

Scientific American.

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The New Patent Bill.

Inventors and sound thinking men, interested in patents and improvements, with whom we have conversed during the past week, are decidedly opposed to the New Patent Bill. The Press of our country, too, which has always very generally sympathized with inventors, is opposed to the Bill. Our editorial brethren, who have read it carefully, believe it to be unworthy of the present enlightened age, and opposed to the democratic nature of our institutions—some of their views we present in another column. The general feeling among inventors, and the honest assignees of patents, respecting it is, that "it appears to be framed for annoying and injuring them." It provides for such a tedious and expensive variety of processes for patents, that if it became a law, it would undoubtedly operate to retard improvements in the arts. Any law that would exert such a tendency, would be a public calamity; therefore, the interests of the people demand them to oppose it, and this they do. The object of any amendment to the patent law should be to lessen the number of processes through which patents have to pass; also to render those processes more simple and less expensive. The spirit and provisions of the new Bill, are of the opposite character.

The first sections of the new Bill, providing for the raising of the Patent Office into a U.S. Court, to try cases of priority in invention, and increase the expenses of the office enormously, is not required at all. The same ends could be obtained in a more equitable manner, without any extra labor on the part of the Patent Office. The way to do this, would be by a provision requiring every applicant to furnish the testimony under oath of two witnesses, respecting the exact date of the invention represented in the model and drawings for which a patent is applied for. Upon this evidence of priority, let the Patent Office decide every case presented, and let that end the matter in that quarter. This plan would prevent the possibility of manufacturing evidence for particular interfering cases, and would simplify the business of the Office.

The confirming clause of the Patent Bill is certainly a disgraceful feature in it. The sum of \$100 is charged to perform a certain act regarding a patent, while it (the patent) bears upon its face evidence that it had been already confirmed. Thus every patent bears the signature of the Secretary of the Interior, and the Commissioner of Patents, and it is stamped with the seal of the Patent Office. Have not these gentlemen thus confirmed the patent as a legal instrument already, and is it not so held by all the Courts? Certainly. Then why charge \$100 for a work of supererogation? Such a provision in the Bill is a hundred dollar insinuation, (to be paid by the patentee,) upon the integrity of those who administer the affairs of the Patent Office. In fact, such a provision in the Bill is neither more nor less than a declaration that all patents are to be suspected of illegality or fraud until they are confirmed. Poor patentees would never be able to sell their patents under such a Bill until they were confirmed. It would therefore do them rank injustice, and tend to make them lose their patents altogether, as they would never be able to pay the extension or confirming fees. The Bill should not pass, and will not pass, for the united voice of the people and press is against it.

Agencies for Selling Patents.

We are frequently inquired of as to agencies for selling patents, many persons supposing that we are engaged in that branch of business. We wish to state that we are not thus engaged, never have been, and never mean to be. We find our hands as full of occupation as we could wish, in our legitimate business of obtaining patents; with their sale we have nothing to do.

There is no reason, however, why agencies for selling patents ought not to succeed well and in some instances they do. The business

is a legitimate one, and when conducted honestly and honorably can hardly fail to result satisfactorily, both to the purchaser, the patentee, and the agent. Quite a number of agencies for negotiating patent sales have been opened during the past few years; among them is that of Mr. T. H. Leavitt, No. 1 Phoenix Buildings, Boston, Mass., and Ellsworth & Co., No. 64 Randolph st., Chicago, Ill. We have confidence in these gentlemen, and therefore mention their names for the benefit of inquiring readers.

The number of patents issued increases every year, and agencies for their sale are springing up in every city. The demand for new inventions was never greater, and the prices realized for patents never so high as at present.

OPINIONS OF THE PRESS ON THE NEW PATENT BILL.

[From the New York Express.]  
The New Patent Bill.

The Boston Bee points out the following prominent objections to the Patent Bill introduced into the Senate by Senator James.—Such objections deserve the serious attention of members of Congress, and if the measure is calculated to lead to much mischief, the end may be the overthrow of all laws for the protection of inventors. As it is, the discoverers of ingenious works of art are about the last to receive the benefits of their inventions. In the main, assignees reap the profit of other men's brains and labor, and it has been so in this country for fifty years past.

[From the Boston Daily Bee.]

Some days since a telegraphic dispatch from Washington was published in Boston, sent most industriously over the country purporting to represent this bill as one calculated to protect the public against dishonest patentees, and on the other hand, the meritorious inventors against dishonest pirates. This is indeed a very easy kind of bill to frame, and every way desirable. We have read the bill itself, and according to our reading this bill of General James, does just the opposite. It takes from the meritorious inventor and gives to speculators on both sides of the water, creating a system of monopoly wholly at variance with the Constitution and the simplest dictates of common justice, and taken as a whole is the most objectionable patent scheme ever yet attempted. It violates the Constitution of the United States by giving patents to mere introducers of new inventions from other countries. It forever in effect bars the public from testing the question of novelty by a jury. It gives unlimited, final, and dangerous powers into the hands of the Commissioner of Patents. It affords no substantial means of repealing a fraudulent patent, and never at all after the second year, and before the patent can be sufficiently introduced to attract attention.

It prevents the meritorious inventor, who has failed to acquire a reasonable compensation for his money and time expended in introducing his invention, from any benefits therefrom when extended, as it gives assignees and licensees in the extended patent the benefit which was always designed solely for the original inventor.

It places all manufacturers, railroad, steamship, and other proprietors of public travel at the mercy of patentees after the fourteen years have expired of all existing patents, unless a special contract shall have been made for an extension, and acts as a surprise upon innocent parties. It will tend to interminable litigation, complicating still more the old system, which only lacked the scire facias to make it a good system of laws.

For one inventor benefitted by it, this bill would seriously impair the rights of twenty present patentees. The greatest beneficiaries, indeed, almost the only ones, are assignees of patents, for whose especial benefit this scheme seems to have been got up.

It proposes a system of stealing from other countries, and making the thing stolen a monopoly in this, against the use of the true author, who might desire to patent his discovery in the United States. It opens the door to fraud and oppression a hundred-fold wider than the present system.

It proposes by legislation to debar the subjects of Great Britain the right to take out a

patent in the United States, if under British rule one of her colonies does not chance to have a system by which American can make a monopoly in such Province. The same effect towards other countries similarly situated.

It is alleged that those under whose importunities this thing has been brought forward intend to lavish unlimited wealth to carry it through. Will they? That is the question.

[From the New York Herald.]  
A New Patent Trap.

Senator James, of Rhode Island, as Chairman of the Committee on Patents, introduced in the Senate a new law on the subject. We have received a copy of the bill and examined it with some care. We trust that Members of Congress will follow our example. It is well known that the owners of several patents, worth millions of dollars, such as Colt's, Woodworth's, and Goodyear's, have been endeavoring, for the past two sessions, to get an extension. So far they have failed, but it seems to us that this law hides an attempt to extend them. The Colt and Goodyear patents were issued for fourteen years, and the sixth section of this act provides as follows:—

And be it further enacted, That from and after the passage of this act, every patent, except such as by this act are limited to seven years, shall be granted for five years. Upon the application of any patentee or assignee of a patent for the extension of a patent so granted, previous to its expiration, and on payment of one hundred dollars to the credit of the Patent Fund, the Commissioner of Patents shall extend such patent for a term of fifteen years, which extended term shall be subject, however, to the conditions and restrictions for the confirmation of such patent, and the proceedings for annulling such patent hereinafter provided in this act. And all patentees and assignees of patents which are now in force, may, after the lapse of five years from the date of the letters patent, avail themselves of the provisions of this act: Provided, That the term for which such patents may be extended shall not exceed the term of twenty years from the date of issue of the original letters patent; and in no case shall any such patent be renewed or extended after the expiration of said twenty years. And provided, further, That no patent granted under the third section of this act for an invention not original with the patentee, or for a design, nor any registry patent, shall be extended for a second term.

The proviso, "that the term," &c., will extend all the old patents six years. By the provisions of the thirteenth section it is made the law that the right to extension can only be controverted by the validity of the patent. We trust that the members who are, as John Van Buren says, "opposed to stealing," will look sharp after this law.

[From the New York Sun.]

Proposed Change in the Patent Laws.

A Bill for the amendment of the Patent Laws, by which several very extraordinary and dangerous changes are sought to be enacted, was read in the United States Senate by Mr. James, of R. I., on the 10th inst., ordered printed, and passed to a second reading.

The existing patent laws, it is well known, are extremely simple. To obtain a patent the applicant deposits a model, drawings, and pays a fee of \$30. This is the whole process. Nothing more is needed. This simplicity and cheapness, by placing the obtaining of patents within the reach of all classes, has stimulated and encouraged invention among us to a marvellous extent. The whole world pays homage to American ingenuity. Our patent system, harmonious and successful in its operations, stands to-day a model for every government in christendom.

In the face of these undeniable facts, and in the midst of the greatest prosperity, so far as respects new inventions, patents, and patent property, it is proposed, suddenly, to subvert the established order of things, to undermine the market value of new inventions, and to discourage our citizens from seeking patents.

The new Bill proposes to increase the official fees from \$30 to \$210—in cases where six claims are made—or seven-fold; to destroy the simplicity of obtaining and holding patents by surrounding them with interminable legal quibbles and forms, which render the employment of lawyers and agents indispensable, but for whose services the inventor must roundly pay; to deprive patentees of the last fourteen years, who have assigned their patents, of the existing right of extension; to make

worthless patents valuable, and invalid patents sound.

This bill also converts the Patent Office at Washington into a huge government printing warehouse, and exalts the Commissioner of Patents into an absolute petty monarch. It makes him the judge and jury in all patent cases, and authorizes him to appoint agents throughout the land, who are to have the power to punish people, by fine and imprisonment, for contempt of them, or the mandate of their new ruler.

Such are only some of the evils which this new bill appears designed to inaugurate. Its principal object seems to be to give extension, under disguise, to certain profitable patent monopolies—relating, in part, to pistols and india rubber,—that are now about to expire, and can be renewed in no other way. The people have not asked for any such changes as are contained in Senator James' bill, neither have inventors. They are not wanted; they are wrong; and therefore should never be introduced. The present system has worked, and still operates most admirably. "Let well enough alone," or at least alter only so as to amend and simplify, if that be possible.

[From the New York Times.]  
Senator James' Patent Bill.

When the exciting topics which are now engrossing the attention of the Senate shall have been disposed of, the very remarkable bill introduced by Senator James, of Rhode Island, on the 9th inst., to amend the Patent Laws, will doubtless come up for consideration, and cannot fail to elicit a warm discussion. Mr. James' bill proposes certain changes of so radical and startling a character, and which must affect so many important public interests, that it will not be permitted to slip through the Senate without a searching investigation. The bill has an innocent look enough on its face, but a close examination of its principles will show that the amendments which it proposes to the existing laws are not calculated to promote the public good, though they may possibly be of great profit to certain individual interests.

Recent American Patents.

**Artificial Stone.**—By Robert Neisch, of New York City.—This invention consists in calcining a quantity of plaster of Paris, and mixing with it sulphuric acid, a solution of alum, carbonate of ammonia, and sand. The paste thus formed is pressed into molds of any desired form. After a short time it hardens into a species of stone, which water or moisture, it is said, will never affect.

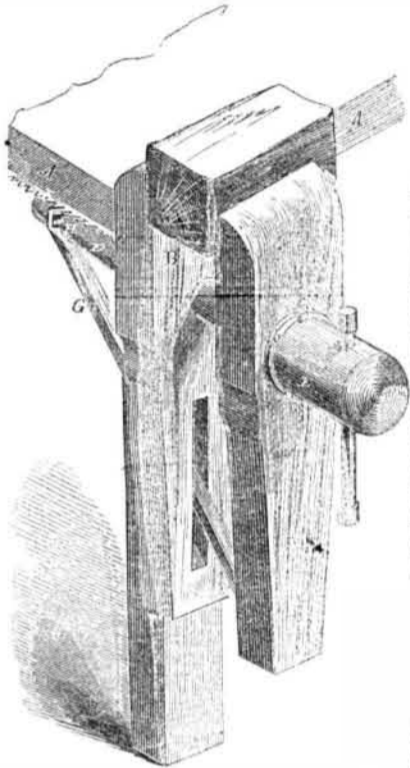
**Improved Brick Machine.**—By Edmund Kingsland, of New York City.—The molds are arranged on a rotating cylinder. In most of the brick machines of this class the mold cylinder is made very large, and the finishing is done by smaller rollers. The chief novelty in the present improvement, consists in employing a segment cylinder to do the finishing, and in causing the face of the segment to pass with a scraping movement over the molds. This arrangement permits the use of a mold cylinder of much smaller diameter than is usual, reduces the expense, results in better work, &c.

The molds are furnished with pistons for regulating the depth, and also for pushing out the bricks. By a peculiar device within the mold cylinder, all of the pistons are moved simultaneously.

**Solder-iron Stove.**—By James Wilson, of Brandywine, Del.—Consists in extending hollow tubes from the outside of the stove into or through the center of the fire. The solder irons are heated by placing them within the tubes. This improvement permits the use of anthracite coal with success, saves fuel, heats the irons better, &c. It appears to be a very good and useful invention.

**Improved Vise.**—By Orlando V. Florey, of Yellow Springs, Ohio.—The jaws of this vise are constructed in the usual way, the stationary jaw, B, requiring to be firmly secured to the bench, A. Instead of a screw, a simple, round rod, D, passes through both jaws. To the lower end of movable jaw C a rigid brace, G, is secured, extending up through a slot in the stationary jaw to the end of rod L, which it embraces by a fork, as represented, so that jaw C cannot move without also moving rod

D, and brace G. The upper end of brace G is sharpened so as to mesh into the notches of rack I, which is secured to the under side of the bench. The brace, which thus becomes a pawl to the rack, should have sufficient vertical play to enable it to enter and be disengaged from the rack, but no more. A notch and pin, H, may limit this motion. A few coils of screw thread are cut on the outer projecting end of rod D, on which a nut, E, fits; this is provided with the ordinary winch or handle used for turning the screw of a common vise, and with a flange, b, around the edges of which, hooks, c c, pass, to keep the nut in contact with the jaws.



When the jaws are free, the weight of the brace, G, keeps it disengaged from the rack I, and consequently the movable jaw may be pushed in or drawn out by simply sliding it along. But when any article is placed between the jaws, and the movable jaw is pressed against it, the lower end of said jaw is thereby pushed inward toward the movable jaw till the ratchet brace enters one of the notches of the rack, I. A turn of the nut, E, then tightens the jaws upon the article, the stronger the pressure against it, producing a corresponding increase of pressure of the brace, G, into the notches of the rack, so that the article is again set free; by turning back the nut, E, the ratchet brace falls from the rack, and the vise is free to be opened or shut by simply sliding the rod, D, and movable jaw, C.

This vise accomplishes two objects most desired, viz., to open and shut the jaws by an instantaneous movement, requiring only a turn or two of the winch simply for tightening, and to keep the jaws parallel. It not only effects the latter purpose, but permits the movable jaw to be adjusted to an exact parallelism with the other jaw, or to vary but slightly therefrom. And withal, its simplicity is such that the cost of the manufacture is less than that of the ordinary screw vise. It is equally suitable as an iron and wooden vise for the smith or the carpenter. More information may be obtained by addressing Messrs. Florey & Davis, Yellow Springs, O.

**Improvement in Gas Retorts.**—By John G. Hock, of Newark, N. J.—The object of this invention is to enable the heads of the retorts to be more handily and quickly attached and detached than the mode of fastening them, at present in general use admits. Another object is, to enable the fastening to be readily detached from a worn out retort and applied to a new one. The neck of the retort is cast with a strong lug on each side, close to the mouth, said lug having a square hole through them to receive the square shanks of two hook-headed bolts, which, with a bail and an inclined projecting rib, on the outside of the retort, constitute the fastening.

**Improved Head Block for Saw Mills.**—By Bela Gardiner, of Florence, Mass.—The ordinary head blocks of saw mills must be moved

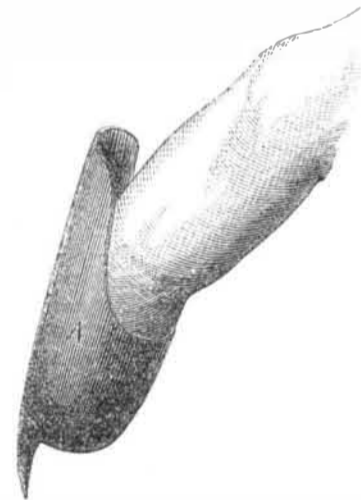
by hand after each board is cut. This improvement consists in rendering the head blocks self-moving so that the labor of an attendant for that purpose is not needed. It is done by means of an endless chain and pinion screw connected to the driving machinery. The log, after being properly placed upon the carriage, will be all sawed up into boards without stopping the saw.

**New Method of Hanging Saws.**—By John Robingson, New Brighton, Pa.—Consists in hanging the saw frame between the ends of vertically vibrating arms, so that the saw, in its descent, will be thrown forward against the stuff, but in its ascent will be drawn back, away from the wood. This improvement is said to render the saw more effective in cutting, to consume less power in rising, afford better opportunity for the dust to be cleared from the cut, &c.

**Weighing Apparatus for Carts.**—By James W. Martin, Burlington, N. J.—Consists in the attachment of a weighing apparatus to common carts, so arranged that by pressing a lever the cart body and its contents become separated from the wheels and swings on a scale beam, by which it may be accurately weighed. No change in the form of the cart is made. The common use of such vehicles would put an end to cheating in the weight of coal and other articles, for the consumer could himself weigh them, before his own door.

**Music Rack.**—By Thomas Ward, Birmingham, Pa.—This is a frame for holding up music books, and is intended to be placed upon pianos, organs, and other instruments. One feature of novelty consists in the facility with which it slides from side to side, so as to accommodate the position of the performer.—Another feature is an action which turns the leaves of the music. This is done by a spring and wires. By touching a pin, and the leaf instantly turns. The invention contains other interesting features. We have an engraving in preparation, which will shortly be published.

**Husking Thimble.**—By J. H. Gould, of Deerfield, Ohio.—In the operation of husking corn it is common to take the ear in one hand, and with a finger nail of the other, to slit the husk lengthwise, so that it may be more easily torn off. This method wears away the nail and excoriates the end of the finger, rendering it so painful that the operator is obliged ere long to quit work.



The present improvement consists of a thimble, A, the bottom part of which is furnished with a small cutter, B. The thimble is worn upon the finger and used in place of the nail. It is an effectual remedy for the evil above mentioned.

#### Recent Foreign Inventions.

**Air Springs.**—A patent has been received by T. Macintosh, of London, for rendering membranous tissues, such as bladders and skins, air tight, whereby they may be formed into bags, and made into air springs like india rubber. Skins or bladder tissue are steeped or some hours in solution of glycerine and glue, and then taken out and dried. After this, such tissue can be formed into a bag, filled with air and placed in a cylinder in which a piston is inserted for the purpose of forming an elastic air spring. The object of the invention is to use such springs for rail-

road cars, &c. Air springs of the same nature, but formed with india rubber air bags are old and have been illustrated in a back volume of the SCIENTIFIC AMERICAN, and are of American origin, but the preparing of skins and membranous tissues, as described, to render them as air-tight as india rubber, is a new process, and if it accomplishes the object specified, it is a useful discovery.

**Steel Pens.**—Mr. Macintosh has also taken out a patent for making steel pens with two nibs—one at each end of the pen—so as to have two pens on one piece of steel. The penholders are made to receive the nib end of such pens, and not injure them, and when one nib is worn out, it is turned round, as it were, and the other used. This invention possesses the merit of saving steel pen material.

**Air Gas.**—A. Longbottom, of London—formerly a resident of New York—has obtained a patent for constructing retorts for making gas from oil, with an interior cone in each, and convex on the outside, to contain the fire. Each retort has also a false perforated bottom, under which is placed a mixture of charcoal and lime. The oil is permitted to enter the retort and drop on the red hot apex of the cone, when it is converted into gas. The gas cannot get out without passing through the perforated bottom and amongst the heated mixture of charcoal and lime, which tend to purify it. From the retort it passes to the cooler, where it is washed with water, and from thence into a receptacle for use. The inventor was engaged in this city some five years ago, in endeavors to improve portable oil gas apparatus and introduce them into use. Cotton and other factories are now illuminated with oil gas made from crude resin oil, which can be obtained very cheap.

**New Tooth Powder.**—J. P. Garbai, of Paris, has obtained a patent for a new tooth powder said to possess wonderful virtues over all others heretofore used. It consists of salt mixed with iron in solution, coffee, chicory, sugar, rice flour, saffron, rhubarb, cream of tartar, and powdered ivory. About two grains of the sulphate of iron is mixed with an ounce of common salt in solution; the water is evaporated by heat, and the residue is mixed with the other substances named—about one-fourth of each according to the quantity of salt being used. This may be a good tooth-powder, but it is certainly a complicated one, and no better, we think, than are made of common salt, sugar, and whitening, in about the proportions of one-fourth of the sugar and whitening, by weight, to that of the salt. These ingredients should be ground all together to a fine powder in a mortar. Charcoal may be substituted for the sugar.

**Cod Liver Oil and Chocolate.**—F. H. Lebarriere, of Paris, has obtained a patent for mixing cod liver oil with chocolate, and forming the compound into cakes. The oil is mixed with the chocolate in grinding the latter. This is stated to be a pleasant mode of using cod-liver oil by invalids.

#### Engineers, and Steam Boiler Explosions.

This subject is always coming up in some new form requiring constant watchfulness and discussion, because it is of such vast consequence to the safety and welfare of thousands of our people. The boiler to which we alluded last week, as having recently exploded at Albany, N. Y., requires to be noticed at some further length. It was a large boiler, weighing five tons, capable of generating steam for a seventy-five horse power engine. The testimony regarding the quality of the iron, and the manner in which the boiler was constructed, is contradictory; but, on the whole, we would infer that the iron was pretty good, and the workmanship not of an inferior character. It had been managed, however, with a great disregard to safety. It was put up in February last, was never tested, and had no gauge on when it exploded. T. Merritt, the foreman of Pruyn & Lansing, at whose shop it was built, gave it as his opinion that the explosion was caused by the want of water in the boiler, and then injecting cold water into it when over-heated.

Some engineers testified that the iron of the boiler was bad, but all agreed that the water had been low in it, and the universal opinion

of engineers, examined as witnesses, was "that cold water had been injected into the boiler while in a heated state, for want of water, by which certain gases were generated which caused the explosion." This is the point to which we wish to direct the attention of engineers. D. Gage, an engineer, gave his testimony to this being a cause of explosions; so did Theodore Merritt, so did Louis Provost, who also said he heard so from scientific men; and so did W. S. Low, who also added that steam alone could not have produced such an explosion.

About three tons of the boiler, in one piece, was projected into the atmosphere like a rocket, and large pieces of other parts of it were driven nearly a mile distant; and the shock was like that of an earthquake in Albany. The explosion was of such a violent character, that no wonder the engineers who testified upon a stock of common information regarding steam, attributed it to certain gases generated in the boiler; in other words, they did not exactly know how it could have been produced by common or uncommon causes.

We are of opinion that the construction of the boiler was good, and that the explosion was caused by the sudden generation of a great steam, not gas, pressure, by injecting water into the boiler while in a highly heated state from want of water. It appears plain, from the evidence, that the water in the boiler had fallen below its proper line, and that the fire acted on the plates above the water, and had raised them to a high temperature—red hot, perhaps. The steam above the water in this case would then become super-heated, and when water was injected into it, a sudden generation of steam would take place, and at a pressure far above that at which the boiler was contracted for to withstand, viz., 125 lbs.

Experiments have proved the possibility of heating steam in contact with water, without increasing the temperature of the latter. Steam heated in a boiler by hot plates above the fixed water line, if raised to a temperature of 435°, and water suddenly injected into it, will raise the pressure instantly to 360 lbs. on the square inch. If steam were heated to 1000°, its pressure would only be increased three-fold, but if water were suddenly injected into it, its pressure would be increased 1700 times. What foreign gases could be generated in the boiler that exploded at Albany? What were the substances in the boiler capable of generating them? The water could not be resolved into its elementary gases by the hot boiler. Red hot iron will decompose some water by absorbing the oxygen and setting the hydrogen free, but the latter gas is not explosive. Cold water injected on a red hot boiler plate at 1100°, will generate steam slower than if injected into a boiler having its plates of no higher temperature than 450°. Water poured on highly heated plates assumes the spheroidal form, and repels the heat; therefore the injecting of cold water into the heated boiler, at Albany, could not have produced foreign gases, nor have caused the explosion in the manner assumed by the engineer and witnesses mentioned. The boiler at Albany was hurriedly put up; hurriedly put to use without being tested, and recklessly managed without a gauge. All the business connected with it appears to have been driven with furious haste, and this always involves an unwise regard of consequences. As so many engineers appear to be unacquainted with the fact that steam can be superheated in a boiler, and produce explosions in the manner stated, we hope the above will be discussed freely throughout all our engineering establishments, for the purpose of diffusing useful knowledge.

#### Shafts for the Adriatic.

The Philadelphia Times states that one of the shafts for the above noble steamship has been completed at the Reading Forge, Pa. In the rough, it weighed 40 tons, when finished it will weigh 33 tons. It is the heaviest shaft ever forged in our country. The crank for it will weigh 16 tons.

#### A Great Philosopher Dead.

Sir William Hamilton died at Edinburgh on the 6th inst. He was generally considered the most profound philosopher in Europe. His reach of thought was vast, and his learning deep and extensive.