

TRANSLATION

OUTLINE OF A MEMORANDUM

On the Establishment of a Society In Germany for the Promotion of The Arts and Sciences

(1671)

Gottfried Wilhelm Leibniz

GOTTFRIED WILHELM LEIBNIZ *was born in Leipzig, Germany on July 1, 1646, two years before the end of the Thirty Years War which had devastated most of Europe. The son of a professor of moral philosophy, he studied at the Universities of Leipzig and Jena. In 1667 he rejected an offer of a professorship and instead entered the service of the Baron of Boineburg, who had been a minister of the Elector of Mainz. While in his service, Leibniz was sent on a mission to Paris, the intellectual capital of Europe at the time, where he stayed from 1672 to 1676. During this stay he discovered the differential calculus and constructed a calculating machine.*

Upon his return to Germany in 1676, he accepted a post under the Duke of Hanover. His nominal duties were various: he was librarian, jurist, and official historian. From this position, however, he developed and maintained an international network of political and scientific collaborators.

In his philosophical and theological writings, such as the Discourse on Metaphysics, the Theodicy, and the Monadology, Leibniz distinguished himself as a Christian humanist opponent of both the British empiricist philosophy of Thomas Hobbes (1588-1679), John Locke (1632-1704), and Isaac Newton (1642-1727), and of the French rationalist philosophy of Rene Descartes (1596-1650).

The essay translated in this issue of Fidelio is one of two written by Leibniz in 1671, which laid the basis for the development of the science of economics. The other essay, entitled "Society and Economy," deals with the subject of the necessary costs and wages of productive labor.

In contrast to today's free market monetarists, who could care less about the development of physical economy, Leibniz, who intensively studied the principles of heat-powered machinery, was the first to define technological progress as necessary to the development of human society. According to Leibniz, the function of a heat-powered machine is to enable one man to accomplish the work of "a hundred others." Thus, technological progress, although not an end in itself, is a necessary means to the liberation of man; it is thus an expression of true love.

The significance of the essay which appears below is that, in contrast to those who in the tradition of Adam Smith deliberately divorce morality and economic science, Leibniz explicitly locates the science of economics as derived from Christian morality. True economic science is an expression of the Christian virtues of faith, hope, and love.

[[1]]

The topics of this memorandum are (1) whether and (2) how to set it up. Although, what we have to say about how to set it up, will serve to show that it is to be set up. To the extent that we think about its nature and characteristics, to that extent we must give an account of examples of its operation and usefulness.

[[2]]

If it is asked, whether it is to be set up, the answer is, yes, and, indeed, as much for the sake of the founders themselves as for the common good. Those who found it I take to be so constituted that, because of their distinguished position, power, and reputation, they have no need of anything other than a good conscience and immortal glory with those judges who cannot be deceived: God and posterity. Both will, of course, only render their judgment in the future; yet even in this life, for persons of high standing and especially for generous men—who are not pressed by necessity and who pay no heed, out of regard of their conscience and their health, to the pleasures of the body beyond necessity—there is nothing sweeter and nothing which promotes health more than that contentment, that joy, that peace of mind and, in a word, that heaven on earth, which gives a truthful foretaste of the future blessedness now, which is otherwise to be believed and hoped for from God and posterity, and which portrays to the mind in a glimpse, as it were, concentrated in a moment, the fruits of eternity. Thus it may be concluded that such a society is to be founded for the sake of (1) the good conscience and (2) the immortal glory of the founders, and also (3) for the common good. Although the common benefit of such a praiseworthy work, agreeable to both God and men, establishes the merit of the founders, their good conscience as well as their immortal name, is the true and infallible reason. Which is now to be shown, point by point.

[[3]]

A good conscience is, as I, so to speak, define it, a joy of the mind because of hope for eternal blessedness. So much, that is, and this is self-evident, as the assurance of that is within human power, if a man does all that is possible, and leaves the rest to the infallible, promised grace of God, who is fundamentally good and at the same time just.

[[4]]

Hope is faith concerning the future, exactly as faith is, so to speak, a hope concerning the past. For faith amounts to the hope that the past is truly as we say. But true faith, and true hope are not merely a matter of talk, nor even

of mere thought, but of thinking in action, that is, action as if it were true. To believe in God, to place hope in God, is to believe that God loves us and that his love offers to awaken in us a reciprocal love through our Savior and Mediator; and to hope that if we love Him in return with our whole heart, that therefore there will arise an indissoluble friendship, and a true and eternal friendship, that there will follow an inexpressible infinite joy in the life to come.

[[5]]

Thus hope and faith are founded on love, and all three on knowledge. Love is a joy of the mind arising out of contemplation of the beauty or excellence of another. All beauty consists in a harmony and proportion; the beauty of minds, or of creatures who possess reason, is a proportion between reason and power, which in this life is also the foundation of the justice, the order, and the merits and even the form of the Republic, that each may understand of what he is capable, and be capable of as much as he understands. If power is greater than reason, then the one who has that is either a simple sheep (in the case where he does not know how to use his power), or a wolf and a tyrant (in the case where he does not know how to use it well). If reason is greater than power, then he who has that is to be regarded as oppressed. Both are useless, indeed even harmful. If, then, the beauty of the mind lies in the proportionality between reason and power, then the beauty of the complete and infinite mind consists in an infinity of power as well as wisdom, and consequently the love of God, the highest good, consists in the incredible joy which one (even now present, without the beatific vision) draws out of the contemplation of that beauty or proportion which is the infinity of omnipotence and omniscience.

[[6]]

Again: Faith, hope, and love are wonderfully strengthened through the knowledge and certainty of the omnipotence and omniscience of God. For because He is the highest wisdom, then it is certain that He is so just and good, and has truly loved us his creatures, that He has done everything possible (that is, as much as the universal harmony of things allows, and which can be done without harm to our free will) in order to assure that we love Him, on which faith rests; but if He is also at the same time the highest power, so it is certain that He is powerful enough to allow those who love Him in return to enjoy His love, that is, to make them eternally happy. Which consideration is the foundation of hope, and if it is taken truly to heart, it alone is enough to make men blissful and to make even misfortune, poverty, persecution, con-

tempt, sickness, torment, and death for them as nothing—indeed, even sweet.

[[7]]

But just as faith and hope are not a mere formality, but rather practical thought, which is to act as if it were true (above, Section 4) that God loves us, so is the love of God also not merely formal, but is the will in action: which is, to do everything within our power to make it true and real that we also love Him to the utmost. The reality of love consists in our doing what pleases the beloved. What pleases God is again given by knowledge, in so far as it is within our power. For just as the knowledge that He is omnipotent and omniscient is the reason (above, Section 6) why we are to love Him, so is the knowledge that He knows all and is omnipotent, as much as we can attain to that, the guiding principle according to which we are to really love Him.

[[8]]

The knowledge of the Divine Nature is naturally to be derived out of nothing other than the true demonstration of His existence. Such must principally be taken from the fact that it is not possible without Him to furnish a reason (and yet nothing is without a reason) why things which might not exist really do exist; and further, why things which could be confused and chaotic are in such a beautiful, inexpressible harmony. The former establishes that He must be the ultimate reason of things and therefore the highest power; the latter, that He must be the ultimate harmony of things, and thus the greatest wisdom.

[[9]]

From this it follows inexorably that charity, the love of God above all, and true contrition, on which the assurance of blessedness depends, is nothing other than that love of the public good and of universal harmony; or rather, on that account, the glory of God and to understand are the same, and how great it is in itself to make greater, for there is no more distinction between universal harmony and the glory of God, than between body and shadow, person and picture, between a direct and reflected ray of light, since the one is what is in fact, the other what is in the soul of him who knows it. For God creates rational creatures for no other reason but that they should serve as a mirror, in which His infinite harmony would be infinitely multiplied in some respects.

From which must arise in due course the completed knowledge and love of God, in the beatific vision or the incomprehensible joy which the mirroring, and to a certain degree the concentrating of the infinite beauty in a small point in our souls, must bring with it. And thus, a burning mirror or burning glass is the natural image here.

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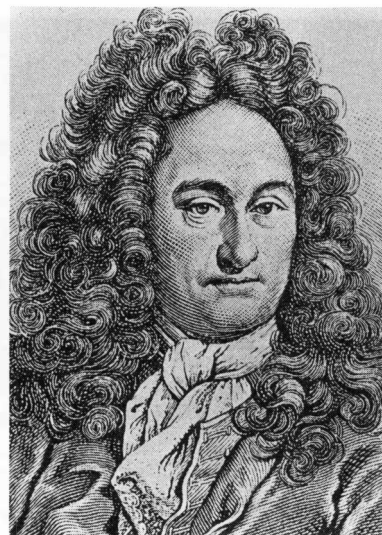
If then the love of God above all, contrition, and eternal beatitude arise from the fact that each comprehends the beauty of God and the universal harmony according to his own rational ability, and reflects it back onto others; and additionally, according to the proportion of his ability, promotes and increases that shining forth in men and other creatures; then it follows from that, that all of those to whom the somewhat sparing nature, in order to shade the world with variety, gave a lesser degree of reason and power, so that they must serve others as instruments and means, do enough if they let themselves be used as instruments for the glory of God and, what is the same thing, for the common good, and for the nourishment, ease of labor, comfort, instruction, and enlightenment of their fellow man, for discovery, research, and improvement of creatures, according to the limitations of ability and knowledge. Thus they satisfy their conscience.

[[11]]

Those who are provided by God with reason without power are appropriately advisers, just as those to whom power is given, should appropriately pay kind attention, and not throw out good proposals, but should rather consider that someday the good, but scorned adviser, will stand before the omniscient Judge, to their dismay, with reproaches, even if silent, of idleness or sinfulness. On the other hand, the disdained, but intelligent advisers are not to attempt to go beyond advising, but are to consider that God reserves a good plan for a better time, and out of His hidden deliberations has not given them a power equal to their reason, and therefore they should in no way attempt to achieve such, in order to carry out their good advice through prohibited words and deeds and machinations which disturb the state.

[[12]]

Those to whom God has given reason and power together in the highest degree, are the heroes whom God has created for the execution of his will, as the principal



Gottfried Wilhelm Leibniz

instruments; but whose invaluable talent, if hidden away, will be extremely difficult for them. The corruption and the putrefaction of the best from excessive idleness is worst of all. It is a crucial point, on which blessedness and mortal justice depends, to properly use one's reason and power for God's glory. Thus, I believe a conscientious man should not accept the Philosopher's Stone—to which is attached that difficult condition, which invariably attaches to all great power—without fear and trembling, so that he may never hear the harsh words, "Be damned with all your wealth!"

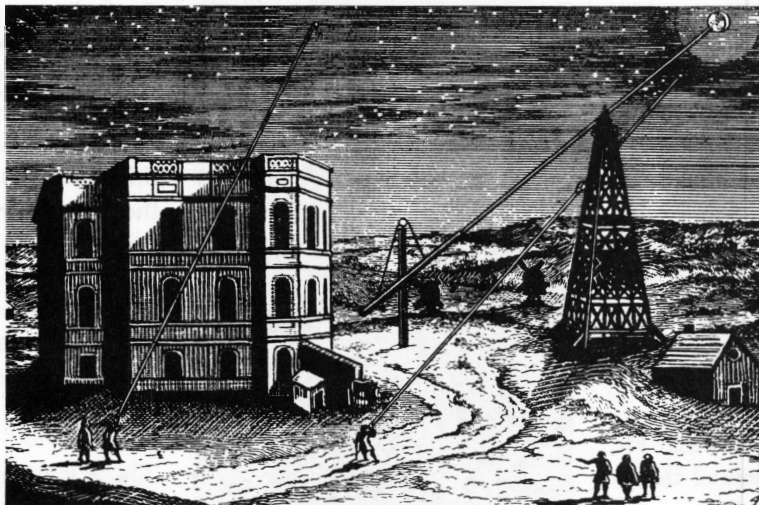
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Now reason and power can be used for the glory of God principally in three sorts of ways, exactly as I can meet a man in three sorts of ways; that is, with good words, good thoughts, and good works, or, as the latter are called among men, kindnesses. With God, it is, firstly, praise and sacrifice, next, hope with faith, and finally, good works or obedience, or effective charity. Charity is better than mere faith, obedience is better than sacrifice, faith is better than the feigned sacrifices and praises of those who honor God only with their lips.

Hence, we serve God either as orators and priests, or as natural philosophers, or as moralists and politicians.

[[14]]

Consequently, those who worship God with praise and sacrifice are orators and priests (setting aside those who care for souls and sacraments, so that they may thus be of benefit to the souls and who belong to the third class, and also not to mention that among the ancients, those who were priests were philosophers at the same time, and those who guide public affairs and for many reasons should still rightfully be so regarded). Now, orators are those who serve with words, priests with ceremonies. But this involves a great and glorious work, to proclaim the glory of God, and at the same time to enkindle everyone with love of Him. Thus, that which is so established, one is wont to say is



The Paris Observatory, 1705.

established absolutely for the glory of God, for although all good is directed to the glory of God, this goes to glorify God both visibly and audibly for the common man, because it refers directly to the glory of God with the words in which it consists. Also, that which is so established, will be called generally most excellent and absolutely a good work. And what is dedicated as a means to pleasing sacrifice to God, to preaching and music, the composing of gloriously moving songs of praise (in which the ancient Hebrews and even the pagans so exceeded what we enjoy and do), to decorous ceremonies and church ornaments, to glorious temples and churches (which serve to awaken even greater veneration), if these are well used, then they are without doubt to be considered well constructed. And thus it occurs to me that—with the establishment

among the French of an academy or society, created by Cardinal Richelieu for the improvement and elaboration of the French language—that one pious man desired to see instituted among other things in the rules, that each member should be responsible for composing something every year to the praise of God; which, however, I know not why, was not done.

[[15]]

And among philosophers, those honor God who discover a new harmony in nature and art, and thus make His omnipotence and wisdom visible. Thus Moses, Job, David and others were accustomed for the most part to take the material for their songs of praise from the natural wonders which God implanted in creation, as much as from that which He had done for the salvation of His people: how He set limits to the sea, arched over the heavens, traveled far above the clouds, sounding His thunder, giving rise to rivers, growing plants, and having the animals find, at the proper time, their nourishment and food.

[[16]]

Therefore, it is certain that to the extent that one knows

a wonder of nature, just to that extent he possesses in his heart images of the majesty of God, if only he refers them thus back to their original: and for that reason the glorious thoughts of an excellent man of the *Patris Spee Soc. Ies.* are to be praised, who proposed that one should refer to almost nothing without reflecting as much as possible on the glory of God; far less the glorious wonders with which the creatures silently manifest and praise Him.

[[17]]

And therefore, I am of the opinion, that even the great moralists and politicians, who are not, however, naturalists, and who are neither conversant with nor pay attention to the wonders of nature, are missing a great part of the proper awe, the true knowledge and the devout love of God, and thus the perfection of their souls, to the point that their art of knowing and ruling men is not made good through excellent science and good practices. Therefore, no one can praise God with more zeal and greater energy than he who, with his eloquence and poetry, and also in true philosophy, goes beyond the boundaries of common knowledge.

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Especially are those among men to be esteemed, however, who doubtless stand in the grace of God, who with the good intention of praising the Creator and of being of service to their neighbor, discover a glorious wonder of nature or art—it may only be an experiment, or a well-established harmony, and, as it were, just through that, honor God with perorating and poeticizing; just as empirical scientists are to be esteemed higher than orators or historians, and theorists higher than real poets, because the former conceive certain experiments which agree with nature—the latter only fictions—and conceive of rhyming hypotheses on the basis of experiments, and with that harmony praise the wisdom of God.

[[19]]

As often as a new structure is discovered by means of experiment by the now industrious anatomists, or a

hitherto unknown function of a long known structure is conceived by means of hypotheses, just so often will the omnipotence and wisdom of God, as it were, be illuminated with living colors, and a rational man will be moved to an awe of the wisdom, a fear of the power, and to a love of the harmony of both, which is the beauty and goodness of his Creator, far more than he is through a thousand speeches, songs, and, indeed, even sometimes lectures and homilies. Correspondingly, one such discovery can be the material and source of more than a thousand beautiful songs of praise.

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Therefore, any truth, any experiment or theorem, which is admirable and worthy of consideration, even if no problem could be made of it (which is seldom), even if it were not lucrative but only luciferous, is, as such, to be considered as a new-found mirror of the beauty of God, and to be esteemed as invaluable and more noble than the costliest diamond, and therefore also, what is used among honorable, God-fearing and rational people to the perfection of nature and the real arts, must be considered for the most holy cause and to the benefaction of the inexhaustible true glory of God.

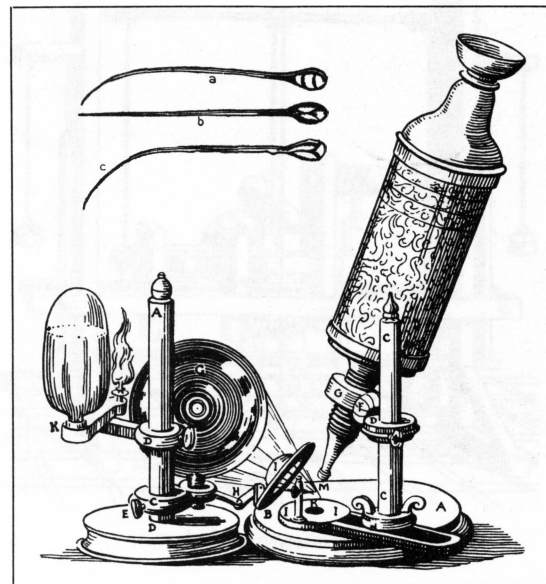
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Which is not even to mention, that most would have a benefit for human life, if our evil institutions, carelessnesses, and distractions did not make all our

real and useful discoveries, of which there have been not a few in our century, worthless to us. As thus medicine is hardly improved at all by the newly discovered lacteal and lymphatic vessels, of circulation, and so many other ducts, nor by the light which was kindled by chemistry and thrown onto nature, and the methods of medicine remain in the same bad condition with practioners, who are only greedy for money, as it has always been in the past.

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For that reason, the third way to seek the glory of God, namely those who serve Him as moralists, as politicians, as those who guide public affairs, is the most perfect,



Hooke's microscope, 1665; drawings of spermatozoa by Leeuwenhoek, 1697.

since those not only endeavor to find the radiance of God's glory in nature, but also seek to emulate Him through imitation; and thus seek to honor Him not only through praise and devotion, or with words and thoughts, but also with good works, not only to consider the good He has done, but to sacrifice themselves to Him and offer themselves as an instrument and through that to do more good for society and in particular for the human race, as the best of all visible creatures, in those things which we have the power to effect, and for which we are ordered and created.

[[22]]

These are the ones who apply the discovered wonders of nature and art to medicine, to mechanics, to the comfort of life, to materials for work and sustenance of the poor, to keeping people from idleness and vice, to the operation of justice, and to reward and punishment, to preservation of the common peace, to the increase and welfare of the fatherland, to the elimination of times of shortage, disease, and war (insofar as it is in our power and is our responsibility), to the propagation of true religion and fear of God, indeed, to the happiness of the human race; and who endeavor to imitate in their domain what God has done in the world.

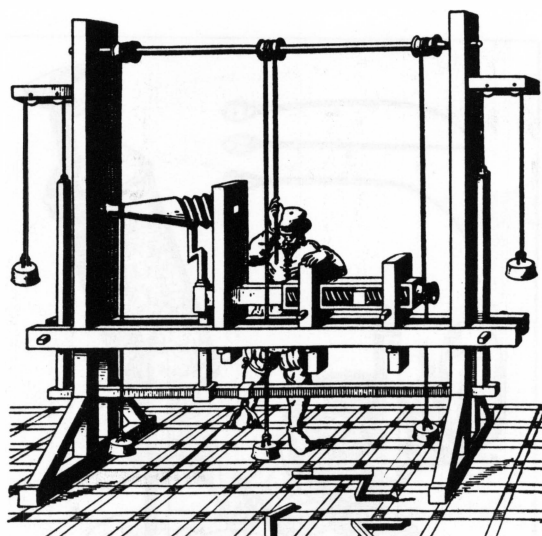
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Such happiness of the human race were possible if a general agreement and understanding were not to be counted as chimeras, and placed along with More's *Utopia*, Campenella's *Civitate Solis*, and Bacon's *Atlantis*, and in general were not commonly too distant from the most powerful Lord Councillors of the common welfare. Nevertheless, it follows from reason, justice, and conscience that each does in his sphere of activity that by which he may be justified before God and the tribunal of his own conscience. If we are not able to do what we want, then we want what we can do. Perhaps through finding means, which though apparently of no great importance and involving no great costs, yet are for the common good, for the stimulus of the nation, for the

support and maintenance of many men, for the glory of God and the discovery of His wonders, great results could be accomplished.

[[24]]

Among such means, one of the easiest and most important will be the establishment of a society or academy, well grounded although small at the start. Through that, the natural genius of the Germans will be inspired, according to the examples of all their neighbors, which it is hoped they will excel:



Screw-cutting lathe.

- an increased agreement and closer correspondence of skilled people will be aroused, creating opportunity and arrangements for many excellent and useful thoughts, inventions, and experiments, which are often lost, because now those having them will have the confidence to communicate and then to receive them back again;
- to supply and make useful resources and funds, and other things lacking, on a large scale;
- joining theory and experiment in a happy marriage, the one supplying the deficiencies of the other;
- establish a school of inventors and, as it were, an official laboratory, in which each could readily work out his tests and concepts; discover the kinds and advantages of experiences which increase of themselves not in the least by chance (even if in the beginning there is only a small number);
- indeed, means will be supplied to maintain the nourishment of the people, to establish manufacturing and consequently draw in commerce, and in time to establish workhouses and houses of discipline for the idle and criminal in which to work;
- erect warehouses filled with necessities for emergencies, and even in the future form a safe bank for rentiers who wish to invest their money;
- to enter into companies, enter into negotiations with those formed;
- to encourage the Germans to commerce on the sea,

joining up with the Hanseatic cities;

- to improve the schools, furnishing the youth with exercises, languages, and the reality of the sciences before they unfortunately travel, and establish Gentlemen's Schools as well;
- to facilitate the crafts through improvements and tools, through always inexpensive fire and motion;
- to test and be able to work out everything in chemistry and mechanics, to work with glass, to create telescopes, machines, water devices, clocks, lathes, painting studios, presses, paint companies, weaving factories, steel and iron works, and even some quite useful things which, when done in a small way without organization are unfruitful;
- to support private laws in land before all else except for new inventions;
- to get support from high places, to support foundations and organizations for curiosities, to form a theater of nature and the arts or chamber of arts, rarities and anatomy for easy learning of all things not in the now established herbal and other gardens and libraries;
- to summarize books and manuscripts and posthumous works, to bring together scattered reports, experiments, and letters of correspondence, to have everything in order and indexed;
- to support poor students and at the same time create institutions for their work which will be useful both to them and to society;
- to support impoverished eccentrics who have ruined themselves through extravagance, and merchants, ruined through misfortune as well, helping both for their own benefit and that of society;
- to support useful people on the land (who only wish to have provisions and materials for their nourishment, who for the most part, when they sense something is wrong in the world, leave the land and go over to foreign rule, much to the harm of themselves and the ruined fatherland, some falling into a life of dissipation, running off to war and destroying themselves or being cut off or removed in their first bloom, when they and others like them could people

bloom, when they and others like them could people the land with families and thus be useful); to put them to work; to preserve them from beggary, to nourish them with their wife and family; to guard them and theirs from sin, disgrace, and ruination of the soul.

On that basis, but without determining a definite time and place, rather everything being undertaken in a leisurely manner, this strategem must be brought into motion with a small fund and some small advantages.

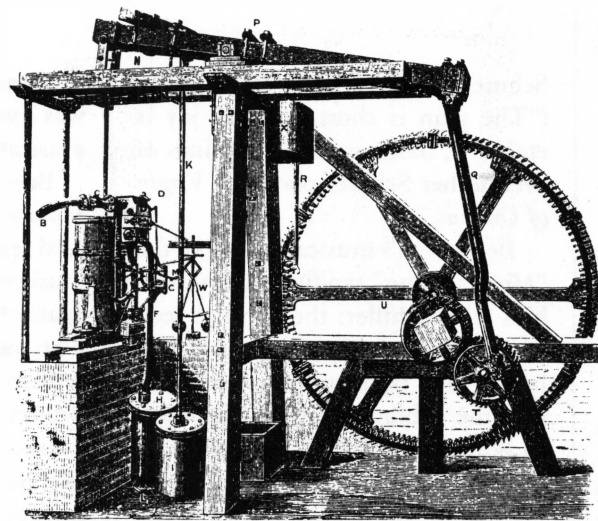
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This is the constant, indeed continuous charity, which will grow endlessly and increase of itself and be of benefit

to many thousands of men, which is circumscribed by no limit in advance; which will not be like other foundations, with which the continuance, support, and even the goal are not always closely connected with the interests of the members and directors, and thus are subject to abuses; and which will not be easily ruined through war or death or other plagues of the country once it gets started; which is directed to the absolutely real things, to the highest glory of God and to universal approval and eternal

benediction and gratitude of posterity, which will come after and will perhaps be able to enjoy it over a long period of time; for that purpose God has given many beautiful circumstances, on which to allow delay would be irresponsible; which God hopefully will bless, indeed, in order to carry out what begins so piously, will reward us with health and long life and, finally, which all rational men most highly wish for, with eternal blessedness for our immortal souls and the prayers and blessings and witnesses of so many souls, who have been taken thereby from misery and ruination and at last can receive a decent wage. And in conclusion, this point: that whoever has the power to do something on this work, should not, for the glory of God and the sake of his own conscience, fail to reflect upon it.

—translated by John Chambless



Watt's rotative engine.