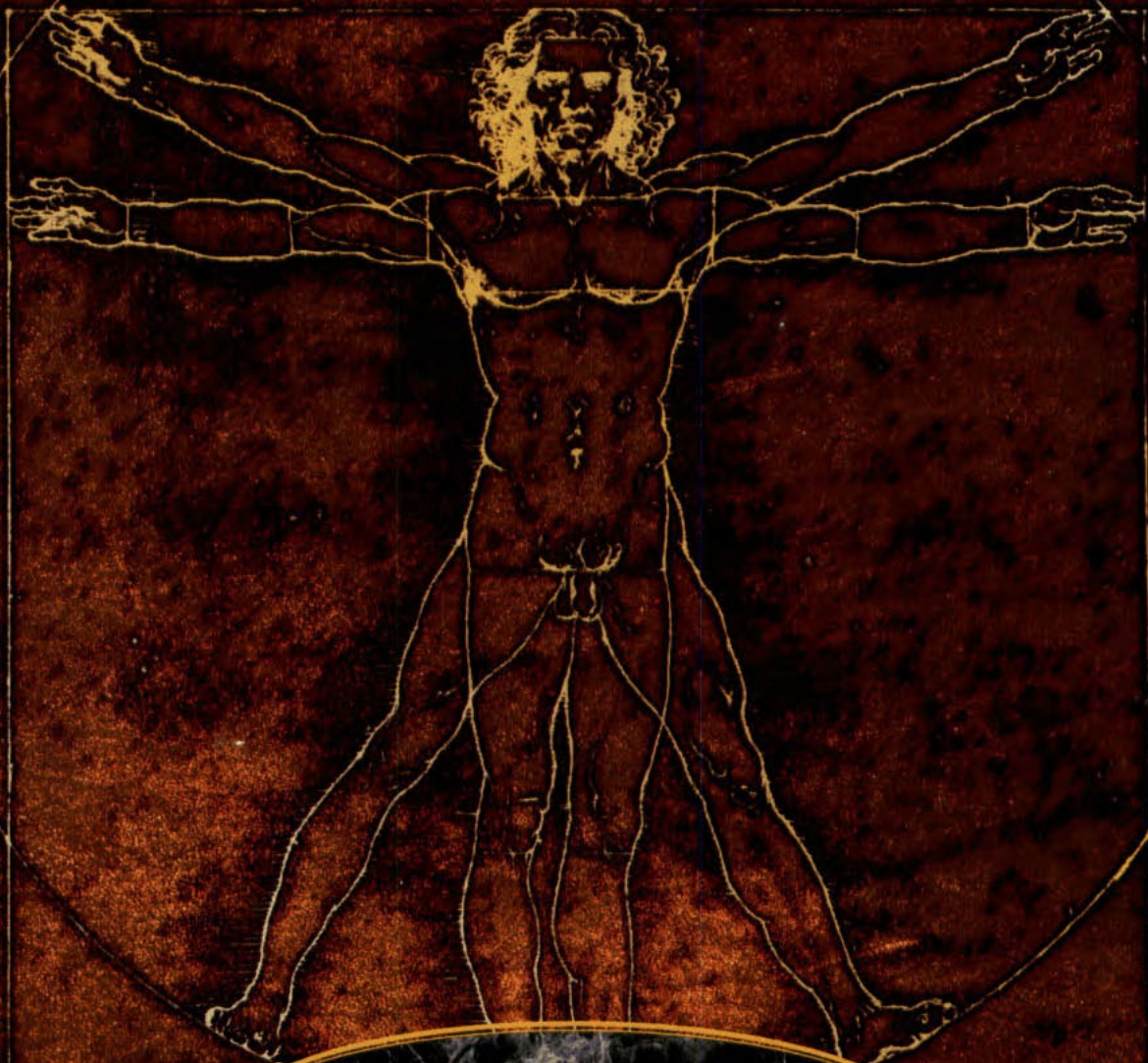


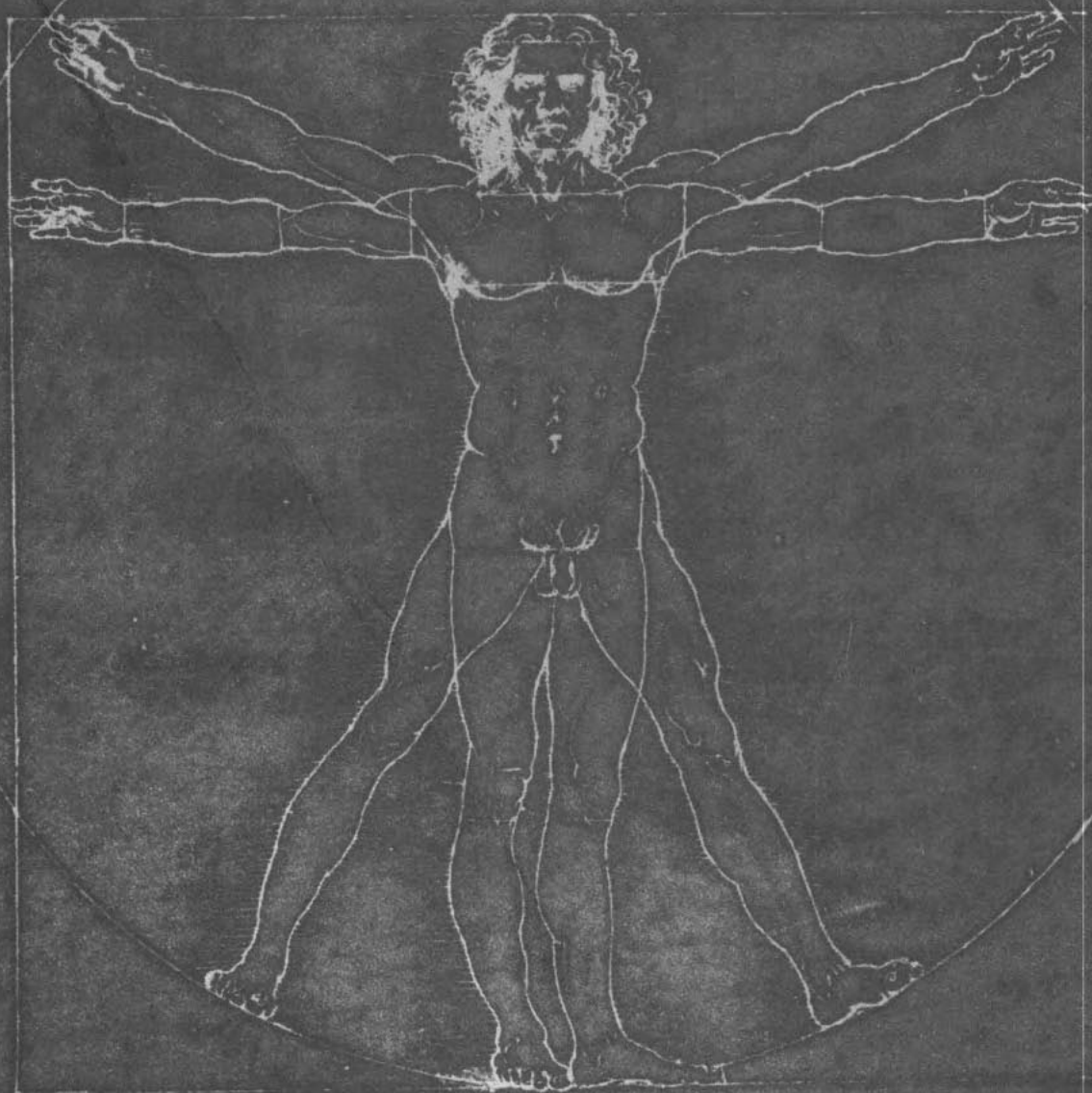
The Lost Notebooks of Leonardo da Vinci

Principia de Mancipium Potentia Magica Universalis



**Castle
Falkenstein**

The Lost Notebooks of Leonardo da Vinci



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The Lost Notebooks of Leonardo da Vinci

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INTRODUCTION

Dear Mike,

I remember back in my college classes being taught about Leonardo da Vinci. I knew that he invented all sorts of things centuries before their time—you know, tanks, subs, helicopters, stuff like that.

But old Professor MacDonnell (I've told you about him before) taught us that Leonardo was not so much a brilliant inventor as a keen observer. He was not a student of the scientific method; he did not pursue purely abstract ideas nor did he develop his explorations in a systematic manner. He did not sit around and doodle up scientific formulas or principles. He wasn't organized. He just watched. And he saw.

That's what strikes me most about this book. Now that I'm in New Europa, I understand what he saw, and what he wrote about in these pages. I can see magickal power now, if I really concentrate and get into it. It's there; magick is real. And Leo saw these things hundreds of years ago. Your Leo. Where you are.

Grey Morrolan tells me that we may never know if this is truly the same book I put in my backpack so long ago on a sunny afternoon on Florence. Maybe it has truly been shaped by that "magickal resonance" stuff Grey is so fond of postulating. But no matter. This book changed an entire world, my friend. Not the world it was intended to change, I'll grant you, but all the same, it reshaped the politics and technology of my adopted home forever.

Did Old Leo know what he was doing? Did he have any idea what shape his fancies would take? We may never know his Intent. But we do know his Vision, through his work and writings. For now, that's going to have to be enough.

Until that time, read on. Read on and marvel.

Thomas Olam,
Old München,
Bayern, 1873

Tom Olam (TO):

I don't speak or read Italian very well, and certainly can't read the dialect Old Leo wrote in. To make things even more confusing, he also was fond of "mirror writing," his diaries and Notebooks in a reversed script.

Morrolan kindly did a sorcerical translation of the original manuscript from mirror to Italian to English, which is what you see here.

And that really bothers me, because I coulda sworn when I bought the book in the Uffizi Gallery gift shop in Florence, that the bloody thing already had a translation in the sidebars! For some reason I can't explain, the original book Editor's comments remained, but the rest of the translation disappeared...

Resonance again?

...e così, come si fa vederle per un piccolo foro fatto colla stretta punta de la sottile acucchia, e quel posto quasi a toccare l'occhio), tu vedrai esse stelle essere tanto minime, che nulla cosa pare essere minore. E veramente la lunga distanza dà loro ragionevole diminuzione, ancora che molte vi sono, che son moltissime volte maggiore che la stella ch'è la terra col l'acqua. Ora pensa quel che parrebbe quessa nostra stella in tanta distanza, e considera poi quante stelle si metterebbe' e per longitudine e latitudine infra seminate per esso spazio tenebroso.

Se guarderai le stelle senza raxzzi (come si fa vederle per un piccolo foro fatto colla stretta punta de la sottile acucchia, e quel posto quasi a toccare l'occhio), tu vedrai esse stelle essere tanto minime, che nulla cosa pare essere minore. E veramente la lunga distanza dà loro ragionevole diminuzione, ancora che molte vi sono, che son moltissime volte maggiore che la stella ch'è la terra col l'acqua. Ora pensa quel che parrebbe quessa nostra stella in tanta distanza, e considera poi quante stelle si metterebbe' e per longitudine e latitudine infra seminate per esso spazio tenebroso.

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Alli abiziosi, che non si contentano del beneficio della vita nè della bellezza del mondo, è dato per penitenza che lor medesimi strazino essa vita, e che non posseghino la utilità e bellezza del mondo.

O speculatore delle cose, non ti laldare di conscere le cose che ordinariamente per sè medesima la natura conduce, ma rallegirati di conoscere il fine di quelle cose has at last arrived, and just as the world about is infused with new life, so are my pursuits, as my benefactor has increased his benevolence. The future looks bright indeed from where I sit at my study window.

For, with great and regal circumstance, and no small part of imperious pageantry, Maximilian I, now the Holy Roman Emperor, with the passing of Frederick II, may he rest in peace, has indeed invested our grand Lodovico Sforza with the Duchy of Milano, gracious city of the Alps. At last, a duke, and no longer a regent, to give Milano the place among the cities of the world as she so richly deserves. And Il Moro, though born but a grandson of a lowly condottiere, is now royalty, and I find that his patronage is now greater, and also that I have acquired greater renown for my work among this Italy, for I am seen as one worthy of being retained by the illustrious House of Sforza, which is as it should be, as there is not one whom I find excels me in any manner of art or architecture, let alone industrious invention and such pursuits.

(I must also make mention that he, that is, Maximilian I, has taken for a bride Bianca Maria Sforza. May their marriage be fruitful and a joy to all. And speaking of marriages, the Sforza family has further expanded their connections. For Giovanni Sforza has married Lucrezia Borgia, who is the daughter of Rodrigo Borgia, who last year was elected Pope Alexander VI.)¹

In point of fact, I find that I am the only stumbling block which I must overcome, for despite some of my best work, I find that my most creative designs yet fail to fulfill the intent for which I developed them, which, inescapably, indicates that my observations or deductions are at times found wanting. This I find most appalling, and thoroughly inexcusable. Fortunately, the Duke is a patient man with my dabbings.

The Chariot of Arms

The covered chariot was the device which most appealed to the Duke, and the one upon which I embarked most enthusiastically. When at last I had completed construction of the first example of this most crafty and impressive device, it indeed proved to be safe and invulnerable to attack, save only from a lucky shot which might by unforeseen circumstance happen to penetrate through one of the small openings which allow the operators of the chariot to view the



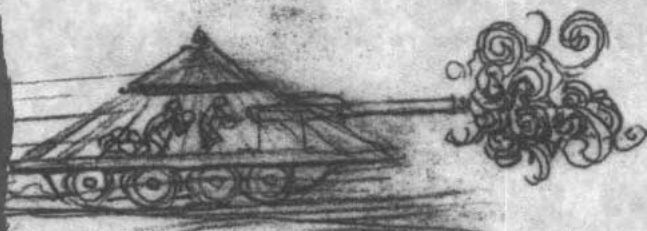
outside world. I have in mind a periscope, which would require a coincidental shot of that sort to undergo such a tortuous path, that to enter the vehicle its speed would be so depleted that the occupants would indeed be safe from any external threat.

¹. EDITOR (ED): These passing references date these opening pages to have been written in the year 1493. At this point, the book is nothing more than Leonardo's diary. Although these comments are not particularly informative or insightful, they have been left in to help set the rest of the book in perspective. It is interesting to watch the evolution of this book from a mere diary and troubleshooting log to what one scholar has denounced as "the venting of the twisted thoughts of a madman for the sole purpose of keeping himself sane in his worldly work."

Leonardo's writing is translated as exactly as possible, considering the differences between Italian and English. Italian place names (e.g., Venezia, Roma) have been left in the Italian, to enhance the flavor of the text. Leonardo used the Latin word *ingenium* exclusively to describe the inven-

tions within this book, apparently to differentiate them from other engines, which to him were engines of war—siege engines. This usage may also have been in a deliberate attempt to confuse others who might read his work. Furthermore, he misspelled magic consistently through his prose—perhaps to differentiate it in his own mind from the magic that witches were thought to practice—and in an effort to replicate this in English, that word has been translated as *magick*.

TO: More than a coincidence? Makes me wonder.



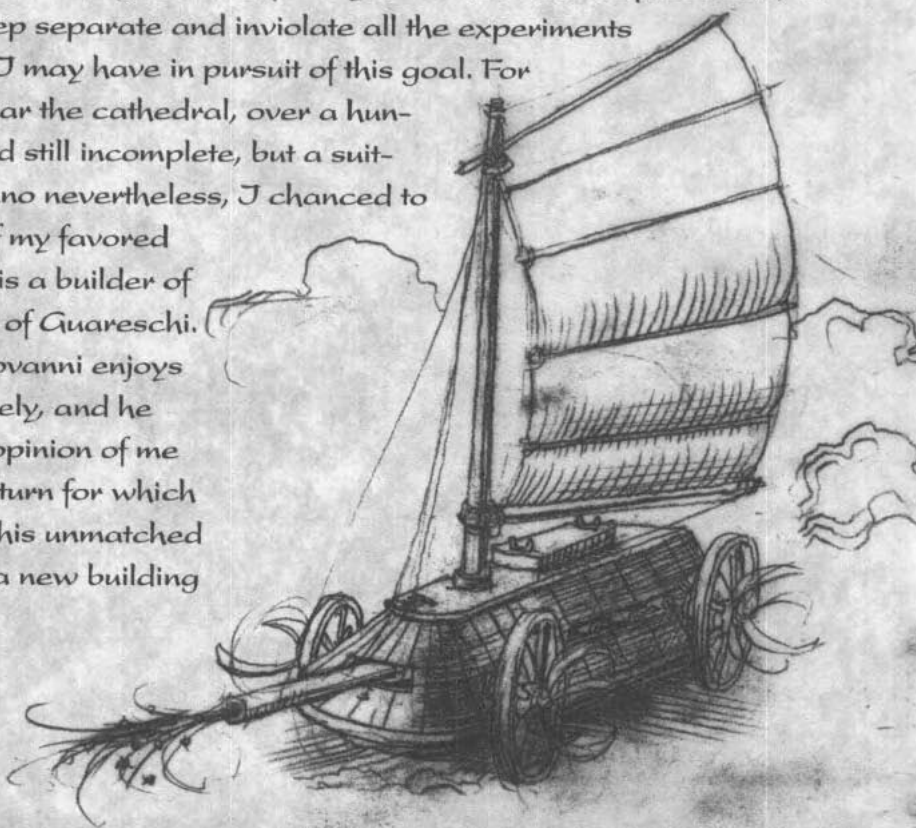
The operation of the artillery in the chariot proved to be less efficacious than J had hoped; however, it was nonetheless serviceable, given the indestructibility of the machine. Where the

covered chariot failed in its trials was in the mobility, for the vehicle had not enough power, no matter how the operators tried, to carry itself independently upon the field, let

alone with the authority such a martial conveyance requires upon the field of glory, and to draw the chariot behind horses would defeat the impregnability of the chariot as a weapon to take the van of an attack against a body of troops, for indeed their very purpose is to allow for infantry to take cover and protection behind its armored shadow, as they advance into the broken and retreating units of the foe. The chariot requires a greater source of power with which to give it speed, as well as a more efficient means of imparting motion. J am certain that J will eventually be able to surmount this problem, for if galleons move about the sea by the fickle puffing of ocean zephyrs, J, certainly, better than any other man, should be able to move my chariot about the land with equal ease.

A Unique Codex Embarked Upon

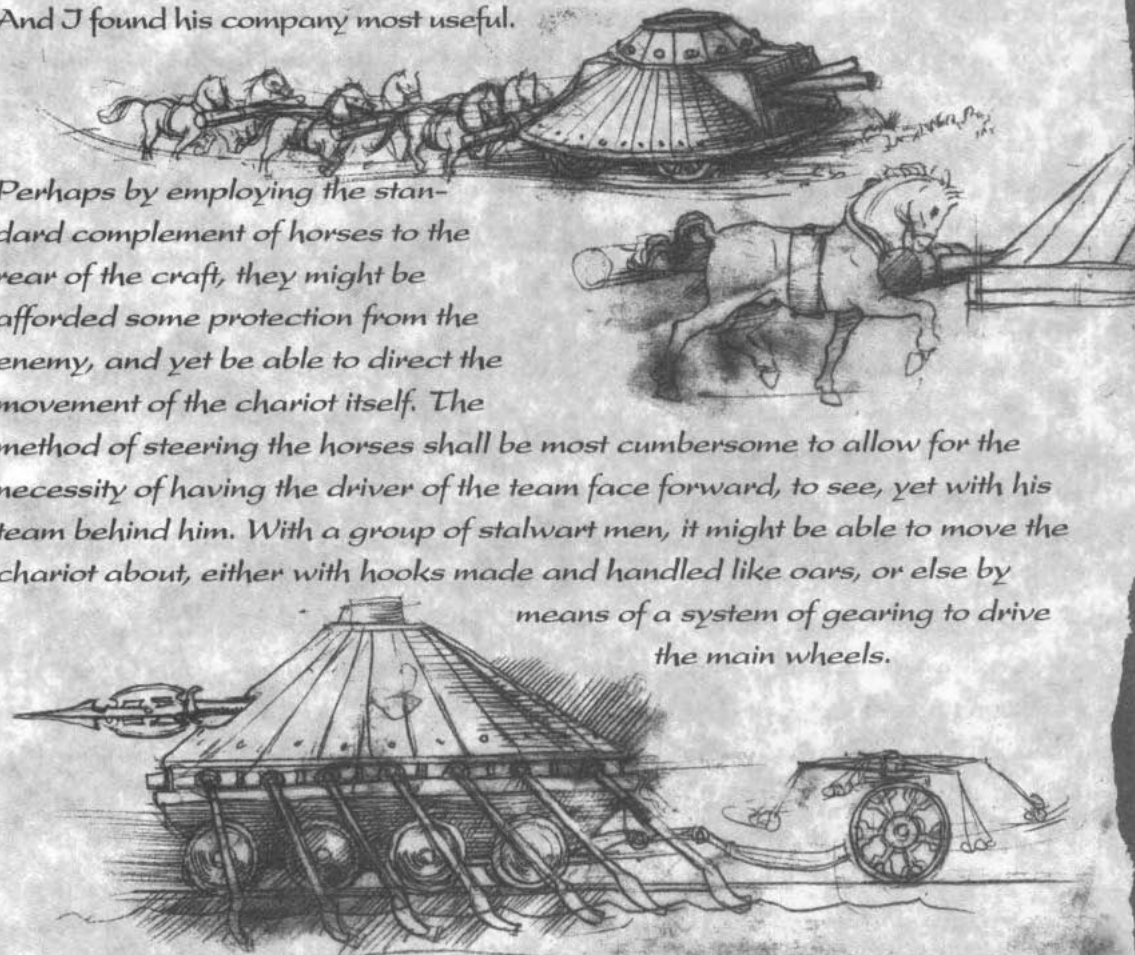
All of which brings me, your most humble investigator, to the purpose of dedicating this diary, to a completely detached and unique Codex, in which J might keep separate and inviolate all the experiments and observations J may have in pursuit of this goal. For while J supped near the cathedral, over a hundred years old and still incomplete, but a suitable gem for Milano nevertheless, J chanced to speak with one of my favored enthusiasts, who is a builder of edifices by name of Guareschi. It is true that Giovanni enjoys my work immensely, and he has shared that opinion of me many times, in return for which J must proclaim his unmatched skill at investing a new building with all the life which J had envisioned for it. Truly he is a master.



By employing a common sail, it might be possible to cause the chariot to move about the field. However, to overcome the natural friction and irregularities of a field, the wheels must of course be quite sizable, although were they armored, they might yet be light enough to afford mobility and sturdy enough to withstand assault.

He suggested many items for the purpose of defeating this impossibility of these armored chariots. And J found him to be a good partner for the conversation, as his input, however benighted in the realm of science, is nevertheless educated in the practical matters of physics, for he is indeed a good architect and builder. And J found his company most useful.

Perhaps by employing the standard complement of horses to the rear of the craft, they might be afforded some protection from the enemy, and yet be able to direct the movement of the chariot itself. The method of steering the horses shall be most cumbersome to allow for the necessity of having the driver of the team face forward, to see, yet with his team behind him. With a group of stalwart men, it might be able to move the chariot about, either with hooks made and handled like oars, or else by means of a system of gearing to drive the main wheels.



An Insight

J met again with Giovanni today, which has become as a daily ritual, to further discuss my ideas and share my insights. He has wondered if there might be a system of pulleys by which the chariots may be moved, but J cannot envision how such an invention would work. However, while Giovanni and J supped, J looked skyward, and commented on the many beautiful lines, seen dimly as though through a dream, which protected us overhead. At this observation, Giovanni laughed, with quite some hilarity. He mused that J was envisioning yet another crowning architectural achievement: that of enclosing this street with a roof to protect against the elements, perhaps one of glass, so that the warmth of the sun might still shine through onto the faces of the happy Milani below, and the lines which J saw were my imagined supports to the translucent

artificial sky I sought to emplace there. It was at once readily obvious that he did not understand what I meant, so in order to obviate any further misunderstandings, which might lead to an estrangement, which, with my favorite builder, I do not wish to suffer, I at once fell in with his interpretation of my exclamation. It is a curious thought, indeed, to enclose a street in such a manner. It would require sound arches to bridge the gap between buildings, and the glass itself would have to be thin, but it could be accomplished, and I shall undertake the design of such a structure, and the invention of the unusual accessories which would be required to see such a project to completion, in a separate place.

It becomes obvious that with the weight of snow which falls in these places which must be considered, that it will be necessary to build up the structure in the shape of a dome, which will, in the event of heavy rain or snowfall, cause the weight to be shifted from the weakest point of the structure, and onto the roofs of the adjoining buildings. With a more temperate clime, it is possible to take greater daring in the design of the structure, perhaps even making one which is not symmetrical.

The Old Woman of Po

Through careful and clever interviews with other acquaintances of mine around Milano, including my esteemed patron, commenting upon the beauty of the sunset and other trivial matters, it became clear to me that there are no others who have my sight, or at least so I thought, until I had a sudden inspiration to meet with an old woman, who lives in a small village which lies nestled along the River Po, not so very far from here. This is a woman, whom, according to certain rumors I had heard, when traveling here to Milano from Firenze a few years ago, the locals reputed to be a witch or otherwise possessed of powers supernatural and beyond ken. I did not at the time hold these rumors to be true, since I was certain that the townspeople, upon hearing she was a witch, would burn her, for they are indeed a superstitious and frightened lot in the peasantry. If it were true, however, it would be possible that she would be in a position to understand my consternation, and enlighten me upon these lines.

I approached her with great deference and circumspect conversation, I assure you, and yet when she realized that of which I spoke, she vehemently denied being a sorceress and the ability to see and manipulate arcane powers. The very vehemence and leap of intuition which it took to make those bold assertions, for they were delivered in a shrill and undeniable voice, gave to me proof that she indeed was given towards abilities unknown to most people, and furthermore, by her denial, given without direct comment from me, I understood myself to be in the manner of exploring that final unknown science. That is, I never spoke of the lines, yet she denied them. Hence I know that I am at the threshold of magick.

A new Cardinal

I have taken notice that Cesare Borgia, the Pope's son of a mere dozen and six years' age, has been appointed a cardinal. One so young! And the Pope not married. Already I begin to wonder at the Pope. What manner of man is he?



TO: Ooh. The Odexcay of Agickmay. I suppose I should warn you that by the time I got this back from Auberon, Morrolan, and Rhyme the Thief Enginemaster, Morrolan had already scribbled notes in the book, commenting on Leo's theories and adding observations of his own. Since my book had already been vandalized, I figured I might as well scrawl game notes for you and yours and send it back so you could see what I was up to. Besides, magickal engines make for great plot devices. That's kind of a pun there. Sorry.

These examinations of magick shall instead be the purarate in this notebook, until such time as I have confidence as to give the results of my pursuits to the sch great anticipation, I be

LEONARDO
PRINCIPIA D
POTENT
VNS

Being an examination and experimentation of the untaring, and their application through means of human amilitary, and to those of pure entertainment, for the be

of this dedication instead, and they are to be held separately
my exploration of the matter in enough detail and con-
world for its joyous betterment. And so it is that with
his book, which I name

DA VINCI'S

MANCIPATION

A MAGICA

RESULTS

powers of arcane universal energy, their understand-
mechanical contrivance, to pursuits both scholarly and
ment of the situation of mankind, in which we find our-

GREY MORROLAN
(GM): The Old
Man abandons the
Human factor pretty
early on, and focuses
Exclusively upon the
Mechanical. Thank
Goodness.

2. TO: Yeah.

Conscienceless evangelists. Political correctness. Newspeak. I know all about it.

3. ED: There

appears to be a gap here of about a year. After this break, it appears that Leonardo wrote more or less continuously until he closed the book in about 1502.

Given that these pages were written over the course of ten years, then, it becomes apparent that this project was a closely guarded secret of his. Also, considering how prolific he was in other pursuits, he considered this a minor field of endeavor.

My Method of Organization

J must be organized in this manner of investigation, more so, I admit, than is my usual wont, for I too readily allow my enthusiasm to overrun and stampede down my deliberation, and as a result my work can suffer from oversights and inefficiency, as I have learned anew with my invention of the armored chariot. I shall here, then, apply to myself an unaccustomed organization, that, while pursuing this heretofore unexplored science, I might avoid the glaring error of overlooking significance in my haste to reach the ends. Thusly shall my newest Codex be ordered:

The Nature of Magickal Energies

The Theory of Harnessing Magick

Magick Through Mechanical Contrivance

Miscellany and Addenda

There. Now I am organized.

The Pope Issues a Bull

J shall have to conduct my researches carefully, and with great circumspection, for His Holiness the Pope Innocent VIII issued a papal bull *Summis Desiderantes* condemning non-Church witchcraft and sorcery only ten years ago, and Italians have a long memory, especially the pious ones. It is tragic to see fear of the unknown impede the exploration of same. Or perhaps it is the abuses of some self-styled practitioners of black arts, the like of which abound in this superstitious land. These unhallowed few bring unwarranted disgrace upon those of us who, with scientific reasoning, acute perception, and a clear conscience, seek to shed light upon the mysteries of the Universal Force.²

Fortunately, the old goat was called to congregate with his Direct Superior a few years ago at the ripe old age of too long, so perhaps this bull will not be prosecuted with as much energy as perhaps it would have before. Indeed I have hopes that Alexander VI will be a more curious and forgiving Pope. Unfortunately, old Rodrigo Borgia—no, he no longer exists, indeed he is now the perfect Alexander VI—has already revised his *Inter cetera divina* within two months of its original perfect incarnation, and it was by and large ignored anyway. This Pope may not have a significant impact on history, despite appointing family members like his son Cesare to important clerical posts. At least so I hope, for I find that those who impact history often do so in an injurious manner.

Be that as it may, I find I have attracted some attention by speaking with the woman reputed to be a witch, and hence I shall have to shelve these inspections for the nonce. I shall resume them when I have finished the *Madonna of the Rocks*, and can more fully devote my time to them.³

A Work Completed

I have finished the *Madonna of the Rocks*, and find now that the world is at war. The Turkmen have invaded Hungary and Dalmatia. This they did long since, although word took some time to arrive in these places. In a similar manner, Charles VIII of France has sent his troops against Italia, and taken Firenze and Roma.

The Pope is said to have fled to Castel Sant'Angelo. I am glad for it, for I would not see the head of the church threatened.

THE NATURE OF MAGICKAL ENERGIES

Judicious examination, and no small part of surreptitious and secretive meetings with the woman from the village, who at last, with some plying of wine and gold, has condescended to share with me some of her insights, although she has a tendency to stray from the subject at hand, has demonstrated to my satisfaction that there are indeed four facets of the magickal powers which permeate the Earth. This is as I had surmised, for the effervescence which these powers exude can be seen to be of four slightly differing aspects, that is color and vibrancy, and, for lack of a better word, taste, indicating that they indeed are separate manifestations of this unknown and unexplored force.

It is my belief, and by watching the method with which these energies interact with the world about, that the best naming of these facets is that they are heavenly, spiritual, natural, and mundane, this being the best explanation of the method by which God might cause these powers to be apportioned among His creation.⁴

O, Unearthly Power of Heavenly Delights

Heavenly power is that which flows from Heaven, borne upon the wings of angels, and connects the earth to the divine. I am uncertain whether or not the heavenly power may also be used by the Deceiver and his minions, trapped between Heaven and Hell as though the poles of a magnet, or whether the Lord smote Satan such that he and his angels may no longer touch the heavenly powers. Heavenly powers may be what divine spark remains within these paltry and sinful human shells. With the heavenly powers might one supersede the limitations placed upon us by God as we live within His Creation, and perhaps even travel to sit at His feet.⁵

Spiritual magicks are those which impinge directly upon the human spirit, that eternal and inviolate part of all of us, granted to us for our eternal salvation by our Creator. The health and state of our spirit is of paramount import to the health of our bodies, as can be demonstrated by the dilapidated position of those most sinful and corrupt people, who then succumb to leprosy and other ailments. With spiritual magicks might one influence or dominate the human spirit, and thereby control the activities of the person.⁶

4. ED: Here Leonardo has divided these supposed powers between God, man, and material objects. At this time, there has remained a belief that nature itself has power, as well.

GM: This is a fairly Accurate appraisal of the Nature of Magick. Although the descriptions are obsolete, the Old Man's deductions are fairly Accurate. I must wonder if the Old Man were a Sorcerer in his Own right.

5. TO: Leo's close here, but not quite right. This is the Spiritual magicks, which we symbolize with spades. Leo is misguided in calling this heavenly power, although spades does allow you to go beyond the norm, and penetrate to other planes.

GM: Don't be so certain, Thomas, that the Old Man is misguided. There is the Incident with the Via Peregreus, which is most Disturbing.

6. TO: This is the emotional/mental aspect, or hearts. I wonder, though, does Leo believe that by controlling someone and making him sin, you can cause him to suffer a plague of boils? Or does he think that free will must be a part? He doesn't really touch on it.

7. TO: Clubs, as you might guess. Elemental magick.

8. TO: This is material or scientific magick, which I designated diamonds. As far as effects, what's greater: two quarters or five dimes? Answer: Who cares? That's why I haven't made all these extra rules about magick. The decks do it simply and easily.

Natural magicks are those which permeate nature, and are inextricably combined with the forces of fire, and air, and water, and the Earth herself. This appears to be a raw and powerful force, not at all refined, but impressive in its own way.⁷

Mundane magicks permeate the rest of Creation, interweaving those material objects which have neither spirit, nor soul, nor divine aspect. This is perhaps the weakest of the energies, but the lines are much more extensive, and exist in greater number, though lesser aspect, that they may not be discounted. In fact, yes, I believe that their greater numbers shall outweigh their weaker aspect.⁸

THE THEORY OF HARNESSING MAGICK

The magickal energies themselves exist, indeed, and what is present in Creation, has been given for the control and enjoyment of man, for as it is written, God said, "Let him have dominion over every thing upon the Earth." Or something simi-



lar to that. I find my Bible is buried beneath my other notes, and I cannot locate it at this moment.

Since these powers can be manipulated by the force of the human will, which is both our greatest asset and most disastrous liability, it should be possible, by the creation of a device suited for just that purpose, to manipulate the magickal forces automatically, since it is by human will that the machine shall be created, and by human will that it shall be engaged, for the manipulation of the magickal energies.

I believe that by interconnection of the lines of force which are present in the magickal fields, that the one who causes these interconnections to spring into being may then be able to cause magickal effects to be made manifest, for the amusement or benefit of all. It shall be most difficult to manipulate these magickal lines, since the threads are not, apparently, possessed of stray ends, which might be used for the better and more ready manipulation of these powers, thus I shall have to discern methods by which to lace together magickal lines without requiring that there be a loose end for the beginning of such a tying. I must seek out instruction in these matters.

Thus, History is written by the victors...

It is said that Aemilius Paulus of Verona has been appointed historiographer royal to the invading King Charles VIII. May he preserve the truth of the matter! And not leave loose ends of his own.

By manner of slipknots, it might be possible to effect unnatural, or since magick is itself natural, I shall say anomalous changes in the surroundings. Unfortunately, since, without the benefit of a loose end by which to tie the knots, they shall all be slipknots, the changes which shall be wrought may not be readily maintained for all of time, but shall eventually unravel themselves.

This does not mean that permanent alterations in Creation may not be effected through the activities of a magickal mechanical contrivance. If, for the sake of an example, I were to create a magickally created fire, and with it to burn a paper, then when the magickal fire is extinguished, the paper shall not spring back into whole being anew. Nay, it shall remain as ashes forevermore. In a like manner, that which is magickally apported about shall remain where it has been placed, and shall not apport back from whence it came at the termination of the magickal effects which moved it, for such a reaction should require the expenditure of additional magickal energies, which, by the assumptions made in the beginning, are already depleted, hence it is nonsensical.

However, it is true that, without interference human or mechanical, one cannot create a permanent change which is in and of itself magickal in nature. That is, one cannot levitate an object forever, without the continu-

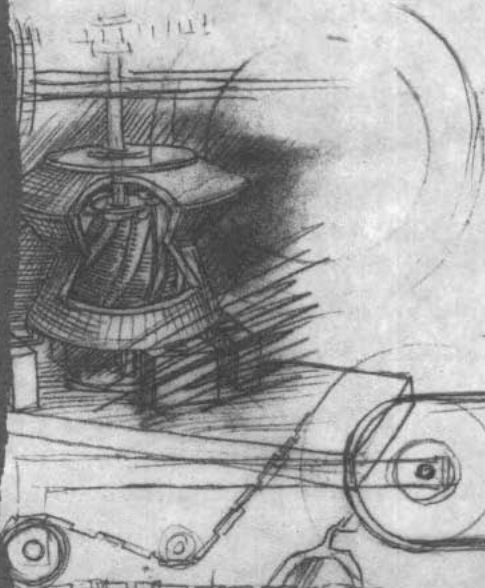
ous efforts of human or mechanical will upon the magickal energies, preventing them from unraveling, as is their wont. Since humans are possessed of weakness of will and body, unlike mechanisms which are tireless, and breakage notwithstanding, capable of continuous effort without cessation or waning of application, I shall pursue the mechanical control of magickal energies.



MAGICK THROUGH MECHANICAL CONTRIVANCE

I have studied carefully the manners in which those who are sailors tie hitches and knots in their lines, and these are most beneficial to my current efforts, as it is most illustrative of the manner in which mechanical devices might create such aberrations in the lines of magickal force.

These are some methods by which I believe we might be able to entangle the magickal energies such that they shall produce unusual results, for the contortion of natural lines of magickal energy shall itself cause a contortion of the Creation about the entanglement, and hence what might be termed an abnormal situation, although magick is, itself, natural. Much as creating an alchemical fire causes an abnormal heat, yet all is perfectly natural.



Of the Soul of the Machine

One difficulty might arise in that mechanical contrivances are not themselves intelligent, nor possessed of a soul, nor conscious, nor capable of discerning

good from evil. They are incapable of differentiation, and shall consume whatever magickal powers are handy for the use,

without regard to their suitability to the task at hand. I cannot yet conceive of a method by which the

mechanical hand shall, by manner of care, extract only the desired aspect of magickal power. Thus I must remember that the machines shall instead only take whatever is convenient, and design my devices accordingly, and with full knowledge that unforeseen magickal manifestations may come into being for the fact that differing energies have been used in unaccustomed ways.⁹

However, when the proper energies are used, the

mechanical attentions shall create perfectly bound energies, given to no variance, and far more perfect than those of a human could ever be, for a machine is by its very nature more patient and exacting than a human. Although a human is more discerning.¹⁰

Such a Loss

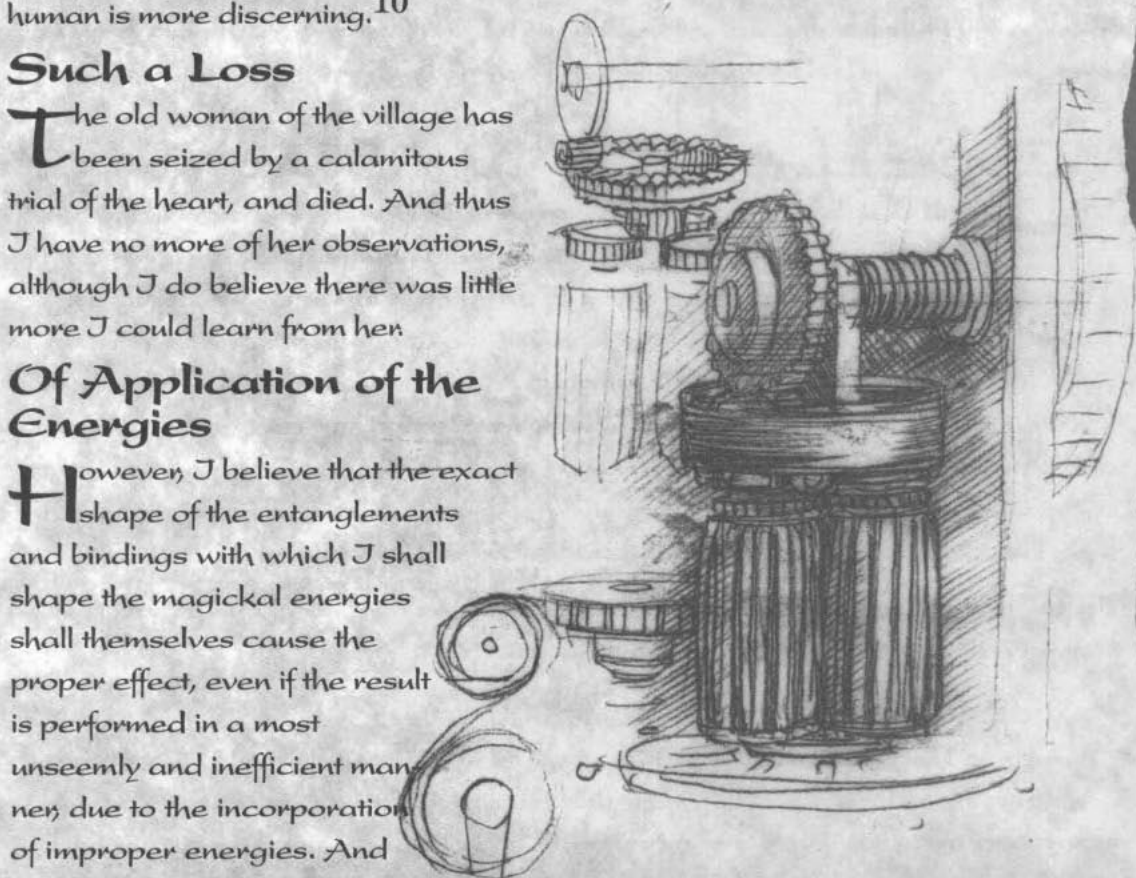
The old woman of the village has been seized by a calamitous trial of the heart, and died. And thus I have no more of her observations, although I do believe there was little more I could learn from her.

Of Application of the Energies

However, I believe that the exact shape of the entanglements and bindings with which I shall shape the magickal energies shall themselves cause the proper effect, even if the result is performed in a most unseemly and inefficient manner, due to the incorporation of improper energies. And

9. GM: The Old Man here speaks of Harmonics, and that Magickal Engines cannot discern the manner of energy they consume to perform their Labors. And, indeed, Harmonics have been an effect which has most Hampered the development of Magickal Engines, for the Harmonics of these Engines can be most Dangerous.

10. TO: In my discussions with Morrolan and Auberan, they backed up this claim by Leo. That's why, in the rules I'm giving you at the back of the book, magickal engines have no harmonics for their aligned power. They just use the stuff correctly.



11. GM: The Old Man is wrong here, as well. Magickal Engines, which operate continuously, shall not Consume the Energy, but merely Retain it for the duration of their purpose.

that the tireless application of the machine to the task shall be balanced against its lack of discrimination, and that the result shall be as efficacious as any as might be obtained by human will alone. And I have no training in magick through the application of the will besides.

I do not believe that the magickal energies are infinite in nature, at least not in a given time. For although they may grow, as does the grass, there is never an infinite supply of grass for the harvesting, either. It is unfortunate that the mechanical devices shall consume the magickal energies in the tying of these bindings, or knots, or what have you, and therefore that it shall be impossible to create a permanent magickal effect, for to have a building supported aloft on air, by means of a magickal contrivance, would be most impressive to all, and a sure construction to draw the curious from across the continent, and bolster trade. And interest in my works shall be widespread indeed.¹¹

Another Commission

I am asked to paint a rendition of The Last Supper. A monk from the monastery of Santa Maria delle Grazie has asked, and the sum he has offered is most worthy, especially in the service of these men of God. I find it somewhat amusing that they wish for me to place the painting in the dining hall of their monastery. Perhaps they wish the illusion that they dine with Our Savior, or perhaps some of them prefer to think of their brethren as Judas. I am certainly merely jesting, here. I find the monks most pious individuals, quite unlike their spiritual leader, Alexander VI. I look forward greatly to this task, for I shall endeavor to exceed all my works gone before with this one, for their benefit and approbation. They are surely most intelligent to turn to me for such a decoration, as none is my compare.

MISCELLANY AND ADDENDA

I find that the methods of powering the magickal mechanisms which I shall design are few indeed, especially when I consider that it is undesirable that the method of power rely upon living creatures, like men, or mules, or the like. I have at my disposal water wheels, and clockwork springs, and muscular effort as from a team of horses. And I have counterweights as well, which, with severe gearing and the assistance of a clocksmith, I might be able to generate a steady, though small, amount of force for a lengthy period of time. Of these, only the clockspring is particularly suited to being moved about, and the water wheel not at all.

I shall have to create new methods of powering these machines, for the furtherance of my testing and experimentation.

A visit from an old friend

Ricardo Del Cantone, the philosopher, is in Firenze, for a visit, from his home in Milano. Good old reliable Ricardo! How often we sat upon the courtyard and practiced our perception of the human spirit by scrutinizing

those who passed by upon the street. Many a good bottle of wine and loaf of warm bread we slew in a noble and friendly fashion so diverting ourselves. And now he is in the city, and in part to pay me company. He claims to have a gift for me in celebration of the anniversary of my birth.

I have now received Ricardo's gift, and a fine one it is! Or two, for he has gifted me with two books; one is *Algebra* as published by Luca di Pacioli, which shall be most beneficial in my mathematical pursuits. The other is the *Treatise* from Aristotle, which affirms much of my current work. I shall set this book aside for the nonce, and read these two missives.

I catch up on the events of the day

As I have spent my time studying these books, much has happened. The Pope has formed the Holy League, with which he sought to engage the French and drive them from Italian soil. The armies of the Holy League and those of the French met upon the field of battle, at Fornovo, whereupon they were most soundly trounced by the French, and defeated. And the Holy League has already seen to crumble apart, they being so dismayed that the will of the Pope was thwarted in such a magnificent manner.

And yet again has the will of the Pope been thwarted, for the friar Girolamo Savonarola, of Firenze, has seen a vision, and has refused a Papal order to leave for Roma immediately, to explain this vision to the Pope. As well, I am sure, to explain some of the sermons he has been giving, which are said to be most incriminating against this Pope. I must admit to a fierce curiosity. For a friar to stand against the Pope, one or the other must indeed be greatly wrong, and I believe I know which.

Aha! This is most wonderful! These books give me the mathematical basis and theoretical evolution of magickal properties that I might be able to pursue the development of mechanical contrivances. Ah, but I hear my neighborly associate Giovanni Guareschi the builder plying me with the smell of roast chicken wafting from the window, and his voice calls to me on the behalf of a fine bottle of white, which he has tucked under his arm, and so I shall have to set this aside for the nonce.



INFUNDJBULUM POTENTJA

(DRAJNNG ENGJNE)

Enough of the observations, and of the thinking, without enacting experiments upon the results of my contemplations! Am I not the most skilled inventor of these days? Am I not capable of giving perfect satisfaction to every undertaking upon which I dedicate myself? Am I not a creative mind the equal of any other, be he who he may? Very well, then. I shall henceforth undertake to prove my theories, to myself and to the world at large, for the betterment of the station of mankind, and for the elevation of Italia back into the rightful place of glory among nations which is hers alone, and again the Roman empire shall spread from the Atlantic Ocean to the wilds of the East, but this time Italia shall be an empire of peace, with everyone provided for and aided by my most useful ingenia, which can be made for every purpose.

A Protection Against Illicit Reproduction

If the creation and building of these ingenia may be made to rely upon the proper assemblage of the exterior of the mechanism, such that when the containment is split asunder, the interior mechanisms, be they clock springs, or whatever, shall be pulled apart, or released from containment or tension, then the method by which these ingenia are made shall be safe from copy, and Italia shall

find herself alone
able to manufacture
and export
such items to foreign
lands, and to
consumers within
those lands.

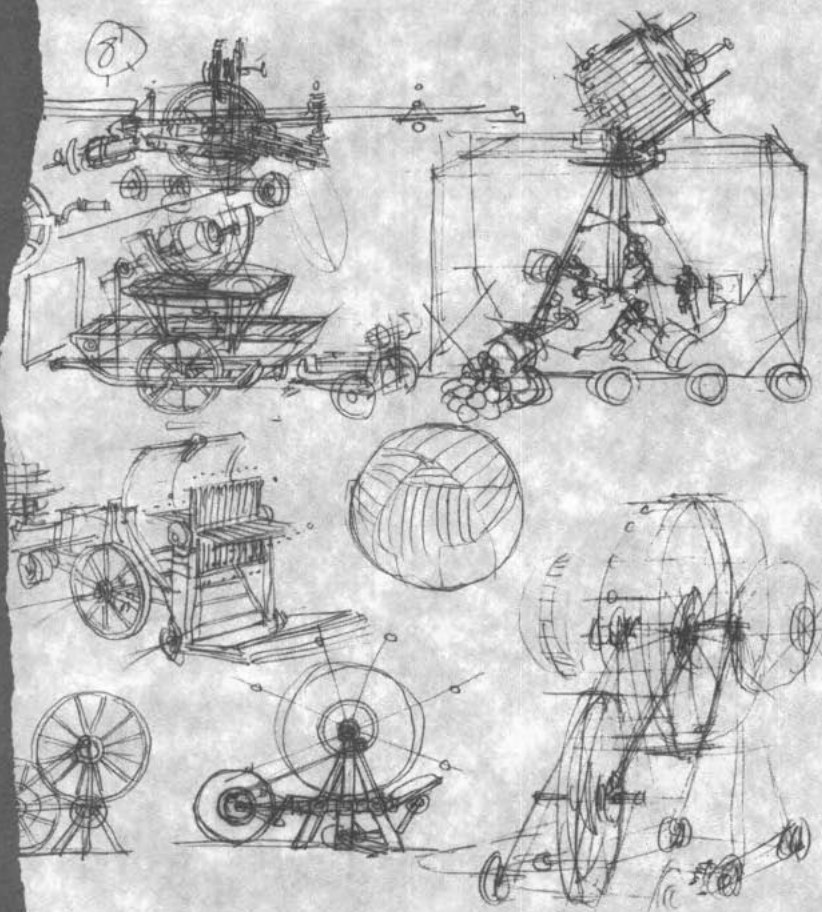


The first method by which I can demonstrate this device, is by the creation of many knots of magickal force, tying them together by mechanical means, in an endless supply. These knots shall be tied to have no particular effects; at least I know not yet how to engage them with effect, however, by their creation, they shall deplete the magickal potential of the region, consuming the magickal energies in a useless fashion, much as a fire in the daytime burns scrap wood to no use other than for its disposal.

If, then, by engaging the device, I can produce these knots of magickal energies, and, by their production, cause the vital magickal potential of the immediate vicinity to be exhausted, it shall be then proven that my reasoning is sound as ever. I shall attach the main

shaft of my ingenium to the gear of my water wheel, that I might have an uninterrupted continuation of motion for my contrivance.

This design, there drawing k, is shown by experimentation to be most expedient, with one each grapnel of silver, gold, wood, glass, tin, and stone, each but a span in length, and mounted as illustrated upon gearings which produce a

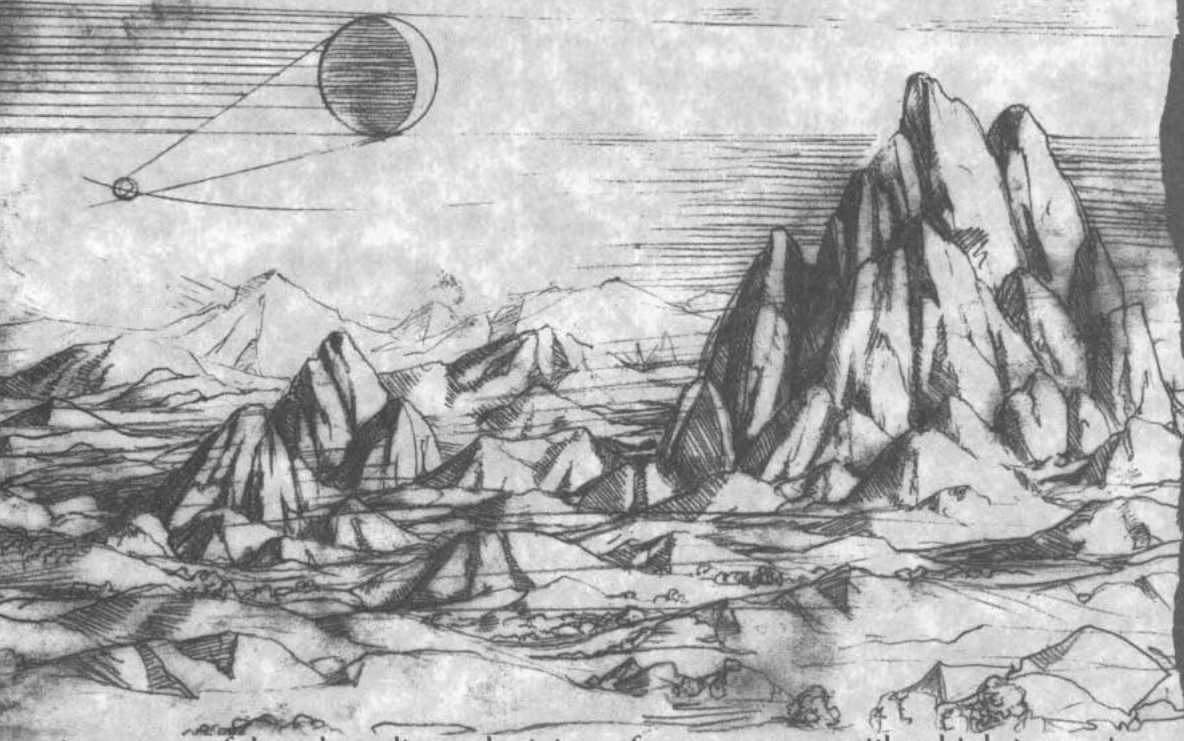


regular, though complex interconnection of motions, set to tie the knot. The wooden needle is unfortunately broken, as I, entranced by the endless series of magickal knots which floated from the ingenium, endeavored to seize one between my fingers, whereupon the finger, being caught by the prongs, did break one, but not before the others had laid to upon it, for which trouble I now wear a cumbersome bandage, and find myself unable to experiment more. Thankfully, I can write as well with one hand as the other. And might continue my labors.

The *Infundibulum Potentia* operated of a sufficient length of time, that I discerned a decrease in the magickal potential of this place. It proves that a magickal *ingenium* does consume the raw material of magick itself, and produce thereto a magickal result. Which is here the knots which I witnessed.

It is now three days later, and by my observations, which you must know are most careful and studious, I have discerned indeed that the magickal lines are present once more in as great a number as any which I beheld previously. This indicates that the magickal energies which abound are not restricted expressly to one place as are the rocks of the earth, but that they flow about as though water, filling in any area where they are drained, by whatever activity. I have as yet not determined that the magickal energies are themselves reproduced, by means natural or arcane, that is, whether the lines breed or grow from sunlight, or are spontaneously generated; or whether indeed they are exhaustible, and limited in number and power, though of such a great account that my experimentations have not yet made a noticeable diminishment of their number. I have no way of proving to myself the truth one way or another, save only through observation of many years.

Here is where the devices were tested, a most inhospitable place, indeed, but one where the permanent consumption of magickal potential might have little effect upon my experiments.



By careful and studious devising of new prongs with which to equip this mechanism, I have created an *Ingenium Solaris*, which creates knots which are seen to glow of their own accord even as they are

2. GM: A simple alteration of the Illumination Engine would cause it to generate Darkness, instead. By replacing the Silver with a Barbed Hook, and the Gold with Ebony, I believe it would work.

unraveled and vanish from sight. I found this most delightful, and powered the ingenium for a few hours in my study, to see the unusual glow which the *Ingenium Solaris* caused. Unfortunately, the light emanating from my window attracted attention at the late hour, and several City Watchmen came to investigate the strange illumination. Fortunately, if you will, it broke down at about that same time, as mentioned above, for I am not yet prepared to display my current works to anyone, let alone to that sort of Milanese who is employed in the city watch, for lack of ability to retain a post which might avail of daytime working hours.

The Fumbling Arm of the Law

In they strode to my laboratory, and proceeded to familiarize themselves without restraint with my equipment. According to the largest of the three, they had noticed, as they said, a most unholy light, which they saw emanate from my windows, as I had not drawn the curtains, and were of a mind to investigate to ensure that nothing were amiss. As I endeavored to explain away the illumination by means of alchemical experimentation, one of the watchmen, apparently believing that my *Ingenium Solaris* were a music box, endeavored to cause it to function. He wound the rod which serves as the main axle in a backwards direction, and as it will not proceed incorrectly so, gave force to the rod, that it might work, and instead broke it with his carelessness. At which the three excused themselves, lest I call for the Duke's Household Guard.

I am most frustrated. However, I have at least proven my work is valid, and many of the parts of the *Ingenium Solaris* were readily salvaged, and sequestered for future use.²

IMAGUM ILLUSORIUS

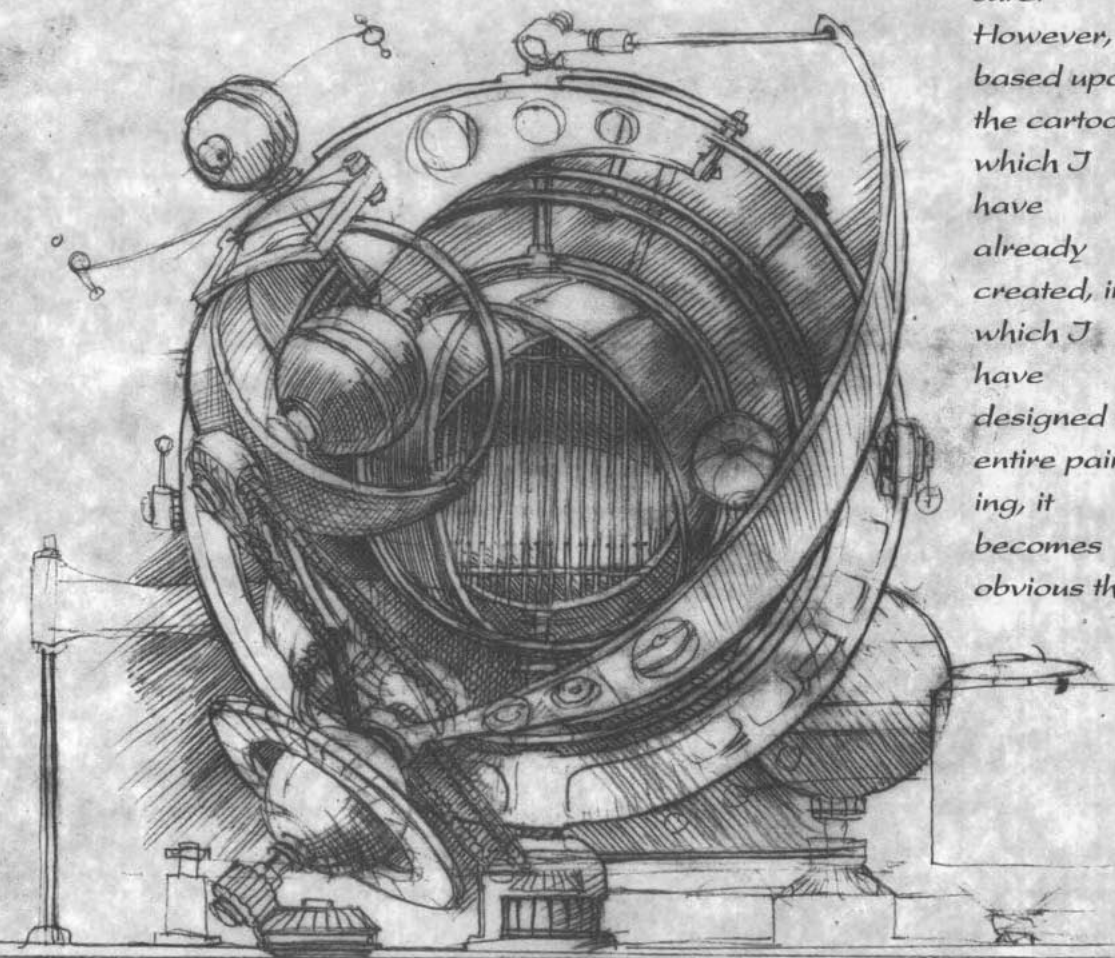
(OPTICAL ILLUSION ENGINE)

Given that I have been able to create an *Ingenium Solaris*, although indeed a faulty and short-lived version, for my own metallurgical skills, despite my learnings, are less than expert, it should be possible, to create an *ingenium* which shall create an entire image. Comprised of a series of *Ingenia Solarii*, each of which contributes one portion of the image, a shape and projecting a certain color of light, each of which pieces is seen to provide a portion of the whole image. That is, by careful arrangement of patches of light and color, an entire illustration might be made.

Temptation has arisen, that I make my rendering of The Last Supper of such ingenia, instead of a standard painting. This will certainly cause the rendering to be more detailed, to have a more smoky aspect, than the normal fresco painting method. And, since the vision so created shall be of three-dimensional nature, it shall better appear that Our Lord were seated with his twelve in the very dining hall, which shall be most profoundly moving, I am

sure.

However, based upon the cartoons which I have already created, in which I have designed the entire painting, it becomes obvious that



TO: Mike—This is the sucker that Rhyme first built, which made an illusion of whatsher-name. You know, I never did find out what her name is. She's a babe, though. I'll have to ask Rhyme next time I visit him.

3. GM: The Old Man is exactly right. Gracious! How can One Person be so Observant? And without adequate Technology to prove these Thoughts to himself!

the entirety of the image shall require a large and exquisitely detailed ingenium, far better than I can possibly create here, and would take much time. Furthermore, it is doubtful that the monks, being disposed to follow the writs of the Pope, will tolerate such a piece of artwork, being magickally created. I am instead working with a new and experimental compound, of my own invention, a paint which shall allow me to take my time, and render *The Last Supper* in great detail and realism, and with the smoky flavor which others have found so appealing in my work. *Fresco* is so limiting.

Of Magikal Resonance

It is my belief that the flare of light, or illumination, generated by the unraveling of one of these magickal knots, is caused by the magickal resonance of friction as the magickal lines of force pull against each other, much as among mundane ropes, such friction produces heat. According to my best observations, the color of light so disposed by the unraveling of a knot shall depend upon its shape, which is to say what additional shapes are bound into the knot, beyond the basic form which produces light. And the aspect of paleness or deepness of the light so produced shall depend on how much extra of the lines is pulled through the knot, which is to say, how much slack is afforded the knots. And the brightness, or intensity, or translucence of the light so created shall be dependent upon the tightness of the magickal knot so bound.³

I had originally believed that it would be necessary to create several *Jngenia Solarii* to cause a detailed image to be created, linked together and carefully arranged. But now I see that is a single device, an *Jmagum Illusorius* can be built to perform the work of many *Jngenia Solarii*, by the addition to the *Jngenium Solaris* of several adjustments, each of which shall affect the creation of the knots which the *Jngenium* produces at that moment, and, which moving, cause their effects to wax and wane in a periodic fashion. The adjustments of this, as I shall call it, *Jmagum Illusorius*, in their orbit and rotation about the central portion wherein the magickal knots are tied, engender differences between the knots, and hence can be so calibrated, through careful and studious efforts, to cause an image of any sort which might be imagined, and the more conscientious the calibration and alignment of these effectors, the more detailed and pleasing the image shall be to the eye. Given a sufficient speed of operation of the *Jmagum Illusorius*, the rapidity with which the knots are tied shall be of such great moment that the created illusion shall not be seen to flicker or pulsate, much as the wings of a hummingbird proceed with such swiftness that they appear to be a mist, and not solid. Once I have found a suitable craftsman here in Milano, perhaps I shall pursue this for the pleasure of the Duke, for I could create a statue of his father far greater than any I could of metal alone. In the meantime, I shall not build this ingenium, for I find the City Watch makes frequent passes by my window these last few weeks.

An Engine of Illusion

It is possible that the *Imagum Illusorius* shall be made to create an apparition which shall move; by the clever design of large and most carefully incorporated gears and wheels, as illustrated here, the picture created by this ingenium shall be seen to permute itself, to give the illusion of life. However, it is necessary, that the movement of the magickal illustration shall either come to an end, or else be seen to repeat itself from the beginning, as the gears and mechanisms which drive this *Imagum Illusorius* may not, of course, be infinite in length, although by creating several independent contraptions, which are not of equal period of operation, which is to say, of differing lengths of cycle, then the period, during which the mechanisms operate, shall repeat again only as the product of the periods of the individual mechanisms. Although this sort of intertwining of images shall require careful design and testing to ensure cohesion and realism. With careful planning, however, the beginning and the ending of the image's movements may be made identical, that the image looks to move continuously, though through a cycle. Like a man walking.



IMAGUM MELOS

(AUDITORIAL ILLUSION ENGINE)

Since I have demonstrated to my satisfaction, that an *ingenium* which shall create a visual image is completely feasible, even within the current limits of technical expertise, although preferably engineered by one more practiced than I, it shall be likewise possible to create an *ingenium* which shall manifest an unreal sound for the hearing and entertainment.

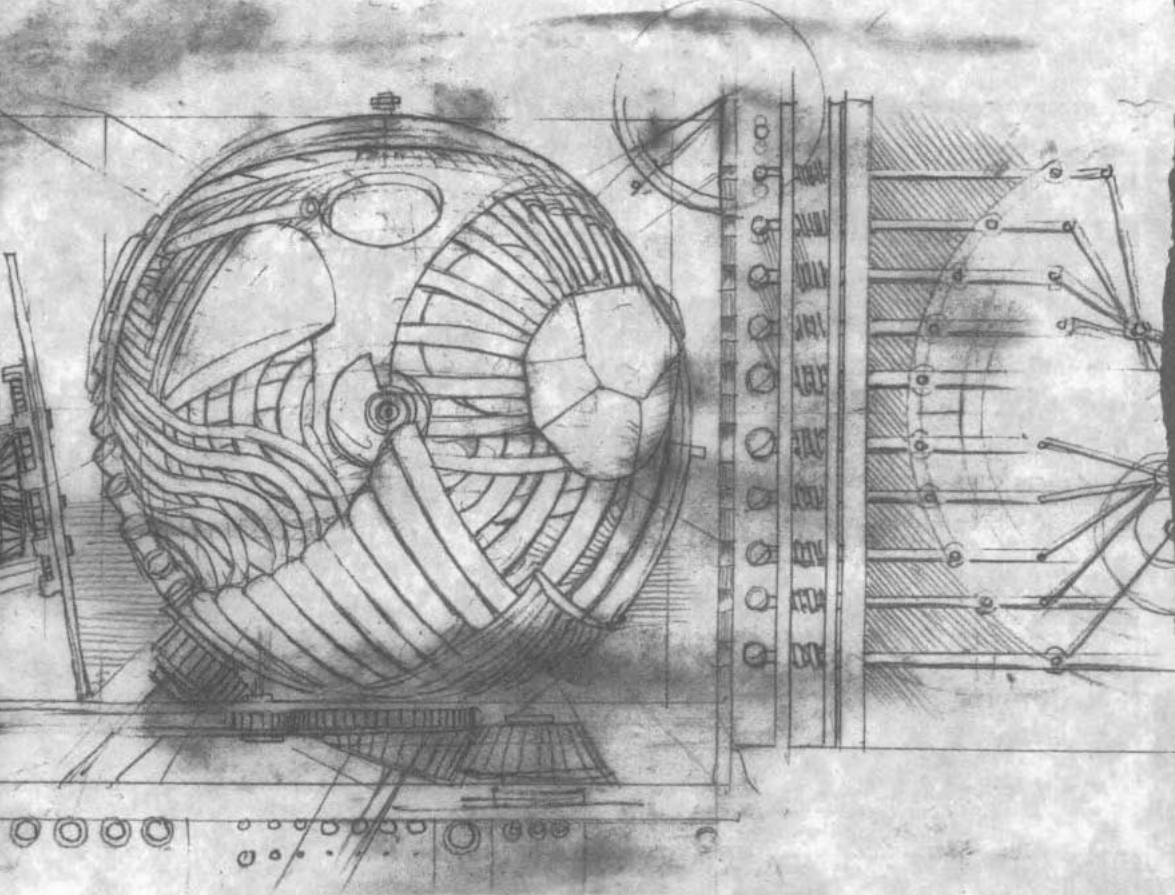
This ingenium I most certainly cannot test, for the presence of disembodied voices or sounds which are not seen to be caused by any natural resource shall indeed cause me to be seized by the authorities and burned as a spiritist, my reputation for invention notwithstanding. The Italians are a superstitious lot, love them though I do, but they are often obtuse, especially when it comes to manifestation of experimentation, which they are at a loss to explain. It is certain that the average peasant would not understand, nor even wish to accept, my explanation of magickal ingenia, and even were I to make such an undertaking, they should seize upon the word magickal, and the same fate should befall me again.

The Design of this Ingenium

The design of this *ingenium* requires a differing sort of magickal knot, which shall be as illustrated here, with the alignment of the gears not in right angles, as with the *Imagum Illusorius*, but instead at an angle of sixty degrees, as illustrated here, which shall create the sort of knot required.

While the *Imagum Illusorius* should be a visually pleasing device, it is necessary that this *ingenium* be of a pleasing sound, that is, that it be forged of purest metals, and carefully engineered that the operation of the *ingenium* shall be pleasing and not jarring to the ear. Indeed, it must be a well-tuned *ingenium*, the better to support the noises which shall emanate from it. For myself, I believe that silver be the best of materials, or else brass, both of which are most pleasing when formed into bell shapes, or carefully forged to be the stuff of tubular bells or Germanic glockenspiels. This also requires that the pieces of the *Imagum Melos* be of uniform thickness and cross-section, and be tested to ring true. Or else that their diminishment in size over the course of their length be again designed for a pleasing effect to the ear. Glass and tin should not be used, neither lead.

It would be most universally useful were this *ingenium* to have the potential to operate drawing from some plate or object which shall



be able to cause the ingenium to recreate a specific sound. These sonographs, which form as yet I have not determined, but which should probably be devised of the gears and cams for the main operational structures, shall be able to be inserted into the Imagum Melos. When the Imagum is engaged to operation, the sonograph will cause its function to be altered to recreate the specific noises desired. Thus, when someone carefully engineers the sounds of a string quartet, for example, it should be able to be recreated, and distributed, among those in possession of this ingenium, and the noises displayed for the amusement of all. In a like manner, similar constructs which shall contain the ingenium for visual constructions could also be made.⁴

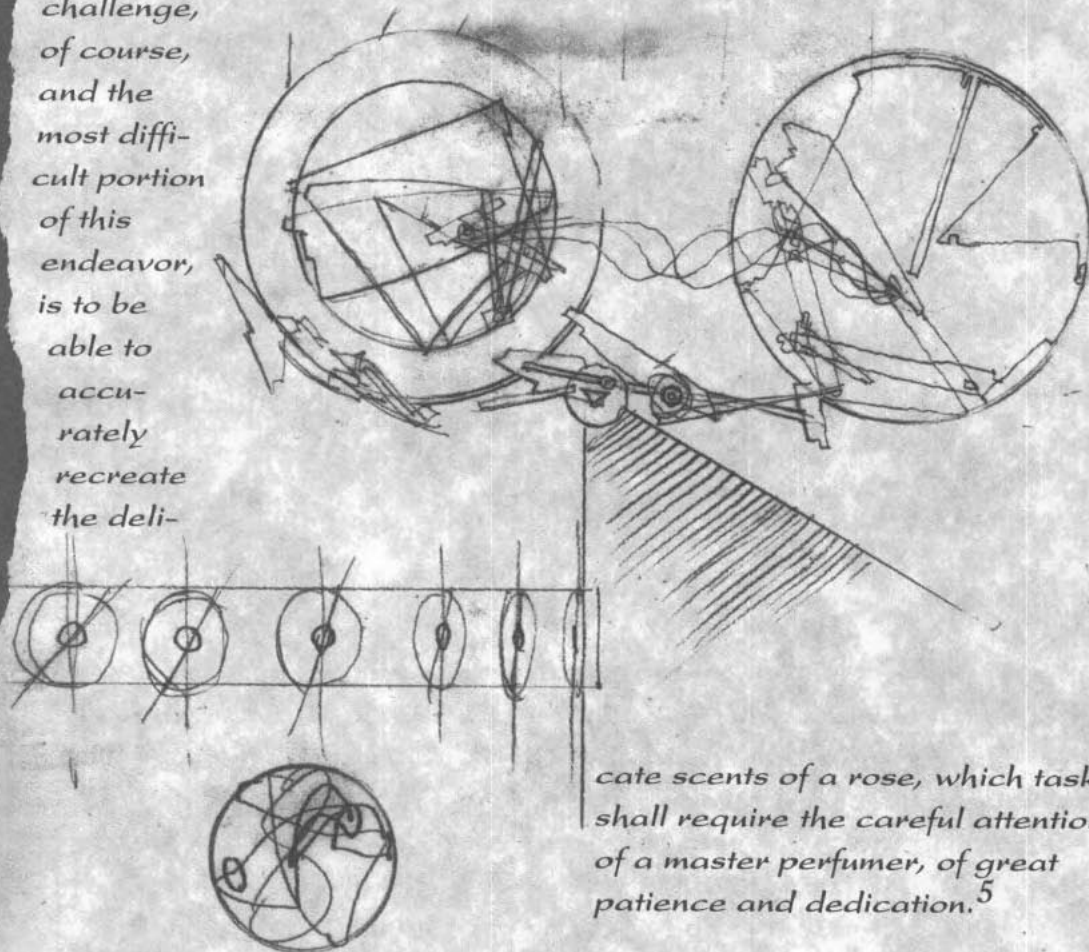
In a similar manner, I believe that a variation of this design can be one which is an Imagum Odorareus, with which it is possible to scent a room as though with perfumes or incense, which shall overcome any other odors in the air, as garlic or onions, which, although I myself find them most pleasing, I am aware that others find less than preferable. Or the thick odor of alcohol, when one in a small room has partaken excessively of wine or spirits. I have previously demonstrated that the sense of a man's smell is that sense which most readily adapts to the presence of certain surroundings; that a scent, once perceived, is most readily ignored by the nose, after but a short amount of time. In contrast to this tendency of human perceptions, this Imagum Odorareus shall not create an actual perfume to be carried upon the air, and which therefore shall not directly stimulate a person's senses. It shall instead

4. TO: Here Leo invents CDs and VCR tapes centuries before their time. I don't necessarily see that the modules couldn't be cross-transferable, either. I mean, given a magical engine which can "play" an audio module, I'd figure that the same engine could "play" a visual module as well, because the module itself determines what kind of knots are tied, right? So, in the section I wrote about making these puppies in the Great Game, I've tossed in a Generic Illusion Engine, and the Illusion Modules which it can take. I've talked with Morrolan and Rhyme, and we're convinced that they are very difficult to make, so probably no one will ever do so. At least not for a few hundred years. Then we'll get porno, gangsta rap, hate posters, industrial sabotage, government propslog ... heck, I don't wanna go there. Not again.

5. TO: Good point, Leo. Also, when the Engine is switched off, nothing of the smell will remain, either. Now, nothing empties a room as fast as a bad smell, so what you could do is take one of these engines, made to be a little stink bomb, switch it on to make everybody else stampede out, then switch it off, go into the room, and take a look at those plans or steal that vase or leave a secret note or whatever other sneaky plot you're up to. Maybe I need to lighten up a bit, Mike. I keep thinking of ways to use these engines in crime—or at least illegal activities and spying. Maybe I can try to recreate Obsession and sweeten Marianne's rooms instead.

GM: It should also be Simple to create Engines which shall generate sensations for Taste, or Touch. Perhaps even Balance; a Kinesthetic Engine would be quite useful in the prevention of Stealthy Theft within a Museum or Diplomatic Office; any would-be Miscreant shall likely stumble and fall under its Effects.

be the appearance of a scent, which shall mean that the scent which is given shall not be readily ignored by the person's nose, but that instead the perfume of, in example, a rose, shall continue to be perceived as freshly as when a woman first buries her nose into a bouquet, &c. The challenge, of course, and the most difficult portion of this endeavor, is to be able to accurately recreate the deli-



cate scents of a rose, which task shall require the careful attentions of a master perfumer, of great patience and dedication.⁵

JNGENJUM JNFERNUS

(JNFERNO ENGJNE)

J find these examinations to be most exhilarating. In fact, enjoyable. And I find my creativity is at a neap, that the ideas flow rapidly from my head, whereupon it is tasking indeed to put these thoughts to paper, for I as yet cannot bear to write for more than a few minutes with my injured finger, and must use my weaker hand, continuously. However, I have demonstrated previously that knots may be tied within these magickal lines of force, which have the effect of emitting spontaneous illumination as they are pulled apart, and unraveled. And sounds as well, when the knots are tied of a different form. I know, then, by applying the knots so formed to a differing aspect, which is to say to use the elemental magickal forces, in replacement of the others, that different effects might be made, and I am most intrigued by the possibilities.

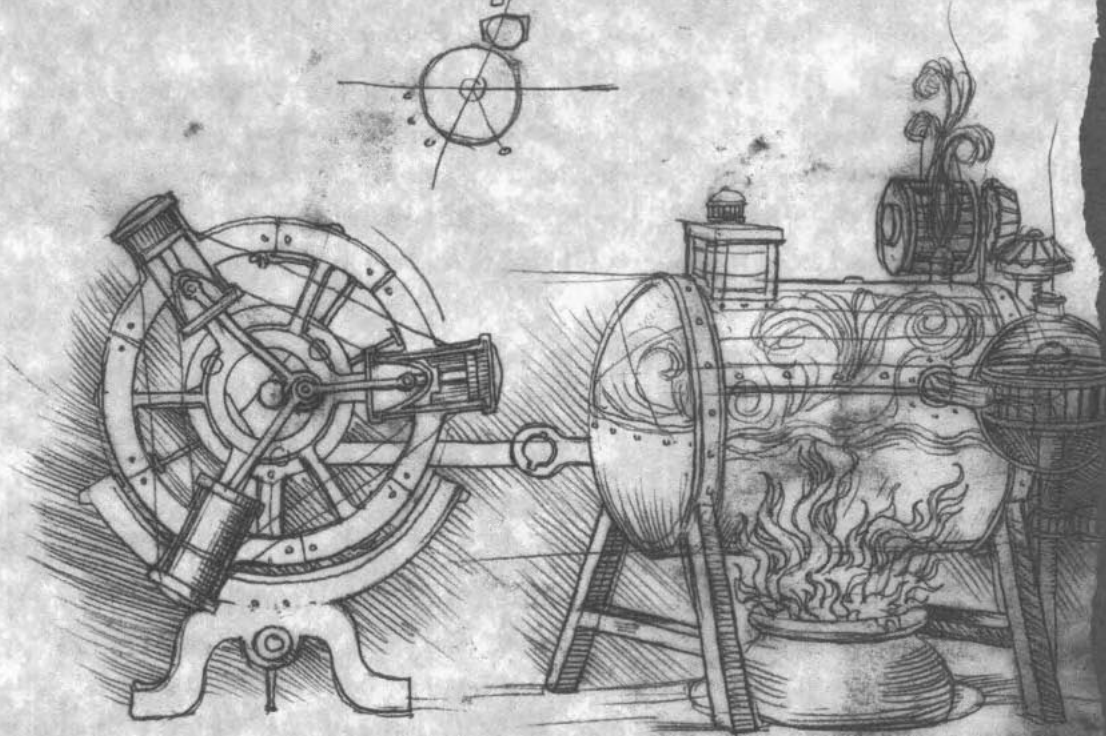
An Engine of Fierce Heat and Power

I have here designed an *Ingenium Infernus*, which, when the construction of such a contrivance is carried out, and it is engaged to operate, shall create a great warmth, as though a fire burned in the air, but without scorching.

This is done by creating knots which produce heat, and not light, as they are pulled apart. It is possible to cause this to create a fire, just as placing a piece of wood on the top of a very hot furnace might cause it to ignite, though it not be in contact with any actual flame.

I have in mind a method of proving great power, for which purpose it is unimportant, which relies upon this *Ingenium Infernus*. I call it my *Inferno Mechanism*, and it relies as well upon the motion of water, and its weight.

For this *Inferno Mechanism*, it is necessary to place an *Ingenium Infernus* within a large but sealed container of water, which has connected to it pipes, also sealed, which direct the steam which shall be produced to a lateral version of the water wheel. As the *Ingenium Infernus* operates, which shall have to be for a lengthy time, and hence shall require a very large and powerful mainspring, it shall cause the water within the sealed container to reach the point of boiling away, into steam. This steam shall move against the lateral wheel. In an attempt to escape the confines, and by moving against the paddles of the wheel, it shall cause it to rotate. And operate whatever additional contrivance is attached to its axle.⁶



The *Inferno Mechanism*, which can be designed with the aid of this *Ingenium Infernus*, may be used in the motivation of large vehicles, such as ocean-going vessels. I have had word that the French fleet has

6. GM: This is a most delightful Steam Engine! Why, it could conduct a train across the Continent, and without causing such a large amount of Smoke and Stench. Would that it were easier to wind the Engine than by crawling into the very Boiler, for the key shall be quite hot after that time.

TO: I don't see why we couldn't power the engine with an external steam line. You run a small steam engine, which powers the inferno engine. The inferno engine powers the big steam engine. It doesn't actually break the first law of thermodynamics, since the big steam engine uses magickal power to generate steam. It's like the giant earth-movers my cousin used to drive on those construction sites; they had a V-8 just to power up the really big engine, otherwise they didn't get enough power to get ignition going. I've been lobbying for this steam-driven steam engine, but so far we haven't tried to make one. I think Rhyme's working on some designs, though.

7. GM: Conversely, a Vessel with a magickal Steam Engine might find itself in a dire Predicament should an Engagement drag on for hours. A magickally-powered Fleet shall experience difficulties even earlier, for Greater Numbers will use the Magickal Resources more rapidly.

been captured at Rapallo, and these prizes which have been captured might become suitable experiments for Inferno-empowered vessels, which shall not then be forced to rely upon oarsmen or the winds for their mobility. But with these prizes tests may be undertaken without removing any ready warships from commission. The design of such a vessel will mean that the *Inferno Mechanism* shall propel a sort of water wheel, which instead of using moving water to propel an engine, it shall move the engine along stationary water, propelling the ship forward. In this manner might a vessel run directly into the wind, without tacking, and escape pursuit, or overtake those sailing vessels which it pursues. Similarly, while an enemy oarship will be forced to contend with the exhaustion of those pulling strokes, the vessel powered by an *Inferno Mechanism* shall find greater energy in the pursuit, for leaving an area where its operation had depleted the local magickal energies shall increase the efficacy of the *ingenium*.⁷

A Boon to Mankind

The *Inferno Mechanism* can also be used for the heating of buildings. The pipings which emanate from the Mechanism itself shall be distributed about the building, and shall convey the steam so produced by the Mechanism to the various rooms. When inside these rooms, the steam shall be made to pass through an array of thin pipes, the better with which to cause the steam to yield up its heat, and condense once more into water, whereupon the water shall drain of its own accord, and gravity, back to the bottom of the building, there to pour again into the Mechanism, where it may be heated once more into steam, in a continuous cycle.

I derive great enjoyment from the fact that Alexander VI is being shown to be ineffective, and cannot even control one fiery Firenzan preacher, while Ferdinand II is waging a very effective campaign against the French. For if it were not for his interference, I should be better able to publish these findings of mine, and gain by the exchange of ideas with other learned men.

JNGENJUM FRJGJDUS

(GLACJAL ENGJNE)

I have now heard tell that the French have been defeated utterly; that their army has capitulated at Novara, and that Charles VIII and his soldiers have retreated back into France. This has shown that Ferdinand II has more of God about him than the entirety of the self-proclaimed Holy League, for they crumbled in battle, while Ferdinand's troops enacted the will of God by driving the French back home, and freeing Italia from their tyranny.

I have not heard that the Pope has made any comment on the matter.

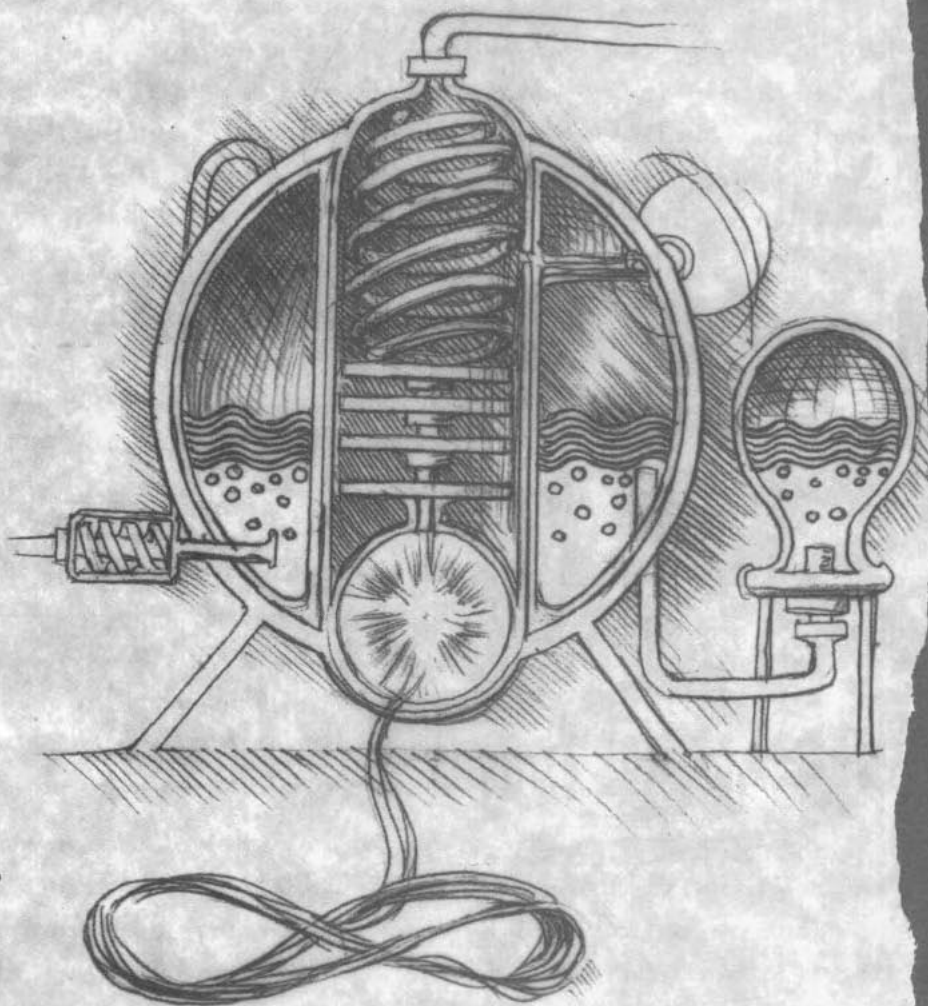
A Dry Spell

In my personal time, I find that the sudden spurt of initial inspiration has run its course, and I am devoid of new and interesting ideas at this moment. This is met with much approbation on my part, as it will give my hands a better chance to heal, that I might not only write, but also continue the painting of *The Last Supper*, which I have had to postpone temporarily, due to the incident of which I have already made mention.⁸

In any event, the lack of great and renowned inspirations leads me to pursue the antithesis of my previous invention, to wit: an *Ingenium Frigidus*, which is similar in relation to the *Ingenium Infernus* as the *Imagum Illusorius* is to the *Imagum Melos*. That is, it is a simi-

lar concept, but a differing knot. In this case, as the knots are driven into dissolution, they radiate coldness, which causes the area about the *Ingenium* to increase in the amount of coldness it possesses. This is done because although the knot is virtually identical to that of those which emit heat, these knots are tied in a manner which, stepwise, is the opposite of the other, and thus, they emit coldness which infuses the surroundings, even to the point of summoning frost. Or so is my theory.⁹

It is to the great credit of Duke Lodovico Sforza, of our city, that there is peace once more in fair Italia. Perhaps I shall endeavor to build one of these for the Duke, which efforts would make him the most renowned host in all the Continent, for I am certain he would put this ingenium to good use.



8. TO: Close enough, although physics proves that coldness is just a lack of heat. In other words, this engine sucks up the heat in the area: it doesn't actually make cold.

9. GM: Actually, the Old Man is wrong here. These knots must be tied Differently.

This *Ingenium Frigidus* is perhaps the most serviceable and versatile of the magickal inventions which I have yet created, and perhaps as well of those I have yet to create, for the more I think upon it, the more it becomes obvious, that this accomplishes an effect which could aught but be carried out by magickal influence. That is, we have mundane, or non-magickal, inventions and methods, by which we can readily produce light, or heat. Or paintings and sculptures. Or beautiful music. And perhaps each of these methods is more easily accomplished than the design and engineering and assemblage of a magickal ingenium, and some have the benefits of social interaction in their accomplishment, as well. But here, with the *Ingenium Frigidus*, I have created an effect which is most difficult to obtain, and is far the lighter for the effort, which is involved in the creation.

A Profitable Endeavor



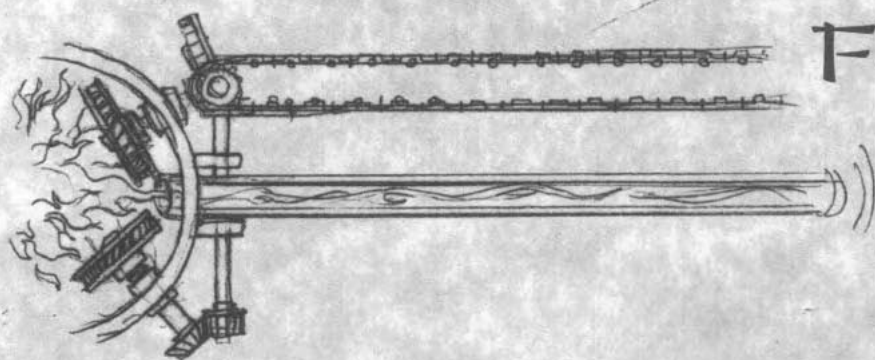
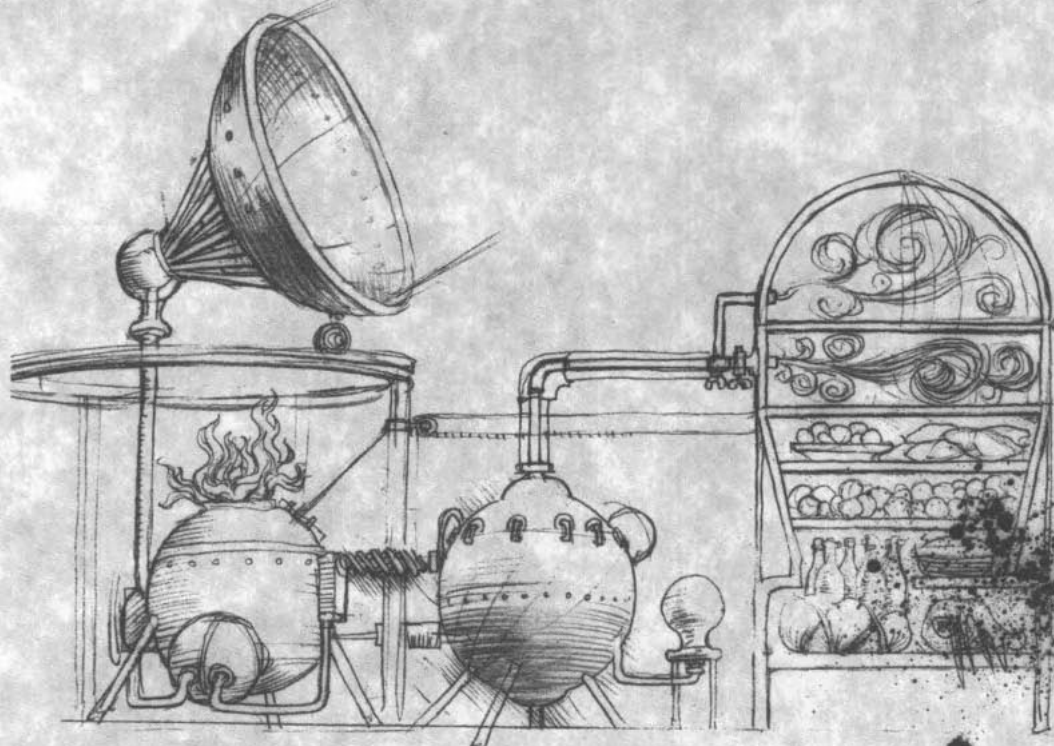
I can envision emplacing a booth, or a small hut, in the midst of the city, say in Roma, where it is large and thick, and dusty with the passage of many people, and, with the *Ingenium Frigidus* engaged, in mid-July or August, charge to the passers-by admission for the opportunity to relax, however briefly, and a cool breeze as from early spring. I could also sell from the other side of the hut beverages of any sort, and all as cold as from a mountain stream. Even including hot tea, although it would be as if iced.

The *Ingenium Frigidus* can also be used in the design of a cold room, which I hereby term a "frigidator," as illustrated here. The room shall be built in the very center of the keep or castle, the best to isolate it from the heat of the outside, and surrounded by thick stone or wood, and the walls covered with furs. In this frigidator might wine and other foodstuffs be safely stored, and for a great length of time. As no spoilage will occur when the corruption of the heat is done away with.

A smaller ingenium, but well powered, might also be used to properly chill a bottle of wine, when events unforeseen necessitate the immediate replenishment of same when none is to be had. Which would be a great embarrassment to any host.

I am certain that the presence of an *Ingenium Frigidus* in the frigidator shall cause some difficulty with the retrieval of items for service. Inasmuch as the magickal cold waves shall be liable to quench the heat of any torch or lantern which is brought within. To counter this, perhaps it is best to leave an *Ingenium Solaris* inside the frigidator, that it might

provide illumination for whichever servant is in need of entrance to the frigidator. No, for then the Ingenium Solaris might devour enough magickal energy, that the Ingenium Frigidus shall cease effective production of cold rays, and the foodstuffs therein shall perish. This is a conundrum. Ah, but I have a solution. The door to the frigidator shall be equipped with a chain, as shown in drawing F. This chain, when the door to the frigidator be opened, shall pull a flywheel upon the Ingenium Solaris, and this empowerment shall cause it to illuminate the interior of the frigidator, that the appropriate foods may be most readily obtained. Then, a few moments later, the illumination shall extinguish itself, and the wheels wind down. In this manner, the illumination shall only be required when the frigidator door is opened, and it will thus consume less magickal power than otherwise. Yes, this is for the best.



1496

INGENIUM FASCJUM

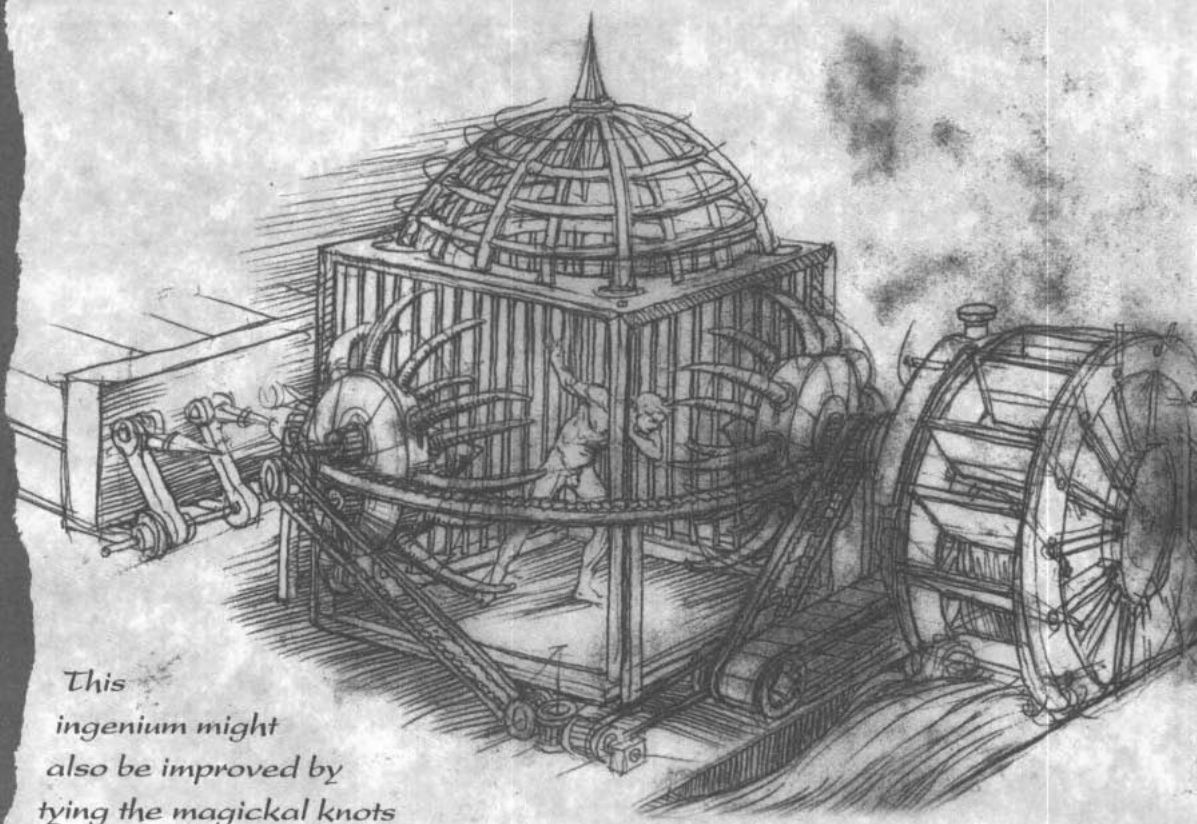
(IMPRISONMENT ENGINE)

G irolamo Savonarola is again the talk of the town, even this far from where he preaches. And, all things being taken into consideration, I am most pleased, and shower my kudos upon his name, although I am cautious to whom I divulge my preference. Friar Savonarola has been quite noteworthy these past months, and his sermons are always well-attended. I myself would attend him speaking whenever possible, were I back in Firenze, however, here in Milano, my station is comfortable, and the trip to Firenze for a Sabbath sermon is too difficult. A shame it is, for word has finally reached here that Savonarola was actually ordered to Roma, by the Pope, and refused to go. He has stated that, "It is not the will of God that I leave Firenze," or so it is said. The Pope is apparently most anxious to hear of his divine revelation, with which the friar predicted dire punishment of the Roman Catholic Church, and in fact all Italia, for the immorality of Pope Alexander VI, which effects, in fact, are already being felt, in my opinion, for the corruption spreads.

For me, I think the presence of highwaymen is more to the truth, both in remote parts of Italia and in the Vatican itself, but certainly obedience to Alexander the Borgia cannot be said to be the will of God, not from what I have seen and heard. Other stories have been related to me as well, but I find them less credible. For although I have it upon reliable resource that Savonarola's language is at times colorful, there are stories attributed to him which I sincerely doubt that such a good-hearted and noble gentleman preacher would ever convey to his pious audience. I believe some of these stories might be deliberate slanders engendered by those who support the Pope Alexander VI, whom Savonarola is most vehement in denouncing.

The Imprisonment of Savonarola?

B ut in contemplating these matters, I have imagined a new and creative magickal *ingenium*, which could be used to retain Savonarola within Firenze, Papal edicts to the contrary. This *ingenium* shall use the powers of the magickal forces to prevent a person from crossing a certain barrier, which is erected by the power of the *ingenium*, for the imprisonment. It shall function not by creating a great steel wall, for although I am certain it is possible, I have not yet developed my theories enough to admit such an invention, but instead by the impressing of a state of mind upon those subject to its influence, that they stoutly and without reserve believe that they may not cross the barrier so presented. Francesca is always fond of saying that only that which one believes is impossible truly is impossible, therefore this *ingenium* shall make those people within its grasp believe exit is so, and it shall be so.



This ingenium might also be improved by tying the magickal knots

in such a manner that they project a pointed aberration towards the center. This shall therefore cause, in addition to the self doubts which shall plague such a prisoner, pains in the mind if a crossing is attempted in spite of belief. This shall be an additional deterrent to the exiting, for the pain so inflicted by one endeavoring to escape shall appear to one convinced of the impossibility of egress as pain futilely brought upon himself, and to no benefit.

The ingenium shall have to be furious in effect and powerful in aspect, for if it is not, and merely adequate in operation, or lacks efficiency, then it is possible that a man of strong will shall, by virtue of desire, be able to free himself from the bonds which tie him within the ingenium's walls of magickal force. However, there is no man so willful that I cannot design an ingenium but it shall hold him fast, and helpless, within its grasp. The key is that I must ensure that anyone imprisoned in such a device may never be able to escape it.

It must be powered by a water wheel, or some similar source which requires no human intervention, so that human failing shall not cause the magickal prison to collapse. By virtue of extensive gearing, to increase the speeds of revolution of the driving axles, a water wheel should prove sufficient to the design.

Dare I Think ... Heresy?

No, I cannot bear to contemplate this being used to imprison Savonarola, not even in his own town. But to imprison the Pope? No, vile though he is, he is still the leader of the Holy Catholic Church, and I bear no malice to the Church as a whole, but only to Alexander VI and

those whom he has, for his own personal gain, appointed to positions, for which they are unworthy.

Instead, by inversion of the structure of the *ingenium*, turning the inside towards the exterior, or reversing the synclast, of the *ingenium* itself, the magickal effects produced by this *ingenium* shall indeed reverse themselves, turning the barrier from egress into a barrier which shall stand against entrance. The inversion of the structure of the *Jngenium Cuneus* may not, of course, be perfect, but shall be as this:¹

With a large enough *Jngenium Cuneus*, or with one properly placed and secreted at the edge of town, the fair citizens of Firenze shall be able to prevent the Pope from entering their city to raise difficulties with the wayward friar. And certainly, the Pope may perceive such a prevention as the will of God. And perhaps it is.

JNGENIUM GNOCEREUS

(JNTELLECT EMBODJMENT ENGJNE)

Upon due consideration of the aerial bombardment method, that involving a large projectile, which may be explosive, held in a large balloon, and a kite for the orientation of the device in a downwind direction, I have come to the conclusion that it is, at this moment, not terribly practicable, in the field of battle.

This is because of difficulties inherent in the calculation of the exact aspects of the lengths and angles involved, with the additional error which shall be caused by the draping of the line from the ground to the kite, which shall be caused by gravity, and require for its solution, the application of calculus. First there is the matter of supply.

For the performance of such sums and calculations, the engineer shall require paper and pens and ink, which supplies are readily damaged or lost in the happy chaos which is often a military encampment. Further, such materials may be damaged in combat, or by inclement weather, or by the fording of a river. Second, the time required for such sums is great, and shall require that the engineer have adequate time and quiet to perform his calculations, which shall be most unlikely in the event of a siege. And this time required for the calculation shall slow the bombardment to almost nothing.

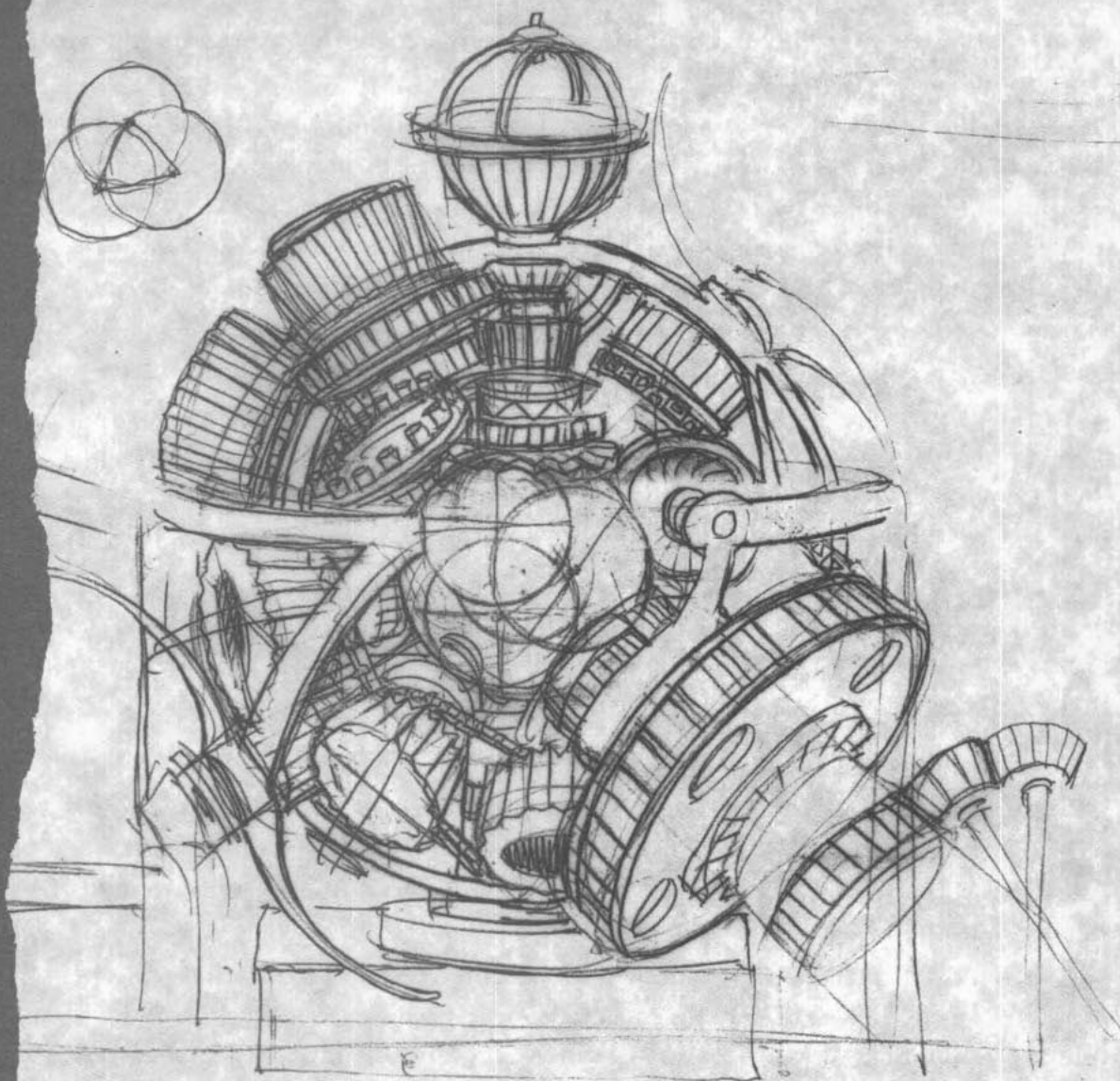
Intellect Applied to Intellect

With these difficulties seen to diminish the utility of this great and unstoppable method of assault, I have put to myself to create a device which shall imitate, in mechanical means, the best analytical mind, which is to say, my own, in the performance of the calculations. This magickal device shall require neither paper nor pen, and shall be incapable of error, given accurate figures from which to extract an answer, for such is the nature of magick.²

1. GM: Since the Repulsor Engine, as the Old Man describes it here, relies upon Mental Commands, its frailty is that it may be Penetrated by a Group of determined People, their combined Will overcoming the power of the Engine. Because of this, it shall be all but Useless in Battle, excepting an Engine which is very Large, which might be of some Aid in resisting a Siege. However, bullets and the like, being Mindless, would be able to Pass without hindrance.

2. TO: Important point here. It's always accurate, but as they say, garbage in = garbage out, so really bad data could have you dropping the big one on your friends instead.

3. TO: Yo, Mike —
Leo's doing binary
here. Who'd have
thought?



I find that by creating this device with a method of twos, similar to an abacus, the results are most readily obtained. That is, the devising of the calculation portions of the engine are the most easily performed when one does not constrain the *ingenium* directly to counting in tens, but rather to account for individual figures, as Roman numerals are most difficult to engineer accurately, and Arabic numerals, which are completely abstract, make no sense.³

With this, the *ingenium* shall be completely capable of calculating any difficult formula, even to the extent of rapid and accurate appraisal of the results of an integration of the true length of a curve over a great distance. The figures to be given to the *Ingenium Gnocereus* are to be tabulated upon switches, as shown here, which must have been converted from groups of tens into a twofold number, which is to say that the numeral XIII shall instead be rendered as l-no-l-l, reading from left to right, where the leftmost switch is that which controls the smallest digit. In this fashion, the first one is indicative of a single item, the second is a group of four, and the third, of eight, which groups sum to thirteen. The second switch is not thrown, which is indicative that there be no single group of two left over in the sum-

mation to thirteen. There shall be a grouping of numerical arrangement plates as is necessary for the calculations expected from the *Jngenium*.

The method of operation of the *Jngenium* upon the numbers given is enacted by the dial set to the right of the numerical plate, which can be set for addition, subtraction, multiplication, division, &c.

And in Matters Most Temporal ...

Pope Alexander VI forbade Friar Savonarola from the pulpit earlier this year, well before Easter. I wonder if it might be possible to design a more complicated *Jngenium Gnocereus*, which shall be possessed of a capacity more akin to personal intellect. In this fashion, might Savonarola speak with the *Jngenium*, and give the device homiletic coaching and explanation, and then let the *Jngenium* itself speak from the pulpit in his stead. No, while it may be possible, I do not believe that Firenzan churchgoers will consent to being lectured by a machine, especially after their lengthy exposure to the passionate and theatrical Savonarola. It is a pity, however, for the *Jngenium* would have no fear of excommunication, execution, or the like. It may, however, be said that Savonarola likewise evinces no such fears.⁴

In a similar manner to this *Jngenium*, it should be possible to create an *Jngenium Fatidicus*, which, by means of a variety of protrusions, not unlike the antennae of insects, shall detect the present weather conditions about, and calculate the future weather conditions which shall occur. These calculations shall be based upon what the surroundings are currently like, for it is evident that there is a cause for all weather. And this *Jngenium* shall be able to make those calculations, and predict, for example, that here shall be rain, which a human being cannot, at least not until the rain has begun to fall.⁵

JNGENIUM AUDJTORJUS

(CLAJRAUDJENCE ENGJNE)

It is now the Sunday after Easter, and while attending services this morning I chanced to overhear a traveler from Firenze mention that the friar Savonarola has continued to cause grief to the Pope. The story is that Savonarola, despite being enjoined from preaching, continued to do so all through Lent, and with more passion and fervor than before, as he is now quite firmly considered to be a leading figure in the city. Why, it appears that the entire city of Firenze shall rally unto him and turn its back upon this Pope, and not a moment too soon, for my opinion, for this Alexander is so vile, that to turn away from him is to embrace God. It is time that these protesters sought to reform the church. But I wonder what shall become of this. The Pope may certainly not ignore this thorn in his saddle for very much longer.

⁴ GM: Actually, given the Simplicity of this Device, I believe that a truly Intelligent Engine may be Created. The Difficulty in using such an Engine is that it might well find itself Bereft of Knowledge each time it is shut down, for the Magickal Fields which imbue it with Memory of Events shall fade and fail, leaving Nothing.

TO: Come on, now, can't we make non-volatile memory for the sucker? How about some huge array of beads, or a written record, which the engine keeps for itself? Then, after being shut down, it could reload the stuff it needed to remember, and then it'd be just fine, right? I'll have to talk to Rhyme about this one. He hates a challenge. Which means he has to tackle it.

⁵ TO: Leo's barking up the wrong tree. While it might work to some extent, it's far from infallible. First of all, the radius of effect would have to cover a huge area all around, which means it'll have to be a giant engine. Second, there's the butterfly effect, which means that any changes which the engine doesn't know about, like someone sneezing, might have a dramatic effect on the weather. Third, this is New Europa, and I'm not certain that the consumption of magickal power like this engine would need might not itself change the weather...

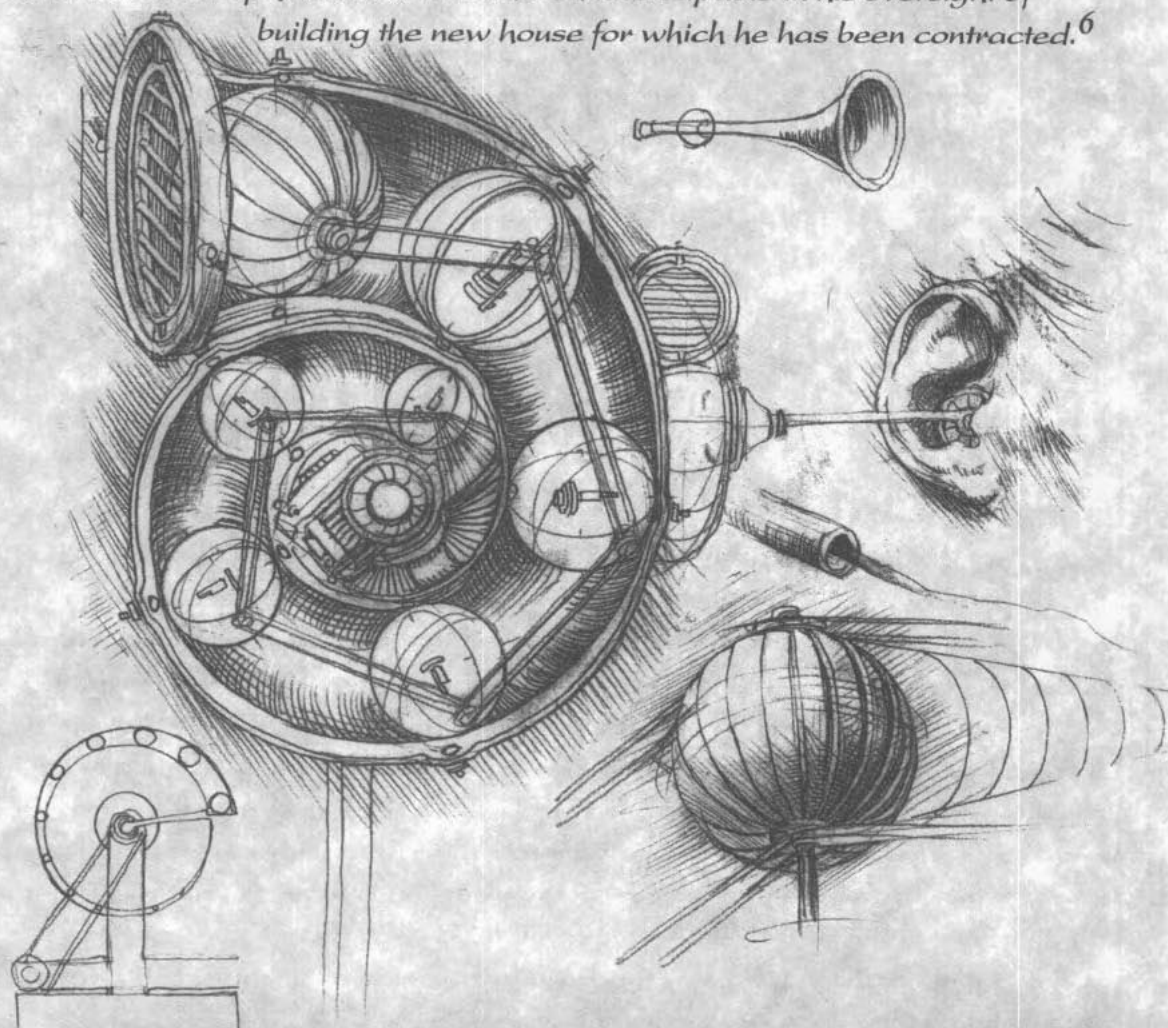
6. TO: "Chief? I think it's time for the Cone of Silence!" "No, Max, not again!" Actually, this would be great for covering the sounds of your footsteps, or picking the lock. Heck, we could even cover up the sound of us blowing the door off a safe!

GM: This is not strictly True. Firstly, the Silence Engine is more easily Achieved as a variant of the Auditorial Illusion Engine. Secondly, powerful sounds, a Gunshot, e.g., might have enough Gusto to be able to Survive the dampening effect of this. The Noise would be Depleted, but still Audible. Finally, the Opposite of this Engine is more nearly a Projector of sound, a Megaphone Engine instead.

To Hear Afar

The more I hear of this friar Girolamo Savonarola, and having duly considered all tales told of him, both true and untrue, the more I wish to hear him, most especially when the passion has seized him, and he rails against the corruption, which now festers inside the most holy Vatican. For this purpose, I have hopes eventually, of applying my skill of artifice to creating an *Ingenium Auditorius*, which shall convey to me the words of persons far removed from me, say to the extent of revealing to me the very words of Savonarola, even as he preaches them, be he in Firenze and I in Milano, for such shall be my pleasure in this ingenium.

By the near-reversal of the operation of this machine, I might make the very air around us to dampen, or to absorb the sounds made within the reach of the magickal energies of this artificery, creating thereby an *Ingenium Silerius*, which shall cause all sounds created within the field of magickal knots created by this ingenium to be completely absorbed, and to travel not at all to anyone's ear. The most effective use for which I can see the employment of this device, is in the service of Giovanni Guareschi, who tells me this morning over breakfast at the park, that his wife snored so sonorously, and with such thorough diligence through the dark hours, that he was all but unable to sleep. And now is rendered less capable in his oversight of building the new house for which he has been contracted.⁶



The *Jngenium* in effect creates a magickal pipe, which acts as a funnel, and draws the sounds of conversations, &c., from far away, to the *Jngenium* itself, which, by its actions, appears to be the very source of the sounds itself. That is, for the purposes of listening to those distant noises, one should place himself near to the *Jngenium*, and hearken to it. As if it were Savonarola himself.

The aiming of the *ingenium*, that is, the projection of the funnel for sounds, is accomplished by the arrangement of a thoroughly clever invention of my own, illustrated here. This is a collapsible cylinder, or tube, as you see, and quite hollow. Which may both be lengthened and shortened along its major axis, and also curved along its length, laterally to the major axis, to avail the user of the fine adjustment to the cylinder, or tube, without compelling the repositioning of the *Jngenium Auditorius* in its entirety. The curvature of the cylinder shall not affect the curvature of the funnel of sound, other than to cause its realignment with respect to the *Jngenium*. However, the length of the cylinder shall be directly proportional to the length of the funnel itself, which is the method by which the careful selection of distance is effected. By this method, the *Jngenium Auditorius* does not allow for the fouling of the sounds desired by the inclusion of sound made betwixt the *Jngenium* and the conversation targeted, which is to say that the funnel for sounds is of itself sealed, and only admits to the conveyance of sounds at the desired locale.

A Difficulty

Be this as it may, I find that the calibration, or specific targeting of the *Jngenium* shall be most difficult, since it is often difficult to judge, by sound alone, exactly at what point one resides. And errors in calculation are magnified when one aims across great distances. Therefore, when attempting to calibrate the *Jngenium Auditorius*, one may receive sounds, but have no idea from where they emanate. Perhaps the aiming of this *Jngenium* can best be done with the aid of the *Jngenium Gnocereus*, which, by means of careful measurements of distance, angle and elevation, for which purpose artillerymen are best suited, can rapidly and without error calculate the necessary length and alignment of the cylinder which represents the magickal funnel.⁷

JNGENIUM VEDEREUM

(CLAIRVOYANCE ENGINE)

According to a notice which has this day been received by the Spanish diplomat, here in Milano, and passed from him to the Duke, and then to me, it is done that Archduke Philip of Austria, who is the son of Maximilian I, who in his turn is of course the Holy Roman Emperor (though why he claims to be Roman,

7. GM: I'd like to see the Old Man, without accurate Measuring Controls, aim this Engine as exactly as he'd need to in order to Eavesdrop all the way across the Italian Mainland. It does one no good to know that one must set a Precise Angle when one must rely upon the Naked Eye alone.

TO: Aha! Unless, of course, he used the aforementioned Intellect Embodiment Engine to do the calculations!

no one knows), has been wed to Juana of Castile. That is, the daughter of King Ferdinand and Queen Isabella of Spain.

And this so shortly after the discovery of the New World by the Spanish expedition. I would not be surprised if it is just for this reason that Maximilian arranged the marriage, for it is well known that he, a Habsburg, seeks to expand his family's power. Habsburgs have ruled the Holy Roman Empire since, I believe, 1438, and have held thrones about the continent for nigh on 300 years. If Juana is to bear to him a son, then it shall be certain that a Habsburg shall also sit upon the throne of Spain. I am not certain that I appreciate this effort, for certainly the more power the family holds the more grave the situation for the entire continent. For in my opinion, no squabbles are so grand or vicious as those within one family, and a family squabble of this nature would be so broad in scope as could embroil all of us.

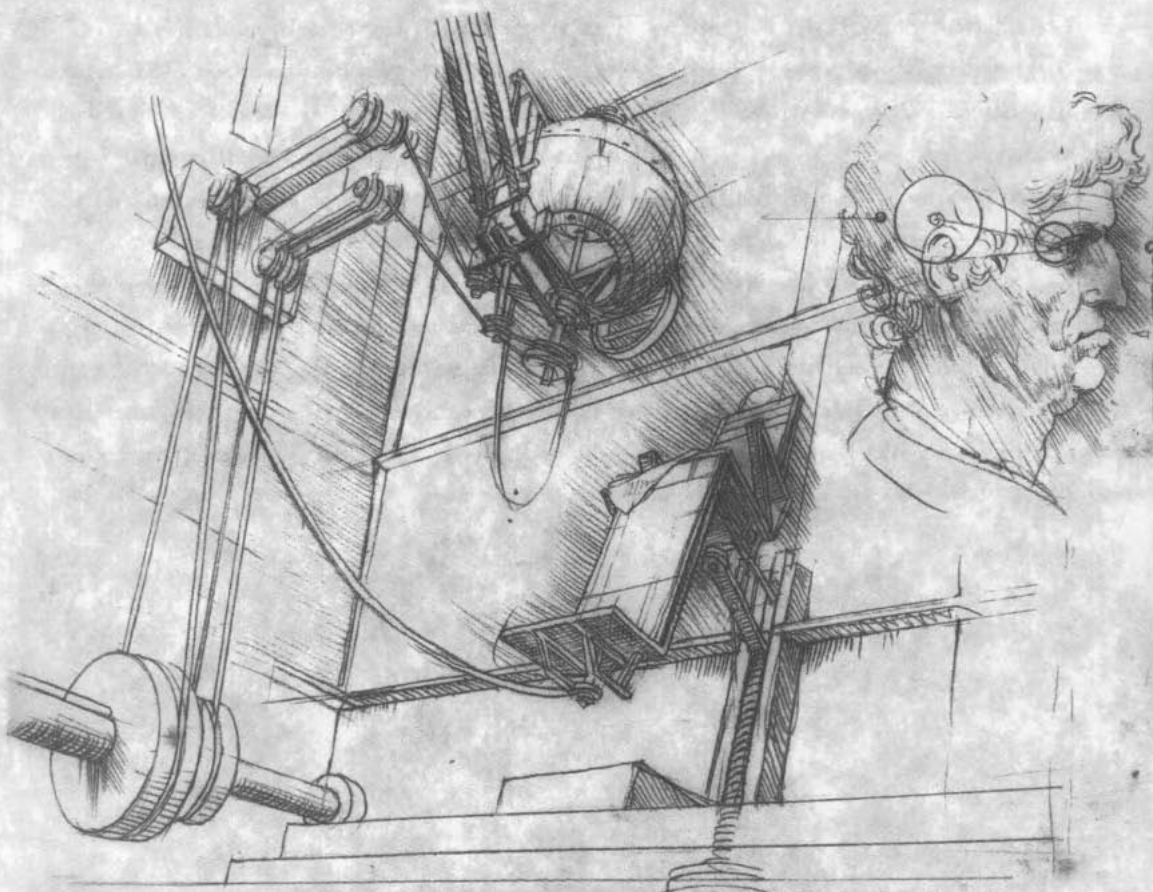
Perhaps Maximilian hopes that the entire new discoveries of Columbus, &c., shall be the sole purview of Spain, the *Inter Cetera Divina* notwithstanding, nor even paid heed, and that therefore the power of the Habsburg family will thence be extended across the *Atlantean Ocean*.

I have also noted that Frederick III is now crowned King of Naples. May he have a long and glorious reign well into the next millennium.

Whatever the cause of the arrangement of the marriage, it is certain that it was a splendid affair, and one which I had hoped to see, for the pageantry. Perhaps I shall spend some time, now, as it is raining outside, and quite heavily, to postulate an *Ingenium Vedereus*, which could do just that, by creating a funnel for visions which may be piped back from afar, as though they were water.

An Ingenium Most Pleasing

Here it is, as illustrated upon these pages, although the materials thereof must be of a most pleasing manner to the eye, which is to say any gold present, and all metals used in the construction should be of gold, must be most highly polished, and smooth of surface. And that the wood, which is used in areas, must needs be carefully sanded as though to a mirror, and layered with several applications of lacquer, that it be smooth and glossy, as well as deep and lusterful to the eye. The operation and aiming of the *Ingenium* shall be done in a manner much similar to that of the *Ingenium Auditorius*. However, as the funnel brings back visual images, and not those of sound, the aiming shall be much facilitated, with visual references for assistance. This also means that for those on one side of the *ingenium*, they shall see in one direction, while those upon the other shall see from the opposite side. So that it may be necessary for all attending to the images directed hereto by the magickal effects shall set themselves upon the same side of the *ingenium*, for viewing.



8. GM: Ingenious, and perhaps more Subtle than trying to smuggle a Dictagraph into a Clandestine Meeting. I shall have to mention this Recording Engine to Rudy Tarleinheim.

I have in mind, as well, an Ingenium Retentus, which shall embrace within it qualities of both the Ingenium Vedereus and Ingenium Auditorius. But, instead of directing outwards, it shall instead receive in a passive manner, and direct the sights and sound which it perceives into itself, through a cone, which shall limit its perceptions in the direction desired, and focus them for greater detail, for transcription. In this manner, it shall record events which are perceptible to it. Perhaps then I can send one of these to Firenze, and ask that it be set to record Savonarola. At which point, the sheet of glyphs may be returned to Milano, and I could review the events on my own version of the Ingenium Retentus, operated in a mode to emit the perceptions back out through the cone.

The inscription of events into glyphs shall be done within the machine, and shall be made by a set of stylus pointers. These shall be pressed by the ingenium into a thin sheet of purest gold, this being a material which is at once immune to deleterious effects of corrosion, and yet also of sufficient malleability to allow such an etching to be made upon it readily. The sheet of gold would, of course, have to be shipped to me flat, and encased in a stiff wooden box lined with soft velvet.⁸

Of Other Matters

Jn other news which I have learned, the Pope, in his divine wisdom and infallibility, at least such smidgen which manages to leak out

from his basest Borgia instincts, has excommunicated Friar Girolamo Savonarola. Of course not for his dire predictions regarding Italia, nor for his all too-exacting accusation of corruption, but instead of disobedience, which is a charge which no one can truly deny. Although I find Savonarola most completely justified in the matter, be certain but that no one else will, especially since any ecclesiastical court shall be stuffed with pigeons for the Pope. And well paid for ~~the conviction~~ their efforts, should the matter come to a trial, which, given the prior behaviors of the friar, and his tendencies, is likely to come to pass, for he will not let a minor matter like excommunication inconvenience him, neither take him from his flock in Firenze. Would that I were in that city, to witness the goings-on. It must be most enjoyable.



1. TO: In case you don't know, Mike, "interdiction" means that worship is forbidden. The Pope threatened to cut them all off from God. Sort of a clerical terrorist action, when you consider the piety of both Savonarola and his people. "Surrender, or all your people go to Hell!" Poor guy. He didn't stand a chance. I hate it when nasty ploys like that work.

JNGENJUM METEORJCUS

(WEATHER ENGJNE)

So much has happened already this year, it is indeed troublesome. Worst of all calamities, is the news from Firenze and the Vatican, where the spiritual struggle has raged, since the Dominican Girolamo Savonarola first began to speak, in a noteworthy fashion, for the last five or ten years. And now: Rodrigo Borgia, who poses to be The Pope Alexander VI, has struck a blow against him, that is, Savonarola, and all those who attend his church, and I am certain attendance has never been better, nor more regular, than of late. The Pope has ordered Savonarola to surrender to his authority, to answer for his continued preaching, in spite of the fact of his excommunication.

Worst upon this, is that the Pope has leveled a threat against all Firenze, which, as I witness is this: that the entire city of Firenze, or perhaps it is the entire Republic, for the sins of their capital, shall be placed and held under interdiction, until such time as they yield up Savonarola to be sacrificed. As this news was old when it reached my ears, it is certain that he has already surrendered.¹

I have now heard that he has indeed given himself up to the civil authorities in Firenze, and they have dutifully, though I am certain with great regret, turned him over to the auspices of the Roman Catholic Church. I have heard that he has been sent back to Roma, to face the old holy hog himself.

But on top of everything else, I have heard that there is also a famine in Firenze! How can this be? Is there no God? Could He actually invoke His wrath against Firenze at the behest of one like Rodrigo Borgia, Pope though he be? It cannot be so! But a famine there is, and all those I know in Firenze are reported to be going hungry, and suffering for it. And I know that many fear the Wrath of God for the supposed sins of that Dominican.

I have had no reliable reports on the climate in Firenze, nor the weather. Perhaps it has been unseasonably dry, or hot, or the rain has trampled down the crops. Or perhaps there have been floods, which have killed the grains. I do not know, and the information I have garnered from travelers whom I have met in the taverns and public shops are different stories, all sworn true.

Perhaps it is that the Pope has also quietly ordered merchants to avoid selling foodstuffs to Firenze under pain of eternal damnation, or perhaps they have enacted this of their own accord, having themselves witnessed the impending threat of interdiction, and thence avoiding the city at all costs, so save their own sorry hides, in such case as interdiction might come. This is a logical conclusion, that the Firenzen countryside has not been made barren by God, but has instead been robbed of its food by the

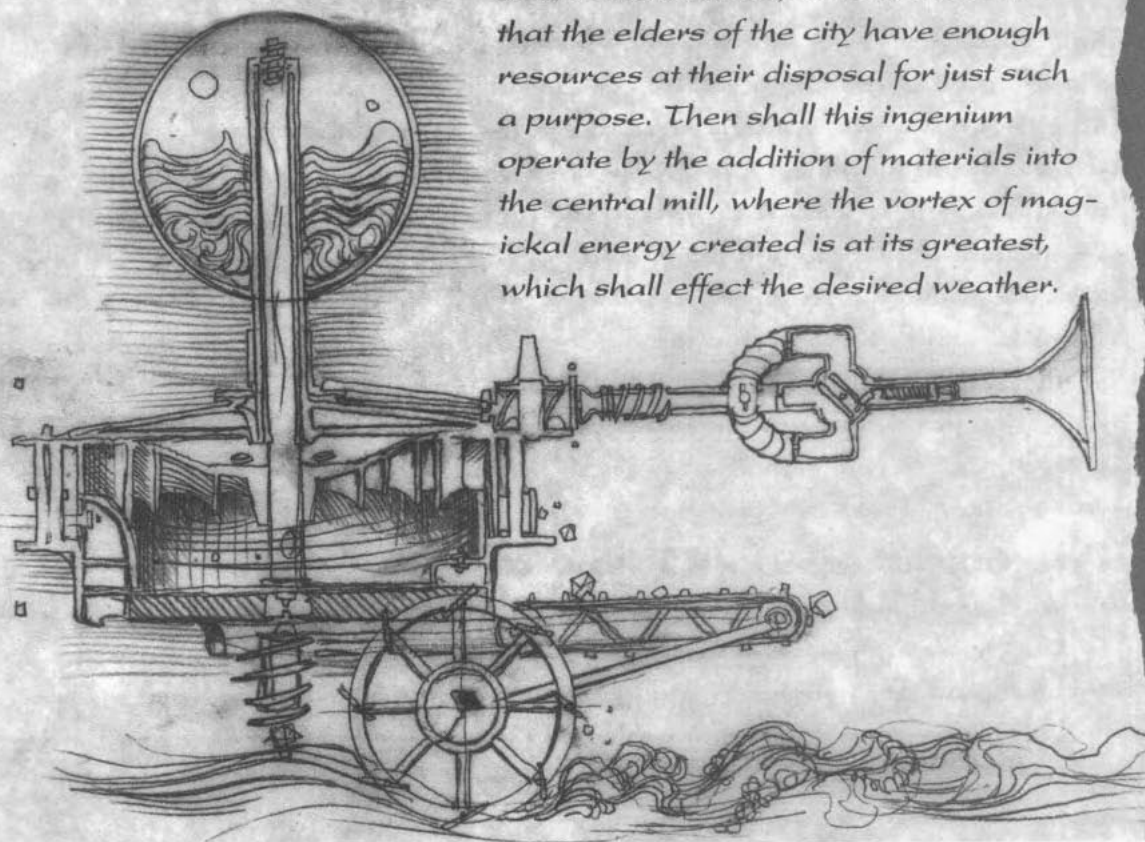
Pope. This thread of logic certainly does weave well into the fabric of Alexander VI.²

To Best the Drought

Whatever the cause, ill timing, or Papal curse, I must endeavor to help my people. I shall design here an *ingenium* which shall persuade the weather into more favorable conditions, be it whatever condition at the moment, whether storm or drought. Then I shall send the design and specifications, to my friend Ricardo Del Cantone, the philosopher, who I believe still works in the town, and leave it unto him to present the design to the city's authorities. Verily an effective test of my genius. It shall also give to me good reason to send Old Ricardo a message, for I have not posted anything his way in far too long. Cursed be my tendency to procrastinate! This device, to affect the climate in an area large enough to meet with the approbation of local farmers, and to the satisfaction of people in the entire vicinity of the city of Firenze, shall have to be quite large, as illustrated here. And it shall require hearty supports, and, I believe, a combination of a water wheel and a treadmill for the employment of mules, both, to empower it sufficiently. However, if a tower were built, to catch the rain generated by this *Ingenium*, the head of water which it shall cause might be of great enough moment to sustain the operation of this *Ingenium* in the production of additional weather and rain for the crops. In essence, it shall propel itself by means of its own efficacy.³

The best steel in all Italia shall have to be procured for its use, for it is a

sizable contrivance, but I am certain that the elders of the city have enough resources at their disposal for just such a purpose. Then shall this *ingenium* operate by the addition of materials into the central mill, where the vortex of magical energy created is at its greatest, which shall effect the desired weather.



2. TO: Or perhaps the merchants, thinking such an embargo might be launched, started hoarding. That might cause a panic, so everyone tries to buy food, the prices shoot up, and the merchants, scared by the sudden acute demand and panic buying, refuse to sell, to be sure they have their own supplies through winter. Bingo! Instant famine! Sort of like a run on the food bank, you know what I mean?

3. GM: No.

Sand shall cause it to be dry, and salt for it to rain. Ash shall make it warmer, and wine shall make it cooler. A pinch of down shall be for the causing of winds, and some moss for stilled airs. By mixing these elements, though never two of opposite aspect, as a calamitous result might occur, one might obtain the exact weather required, and the amount which is given for the Ingenium to consume, shall determine the ferocity of the event.

There. This is now completed, and I have copied it onto another parchment, and sealed it within wax. This is the first of these ingenia which I shall deliberately show to another. I have great hopes that Ricardo shall be able to sway those of Firenze towards its use, for the sake of their city and everyone. I cannot but wait for his reply in the matter.

INGENIUM ALCHYMIA

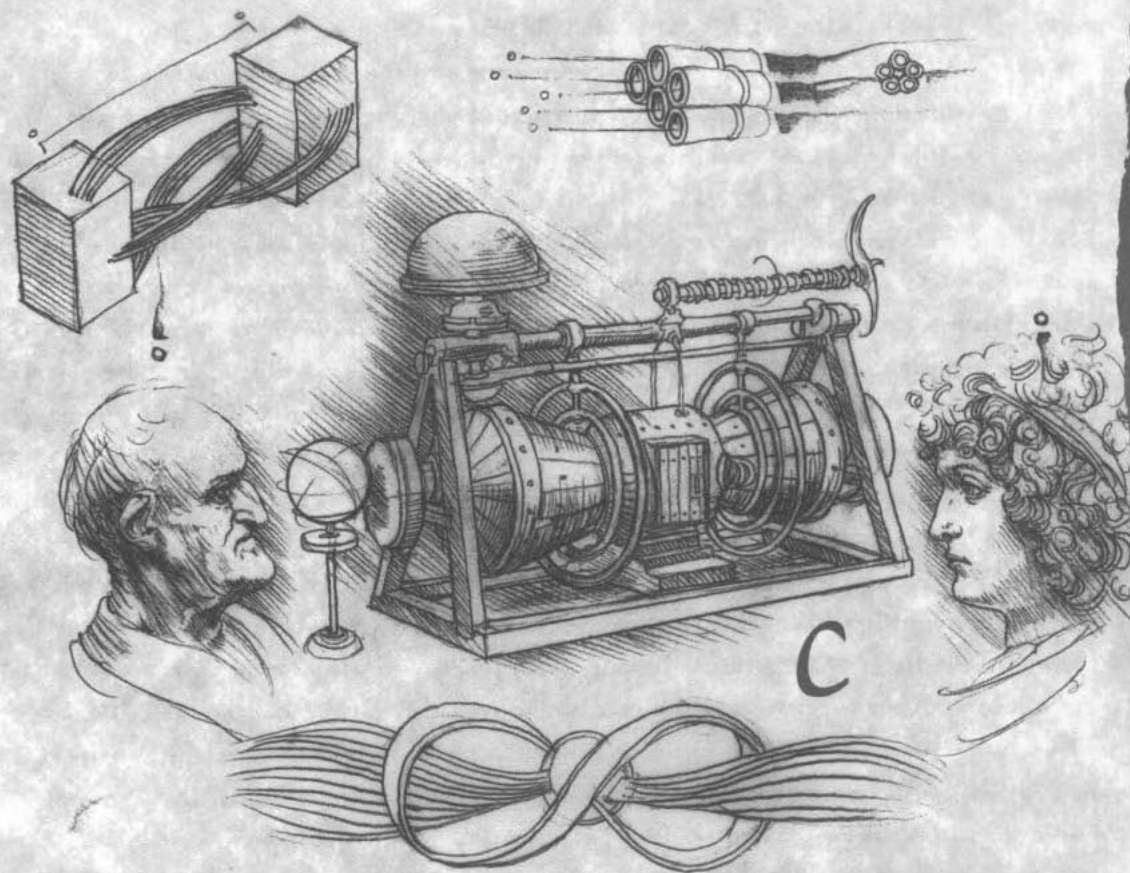
(ALCHEMICAL ENGINE)

I have another approach, along the lines of magickal contrivance, which may be of benefit to the beleaguered city of Firenze. I have spoken extensively these past two weeks with the surgeons in the employ of the Duke, and have garnered from them much of the art of alchemy, such that I believe I might be able to undertake the development of an *ingenium* which shall perform alchemical operations, that is, alter matter from one substance to another, through the intervention of magickal manipulation upon a fundamental level.

The central portion of this *ingenium* is the container which shall hold the material to be altered. It shall be contained in a vessel which holds the shape of a parabola, rotated about the primary axis, the better for the focusing of the magickal effects. Two of these shall be constructed, and joined together, to form a shape akin to an hourglass, with a very small connection made between them, and carefully lined with platinum. A stopcock must also be employed to prevent any of the material, which is to be altered, from flowing from one container into the other, until the *ingenium* is operating at full speed, or potential, thus ensuring that none of the material which flows through the transcomposition portal between the parabolic receptacles shall remain unaltered, thereby allowing for the purest possible material to be evolved as a result.

The Exactness of Calculation

However, it is necessary to calibrate the *ingenium* to exactitude, specifically for the material to be entered into the top of the chambers of alteration, and for whichever material is desired as a result of the operation. This calibration shall require that the *ingenium* be carefully controlled by a series of levers, each of which is connected to gears and joints, and most of which are interdependent, as shown in drawing C.



4. GM: It appears that the Old Man abandoned this Effort, for there is no Indication anywhere else that he undertook such an Analysis.

5. TO: Yeah! We could bake bread, and then take all the guns and transmute them to butter!

By the twisting and swinging of these levers, the appropriate alignment and composition of magickal efforts can be achieved to alter any substance into any other. The list of possible permutations is too great for the elucidation here, so I shall have to pursue the cataloguing of these settings elsewhere.⁴

*It is my hopes that this shall be used for the creation of grain from sand, for the Mediterranean shall be a source of enough sand to feed the entire city. Although perhaps the conversion from wood shavings shall be easier, as both wood and grain are seen to grow, while sand and stone are but minerals, and lifeless.*⁵

There are dangers, of course, with any alchemical work. It is possible that someone shall indeed find the proper settings to turn lead into gold, or glass into diamonds. If these results are obtained, there shall be a flood of gold upon the market, or so I was assured by Barchini the moneychanger, as I lunched with him this day, over pheasant. Barchini stated flatly that such a sudden glut of gold upon the market shall cause its value to become as low as that of paper, or at least copper, for when an alchemist may transmute one to the other, it may be obtained for a minimal amount of work and expense, and thus have no real value, to the alchemist. Such an event would cause the rich houses of the Continent to become poorer quite rapidly, and the likely result could be war. Therefore, I shall have to keep this ingenium to myself, and resist the temptation to investigate how I myself might turn lead into gold, for I have no desire to cause such an uproar across the lands.

6. GM: A Transmutation Engine could be a Great Disaster! It could allow the Mass Production of which Thomas warns, and thereby bring about the accursed Industrial Revolution. Imagine, magickally taking Raw Steel and turning out Rifle after Rifle. Horrendous!

TO: Morrolan and Auberon always seem to misunderstand my arguments against technology. As a rule, I really haven't anything against Progress. I just think it has to be balanced against the costs. Leo's Transmutation engine could be a godsend in the right hands—mass production without pollution, slums or destruction of ecosystems. On the other hand...

An Ingenium Permatatus

Instead, I shall consider a lesser version of this, an *Ingenium Permutatus*, which shall not alter the substance of the matter, but merely its manifestation. This is a different matter entirely, and may be accomplished with this construction, where the plate which is inserted into the *ingenium* shall cause the material, whatever it may be, to be altered in shape to the new form, according to the carving of the plate. The material to be altered must be placed in the center of the spherical chamber, using a support to hold it there, if such is necessary for small or limpid objects. With this, might a broken sword be made as new, a large block of cheese evenly divided into perfect cubes, or scraps of wood be made into the best of trays. It is possible, as well, I believe, that a bowl of grains and yeast and water be made into a loaf, ready for the baking, or possibly that a small cat be made into a large rat, though for what purpose I cannot imagine. Perhaps the reverse would be better.⁶

I have just had word back from Ricardo Del Cantone, in Firenze. Alas, the philosopher, although persuasive in his arguments and vigorous in his presentation, was unable to sway the city council of Firenze. They have had enough of trouble with the Holy Roman Catholic Church, and although I am there revered, the final decision was that, the *ingenium* is said to work through the transference and manipulation of magickal powers, which, they believe, is sorcery, which it is not, for sorcery is a black magic. Yet sorcery, by papal bull, has been condemned, and the city shall not avail itself of this technology for the mitigation of their famine, for they wish not to run afoul of the Pope again, and risk interdiction once more. Ricardo has said in his message that some present thought to further appease the Pope by revealing to him my dabblings in these experiments, but that he was able to discourage such a course of action. I am glad to have such a friend as Del Cantone.

INGENIUM DEFLEXUS

(ETHEREAL INTERFERENCE ENGINE)

I continue to be amazed at the arrogance of our Alexander VI. No, he is not ours really, he is a Spaniard, for no Italian that I know could act with such an unashamed abandon, and so flagrantly violate the laws of ethics. Here I have had news that the Pope has annulled the marriage of Lucrezia of the Borgias, to Giovanni Sforza. That which the Pope himself arranged is now annulled! He has, with a flick of his ringed hand, declared that all that has happened between Giovanni and Lucrezia has never occurred! As if he had the power to rewrite history.

They were only married four years ago. I witnessed the ceremony. They entered together the bridal suite, after much revelry of course, and have

been together since. And now the Pope is going to pretend for all time that these events never occurred. I must wonder, what of their consummation? Does this annulment of the marriage make Lucrezia into an adulteress? Or has that been swept away by divine license as well? Perhaps she is a virgin anew. Next, the Pope may annul the fact that the wind blows. What then? And at all this, he still has the audacity to have Savonarola arrested. I hear he is to stand trial, but I have no hopes that right will win out, for he is indeed a devilish Pope. It may be blasphemy to say it, for the Pope is held to be infallible by the grace of God, but it is true, and I shall say it. I shall not, however, repeat it to others.

Ah, now the plot is seen to thicken, and the plans of the Pope to bear fruit. For no sooner is Lucrezia's marriage annulled, than she is betrothed to Alfonso of Napoli. Her father and brothers kick her about like a ball on the street! And with as much concern for her happiness, or well-being. Or her respect, for I am certain that in the upper circle of society she is now looked upon as a doing or a prize horse, to be had for favors to the Pope. Ah, I am incensed.

Of the Famine Again

I have been wondering of late of this famine in Firenze. There has been a papal bull against sorcery, which is now in its thirteenth of fourteenth year. And who better to know about sorcery than the Pope, who is the great leader in the war against deviltry? And they say a man must know his enemy. All of this has caused me to wonder at the fortuitous timing of this famine which tortures my people. It cannot be the will of God, and the possibility of a coincidence of this sort is far to remote. I believe, then, that it is the Pope himself, who has caused there to be a famine, by exercise of black arts. Small indeed the chance he would be caught, when all other practicing sorcerers have abandoned their craft or fled across the Mediterranean. And none would dare question him, at least not in the public square.

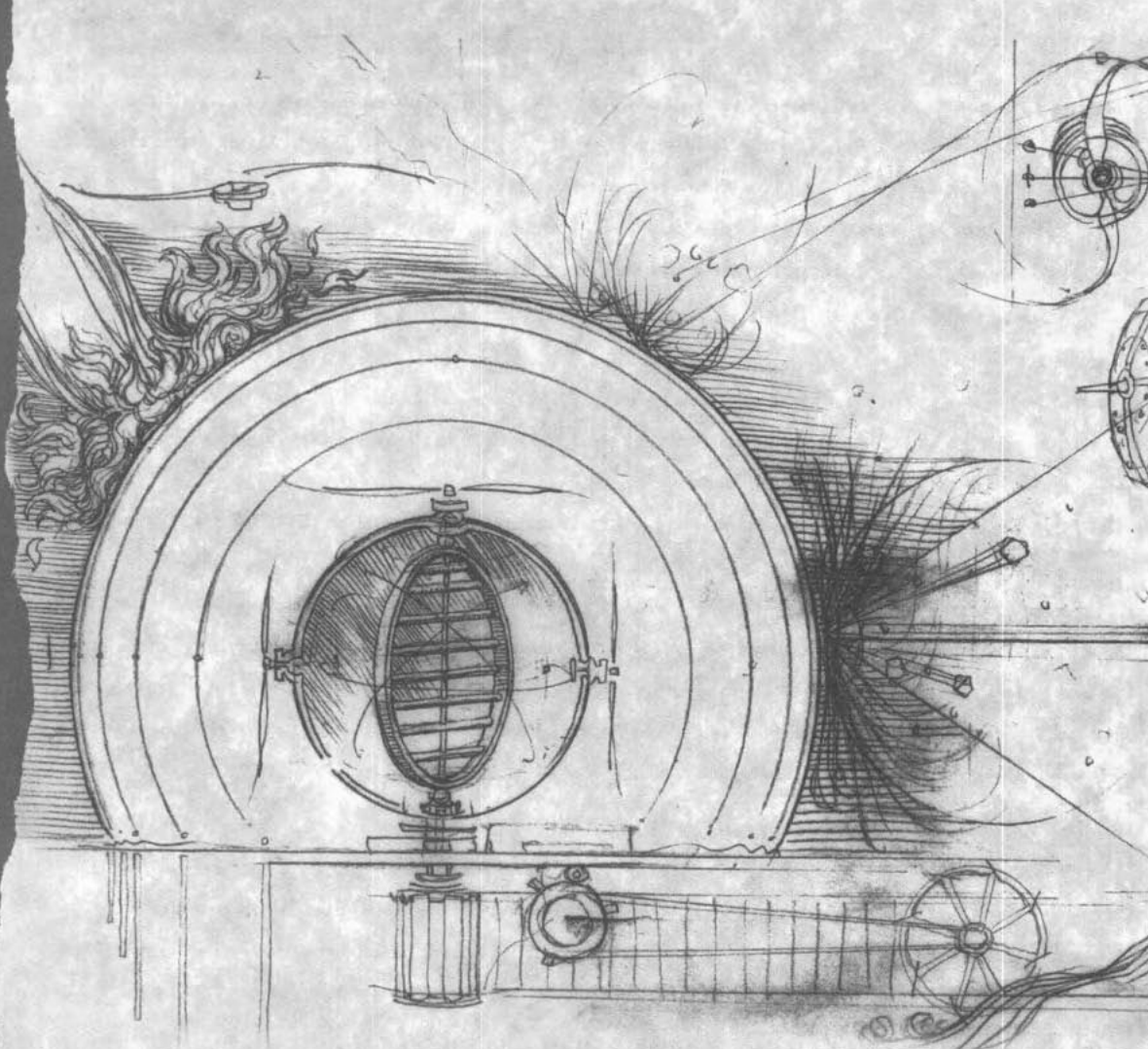
An Engine Against Sorcery

To contest this, I shall here illustrate the construction of an *ingenium* which shall detect and destroy any such evil spells which are cast into its protective encirclement. The difficulty of this creation is that it must be of a different construction of the aspects of magick, that is, a fundamental *ingenium* cannot be designed, for both the aspect of magick against which one seeks protection must by its very nature be itself employed in the defense, and because the knots which are produced of the *ingenium* must be constructed of a manner in which best to employ the auspices of each aspect in the withstanding of assaults. For example, the knots produced by the forces of nature must be stout and inflexible, while those which seek to mitigate the magicks of the mind are more slippery, like unto slipknots, and malleable. Therefore, you need to build a different *ingenium* to defend against each different sphere of magick.⁷

7. TO: Interesting. Have you noticed, Mike, that when people don't want you to win an argument, they keep sidestepping the real issue? I think that's kinda what Leo's talking about here, in a magickal sense. To defend against a debater, you never say yes or no, you just make another unrelated statement...

8. GM: The sudden Eruption or Removal of a protective Barrier will potentially strike down any Spell which is currently being Supported across the Engine's Frontier. Further, Mages cannot typically maintain a spell in hopes that a Ward shall be shut down in a Timely Fashion, so the Effects of a defense may be Felt long after it has been Removed.

TO: Personally, I've always maintained that the best defense is a good offense. Don't waste your time with protective engines, when you can build a destructive instead.



Tragically, each of these ingenia requires magickal essence for the employment, that is, they use the magickal potential in an area much like a lamp uses oil to stay lit. Now then, if a man were to protect himself, fully against all magicks, then he shall require all four of these ingenia, to be in operation. This shall deplete the magickal energies rapidly, much as four wicks shall rapidly empty an oil lamp. Once the magickal potentia of an area is drained dry, leaving nothing but magickal dregs for the operation of these ingenia, the man will have no more of protection against the magickery of others, and another, in a distant land, could magickally project devastation at the man with impunity, and without encountering resistance. Thus you must see that it is impossible for a man to protect himself against all magicks at all times. There must be hours, or perhaps even days, where he must reveal himself to be vulnerable to one or more aspects, and may succumb to their influences. It shall best behoove that man, then, to play with his protection as at a shell game, switching from one to another, and without order or reason. And perhaps even to switch ingenia when it is patently foolish so to do, for such a ploy will not be anticipated. This shall best thwart and confound the man's enemies.⁸



JMAGUM SOMNUS

(DREAM ENGINE)

I have not been able to apply much effort to this Codex, in recent weeks, as I have been embroiled in the completion of *The Last Supper* in the monastery, and a mighty task it is. Especially since I am assailed by the most effervescent and delectable odors of the monks' culinary skills all the day, while I am at work. I am most definitively favored of plain and simple cookery. The monks here are most kind and gracious hosts, and Godly men, and I believe I have put on a hearty girth in the months, no, now years during which I have been at work upon this project.

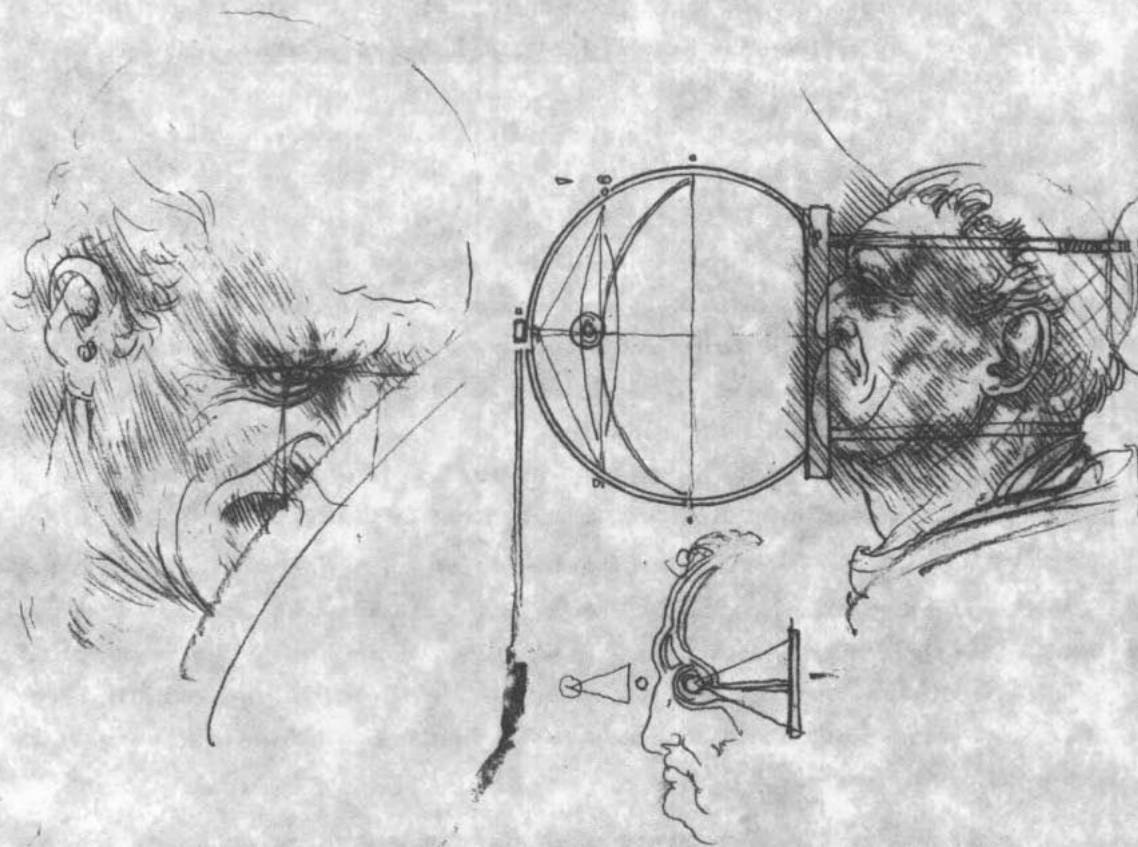
At last I can see the completion of the painting. I believe it shall take me but a month more or so to see it through, so I shall set this tome and other works aside to finish this employment. It is a beautiful painting, perhaps the best I have ever done. I am most particularly proud of the composition of the entire assemblage of disciples. And of Our Lord Himself, ah, I am most pleased. I humbly believe that even He would find the rendering most flattering.

It is finished. I am going back out to the plaza, for Giovanni, bless his doughty heart, is relieved to see me completed at the monastery, that I might design further buildings, in Milano, for to challenge his skills, and has vowed to drink me under the table this evening, in celebration.

My Masterpiece Undone!

I am cursed above all people. This is a horrendous occurrence. No sooner have I completed my masterpiece at the monastery, than I discover that my most inventive experimental compound, that with which I coated the walls of the monastery, the better to hold the paint, and allow me to work in light and shadow, in my smoky technique, which is now famous, for the betterment of realism, that this compound is a failure! Ah! Maria incarnate! What ignominy! It has begun to peel itself away from the walls, curling itself up into flakes as a damaged insect, and carrying away my work of these past three years upon its feckless back to the floor. Why, dear God in Heaven, why?

It worsens, every day, I can see it. Others cannot, they maintain that I am envisioning the worst, that it is but the slightest bit worse, and shall soon stop, for certain, but I can see it. I see students of art, and monks, stand about, and render my work for themselves, for their own experience and study, and I know that soon theirs shall be the only executions of my masterpiece left upon this Earth. I am torn between asking them to hurry, to complete their studies of my art, before it all falls to dust, and instead asking them to be patient, and copy it correctly, and accurately, to preserve the image and color for posterity. I myself am too depressed,



1. TO: According to a book I found in the library, this is when Leo reached peak production capacity of his more mundane inventions. Threw himself into his work, indeed. But hey, I've done that. I held down four jobs for a few months after I broke up with Cassie, you know.

too ashamed to make a copy of this work, for my coating, which I devised myself, has failed me utterly. I am bereft. All my work is for nought. I cannot write any more. I shall drink this bottle of liqueur which I have purchased, and sleep, for I will think no more, upon this matter. It is of no use. The painting haunts my dreams still, as it has for so many months, only now in my dreams I watch it rot away before my very eyes, until it is completely forgotten from the minds of men for all time. My painting, which I proclaim my best, shall be unknown in but ten years. Oh, how despairing I am. And sleep I cannot, I can only distract myself with mundane works.¹

There is no solace available to me.

I Must Turn to Other Matters

I must find another method by which to free myself, from this trepidation which I endure, as I watch *The Last Supper* slowly die its tortuous death.

I shall design here an *ingenium* which shall be my freedom from this abhorrence of watching my masterwork flake into scraps of color. This *ingenium*, which shall rely upon the magicks of thought, shall be seen to have the effect, of imparting into the mind of the subject upon which it is aimed, by means of the rods, dreams, which shall be selected by the manipulation of the various controls.

The rods are of metal, and hollow, which are held in place upon the subject's skull by tensile springs. The tips should be padded, lest, as my

2. GM: Goodness! What hath the Old Man wrought? It appears that if you set the Temporal Basis to the extreme end of the Spectrum, that you may indeed receive a Dream of Prescience, unfolding events which have not yet Occurred! I am not Certain, however, and find myself Hesitant to test this Engine.

TO: I don't know. I've always thought of the future as an unwritten book, myself.



mother used to admonish me, someone should get their eye poked asunder, for carelessness. In my brown moods, I am likely to be careless.

Again, the various individual ringed structures shall control the dream which is made manifest, according to the labels given, of duration; pace or swiftness of events; reality, which in minimum creates a fantastic dream, perhaps one even beyond human comprehension; chromatic appearance, which is to say, whether it is in color or in shades of gray; and temporal basis, or when in the subject's life his dream events conspire. Also, there are controls for adjusting the levels of emotion found, including fear, love, and enjoyment, and others.²

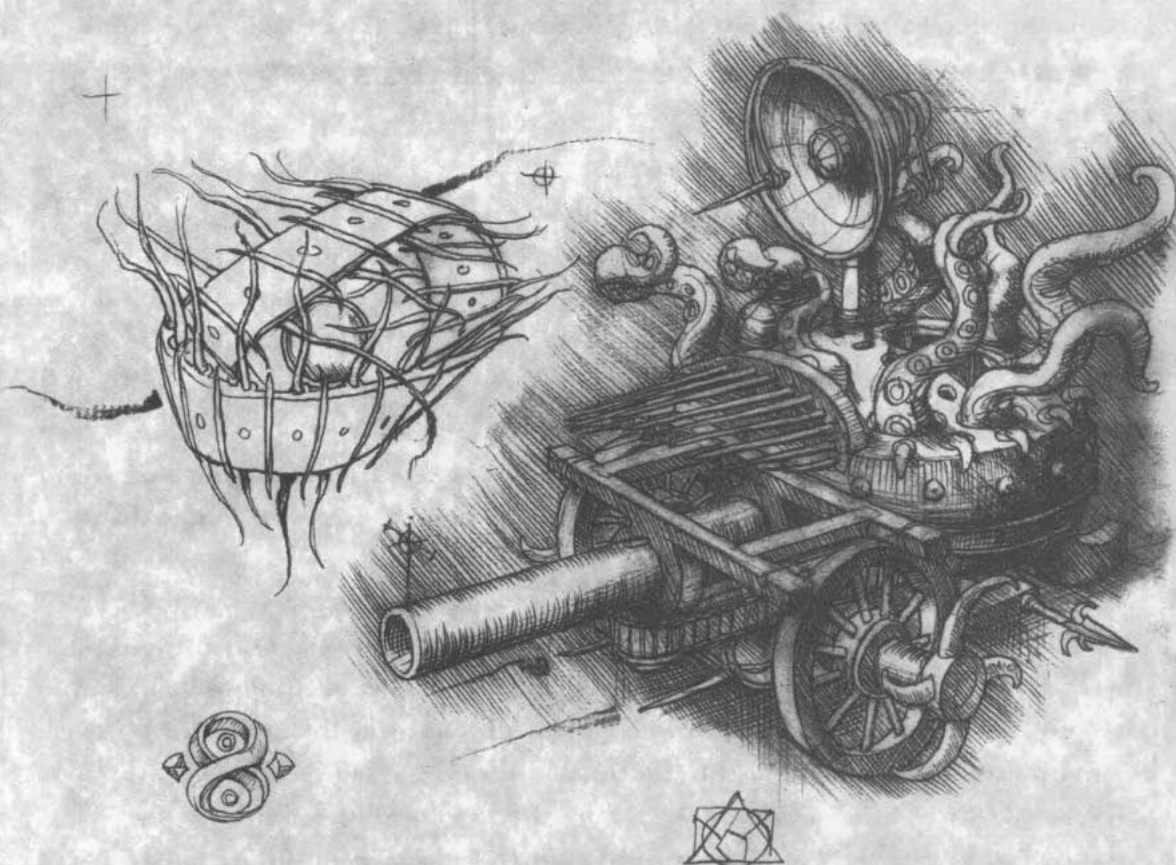
I have not the funds at this time, nor the patience, to create this device. Nor can I particularly sleep, so disturbed am I by these events. I shall have to undertake to create an ingenium which shall set me to narcosis. But no, then the Imagum Somnus and the new ingenium shall compete with each other for the magickal energies, and, potentially, neither shall work.

JNGENTUM JNSANUS

(MADNESS ENGINE)

Is there no end to this madness?! This year is vile indeed, would that I were not forced to endure all that has transpired! I have just now learned of the fate which has befallen the Dominican friar Girolamo Savonarola, and I am outraged! It is a travesty, a crude parody of justice, which has been to work the will of Pope Alexander VI, and to forever silence the voice, of Savonarola, which called him to task for his excesses, and his sins! I am certain that this ecclesiastical court, which has convicted Savonarola, must to a man be poisoned of the mind by the Borgia Pope, or else be wracked with guilt for having passed judgment upon such a man as Savonarola. But, no, they shall surely mollify their consciences with the fact that he did indeed preach, despite being banned from so doing by the





Pope. No matter that what he did were the Will of God, or righteous and true besides. No matter that for such a minor offense, in name, he died. And now, such a man as Friar Girolamo Savonarola, has been burned at the stake, until dead, which end at least is more merciful than any dousing the flames and allowing him to die of his injuries. He has been killed as though he were a criminal, or a heretic, or the Anti-Christ himself! Such a tragic, and pointless, waste. I mourn with all of Firenze.

Politics Again, I Fear

More ill tidings find their way to my door, and make their unwanted way to my ears. Cesare Borgia, who is a cardinal, has been awarded the Duchy of Valentinois, by Louis XII, for a reward of bearing a message unto him. And, in his turn, the new French king has made claim to the Duchy of Milano and the Kingdom of Napoli. I fear that the Pope, having seen his son so shrewdly rewarded, may decline to intervene in the wars which are about to ensue as a result of this bombastic claim by France. The Pope, I am sure, would be only too happy to part with anything that was not his to begin with, and give it to someone with whom he would ingratiate himself. And so indeed the bad events have once more come in a threesome.

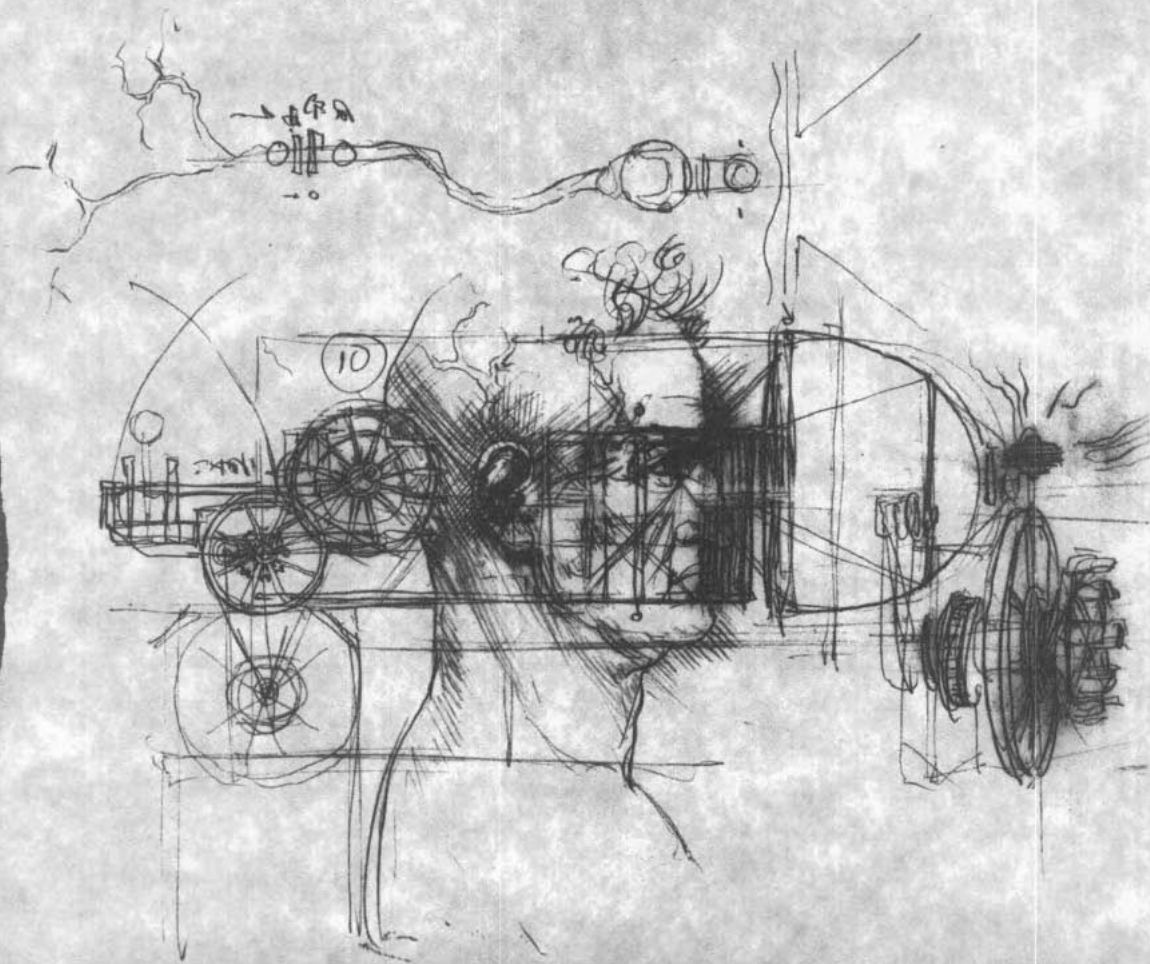
I may have neglected to record that Louis XII is the successor and cousin, to Charles VII, of France.

Madness, all Italia is degenerating into madness. Even the walls themselves have gone mad, and refuse to hold upon my greatest accomplishment, of my entire life.

An Engine of Madness

If everything be madness, then I shall ensure that it be so! Here, then, it appears, this *ingenium* which shall drive those within its grasp into the abyss of madness. I shall build this and bring it with me to Roma, to meet with the Pope, and drive him into a frenzy, such that his real, and true, and basest nature shall be brought forth for the inspection of all, and he shall at last be cast down, or slain. It must be so.

It is a large and cumbersome *ingenium*, but it can be most effective in the use. Its magickal energies, which are those of the medium of the mind, are generated within the great cavity in the center, wherein they reverberate between each other, until such time as they reach the opening, and gain energy and strength for the rebound. The opening itself, where the magickal energies gush forth, is to be built small, and surrounded by a conical section, built of a pure metal, be it what it may, but preferably cold iron, and this conical section shall be of a more acute angle than the radius of the central containment sphere to the opening, the better with which to guide and aim the magickal energies at the person whom the operator wishes to strike.



It shall render the subject with incoherent thought, in compensation for which the brain will be forced to rely upon those instinctive behaviors, which, given the sinful nature of man, and the Pope especially, shall be akin to madness.

If the operator of the device were to mount it upon a central axle, which should spin the ingenium about as it operated, then the ingenium shall have effects upon all who stand about it, such that it might strike an entire crowd with the frenzy. Perhaps I should build many of these, and secret them inside crates and wagons about Roma, and drive the entire city into the madness which lives incarnate in the Vatican.³

Perhaps I am being too cruel. Better still, instead of inflicting chaos upon the recipient, to implant more coherent thought, by means of controlling the subject. Then I could have the Pope fall upon his own sword.

The settings must be made beforehand, or else carefully aligned during operation. This I do not recommend, for if the alignment is careless, the subject may be able to cast off the effects. No, this shall never work, for the Pope does not carry a sword, cursed be his clerical restrictions.⁴

INGENUM VADERUS

(IMPARTED MOTJON ENGJNE)

How many months now, has it been, since I have browsed through this Codex? I am not certain, for I am not in the habit of dating my thoughts, but instead of returning to past pages and inscribing additional ideas or illustrations as suits my mood. I do not therefore know. It has indeed been a long time, however, judging by the last entries which I made upon these pages, and by the dust which has accumulated, upon these pages, betwixt that dark time and now. I have healed myself of my grief, and despair, and self-reproach for the loss of *The Last Supper*, for lose it I shall, eventually, but for the nonce, it stands still, and elicits much interest and excitement, among the peoples of Milano, and all those who travel to view it. It is a very good painting, and more poignant still that it fades, even before our eyes. It is in that fashion, much like a summer, which we shall never see again, as it fades to autumn.

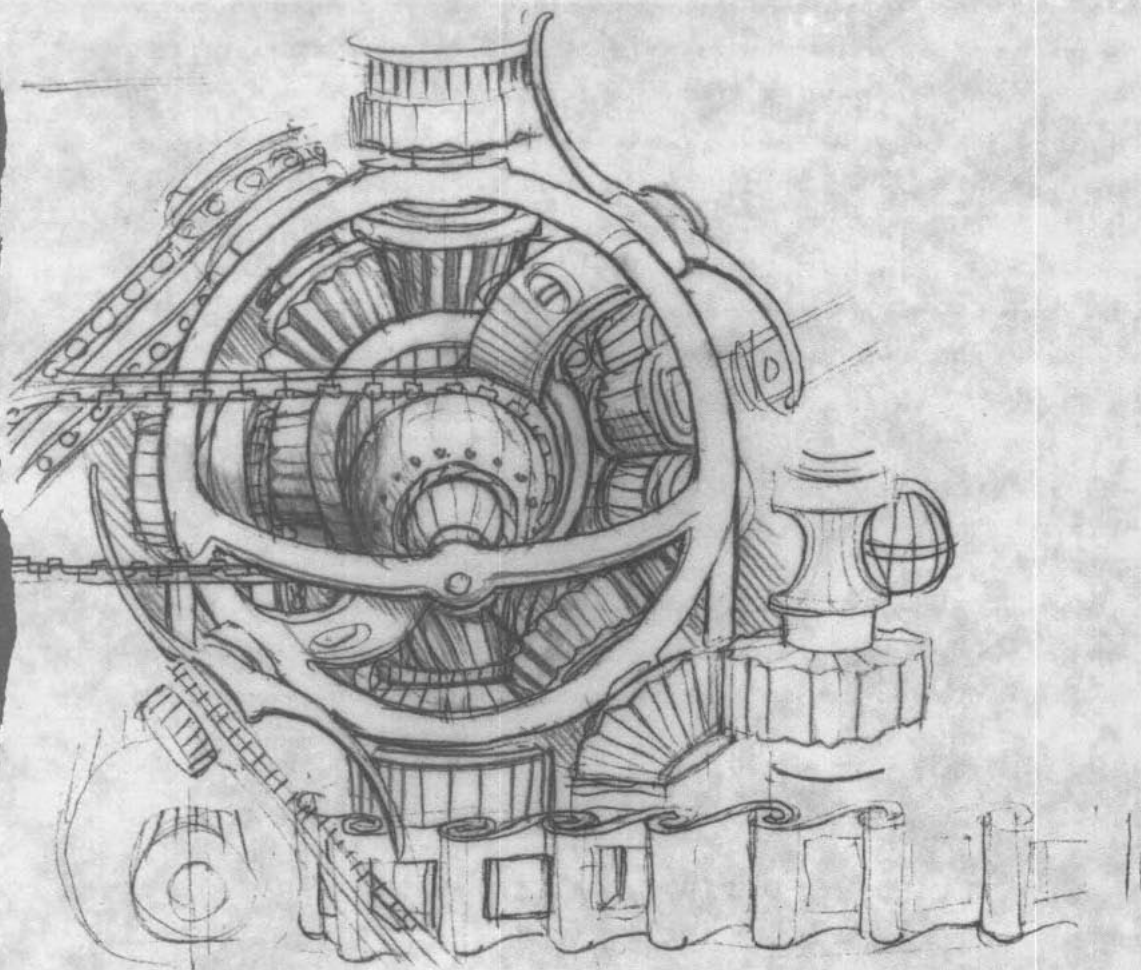
All must eventually pass from this Earth, and it is simply my ill fortune, that I shall see this pass, or at least begin to do so. Now I can better understand the grief of those who, through calamitous accident, lose one of their children, before they are grown.

A New Conception

I shall move ahead upon these theories, and build new ingenia, with which to harness the magickal forces which envelop the globe in

3. TO: Yeah, sure, and leave a bunch of bricks lying about for folks to throw. After all, they're not lethal weapons, right? Just ask Damian Williams.

4. GM: Fortunately, the effects of the Old Man's Mesmer Engine shall not last long after is Completion. It appears that post-hypnotic suggestions shall not be Feasible, at least not with an Engine of this low Power. Perhaps a greater Engine would be more Effective.



their gossamer web. But where to begin these new developments? It has been so long since I have contemplated these matters, that I am at a lack to move ahead.

Ah! In recognition of the fact that I move ahead in these labors, I shall develop an *Ingenium Vaderus*, which shall cause by means of its amazing construction for the motion of all that is attached to it! The *Ingenium Vaderus*, for complete efficacy in all constructs, which are to be so empowered, must be comprised of many means of harnessing the power which it shall exude, and many gears shall be employed in the distribution of this motivation.

The motivation may be had with a severe clock spring, or for large constructs, which are to be motivated for extended periods, it may employ the *Inferno Mechanism*, which I described in previous pages, or a water wheel, or some other method of empowerment.

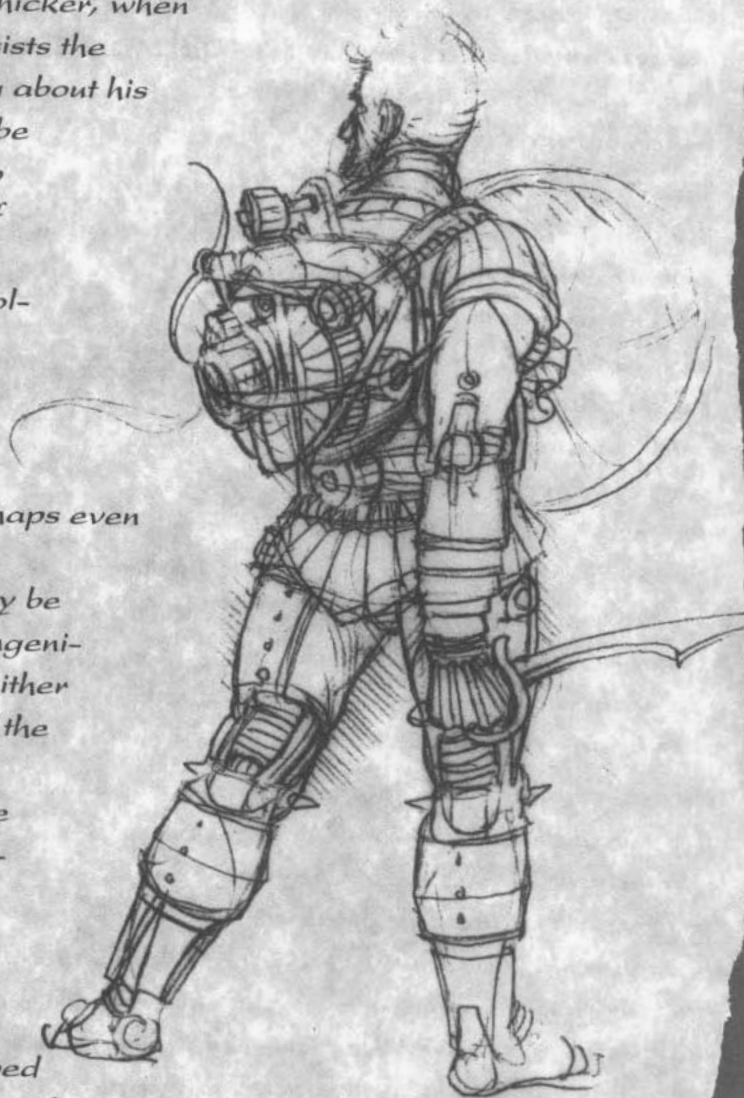
My, but I find that I have discovered, to my delight, a veritable trove of applications to this ingenium. There is not a single industry upon this planet that may not benefit of this *Ingenium Vaderus*. But for now, as war is in the wings, with France, I shall develop several ideas, for the purpose of waging war.

Armor may be made the thicker, when an Ingenium Vaderus assists the armored soldier in moving about his body. The ingenium shall be mounted upon the back, to shield it from the effects of the enemy's fire, and attacks, and to offer the soldier the greatest mobility. The more efficient the engine, the more powerful an armor can be had, perhaps even one or two inches thick.⁵

A horseless chariot may be developed with the ingenium, which shall not tire, neither shall it suffer the deaths of the horses, for the Ingenium Vaderus, which propels the chariot, may be safely concealed, and armored, at the rear of the chariot. Such a vehicle need not be heavily armored, but rather equipped with spikes, for the impaling of enemy men, because the greater the speed which the chariot may attain, the more irresistible its lancing, and the more it shall terrify and dismay the enemy army, to see it in operation, and easily evading all pursuit.

With a larger Ingenium Vaderus, a suit of armor may be made to leviathan dimensions, with the wearer of the armor safely ensconced inside, and controlling the movements of the armor, indirectly, by use of levers and gears.

This suit of armor may be



5. TO: Oooh!
Mike! Darth
Vaderus!

6. TO: Oh! Yeah!
The Colossus of
Rome!

7. TO: Maybe it's
just me, but when
he says to bombard
the heads of the
enemy, I see him
targeting the toilets.
That'd end a siege
real quick.

made of a size large enough to scale city walls without assistance of ladders or siege towers, and would be stout enough to resist everything short of a direct strike with a cannonball, and then only if the artillerists used an increased charge of powder.⁶

The Ingenium Vaderus may be used in the construction of a new and efficient type of artillery, which shall be able to move

itself about the battlefield. In addition, and properly arranged, the

barrel of the cannon

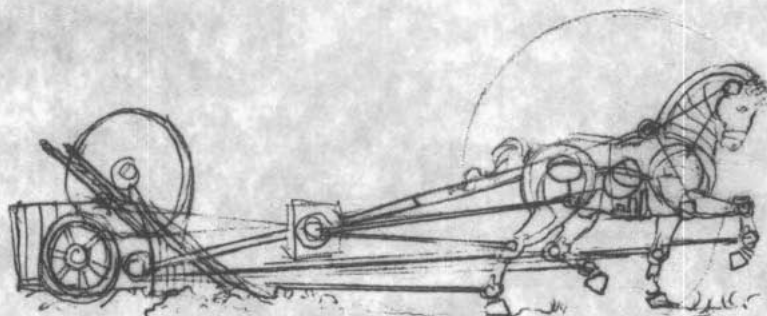
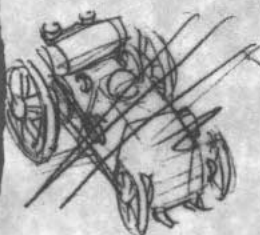
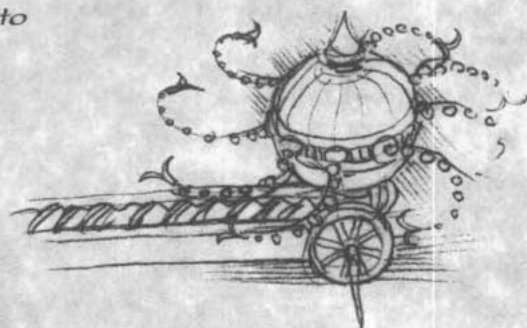
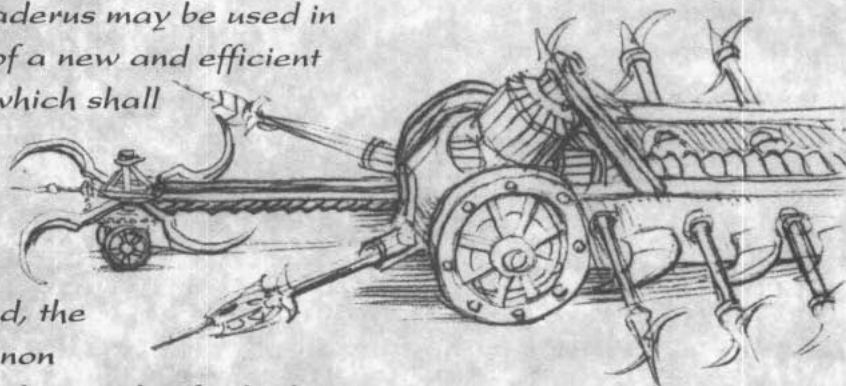
could be elevated to angles far higher than any now, the better with which to propel explosive shells, as rain, over the battlements and down upon the heads of the enemy.⁷

Upon the defensive, in the resistance of a siege, the Ingenium Vaderus can be used to deceive the enemy, as to the strength of the city garrison. The

ingenium shall be connected by tortuous linkages, to a plethora of spears and pikes and other arms, placed about the walls for the city, and set to waving in the sun by the action of the ingenium.

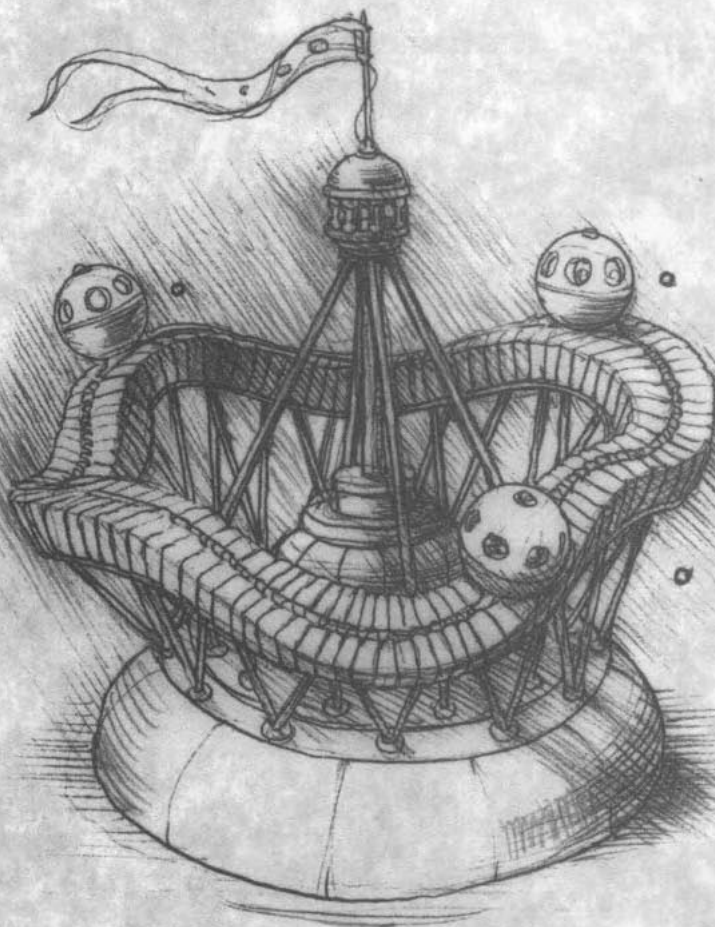
In this fashion shall the garrison appear to be double or more its size, and the enemy, set to inaction for fear of the great garrison which appears upon the walls, may be set upon by surprise by the true garrison of the city, and destroyed.

There are less savage applications of this Ingenium Vaderus, as well. It may be set to any task required. It may be used in the plowing of land, for example, when applied to an automaton similar to this design:



It may be set to hammer, as by pounding with a great mallet, to set properly pile upon the shore, or to break apart rocks, or to demolish the gates or walls of an enemy city besieged.

It may be used in the creation of devices which shall more efficiently and hideously punish criminals, that they may be sooner cured of their evil ways.





INGENIUM TEMPORALIS

(TEMPORAL ENGINE)

I find I ought now to leave Milano, as I do not care for the course of recent events. Relations between the Duchy of Milano and France are strained, and I fear that Lodovico El Moro, despite all that he has done for his people, will head into yet another fruitless war much to the dilapidation of the Duchy in general. I have taken my leave, to pursue a sabbatical in my home city of Firenze, and perhaps to visit other places en route, including, I hope, Venezia. I am now at last in the Duchy of Mantua, and have been retained by the Most Illustrious Duke himself, to render his wife, Isabella d'Este, for the purpose of posterity, and presumably so that he might be able to reminiscence and visit anew her beauty, what remains of it, before it is gone forever under the tireless press of age. Surely time is that which crushes all beneath its feet, for even the pyramids, though they stand yet, show the deleterious effects of time, as does the most regal profile of the Sphinx. And the Coliseum? Would that Italia made her monuments as lasting as those of the Nubians.¹

Time and Time Again

And now I find myself contemplating the concept of time. What is the nature of time? I believe time is like a current, which draws us all along with it, as though down a stream, or instead an aqueduct, which is more regular and predictable, as it is engineered, for certainly time proceeds at an equal measure, and flows unlike a stream, but constantly and without deviation, carrying us as though flotsam from the past into the future.²

As excellent as I am in the matter of transporting water from one location to another, as from a stream into a high tower, I believe I ought to construct an *ingenium* which shall overcome the natural current of time, which is to say stand fast against its flow, such that it might be seen to cause time within its effect to stand still.³

Of course, it is obvious that an *ingenium* which is to be used for the stoppage of the flow of time must of course constrain the operator without exception, for it shall encompass all around. However, it is also readily seen that the interior of the *ingenium* itself may not be affected by the magickal bindings upon the times, but instead be allowed to operate freely, for if the *ingenium* does not experience the passage of time, it may not operate, hence time will not be stopped, and a conundrum or paradox becomes evident. The workings of the interior mechanism of the *ingenium* must thus be shielded against the magickal restraints, with an arrangement of tubules, containing *hydragyrum* and

1. TO: Remember, folks, Napoleon's men had not yet blown the schnozz off the Sphinx. I really wish they hadn't done that...

2. TO: Hey, but if time changes speed, how are we, carried along, to know? Haven't you ever had a class last forever? Or a date with a real babe last for the blink of an eye? Oh, but Leo would probably say I'm splitting hairs, because it really doesn't matter to the design of this engine.

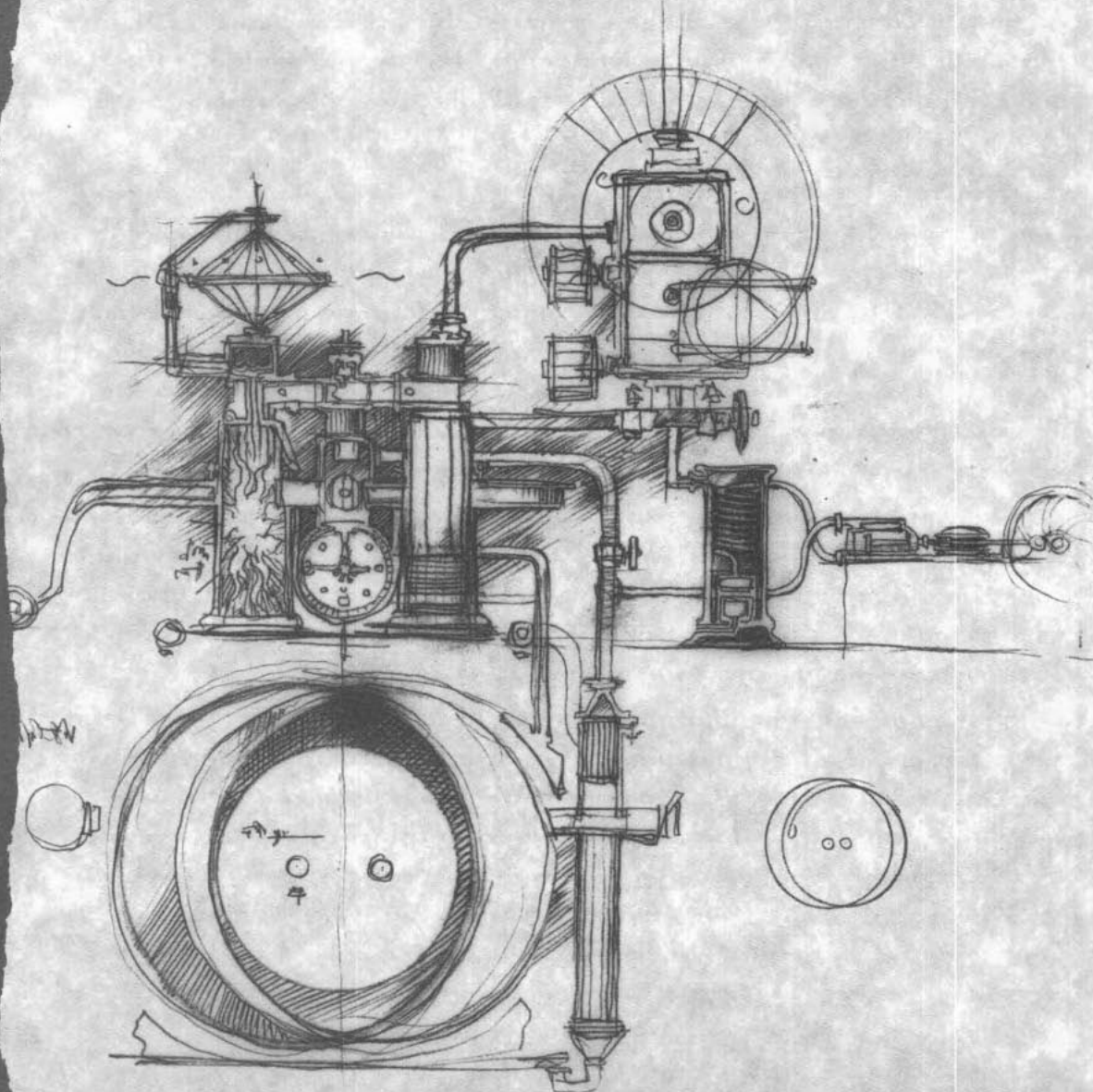
3. GM: Gads! Another Engine for the Master Criminal!

4. GM: Why in the name of Heaven does the Old Man think this would suffice? I see no Reason.

water, which shall be seen, when placed within glass tubings, to flow in chaotic form, through deflection of the magickal field. They are to be arranged thusly, as in drawing c.

In a like manner, the persons operating such a device may also create for themselves a webwork of the selfsame materials, a cage about the wearer of *hydragyrum* and water contained within tubes, which may be of flexible or inflexible materials as the wearer's purpose permits. The proportions of *hydragyrum* to water must be of the thirteenth to the seventeenth, and the makings of the tubes be of five different sections which interlace, yet are not connected one between the other, else the magickal knots will leach through the protection and be seen to thwart the wearer.⁴

In a similar manner, it may be tested whether, given sufficient powers behind the operation of the primary mechanism of the *Ingenium Temporalis*, the currents of time might be reversed in a small portion, which is to say, caused to run counterwise, or backwards, against the regular flow. Such an effect would require great sums of exertion, I am



sure, and the magickal requirements thereunto would be certain to preclude the employment of my *Inferno mechanism* to the generation of such strengths, as the *Inferno mechanism* itself has need of magickal power such as shall be consumed in the reversal of time.

I find I have no theoretical or observational basis upon which to deduce the effects of such a temporal reversal, except perhaps to believe that the images seen through such a portal would themselves be mere images, the stuff of dreams, in much the same manner that when we remember events, the people whom are seen to occupy our memories are not the true flesh and blood relations we know. In a like manner, I hope that by reversing time, we do not cause people to exist in any real manner within the field, for such would be an impossibility, they being extant elsewhere, and very much alive.

*O*ne conceivable use for the *Ingenium Temporalis* would be in the creation of a means of preserving the life of one ill or mortally wounded until such time as a *chirurgurgeon* might be found to administer a remedy. In this fashion, the patient is lain upon a table, beneath which the *ingenium* processes its magickal knots. Then, when the *chirurgurgeon* appears, and all is in readiness, the *Ingenium* may be halted, and the healing commence.

It becomes obvious that for this *ingenium*, a timed method of empowering the unit is required, or else that a shielded line of control from the operator of the *Ingenium*, be extended through the time-stopping effects, and to the fundamental source of operation. Elsewise, it will be impossible to control the function of the machine, but merely to allow it to run its course, until at last it winds down, spent of power, for any who endeavored to penetrate the magickal restraints would find their time, too, had been halted in its flow, and they would be unable to halt the *Ingenium's* progress.⁵

JNGENJUM JNTEGRJTAS

(JNTEGRJTY ENGJNE)

I am now visiting Venezia, the city of the canals, and have passed many an enjoyable hour touring at the whim of the *gondoliers*, and attending the ballets. It is a beautiful city, and I enjoy my recreation here greatly, but the days are soured with the talk of the war which has broken out between the Turkmen of the Ottoman Empire and fair Venezia.

This darkening of my relaxation is doubled by word of the defeat of the fleet at Sapienza, although I have heard so many varied stories that I am unsure which are true. Verily do these common Italians embellish every story, for I have heard the same person inflate the drama of his discourse

5. GM: It's curious that the Old Man never thought of trying to read the Future.

TO: Not really. I never read the ending of a book first, and how much worse would it be to know the ending of your own story?

over the short span of one day, and he swore that he was there with the fleet at Sapienza! Mayhap he was there indeed, and was struck upon the head, that he has gone silly.

It is painful to me to hear of the defeat of the fleet, with so much of our land being upon the coast, where any barbarous invasion may put ashore. With this concern in mind, I went to the shipyard to speak with the shipwrights, and to endeavor to find the truth of the matter. As it befell, when I arrived, they were in the process of keeling a vessel for the sake of repairing her, and they were putting about the task in a most unseemly and inefficient manner, that I had to exclaim, as though to children, my astonishment.

To which exclamation, more than one of the workers at the dock drew great offense, and brandished a boathook with which to threaten and extort an apology out of me, or blood, or perhaps both, but I was fortunately recognized by a learned man, who calmed down the irate ruffians. I must remind myself to hold to my tongue more carefully when dealing in the future with seamen, for they are roguish rascallions.

After speaking with the shipwright, for such my defender turned out to be, I designed for them a system of lines and pulleys which will more effectively transfer the forces of their strength against the ship being keeled, for which efforts they were most grateful, and treated me to dinner, at the most rancid establishment I have ever had the displeasure of attending. The bread was quite coarsely ground, and the beef was burned and appeared as though it had been hacked off the cow with a halberd. And the wine is best left without description, especially the way I feel this morn.

To Enhance What Exists

While inspecting the damage to the vessel, of which I knew little, as I have made no serious study of nautical sciences, it occurred to me that a magickal *ingenium* emplaced upon a vessel could be used to enhance its durability in battle, most specifically against the power of an enemy vessel striking it in the side, below the waterline, with a ram. A different *ingenium* would have to be used to protect the vessel, against attack by Greek fire, or other pyrotechnical assaults, but I shall here work upon an *Ingenium Integritas*, which will be employed in the defense against rams, collisions, and bombardments, and would also be useful were the vessel to be plying treacherous waters, where there might be rocky shoals below the surface of the water, invisible reefs, &c.

The method by which the *ingenium* shall work will be to tie a series of knots into a webwork, like undoing a net or fabric, the structure of which I have gleaned by watch those skilled at knitting, and in fact to create two such webworks, one contained completely within the other, much as a glass float (of which I have one here before me) has an inner and an outer side to the glass, and is hollow, yet the inner and outer surfaces do not connect. In a like manner shall the webworks of magickal knots be contained one within

the other, yet be separated by the hull of the vessel, which they in turn shall press upon, the better with which it shall keep its shape, as any attack by bombardment or ram shall have to overcome the durability of the magickal net as well as the strength of the hull of the ship.

Against the Turkmen

To afford any effect, this *ingenium* must by means be very well powered, as to protect a vessel against the hostility of the Turkmen or the irresistibility of an underwater rock, half-measures will be woefully inadequate. However, any vessel upon which this *ingenium* might be employed, is necessarily a larger vessel, and therefore may admit to a larger source of power for this *ingenium*, for its increased effects, of which I believe a mundane revision of my previous *Inferno* mechanism for empowerment might well be adequate, for although such a motivator is unforgiving of damages inflicted upon it, it shall be protected within the interior, below decks, of a magickally reinforced hull of an Italian-built warship, and there is no place more safe than that. Previous incidents at Sapienza notwithstanding.

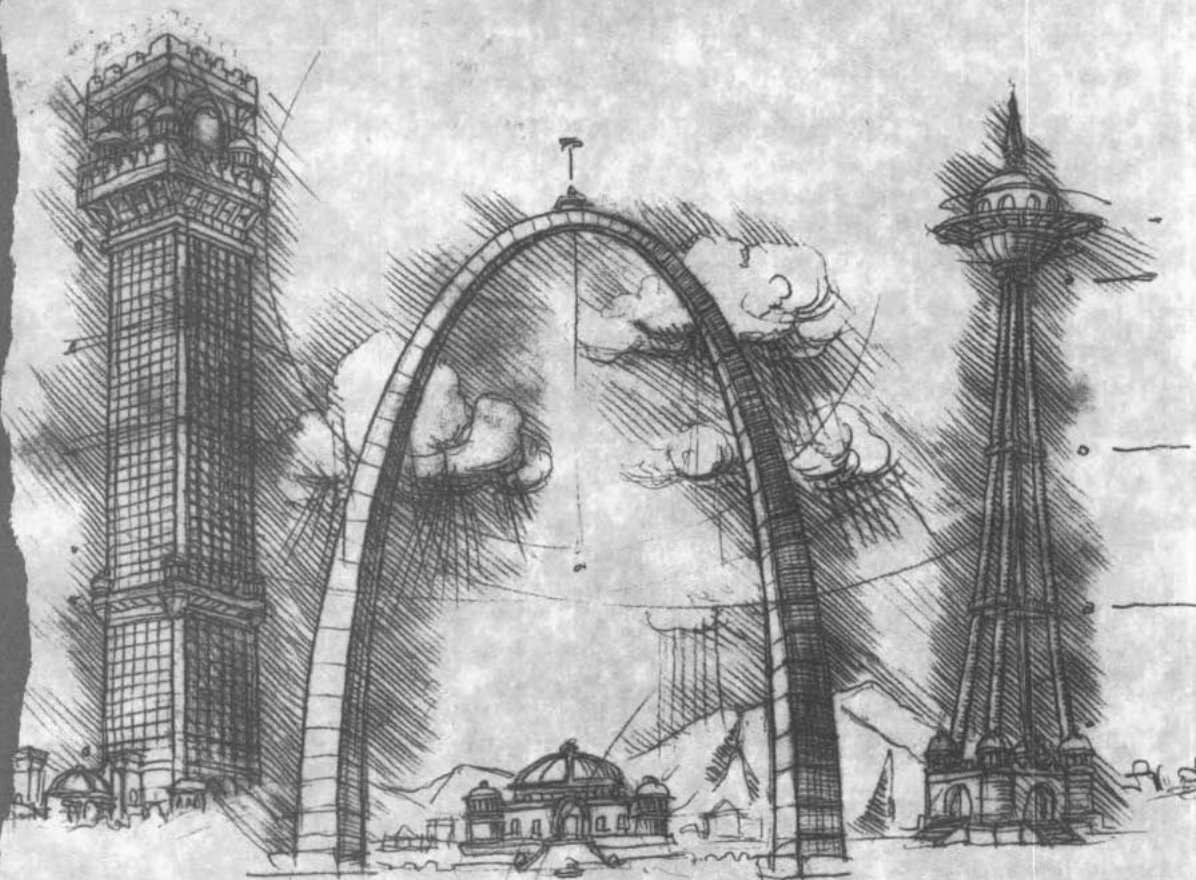
This will require that a fire or some alchemical source of heat be employed below decks, but as I understand that fire is likewise used by a ship's cook, I cannot see that there would be any objection to such an equippage. The only difficulty arises in that if it were necessary, due to the great length of a protracted naval battle, to burn for consumption unimportant portions of the ship itself, the strength of the *ingenium's* magick would prevent even hardy sailors from prying ornamental planks or woodwork from the hull to be burned. Upon the other hand, it should be noted that should the *ingenium* run completely out of fuel and cease to function, it is likely that the vessel in such a grave position shall take damage from the enemy, which shall cause there to be an immediate supply of scrap and flammable woodstuffs.⁶

INGENIUM SUSTENTACULUS

(LJFE SUSTENANCE ENGJNE)

After I had completed the design of my *Ingenium Integritas*, I returned to the docks to display my invention to the shipwright who favored my cause when I first visited that place. Sadly, he was not receptive to my ideas for the improvement of the Veneizian ships, and in fact was appalled at the idea of employing a fire-powered version of my *Inferno* mechanism below decks of a warship engaged in battle. He could not see that the *Ingenium Integritas* would protect itself, and with itself also the crew and the ship herself, from enemy activities as well as the mechanism's fire. It is perhaps as well; there are significantly fewer Veneizian warships now, and a given one which were to employ my *Ingenium Integritas* has a greater chance of being captured by the Turkmen, at which time we should see all the vessels of the Ottoman Empire invincible.

6. GM: This would be a great addition to any Steam-Powered Warship; with this Engine, it could be more lightly Armored and travel more rapidly under Full Steam, yet when Engaged by the Adversary, avail itself of the extra Protection afforded by the Integrity Engine, and fight toe to toe. It could outrun any vessel more Heavily Armored, and outfight any vessel Lesser. Would that Bayern were more of a coastal Nation. We'd show those Infernal Prussians!



It occurs to me, though, that the employment of an Ingenium Integritas could afford for some very tall and elegant designs of architecture, so long as the ingenium were well-supplied with fuel. I shall have to develop these ideas, as I love architecture so, and this could cause my creativity to reach fruition.

Now at last has news also reached us that Lepanto, Venezia's holding upon the Gulf of Corinth, has also surrendered to the Mohammeddan Ottomans. It is tragic to see Venezia's territory along the Mediterranean be swallowed up by the Turkmen. I believe they now hold all of Greece, and can operate fleets from ports within the Adriatic.

All tidings continue closer to me, as well. It turns out the last night that a drunken gondolier chanced to pick up some passengers who were likewise inebriated. They, in their festivities, apparently tipped their small watercraft upon itself, capsizing it, if you will, and you must be certain that they drowned, being not of sound mind and constitution weakened by drink. Many are upset at the news, more so than of the defeats which Venezia has suffered, perhaps because the gondolier in question was known by so many, while the slain soldiers are not seen here.

To Provide Sustenance of the Lifeforce

This of course led me on to a morose path of thought, but indeed my brown study brought me through the depths of depression, into a glorious new revelation, which burst upon my spirit like a sudden dawn. Using a magickal ingenium, it should be possible to calibrate and align the magickal energies such that they maintain the body's regular function in spite of the surrounding environment, to wit: one might be dunked under the water, and yet not drown, because the ingenium

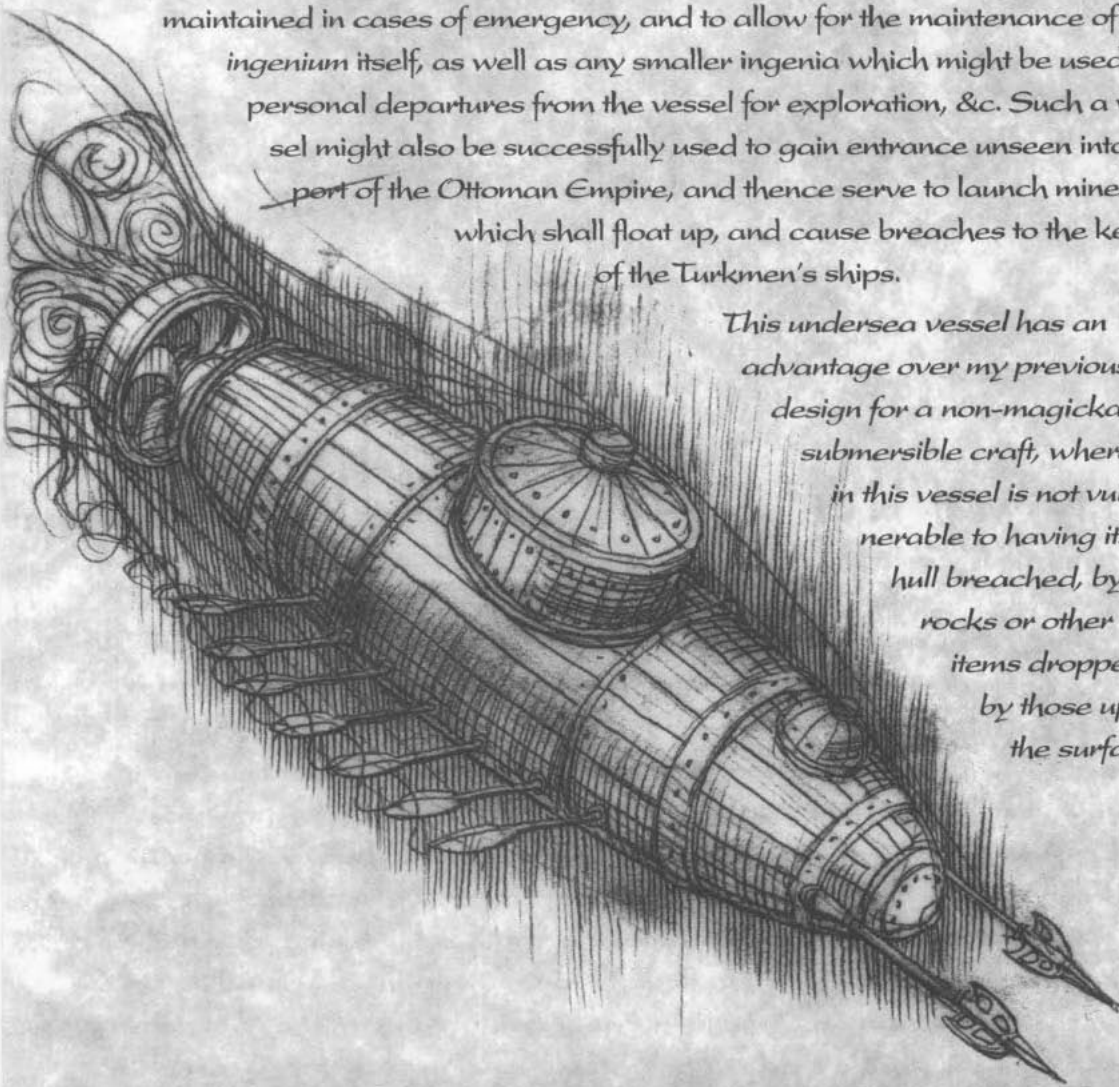
would provide you with the vital fires of life which the water quenches within you. This *ingenium* relies upon the technique of infusing additional life energies into the subject even as these energies are extinguished by whatever means. The heart being the muscle which pumps these energies about the body, it is most necessary that the *ingenium* be held within close proximity to the heart, or else that the *ingenium* be of large design.⁷

Small *ingenia* may be safely operated by clockwork, with a mainspring of exceedingly stiff steel, and protected against water or whatever elements might impede its function. So made, the *ingenium* shall allow the wearer, being the person affected by its magickal infusions, to operate in places under water, or where there remains but only bad air, as in a mine shaft or in a building ablaze. Here I must tell that the *ingenium* only protects the vital organs from being destroyed by suffocation or poisons; it shall not provide any protection against the inferno, which shall directly cause the wearer's flesh to be roasted until it no longer functions, although the wearer, by the grace of my *ingenium*, shall not be overcome by the smoke before the fire.

In a larger version, this *ingenium* might be used to power a ship which would travel under the waves as do whales and other fish. Pockets of air must be maintained in cases of emergency, and to allow for the maintenance of the *ingenium* itself, as well as any smaller *ingenia* which might be used for personal departures from the vessel for exploration, &c. Such a vessel might also be successfully used to gain entrance unseen into a port of the Ottoman Empire, and thence serve to launch mines, which shall float up, and cause breaches to the keel of the Turkmen's ships.

This undersea vessel has an advantage over my previous design for a non-magickal submersible craft, wherein this vessel is not vulnerable to having its hull breached, by rocks or other items dropped by those upon the surface

7. TO: Thank goodness Leo didn't appear to test this engine. I can't see that he could make something water-proof in his day, and I think the sea water might easily mess up the thing in the middle of operation. Maybe not, though, I don't know a lot about water, and how much friction it would cause to something like a clock. But eventually a barnacle would grow inside it or something.



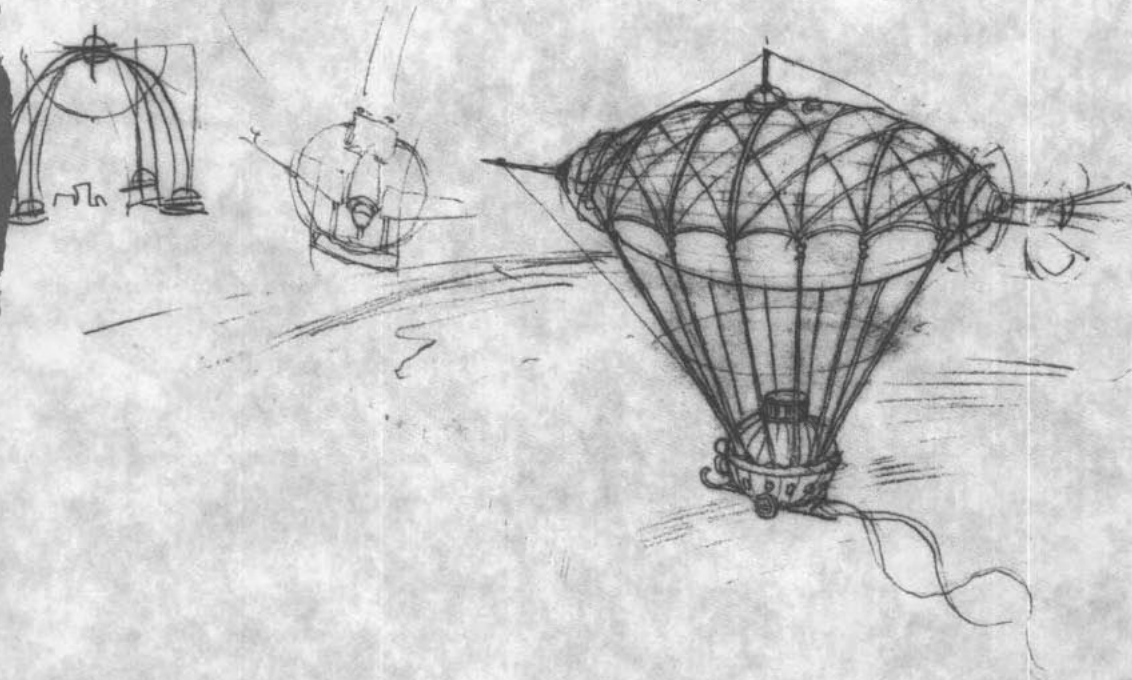
8. GM: By Jove! Let the Huns have the Seas! We shall rule the Air and the Sea beneath, and trap their High Seas Fleet in between our two Navies! This is the sort of Submersible which could even defeat the *Nautilus*, because even She can be Breached and sunk!

9. TO: Whoa. Hey. Blame the *Cyberpunk* influence, call me sick, but sinking one of these at the bottom of a deep lake would be a great way to create an escape-proof prison. As long as you stay within the confines of the Life Sustenance engine, you're all right ...

of the sea, as its magickal effects preclude the danger of losing the air inside the craft.⁸

*Stationary edifices may also be constructed, using a waterborne version of the windmill common in the lowlands of Europe, to wit: the Netherlands, which mill, by using the force of the tides which shall pull upon it, might afford a comfortable living environment without unduly depleting the area of magickal potential, and drowning the occupants in luxury.*⁹

With this ingenium, it might also be possible to arise upon the air to great heights, where the air becomes too rarefied and hot for normal human endurance, and thence to explore the ether, as well.



INGENIUM FATIGARUS CURAREUS

(HEALING ENGINE)

I grow weary of the welcome which I have received upon returning to my native city. You must know, that to receive a most illustrious welcome is a boon to the heart of every Italian, but the continued perseverance of this most laudatory treatment has wearied these old bones, doubly so since any mention which I have made of these pursuits, kept within the pages of this *Codex*, has been received with greatest ill measure, that I was forced to proclaim my explanation to be a great joke upon those listening, at which they laughed most heartily. I wish to be left alone to continue my studies now. Perhaps I can design an *Ingenium Fatigarus* to dampen the enthusiasm of those who have proclaimed me a virtual hero of the city for my art and

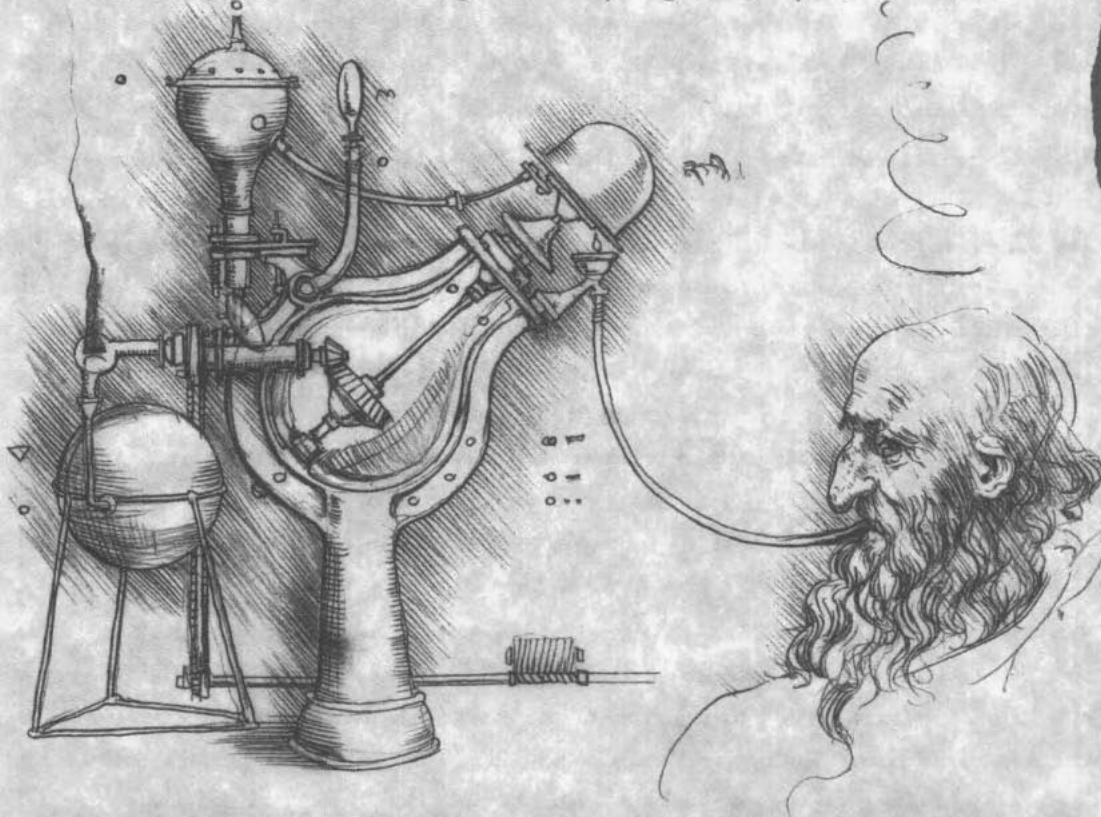
inventions. This would be a simple modification of my previous *Ingenium Sustentaculus*, which, by inverting the ratios and realigning the mechanisms to work in the reverse order, would from those surrounding, cause the vital force to be depleted, instead of held buoyant. In this fashion, the crowds would grow weary before they could bombard me with their praise, and I should have a moment's peace.¹⁰

A New Work to Commence

It is a better day, now, and my temperament is less stormy than it was in the previous days, for surely now I reap the benefits of my fame in this town. Firenze is building a new hall to house her city council, and the government has retained me to decorate the walls of the new edifice with my works, representing the many Firenzen victories on the field of battle. In light of recent events, I cannot resist but to base my first work upon the Battle of Anghiari, wherein Firenzen forces defeated the Milanese army some sixty years previous. I have cartooned this work, and am pleased by my initial results, of tense and fervent soldiers, horses rampant, and clouds of dust kicked up by the tumult. I shall have to revise the plans, however, and find a better method of working than fresco. I have in mind a new paint which should suffice my needs.

My high repute has also attracted the attentions of several young and aspiring gentlemen, each of whom hopes to paint as I do. Raffaello Santi shows promise, but I find that Andrea del Sarto is yet too young. I have also heard that one Michelangelo Buonarroto is interested in my works. He is reputed to have a good sculpting technique, as I have

10. GM: The Old Man never pursued this. It is perhaps for the best, since a Weakening Engine could, in Theory, cause one old or infirm enough to collapse on the Spot, deceased. It wouldn't actually drain one's Energy, it would deplete the Air around him, causing him to Suffer as though through Exposure or Consumption.



11. GM: It should be Possible that the Engine be made of Sterling Silver instead. While this might be a less effective Version of this Engine, its Construction would be greatly more facile.

12. TO: Urgh. Sterile technique is still a few hundred years away. It makes me ill just thinking about it; doctors used to go straight from autopsy to child-birth without washing their hands! And the fact that patients so often died of infections proved the need to have doctors present ...

heard complimentary reports about his statues of Bacchus, and Pietà at St. Peter's. I myself shall withhold judgment until I can see his work personally, which I shall be able to do, since I am told he also has been commissioned to help to decorate the hall of the city council.

An Engine of Vitality

But my work on this painting has led me to think of warfare, and what I can perhaps accomplish for the betterment of the welfare of the soldiers of Firenze, and I have devised another variation upon the theme elucidated by my *Ingenium Sustentaculus*, which, by infusion of vital energies into the body of one wounded or ill, as from battle or plague, and focused in the manner by which the *Ingenium Integritas* effects its works, shall cause the decrepitude to be flushed from the patient's system, that they might spring whole and hale from their beds anew.

It is I fear a most difficult *ingenium* to design and calibrate, for insufficient infusion of vitality will not have the desired effect, while I believe an excessive infusion will cause the ill person to evoke such a fever as might prove fatal, or else to feel cured of all ills while yet unhealthy, that is, a wounded man might feel so vital that he arise from the chirurgical table and walk away, with his arm yet dangling from the socket, and bleeding, which would be most unseemly.

For the most accurate imparting of the effects into the ailing person, the effects of the *ingenium* must be conveyed with a wrapping woven skillfully of gold and silken threads, which may cover the patient all around, as though a cocoon or a shroud. The silk should be of the brightest and most cheerful colors available, that the patient may not believe a shroud it is indeed, and thereby panic and damage the *ingenium*, which is very delicate by nature and design, and poorly-disposed to abrupt shocks or motions.

This is because of the fact that the *ingenium* itself must be blown of glass, so as to afford itself to be perfectly unreceptive of the energies it produces, for any build-up, whether in the *ingenium* or of the surroundings themselves, can cause a wave, which, suddenly imparted upon the patient by whatever circumstance, can be deleterious in effects. As yet I know of no Italians so well-versed in the art of glass blowing that I deem them skilled enough to undertake the production of eccentric gears and precision-cast mechanical contrivances. Perhaps I can persuade the government to announce a reward for whichever artist can produce the best blown-glass clockworks, and then employ that person in the production of this most merciful *Ingenium Curareus*.¹¹

One final word of warning: The machine itself must not only be of glass, but it must also necessarily be kept fastidiously clean. This cleanliness is not for the pleasure of the patient, for certainly his awareness will likely not proceed past the wrappings in which he is laid, but for the prevention of any build-up of magickal potential upon the engine itself.¹²

INGENIUM PHLOGISTON

(LEVITATION ENGINE)

I have undertaken the design of an *ingenium* which may be suitably employed in purposes of warfare against the French by the noble Duke Sforza of Milano. And also for driving away the Ottoman Empire, for a device which might rout the unwelcome French soldiery will prove equally efficacious in driving the superstitious Turkmen back to the East from whence they hail.

I have spoken with several surgeons well versed in the alchemical arts, and none of these masters has yet been able to isolate phlogiston, but which once isolated, will be a great benefit in creating vehicles, which could hang themselves in the air, relying upon the buoyancy of phlogiston. I have several means of conveyance and waging war which depend upon such a technology, and so here I shall create just such an ingenium as shall obviate the need for alchemical intervention.

The Aspects of Magnetism

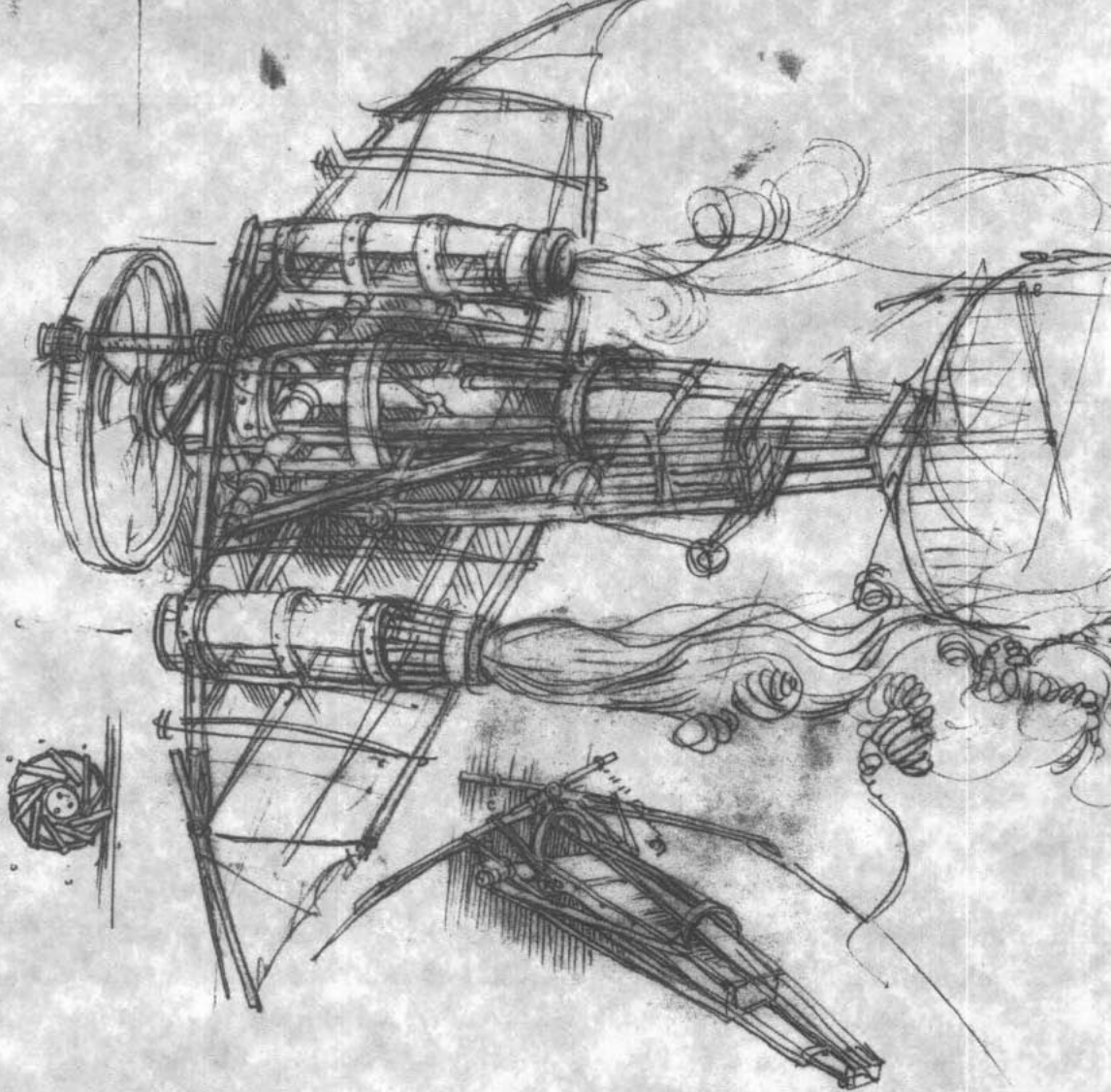
I have this day been studying the effects of magnetism, and observing the behavior of a magnetic compass. The magnetic powers exert themselves in a collinear fashion, enveloping the entire globe in their grip from north to south. With talons strong enough, it should be possible to elevate one's self upon these lines of force, climbing upon them as though up a ladder with invisible rungs, to whatever elevation.

For the climbing, it shall be necessary to create a very special shape for that portion of the *ingenium* which shall arrest itself upon those lines, and cause the *Ingenium* to be pulled up upon it. This shall have a sharp point on the uppermost edge, to divide the magnetic lines out of its way, yet without sundering them. And then, these axes of force shall fall in beneath it, and there be caught by the insinuations of the bottom edge. This shall require a shape like unto a spade.¹³

By a careful synchronization of these obcordiform climbing blades, they may seize hold of the magnetic axes in series, one gripping hold, while the others release and propel themselves further up. By varying the cyclic speed, the *Ingenium* shall rise upwards or decrease in elevation, for there shall indeed be some slippage. Should the speed of the *Ingenium* be greater than the slippage, it shall rise; else it shall fall.

By reversal of the blades, the Ingenium Phlogiston shall press itself most firmly into the ground, such that no man can move it from the spot. If the control arm is forced needlessly far, it is possible that the ingenium shall bury itself or crush itself against the rock, hence I shall have to emplace a safety catch upon the arm to avoid such an eventuality.

13. TO: But wait!
Spades is the suit of
spiritual magick!



A small armored chariot, equipped for elevating itself into the atmosphere, and Chinese rockets, or a mechanical fan for propulsion, and armed with a cannon or a ballista, would be most effective in reconnoitering the enemy deployments in battle, and also in the creation of havoc within their lines, by attacking their officers and leaders directly. In fact, if the armored chariot had powerful enough rockets to impel it, the *ingenium* could be powered by a rotary fan, which, set into motion by the speed of the chariot through the air, would propel the *ingenium's* workings. This propeller would require that the air chariot move continuously and at great speed, or else the *Ingenium Phlogiston* would not receive enough power to operate, and the chariot would fall out of the sky.

There are also peaceful employments to which this ingenium can be set. It can be used as an elevator device for a carriage for which to ascend to the top of tall structures like the cathedral, or to raise up large signs for the conveyance of messages across great distances.

Peppone the Craftsman

While lunching at the plaza this afternoon, I was again surrounded by sycophants of every nature, most of whom sought my favor upon their artworks. However, by diverting the discussion to matters of

invention, and the construction of large engines, I was able to engender a lengthy discourse upon which craftsman in Firenze is most experienced and skilled in artifice. There was quite some argument among those present upon which of these worthies stood indeed above the others, and while the debate grew more heated, I quietly excused myself and paid a call upon one of the gentlemen whose name had arisen frequently, which is to say, Peppone Camillo, who operates in the neighborhood of the city hall which is being erected.

Peppone I found a most interesting and energetic character, and he agreed at once to build a machine to my specifications. He seemed a most curious man, and never ceased moving the entire time we spoke, not even to partake of wine, which he did while working upon his lathe, a custom which I found mildly alarming. I gave him an advance sum, and conferred upon him the plans for this *ingenium*. He bade me return in three fortnights, and, as he is a most efficient and tireless worker, I have no doubts but that he shall complete the project in the stated time. This is the evening of the day upon which he began his labors, so I shall set this *Codex* aside until the moment I have the *ingenium* completed in my hands.

A simpler system is to attach an Ingenium Phlogiston to a kite, and use the combination to bear a great rock aloft. The kite shall cause the assemblage to drift in a downwind direction, while the Ingenium shall

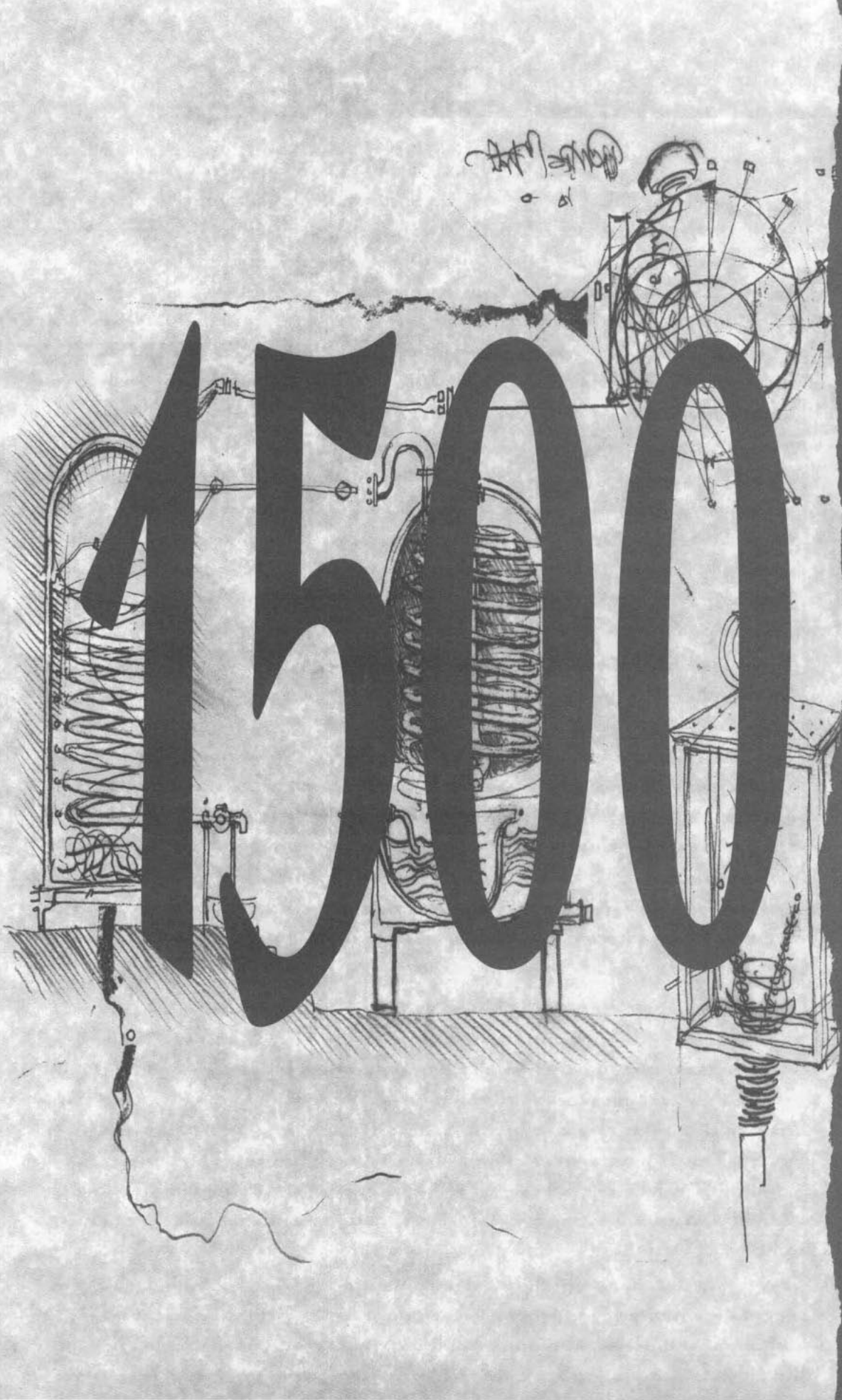


hold the missile aloft. By manipulating the kite from the ground, it shall be possible to aim the rock most accurately. By a calculation employing the triangle formed by the string of the kite, the elevation of the kite, and the angle of elevation of the kite string itself, the true distance from the holder of the string to the city may be readily calculated, and the rock sighted along the string to drop where it will.

A Great Calamity Befalls

It is a most calamitous effect which has resulted from Camillo's engineering my ingenium. The technician has taken the presumption of testing his skills by powering the ingenium, before informing me of the completion of his labors. I can only assume that he had the device switched to maximum effect, since that was the position in which I drew the control arm of the ingenium. Camillo rounded upon me and cursed me at great length, and forced was I to pay him the final sum of his work. He demanded more for the repair of his ceiling, which is now possessed of a hole, but I reminded him of my strict instructions not to engage the ingenium without my presence. He will work for me no more.

I am frustrated. I hope that it fell back to Earth in the Adriatic, since I wish it not to find its way into the hands of the Ottoman Empire.



GM: If anyone is found to have undertaken the Construction of this Engine, that Miscreant will Rue the Day he were born. Take Note! All are Forbidden to pursue this Invention! By order of the King.

VJA PEREGREUS

(DIMENSIONAL ENGINE)

Jt is now the last year of the fifteenth millennium of Our Lord, and His Holiness the Pope Alexander VI has declared the year to be a jubilee. Would that I were in debt that I might take advantage of this situation. But no, the word in the streets is that he is imposing a tithe with which he seeks to fund a new Crusade against the Turkmen, and in the plaza, the crowds are all there, but none spend as much upon wine and biscotti and tea as they had in days previous, for none wish to find themselves indebted to the church as a result of this most taxing levy.

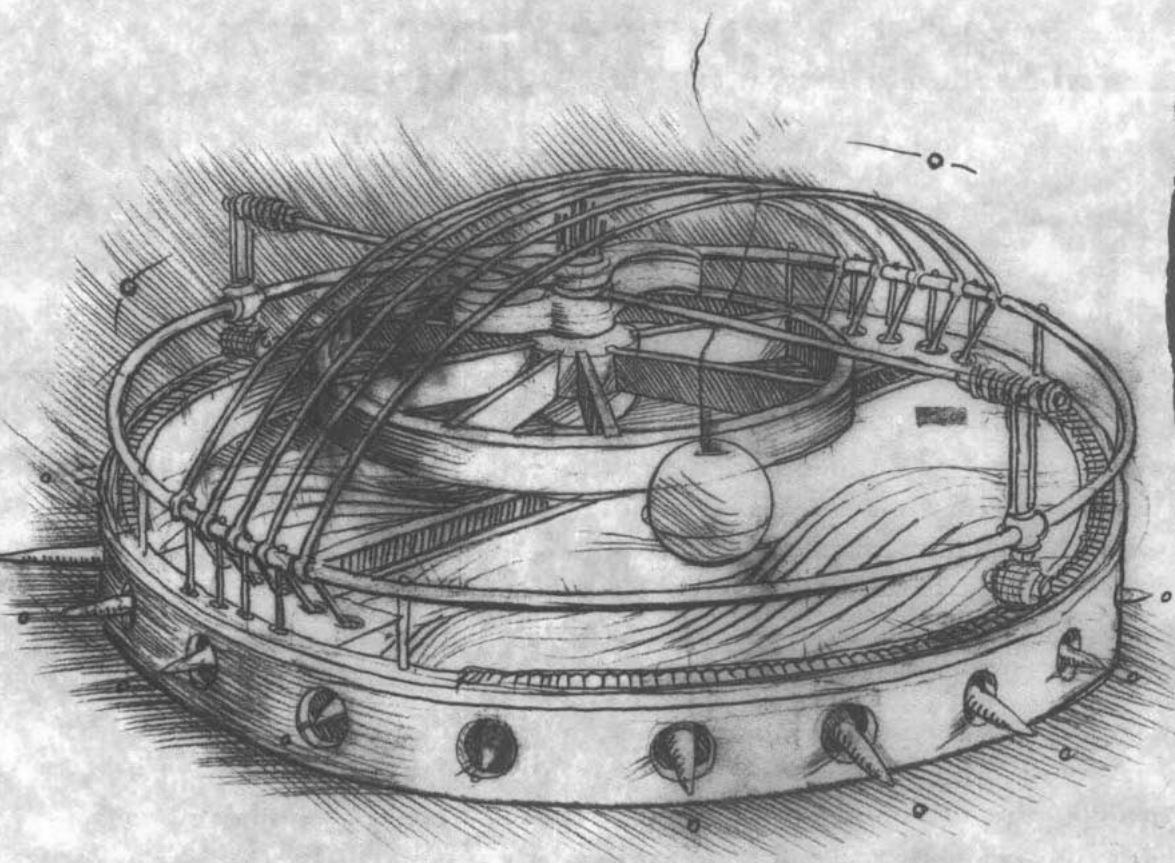
It is so obvious to me that merely making a man the Pope does not change in any fashion the fact that he is yet a Borgia, and therefore corrupt, bloodthirsty, and vain; yet no one will hold to these ideas, despite that all are feeling destitute as a result. The collectors at the church are investigating people here to ensure we give our due tithe, and all appear to be too afraid to stand firm in their beliefs, and rather follow the Catholic Church to war. It appears the corruption of the Roman emperors lingers still.

Perhaps I should leave this place. Although I love these fair lands, and no cities to be found anywhere can compare with Firenze, Milano, Venezia, Mantua, and other gems scattered across this fertile countryside, I grow weary indeed of the misbehaviors of those who are in power. It seems to me that God's desire would be to find a way to make peace with the Turkmen, or to turn the other cheek, or to convert them to Christianity, and not to fund another slaughter. I would be willing to wager that the Pope will never launch a new crusade with the funds he has amassed from the people, although I find myself reluctant to voice such an opinion openly, given what happened to Savonarola two years ago. I find myself inflamed enough with the pursuit of my interests.

Perhaps a Long Journey is in Order...

Upon minor experimentation, it appears that it will be most facile to create a portal which shall open onto other places. With this, I might be able to travel the world without more effort than it takes to walk to the plaza and purchase a cup of hot Arabian black tea, imported fresh from Mocha. This I find most exciting. With it I might be readily able to visit Columbus' Indies, or feast with the Norsemen, though only in the summer when it is warm up there, for I have no taste for endless cold. Or travel to the heart of Africa.

I find the countenance of the device to be quite intriguing, although I am not certain whether I appreciate its appearance or despise it. I find my reaction most curious. The construction of this device was simple enough, that I have been able to create one of my own crafting, and it has taken



but a short amount of time, and little in the way of expenditures. I have been able to salvage some parts from other creations, and have pressed a large clock into service as the main powering engine. The actual engagement of the device I shall undertake in my own chambers, so as not to have another experiment ruined by the ill-advised efforts of one like Camillo, or else destroyed by an unforeseen reaction of someone too eager to earn the favor of the church, so as to avoid having to pay the tithe.

It is now arrayed properly in the center of a room which I have vacated of personal effects for the purpose of this testing, and now the *Via Peregreus* is to be set in motion. This is fantastic! I am finally able to engage in a real demonstration of these my observations about magick! I shall record all that I see.

There is a glow forming about the *Via Peregreus*. A circle is being inscribed in the air, which in turn begins to smell sulphurous. My hair stands on end as does a guardsman. The wheels spin faster, and now the interior of the circle begins to smoke. No, it is a different place, where there is smoke. I see something. It draws closer to the portal.

Its eyes



It has taken the *ingenium*. Perhaps it is best. I wish not to see it again.¹

1. TO: Why is it always the most dangerous acts that are the easiest to do? It's far easier to hate someone than to take care of him, it's easier to fall down the stairs than eat healthy, get someone pregnant than marry her, and according to Leo here, it's far easier to create a magickal engine to summon a living fire-breathing demon into your room than it is to create a magickal engine that will save your life. Great. Just great. Some stuck-up villain is going to make one of these, try to bargain with a demon, and end up unleashing something worse than anyone can imagine upon New Europa. But then, if Leo's story is true, something out there already has an engine to put it wherever it wants in any world. I can only hope whatever it is screws up royally. I think I'll go silverplate my sword.

That, and start attending church.

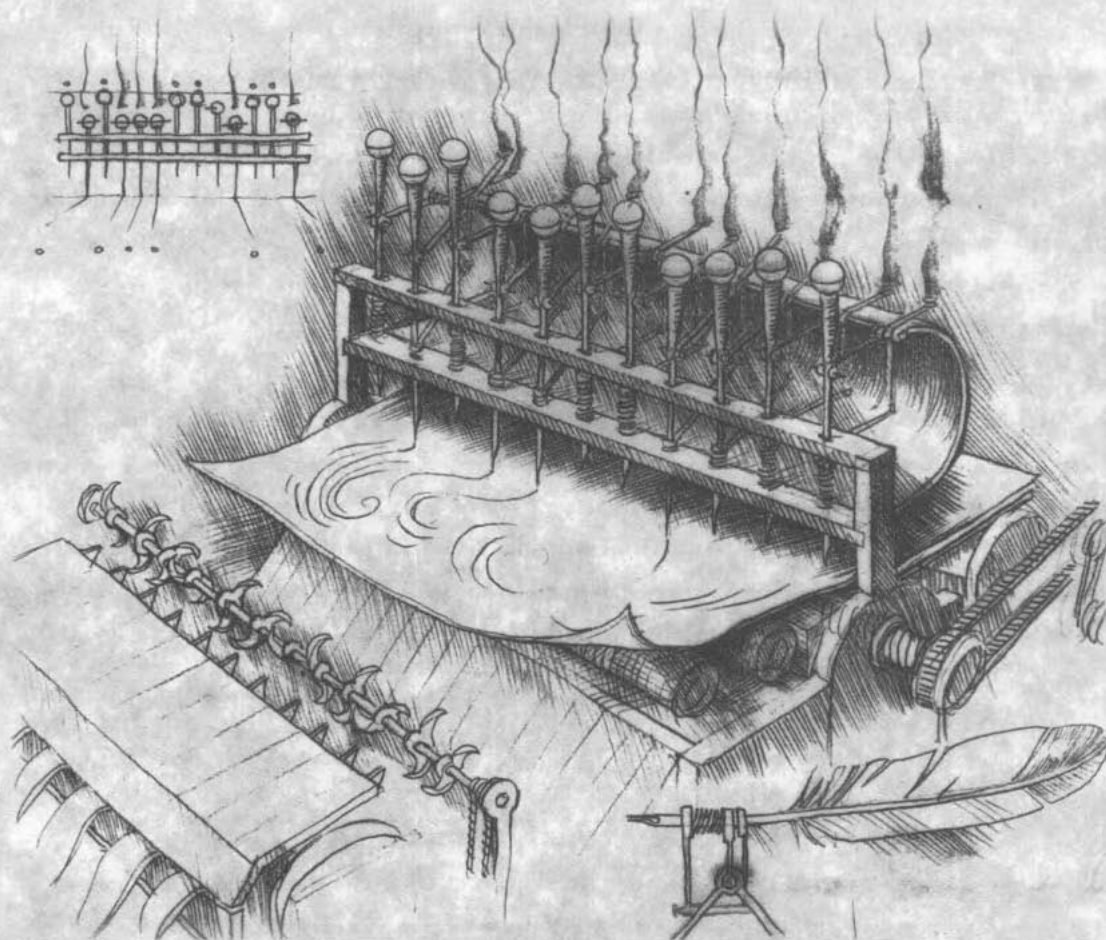
INGENIUM PERPLEXUS

(CIPHER ENGINE)

Recent setbacks notwithstanding, I have decided, in my own fashion, to publish the results of the *ingenia* which I have obtained to date. These *ingenia* which I have thus far designed and invented shall be included within the book, as shall the pages on which I ruminated about the theory of magickal knots, their creation, their use, &c. I believe that, the dictates of the Pope at last being recognized as the corruptions they are, or so I hope, that Italia shall be well enough prepared for the revelations of which I shall set forth many. If not those learned men of Italia, then, perhaps those from foreign lands, less dominated by the fears of the Catholic Church, shall be interested enough to pursue these concepts. I have concerns about publishing, however, that these ideas may be used for ill purposes, or against Italia, instead of the betterment of mankind. I have been tempted to control the flow of this information by printing the entire manuscript in code. Then, I could force those interested in these works to petition me for the cipher with which to make sense of everything, in which case I will only yield the key to those with whom I am impressed of their demeanor and intent. However, it is certain that the code can be copied by unscrupulous men, as can the pages of a book, and then once more, the information and ideas will be transmitted where they may, and criminals shall benefit from the sale of my *Codex*.

An Engine of Cipher

Ave Maria! I have an inspiration! I can, with the careful creation of a new *ingenium*, cause the pages of this notebook to be reproduced in a manner which is completely unintelligible to anyone, and as a result, the pages, though incomprehensible, shall nevertheless not be magickal of nature. Next, by reason of the encryption of the pages, I shall also have to design a method, convenient for use and portable, by which these pages may be converted back from nonsense into intelligible and legible form. This shall necessarily require a most detailed device, an *Ingenium Perplexus*, which shall, enacted by contrast of the ink on a page with writings, be engaged to so interpret the writings and to make particular nonsensical scribbles, which, when properly engaging an *Ingenium Perplexus* of identical but opposite aspect, shall be known to cause that *ingenium* to revert the scrambled jottings back into legibility. Each *ingenium* shall have to be perfectly mated with its opposite, and, to allow those purchasers of my new *Codex* to return ideas to me, without fear of interception, they shall each have to be capable of operating in a reversed manner. Again, by making these *ingenia* in matched pairs,



and only two of each kind, each with a forwards and backwards mechanism, I can ensure that rival inventors shall not be able to steal each others' letters, saving only by theft of the competitor's Ingenium Perplexus.²

The Ingenium shall be equipped with several quills, each well-equipped with ink, according to the design for an improved quill, which I have in another Codex around, though I cannot find it at this moment.³ These quills shall be set in a free-floating manner, balanced as illustrated here, to be manipulated by the magickal energies caused by the written parchment passing into the center of the ingenium. These quills must be most finely balanced, as to react to the slightest pressure, for surely the pressures engendered by the magickal field of the ingenium shall be delicate indeed. And the ingenium must be operated on a solid stone floor, in a sealed room free from drafts, or insects, and the operator must remain perfectly still, lest he also reduce the ingenium's work to nonsense by jarring one or more of the quills. And an Ingenium Solairs must be built inside, to illuminate the pages as they are encrypted.

It is also possible to send drawings encoded, as the magickal operation of the Ingenium only encodes the presence of lines; the Ingenium Perplexus knows not a line of a letter from a line of a drawing, hence drawings and illustrations shall likewise be reduced to nonsense.

2. TO: Carumba!
This is like the German Enigma Device—it was perfect; the only way the Allies cracked it was by stealing one. Furthermore, the Enigma could only type letters; this sucker can scribble. There'd be no way to crack it; it'd be like trying to crack Chinese pictographs without even speaking Chinese!

GM: By Jove! We need these in our Embassies! Think of the Security it would offer our Dispatches. That'd put a Kink in the Kaiser's Crumpets!

3. TO: WHERE!!?
WHERE!!? This is new! No one has ever heard of a Leo pen! I WANT IT!!!

4. ED: These particular notes prove that this is a valid, unbiased, first-person account; in fact, this proves that this *Codex* is da Vinci's original notebook. Consider: Were this *Codex* one of the copies which was published, these comments, and the text which follows this chronologically, would not be present. Certainly, given the religious climate of the time, all the references to the Borgias and Pope Alexander VI would be removed before publication. Despite this, there are expert skeptics who maintain that da Vinci was far too logical a person to delve into black magic and sorcery, and these scholars claim this *Codex* is an elaborate hoax published by one of da Vinci's detractors, or perhaps even by da Vinci himself as a sort of joke; or else a deliberate attempt to frame da Vinci for practicing sorcery.

The sheets of parchment upon which the enciphered marks shall be made must be fed individually, however. For items which are of utmost importance, such as messages sent to clever agents operating in foreign cities, there can be attached several thin blades, which shall reduce the original parchment to ribbons. But I need not this measure of security, for I intend to make several copies of my *Codex*, twenty or more, for the selling, although each shall also be given with an *Ingenium Perplexus*, which shall at once protect and prove my work.

No, this I cannot do, for it would break me, or else the fees which I would be forced to levy upon those, who are interested in my book, to pay, would drive them away, and again I shall have no one with whom to share my enthusiasm. I shall have to publish this book as it is, of course, certain comments edited out, to avoid the scrutiny of the Pope. And also, I shall leave certain ingenia out of this book, most notably the *Via Peregreus*. The copies shall be ready in a few months.⁴

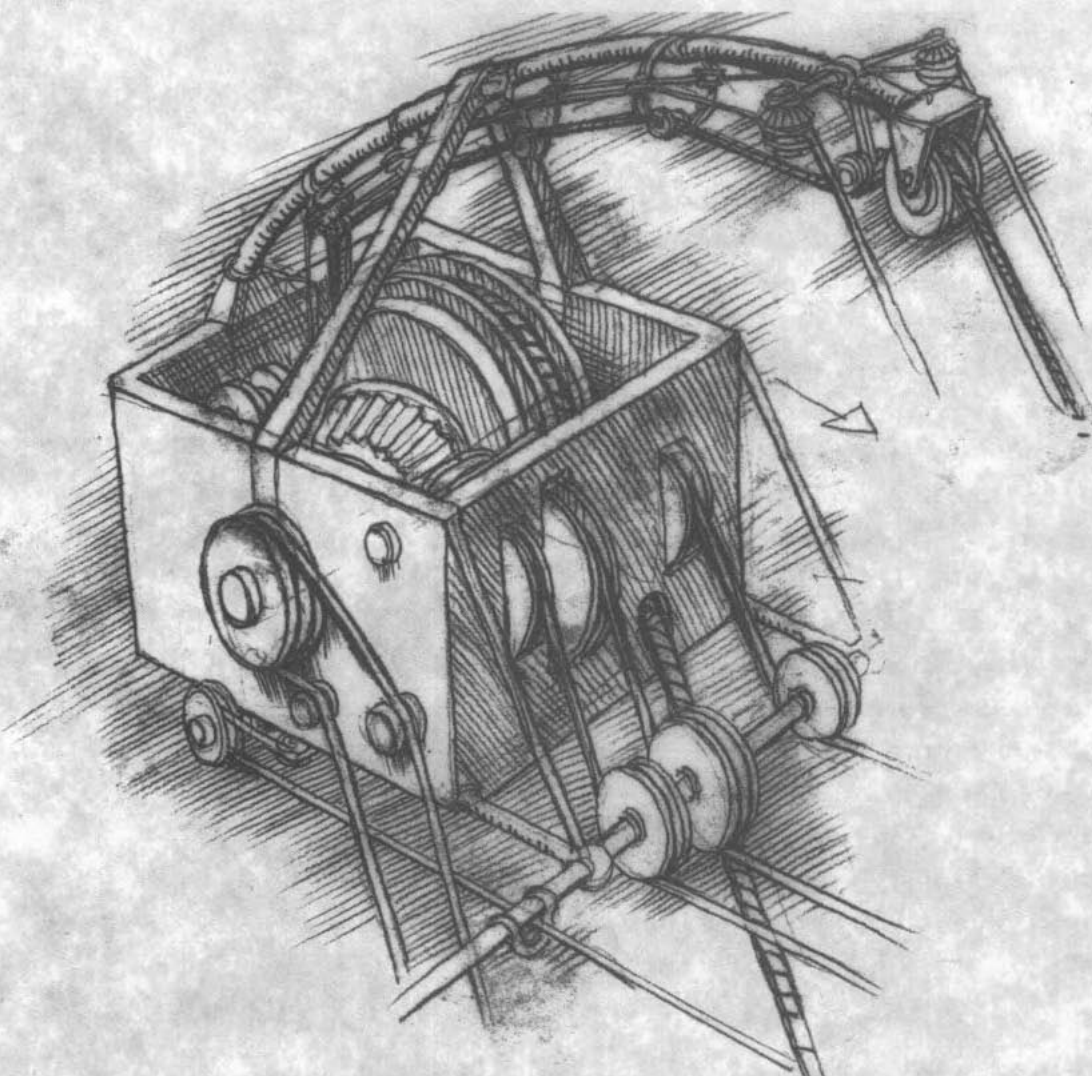
INGENIUM MAGNETICUS

(MAGNETIC FORCE ENGINE)

I have thought again upon the effects of magnetic axes of force, curved across the landscape from one end of the earth to the other. In this I recalled my visit to Venezia, where the canals are plied by boatsmen, and where I saw gondoliers at work, and also provided technical aid in the shipwrights in keeling a vessel for repairs. In this, the magnetic forces I believe are as invisible and unbreakable ropes, but deformed not by stresses in a downward direction, but actually buoyed in a graceful arc above the lands from one end of the Earth to the other, where each line of magnetic force is rooted or attached.

A gondolier pulling a boat with a pole propels his craft forward, and in a likewise manner, do men pull at a boat with ropes. Were the ropes to be grounded miles away, it would make no difference to the work of the shipwrights, and were the gondolier's pole to extend from the end of the earth to the end of the earth, he could still ply his craft by pulling his body along its length. In this manner, it can be readily seen that the lines of magnetic force, being of themselves inviolate and permanent, may be used, with an *ingenium* designed for such a purpose, to propel a craft across the surface of the planet in much the same manner as gears can be used to propel links of a chain.

In essence, the *ingenium* will act as though it were a magickal pulley system, which, using lines of magnetic force which are intangible and invisible, yet approaching the infinite in number and of exquisite finery of detail, may be passed through its system repeatedly and without loss of efficacy, excepting by which the *ingenium* is perfectly aligned



5. GM: I disagree with the Old Man here. Even when operated in reverse gear, the Engine should pull upon the Magnetic Lines, propelling the craft. In this manner, it would work like a Man pushing a Wheelbarrow instead of a horse drawing a Cart. By thus being able to place the Engine at the rear of a Floating Vehicle, it would be less vulnerable to Damages and Collisions.

perpendicular to the magnetic threads, in which case the *ingenium* will not pull itself along the lines, but merely pluck at them in futility.

The orientation of the device is most easily accomplished, being merely the direction of the pulleys with respect to the *ingenium*, that is, the *ingenium* will be drawn irresistibly towards the magnetic pulleys as they perform the efforts on the magnetic lines. As designed here, the *ingenium* cannot be worked in reverse, for the pulleys rely upon the tension of the magnetic lines to draw themselves towards them, and in reversed effect, by pushing against the ethereal rope, the magnetic lines would become hopelessly snarled, magnetizing the *ingenium* beyond use.⁵

Arise, O Mechanism!

Such an *ingenium* would necessarily require the use of some sort of Elevating mechanism, in avoidance of having to overcome the forces of friction upon that which is to be transported. It is far easier to propel a craft through the air, which is frictionless, than through the ground, which is filled with resistance. Thus, employing the *Ingenium Magneticus* into a suspensible craft of my own design, we find a vehicle suited to the conveyance of people rapidly over great distances.

6. GM: We should be able to duplicate this, but employing a larger Magnetic engine for steering, and mounting it upon an Armored Dirigible of the sort designed by Count von Zeppelin. A Fleet of these, suitably equipped with small Cannon, would be an effective addition to the Bayernese Arsenal. Rhyme: Please begin at once on adapting this Design, and I shall confer with the King for Appropriations.

TO: Yep. Ours are better. I had a bit of a hand in their design, you know. Having seen dreadnoughts and battleships helped.

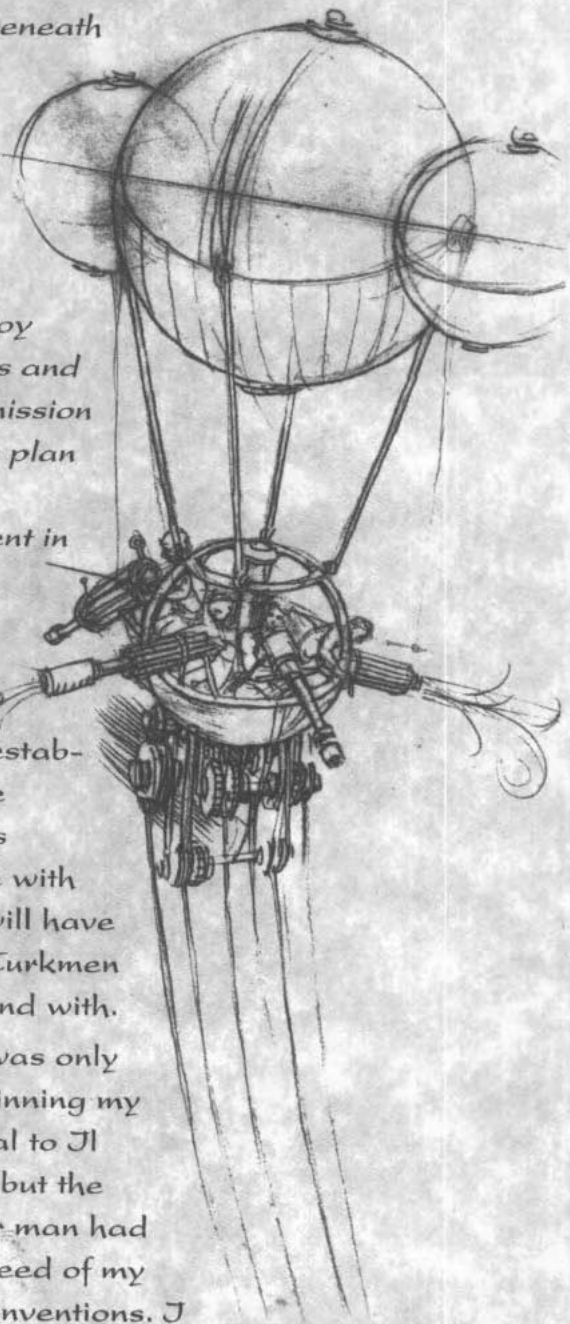
Equipped with a shield suspended beneath the passenger basket to protect against musket-fire, and staffed with soldiers employing ballistae or musketry of their own, we can create a war craft even better than my armored chariot, which can bypass the defenses of a city wall and employ direct fire and the dropping of bombs and fires to bring an entire city into submission with minimal loss of casualties. This plan I hope to bring to the attention of Lodovico Sforza, for the engagement in the retaking of his city.⁶

Glad tidings have just reached Firenze! Lodovico Sforza has recaptured the city of Milano to reestablish his Duchy, against the will of the French army! The Duchy of Milano is restored! Now, if he can make peace with France, all shall be well, and Italia will have

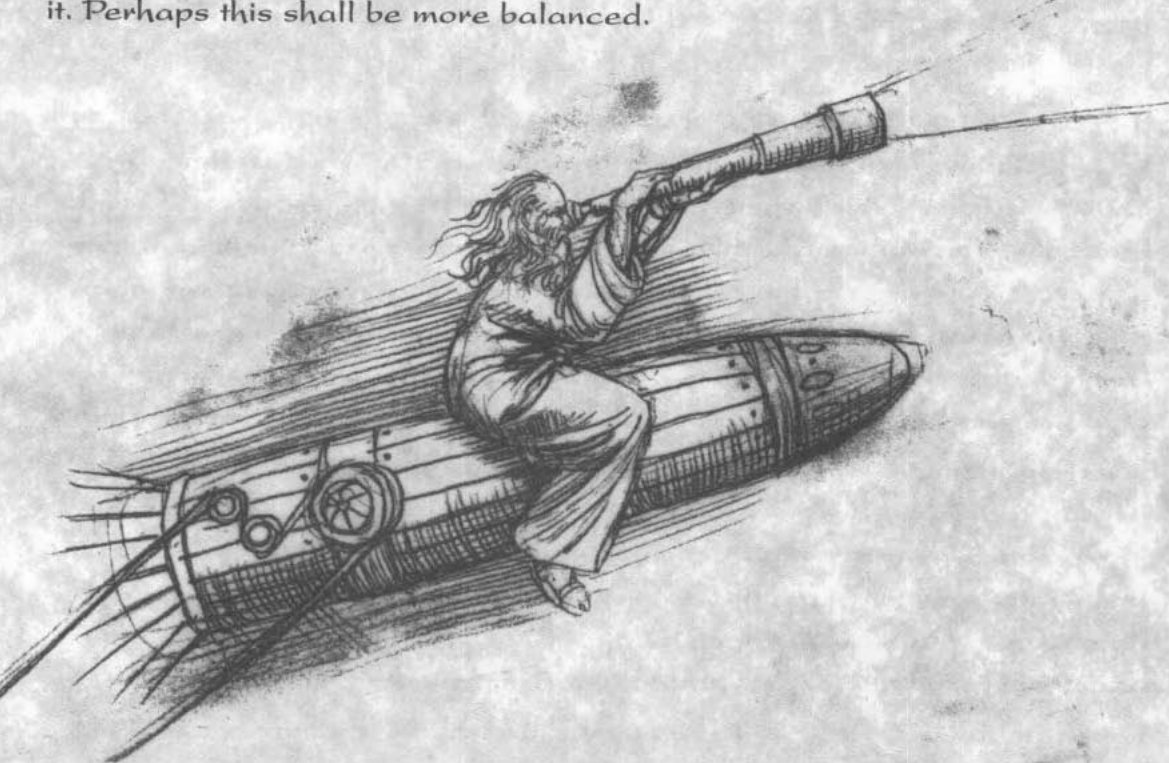
but the Turkmen to contend with. And I was only just beginning my proposal to Il Moro, but the clever man had no need of my inventions. I should visit

Milano, but can ill afford the lengthy travel at this time to do so.

Perhaps with a smaller Ingenium Magneticus, and a large in-built rocket designed to suspend both the ingenium and a person above the ground for an extended period, I could travel across the mountains more rapidly, and conclude my visitation without unduly delaying the Battle of Anghiari, for I dare not offend my new patrons at this early juncture. I also dare not ignite my clothing with the exertions of the rocket, so this design will require further thought.



Jfind that the balance of such a device is not in order, that used in such a manner I might rotate forward, and be thrust into the ground by the rocket as the *Ingenium Magneticus* pulls me forward. Truly walking the earth should be far easier on the constitution than plowing it. Perhaps this shall be more balanced.



No, this would be a most undignified manner of transport. I shall have to counterweight and balance the initial design. Ah, but if I were to⁷

CENSURUM VERACEUS

(CONFESSION ENGINE)

Jhave had plenty enough of the Borgia family! I am furious! These Valencian nobles—they are nothing of the sort—have made a complete mockery of all that is Holy, let alone all that is Italian. We have heard tell that the husband of Lucrezia Borgia, and this is her first husband, since the other marriages were annulled, and hence never existed, has died. Presumably he died of a weakening of the heart, which is not a surprise since many hearts have been weakened when Cesare skewers them with a stiletto. With Cesare's bloody hands, he should take the name Cardinal Sin. I am furious!

Of course, Cesare being a Cardinal, it is certain that he shall deny any wrong doing, and as he is an ordained member of the clergy, he is incapable of lying, thus we shall all have to accept his innocence in the matter. He is as innocent as a mongrel dog, or a plague-ridden rat! What this country needs, in fact what the entire Catholic Church around the

7. GM: Were to what? I hate it when the Old Man leaves Thoughts unfinished!

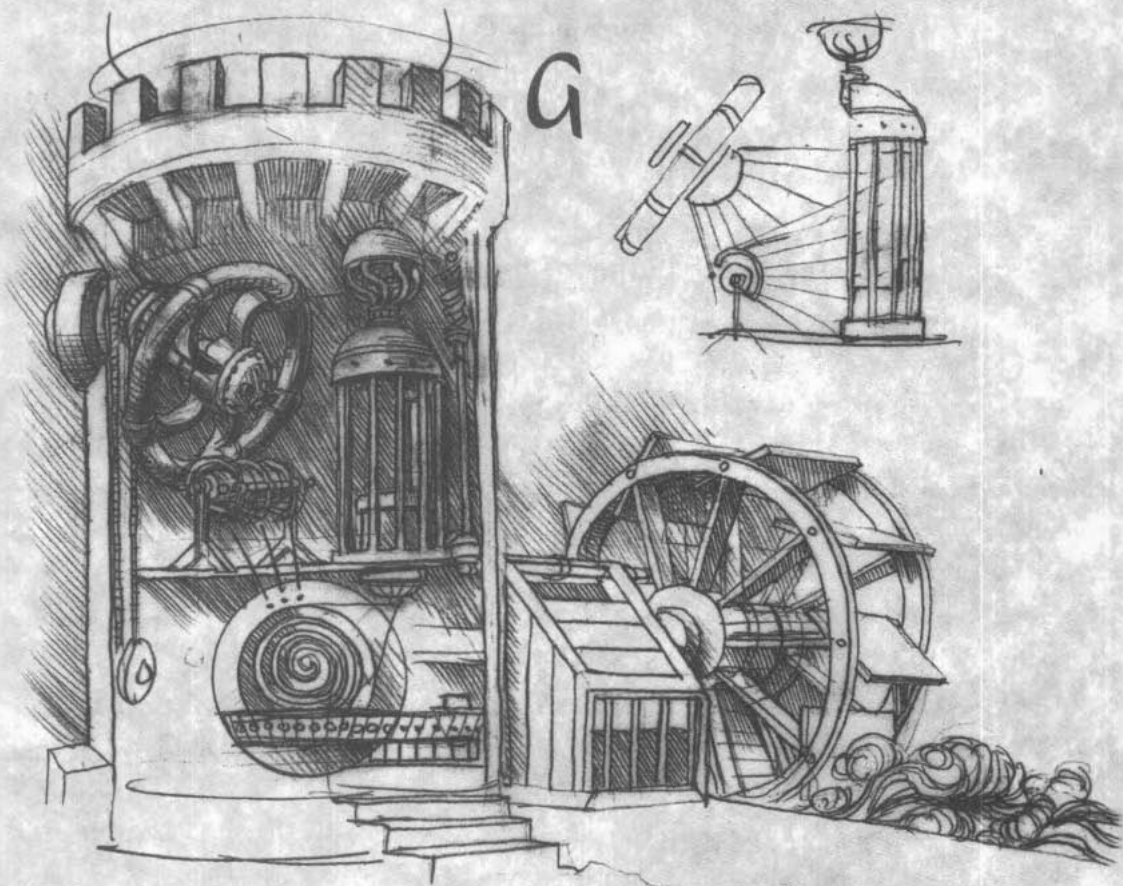
whole continent needs most desperately, is an *ingenium* which can cause the truth of the matter to be revealed once and for all. And not just the death of Alfonso of Napoli, but also of his brother, slain so long ago. Poor Lucrezia, widowed after but three years. I hope she finds a proper husband who can shield her from the intrigues of her corrupt family. She has such an interest in the arts.

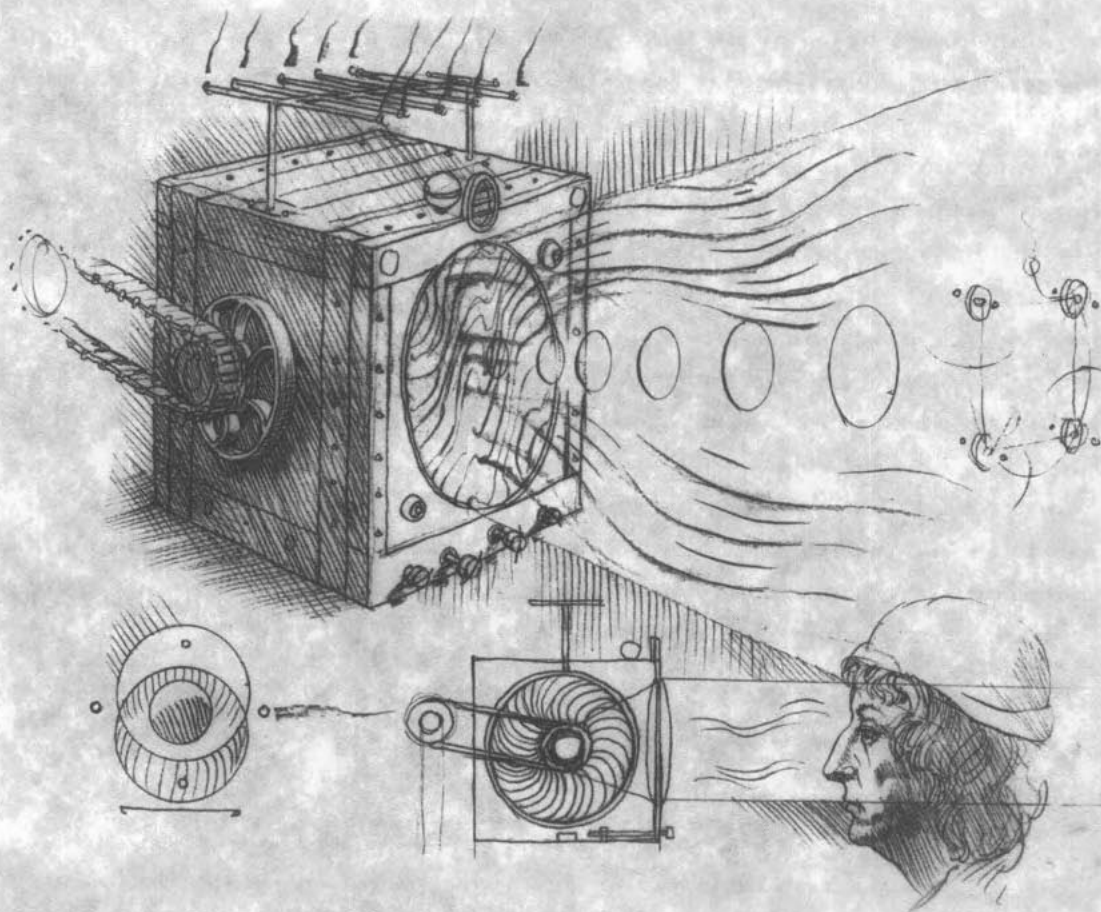
The Truth Must Be Revealed

While one might find the truth through scrying into past times with a magickal window, such evidences can be dismissed as an illusion made through malice aforethought. Far better instead to hear a confession from the mouth of the criminal himself! This requires that an *ingenium* generate a field which causes all to speak under command the truth, in fact the whole truth and nothing but of the truth. So help me God, I shall do this thing and bring down the Borgias for their crimes.

It is not necessary, to focus the effect of this mandate field, perhaps even preferable, because to protect against corruptness amongs the police and other investigators, an omnidirectional effect of this ingenium is a necessity. In point of fact, a discussion between Borgias and the powers of the law in which neither side spoke but the truth, might be a colorful, entertaining, and educational environment indeed for all.

The magickal energies are to be routed through the cylindrical helical gears illustrated in drawing A, with the aspect of clearance between the





gears being the ratio of five to seven, this being according to my calculation that which will wring from the imperative field the opportunity for untruth, without the loss of the imperative to speak, for it does no good to force someone to speak the truth, if he will not answer the questions put to them.

Of course, truth is as pure a matter as possible, so it is required that the *ingenium* be created of the purest materials possible, however silver shall be of no use. Better much that it be made of beaten gold or perhaps platinum, and lubricated with pure oil or perhaps holy water, if a significant amount can be had without complaint from the local priests.

To make this *ingenium* powerful in aspect and irresistible in dominance, it is my intention to install it in a room of a tower built among the banks of a fast-flowing stream, therewith to build a water wheel with which to provide the *ingenium* a constant and unwavering source of motivation, which shall be seen to invest most thoroughly the area with the imperative for veracity. It will be necessary to admit a disengagement mechanism to allow the *ingenium* to rest while the magickal energies of the area are being restored.

Another Idea Occurs to Me

You must know, of course, that to interrogate any of the Borgia family under the influence of this most telling *ingenium* would cause

8. GM: Fiendishly clever. With these two Engines, a suspect might be interrogated at Great Length, speak only the Truth, and then forget that he had ever revealed anything. As I understand Illuminated Magicks, however, the Incomprehensibility Engine would only cause Forgetfulness of that which occurred during its Operation. It would take a different Construction to cause a permanent form of Amnesia, which could be a dangerous Undertaking for all.

TO: The idea of an Incomprehensibility Engine freaks me out. Imagine what it would be like if suddenly you could remember nothing for longer than about half a second. An armed robber would forget what he was up to, perhaps give his gun to his intended victim, and start to wander off, then lie down and take a nap. A policeman seeing the scene might forget who the criminal

great calamity to befall all who undertook the pursuit of the Lord's truth in the matter. Especially if those who questioned the Borgia (whichever one it was) were themselves under the influence of my *Censurum Veraceus*, and thence spoke freely and honestly of their own dispositions towards this most powerful and corrupt family. To that end, it is but a simple endeavor to make a secondary ingenium which shall work at the same time as the *Censurum Veraceus*, and which shall have a similar impact upon the person's psyche, by using a different construction of magickal energies to influence the mental processes of the person. This *Ingenium Obfuscarius* would cause those so affected to forget all which had occurred while the mechanism of the engine were engaged. It would be required to be of smaller impact in radius, so as not to cause the police to forget the confession as well, although the inclusion of a large glass lens would be of great assistance in causing the effect to be focused in nature.⁸

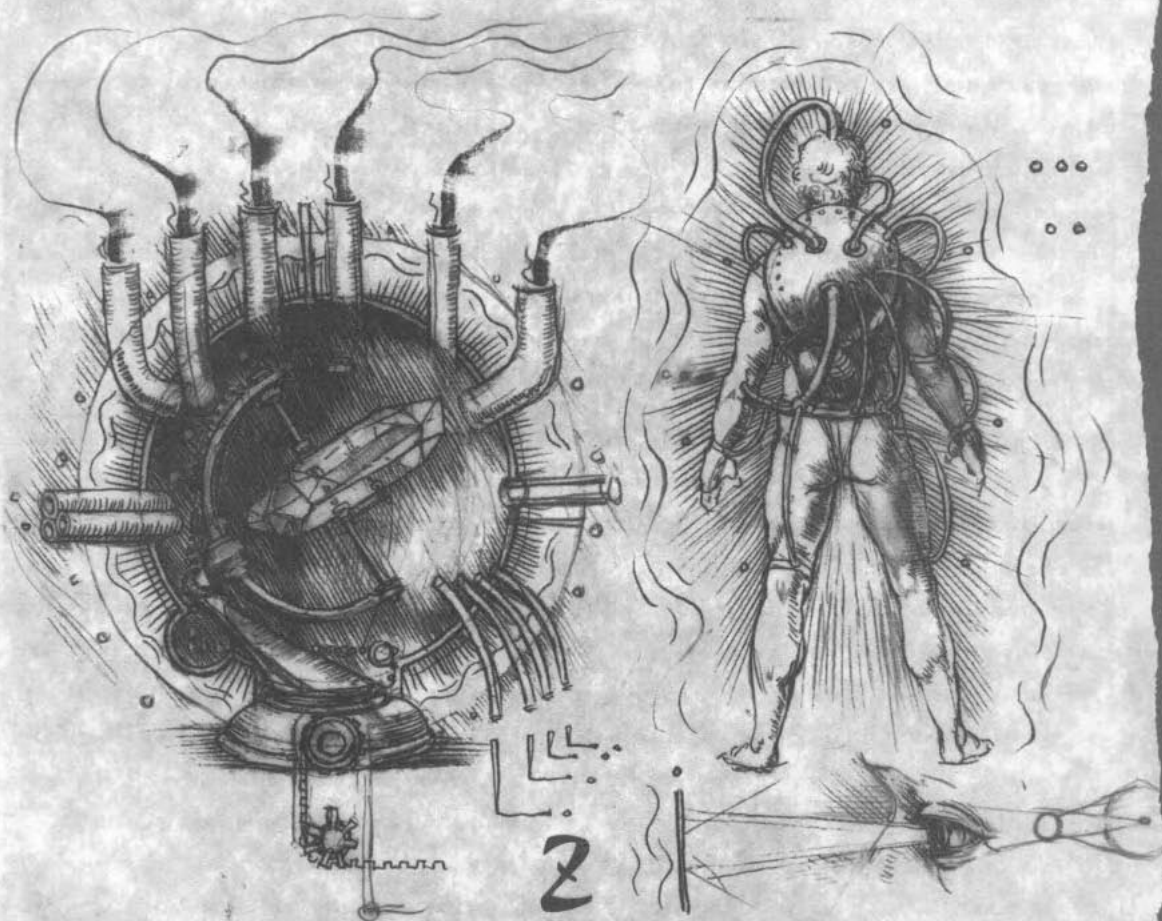
INGENIUM CONFUNDERUS

(JNVJSJBJLTJY ENGJNE)

Today I am dismayed by the slow pace with which bad news can sometimes travel through Italia. It is surprising to me, as well, for Italians are fain to talk at great and exhausting length about all manner of subjects, and to gesticulate with such force that they cause your inkwell to spill upon your papers. It is in just such a manner that I have received this latest and most unwelcome bit of tidings.

I have been given word that the French have retaken the City of Milano from the forces of the Duke Sforza of Milano, my former patron. It is said that Lodovico now languishes in prison, awaiting the pleasure of Louis XII. Such are the fortunes of war and politicking, but I had better hopes for Il Moro, and now it is apparent that I shall never be granted the pleasure of completing the statue he wished of his father. And a magnificent statue it would be, with not its equal in all the world! I will not return to that city of Milano again, for I am certain that should I appear, the French will force me into making some archway commemorating their triumph at the city gates, and I have no desire to bring their treachery to glory. Or perhaps they would press me into devising a new means of interrogating the Duke. Bah!

I cannot bear the thought of the Sforzas imprisoned by the French. It has soured my stomach, and now I must abstain from wine and spicy dishes, and restrain myself to pastas. I shall have to find a means of purging myself of this phlegmatism, and so shall pursue the invention



was, and try to arrest the bystander—remember, he can act upon his years of training even while under the effects. The whole idea is so strange, so silly, that it has to be incorporated somewhere. It would be the perfect cover for a master-mind to commit the crime of the century, if only he could find a way to exclude himself from its effects.

of a device with which JI Moro might be able to free himself from imprisonment. And if J am successful, and am able to test this *ingenium* J may make some effort to send one to Milano for his escape.

Invisibility is obviously one method which would work, for an invisible escapee cannot be apprehended unless he makes some grave error in the execution of his flight. But how to obtain invisibility as a result? The possibility of bending light around the person is one approach, as is making the subject perfectly translucent and non-refractive, like a solid form of the air itself. Another approach is not to make the person physically invisible, but to make nearby persons fail to notice the person's presence; this makes the person effectively invisible through the process of mental command. Out of mind, out of sight, as it were.

A Light Sublime

Of these, it appears that causing the light to flow about the person, like water around a rock, is the most easily effected, as it does not involve altering the physical parameters of the subject person, nor does the efficacy of the *ingenium* rely on the low magickal resistance or awareness of an interloper who might be in witness of the endeavor, which is an unreliable potential indeed, as is the number of persons who must be commanded, which requirement of power might mean that among a large crowd, the subject would be visible to many. The *ingenium* itself must be small, so as to be most easily carried about, which means that it

9. GM: With our new electric Batteries, it is possible that we could create an Invisibility Engine that was both portable and silent in Operation. I must confer with Rhyme upon this problem, especially whether we could Fabricate a Battery which was light enough to permit a man full latitude of operation.

shall affect but a small portion of the environment, but I believe that I can arrange for the effects of the *ingenium* to be distributed by a series of metallic cords, so as to erase more evenly the subject from sight, which distribution was designed and tested by constructing a mannequin of cantaloupes. Necessarily, large people might require a different distribution. Additionally, an independent source of motivation is not feasible, as an escapee cannot depend on the blowing of the wind, especially on a dark Mediterranean night, so the *ingenium* shall have to be empowered by a small but vigorous hand crank.

With the distribution of the transmission lines as shown in drawing Z, shown here, the small effects of the *ingenium* will be distributed in an arrangement such that it shall conceal the entirety of the Duke's subject's body. When a witness is close at hand, I suspect that the presence of the *ingenium* will cause the light to appear to eddy and swirl about just as water downstream of an obstruction, but this is not seen as an impact of major import, since a witness of such close proximity would be able to smell the garlic on the breath of any Italian I know. One other potential difficulty is the noise made by cranking the flywheel, to empower the *ingenium*. Or, if the subject does not connect all the distribution lines correctly, it is conceivable that a small disembodied navel shall be seen to be floating about making an escape, which would be unfortunate, because aside from being very suspicious in deportment, it also offers a target for attack.⁹

The greatest difficulty I shall have is in giving the Duke the *ingenium* while also conniving to have him be free of fetters—no force of invisibility is sufficient to overcome steel shackles. I could perhaps

No, it is of no use. Rizutto has stopped by to tell me that Duke Lodovico Sforza is being held not in the prison of Milano, but instead in France proper, and I have no desire to travel to that place at my age.

1501

~

1502

INGENIUM TUMULTUOSUS

(EARTHSHAKER ENGINE)

While meeting with Alberto Rizzutto again, over dinner this day, he chanced to bring to me some ill tidings, which is that the Turkmen have at last wrested the city of Durazzo from Venezian presence, therewith robbing their army of its strongest hold upon the lands of Asia Minor, south of Dalmatia, which could be said to be more of the Balkans than Asia Minor proper. This alarms me greatly, for it is a possibility now that the Turkmen will launch a great fleet, with the intent and purpose of landing upon the Venezian coast, striking at that fair city, and conquering her at once for subjugation into the Ottoman Empire. Or else that they may march along the Adriatic Coast, moving against Zara, and dismember Venezian holdings piecemeal for consumption by Constantinople. This is worrisome to me, for the effects of the Mohammedan zealots linger still in Spain, and I would ill see that happen to fair Venezia.

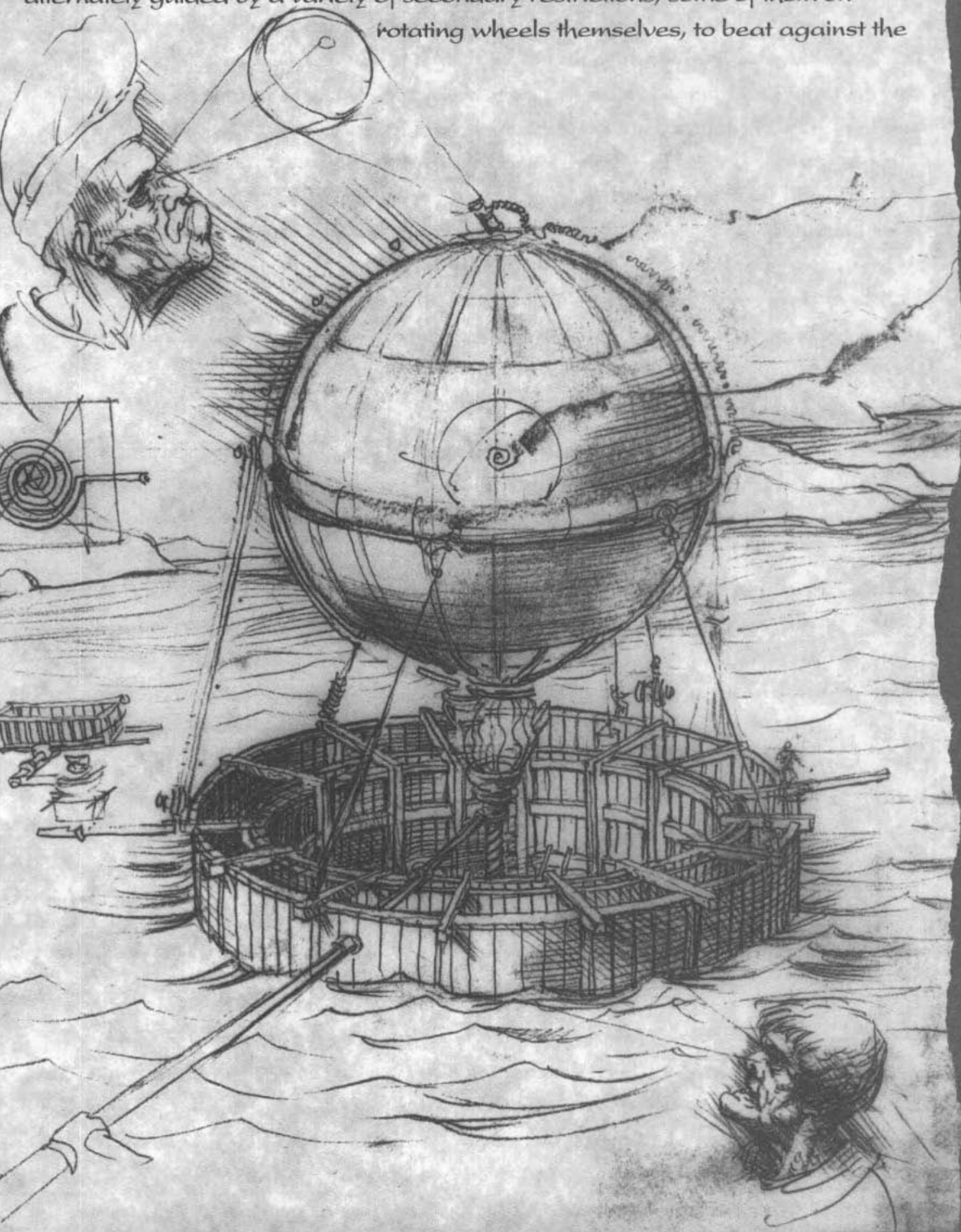
An Engine to Smite the Earth!

In preparation for such an event, I must calculate the necessary engineering of a device of magnificent destructive capabilities, with which I might be able to bring to a sudden demise any Ottoman aspirations to Italian lands, whether by invasion of fleet or march of army. The brightest inspiration I have had is to create an engine which acts upon the ground as does the wind against an ill-rigged sail, which causes it to whip itself. That is, an *ingenium* which shall, by its nature, cause a great trembling among the elemental forces of the earth, and thereby the tangible earth proper, for the disarray and disruption of the enemy. Also for the destruction of his fortifications and siege engines. In witness of which, the terror of his people would be great such that they would break at the sight of the approach of the Venezian army, and the new magickal engines of war employed by same.

In this manner, it is necessary to cause oscillations among the lines of elemental force. Or perhaps random vacillations would be better. Yes, that is the solution, for although cyclic forces can indeed create large disruptions, as evidenced by the method by which children disrupt a piece of rope in a regular fashion to play at jumping it (I can see them doing so outside my window, and I hope that they will cease their squealing, the better to help me concentrate), but in a similar fashion, it is possible that such a disruption will result in a minor, or even a pleasing effect, much as a violin string is set to vibrating for our amusement. Furthermore, regular disruptions depend in large part on the regularity of the medium of transmission, and the grounds of a battlefield are likely to be very poorly homogenous, a mix of stone and dirt and sand. Irregular stimulation it must be.

The result is finally, as seen here in its illustration, perhaps the most impressive in appearances of the *ingenia* which I have devised in these pages.

Mechanisms within the base draw in water and convert it to hot gas, which is released into the interior of the sphere. The passage of the gas into the sphere causes the cams contained within to move. Also, as the gases heat the cams and cause them to expand, they will rotate freer about their shafts. I have carefully calculated out the cycles of each of the cams contained within the great sphere. The purpose of these cams are to cause grapnels, which are alternately guided by a variety of secondary restrictions, some of them on rotating wheels themselves, to beat against the



1. TO: Hey, Mike, have you ever seen a Spazz Ball? They're rubber balls with bumps on them. Other similar toys have shaved edges and the like. Bounce one of those, and I think you'll see what this Leonardoism is supposed to act like. Just a lot bigger. And heavier.

GM: Good Grief! The Old Man has shown some Acute lack of Foresight here! Its unpredictability means that its Power Source will have to be internal, and very strongly built. Also, how in the name of Tarnation is one supposed to switch the Blasted Engine off when it's Bouncing around like an Irishman? A Looney waste of time.

inner surface of the *ingenium*. I chose seventeen grapnels, since seventeen is a prime number, and not divisible by any other. And the gearing of the many cams is such that the grapnels will not align themselves in the same sequence for some several thousand revolutions of the main drive shaft, which shall require several hours of continuous effort, on the part of the *ingenium*. The beatings of the grapnels causes the sphere to vibrate (these vibrations also facilitate the continuing revolutions of the cams). Furthermore, the engine is not created to be stable in aspect, and in fact is detachable from its stand. Once the correct vibratory frequency is achieved, the braces holding the *ingenium* in place are released, and the sphere set free to bounce about the landscape, transmitting its vibrations into the very ground, and causing it to convulse with tremors as the surface of the sea is convulsed with waves, until such time as its cams cease rotating. After the complete cycle of sequences is played out, it is impossible that the *ingenium* shall be seen to be standing in the same position as when it was first begun to operate, and this shall continue to cause the machine to have an irregular effect. Much as when a violinist bows the same notes but holds his wrists at a different angle, he plays a different string, so shall the *Ingenium Tumultuosus* provide a never-ending sequence of random and aberrant pluckings of the elemental forces. And causing tremors as a result.

A Setback

After great thought and meditation upon the subject, I find that I now am unable to secure a suitable testing location for my *Ingenium Tumultuosus*. Its effect would be so great, that any nearby would suffer needlessly, and doubtless cause the full force of the law to fall upon my balding head. Furthermore, after great concentration, I am unable to elucidate the manner in which I might transport the effect of my *ingenium* to a location more remote than that of the device, for it would be an ill-advised endeavor to cause a tremor of the earth at any location within twenty miles of the *ingenium*, to say nothing of the *ingenium* being the very center of the trembling. I shall have to shelve this design until I have a better patron, funding, and someone more reliable than Camillo to do my engineering.¹

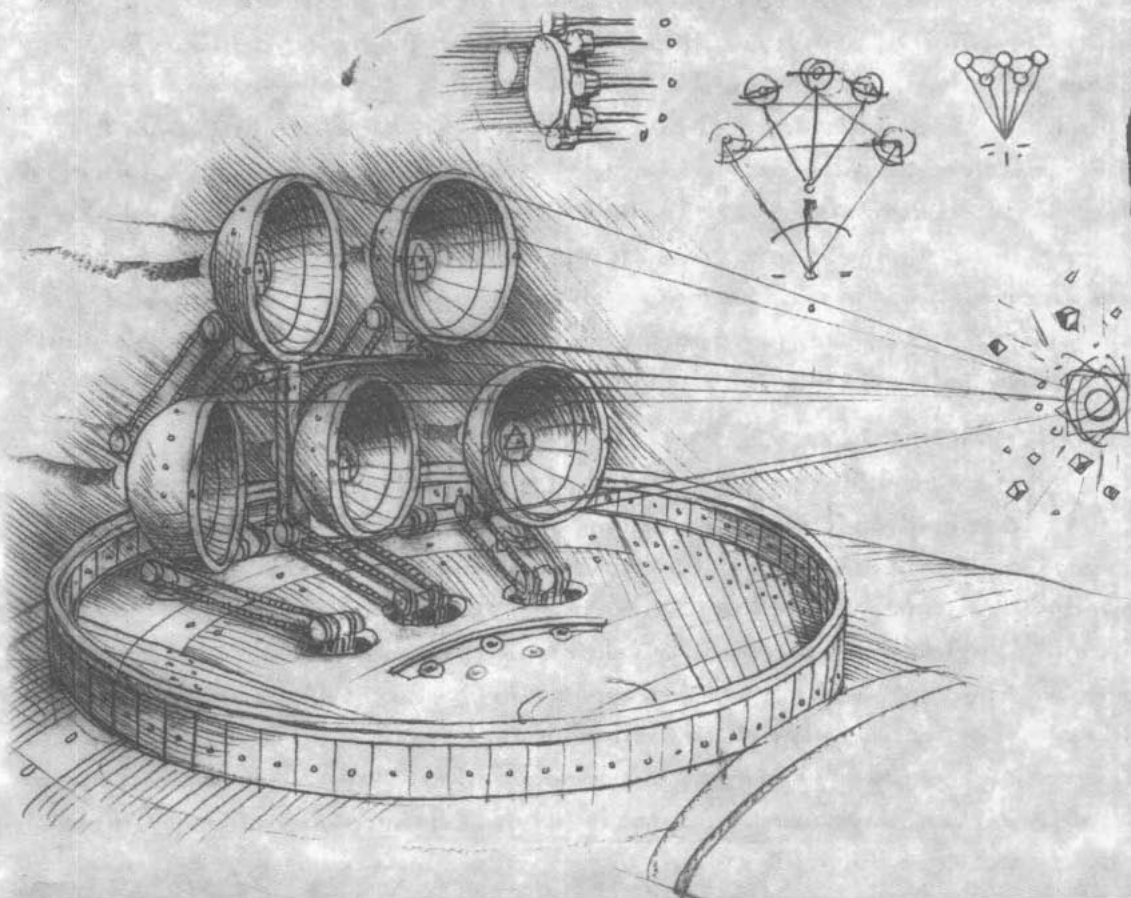
DJSSOLVENTUM UNJVERSALIS

DJSSOLUTION ENGINE

Since I am unable to test my *Ingenium Tumultuosus*, I have instead decided to undertake a different approach to creating an effective *ingenium* for making war upon the Turkmen. This device, properly deployed and employed by Venezian or Firenzan troops in the field, will hold inviolate Italian frontiers against the most ingenious inventions and strongest forces which the Ottoman Empire can array against us.

I find I must credit Rizzutto for the inspiration of this device, for over
 biscottis and tea he chanced to remark that we ought destroy every
 thing that the Turkmen have so as to bring them to a peaceable and favor-
 able resolution of this war. With that I thought of endeavoring to create
 the direct destruction of their fortifications, instead of employing the indi-
 rect method of shaking their very foundations through a quaking earth.
 Of course, poor Rizutto may have been taken somewhat aback, as he did
 not understand whereof I ejaculated my excitement of inspiration, and I
 left him abandoned in the plaza without explanation. It is unfortunate, at
 times, that I must write my inspirations immediately, lest I forget them.
 Perhaps the remainder of my biscotti and the bottle of wine which I for-
 got by the side of the table both will have served to solace my effrontery.
 This device has a smaller radius of invocation, and is thereby consum-
 mately easier to aim and set off without undue effects upon the user of the
 device or the device mechanism proper. For its effect itself, it is best
 described, that it imparts to the affected material an acute lack of cohesion
 of the stuffs of which it is made, causing it to fall into disarray, or powder,
 as though eaten by termites or rusted through completely, although even if
 the item affected were not iron or wood, even were it stone or glass. The
 Greeks might say the targeted material were rendered into atoms.

The device is aimed by the dishes mounted on top of the contraption,
 which, being geared together that they always move in tandem, and by
 equal amount of the radius, and being properly aligned as to be syn-



2. GM: If this is True, then the Dissolution Engine will become geometrically more difficult to construct at larger Sizes. Greater Size will mean greater Weight, hence greater chance for a disastrous Deviation from the true calibration. What Effect this will have, the Old Man does not say, but I am Loathe to find out. Further, even in smaller engines, only the finest of steels could be used, which will increase its price.

chronous, produce an isosceles triangle of projection, which point, being the focus of attack, is rendered dissolute.

Time Presses

Since the days are pressing upon the welfare of Venezia, I have determined that I must make every effort to create and demonstrate this device for the benefit of the city, and thereby all Italia. For the purpose of the demonstration, it would be most seemly were the device to be self-motivated, to which end I shall use a tightly wound spring of metal, as a mainspring, the tensile power of which shall be enough to motivate the ingenium. Of course, for the winding of the spring, I shall have to use a lever arm of sufficient moment, but I believe I can borrow a wrench to suit my needs from Gniffa, who makes carriages outside of town.

Despite the recent results obtained by that careless Camillo, I have been able to retain the services of one Hernani Bellizzi, a very excellent metal smith and maker of clocks. It is most important that the entire assemblage of this Dissolventum Universalis be made entirely of closely-fitted and studiously calibrated metals, for the device itself is tolerant of nothing in the line of deviation; even the flexibility of wooden boxes is too great for its admission.²

Once the device is tightly wound upon the mainspring, and it has been set up in a suitable location, it is only necessary to aim the dishes and engage the mechanism into operation. The aiming of the dishes involves determining the distance of the height of the triangle formed by their foci, the estimation of which is difficult for even experienced artillerymen. Hence I have also designed a system of reflecting mirrors and lenses, which lenses are mounted above the dishes, but so close in aspect to their position as to be nearly identical, and which transmit the focus of the dishes to their various reflecting mirrors, which guide the light to a single plate, thusly generating a double image, which can therefore be used for aiming the device. For when the image on the viewing plate is least distorted by the twin images, then the operator of the Dissolventum Universalis knows that the device is properly aimed upon that spot.

Extortion! Robbery!

My mother! The prices which that Hernani Bellizzi has levied against me for this project are exorbitant! Evidently he has had a visit from that rascal Camillo, who I can only assume gave him a heavily-embroidered version of the incident, and though being disposed of abandoning the job through Camillo's detractions, nonetheless found himself unable to renege upon his word, and in purpose of forcing me to abandon his services, raised his prices to levels which he thought I was unable to afford. He has underestimated me, however, for I have sequestered quite a fair reserve in my years, and paid his inflated prices, in surprise of which he vowed to perform for me his finest craftsmanship.

Disaster!

I cannot believe what the fates have thrust upon me. My experiment is at once a success but a failure of the greatest order. Bellizzi, having finished the *Dissolventum Universalis*, and without acquiring my permission, attempted to test the *ingenium* to ensure its proper function. He wound it up, and engaged the lever to permit it to function, at which point, of course, it did exactly as I had predicted. Unfortunately, that craftsman did not have the dishes aimed at any particular area, but indeed they were aimed in divergent directions, which caused the back-fire of the machine, and it dissolved itself, the table upon which it rested, and many other tools and sundries in Bellizzi's workshop.

All my savings now lie in dust on Bellizzi's workshop floor, and he demands that I repay him the loss of his equipage. This I shall not do, for he experimented in an unwarranted fashion, and I receive some small gratification that his financial losses are extreme, as well. As I write this, I have just had a brick thrown through my window, so I shall close.

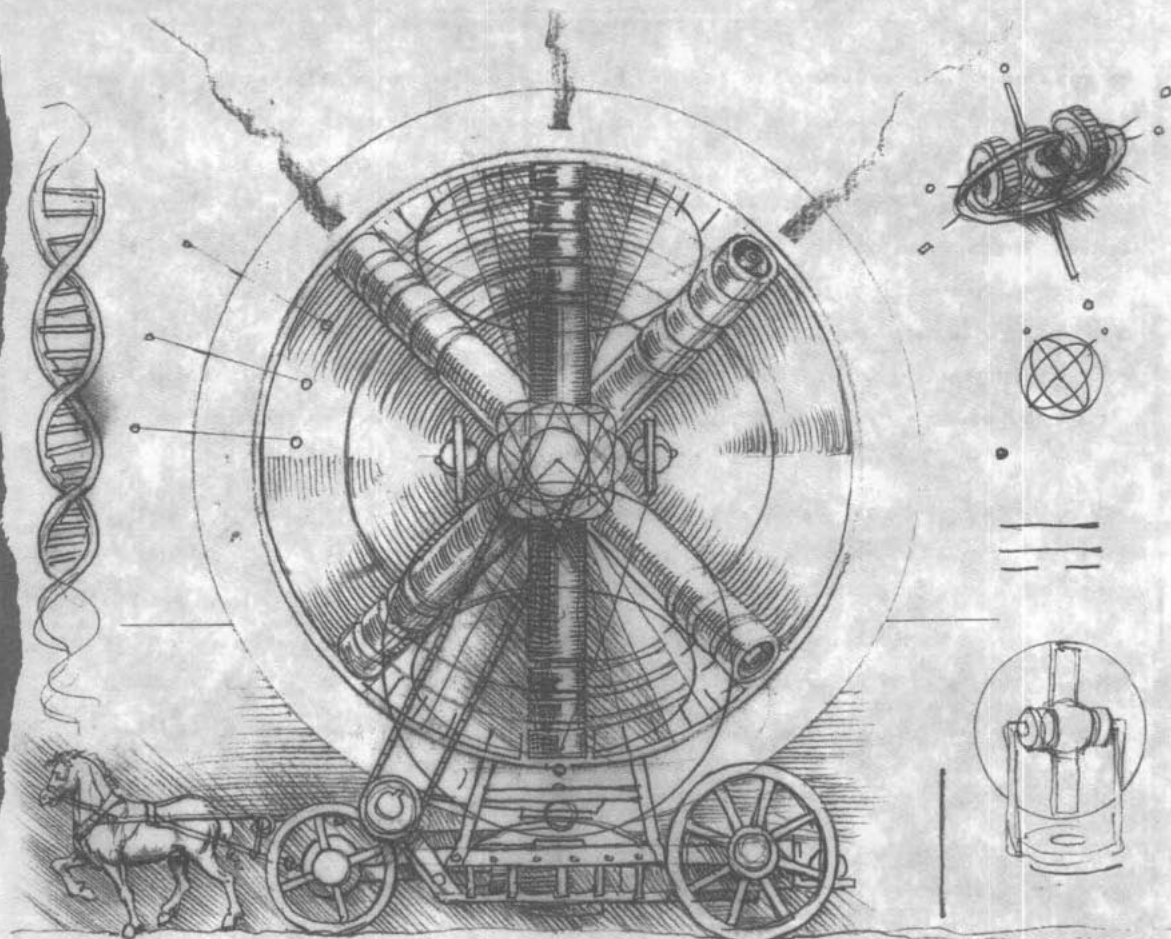
TESTUDO ELEMENTALIS

ELEMENTAL ENGINE

The forces of the elements are most flexible in application; indeed, they are often more useful on the defensive than in operations of attack, most especially the earth itself, although notwithstanding few are the soldiers willing to push forward through a sheet of flame or water, both of which are seen to have effects deleterious to explosive gunpowder. This, then, shall be my next objective, to the construction of an *ingenium* which can be used for the protection of a body of soldiers through an application of the pure forces of nature, whether by impenetrable earth, or by strong winds to divert the projectiles of the enemy, or other manifestations of fire or water, as already mentioned.

The brave soldiers of Italia are in most dire need of such stern protection, with wars prosecuted by both the French and the Turkmen.

I have now heard that the French have entered into Roma, the very heart of our land. In response, making it an unmitigated disaster, His Excellency the Pope Alexander VI has declared the French King Louis XII to be also the king of Napoli. We have given away Napoli! No, for it is not we who have perpetrated this crime, it is that conniving Pope who enacted it, seeking always to further his own power and gratify himself with others who might be seen to be stronger than is he. I now fear the Pope, and the susceptibility of the kingdom of the Lord to the vagaries of current politicking. Where once he formed the Holy League to stop the French king, he now grants them our lands with a dismissive wave of his



bloody hands. Perhaps he thinks Louis will not remember his resistance to his cousin Charles. I do not pretend to understand that man's mind. There is no telling to what depths Alexander the Borgia will now stoop.

Michelangelo Buonarroti confides to me that he aspires to paint a fresco next to those of Botticelli, Signorelli, et al; in the Sistine Chapel. He is a dreamer, and I myself would distance my work from that of the church.

The need for this *Testudo Elemental* is now greater than ever, for we find ourselves surrounded with enemies, from the Turkmen to the French to the Church. With Bianca Maria Sforza's marriage to Maximilian I, the Holy Roman Empire is still on our side, although even their value is questioned at this time, with Switzerland now standing in sovereign testimony to the Holy Roman Empire's ineffectuality in enforcing their will through military means. With these notifications in mind have I constructed the design for this *ingenium*.

In Function

As illustrated in drawing a, the transmission rod of the *Testudo* swings in orbit around the central portion of the mechanism, which is the focus in creating the wall of elemental magick which shall be seen to surround my invention. In this, the circumscription of the rod must by its nature make a perfect circle, and the length *mp* of the rod shall be proportional to the radius of the circle of protection afforded. It is conceivable

that through the creative application of a trammel or other such elaborate impediments to the motion of the rod, that an elliptical perimeter to the *Testudo Elemental* can be derived, the better to protect a line of men without needless waste of magickal energy and abrogating the expansion of the protection to incorporate empty space in front of the soldiers, into which a body of brave enemies might breach and cause havoc.³

The central mechanism of this *ingenium* is, as illustrated here, the crucible, which contains the material to be consumed by the *ingenium*, which in turn, shall be seen to affect the elemental manifestation of the output of the device, thereby determining what manner of wall shall be erected, for the protection. I must consult with those versed in the alchemical arts to understand exactly which materials are best suited to the consecration of the *ingenium* to certain elements, although from conversations with a surgeon, I am led to believe that bile, blood, phlegm, and urine are the materials associated most efficaciously.⁴

Its Usages

The *ingenium*, being designed for, and eminently suited to, the protection of a body of soldiery, in maneuvers against the foe, it shall be obvious that it is best powered by manual exertions, which are most readily obtained by soldiery. In this fashion, the *ingenium* can be carried upon the back of one of the soldiers to allow for maximal portability, or else, should the size of the device be prohibitive, as might be the case for a device large enough to protect a full regiment, it can be ported about in a small wagon designed for that purpose, with a modified crank made expressly for the use by two or four men, or possibly mules.

And now I have indeed once more, at great personal expense and considerable difficulty, obtained the materials needed for the construction of this *ingenium*, for with it I can prove once and for all time that indeed my designs are sound. No more will the craftsmen here build of these engines in their completeness, but instead I was forced to disperse the pieces of the *ingenium* among several craftsmen, and undertake the completion of the parts and the assemblage of the *ingenium* myself. It appears that word of Camillo's roof and Bellizzi's workshop has spread rapidly about the city, and none others will risk their own houses.

Another Failure...

The experiment is a failure. After cranking the handle of the *ingenium* until my arms ached, no curtain of fire arose in testament to my labors. I moved about and felt the grass at the radius of the *Testudo Elemental* which should have arisen, according to my calculations, and felt about with my hands. The grass was most certainly parched and withered, and a perfect ring of browned grass stood about me, but unfortunately this is not enough to forestall an enemy. I endeavored to make another stronger spring with which to wind the *ingenium*, but during the cranking the linchpin split due to inferior construction.

3. GM: Rhyme informs me that Dwarfen Craftsmen are skilled at creating New and Clever methods of Gearing, which, he claims, can create an Effect of nearly any shape desired. With extreme Difficulty, he believes that even perfectly square perimeters can be Effected, although I am certain that for the Manufacture of such a Gearbox, we will have to retain the Services of the illustrious Robin Cammaster, who, unfortunately, resides in England. The thought of Penetrating the Steam Lords' frontier in such a mission excites me, bearding the British Lion in his den, as it were.

4. GM: The Old Man missed again; these are Material Components for affecting human targets. Furthermore, the liquid forms of these Materials are not best suited for being consumed in the Crucible. For best Results, the Crucible should contain the following materials for the desired Effects:

Earth	Gold
Air	Frankincense
Fire	Sulphur
Water	Quicksilver

5. TO: They always say that war does more to advance society than any other activity. And, frankly, it's true. Now if only we could channel all that creativity into being nice ...

6. GM: A Steam Boiler would be far better suited to this Machine, even in the Field. The Deployment of such Pieces would make any Fortress nigh impregnable. We must have one for our Castle.

INGENIUM SANGUINEUS

DESTRUCTION ENGINE

I received word this day that Maximilian I, the Esteemed Holy Roman Emperor, has, in what is now known as the Peace of Trent, recognized the French occupation of her conquests in our fair Italia as legitimate. It is now obvious that Italia is a broken and divided land, which both angers and saddens me, and more so that she shall not have the benefit of foreign assistance to defeat France. Italia shall have to drive out the French herself, even if it takes twenty years, but drive them out we shall!

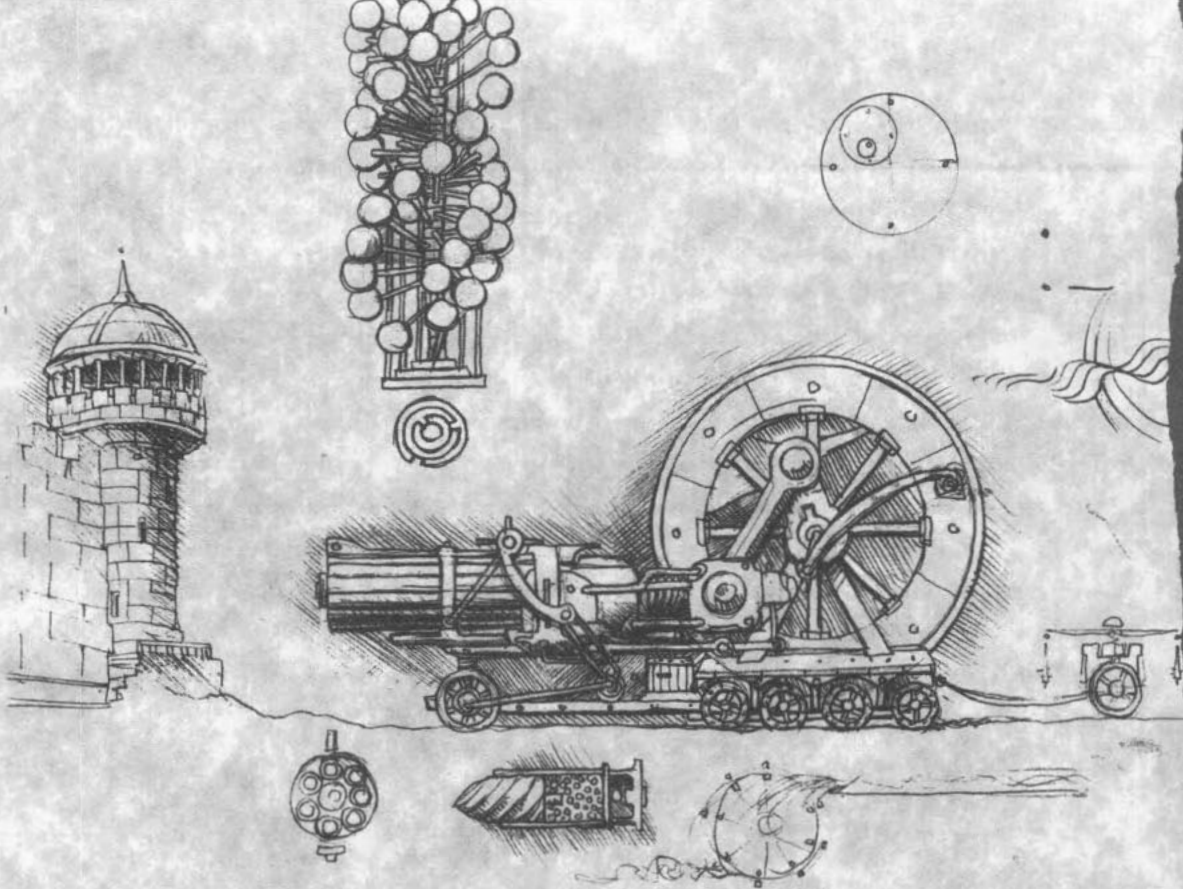
Ordinarily I do not like to lose my temper, as I did when I first heard the news from Giovanni while breaking fast with him this morn, however, even as I did so, I was able to draw an allegory between my explosion of rage and that which indeed shall be most productive in routing the French from the field.

It is such a simple variation of my own previous *Ingenium Infernus*, and less destructive to homes than the *Ingenium Tumultuosus*, that I wonder that I had not previously invented its mechanism. However, I find that my thoughts and successes both flow more readily when I am focused on the contemplation of matters martial in nature.⁵

The *ingenium* should be constructed of purest iron, the better to focus and amplify the destructive forces which this shall unleash, and aiming may be effected through the manipulation of the scope mounted on top of the device. In keeping with the necessity of military *ingenia* to be portable and independent of water, wind, &c, and other sources of external power, it is necessary to turn the central axle of the *ingenium* manually; however, with a proper series of gears, this method of empowering the device can be calibrated to any strength or rapidity of fire desired. I estimate that in order to bombard and destroy a city wall, with a series of fiery projectiles like unto a storm, that a team of twenty horses or more might be required, but although a lesser amount might not strike down the rock, the conflagration would cause great fear and confusion among the defenders. I must also someday test this device, however, to ensure that it does not heat up as a result of generating such temperatures itself.⁶

A Most Inconvenient Bull

At last the worst event which I have feared has come to pass, withstanding only that of being burned at the stake as a heretic, and in as cruel and unseemly a fashion as it is conceivable to be borne. Alexander VI, that vile scheming usurper of the papacy, and all that is noble of mortal man and the Church, has now ordered, by papal bull, for all books which are said to be set against the most divine authority of



the Church, through fiat of his own personal distastes I am certain, to be burned, as though in the fires of Hell itself. Foremost of these books which are to be consumed by flames are the mere two dozen copies of my own latest notebook which I have published, and at my own expense and great travail. The offense which my book has caused is so great, and engenders such tremulous feelings in the hearts of the church, that the pope has ordered, as well, with great solemnity of purpose, that no written record of my notebooks having existed is to be made, and all knowledge of this *Codex* having been created is to be smitten from the minds of men for all time, under penalty of excommunication, eternal damnation, purgatory, &c. My *Codex* is to be struck from the pages of history, destroyed utterly as were the untold volumes of the Library of Alexandria. Although I myself face charges of heresy, this I cannot allow to happen, for I have spent my years in a tireless quest for the uncovering of much knowledge to the betterment and enjoyment of the common man, and to turn my back so upon my own discoveries into this most mystical of powers is a burden more heinous and wearying to me than any other. I cannot let it be so.

I must hide this, my original, for its safety, and for my own. Perhaps it is for the greater good in the immediate time, as to have items of such great power as this *ingenium* of fire and brimstone in the hands of the unscrupulous Borgias would cause great calamity, upon the rest of Italia, and perhaps all of Europe. Against those who would consign knowledge to oblivion, as though it

7. TO: AUGH!
Leonardo burning his own work? I can't believe it! Mike, you have to know this kills me. What other works did he do that went up in smoke in that fire? I pray that they were only rough drafts, but I just know that other amazing Leonardoisms were lost that day. I get sick just thinking about it.

8. ED: The references to dwarfs is an obscure one, as midgets and others with genetic aberrations were normally social outcasts, and would not have been considered to be a class of craftspersons.

9. ED: In these paragraphs, da Vinci essentially extrapolates that bigger is better, without correcting for the fact that size cannot be increased without dramatic changes to other conditions, including cooling, structural stability, etc. This oversight presumably also caused him difficulties in the construction of the bronze statue of the Duke's father, which was never completed.

were infernally inspired, and for their deception, I have bound together instead many of my rough sketches and preliminary musings into a notebook of their own, and I have fashioned for it with great care a cover and frontispiece not unlike that of the published version of my *Codex*, and I shall proceed to the city square and burn this notebook publicly in its stead as a sacrificial lamb for the appeasement of this jealous mortal who has set himself as though God. I know that those at the pyre who will investigate my notebook are unable to read my writing sensibly, and that the illustrations and illumination contained therein will defy their understandings, even though they be as simplistic as water screws and other fundamental devices with which Verrocchio tutored me when I was but a student. For their further confutation, I shall add some interesting but nonsensical additions to these pieces. In this way I hope to avert further harassment from the seminal forces, that this *Codex* may once again be published at a later date.⁷

INGENIUM REGIA

(ULTIMATE ENGINE)

The difficulties in obtaining proper craftsmanship have been a continual hindrance to these investigations, as has finding fellow countrymen who are sensible in demeanor, enough to partake and hold constant in times of experimentation and delving into the unknown. These researches would be much easier, and the results more readily obtained, were the quality of these *ingenia* better, so that they might more efficiently make use of the arcane potentials of the countryside, thereby to demonstrate the soundness of these principles so involved, but I'll be first damned if I ever turn these pages of mine over to those incorrigible dwarfs.⁸

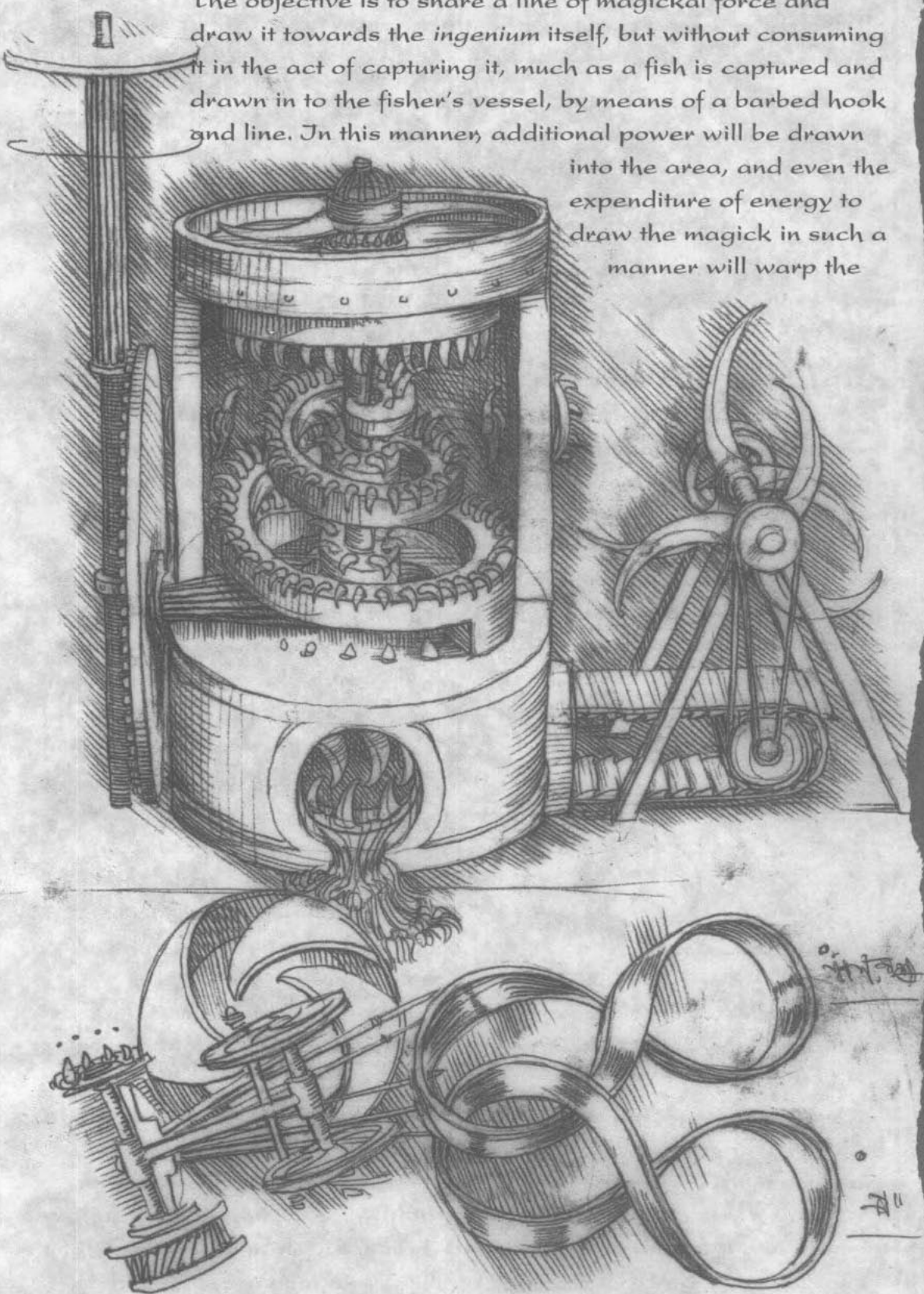
However, efficiency is the rate of conversion of the elements, that is, the reagents, if you will, into the desired outcome or product. That is to say, that efficiency is the proportionality of what is put in to what is taken out, or of effort to work accomplished, and it is the complement to waste, therefore, with unchanging efficiency, $R \propto E$, hence to increase the actual outputs of one of these *ingenia*, it is only necessary to increase the quantity of magickal energy present in the area for the *ingenium* to convert.⁹

I passed several days contemplating the quandary, visiting a weaver and one versed in knitting in an effort to find some inspiration, an underlying parallel of technical achievement which might shed light upon my stumblings. This day, however, I chanced to lunch with some fishers, who were in the city, on a visit to their family, and discussing with them

the technical challenges of their craft at last gave me the insight I sought, and I at once departed the square to expound upon my conception.

The objective is to snare a line of magickal force and draw it towards the *ingenium* itself, but without consuming it in the act of capturing it, much as a fish is captured and drawn in to the fisher's vessel, by means of a barbed hook and line. In this manner, additional power will be drawn

into the area, and even the expenditure of energy to draw the magick in such a manner will warp the



9. GM: This is Impossible! A Magickal Device cannot generate its own Power, for to do so defies the First Law of Thermodynamics. There are no Perpetual Motion Machines. Further, the very idea that a Device could reach magickal Power at a range farther than the selfsame Device drained Power is ludicrous. The old man was becoming Daft.

TO: This is potentially a devastating engine, although I tend to agree with Morrolan that it wouldn't work, experience with Leo's other designs notwithstanding. But can you put it in the Great Game? Well, it's unfinished, first of all, and it would take a brilliant inventor to be able to complete Leo's work here. As for the concept? Well, I think that anything which could draw power to itself would unbalance the game. But even the threat of it could make a good Infernal Device ...

line itself, presenting a tangential line to the *ingenium*, with a great amount of additional power due to the stresses imparted upon the elasticity of the force, and here shall be illustrated that *ingenium* which can draw magickal powers into the area from lands far beyond.

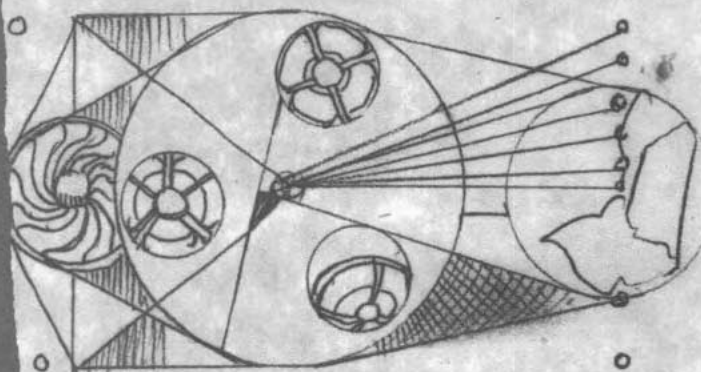
Of Its Function and Nature

One begins with snares, which shall be as hooks, but formed in complete circles, and turned once around back upon themselves and fashioned of purest gold, to afford the greatest protection to the user. These are wound in the manner so illustrated, in drawings b through e, for the making of the spool itself is intricate, although schematically it is difficult to illuminate.⁹

And So, I Must Close

Even though my burning of my notebook was seen, although through papal edict not recorded, and even deliberately remembered to be forgotten by the most fearing of the pious, indeed the suspicious and untrusting manner of the Pope and his ordained henchmen is evident still. I returned to my domicile last week, and upon entering, found that the sanctity of my domain had indeed been violated, and many of my works in progress had been taken and removed. Fortunately, I practiced foresight, for indeed I had observed that such an event might

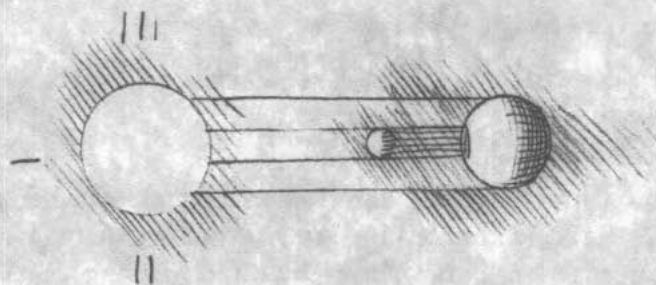
take place, and had taken care to hide this manuscript beneath the ashes in the fireplace, which is above all the last place one might expect a studious and careful man such as I to sequester invaluable documents. My



stolen works have been now returned to me, peremptorily, by an unnamed priest, but as the vandals acted upon the guidance of the most obnoxious Pope, they offered, and in fact required, no explanation of their activities.

I cannot abide this type of hounding, to be treated without respect, and to have my propriety and privacy violated, and with such a casual disregard for morality. Truly now do I understand better the words of the Christ when He spoke to the Pharisees of his time, although I cannot remember exactly what they were, and I do not wish to misquote Him in these pages, so I shall have to look up the passage in question this evening. But suffice it to say that I agree with Him that the holy men of





the day were, and for me yet are, corrupt individuals who hold not God sacred, but instead revere more their power, and their privilege, and their

position. Why, the word is that the Pope has sired another child. By immaculate conception, I am sure, since he is unmarried. I can only pray that this Pope Alexander VI and his scheming offspring receive their just rewards both in this world and in the hereafter, for the sooner they reap the treachery and corruption they have sown, the sooner I shall be able to continue these studies. In fact, were the Pope to die next year, I couldn't be more elated.

I may perhaps know why these illegal and affronting searches were made upon my house. I have had word that an Arab merchant has caused one copy of my manuscript to disappear. He claims to have burned the papers upon hearing of the edict, but the church authorities doubt his word as he is merely a heathen and not at all a Christian. They searched his house and those items which he was shipping back to his homelands, but they found not my book. He claims that it cannot be reclaimed from the fires which consumed it, and so is held in prison at this time at the Pope's leisure. There are those who say he consorts with supernatural forces, and may have used dark arts to secrete my *Codex* away, but I do not know.

Whatever the truth of that story, I will leave these magickal researches to lie fallow for the present time, until the Papal fires of indignation are cooled. Perhaps I can divert my own attention from this matter by concentrating on painting once more. The Battle of Agghiari yet awaits my brush. I have also received notice from the merchant Giacondo that he would like me to render his wife, Lisa, for posterity. I hope this will help divert me, although the fashion of shaving one's eyebrows does not endear Firenzan women to me. Perhaps were I to include more of her in the drawing, this farcical depilation will not be as noticeable, and the painting will also look less like a decapitation as do so many portraits. But these are thoughts for another day. I must now sequester this *Codex* among my most personal belongings, and think again upon it no more.¹⁰

10. TO: This may mean that the Arabian merchant tossed the book through a gate to your world, Mike. I don't know. If that's true, then maybe Leo never actually made a book in your world, and instead this book is the New European version. Somebody found it, hid it away from the church like a typically paranoid Middle Ager; it was found and published, and then we finally got a copy back. Or not. I mean, maybe Leo did have a touch of the sight over there. But that doesn't explain what happened to Leo's copy over here. Maybe he got caught by the church, or else burned it to protect himself. We'll probably never know.

SORCEROUS AUTOMATA IN THE GREAT GAME

Hey, Mike. You're probably wondering why all this stuff is stuck at the back of this book. Well, there's two reasons. First, there simply wasn't enough room between Leo's scribbles and doodles and stuff to write down all the game mechanics for these things, wondrous as they are. Second, when you're playing a role-playing game, especially the Great Game (which is really getting popular over here), you really shouldn't worry about petty things like difficulty numbers. We don't in real life, right? We just make a reckoning of the odds and do it.

So, when someone in the Great Game wants to make a magickal engine, or if he finds a copy of the Codex, or just a page, or whatever, you can hand him the book, and use a heavy-duty clip to hold these pages shut. That way, he'll deal with the info as he would in real life, without suits and feat difficulty numbers and required skills. It'll make suspension of disbelief easier, role-playing more realistic, and what the heck, it lets you, the Host, fudge all the numbers if you have to for the sake of dramatic interest. Speaking of dramatic interest, I have a dinner date with Marianne tonight, and—well, never mind.

I've taken the time to alphabetize the list of engines described in this book, and reference them all by the page number where they appear. And let me tell you, alphabetization was easier with computers—there are a few things I miss from back

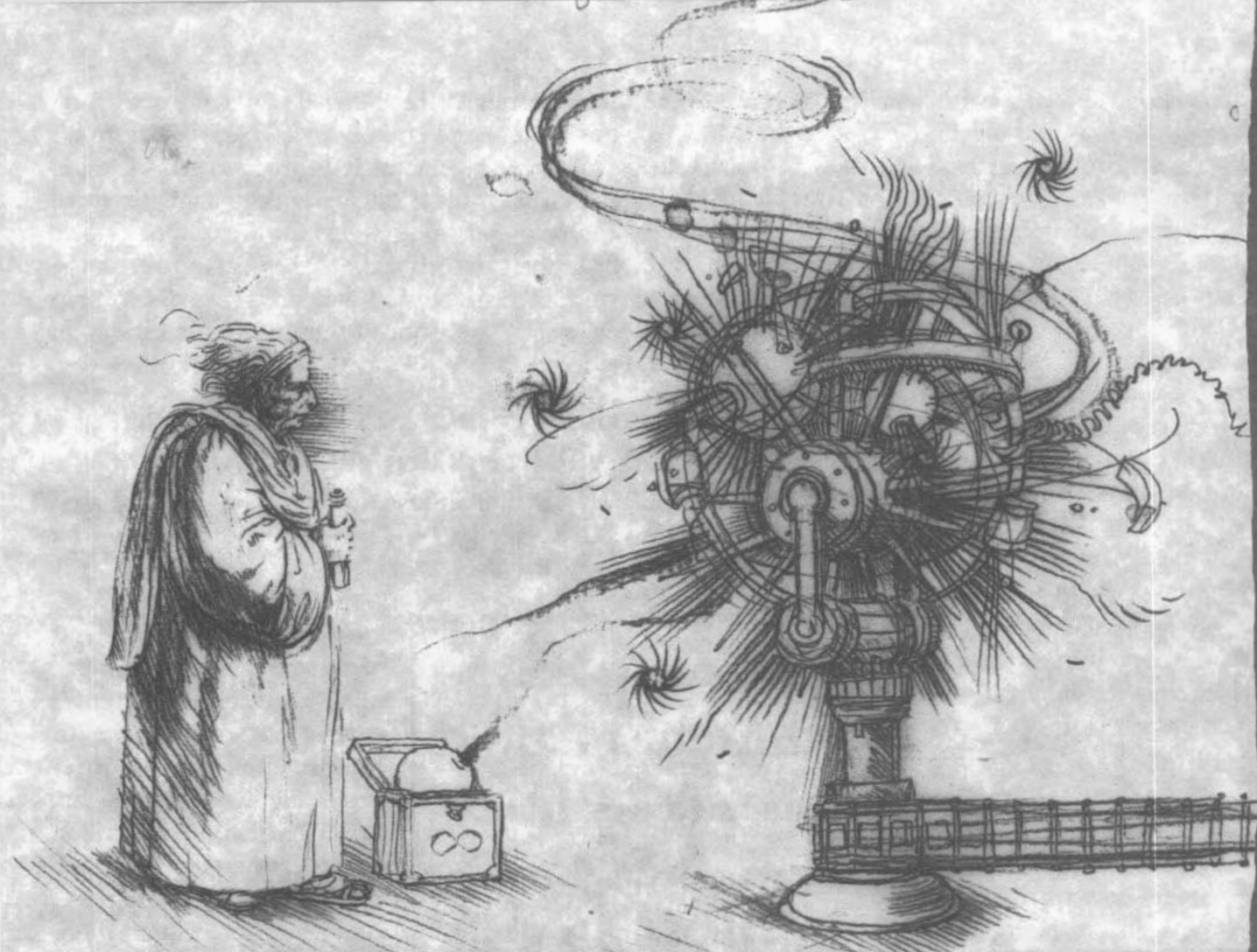
there, though not many. I ended up making a bunch of little slips of paper, each with the name of one engine, and sorting the list that way, and then copying it over by hand again. Sigh. Well, anyway, here are all the rules you ought to need to use these fantastic devices in your own game. Have fun.

HOW SORCEROUS ENGINES WORK IN REAL LIFE

Unpredictably. No, wait, that's not what I meant to say. Actually, sorcerous engines are pretty predictable, although I can tell you that they are not all alike. Not even the engines we use for our aerodreadnoughts, all made to the same plans, are alike. That's because of the way they are built and tuned and maintained; harmonics can be different for each one. Furthermore, there is some unpredictability in a magickal engine, because the energies it consumes to do its work can cause some strange effects. Unlike gasoline back there, which is pretty much uniform, magickal power varies greatly.

When the
proper ener-
gies are used,
the mechanical
attentions
shall create
perfectly bound
energies.

Anyway, there are two types of sorcerous automata: spontaneous and continuous. Spontaneous engines gather up enough power to fire off an instant spell, and when they have it, the spell gets cast. An example of a spontaneous magickal engine is the destruction engine on page 104: Crank it up, and a few moments later a blazing fireball vomits forth to smite the enemy, as Morrolan would put it. Keep the destruction engine running, and fireballs will continue to be spit out at slightly irregular intervals, depending on the amount and type of power it consumes to do its work. The spontaneous engines gather up



enough power to create a temporary change in conditions, enact that change, and then they're done. They act just like wizards do, drawing up power and using it—except they cannot selectively eliminate unwanted power. The brainless things just use it all.

Continuous engines are different. They weave a complex and long-lasting spell, creating all these subethric knots which can redefine the reality around the machine. Since these knots try to unravel themselves, the magickal engine has to hold them together, which it does by continuing to run. It keeps the tension off the knots so they won't untie, if you want to think of it that way. So what they do is gather up large quantities of energy, larger quantities than the spontaneous engines do, and use them to alter the qualities of the world immediately around them. The reason they need to use so much energy is that the spells must be able to last for a lot longer.

The curious thing is that the engine itself is what does the work, not the magickal power.

The engine uses the magick as a catalyst, but when it is shut off, it releases the magickal energy back into its surroundings. This means that when a continuous sorcerous automata starts up, it gathers up a bunch of power, depleting the area. When it's shut off, the power returns pretty rapidly. However, if you move the magickal engine, the power it has accumulated goes with it, held by its mechanical arms. If it's shut down somewhere else, that place will have more power than normal.

We haven't done much experimenting on what happens when a place has more than a normal amount of magickal energy. After all, we've only had these aerodreadnoughts a short while, and we're keeping the few other engines we've built securely under guard back at Falkenstein.

So what happens when an area is overstocked on magick? It could be that anyone casting a spell in the area gathers more power than intended. You could simulate this in the game, if you like. Take your normal sorcery deck, and shuffle in extra cards from another deck. When

someone draws a card from the sorcery deck, and the top card on the deck after they draw is a card from the extra deck, they automatically draw that card too, and add it to their hand. If the top card after that is also an extra card, they draw that one too, and so on, until the top card is a normal sorcery deck card. Perhaps the wizard has the option of discarding these extra cards forced upon him or her, or perhaps not. Not is definitely more fun, and I think it's more realistic. Casting a spell in an area supersaturated with magick would seem to be as risky as lighting a torch in a fireworks warehouse. Especially if there's another joker or two in the extra cards.

You could take a similar approach when someone fires up a magickal engine in an area where there's a lot of magickal power.

You can imagine that as magickal engines become more common, whatever wizards are in the area are going to get peeved. The things will suck up the energy and keep it, perhaps—if they're a magnetic force engine or something—even carry that energy away. This might be incidental to the engine operator's purposes, or the user of the engine might even do it deliberately, to disarm the local mages. Let me tell you, when we launched the airships from Bayern, we were magickally destitute back in München. It was bad.

This also means that continuous magickal engines can be used to trap or disable other continuous magickal engines. For example, imagine one of our aerobattleships resting at anchor. Someone comes in with another magickal engine and sucks up all the power in the area for its effect. Now our aerobattleship can't gather up enough power to get out of there; there simply isn't enough power left around, and we'll

have to wait for the normal regenerative properties to generate enough extra magick before we can leave. Not a terribly great situation, especially since this means that our magnetic force engine is a sitting duck for the capture. I've brought this problem to the attention of the king, and suggested we install auxiliary propellers on the front of our aerobattleships as an emergency propulsion system.

HOW SORCEROUS ENGINES WORK IN GAME TERMS

Every sorcerous automaton has an associated activation level, which is the amount of magickal energy the engine needs to cast the spell it's designed for. If you look over the list at the end of these pages, you'll notice that continuous engines require a lot more energy to activate than do spontaneous engines. This is due to the effects I described above. However, there are spontaneous magickal engines which require more power than a mage would to do the same thing with a spell. For example, the transformation engine takes 16 points of power to activate, while a Templar can change the shape of an item with a 12-point spell. This is because the effects of the Templar's spell will fade, but the spontaneous engine's

effects are permanent! Once a transformation engine changes the shape of an item, it will forever be that new shape—that's its new natural condition.

When a magickal engine is switched on, the Host begins to draw cards for it from the sorcery deck, one card per round (or at whatever frequency the Host deems suited for dramatic effect). All cards are added to the engine's pile; the engine cannot refuse any card. Once the value of the cards in the engine's pile equals or exceeds the engine's activation level, the mag-

*Unforeseen
magickal mani-
festations may
come into being
for the fact that
differing ener-
gies have been
used in unac-
customed ways.*

ickal spell goes off (spontaneous) or begins (continuous).

Like human (or Faerie) sorcerers, magickal engines suffer from harmonics. When an engine's activation is reached, the Host should inspect the cards drawn by the sorcerous automaton and apply any harmonics that are called for. These harmonics will affect the individual casting of the spell for spontaneous engines, and they will be sustained with the effects of a continuous engine for as long as it's operating. Magickal engines are designed to use correctly the magickal energy keyed to the type of spell it casts, so if the suit keyed to the engine is the most numerous in the cards drawn, the engine exhibits no harmonics at that time.

Some engines will have a craftsmanship value associated with them, depending on how well they were put together and calibrated. This craftsmanship value is added to the number of cards of the appropriate suit that were drawn for the purposes of determining harmonics. Thus, if an engine draws two cards of the appropriate suit, and three cards of another suit, it would normally exhibit the harmonics of that second suit. However, if the engine had a craftsmanship of two, it would have effectively drawn four cards of the appropriate suit (two drawn plus two for craftsmanship), and would exhibit no harmonics.

Spontaneous engines deplete the sorcery deck as do human mages. Continuous engines deplete the deck temporarily; when a continuous engine is shut down, all of its cards are returned to the deck at whatever rate the Host deems appropriate (usually, unless the characters are embroiled in combat, we just dump the whole slew back into the deck).

Finally, jokers affect the casting of the magickal spell as well, just as they do in regular sorcery. As with regular magick, the effect is far greater than intended, and may have a negative impact on the engine itself. The second time we launched the *Valkyrie*, one of the knots of magickal energy got itself caught around the control arm for the magnetic force engine and pulled it to maximum. Suddenly we found ourselves hurtling at an impossible speed out over the North Sea headed straight for the Arctic in win-

ter, and the tension of the knot refused to let us pull the Star Iron-laced control arm back to normal. Quite a scary time, let me tell you, though I just had to say, "The engine canna' take much maur o' this, captain!" Nobody laughed, though. Ah, well.

For spontaneous engines, backlash is a popular approach to take—the destruction engine fires off such a powerful fireball that it also melts itself in the process, that sort of thing.

AJMUNG A SORCEROUS AUTOMATON

Some magickal engines require that the effect of the engine be aimed for best results. For example, the destruction engine emits fireballs periodically. If you want to destroy the enemy, it's best if these fireballs hit the target. Therefore, you have to aim them.

Aiming an engine is different from calibrating it (calibrating an engine is covered under Making a Sorcerous Automaton). Consider aiming the magickal engine to be like steering a car, while calibrating it is like tuning the engine and aligning the wheels. This is an especially appropriate simile for things like magnetic force engines, which are used to move and steer the Bayernese aerobattleships. It's not good enough to be able to pull yourself along the lines of magnetic force, you need to be able to do it in a controlled manner for the engine to be very useful.

Aiming a magickal engine requires that the operator undertake a Tinkering feat, and the more difficult the job of aiming, the tougher the feat becomes. Also, the more important it is that the magickal engine not affect anything else nearby, the more difficult the task becomes. For example, it's easy to aim a destruction engine to pummel a city, but very tough to aim it so that the fireball shoots through the city gate, takes a right at Main Street, and roasts city hall without scorching the cathedral on one side or the orphanage on the other.

I haven't bothered to note which engines need to be aimed; it's pretty obvious which ones they are. Besides, players are so clever, they might think of a new way around such restrictions.

MAKING A SORCEROUS AUTOMATON

Making a Magickal Engine is not as easy as it might seem. This is because the technology, the knowledge of how to create one, is not known to the world at large. Unlike making a new-fangled device with Tinkering, which relies on commonly held knowledge, the possibility of creating magickal engines is an idea unknown to many. It's sort of like trying to make an atomic bomb in 1950; you can only get the technology from the Soviets or the American-British Manhattan Project. Yeah, right, and good luck to you.

This means the dramatic characters have to gain access to the knowledge of how to build magickal engines through their own activities. That's right: This isn't invention by feats, this is Creation Through Adventure.

Creation Through Adventure requires that the dramatic characters jump through five hoops:

- 1) Get the Plans
- 2) Get the Materials
- 3) Build the Engine
- 4) Tune the Engine
- 5) Determine Its Efficiency

I'll explain each of these in order. There may be one or two things you don't understand at the moment I explain it, but all shall be made clear, so stick it out.

GET THE PLANS

Obviously, you ain't a-goin' nowhere until you do this. You can obtain copies of the plans from my copy of Leo's *Codex*, or discover a long-lost page of Leo's original notebooks in some widow's attic in Genoa, or acquire the plans from someone else who, by hook, crook, or genius, has a copy of his own. Or, hardest of all, you can design your own magickal engine (don't even try until you're Excellent at Sorcerous Engineering).

Getting the plans must be played through in the game. We of the Inner Circle are loathe to give up our secrets, as would be anyone else the Host decides has a plan for a magickal engine. Unless the dramatic characters have ingratiated themselves to

no end with the leaders of Bayern, they'll have to come up with a darned interesting scheme to get hold of the plans.

NEW SKILL: SORCEROUS ENGINEERING (◆)

This is the ability to design and tune sorcerous automata (building them in and of itself is a Tinkering feat). A Poor Sorcerous Engineering skill means you are technically illiterate with magickal engines; you don't know how to operate them, and if you tried to design or tune one, others nearby would run for very solid cover from the impending blast. Good Sorcerous Engineering is still not particularly good; you can probably adjust very simple devices, but your designs are only the most basic, and are still unreliable at best. Tuning complex magickal engines is still a nervous undertaking. Great Sorcerous Engineering ability allows you to readily design very simple engines, and even undertake some more complex ones. Tuning engines is something which you perform with confidence. Those with Exceptional Sorcerous Engineering skills can design a wide variety of engines, and tune them quickly and efficiently. Characters with an Extraordinary ability at Sorcerous Engineering can create any magickal engine imaginable, and tune even the most temperamental and explosive engine without a fuss. Those with such skills are on par with Leo himself, and are probably bent on global domination besides.

Designing an engine from scratch involves a Sorcerous Engineering feat. Use the complexity of the engine as the difficulty of designing it, i.e., the harder it is to build, the harder it is to design as well, right? If the engine being developed is a new one, use our complexities as guidelines. If it's a combination of engines given in this book, you might want to take the higher difficulty and add half the lower to determine how tough a feat it is.

There are several restrictions on the use of Sorcerous Engineering. First, anyone with the skill must also have Sorcery at a level equal to or

greater than the level of his Sorcerous Engineering. You have to be able to see the subethric knots to be able to adjust the way the engine produces them, and you can only adjust the engine as well as you can see the knots. (Well, okay, someone with a good magician for a mentor might be able to design an engine to tie specific knots, but he certainly couldn't tune the engine once it's built.) Second, dramatic characters cannot take Sorcerous Engineering as their mandatory Poor skill without the permission of the Host. Third, dramatic characters cannot have a Sorcerous Engineering skill greater than Good without having a great background story (feasible, or at least interesting and fun) which the Host accepts. Generally, characters should only be able to improve their Sorcerous Engineering skill beyond Good through game play—and extraordinary activities, as well. The only method we know of in New Europa to learn this skill is by being a member of the Bayernese Inner Circle, which is composed of Ludwig, Rhyme, Morrolan, Auberon, and myself. We don't even let Marianne or Tarlenheim in on the secret, at least not much. The fewer who know, the better. So, to learn the skill, a character must either join us, or steal it from us. Hopefully the former.

GET THE MATERIALS

This involves accumulating the steel, wood, and whatever other materials like silver or glass that the engine requires. A lot of this can be done with a flick of the Host's wrist, as role-playing a shopping expedition to the hardware store usually isn't that exciting. The persons involved in the creation of the engine must part with a lot of cash at this time, in all likelihood.

Aside from the mundane materials, it's also necessary to have some Star Iron. Yep. This is the big secret of sorcerous automata; they require some amount of Star Iron to work, otherwise the mechanical assembly will be unable to actually seize and control the magical power around it. (As an aside, it seems that Leo was lucky enough to have had some Star Iron in whatever iron he used in his devices. Considering they were all small engines, a very little bit would have been enough. Perhaps he also recycled his iron from his previous efforts, which would explain why his engines generally worked. You'll note that the last engine he built

didn't work well, but that was after Bellizzi lost his disintegration engine—and, presumably, swept up his Star Iron and threw it away.)

The amount of Star Iron you must have to build the magical engine depends on its size and the base complexity of its construction. This chart shows the sizes of engine which can be created, how much Star Iron is required for each one, and the increase in the engine's base cost given as a result of its size. Big engines get very, very expensive.

Engine Size	Comparison Guide	Complexity Range			Cost Increase
		S	M	V	
Tiny	Toy	1/2 oz.	2 oz.	4 oz.	x0.5
Small	Chest	2 oz.	4 oz.	8 oz.	x1
Medium	Desk	4 oz.	8 oz.	1 lb.	x1.5
Large	Carriage	8 oz.	1 lb.	2 lb.	x3
Huge	Locomotive	1 lb.	2 lb.	4 lb.	x8
Immense	Ship	2 lb.	4 lb.	8 lb.	x20

Key:

S: Simple (Difficulty 1-20).

M: Moderately Complex (Difficulty 21-50).

V: Very Complex (Difficulty 51+).

Obviously, this is just a guideline. For better suspension of disbelief, the Host should adjust the numbers for engines at the edges of the complexity range, and promote or inhibit the development of those engines which are deemed dangerous.

Also, remember that the character building the engine can subtract 100 times his Tinkering ability from the base cost of the sorcerous automaton before multiplying the cost by the engine's price increase due to size.

BUILD THE ENGINE

Building a sorcerous automaton is much like building a steamtech invention, as I covered in the basic game rules I sent last year.

First you have to figure out how difficult the engine is to build. Take the complexity of the magical engine as given under Sorcerous Automaton Definitions at the end of this section. This is the base difficulty. This base difficulty might be increased by the duration of its power source, and the reliability of the power source, as shown in the following tables:

Power Source	Complexity	Cost
Hand Crank	-1	+0
5 minutes	+0	+50
30 minutes	+1	+100

<u>Power Source</u>	<u>Complexity</u>	<u>Cost</u>
3 hours	+3	+250
1 day	+5	+1000
1 week	+8	+3500
1 month	+12	+10,000

It doesn't much matter what sort of power source the magickal engine uses, although one must be chosen. You never know when some circumstance might make it impossible to power the engine. Pick any of the ones you want from the base rules [that's *Castle Falkenstein* page 210—Mike]. The Cost increase is added to the base cost of the engine after all other adjustments have been made—after subtracting for the skill of the builder, multiplying by the engine size, etc.

<u>Reliability</u>	<u>Cost</u>
Poor	-1
Good	+0
Excellent	+2
Indestructible	+5

Reliability is not defined here. Pretty much, it's up to the Host to determine how unreliable an unreliable power source is. Generally, though, unreliable means that the engine's operation can be interrupted relatively easily; the steam pressure must be kept high, so the boiler is very susceptible to rupture, for example, or the hand crank has a tendency to slip off the main camshaft. Excellent means that the power source is very difficult for an enemy to disable; perhaps it is very simple or well armored. An indestructible power source is just that; perhaps the magickal engine runs off a radium pile or a giant well-armored battery or geothermal power or something.

Next we must talk about craftsmanship. This determines how easily the engine can be directed or aimed, or how tight the controls are. The actual mechanics of the control device are not important. Control mechanisms are merely cosmetic, so they can take any shape the inventor desires, from crystal to parabolic dishes to levers to rubber bands, so choose any method you like from the basic game rules [page 211—Mike] or make one up. The craftsmanship will determine how difficult it is for the engine's operator to guide the engine properly. The levels are:

<u>Level</u>	<u>Cost</u>	<u>Tinkering Feat</u>	<u>Description of the Craftsmanship</u>
Gross	0	10	Within a mile or two, ponderous control, a lot of interference
Poor	1	8	Within a thousand yards, sluggish control, high background
Good	2	6	Within a hundred yards, reasonable control, some slop
Fine	3	4	Within ten yards, room-by-room control, a little static or noise
Exact	4	2	Perfect aim, precise control, no interference at all

Thus London-bombing destruction engines can have gross control, because even if they miss the Tower of London by a few miles, some Londoner is still going to find his kitchen well done by a magickal howitzer, and the desired effect of terror will be achieved. Our Bayernese aerobattleships have good controls on their magnetic engines: They can maneuver effectively on the battlefield, but their ability to drop bombs on Prussian Landfestungen is marginal (thank God for our excellent pilots!). Victorian medicine would love to have an exacting clairvoyance device to allow for internal exams.

It is possible to upgrade Craftsmanship by one level. You cannot go more than that, because you can only improve on bad engineering by so much before you're already rebuilding the thing from scratch with all new parts. To upgrade, calculate cost and time as if you were making the thing from scratch, but cut the time involved to one half normal and the cost to one tenth normal.

Still with me? Good. Finally, take the modified complexity of the magickal engine, and multiply it by the number listed next to its size.

<u>Engine Size</u>	<u>Complexity</u>
Tiny	x1
Small	x1
Medium	x1.5
Large	x3

<u>Engine Size</u>	<u>Complexity</u>
Huge	x7
Immense	x15

Yes, immense magickal engines get very expensive. What would you expect from an engine that could melt New York when fired from some mad scientist's secret base in Antarctica?

Subtract the character's Tinkering skill from this final value, and that number is the time in weeks it will take to manufacture the parts and assemble the engine.

TUNE THE ENGINE

Once the magickal engine is all put together, no one's going to guarantee it's gonna work right the first time. Lord knows when Rhyme flipped on his first engine, we thought the castle was a goner. After an engine is built, you've still got to tune it. This requires a sorcerer. Well, it could be done by the guy who built it, assuming he was also magickally inclined, but such people are rare.

But before you can tune it, you've got to flip it on. Put the controls where you think they ought to be and power it up. And hope for the best.

Magickal engines are very temperamental things, and even after the best engineering and pre calibration, things can still go wrong. So, when first powering up an engine, add together the values of the building character's Tinkering ability and the calibrating mage's Sorcerous Engineering. The players can add 1/5 the value of any cards they wish to play at this time to this total (i.e., diamond face cards are worth a little over two points). Once the players have played whatever cards they want, the Host turns over the top card of the Fortune Deck and compares the draw to this table:

Quality	<u>Tinkering + Sorcerous Engineering</u>					
<u>Result</u>	<u>0-8</u>	<u>9-12</u>	<u>13-16</u>	<u>17-20</u>	<u>21-24</u>	<u>25+</u>
SE					A	K-A
E			A	A	Q-K	10-Q
WF	A	K-A	10-K	9-K	6-J	3-9
RP	K	J-Q	8-9	6-8	4-5	2
DW	9-Q	7-10	5-7	4-5	3	
BU	2-8	2-6	2-4	2-3	2	

Key:			
SE:	Superefficient	E:	Efficient
WF:	Works Fine	RP:	Runs Poorly
DW:	Doesn't Work	BU:	Blows Up

The result of the draw of a joker is entirely up to the Host.

Once the machine is running, and with any luck hasn't blown you to pieces, the magician must make a Sorcerous Engineering feat equal in difficulty to the activation of the spell to bring it into good running form.

DETERMINE ITS PARAMETERS

Now that it's built and running, we need to take note of exactly how it works, its activation level, range, etc.. Every magickal engine has an activation level noted for it under Sorcerous Automaton Definitions. This activation level is how much power the engine must draw to fire off the spell (for spontaneous engines) or begin working (for continuous engines). The activation level is affected by each of the following:

<u>Quality</u>	<u>Activation</u>
Superefficient	-4
Efficient	-2
Works Fine	+0
Runs Poorly	+2

<u>Engine Size</u>	<u>Activation</u>	<u>Max Range</u>	<u>Area of Effect</u>
Tiny	+0	50 ft	Small obj, 12 sq. ft
Small	+1	500 ft	Med obj, 30 sq. ft
Medium	+2	1 mile	Large obj, 60 sq. ft
Large	+3	10 miles	Huge objects
Huge	+5	200 miles	City blocks
Immense	+8	3000 miles	Whole cities

<u>Power Source Duration</u>	<u>Activation</u>
Hand Crank	-2
5 minutes	+0
30 minutes	+1
3 hours	+2
1 day	+3
1 week	+4
1 month	+5

There you have it. So how hard and expensive are these to build? Take a look for yourself.

SORCEROUS AUTOMATON DEFINITIONS

Each of the magickal engines listed below has several definitions which delineate how it works.

Effect is what exactly the magickal engine does. If the engine can be adjusted in effect, it will be noted here. These effects are based upon the illustrations Leo gave in this *Codex*. With a little bit of ingenuity, you can engineer the sorcerous automaton differently to alter the effect it has—you know, customize it.

Operation is how the magickal engine functions. First I state whether it's spontaneous or continuous, and then I give the activation level of the spell, which is the amount of power it must gather before the spell begins working or goes off. Finally, I give the suit aligned to the engine's spell. Engines require aligned energy just like human mages do; when drawing from the sorcery deck for an engine, non-aligned power counts only one point towards activation. An important note: The activation level of an engine will increase with its size! Bigger engines have bigger effects, but require more magickal power to cause those effects. The exact amount the activation level increases is covered under Making a Sorcerous Automaton, above.

Investment is likewise a two-part definition. First is the natural difficulty of building the engine, according to the rules I gave. This is followed by the base cost of the engine, given in crowns. The cost covers materials and costs associated with crafting the device. If the dramatic characters farm out the job to a contractor dwarf or something, or else hire a wizard to do the adjustment, these costs will increase dramatically, because the craftsbeing wants to turn a tidy profit—and there will be someone else in the world with the knowledge of how to make or adjust these things. Also, the difficulty and the cost will be affected by the craftsmanship and size of the engine, and so forth, as mentioned above.

ALCHEMICAL ENGINE (Pg. 50)

Effect: This engine transforms the material put into it into something else. The exact materials consumed and produced are dependent entirely

upon how the engine is calibrated—and, of course, how well it's calibrated. A poorly calibrated engine might produce nearly anything, or the expected material contaminated with other odd materials. After an engine is calibrated, it will only alter the substance for which it is prepared; if you calibrate the engine to change lead to gold, and put steel into the conversion chamber, nothing happens. You may, however, recalibrate the engine to change steel into gold—just make sure you're all done with lead before you do it. If you draw a joker, the engine might convert itself to whatever the product is. Hmm.

Operation: Spontaneous, 22 points (♦)

Investment: Difficulty 90, Cost 25,000 c

AUDITORIAL ILLUSION ENGINE (Pg. 28)

Effect: This creates sounds—either one continuous tone, which is easy, or a melody, which is more difficult. Melodies are created by engineering the audio illusion to “move” in much the same manner as is done with an optical illusion. The difficulty of tuning the engine depends on the difficulty of the sound being recreated. A simple toot is easy, but a good rendition of a Mozart concerto is practically impossible—at least at this time. Jokers might make the illusory sound very loud, or perhaps make it linger in the area after the engine is shut down.

Operation: Continuous, 16 points (♥)

Investment: Difficulty 20, Cost 1500 c

Difficulty 25, Cost 2500 c for a moving illusion

CIPHER ENGINE (Pg. 84)

Effect: When activated, this engine takes a single page and encodes it into nonsensical scribbles. These scribbles interlock in a haphazard manner, and so defy human or Faerie decryption. The machine may be constructed in such a fashion as to destroy the original, if desired. This does not add to complexity; a shredder is a very easy device to add on to the tail end of the engine. A page encoded in this fashion, which may be artwork or text, may only be decoded by another cipher engine, or else possibly by a very skilled wizard of some sort.

Operation: Spontaneous, 16 points (◆)

Investment: Difficulty 60, Cost 6000 c

CLAJRAUDJENCE ENGJNE (Pg. 41)

Effect: This engine creates a magickal pipeline of extradimensional nature, which carries the sounds made at a distant location back to the engine so that the operator can hear it. It does so without eliminating the sound at the source. The area of effect determines how much sound is pulled out; a large area of effect might transport every conversation in a large ball room, while a small engine will eavesdrop on just one corner of it. Also, the amount of energy used by the engine determines the quality of the sound: volume, static, distortion, minimum audible sound, etc.

Operation: Continuous, 18 points (♠)

Investment: Difficulty 30, Cost 3500 c

CLAJRVOYANCE ENGJNE (Pg. 43)

Effect: This creates an extradimensional gate, the location of which may be moved around. This gate is paired to another gate at the engine by an ethereal tunnel which transcends normal space. This gate allows people at the engine to look through the gate and see what's on the other side as if they were there. This means that people on opposite sides of the engine will be looking in different directions of the target area, and will see opposite walls of the place the far gate is placed. This gate allows only for the transmission of light, yet it does not diminish the light present at the location being spied upon.

Operation: Continuous, 20 points (♠)

Investment: Difficulty 35, Cost 4000 c

CONFESSJON ENGJNE (Pg. 89)

Effect: This causes all persons within the field of its effect to want to speak the truth, no more and no less. They may endeavor to lie, but the difficulty of the task is the power drawn by the engine to start the spell, modified by the Host if the lie is particularly large. Evasions and half-truths can result in a slight decrease in the difficulty. Obviously, then, a large and powerful engine will be nigh irresistible in its sodium pen-tatholic effect. Jokers make everyone speak the truth, the whole truth, and nothing but the

truth, no matter what, and no matter how trivial or pithy the remark. "Gee, that's a terrible coat you have. You should really have it tailored. And you nicked yourself shaving again, you maladroit, but I should have guessed by the stumbling way you waltz." "I shall ignore your contemptible babbling. You're always cutting me down, old chap, because you're so conceited, and insulting someone as much more handsome than you as I am makes you feel better." Oooh. Trouble.

Operation: Continuous, 20 points (♥)

Investment: Difficulty 60, Cost 7000 c

DESTRUCTJON ENGJNE (Pg. 104)

Effect: This unleashes blazing wads of doom, much akin to explosives or fireballs. It's not exactly either, because it's magickal in nature—it just tears stuff apart in a kind of photon-torpedo mix of all the elements. Like maybe it engenders a molecular-level steam explosion like the one that took St. Helens apart up in Washington in 1980. The amount of damage the shot causes is equal to the amount of energy used in the creation of the fireball. It is possible to build this engine with a higher or lower activation level, and in fact, it's recommended that smaller engines have very small activation levels. You don't want to hold onto something when it unleashes a fireball that'd take apart the World Trade Center.

Operation: Spontaneous, 16 points (♣)

Investment: Difficulty 35, Cost 3500 c

DJMENSJONAL ENGJNE (Pg. 82)

Effect: This creates a dimensional gate between the engine and whatever plane it is built for. Although it can be aimed at any place in the target plane, a dimensional engine, once built, can only access that particular plane. It is possible to design the engine to create a different gate which will access a different plane, but frankly, we're not going to play hunt-and-peck with a transdimensional doorway. You never know; the way things run around here, I'd expect to open a gate on Cthulhu himself! Whatever the case, when you draw a joker while operating this gate, expect company.

Operation: Continuous, 24 points (♠)

Investment: Difficulty 25, Cost 2000 c

DISSOLUTION ENGINE (Pg. 98)

Effect: This causes the item upon which the engine is focused to dissolve into dust. Human targets can resist the effects, both by force of will and more easily by moving out of the way, but any inanimate object will eventually be consumed. The dissolution engine can only dissolve an amount as big as its area of effect; if the target is larger than this, a spherical area as big as the engine can handle will be dissolved (the Host should add to the difficulty of a partial dissolution). The dissolution engine requires a variable amount of power, depending on the resilience and size of what it is targeted against— 4 for sandstone, 8 for wood, 12 for steel, 16 for a human, and others can be derived from there. The amount of power required also depends on the size and shape of the target, because the more of it there is, and the better it's held together, the tougher it is to render it into component atoms.

Operation: Spontaneous, variable points (♦)

Investment: Difficulty 70, Cost 7000 c

DRAINING ENGINE (Pg. 21)

Effect: The draining engine has no effect other than to use up the magickal power in a region in a useless fashion. It is, essentially, a magick leech, used to disarm those sorcerers and wizards who might oppose you. With a joker, you might consider having the magickal knot get tangled in the engine, growing bigger and bigger until something has to happen ...

Operation: Spontaneous, 1 point (any suit)

Investment: Difficulty 15, Cost 1000 c

DREAM ENGINE (Pg. 56)

Effect: When activated and placed over the recipient's head, this causes strange and unusual dreams to fill the person's sleep. This can be used in psychoanalysis, to help someone resurrect suppressed memories. It can be used as a punishment or reward. Morrolan wonders if it might be set to give prescient dreams, but I myself doubt it. If you want to play that way, though, go ahead. Me, I'll just program mine to give me dreams about Marianne all night long. Mmmm. Yeah.

Operation: Continuous, 16 points (♥)

Investment: Difficulty 30, Cost 3000 c

EARTHSHAKER ENGINE (Pg. 96)

Effect: This causes tremors and earthquakes to occur within its radius of effect, the strength of which is dependent upon the amount of magickal energy the engine gathered to itself. If a joker is drawn, you can be sure that actual fissures will show up, possibly accompanied by a gush of lava and the like. The biggest problem with the earthshaker engine is turning it off, because it can really get itself bouncing around, and if you're careless, you could break a bone. I'd recommend that an exceptional Athletics feat be required to shut one down before it runs out of power. The second biggest problem is containing the sucker when it gets itself going; it might wander off downhill away from where you want it, for example.

Operation: Continuous, 20 points (♣)

Investment: Difficulty 45, Cost 4000 c

ELEMENTAL ENGINE (Pg. 101)

Effect: This engine creates a wall around itself, made up of whichever element is determined by the material being consumed in the crucible of the engine. Change the fuel, change the element. The wall's shape is determined by the way the engine is built; different cams produce different shapes. The less round the desired shape is, the more difficult the engine is to build and calibrate (the stats I give here are for a circular wall). The strength of the wall is equal to the power put into it by the engine, though the exact effects depend on the elemental manifestation. Earthen walls take damage equal to the power before they are temporarily breached, while walls of fire will burn anything that tries to pass through.

Operation: Continuous, 22 points (♣)

Investment: Difficulty 50, Cost 5000 c

ETHEREAL INTERFERENCE ENGINE (Pg. 52)

Effect: This provides a magickal barrier against a spell of the same magickal aspect as that of the engine. Each ethereal interference engine is specifically built to withstand one particular type of magick, and they cannot be interconverted. When an ethereal interference engine is operating, the cost to cast a spell of the same aspect

against any person or place inside the engine's radius of effect is increased by the amount of power the engine has accumulated to trigger the spell. If a joker is drawn, perhaps the area acquires a permanent deflection against that type of spell, or perhaps the engine draws in all the power of its aspect in the area.

Operation: Continuous, 14 points (any suit, by design)

Investment: Difficulty 35, Cost 3500 c

GENERIC ILLUSION ENGINE (Pg. 25)

Effect: The engine is a vehicle for casting illusions. The actual illusion created depends on what module is attached to the engine, because it's the module that contains the mechanisms that actually tie the subethric knots. Each module is a little easier and cheaper to build than a full-fledged engine of that type, but the cost and complexity of the generic illusion engine more than makes up for the difference.

Operation: Continuous, 16 points (♥)

Investment: Difficulty 40, Cost 2500 c

Difficulty 15, Cost 1200 c for an illusion module (any type)

Difficulty 20, Cost 1500 c for a moving illusion module (any type)

GLACIAL ENGINE (Pg. 32)

Effect: This causes everything within the area of effect of the engine to decrease in temperature, starting with the hottest items, like torches, lamps, etc. Given enough time and magickal power, everything in the icy grip of a glacial engine will freeze solid. The lowest temperature to which the glacial engine cools the surroundings can be set with a control lever. As illustrated here in the *Codex*, the lever runs from about 40° F to a good step below zero. Humans inside its effect will likewise decrease in temperature, although their spirit's force acts as a bit of a buffer. Stay inside a glacial engine's radius too long, though, and you'll die from hypothermia. Here's a clue: When you no longer feel the cold, run like hell and don't stop until you're sweating like a pig.

Operation: Continuous, 14 points (♣)

Investment: Difficulty 20, Cost 2000 c

HEALING ENGINE (Pg. 74)

Effect: This causes all wounds and illnesses to be removed from the person wrapped in the gold and silk shroud of the engine. The amount of power the engine requires depends on how badly injured the person is. It takes one point of power per wound incurred to heal someone, plus extra power as determined by the Host to compensate for illness or poison. Once the activation energy is acquired, the actual healing process is impossibly fast. If a person is healed with a joker, he gets hyperactive for a long while, and demands immediate action in all situations.

Operation: Spontaneous, variable points (♦)

Investment: Difficulty 70, Cost 7000 c

ILLUMINATION ENGINE (Pg. 23)

Effect: When activated, this engine creates light all around it. It does not glow of itself; it causes all items within its radius of effect to be illuminated, in essence to reflect a magickal light. The light has no source, so there are no shadows within its area of effect. The magick causes items outside its radius to be lit as well, simply because there is some reflected light from items within the engine's radius. However, this reflected light is scant at best. By the way, you'll notice that this is a hearts spell; it's psychic magick. I think this is because the engine doesn't actually cause real light, just the illusion of it. I'm not sure why it works that way, and Morrolan is tired of trying to explain it to me, so just accept the fact.

Operation: Continuous, 14 points (♥)

Investment: Difficulty 15, Cost 1500 c

IMPARTED MOTION ENGINE (Pg. 61)

Effect: This causes whatever device to which it is attached to move in a manner determined by the operator of the engine. This engine cannot be used on its own, but must be mechanically connected to whatever it is that the operator wants to move. In this sense, the imparted motion engine is much like a magickal internal combustion engine. And when a joker is drawn, your accelerator gets stuck on full power! The difficulty of the Tinkering feat required to control the engine's effects depends on what kind of mechanism is being moved. A go-cart is easy, but a giant robot battle suit is very difficult.

Operation: Continuous, 14 points (◆)

Investment: Difficulty 40, Cost 4000 c

JMPRJSONMENT ENGJNE (Pg. 37)

Effect: On further discussion between Auberon and Morrolan, it was decided that Leo was wrong about the action of this engine. It actually creates a sort of dimensional barrier, an invisible, intangible, but nonetheless very real wall, which is all but impossible to pass through. That's how it's possible to weave it with spikes; the spikes are there, and the person feels them, though because they're extradimensional, they don't actually tear the person's body. In any event, the engine creates a wall around itself, well, actually a sphere, which traps intelligent beings within it. To overcome the strength of the wall, the person trapped within must make a Courage or Etherealness feat equal in difficulty to the amount of power drawn by the engine.

Operation: Continuous, 16 points (♠)

Investment: Difficulty 35, Cost 3500 c

JNCOMPREHENSJBJLJTY ENGJNE (Pg. 92)

Effect: This causes all within its grasp to forget everything that occurs while the engine is operating. I mean everything. It's as if those affected by the engine are in a continuous state of complete confusion. Memories and training which occurred before the engine was switched on may still apply, so someone would probably remember that he is facing his arch-enemy, although the moment someone turns his face away from his long-hated nemesis, he'd forget that person was there. While under this engine's effects, acts may be remembered, however temporarily, by making a Courage feat equal in difficulty to the engine's spell's power. Yeah, use Courage for this, because it represents the difficulty in forcing your brain to work against all the effects of the engine, and that's willpower more than anything else.

Operation: Continuous, 16 points (♥)

Investment: Difficulty 50, Cost 5000 c

JNFERNO ENGJNE (Pg. 30)

Effect: This causes everything within the area of effect of the engine to increase in temperature.

Colder items are the first to be affected. Allowed to increase enough, and lacking any means of dissipating that heat, eventually something under the influence of an inferno engine will melt or burn or whatever. The maximum temperature to which the inferno engine heats the surroundings can be set with a control lever. As Leo designed it, the lever runs from about 200° F (boiling water) to just over 450° (burning wood). Humans inside its effect will likewise increase in temperature, and although their willpower and the body's natural mechanisms will prevent them from succumbing as fast to the magickal fever, eventually they, too, will suffer. Again, a clue: If you stop sweating, you're in deep yogurt.

Operation: Continuous, 14 points (♣)

Investment: Difficulty 20, Cost 2000 c

JNTEGRJTY ENGJNE (Pg. 69)

Effect: This engine reinforces the natural strength of any structure, like the walls of a tower or the hull of a ship in Leo's example. It gives the structure additional resistance to all forms of attack. Add the energy accumulated by the integrity engine to the natural strength of whatever structure is reinforced. For example, if you've determined that a particular wall is strength 15, so that it'll take a strength 16 blast from a destruction engine to breach it, and someone fires up an integrity engine which gathers ten points of power before it activates, then the new wall strength will be 25, and the attacker will have to come up with a 26-point fireball from the destruction engine to put a hole in the defenses.

Operation: Continuous, 18 points (◆)

Investment: Difficulty 45, Cost 4500 c

JNTELLECT EMBODJMENT ENGJNE (Pg. 39)

Effect: The intellect embodiment engine is New Europa's answer to the TI-59. It's a calculator, pure and simple, and gives very accurate answers very quickly, even if the operators don't exactly know the math involved. To generate an answer to any equation, no matter how difficult, the operators must make an Education feat, with the difficulty based not on the mathematics, but on

the difficulty of framing the question accurately. Calculating the escape velocity of the planet is very easy; the result is easy to explain and obtaining the gravitational contestant is simple. Calculating the thickness of steel necessary to withstand vacuum and provide protection against asteroids is nearly impossible, since no one here really knows what's involved. Remember, the intellect embodiment engine isn't intimidated by math, just definitions.

Operation: Spontaneous, 6 points (◆)

Investment: Difficulty 35, Cost 3500 c

INTELLIGENT ENGINE (Pg. 41)

Effect: This creates an artificial human persona, the personality of which depends on how the engine was tuned. You might get an antisocial pacifist chauvinist schizo, or a devoutly religious gluttonous child. Impossible blends are possible with poorly tuned engines, and in fact it is conceivable that with an abject failure of tuning, you might get a personality that deliberately lies to you. In any event, the persona is intelligent and can communicate with the operator. I suggested we attach a Morse code key to make things easier. All information gathered from an intelligent engine should be gathered through role-play, not through feats and cards. It is, after all, another intelligence.

Operation: Continuous, 26 points (◆)

Investment: Difficulty 80, Cost 8000 c

INVISIBILITY ENGINE (Pg. 92)

Effect: This engine causes the light to flow about it at the periphery of its effect, though not quite all light, or else the person made invisible would never be able to see anything. As Leo mentioned in his explanation, to those close to the invisibility field, the image seen through the field seems to warble and twist about, as it coalesces back into a natural state. Kind of like it did in *Predator*, although in that movie the light seemed less fluid and more like it was refracted through crystal. At longer distances, it will appear to an observer that the invisible field is a light smudge or shadow or dim spot, because some of the light which strikes the field is held within it so that those inside can see. To spot an invisible person, add the power of the engine to

the normal difficulty of the Perception feat. Other senses are not affected; it's every bit as easy to hear an invisible person as a normal guy. This makes it very important to calibrate an invisibility engine properly. Finally, lower the feat difficulty for someone close at hand. And with a joker, it might be fun to have the invisibility field deflect all light, making the persons within perfectly invisible, no chance to be seen at all, but also blind as a bat.

Operation: Continuous, 20 points (◆)

Investment: Difficulty 25, Cost 2500 c

LEVITATION ENGINE (Pg. 77)

Effect: This engine causes itself and everything attached to it to rise up in the air, or else to grind itself firmly into the ground. The amount an individual engine can rise up depends on its area of effect; if all of the vehicle can't fit into the area of effect, it probably can't be held up. The more energy the engine gathers to activate the spell, the more rapidly it can cause its vehicle to rise and fall. Yeah, these are loose definitions, but I don't want to bog the Host down with all sorts of strict and exacting definitions about vehicles, size, shape, mass, and stuff like that. Even if I did, the players would just find a loophole and pilot an aerobattleship through it.

Operation: Continuous, 18 points (◆)

Investment: Difficulty 45, Cost 4500 c

LIFE SUSTENANCE ENGINE (Pg. 71)

Effect: This engine turns all environments it encounters to one suitable for human habitation. In other words, it changes everything that's fatal to something that's non-fatal. As I understand the engine, it will only affect that which might poison or drown or suffocate people; don't count on this to protect you against the inside of a volcano, because you'll burn like a flare as soon as you hit the lava. But against smoke and water and poison gas, it's great. To defend against smoke and thin air, the engine must gather 20 points of power, but water and nerve gas require 30 points of power to be gathered for activation.

Operation: Continuous, 24 points (◆) see para

Investment: Difficulty 50, Cost 5000 c

MADNESS ENGINE (Pg. 58)

Effect: This causes the basest measures of a man to come out to play. Essentially, it instills a sort of immediate mob mentality on people, where human ethics and social mores are suddenly no longer a consideration. The way each person reacts to this will vary from autism to cavorting to mayhem or murder. It's up to the Host to decide what exactly shall happen. A person may resist the effects by making a Courage or Charisma feat which beats the strength of the spell. But if the engine draws a joker from the deck ...

Operation: Continuous, 20 points (♥)

Investment: Difficulty 60, Cost 6000 c

MAGNETIC FORCE ENGINE (Pg. 86)

Effect: When fired up, this engine causes itself and the vehicle in which it's installed to move about, pulling itself along the magnetic force lines of the Earth. The amount an individual engine can push around depends on its size; the bigger the engine, the bigger the vehicle that can be hauled about. Yes, you can use under-sized engines in a vehicle, if you want something that moves ponderously slowly. The more energy the engine gathers to activate the spell, the more rapidly it can move itself about. Yeah, as with the levitation engine, these are loose definitions, and for much the same reasons. Just use your common sense.

Operation: Continuous, 16 points (♦)

Investment: Difficulty 45, Cost 4500 c

MEGAPHONE ENGINE (Pg. 42)

Effect: This engine creates a magickal pipeline of extradimensional nature which carries the sounds made at the *ingenium* to a distant location. The area of effect and the amount of energy used by the engine determine the quality of the sound: volume, static, distortion, minimum audible sound, etc. If a joker is drawn, the megaphone engine might steal all sound away from the source, leaving the operator unable to communicate with those close at hand. Plus there's the difficulty of speaking when you can't hear yourself do it—your volume and tone may take on weird characteristics.

Operation: Continuous, 18 points (♠)

Investment: Difficulty 30, Cost 3000 c

MESMER ENGINE (Pg. 61)

Effect: This is a variant of the madness engine, but instead of creating random chaos in the victim's brain, it imposes commands instead, and allows the operator to control the victim. The engine must be calibrated for each command or set of commands, but it is a flexible enough design that it can deliver almost any type of control the owner wants. Despite its name, the mesmer engine does not allow for post-hypnotic suggestion. When its effects are ended, the victim returns to normal. The only after-effect is that it might be possible to cause the victim to immediately forget all events while under the control of the engine, although that's doubtful, because then he'd also immediately forget the commands the operator had given to him.

Operation: Continuous, 22 points (♥)

Investment: Difficulty 70, Cost 7000 c

OLFACTORY ILLUSION ENGINE (Pg. 29)

Effect: This creates smells for the amusement of all. Obviously, some will choose to flood their apartments with nice smells; others, to flood the apartments of their enemies with foul stinks. Since it is the illusion of smell, and not the real smell itself, the bouquet (be it fair or foul) remains as fresh with every breath as it was for the first. One of the worst tortures I can imagine would be to have an ever-changing foul stench illusion gagging some hapless prisoner for hours on end. This way, the foul bouquet is ever-fresh and ever-new. Yeagh.

Operation: Continuous, 16 points (♥)

Investment: Difficulty 20, Cost 1500 c

Difficulty 25, Cost 2500 c for a moving illusion

OPTICAL ILLUSION ENGINE (Pg. 25)

Effect: This creates an optical illusion, a magickal hologram sort of thing. The exact illusion generated depends upon how the engine is calibrated more than on its engineering, although certain engines might not have enough flexibility in their controls to allow them to create any illusion one might imagine. Ordinarily, the illusion will not move. With extra effort, though, a moving illusion can be created.

Operation: Continuous, 16 points (♥)

Investment: Difficulty 20, Cost 1500 c

Difficulty 25, Cost 2500 c for a moving illusion

RECORDING ENGINE (Pg. 45)

Effect: This combines the effects of the clairaudience and clairvoyance engines, and directs their output into a derivation of the cipher engine, thereby recording all events that the engine perceives for future playback. When the engine plays a recording back, it creates an optical and auditorial illusion of sorts, but it is actually the delayed imparting of the images of the actual event.

Operation: Continuous, 24 points (♠)

Investment: Difficulty 50, Cost 5500 c

REPULSOR ENGINE (Pg. 39)

Effect: The inversion of the imprisonment engine, this one is designed to keep people out of its radius of effect. Since it's a magical barrier, people may pass from the inside to the outside freely, but they may not reenter. If I understand my magick, even a person half in and half out of the barrier will be unable to get back in—the thing works sort of like those tire spikes they used to have at drive-ins. To overcome the strength of the wall, the persons who wish to cross must make a Courage or Etherealness feat equal in difficulty to the amount of power drawn by the engine. There is apparently some benefit to trying to rush the wall en masse, but not a great one, so we'll leave it to the Host to determine, especially since "en masse" carries very different meanings for a small engine as compared to a huge one.

Operation: Continuous, 16 points (♠)

Investment: Difficulty 35, Cost 3500 c

SILENCE ENGINE (Pg. 42)

Effect: This engine dampens sound within its area of effect. This means that sounds inside the engine's area of effect are made much quieter, and also that those within the sphere of influence will be less able to hear sounds made outside the engine's reach. To simulate this in game terms, add the amount of energy the engine has accumulated to the difficulty of any Perception task involving sound. This is applied to those

within the engine's effects, as well as to those outside trying to hear what's going on inside.

Operation: Continuous, 16 points (♦)

Investment: Difficulty 20, Cost 2000 c

TEMPORAL ENGINE (Pg. 67)

Effect: When activated, this engine dramatically slows the passage of time for all within its grasp. The amount that time is slowed depends on how much power the engine gathers to do its work; for each point, time slows by a factor of one. Thus, if a temporal engine activates with 30 points of power, then for each 30 minutes of real time, one perspective minute will pass within the grip of the engine. It's possible (at least in theory) to make a personal harness which will protect you from the engine's effects. This lets you move through the engine's field normally. Thus, in the above example, you'd be able to move thirty times as fast as the people who were trapped in the temporal amber.

Operation: Continuous, 28 points (♠)

Investment: Difficulty 90, Cost 12,500 c

Difficulty 40, Cost 5000 c for a protective harness

TRANSFORMATION ENGINE (Pg. 52)

Effect: This takes any item and alters it in shape to something else. It does not make any chemical changes to the item; something which starts as wood ends as wood. The shape of the item to be made is determined by a carved plate which is inserted into the machine (this also requires calibration of the engine), but once the shape to be made is determined, anything can be transformed. Given the shape of a sword, you could put sawdust and make a wooden sword, a book to make a paper sword, or a chandelier to make a glass sword. It works this way because the engine doesn't actually change the molecules, it just rearranges them. It doesn't even break matter down to the molecular level, I don't think, just to small chunks.

Operation: Spontaneous, 16 points (♦)

Investment: Difficulty 45, Cost 4500 c

ULTIMATE ENGINE (Pg. 106)

Effect: Although this was not completely described in the *Codex*, I thought I'd include it

anyway. Probably the easiest way to simulate this engine is to consider it to be a continuous engine which draws power from farther afield than other engines do. It draws in power from all over the place, and when it's shut down, it dumps all the power into the immediate area. It acts kind of like a magick pump, then. I'll warn you, this is a dangerous device to have in any game, because someone could design it so that it never achieves activation, and that being the case, it could conceivably drain an entire continent of magickal power. Then the evil mage shuts it off, all the power gets dumped in his lap, and for several hours he can cast fireballs like you've never seen ...

Operation: Continuous, 30 points (♠)

Investment: Difficulty 100, Cost 20,000 c

WEAKENING ENGINE (Pg. 74)

Effect: This drains the energy from people within its radius of effect. It doesn't do this directly, like unraveling or anything, but by reducing the effectiveness of oxygen within its influence. This means that when you draw a breath, you don't get anything from it. It's like you're out of breath after having run wind sprints. It is possible that the effects of this engine might cause those who are infirm (or exhausted from running wind sprints) to actually pass out or die. To simulate its effects, add the energy of the engine to the difficulty of any Physique or Athletics or Fisticuffs tasks performed under its influence. If the activity is light, the penalty may be reduced at the whim of the Host.

Operation: Continuous, 22 points (♦)

Investment: Difficulty 50, Cost 5000 c

WEATHER ENGINE (Pg. 48)

Effect: This engine alters the weather within its area of effect, which means that it's most effective as a very large engine, big enough to hit a city. For as long as the engine is running, the weather desired shall hold sway. The engine is flexible enough to allow several different types of weather, depending on the material consumed as fuel; it is not necessary to calibrate the engine for each type of weather.

Operation: Continuous, 20 points (♣)

Investment: Difficulty 45, Cost 4500 c

WEATHER PREDICTION ENGINE (Pg. 41)

Effect: This predicts the weather to the best of its abilities. Unfortunately, like all weather forecasters, its accuracy is far from exact. Worse yet, the smaller the engine, the less accurate it becomes. Anything less than a large engine simply isn't worth the bother.

Operation: Spontaneous, 6 points (♦)

Investment: Difficulty 40, Cost 4000 c

Looking over the list, the observant might notice that there's a bit of an energy gap in the alignments of the engines. There are nine spiritual (spades) engines, and eleven psychic (hearts) engines. However, there are sixteen material (diamonds) engines — almost twice as many as the previous two—and only six that rely on elemental magick (clubs). This means that, as far as engine magick is concerned, there is a premium on material magickal energy and a bit of a glut on elemental magick. You can also, therefore, expect that those magicians who use the material magicks will be most opposed to the construction of magickal engines.

STAR IRON

STAR IRON: WHAT IS IT?

Star Iron, also known as Cold Iron, is the key ingredient for a magickal engine—without its effects, a magickal engine cannot manipulate the raw power of sorcery. But what is Star Iron? I mean, to me, iron is iron is iron, right? Chemical symbol Fe, and that's about all I remembered from my chemistry class. It rusts, it melts, it presses clothes when heated, and you're supposed to take some every day with your vitamins. Iron.

But no, I was very wrong, as Auberon took great pains to demonstrate to me. See, over here, Mike, there's two types of iron: the normal stuff, and Star Iron. Yeah, always spelled with caps. Normal iron is what the Prussians are beating into sabers and bayonets and land fortresses even as we speak. Normal iron has some negative effects on magick, too. The iron railways the Prussians and English Steam Lords are building are hampering the normal flow of magick about the land. But Star Iron, well, that's something different.

OF ITS NATURE

As its name implies, Star Iron is extraterrestrial in origin (I had to explain that word to the gang when I first used it, but now it's become very chic among the salons). And Star Iron has a great effect upon magick, far more so than normal iron. To hear Auberon explain it, Star Iron is a lot like plutonium to the Faerie. Yeesh. Star Iron's effect is so pronounced that the Faerie can actually die just by being too close to it—they don't even have to touch the stuff! And we're talking the True Death here!

No one knows why Star Iron has these effects. Grey Morrolan believes that is it because other planets out there do not have magick. That may

or may not be, but it's almost certain that there is no magick in deep space. Since the iron here has been exposed to the Earth's magick for thousands of years, its suppressive effect on magick has been reduced over time. It's been denatured. But Star Iron, Morrolan thinks, has never been exposed to a magickal field, and so has a very serious effect on magick. Over a few hundred thousand years or so, he thinks Star Iron will be indistinguishable from normal iron. This sounds pretty reasonable to me; I mean, the planet is supposed to have been made by a whole bunch of

iron-nickel asteroids mashing together, right? So, in theory, all the iron on the planet is Star Iron if you go back far enough. And since it doesn't act that way, that indicates that maybe Star Iron can be denatured by chronic exposure to magickal energies.

Whatever the case, Star Iron is needed, so Star Iron the characters must get. As you might figure, you just can't go trot on down to Fred's Convenience Store on the corner and pick up half a pound of Star Iron. While it is possible to buy it from time to time from collectors and governments, it is a rare instance indeed, and very very

expensive besides. Instead, the dramatic characters must find a way to go where some Star Iron may be found, and get it themselves.

HOW TO GET IT

You have to go somewhere to get the Star Iron. This can either be a meteorite crater or a museum which has a meteor on display. Whichever the case, the dramatic characters must first figure out where the stuff is. This can be accomplished through interviews, research, spying, or whatever, depending on what sort of Star Iron source they're trying to pursue. For example, it might be easy to determine that the Smithsonian Museum has a few meteors on display. But crossing the Atlantean to the New

Star Iron has
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World and staking out the Museum to determine the best way to get a sample is a lot harder. Then you actually have to do it ...

As Host, you need to determine where there might be Star Iron in the world, how much is at each site, where exactly at that site it is, and how it is obtained by someone there. Note that if Morrolan's right, not all Star Iron is created equal, or rather it's all created equal but some has become devalued over time, so the characters may need to incorporate more of that stuff into their engines to make up for its denatured effects.

Here's a few places we in Bayern know or think there might be Star Iron over here:

<u>Place</u>	<u>Amount</u>	<u>How to Get It</u>
Arizona Crater	50 lbs.	Prospecting a lot of small rocks, but the stuff is only 1/4 effective
Hudson Bay	Unknown	If the Bay is really a crater, go diving at the center and look
<i>Berlinische Stadtmuseum</i>	10 lbs.	Grand theft, defying the impeccable Prussian security
Smythe Estate, South Africa	2-4 oz.	Pay a lot of money for his meteor
Festung Falkenstein	3 lb.	Have a good reason, work for the Bayern Inner Circle
Siberia	Unknown?	Wait for the meteor (?) to hit in 1908
Chateau Mousseau	7 oz.	Break into Mousseau's private estate
Tokyo	2 lbs.	Steal the Emperor's katana, rumored to be forged of a meteor

Add your own ideas, and change these listed here so your players can't get an unfair advantage.

There is no known way to refine iron ore or steel to extract the Star Iron which may be trapped within it, because as far as mundane chemistry is concerned, there is no difference between normal iron and Star Iron. However, it is theoretically possible to separate the types of iron with the help of magick. But until such a magickal spell is devised, I wouldn't waste my time buying up all sorts of scrap metal in the hopes of being able to separate the Star Iron from the dross. Besides, you can be sure that the magickally attuned Faerie will stop just such an undertaking. They certainly wouldn't help.

IDENTIFYING STAR IRON

Once you have a chunk of iron in your hand, you have to figure out whether or not it's Star Iron itself, or merely normal stuff. They look very similar, but there are differences, subtle though they are. There are two ways to identify Star Iron. The hard way is to try a Perception feat, examining it very closely, preferably with a good scope. To do this, the character must have a Sorcery ability of Good or better; it's necessary to see the subethric interference of the Star Iron. The Difficulty of the feat is 20, but the characters can add the values of their skills in Sorcery and Perception together—the better the character's sorcery, the easier it is to identify the subethric changes Star Iron causes.

The easy way to tell if a chunk of ore has Star Iron in it is to walk up and bonk a Faerie with it. If the Faerie vaporizes, it's Star Iron. Then it's time to run like Hell before the rest of the Faerie roast your body alive.

EFFECTS OF STAR IRON

Star Iron has a nasty effect on Faerie, Seelie and Unseelie alike. This table shows what kind of effects Star Iron has on them. The effect depends on the amount of Star Iron present, and the Faerie's range from the Star Iron. Star Iron which has been denatured over time (very old Star Iron, in other words) should be treated as a lesser amount, in proportion to its effectiveness.

<u>Amount</u>	<u>Disturbing</u>	<u>Painful</u>	<u>Deadly</u>
0 - 4 oz.	2 ft	1 ft	touch
4 - 8 oz.	5 ft	2 ft	1 ft
8 - 16 oz.	10 ft	5 ft	2 ft
1 - 2 lb.	25 ft	10 ft	5 ft
2 - 4 lb.	50 ft	25 ft	10 ft
4 lb. and up	100 ft	50 ft	25 ft

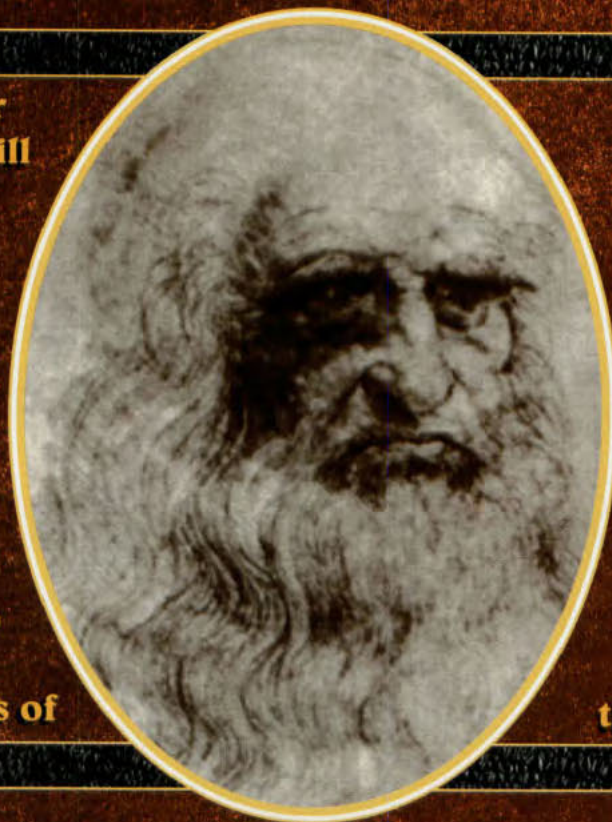
Looking over this table, I get this very nasty idea for a magickal engine which causes everyone within a mile to become very slow. Then you could charge an Unseelie host, trap them magickally, and crush them beneath the effects of the Star Iron. Yuuuck. Hundreds of Faerie vaping into nonexistence like a whole series of matches. I'd better not let Auberon see this; he'll have my hide. Never talk about True Death to a Faerie, let alone make plans for same.

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