

Scientific American

NEW-YORK, SEPTEMBER 4, 1852.

Screw and Paddle Wheels Combined.

J. Bourne, C. E., the well-known author of a number of works on practical engineering, has published a long and able article, in the 'London Artizan,' on propelling steam ships by the conjoint action of paddles and screw. He states that the best old steamships of the Peninsular Steam Packet Company were constructed under his direction, but they have become old, and having no interest in the Company now, the new steamships built since then, are worse than the oldest. The new vessels being slower than the old ones, general dissatisfaction has been manifested. To increase the speed of the old vessels, as it was impossible to sell them in order to get others of greater power, he, some years ago, recommended that one of the small ships of the company should be fitted with a screw at the stern, and a pair of extra engines of 140 horse-power to drive it, as auxiliary to the paddles and the engines which she had; the screw engines were to have no air-pumps or condensers; they were to have high pressure cylinders, from which the steam was to pass, when cut off, into the old large cylinders, and there work expansively, and then be condensed; this involved no increased consumption of fuel, and if the power was thus doubled, the speed would be increased in the proportion of the cube root of 1 to the cube root of 2—an increase from 10 knots per hour to 12½, with a duplicate of power. His suggestions, after great vacillation and delay, were neglected. Since then a rival company has started, which has cut down the profits of carrying the mails, and an increased speed has to be maintained at the expense of an increased quantity of fuel. It is to save expense in fuel, and yet increase the power, that he suggests the propriety and utility of employing both paddles and screw in one steamer. The idea is a good one for adding auxiliary power in an old vessel, and strange enough, both paddles and screw are represented in the figure of John Fitch's old steamboat, which he exhibited on Collect Pond, in 1796, in this city, the place where the "Tombs" now stand. Mr. Bourne contends that a steamship, with a pair of paddle engines of 500 horse-power, and a pair of screw engines of 500 horse-power, would be more efficient when deeply laden, than the same vessel with 1000 horse-power engines driving paddle wheels alone, and that it would be more efficient in head winds, than if driven by the screw alone and 1000 horse power engines. If either the screw or the paddles were deranged, the vessel would still be able to proceed with the remaining power. He has a high opinion of this plan, but only recommends it to increase the speed of existing vessels, not for new steamships.

At a meeting of the Eastern Steam Navigation Co., held in London on the 12th ultimo, a most ponderous scheme was proposed; it is no less than a line of huge steamships to run from England around the Cape of Good Hope to Calcutta. These ships are to be of such a size that they will carry 3,000 to 4,000 tons of coal, and run at the rate of 16 knots an hour, to make the passage in 30 days. They are not to stop for coal on the way, but make one long bold stretch from the west of Europe to the east of Asia, and vice versa. It is a settled matter, by experiment, that the speed attainable by large vessels is greater in proportion to their power than with smaller vessels. These steamships are to be constructed principally of iron, and to be propelled by paddles and screw together,—thus carrying out the proposition first made by Bourne. At that meeting Scott Russell was present, and stated that there were steamboats now running between England and Ireland, which made 18 miles per hour, and he had built one of twelve times the length of her breadth, which ran at the rate of 18½ miles per hour. The changes which may be brought about in ocean steam navigation by the combination of screw and paddle, have yet to be demonstrated; the reasoning upon the proposed changes is good but experience is the only test of economy. One thing is certain, the great

length of American River steamboats in proportion to their breadth, has afforded an instructive lesson to British ship builders, especially Scott Russell.

Manufacture of Gold Pens.

We have made a few remarks on several occasions about the manufacture of gold pens, and had we nothing new to say just now, we should not utter a single word upon the subject, but having witnessed the operations of some new machines, a few days ago, in the manufactory of A. Morton & Co., No. 25 Maiden Lane, this city, we took the opportunity of examining into the whole of the operations, and acquiring new information respecting many things unknown to the world at large. The gold for pens is rolled into thin strips, about the thirty-second part of an inch in thickness; in this state it is black on the surface, and looks like brass; the first operation is cutting it into stubs—short pieces pointed and angular at one end, and cut square off at the other; this is done in a die. The stubs are then run through a machine, and each point is indented for the reception of the real pen points. The next operation is pointing the stubs; the substance used for points is rhodium, a hard brittle metal like steel, but unoxidizable. It is to this metal we wish to direct particular attention. There are various qualities of it, some worth 12, 20, 30 and 40 dollars per ounce, and Mr. Morton told us he had paid even \$120 for a superior quality. It is found in the ores of platinum associated with irridium, osmium, and palladium. Iriridium is used by some for the points of gold pens, but rhodium is the dearest and best. All of this metal used in the United States comes from the Peruvian or Russian mines, but Mr. Morton assured us that there was plenty of it in California, and he had seen some which had been brought from that gold land. It is also found there, pure, associated with sands, and requiring no chemical manipulation for its separation, as in the platina ores of the Ural. Our gold seekers in California should direct their attention to this metal, as it is far more valuable than gold; it is of a white glassy steel color, and in minute roundish particles like sand; the round globular particles are the best for pen points; in fact, out of one ounce of this metal, perhaps not one seventieth of the granules can be used, the rest are rejected. A fine particle of rhodium is soldered on the indented point, of each stub of gold—the solder is mostly composed of gold, for unless it is good, ink soon corrodes it, and the rhodium point drops off; this is the case with poor pens made by indifferent makers. After the pen is pointed, it is rolled out between rollers with indents in them to save the points, until the stub is drawn out to its proper length and correct thinness; the rolling also makes the gold elastic. Many suppose that gold pens can be re-pointed, and we actually had one re-pointed ourselves seven years ago, by getting it exchanged for a new one; we paid the full price, feeling conscious, at that time, that our old pen had really a new point put upon it. But old pens cannot be re-pointed, for the heat employed to solder on the point, renders the gold as plastic as a piece of tin; the heat changes the relative position of the crystals of the metal—thrusts them out, as it were, and the gold requires rolling or hammering afterwards, to give it elasticity—that spring so requisite for pens; this is the reason why old pens cannot be re-pointed. Some makers do not hammer their pens after being rolled; they are never so good. After being rolled they are cut to the proper form in a finishing die, then stamped with the name of the maker, and afterwards turned up to the rounding quill form. This is done in the establishment above named in a new and ingenious machine, invented by Mr. Morton, which makes a superior pen. After this the point is slit with a thin soft copper disc revolving at a great velocity; the great speed makes the soft metal disc cut the hard metal rhodium; the gold is slit with another machine, therefore to make a slit in each pen, it has to undergo two operations. The point is next ground on a copper wheel revolving at a high velocity; this is a very delicate operation, and a good artist gets high wages. After this the pens are "stoned out," that is, they are ground down on the inside and out by fine Water-

Ayr stones, by hand, on a bench alongside of a tub of water; the stones are long, thin, roundish slips, and the pens have to be operated so as to make one part more thin than another, to give them the proper spring; they are then polished on swift revolving copper rollers, and afterwards finished with fine powder and soft chamois skin. Thus, to make a gold pen, it undergoes twelve operations; inferior pens can be made with less labor, but they soon develop their true characteristics.

This business has largely increased, and is rapidly extending. New York is the headquarters of the manufacture, and there are now perhaps no less than forty makers in this city. How the demand is made to increase, we do not attempt to explain; it shows, of a truth, that Americans are verily a writing people.

A Few Reasons why Persons should Subscribe for the Scientific American.

In this age of rapid improvement, no manufacturer, mechanic, or artizan, is safe who does not strive to keep posted up in inventions and discoveries. Scarcely a day passes but we receive a dozen letters from persons describing some invention on which they have expended considerable money and labor, which has been illustrated in some of our former volumes; the usual inquiry is, "can a patent be obtained for the invention?" Had they been subscribers to the Scientific American since its origin, they would have saved time and money; it has been the means of saving hundreds of dollars to many subscribers. One article in this volume, in the series on boilers, was the means of enabling a subscriber to save \$1,000 per annum for fuel. Many papers, at the same price, have more reading matter; if more reading matter was our aim and object, we could print a larger paper at less expense; but quality and quantity are two different things. No man can now be considered intelligent, unless he is well informed on subjects of science and art; it would be much better for all young mechanics, everywhere, if they read more useful and less trashy works. As a volume for binding, the Scientific American is a yearly record of all new and useful discoveries, and many of the rare receipts which we publish are worth more than the year's subscription.

Drainage of Harlaem Lake.

In No. 9, Vol. 2, Scientific American, we published an illustrated description of the "Leeghwater" Steam Engine, for pumping the waters out of the Harlaem Lake, in Holland, in order to reclaim the land. This lake covered about 70 square miles, and was 13 feet deep. Three engines of great power were constructed in England in 1846-7, but the pumping was not thoroughly commenced until 1848. The steam engines are nearly through with their labors; the last accounts from Europe stated that much of the bottom was now exposed, and only large pools were left. To lower the lake one inch, four million tons of water had to be lifted. In three years the lake was lowered 7 feet 3 inches; in December, last year, it was lowered to 9 feet and a half, and now it is nearly dry. It is believed that no less than 700,000,000 tons of water have been lifted by the engines since they commenced operations. This is equal to a mass of solid rock, a little more than three square miles, and one hundred feet high, that is, allowing fifteen cubic feet for a ton. We can easily see what an immense amount of labor the engines performed, and what power there is in coal applied in a state of combustion to water, for the purpose of raising water. Each engine was 350 horse-power, and so economical were their working qualities, that two and a quarter pounds of Welsh coal per hour were all the fuel used for each horse-power of an engine. The Dutch engineers were nearly unanimous for using the old-fashioned wind-mills, which had been so often employed for the same purpose, but it was asserted by two English engineers that the steam engines could be built and do the work for one half the amount of wind-mills; this has been completely fulfilled.

The people of Albany are enthusiastic about a tunnel under the Hudson at that place; why don't they try H. N. Houghton's Aerial Bridge, illustrated on page 169, Vol. 7, Sci. Am.

A Chapter of Suggestions.

FOREIGN SUBSCRIBERS—Our Canada and Nova Scotia patrons are solicited to compete with our citizens for the valuable prizes offered on the next Volume. [It is important that all who reside out of the States should remember to send fifty cents additional to the published rates for each yearly subscriber—that amount we are obliged to pre-pay on postage.]

BINDING—We would suggest to those who desire to have their volumes bound, that they had better send their numbers to this office and have them executed in a uniform style with their previous volumes. Price of binding 75 cents.

MISSING NUMBERS.—Subscribers who have failed to receive some of the numbers during the year, can have them supplied by stating what numbers are missing at the time of re-mitting for the new volume.

INFALLIBLE RULE—It is an established rule of this office to stop sending the paper when the time for which it was pre-paid has expired, and the publishers will not deviate from that standing rule in any instance.

RECEIPTS—When money is paid at the office for subscriptions, a receipt for it will always be given, but when subscribers remit their money by mail, they may consider the arrival of the first paper a bonafide acknowledgment of the receipt of their funds.

GIVE INTELLIGIBLE DIRECTIONS.—We often receive letters with money enclosed, requesting the paper sent for the amount of the enclosure, but no name of State given, and often with name of post office also omitted. Persons should be careful to write their names plainly when they address publishers, and to name the post office at which they wish to receive their paper and the State in which the post office is located.

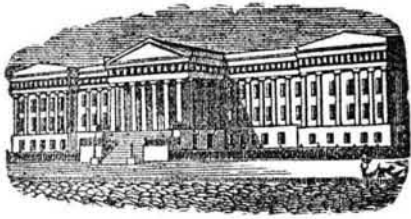
TO CORRESPONDENTS.—Condense your ideas into as brief space as possible, and write them out legibly, always remembering to add your name to the communication.—Anonymous letters receive no attention at this office. If you have questions to ask, do it in as few words as possible, and if you have some invention to describe, come right to the business at the commencement of your letter, and not fill up the best part of your sheet in making apologies for having the presumption to address us. We are always willing to impart information if we have the kind solicited.

PATENTEES.—Remember we are always willing to execute and publish engravings of your inventions, provided they are on interesting subjects, and have never appeared in any other publication. No engravings are inserted in our columns that have appeared in any other journal in this country, and we must be permitted to have the engravings executed to suit our own columns in size and style. Barely the expense of the engraving is charged by us, and the wood-cuts may be claimed by the inventor, and subsequently used to advantage in other journals.

The above chapter of variety we have inserted for the mutual benefit of our patrons and ourselves. If our subscribers will retain in mind the suggestions contained in the above paragraph they will be likely to be benefited thereby; besides they will save us much valuable time and a good deal of perplexity.

Patent Appeals.

A Bill has passed Congress, authorizing appellants from the decision of the Commissioner of Patents to have their appeals tried by the Assistant Judges of the Circuit Court of the District of Columbia, because the Chief Justice of the District, Judge Cranch, is now too frail to try them. The law, as it stood, demanded all appeals from the decision of the Commissioner to be tried by Judge Cranch in person. He is now very old, and has not been able to act upon any such cases for a long time. There are a number of appeals, which, for a long time, could not be acted upon, owing to the want of the amendment now made to our patent laws. We hope the Assistant Judges will act upon them promptly, and thus relieve those deeply interested in their decisions.



Reported Officially for the Scientific American  
LIST OF PATENT CLAIMS

Issued from the United States Patent Office  
FOR THE WEEK ENDING AUGUST 24, 1852.

**BILL REGISTERS**—By J. N. Ayres, of Stamford, Ct.: In combination with the perpetual calendar in the same table, frame, or box, I claim the bill register, consisting of the strips or sheets of paper, or other material, suitably ruled for names and amounts, and inserted in or attached to the table, frame, or box, in any convenient way, so as to be easily removable, or removable on either side of the columns of days of the month and week, undersuitable headings, which denote whether the bills are payable or receivable, as set forth.

**COOKING STOVES**—By R. J. Blanchard, of Albany, N. Y.: I claim placing two separators in the front and back descending and ascending flues of a cooking stove, to divide the products of combustion whilst they are permitted to pass undivided over the top and under the bottom plate of the oven, substantially as described.

**LASTING BOOTS**—By Hezekiah Conant, of Worcester, Mass.: I claim the combination of the two levers connected together and connected to the jaws, also connected to the step, by which combination, on opening the pincers, the simultaneous motion of the two jaws are guided so as to take hold of both sides of the leather, and by pressing the handles towards each other, bring up the leather with equal tension on both sides. I claim this for the purpose and in form, substantially as described.

**MACHINE FOR CUTTING CHEESE**—By W. K. Foster, of Bangor, Me.: I claim the combination of the groove, and the slot, with the spindle and its sustaining board, so as to guide the point of the knife, and support the pointed end of the knife, when the knife is forced down through the cheese, as stated. And in combination with the groove, slot, and plate or board, I claim the secondary rotary board, to be applied and used, substantially in the manner and for the purpose specified.

**BED FOR INVALIDS**—By S. D. Hopkins, of Staunton, Va.: I claim suspending the sheet, hammock, or mattress upon which the patient lies, to a carriage which moves on a frame placed over or around a common bed, so that by said carriage, the patient may be raised up or let down upon the bed, or moved from one place to another, or gently exercised, the whole being arranged, combined, and operating, substantially in the manner described.

**LASTING BOOTS**—By Benj. Livermore, of Hartland, Vt.: I claim the mode of bringing the arms together by means of the slots in the arms, and the bolt operating in the slots, when this is used in combination with the standard, substantially in the manner described.

**CHURNS**—By Rufus Maxwell, of Lewis County, Virginia: I claim, first, the forcing of the milk through a rack, by revolving the churn in an orbit, without turning it on axis. Second, the bow and rods connected together as described.

**ADJUSTMENT MOTION FOR REVERSIBLE ROTARY ENGINES**—By C. A. Mills, of Coldwater, Mich.: I claim the combination for the purpose of withdrawing the sliding heads, at proper intervals, and retaining them, whichever way the engine is working, of the rods, the levers, the wheels (two), with their wedge-shaped projections or inclines, and the springs, the whole arranged and operating in any way, substantially as set forth.

**MACHINES FOR CUTTING HAND RAILS**—By Geo. B. Pullinger, of Philadelphia, Pa.: I claim arranging the rollers, one above the other, within a revolving frame, so as to allow of the curved roller, or its equivalent, being substituted for the roller, at the time desired, and in the manner and for the purpose fully specified.

**HORSE POWER**—By David Russell, of St. Louis, Mo.: First, the combination of the canting tread wheel, an horizontal sweep shaft, and friction wheel for producing motion in the manner described, by which the whole is always running down hill, by throwing the weight of the horse onto the canting wheels, just forward of it, as described.

**MECHANISM FOR GRIPPING WOOD-SCREW BLANKS, ETC**—By T. J. Sloan, of New York City: I claim for operating the gripping jaws on the mandrels of machines for threading or shaving the heads of wood screws, the employment of a wedge on a stem within the mandrel to act on the jaws to close them, substantially as specified, when the said wedge stem is combined with a sliding frame, or its equivalent, by means of an interposed spring, substantially as specified, for the purpose of adapting the jaws to the gripping of blanks of various sizes, as set forth.

And I also claim, in combination with the said spring connection for the purpose specified, the making of the wedge faces curved, substantially as specified, to insure an equal, or nearly equal, force on the gripping jaws, as set forth.

**THREADING POINTED WOOD SCREWS**—By T. J. Sloan, of New York City: I claim giving to the mould or former, or its equivalent, motion, substantially as specified, whereby the cutting away of the metal at the end of the shank is divided amongst several threading motions, instead of being cut away at the first threading motion, as heretofore practiced.

**RAILROAD TRUCK**—By Edwin Stanley, of Bennington, N. Y.: I claim, first, the combination of the brake with the wheel and rail, arranged and operating substantially as described.

Second, making the wheel substantially as described, for the purpose of preventing from clogging with snow or other substances, and giving it a better hold upon the rail, as suggested.

**APPARATUS FOR FEEDING BOILERS**—By Andrew Walker, Jr., of Johnsbury, Vt.: I claim the combination of the heater, or vessel, and its pipes and stock cocks, or either of them, with the tank, boiler and force pump, so as to operate therewith, or enable the force pump to be operated, substantially in manner and under the circumstances as set forth.

RE-ISSUE.

**LAMP BLACK**—By J. G. Mini, of Philadelphia, Pa. Patented originally Nov 13, 1844: I claim the mode described of burning lamp black, that is to say, burn-

ing it in a confined building or room, without chimney or draught, substantially in the manner set forth.

#### Woodworth Patent.

[Continued from page 398.]

So far as the claim is urged on the attention of Congress upon the score of expense incurred in the various suits brought by the proprietors of the Woodworth patent, it presents some peculiar aspects. If the administrator made an absolute sale to Wilson of his rights under the second extension, over four years before the term began to run, it is not easy to perceive on what principle he can claim the supposed expenses of Wilson's lawsuits as entitling Woodworth to further bounty. If, on the other hand, the sale was merely ostensible, and made with a view to obtaining a still further extension, it is equally difficult to perceive on what principle he can claim that he is to be paid over again by the public, who have paid such immense sums already, by his authority, to his agent and grantee. But he claims that the courts are favorable, and the infringers wealthy. The laws against piracy are severe, and the remedies ample and easy of access. The costs fall upon the defendants, and the owners of the patent receive the damages. The remuneration is abundant; the owners are not slow to assert their rights; for each wrong they claim and obtain redress; the remedy survives the term and is in no degree dependent upon its duration.

But in connection with these litigations there are other matters which invite serious attention when the administrator appears before Congress as a petitioner for further bounty. It seems from his own showing that the original patent was invalid, and was only made effectual by the re-issue six years after the death of the patentee; yet the litigation was as rife and the owners were as successful under the void patent then, as under the valid patent since. Even the original grant embraced what was never invented by the patentee, as conceded by the disclaimer filed in the Patent Office, by William W. Woodworth, on the 2nd of January, 1843, four years after his father's death. The extension of 1842 was obtained by the administrator upon papers which, to say the least of them, did not disclose the whole truth; but even then, no pretence was made that William Woodworth had invented anything more than what was claimed in the original patent of 1828. The second extension of 1845 was procured from Congress without the usual investigation, without even the customary report by a committee, without discussion in either house, and upon papers which did not disclose the facts material to a proper decision upon the application. But even then no pretence was made that the invention covered anything more than was claimed in the original patent, nor was any intimation given to Congress of an intention to change the subject matter of the proposed grant by obtaining a re-issue of the patent upon new and expanded claims, so framed as to strike down the intermediate inventions of other citizens as infringements and to cut off by anticipation, as far as human foresight could go, all subsequent inventions in this department of mechanical industry.

Within five months afterward the re-issued patent was obtained; by what means it was procured is unknown to the public. The evidence in such cases is secret and *ex parte*.—It is sufficient to say that after a previous deliberate decision of the Commissioner of Patents, rejecting the application of William W. Woodworth for re-issued letters patent, a re-issue was granted by the Chief Clerk of the Patent Office, embracing claims not contained in the original patent, and enabling the owners to wage successful war upon numerous inventors whose machines threatened to compete successfully with their own. From that time the claims, even under the re-issued patent, have been expanding, until the only fixed fact in its construction seems to be that it is a general declaration of war upon every possible invention for dressing lumber more successfully than the Woodworth machine. The records of the Patent Office show that William Woodworth, the father, admitted the validity of the patent of Uri Emmons, and acknowledged his title by holding under him.

Yet, even when that invention became public property, those who claimed the right to use its combinations were prosecuted by the owners of the Woodworth patent as infringers. One of the unfortunate effects of the grant of a re-issued patent upon the *ex parte* evidence of interested parties is, that the instrument itself becomes presumptive evidence that all it grants was a part of the original invention of the patentee, thus throwing upon the defendant the burden of proving the negative fact that he did not conceive the invention. The fact that no such claim was made in the original patent is not admitted by the courts to overcome the effect of the new grant. This legal presumption has been held so sacred as not to be overcome even by the acts and declarations of the patentee, his recorded admissions, and his deliberate oath.

Without pausing to consider the propriety of giving such force to a presumption based upon evidence so objectionable and unsatisfactory, it will readily be seen how disastrous the effect must be upon the rights of defendants. By the operation of this and similar rules of presumption in favor of the validity of patents, and by the aid of other circumstances, to which it is not necessary here to allude, the re-issued patent has been as yet upheld in the courts, and skillful experts, whose frequent testimony in the suits brought by the owners of the Woodworth patent has made their names familiar to the country, have not failed to find a new construction of the claim whenever it became necessary to strike down some new invention. That the claim of the re-issued patent, in any form, should ever have been sustained seems strange enough, in view of the fact that it embraces combinations which William Woodworth never put forth as invented by him down to the last day of his life, which he repudiated in his affidavit of 1838, and which were never claimed for him even by his administrator until many years after his death. Even if he had actually invented all that is embraced in the re-issue, the omission to claim it at any time during the fourteen years was a dedication to the public of all which he did not choose to embrace in his original patent. That dedication could neither be recalled by his administrator nor revoked by the Patent Office.—The re-issue was granted after the second congressional extension. That this was in conflict with the policy of the law will not be disputed; and it requires an ingenuity of construction beyond the reach of ordinary minds to reconcile the grant with the language of the statute under which it was made. That statute authorized a re-issue during the original term, and expressly provided that it should issue "for the residue of the period then unexpired for which the original patent was granted." (See patent act of 1836, chapter 357, section 13.) The various attitudes assumed by the owners of the Woodworth patent in the assertion of their claims, as disclosed by the reported cases and other papers and documents submitted to the committee by the memorialist and the remonstrants, are not unworthy of a passing notice in this connection. The novelty of the Woodworth invention was questioned in some of the earlier cases, on the ground that the combinations claimed in the re-issue were substantially the same in principle with the prior inventions of Bentham, Bramah, and Muir. The owners of the patent insisted that the use of the stationary planes in those machines constituted a substantial difference between them and the Woodworth machine, in which the rotating planes are employed. In the case against Mercien, in 1846, Judge Kane, in delivering his opinion, after showing the difference in this element of the combination between the Woodworth machine and those of Bentham, Bramah, and Muir to be entirely decisive and controlling, says:—

"Regarding, then, the Woodworth machine as substantially different from the three last mentioned, I find the substantial difference to consist in this, that they act in planes parallel to the surfaces to be removed, Woodworth's in vertical curves; that theirs produce an absolutely level surface, his a surface apparently level, but in fact corrugated or grooved."

tried at Boston in 1848, the late Mr. Justice Woodbury, after showing that stationary knives were employed by Muir, and revolving knives by Woodworth, says:—

"The principle is entirely different.—Woodworth operates by an adze cut, while in Muir's machine the knives are stationary, and the board is shoved over."

Having thus sustained the novelty and validity of the Woodworth patent against previous inventions on the very ground that in the re-issue the combination was restricted in the claim to the revolving knives the exact converse of that position is taken by the owners of the patent for the purpose of stopping subsequent machines; and they are now prosecuting, as infringers, parties who use the stationary planes, and not the revolving knives. This is claimed upon a new construction of the patent which is put forth to meet new cases. It is insisted that the patent is for certain functions; that as the office of a knife is to cut, any thing which will cut, whether rotary or stationary, answers one of the functions of the patent; that as the office of a pressure roller is to hold the board, whatever will serve to hold a board answers the other function of their patent. The practical result of this theory would be that any machine which would plane a board to a uniform thickness would be an infringement of the Woodworth patent; for it is of course impossible to plane without using some cutting instrument, and the board, unless held in its place, would of course be pushed off by the knife. This doctrine is directly at variance with all former constructions of the patent by the courts; and the committee congratulate the country upon the fact, that in the only instance in which it has been directly presented and passed upon, it has met with the prompt rebuke of the bench. This was in the case of Brooks *et al.* vs. Fiske *et al.*, decided in February last in the United States Circuit. The following is an extract from opinion of Mr. Justice Sprague, which was adverse to the Woodworth patent:—

"Another view presented by the plaintiff's counsel is, that this is a patent for an organized machine, containing parts performing certain functions and producing a certain result, and that any machine in which those functions are performed and such result produced, is an infringement, although it have no rotary cutter or pressure roller, but accomplishes its work by other instrumentalities. This construction cannot be maintained."

[Concluded next week.]

#### Another Use for the Telegraph Wires.

Scientific investigation and practical experiment have demonstrated the ability of the magnetic telegraph wires to ring, at the same moment, all of the bells distributed in various sections of our city, for the very useful purposes of fire alarms. This fact suggests another idea, namely; that of lighting all the gas lamps of the city by the same means of telegraph wire. Very simple machinery only would be required to turn the cock of the gas-pipe, and simultaneously with the escape of the gas, to apply the electric spark. This experiment would ultimately prove an economy to the city; and would also prove another triumph to scientific art, which has been already applied successfully to the business of everyday life.—[Boston Commonwealth.]

[This has been proposed a number of times during the past five years, and some experiments, we believe, were made on a small scale in Paris. Could this be accomplished, a very desirable and important saving would be effected in all our cities, but it cannot be accomplished as suggested above.]

#### Steam Grain Elevator.

Messrs. Godard and Hovey, of Albany, have just completed a floating elevator, for the purpose of unloading and loading grain. The elevator is so arranged that it will not only measure grain from one boat, and deliver it on another, and give the accurate quantity, but will also receive it from a boat and deliver it into the first, second, and third stories of any building, at a very cheap rate. It will handle 15,000 bushels of grain per hour—will separate the cobs from corn, or other large substances, most always in grain, and will also screen and blow it, and give the exact weight.