

Scientific American

NEW-YORK, APRIL 9, 1853.

Repairs to the Ericsson—Let the Truth be Told.

The Ericsson is getting new cast-iron crown plates, in place of wrought iron ones in her furnaces.

The "New York Daily Times," of Saturday the 26th, had a long article on the subject, and made one statement which contradicts another made by Capt. Ericsson, in our presence.

It says, "the bottoms of the cylinders are of wrought iron and convex in form, because no foundry would cast them. During the first trial trip down the bay, under anything like a full pressure, the wrought iron bottoms (it should have said crown plates) proved too elastic. When the pressure reached nine pounds, one or two of the bottoms yielded from half to three quarters of an inch. Upon the next trip, the pressure was less, and during the voyage south, it never exceeded eight pounds. The remedy for this is simply to substitute cast-iron for the wrought-iron bottoms used hitherto; Messrs. Hogg & Delameter are now casting them."

In answer to the foregoing we say, it will be remembered by those who were on board the Ericsson on her second trial trip, that Alex. Jones, Esq., of this city, asked Capt. Ericsson if the crown plates of his furnaces were not liable to give way, and the answer he received was "no." "Their form," (convex) said Capt. Ericsson, "allows them to expand and contract without danger." Said Mr. Jones, "the talk on 'Change among those who have a knowledge of such things is, they cannot stand." The "Times" says, in the article referred to. "Practical engineers who make any pretensions to a mastery of their profession are very careful even while dealing largely in anonymous and injurious insinuations not to put themselves on record against the speedy and complete success of the caloric engine."—This is untrue; we can get the opinions of fifty engineers, if we choose, to put on record against its success, while the world lasts. How does this accord also with the statement and question of Mr. Jones? it has already come to pass what engineers talked of on 'Change, and which Capt. Ericsson denied, and which we heard with our own ears. The "Times" also says, "The theoretical demonstrations with which many of our so-called scientific journals lately abounded that the use of heat over and over again for the purposes of motive power was absolutely and simply impossible, have already vanished altogether."

No paper professedly devoted to science but the Scientific American has put forth theoretical demonstrations, to prove the principle of using heat claimed for the Ericsson, erroneous. The advocates of the Ericsson claim that a certain amount of heat by the use of packages of wire gauze can be made to produce an infinite amount of motion—strokes in an engine. We deny this, it is against all the established laws of mechanical philosophy, and there is not a single scientific engineer or professor of mathematics and engineering in our country but will, if called upon, corroborate our views; if we are not correct the Principia of Newton is trash, and the philosophy of mechanics as taught in our colleges for two centuries (but which the editor of the "Times" has never learned) and is now taught there, is false. If a definite quantity of heat can produce an infinite amount of motion, there is hope for the static pressure engine yet, although we exploded that humbug more than a year ago, the principle claimed is the same in both cases. In conclusion let us say that cast-iron crown plates for wrought-iron ones is a new idea in engineering, but as poor as the use of hot air. What engineer of common sense would use cast for wrought-iron in a high pressure boiler. We now say and call upon all to mark our words, that the cast-iron crown plates will soon be found as useless as the wrought-iron ones. So far as it regards anything the "Ericsson" has yet done, our readers will see that their confidence in our opinions has not been misplaced.

Fuel and Mechanical Power.

As the saving of the fuel is the only string on which the advocates of the hot air engine harp, we must say, they exhibit an amount of ignorance on the subject worthy of a native of the interior of Africa. The Arctic burns 84 tons of coal per day, and we assert that the Ericsson cannot go as fast and use 100 tons;

When our north river steamboats increase their speed to but a few miles beyond their average rate per hour, they consume four and five times the usual amount of fuel. Dr. Lardner himself, who presents in his "Railway Economy" the Iron Witch, of Capt. Ericsson, which turned out a complete failure, as a favorable specimen of a north river steamboat, admits this to be true.

When the Oregon and Vanderbilt had their famous race on the 2d of June, 1847, the former consumed 18 tons of the very best picked coal in three hours, running at the rate of 24 miles per hour. She will run to Albany in 10 hours at the rate of 15 miles per hour, and use only 12 tons of common coal. Thus with an increase of only three-fifths the speed, she consumed more than 6 times the quantity of fuel—the increase was as 6 tons to 0.83 of a ton. With this data of the quantity of fuel necessary to run a steamboat according to a certain speed, the Oregon would only use 1½ tons of coal in running to Albany at the rate of 7½ miles per hour, that is allowing a double speed to require 8 times the amount of fuel which appears to be about the quantity.

Withdrawals from the Patent Office.

We request the attention of our readers to the following letter:—

U. S. PATENT OFFICE, WASHINGTON, }  
March 20, 1853. }

SIR—In reply to your's of the 1st inst., I have to inform you that, doubting the legality of refunding money on the withdrawal of an application, the fee on which consists in part of that paid on filing a caveat, I have submitted the question to the Attorney General, and until his decision shall have been communicated to the patent office, all such applications for withdrawals must be suspended.

Respectfully R. C. WRIGHTMAN,  
Acting Commissioner.

Since the re-organization of the Patent Office in 1836, every Commissioner of Patents has returned the sum of twenty dollars according to the plain provisions of the law—on the withdrawal of every application for a patent. When Mr. Hodges was appointed he sent out a new order of instructions respecting such payments, and the above is the first case bearing on the subject which has come under our cognizance. Had he followed in the footsteps of his predecessors, abiding by the plain language of the law, the Attorney General would have been saved the trouble of deciding upon such a question, and other troubles in connection with it, would also have been avoided.

Section 12, of the Patent Act, of 1836, in relation to the fees of caveats says, "which sum of \$20, in case the person filing such caveat shall afterwards take out a patent for the invention therein mentioned, shall be considered a part of the sum herein required for the same."

That specific sum mentioned as herein required refers to section 7, of the same act, which says, in reference to withdrawals:—"In every such case, if the applicant shall elect to withdraw his application, relinquishing his claim to the model, he shall be entitled to receive back twenty dollars part of the duty required by this act. On filing a notice of such election in the Patent Office, a copy of which certified by the Commissioner, shall be a sufficient warrant to the Treasurer for paying back to this said applicant the sum of twenty dollars." This is all so plain that the wayfaring man need not err in respect to its meaning; it can have no other than just paying back \$20 upon every withdrawal of an application for a patent. To refuse to pay it back in the above case is a violation, we believe, of the plain letter of the law; the duty of the Commissioner was to certify at once, to a copy of the application for a withdrawal, so that the money returnable by law should be granted immediately to the applicant. To alter the established policy of the Patent Office after it has paid out thousands of dollars

for the past seventeen years for such withdrawals, exhibits a want of consideration. Before the old policy can be abandoned, with a regard to justice, the patent laws must be altered. If it were the law to refund no moneys on rejected applications, upon which Caveats had been filed, we would not and could not utter a disapproving word, but instead of this being the case, there is not a syllable in the whole Patent Code authorizing the Patent Office to refuse the paying back of \$20 on every withdrawal, when the application had been fully made.

It is true that, in the case of filing a caveat, and again applying the fees to an application for a patent, more labor is entailed upon the Patent Office than in a case where no caveat has been filed; but the Patent Office is not in debt; the fees pay all the expenses. If, however, it is considered necessary to charge more for a case like the above, let the law be altered to charge \$25 for a caveat and allow \$20 to form part of the patent fee. Or let \$5 be the Patent Office fee for a caveat, and let \$30, in every case, be paid on the application for a patent. Five dollars are sufficient to cover all the expenses of the Patent Office for filing a caveat. We should have no objections to such an alteration of our patent laws, but until they are so altered let the Patent Office honestly and rigidly adhere to the law as it is, and make no rules which do not harmonize with the code.

Events of the Week.

TIN AND COPPER PRICES—The metal trade of Birmingham, England, rules the world in respect to articles of tin, copper, and light jewelry. Since we last noticed the rise in the price of tin, another advance has taken place of no less than \$10 per ton. The price of copper has also advanced to no less than \$695 per ton; the small manufacturers of copper and brass articles, in Birmingham, have stopped manufacturing, owing to the high price of tin and copper.

INCORUSTATIONS IN BOILERS—Fredk. Dam, a chemist, of Brussels, Belgium, has lately taken out a patent for employing a solution of soda, in steam boilers, for the purpose of precipitating impurities in the water. Soda will precipitate lime, which will fall to the bottom. Some of the salts of soda are dissolved in hot water and then poured into the boiler. This substance is not expensive and can easily be tested. In our opinion it will be found to work very well.

IMPROVEMENT IN THE MANUFACTURE OF IRON—This is a subject of deep interest to our manufacturers, and a discovery has recently been made in England, which is of the utmost consequence to all engaged in that art who use coke for smelting. As we learn by our cotemporary, the "London Mechanic's Magazine," at a late meeting of the Institution of Civil Engineers, a paper was read by W. Fairbairn, C. E., on the increased strength of cast-iron produced by the use of improved coke. It was stated that the quality of cast-iron had greatly deteriorated by the application of the Hot Blast, by which a large percentage of slag and other impurities, viz. sulphur, phosphorus, &c., were reduced into cast and malleable iron, destroying its tenacity and making it red and cold short. Impure fuel is also a great cause of destroying the tenacity of cast-iron, especially when it contains sulphur. The improvement has been made in removing the sulphur from the coal. Iron that was melted with common coke contained 0.281 proportions of sulphur; some kind of iron, melted with purified coke, contained only 0.191 proportions of sulphur. A great increase of strength had been obtained in the improved iron. The coke was purified by adding a considerable quantity, in layers, of common salt, among the coals. This salt acts upon the sulphur in the coal, when subjected to heat in the coke-oven, forming the chloride of sulphur and disengaging it. A portion of the sulphuret of sodium was left, but this in the iron-furnaces does not yield its sulphur, but passes off, during combustion, into the cinders.

Another plan for using the salt so as to remove sulphur in the coal while in the smelting furnace, is to add a considerable quantity of the salt (chloride of sodium) with the ore, so as to mix it with the coal and the iron.—

This is a good plan for those iron works, which employ coal and not coke in smelting. We are not informed of the exact quantity of salt used, and in fact this could not be determined, as that must be according to the quality of the coal and ore. Our manufacturers can easily try the experiment with half a bushel of salt to the ton. In some experiments made with iron produced without the salt and with it, on bars one inch square; that made with improved coke was found to be from 10 to 20 per cent. stronger. The cast-iron made with improved coke was superior in the ratio of 5 to 4.

In England nothing but coke is used as fuel for locomotives; it will yet be employed extensively in our country, as we have bituminous coal fields of greater extent than all those known in the world beside; our anthracite fields are mere plots in comparison with our bituminous fields. Coke made with salt, by removing the sulphur, must be excellent for locomotives; and will tend to make the tubes endure twice as long. We commend this subject to all those engaged in making coke and manufacturing iron.

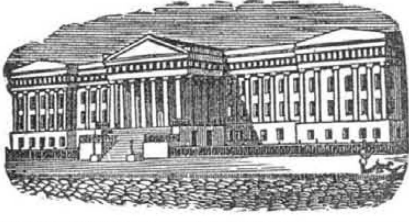
Aerial Navigation by Steam without Balloons.

Theodore Poesche has presented a plan for navigating the atmosphere with a car propelled by a steam engine without employing a balloon. His plan is published in the last number of the Journal of the Franklin Institute, and he has sent us a pamphlet containing his plan, illustrated with some engravings. We certainly would like to see Mr. Poesche driving his steam car "through the ether blue," but his plan presents no rational ground for us to hope we shall ever see him perform such a feat. We consider that safe, economical and successful aerial navigation would be the grandest and most important invention perhaps ever made, but no plan yet proposed, no means yet tried, have by actual experiments (the only way to test the value of any invention), proved anything more than that, with a gas more rarified than air, man is enabled to ascend by the help of a huge balloon to some upper strata of air, there to be drifted by the current of wind to some distant place—not without risk and danger in a single case. M. Poesche's plan is to build a long, narrow, and light wooden vessel, with a flat bottom, and with wings of canvas, and propel it by a screw propeller driven by steam power. "My ship," he says, "most nearly resembles the flying fish, which progresses by the spiral action of the tail, while its extended fins support it in the air."

He trusts to the propeller to drive his long boat through the air, but he will find himself greatly mistaken. The screw was proposed long ago to drive aerial ships with balloons, but could not do it, and that it will be able to do so now without a balloon, is an impossibility, just as much so as that the author of the plan is able to fly by tying wings to his shoulders; in fact, the latter case is the most feasible. There is one way to prove we are wrong, and that is for M. Poesche to put his invention into practice, and floor all opposition by actual demonstration.

Pneumatic Telegraph.

In a few weeks we expect to be able to present engravings of a pneumatic telegraph, invented by J. S. Richardson, of Boston, which presents features of a new and important character. This kind of telegraph is composed of a tube, which, by exhausting the air from it by a steam engine working a huge air pump, is intended to send packages from one place to another through it with great velocity. The idea of sending packages in this manner from one place to another is not new, many attempts have been made to carry it out, some of which we have witnessed. Mechanical difficulties, however, have prevented the success of such a desirable mode of expressing parcels, and these it is believed have been overcome by Mr. Richardson. His atmospheric tube telegraph and railway is very ingenious, and in a tube one mile long, it has operated successfully for some time. We will present a more full description of the invention when we illustrate it. A joint stock company is about to be formed for a line of this telegraph, between this city and Boston.



Reported Officially for the Scientific American  
LIST OF PATENT CLAIMS

Issued from the United States Patent Office  
FOR THE WEEK ENDING MARCH 29, 1853.

**LUBRICATING OILS**—By Luther Atwood, of Boston, Mass.: I claim the manufacture or combination of paranaphthaline and fixed oils derived from coal tar, and boiling from 450 to 675 degrees, Fahr., as produced by the process, as described, the said new manufacture being highly useful as a lubricating composition, either alone or combined with oils or fatty matter, as set forth.

Also the combination of this product, so made with concrete, or thick fatty matter, or oils, for the purpose of liquifying them, or rendering them more mobile, or imparting to them lubricating qualities, as specified.

**WINNERS OF GRAIN**—By S. Briggs & J. G. Talbot, of Sloansville, N. Y.: We claim causing the upper sieve or riddle to vibrate at a greater speed than the screens, as set forth.

**BREAKING HEMP**—By Lewis W. Colver, of Louisville, Ky.: I claim the combination of the oscillating beaters, and the spring bars placed above and below the beaters, so that the recoil of the springs after the beater leaves the bars, shall shake out the hemp and clear it of its woody portions, as described.

**HOT-AIR FURNACES**—By Wm. Ennis, of New York City: I claim the employment of an inverted cone within a drum or cylinder, in whose side the taper end of said cone is inserted and allowed to communicate with the surrounding atmosphere for the purpose of creating an atmospheric reversing draft to cool the direct heated current from the fire; the said cylinder communicating with the fire chamber and ash pit, as described.

**ELECTRIC TELEGRAPHS**—By Moses G. Farmer, of Salem, Mass.: I claim the method, as described, of bringing any number of telegraphic signaling and recording instruments into successive electric connection with the common communicating wire; meaning, more particularly, to claim the combination of the writing and working, or primary and secondary circuits, the electro-magnets and movable armatures of the primary circuit, the local magnets, and their movable armatures and pallets, or equivalents therefor, and local battery and battery connections of each terminus, and connections leading to the armatures of the local magnet, the escapement wheels and wheels U and Z on the arbor of each, the two series of springs of said wheels U and Z, and branch connections, and the branch connections of the main writing circuit at its two termini, the whole being connected and made to operate together, as described.

**PENDULUM BALANCE**—By Benj. Fenn, of Hartford, Ohio: I claim a machine for ascertaining, instantly, the weight of bodies by means of a scale, dish or plate, supported by pivots upon a heavy weighted semicircular frame, or its equivalent, in the manner of a pendulum, and operated by catches, as described.

**SEED PLANTERS**—By Isaac H. Garretson, of Clay, Iowa: I claim planting corn in check rows, by the planting sides, worked on the cross bar by hand, in the manner set forth.

**KNITTING MACHINES**—By John Maxwell, of Galesville, N. Y.: I claim the construction of the locking apparatus, by placing standards upon the back ends of the half-jacks, to carry springs, which regulate the pressure of the bar upon the jacks, in combination with an apparatus for raising said locking bar, the whole constructed and arranged for the purpose set forth.

**PAGING BOUND BOOKS**—By Thomas McAdams, of Boston, Mass. Ante-dated Sept 29, 1852: I claim the employment of a square, rotating shaft, as a bed for the odd numbers, and the shaft D, as a bed for the even numbers of the types, in combination with the tongue, as a platen to both sets of types, the same being operated by the treadle, ratchets, and pawls, so as to enable the operator to print the odd and even numbers of the alternate pages of a bound book, by a single movement of the treadle, as described.

**SPIKE MACHINES**—By James H. Swett, of Boston, Mass.: I claim skewing the shafts or axes of rotary-pointing dies, so that they shall stand oblique to each other, and bevelling off the faces of the dies to the same, or about the same angle at which the shafts stand to or cross each other, for the purpose of forming a close-fitting space in front of the dies, or where the blank is fed in, and spreading the dies in rear or behind, where the spike is pointed, so as to release it and allow the nippers to take the spike from the pointing dies, without injury to the spike, as described.

**VERTICAL PIANOS**—By George Traeyser, of Cincinnati, Ohio: I claim the construction, as described, of a vertical piano, having the tuning pins placed below the lower edge of the sounding board, for the objects explained.

**SEWING MACHINES**—By Thomas C. Thompson, of Ithaca, N. Y.: I claim, first, the magnetic shuttle and race, one or both, for the purpose of keeping the shuttle in perfect contact with the face of the shuttle race, without the use of springs, or any other device, and thereby ensuring the securing of every stitch, as described.

Also, the curved and hinged cap, in combination with the shuttle, to confine the cop in the shuttle, as set forth.

Also, the use of a cop, without a spindle or spooler, in combination with a shuttle, or its equivalent, when the thread is drawn from the inside of the cop, by which means I retain a uniform draught on the cop thread as it is drawn or paid out from the shuttle, as described.

**WIRE FENCES**—By Matthew Walker, Matthew Walker, Jr., & D. S. Walker, of Philadelphia, Pa.: We claim the arrangement of the hooks within the mortises, so that the parts of the hook shall be sustained and kept from spreading by the mortise, and a strain upon the wires tend to steady the posts, as described.

EE-ISSUE.

**SCREW BLANKS**—By Thomas J. Sloan, of New York City. Patented Feb. 25, 1851: I claim the lifters, which select and lift the blanks, etc., from the hopper, substantially as specified, in combina-

tion with ways or conductors, or the equivalents thereof, as specified, into or on to which the blanks, etc., are transferred.

Also, giving to the lifters or to the inclined ways, or their equivalents, a lateral motion, in combination with a stop or detector, as specified, for the purpose of arresting the operation of the lifters until a further supply is required.

Also, the sliding carrier, with its recess, for receiving and holding the screw blanks, as specified, in combination with the spring fingers, for taking the screw blanks from the carrier, and presenting them to the jaws, as specified.

**The Woodworth Patent Suit in North Carolina Terminated.**

Most of our readers, acquainted with planing machines, are probably aware that the heaviest suit brought under the Woodworth Patent has been pending in the Circuit Court of North Carolina for three years past: we mean the suit of Potter & Kidder vs. P. K. Dickinson & Co. Some of the ablest counsel in the country were retained in it, and twenty-five thousand dollars in the three years were expended by the parties in the preparation of the cause for a hearing. It was before the court at the last term, on a motion for an interlocutory injunction, and Mr. Justice Wayne ordered the complainants' bill to be amended as required by the answer, refused the injunction, and remarked that the pleadings on behalf of the defendants exceeded any for ability, and the great number of new points raised, that had ever fallen under his notice. A case of more importance to the country and to the patent law had never arisen, the defendant continually running the Gay machine, and the evidence covering everything known in relation to the Woodworth patent and all the planing machines in this and foreign countries. Having reached this crisis, the complainants proposed to dismiss the bill, each party paying their own costs—and thus has ended this vigorously prosecuted and most vigorously defended suit of any that has yet been brought under the Woodworth Patent.

#### French Patents.

A law somewhat similar to that about to be introduced into England, substituting stamps for the present system of patent right, has been passed in France. The French system does not, however, do away with the existing laws or patents, but leaves it at the option of the patentee to follow either method of protection as he likes, and to be subject to the fees of that alone. A law introducing stamps has, accordingly, been promulgated in France, which are divided into two classes, the one called "timbre marque," to protect the name or mark of the manufacturer, the other "timbre garantie," to protect his ownership of an invention. These stamps are to be made of various sizes, on paper and metal, of a circular form, with an empty space in the centre for the manufacturer's legal mark or signature; the former are to be sold to patentees at one per cent. on the price of the articles for which they are intended, and the latter ("timbre garantie") at two per cent., and the counterfeiting of them will be punishable by law. The "Genie Industriel" calculates that this system, if generally adopted, would produce a revenue sufficient to pay more than half the annual budget of the country.

#### New Commissioner of Patents.

The appointment of Judge Mason, of Iowa, as Commissioner of Patents, is highly creditable to the new Administration. We have known the Judge for years, and know him to be a gentleman eminently qualified for the post. In his own State no man is more deservedly popular among the people. He combines, what is not always the case, a clear and well disciplined intellect, with a good and benevolent heart.

In everything relating to the reforms and benevolent institutions of his State, Judge Mason has been prominently identified, so much so, indeed, that although one of the most prominent Jurists of the West, he has not accumulated a large share of this world's goods.

Such men deserve well, and we are rejoiced to see them filling distinguished places in the offices of the Government.

[The above notice of Judge Mason we copy with much pleasure from the "Ohio Farmer," an excellent paper published by Thomas Brown, Cleveland, Ohio.]

#### Principles of Patents.—Important Decision.

It is well known to our readers what ground we have taken in respect to the principles of patents, and how we have endeavored to set so many legal gentlemen right in respect to the nature of inventions. It has always appeared to us that many of our judges and men of legal fame have had very confused ideas of what a principle is. The decision made by Judge Kane, on which we freely commented on page 67, Vol. 7, Scientific American, and the letter of the Hon. A. Kendall, page 170, this volume, present examples of what we call "confused ideas and incorrect views respecting an art and a principle," as connected with patents and inventions."

We have now before us a certified copy of a decision of the U. S. Supreme Court, made at the last December term, and which was referred to in Mr. Kendall's letter, which is in exact accordance with the doctrines we have taught, and the views set forth by us from time to time respecting the principles of patents. The case is one of error—an appeal taken from the Court of the Southern District of New York, in the case of a patent for manufacturing lead pipe.

In 1837, John and Charles Hanson, of England, obtained a patent for an alleged improvement in the manufacture of lead pipe, and in 1841 a patent for the same was taken out in the United States, which was assigned to Messrs. H. B. & B. Tatham, and afterwards G. N. Tatham was admitted a partner. A re-issue of this patent was granted in 1846, and a suit was commenced in New York against Thomas Otis Le Roy and David Smith for infringement of the same, and damages of \$20,000 claimed. The defendants pleaded not guilty and asserted that the invention was not new, that the machinery had been described before and was not patentable.

The Court in charging the jury in the case said:—"There can be no doubt if the combination of the machinery claimed is new, and produces a new and useful result, it is the proper subject of a patent, the result is a new manufacture. And even if the mere combination of the machinery in the abstract is not new, still if used and applied in connection with the practical development of a principle newly discovered producing a new and useful result, the subject is patentable." [We request the attention of Mr. Kendall to these sentiments.] "In this view the improvement of the plaintiffs is the application of a combination of machinery to a new end, to the development and application of a new principle resulting in a new and useful manufacture. In the view taken by the court in the construction of the patent, it was not material whether the mere combination of machinery presented by the defendants as having been described before was similar to the combination of the Hansons, because the originality did not consist in the novelty of the machinery, but in bringing a newly discovered principle into practical application by which a useful article of manufacture is produced." To these charges of the court the defendants took exceptions, and carried the case to the U. S. Supreme Court. Judge McLean delivered the opinion of the Court, to which we request the attention of our readers interested in patents, so as to take particular notice of the opinion of the U. S. Supreme Court, and see how it accords with the views we have always expressed in respect to patent principles. The court said:—

"The word Principle is used by elementary writers on patent subjects, and sometimes in adjudications of Courts with such a want of precision in its application as to mislead. It is admitted that a principle is not patentable. A principle in the abstract is a fundamental truth, an original cause, a motive; these cannot be patented, as no one can claim in either of them an exclusive right. Nor can an exclusive right exist to a new power should one be discovered in addition to those already known. Through the agency of machinery a new steam power may be said to have been generated, but no one can appropriate this power exclusively to himself under the patent laws. The same may be said of electricity, and of any other power in nature, which is alike open to all and may be applied to useful purposes by

the use of machinery. In all such cases the processes used to extract, modify, and concentrate natural agencies constitute the invention. The elements of the power exist, the invention is not in discovering them, but in applying them to the useful objects.—Whether the machinery used be novel or consist of a new combination of parts known, the right of the inventor is secured against all who use the same mechanical power or one that shall be substantially the same. A patent is not good for an effect or the result of a certain process, as that would prohibit all other persons from making the same thing by any means whatever. This, by creating monopolies, would discourage arts and manufactures against the avowed policy of the patent laws.

A new property discovered in matter, when practically applied in the construction of a useful article of commerce or manufacture is patentable, but the process through which the new property is developed and applied must be stated with such precision as to enable an ordinary mechanic to construct and apply the necessary process. This is required by the patent laws of England and of the United States, in order that when the patent shall run out the public may know how to profit by the invention."

[Let our readers examine page 67, Vol. 7, Scientific American, and pages 170, and 214, present Vol. Scientific American, and compare the above with our views therein expressed.]

"In the case before us the court instructed the jury that the invention did not consist in the novelty of the machinery but in bringing a newly discovered principle into practical application, by which a useful article of manufacture is produced, and wrought pipe made as distinguished from cast pipe." A patent for leaden pipes would not be good, as it would be for an effect, and would consequently prohibit all other persons from using the same article however manufactured." We request the attention of Mr. Kendall to the last paragraph, the decision is just such as that which his letter states the "court did not make."

The instructions of the New York Circuit Court were totally at variance also with the claims of the patent, for the claim is as follows:—"The combination of the core, bridge, or guide piece, the chamber and the die when used to form pipes of metal under heat and pressure in the manner set forth," and respecting this the U. S. Supreme Court decision says:—"The combination of the machinery is claimed through which the new property of lead was developed as the part of the process in the structure of the pipes. But the jury were instructed "that the originality of the invention did not consist in the novelty of the machinery, but in bringing a newly discovered principle into practical application. The patentees claimed the combination of the machinery as their invention in part, and no such claim can be sustained without establishing its novelty; a newly developed property of lead was not in the case."

The instruction of the Circuit Court, New York, was ruled to be wrong, and the judgement reversed. We would state that the opinion of the U. S. Supreme Court, as set forth above, accords with that of the most eminent jurists in patent laws, and the instructions of the court of New York in this case, and the decision of the court in Philadelphia in the Morse and Bain case, excited great surprise in us. "Is it possible," we said, "that we have any judges so defective in knowledge respecting patent laws." Mr. Justice Buller, as quoted by Webster, says in reference to the question of patent principles. "The method and mode of doing a thing are the same, and I think it impossible to support a patent for a method without carrying it into effect and produce some new substance. But here it is necessary to inquire what is meant by a principle reduced to practice. It can only mean a practice founded on a principle."

A line of propellers has been started to carry Cumberland coal from Baltimore to New York.

A Mechanics' Institute is about to be established in Louisville, Ky.