

**The Patent Office, and Reform of the Patent Laws.**

The following article taken from the Union, is no doubt from the pen of Mr. Burke, late Commissioner:

While the bill amending the patent laws was pending on Monday before the Senate, the following amendment was offered:

Sec.—, And be it further enacted, That all rules, orders, and by-laws of the Patent Office shall be entered in a book kept for that purpose, which shall be public and open for inspection to all persons transacting business at the Patent Office; and said rules, orders, and by-laws shall be general in their application in all cases.

This amendment implies that the rules, orders, and by-laws (of which there are none) of the Patent Office are not open for the inspection of all persons, and that they are not general in their application to all persons doing business at that office. This is certainly an error. All the rules regulating the manner of doing business at the Patent Office are printed and distributed gratuitously to all persons having business with the office, and to all others applying for them. This has been the practice of the office, we believe, under every Commissioner, from the reorganization of the office to the present time. There is no secrecy or uncertainty about those regulations; and, in the main, they are now the same as when originally adopted. It is true, they are within the discretion of the Commissioner, who may, whenever the necessities of the office or justice require, alter, amend, or even suspend them.—He exercises the same discretionary power over the rules which regulate the business of his office as the heads of the other bureaus exercise over their respective officers. We have never known the rules of the Patent Office to be altered, amended, or suspended for favoritism in a single instance; and whenever they have been amended or suspended, it has been for the purpose of promoting the dispatch of business in the office, or to enable the office to do justice to persons having business with it. We know that such was the case under the administration of the late Commissioner, and we have no reason to doubt that it is also the case under the present Commissioner. And we will take the occasion to affirm, that we do not believe there is another office connected with the government which is, and has been, more impartially and systematically administered than the Patent Office.

Yet we are aware that there are, have been, and we have no doubt will forever continue to be, complaints against that office on account of the manner in which it is administered.—The late Commissioner was constantly beset with these complaints, and the office was constantly charged with partiality and corruption. But these charges mainly emanated, not from inventors, but from agents and patent pirates; and if such charges are now made, we have no doubt they in the main proceed from like sources. The late Commissioner was constantly assailed by such persons who are the pests of scientific improvement, instead of its promoters. Instead of trammelling the hands of the Commissioner, Congress should give him power to expel from the office, and disqualify from all future business intercourse with it, patent agents, when guilty of offences which disqualify them from doing business in any respectable court of justice.

We have examined the bill now pending before the Senate, and find that many of its sections merely re-enact what is now the law and usage of the Patent Office, and the residue we humbly believe would open all valuable patents to a general invasion by patent pirates. We are of those who believe that the honest inventor should be protected by the government, instead of being exposed by its legislation to the depredations of a set of men who make it a business to infringe the rights of the inventor, and who, in point of morals, are not above common thieves. It is a great mistake to call the right of property in a valuable invention a monopoly. It is not a monopoly, in any sense of the word. The inventor is as much entitled to his invention—the production of his intellect, labor, and money—as the farmer is to the bushel of wheat produced by

his own labor, or the lawyer to his fee. That right of property can be taken for the public use, as all private property can be, but not without an adequate compensation. This adequate compensation the government gives the inventor by professing to secure to him the exclusive and uninterrupted use of his invention for the term of fourteen years, in consideration that, at the end of that time, it shall become the common property of the public.—Therefore, the government is, in justice, bound to be liberal to the honest and real inventor, and to give him adequate protection for the term of time stipulated for.

In the preceding remarks, we disclaim all reflection upon the distinguished mover of the amendment which has furnished the text of our article. We have no doubt his motives are most honorable and praiseworthy, but we believe he has been wrongly informed with regard to the matters to which the amendment relates.” [We shall make some remarks upon this letter next week.—Ed.]

**Table of the Board Measure of Logs.**

| Diameter of Log in inches. | Content for 12 ft. in length. | Content for 14 ft. in length. | Content for 16 ft. in length. |
|----------------------------|-------------------------------|-------------------------------|-------------------------------|
| 12                         | 72                            | 84                            | 96                            |
| 13                         | 84                            | 98                            | 112                           |
| 14                         | 100                           | 116                           | 132                           |
| 15                         | 115                           | 135                           | 155                           |
| 16                         | 130                           | 152                           | 174                           |
| 17                         | 147                           | 170                           | 194                           |
| 18                         | 162                           | 190                           | 218                           |
| 19                         | 182                           | 212                           | 242                           |
| 20                         | 200                           | 234                           | 268                           |
| 21                         | 220                           | 256                           | 292                           |
| 22                         | 242                           | 282                           | 322                           |
| 23                         | 264                           | 307                           | 350                           |
| 24                         | 289                           | 337                           | 385                           |
| 25                         | 313                           | 372                           | 432                           |
| 26                         | 338                           | 389                           | 451                           |
| 27                         | 360                           | 421                           | 483                           |
| 28                         | 390                           | 454                           | 518                           |
| 29                         | 420                           | 490                           | 560                           |
| 30                         | 452                           | 528                           | 604                           |
| 31                         | 484                           | 564                           | 644                           |
| 32                         | 514                           | 603                           | 692                           |
| 33                         | 554                           | 649                           | 744                           |
| 34                         | 582                           | 679                           | 777                           |
| 35                         | 618                           | 722                           | 826                           |
| 36                         | 650                           | 758                           | 866                           |
| 37                         | 689                           | 798                           | 918                           |
| 38                         | 727                           | 858                           | 989                           |
| 39                         | 786                           | 903                           | 1021                          |
| 40                         | 807                           | 941                           | 1076                          |
| 41                         | 848                           | 989                           | 1130                          |
| 42                         | 891                           | 1039                          | 1188                          |
| 43                         | 924                           | 1078                          | 1232                          |
| 44                         | 979                           | 1142                          | 1305                          |
| 45                         | 1025                          | 1195                          | 1366                          |
| 46                         | 1073                          | 1251                          | 1430                          |
| 47                         | 1123                          | 1310                          | 1497                          |
| 48                         | 1175                          | 1359                          | 1565                          |

M. J. B.

**Philosophy of Mechanics.**

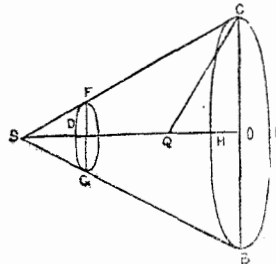
Being an answer to a series of articles published in the Scientific American, commencing on page 67, termed “Important Discovery that may lead to improvements of great value.”

No. 3.

The author of the articles referred to on page 75, says, “if philosophers were acquainted with the phenomena of circular motion and centrifugal force, why did they not give us a rule for shaping vessels, and then the world would have been far in advance of its present position.” How the shaping of vessels has anything to do with circular motion, is something inexplicable, but let that pass. On page 83 he gives a rule for shaping vessels whereby they can be made to cross the Atlantic, as he informs the world by his recent articles, in less than five days. By this rule he says, as plainly as can be said, “the world will soon be beyond its present position, by my important discovery.” It is well known to natural philosophers, that “the solid of least resistance” has engaged the attention of not a few of the brightest lights in science, and the mind of Newton, especially. As the author of those

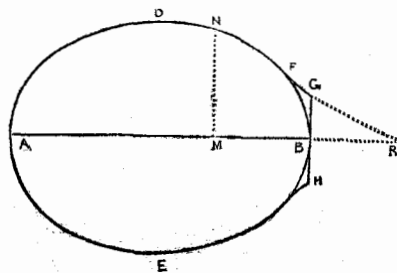
articles does not seem to have a profound acquaintance with such authors, I will hereby insert the 24 proposition of Book 2nd of the Principia. After demonstrating the resistance of a cylinder, Newton says:

By the same method other figures may be compared together as to their resistance; and those may be found which are most apt to continue their motions in resisting mediums. As if upon the circular base C E B H, from the centre O, with the radius O C, and the altitude O D, one would construct a frustum C B G F of a cone, which should meet with less resistance than any other frustum constructed with the same base and altitude, and going forwards towards D, in the direction of its axis: bisect the altitude O D in Q, and produce O Q to S, so that Q S may be equal to Q C, and S will be the vertex of the cone whose frustum is sought.



Whence, by the bye, since the angle C S B is always acute, it follows, that, if the solid A D B E be generated by the convolution of an elliptical or oval figure A D B E about its axis A B, and the generating figure be touched by three right lines F G, G H, H I, in the points F, B, and I, so that G H shall be perpendicular to the axis in the point of contact B, and F G, H I may be inclined to G H in the angles F G B, B H I of 135 degrees: the solid arising from the convolution of the figure A D F G H I E about the same axis A B, and that the extremity B of each go foremost. Which Proposition I conceive may be of use in the building of ships.

If the figure D N F G be such a curve, that if, from any point thereof, as N, the perpendicular N M be let fall on the axis A B, and from the given point G there be drawn the right line G R parallel to a right line touching the fig. in N, and cutting the axis produced in R, M N becomes to G R as GR<sup>3</sup> to 4BR x GB<sup>2</sup>, the solid described by the revolution of this figure about its axis A B, moving in the before-mentioned rare medium from A towards B, will be less resisted than any other circular solid whatsoever, described of the same length and breadth.



This solid of least resistance of the great Philosopher, so mathematically demonstrated, has surely some meritorious claims, if not equal to the modern discovery in importance, at least in point of age. There can be no question, but considering the length and the greatest breath of a vessel, a curved line extending from the point or bow, to the greatest breadth, presents a longer line of action, on the principle of a spiral and hence a form of less resistance than a straight line. But in the construction of ships, a great number of things have to be taken into consideration to produce the best sailing form. The nature of the element in which the vessel moves, the manner of moving it, and what is to be moved, (cargo.) The author of the articles in question, on page 83, presents his ideas on the subject by supposing a huge vessel, 640 feet long and 64 feet wide, sweeping through resistless space at the rate of 160 feet in one second, or 109,480 miles per hour. His ideas, on the page referred to, however, are worthy of attention and should not be despised. He there lays down an empirical rule for the construction of vessels of a certain length, so as to run fast, and were steamboats for no other use but

racing, like race horses, it would work well enough on smooth river water, but would never answer for marine navigation, as that is an entirely different element. And so far as the construction of our river steamboats is concerned, he certainly has thrown no new light upon the subject, for they are all built with the finest tapering curve, and as narrow and long as is prudent in an economical point of view. The manner of building the hull for speed is well understood, but this is not enough for a fast steamboat, for there are other things to be taken into consideration, which cannot be so easily demonstrated, and about which there is more diversity of opinion. A good hull, without other things being equal, will not make a fast boat. The placing of the engines—the size and kind of paddle wheels are important items, and will claim our attention again.

(To be Continued.)

**The Use of Oxide of Zinc is not Injurious to Health.**

M. Flandin, of Paris, gave an account to the Academy of the result of a series of comparative experiments undertaken by him, with a view of ascertaining the effects produced by oxide of zinc, carbonate of lead and sulphate of lead, on the animal economy.

The presentation of the Montyon prize to M. Leclaire has borne testimony to the interest taken by the Academy in the substitution of oxide of zinc for carbonate of lead in painting.

As no experiments had yet been instituted to determine the question, whether the manufacture and use of oxide of zinc was divested of all injurious consequences to the animal economy, and as some persons had stated, that the slow and repeated absorption of zinc was as injurious as that of lead, M. Flandin determined to settle the question by having recourse to the following experiments:—

Some years since, M. de Ruolz proposed to substitute sulphate of lead for carbonate of that metal in painting, &c. He considered that as the sulphate was a more insoluble and stable compound than the carbonate, that therefore it would be less readily absorbed and assimilated by the system. M. Flandin having been consulted by M. Ruolz on this point, first tried the effect of sulphate of lead on animals. In order to place the animals operated upon as much as possible in the same relative condition as the workmen employed in the manufacture and use of white lead, he made use in each case of frictions on the skin. He took a dog, and having shaved off the hair, rubbed in every day four or five grammes of an ointment composed of equal parts of sulphate of lead and lard. After the tenth day the effect of the poison became evident, and the dog died on the twenty-second day. Less than sixty grammes or two ounces of sulphate of lead had been employed in the frictions. A chemical analysis of the body indicated the presence of lead, especially in the liver. A second dog was treated in exactly the same manner, and four or five grammes of an ointment composed of equal parts of oxide of zinc and lard was rubbed in every day; ten, twenty, thirty days passed, and although the ointment was applied every twenty-four hours, the dog's health did not undergo the least alteration. The experiment was stopped when about 70 grammes of the oxide had been used. For ten days afterwards the dog was allowed to remain untouched, after which he was submitted to the action of an ointment composed of equal parts of white lead (carbonate of lead) and lard, used in the same proportions as the sulphate of lead and the oxide of zinc. At the expiration of ten days, the dog sickened and refused his food; gradually all the symptoms of poisoning appeared, and the animal died on the twenty-third, sixty grammes of carbonate of lead having been used.

These experiments incontestably prove, that the compounds of zinc do not exert any pernicious influence on the animal economy, and that the sulphate and carbonate of lead are both injurious.

In one of the church processions, at Rome, a boy was gilded over to represent the golden age, and he died in consequence of the pores of the skin being closed.