

Pulaski;" you state that Mr. Frederick Gilmore, of Paterson, N. J., constructed a condenser inside the fort, for supplying the troops engaged and stationed there with potable water. Will you have the kindness to say, that "when the need of water was felt" in the fort, the condenser in question was ordered from me by the War Department, and was constructed, erected and put in operation by me.

W. A. LIGHTHALL.

No. 5 Bowling Green, New York.

#### Steam Boilers.

Messrs. Editors:—I take the opportunity to inquire through your paper which is the cheapest to use, a flue or a cylinder boiler? I have often heard it said that if you have plenty of room for cylinder boilers, they were more economical than flues. Is not a cylinder boiler considered safer than a flue? Can you give an idea of the ice manufacturing process in warm climates? G. U.

South Danvers, Mass., Oct. 23, 1862.

[With proper attendance, firing, and attention to the feed, flue boilers are the most economical; the saving of fuel in a boiler is always in proportion to the amount of its heating surface; a boiler 10 feet long, and 24 inches diameter may burn twice as much coal or wood, as one of larger dimensions; the object of flues, as our correspondent is doubtless aware, is to form a large amount of heating surface, to which small areas of water are exposed. In cylinder boilers generally, there are but two large flues running the whole length, in most cases none at all, and these are surrounded, when properly set, by fire and the heat from the same, on all sides as high as the water line. In order therefore, to form a proper estimate of the relative economy of the two systems, it would be necessary to have two boilers whose area of fire and water surface were the same, and compare their performances. The difference would be largely in favor of the tubular one, for the reason that the surfaces are not distant from the fuel but close to them, and also from the greater proportionate areas acted upon by the heat. These opinions are based upon the supposition that the price of fuel remains the same in both cases. The question of the relative strength of the two plans is immediately in favor of the cylinder, as that is the best shape for resistance of any kind; tubular boilers can be made just as safe, in point of strength, as they are required to be. For a description of the process of making ice artificially we refer you to Vol. V. No. 5, page 72, (new series) of the SCIENTIFIC AMERICAN.]

#### Revolving Turrets—An Old Invention.

As considerable controversy has arisen as to who was the original inventor of revolving gun turrets, the following extract taken from the *New York Evening Post*, June 1843, will throw some light on the subject:—

On the corner of Greenwich and Liberty streets there is a model of a battery, which is of a novel and destructive character. It is erected in a circular form, and presents four tiers of guns. The plan of the battery is, indeed, similar to any other of that form. The important difference consists in the manner by which its armament is brought to bear upon an object. For this purpose it is made to revolve upon its center, and if this revolution is performed in one minute and the armament comprises a hundred guns, each one of them may in that period of time be discharged at the object. In no other way can so great a number of guns be brought to bear upon an object in so short a time. It is designed to put this in practice by erecting a circular fort of 50 or 100 feet in diameter, of plates of wrought iron. By means of steam power under ground, which shall cause it to revolve on its center, all the guns of this fort will be brought to bear at each revolution on a given object. The practicability of the plan remains to be tested, and the most important point would be to produce easy, uniform and rapid revolutions of so large a mass; though it would be smaller and less frail than some structures moved by mechanics at the present day.

[The above was sent to us by Mr. Fred. A. Hawley, of Windsor, Vt., who states he cut it from a Boston paper published June 1843, accredited to the *Evening Post* of this city.—Eds.]

The above article appeared in our issue of Oct. 25,

1862, and annexed is a reply to it, handed in for publication a few days ago:—

The revolving turret, described above, was one invented and made by Mr. T. R. Timby, and since patented by him and exhibited by the undersigned at the time and place stated in the foregoing article, I also exhibited this model of Mr. Timby's to President Tyler and his Cabinet, some time in the month of June of 1843, at the City Hall in New York. This invention was very universally discussed by the press at that time. H. A. CHASE.

National Hotel, New York, Oct. 27, 1862.

#### BRIEF EXTRACTS FROM LETTERS.

It is an old adage that "straws show which way the wind blows," and so a single paragraph in a long letter often indicates all the writer has to say. We make a few brief extracts from letters recently received at this office, merely as samples of scores of others which are sent to us every week by our correspondents.

Mr. H. H. Christie, of Perch River, N. Y., in sending the \$20 to pay the second Government fee for a valuable invention he has just secured through this office, writes as follows:—

As this will probably be my last communication to you concerning this business, permit me to thank you for your honorable dealing, and the promptness with which you have attended to my case and answered all letters of inquiry. I shall take pleasure in recommending your firm to any one who may have business at the Patent Office.

D. Harper, of Crystal Lake, Ill., writes as follows:—

I have received your letter informing me that my application for a patent on an improved plow had been allowed. You will please accept my thanks for the successful exertions you have made in my favor. You may rest assured that I shall always feel a pride and pleasure in recommending your Agency to all those having business with the Patent Office.

H. N. Gallagher, of Geneva, N. Y., writes as follows:—

I have to inform you that I received my Letters Patent two or three days ago. I am much pleased with the manner your Agency conducted my business. I shall always look to you for help when needed.

O. Sherwood, Jr., of Dunham, C. E., sends \$20 to pay the balance of Government fee, and adds:—

You have my sincere thanks for the promptness you have manifested in procuring my patent. I shall cheerfully recommend your Agency and paper, as I ever have done since you first did business for me.

Charles G. Austin, of Nantucket, Mass., has got out a very handsomely printed circular, advertising his most excellent Patent Coal-sifter, and at the end of his advertisement he adds the following as a guarantee to the public that his invention is properly protected by the claims allowed, and at the same time, he gives a passing compliment to his agents:—

The patent for this invention was obtained through the Agency of Messrs. MUNN & Co., Patent Solicitors and publishers of the SCIENTIFIC AMERICAN, at No. 37 Park Row, New York City. I make this statement for the benefit of inventors, and all persons having patent business; and they may rely upon Messrs. MUNN & Co., as being honorable and trustworthy men, and thoroughly posted in all matters appertaining to patents.

The annexed complimentary notice we find in the *Rahway* (N. J.) *Register and Times*, of October 23d. We do not know that the editor who penned the paragraph is a patentee, but we feel assured that he has more than ordinary taste for the mechanic arts, and if the writer never took a patent in his own name, some friend of his has, and he took special interest in the manner his business was conducted before the Patent Office:—

Probably no similar concern in the world has been so rapidly and triumphantly successful in the highly important and most responsible business of securing Patents to Inventors, as the widely-known firm of MUNN & Co., 37 Park Row, New York. It only requires the most cursory inside view of their establishment to become satisfied that they have matured a system of transacting the momentous matters confided to their charge in the most conscientious and thorough manner conceivable; nor can we wonder, therefore, that their persevering and systematic efforts have, from the beginning, commanded success. As a matter of course, the spirit of science pervades almost universally the business in which they are engaged, and it is to this circumstance, in great part, that we must ascribe the numerous and unparalleled triumphs they have achieved in the glorious cause of mechanical invention. Let no man, therefore, of truly inventive genius, so far mistake his own interest and that of science as to forego the great advantage of consulting the above firm in any matter where the early procuring of a Patent Right is concerned.

The Annual Convention of Steamboat Inspectors was held in Philadelphia last week. We expect to be able to obtain an abstract of their transactions for our next issue.

#### Hysterical Fits—A Mania.

A late Manchester (England) paper contains the following:—

Upward of three hundred girls were employed in sewing in the large schoolroom under Dr. Munro's Chapel, and one or two of them were subject to fits. One afternoon recently everything was proceeding in the usual manner, when suddenly one of the girls was prostrated by a fit. There was considerable alarm created in the school by this circumstance, and almost instantly another girl was attacked by what the superintendent believes was hysteria, and then another and another, until quite a panic prevailed; altogether nineteen girls becoming affected in less than an hour.

This hysterical mania is the effect of sympathy. A case of a similar nature occurred many years ago in a German orphan asylum. One of the children in it became subject to fits, and one after another of those in the Institution became as subject to the malady as the one that was first affected. The singularity of this case was soon noised through Europe, and the celebrated Dr. Boerhaave being then living, he was sent for, to see if he could prescribe a remedy for the affection. By inquiry and by observation he found that the fits came on at a regular period daily, and that when one of the children exhibited symptoms the whole number in turn became also affected. Boerhaave soon devised an effectual mode of treatment. He ordered a large fire to be kindled in the hall where the children were assembled, and he heated two poker red hot. The children looked on in wonder, when just about five minutes before the time when the fits usually commenced, he lifted a poker from the fire and standing before the children declared in a solemn voice that the first one that took a fit should be burned in the face. As one poker cooled another was handed to the philosopher physician for the space of half an hour, when not a fit occurred on that day. On the day following the same scene was repeated and with like results, and in this manner in two days these fits were banished forever from that Institution. Fear frightened away the fit sympathy.

YANKEE INGENUITY.—A Washington correspondent writes as follows:—

Peddlers of newspapers, pies, cakes, and small wares drive a thriving trade among the soldiers near Washington. Near Fort Richardson a party of men have taken possession of an orchard and cider press, and sell great quantities of the liquor they manufacture to the soldiers. An enterprising firm have started a bone-boiling establishment on the river bank, and are making money by producing a fertilizer from the cast-off bones of the camps. Carts permeate through all the roads and by-paths collecting grease, which is sold to the soap and candle makers.

SCIENTIFIC AMERICAN.—We are in regular weekly receipt of this excellent publication. Messrs. MUNN & Co., the publishers, have been of incalculable benefit to the inventors of the United States. They have built up an immense business in the Patent Agency.

[We cut the above favorable notice from the *Rocky Mountain News*, of Denver City, C. T.; and if the appearance of the paper typifies the degree of civilization to which that city has attained, it must be a highly favorable place to locate in.—Eds.]

THE LAST OF THE WEBSTERS.—Colonel Fletcher Webster, who was killed in one of the recent battles near Centreville, was the oldest son of Daniel Webster. His younger son was in the army in Mexico, and died in the service there. His daughter, Mrs. Appleton, died some years ago—so that now there is none left of the blood of the "Websters."

A RAILROAD ARGUMENT.—The *Territorial Enterprise* says the best estimates put the amount of freight required for Washoe and its dependencies, during the eight winter months, at 28,000,000 lbs. At 4½ cents per pound the freight on this would amount to \$1,260,000. This is a forcible argument in favor of a railway across the mountains.

AN editor who has "gone for a soldier" publishes a portrait of his successor, a goodly pair of scissors. Well, Scissors is one of the best editors, and many papers would be greatly improved by a proper use of the same.

LEFT-HANDED COMPLIMENT.—When Mr. Whiteside finished his five hours' oration on Kars, Lord Palmerston replied that the honorable gentleman's speech was highly creditable to his physical powers.

**Improved Patent Valve for Canal Locks.**

This invention, which the plans, sections, and projections accompanying fully explain, is intended for canal locks, admitting the water by which the boats are transferred from one level to another. It is hung in a rectangular wooden frame, which is represented as broken off in the cut for convenience, upon journals which pass through boxes provided for their reception, let into the frame before mentioned. The body of the valve is of wood, confined in a frame of iron, for such the various heads and seats composing the invention form; the distinguishing feature of the valve is the arrangement of the bearing edges or seats, which are struck from the center of the valve by bevelling, through which device the areas of the valve are rendered unequal, while the weight of it upon the journal is the same on both sides, the upper and lower edges of the seat remaining parallel; this method of construction gives a greater surface upon the pressure side, indicated by the arrows, and as a consequence it is opened more easily.

Fig. 1 is a plan of the valve in section; in it A represents the wooden portion, B the iron heads which traverse the ends, and C the iron edges or seat; upon the rectangular frame, *a*, are the bearings, *b*, which support the whole apparatus, and contain the journals, *c*. The heads, B, spoken of previously, are secured to the valve by the screw bolts, *d*, and also by the shaft, *e*, which passes entirely through from end to end of the journals; the T-shaped irons in the frame being merely fastenings. Fig. 2 is an end section of the frame and its fittings, and shows the rebated cleats, C, which form the valve seat; the relations of the cleats and edges of the valve being so analogous that they have similar letter of reference. Fig. 3 shows the valve in place and the direction of pressure by the arrows; the projecting elbow being the part to which the operating rod is attached for opening and closing. Fig. 4 represents a perspective view of the valve and all its attachments, except the rod spoken of, the same letters referring to like parts; A being the wooden body, B the iron heads which confine the same, *e* the screw bolts which hold the heads in their places, and C the iron edges or seats of the valve which make the water-tight bearing against the rebated cleats, C, bolted on to the rectangular frame in which the valve is suspended, the small mortise holes in the body being made for the insertion of the nuts which screw on the bolts, *e*. In the end of the journal will also be seen the end of the shaft which was mentioned as running through and through. By means of the device of the beveled edges, therefore, and the greater area obtained through them, the inventor claims greater convenience and ease of operation, and by the employment of the wooden body with the iron attachments, strength and lightness are secured. Mr. George Heath, of Little Falls, Herkimer county, N. Y., is the inventor, to whom the right was secured, through the Agency of the Scientific American, on July 1, 1862.

SEVEN thousand men are now busy in completing the iron-clads in and around New York city. In addition to these, ten first-class foundries have all their men engaged upon the machinery and turrets, while the ordnance shops in the country are preparing the armaments.

**VALUE OF LITTLE PATENTS.**

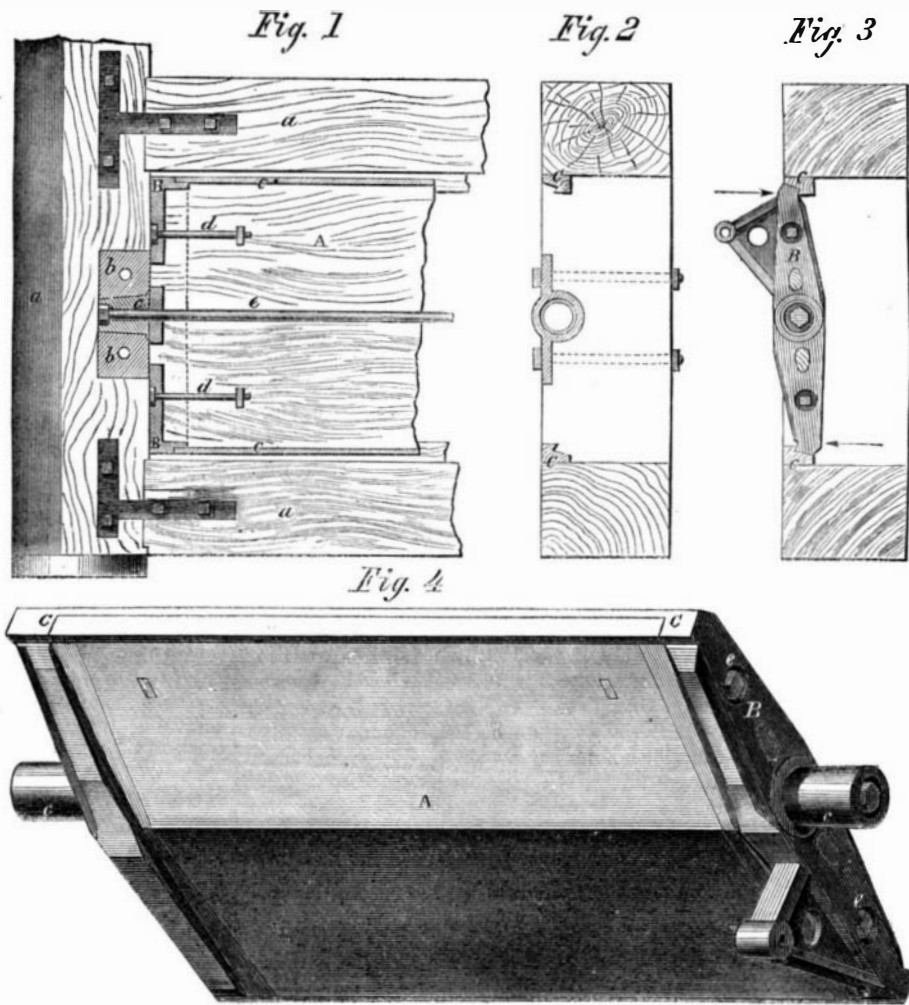
Our readers will remember the engraving of Harvey Brown's patent lamp chimney, which was published on page 240, present volume, SCIENTIFIC AMERICAN. Immediately after its publication the inventor was beset by applicants for the purchase of the patent, and a day or two ago he called upon us with a roll of bills for quite a sum which he had just received from the lucky purchaser of his patent, and besides he informs us he is to receive a handsome tariff on every article made. Who can say that little patents do

face of the instrument, after which the blank piece is folded together so that the edges are brought directly opposite each other. Fig. 1, represents the view of the sharpener at work; the pencil is inserted at the hole *a* and then pushed down until it comes in contact with the edges, *b*, Fig. 2, before spoken of, these constitute cutters, which, as the pencil is revolved, wear away its surface. Fig. 3, shows most clearly the operation of the cutting edges, *b b*, and otherwise explains itself. The whole affair is quite tasty and adapted to the end desired; good tools are always in demand, and the moral effect of a well-sharpened pencil must have its weight in the work to be performed.

Patented by A. C. Funston, Kensington, Philadelphia, to whom all letters should be addressed.

**A Flying Peace-maker.**

William Fields, of Wilmington, Delaware, informs us that he has invented a "Flying Peace-maker" for the destruction of iron-clad ships of war, which he declares no iron-clad vessel can withstand, so powerful will be the shock. He can operate it directly from the deck of the *Monitor* or any other iron-clad ship. The best part of it is, he can rig, as he asserts, two or three vessels in less than a week with but trifling additional expense. It can also be used against forts or an army on land with good effect. Mr. Fields writes us that he will soon be in New York to show us his wonderful discovery. We shall be happy to see him, and doubly so if the discovery is anything like as important as he announces it to be. We want something that will do the work in a short, sharp and decisive manner, and we trust it may not prove to be another Crimean panatechner.

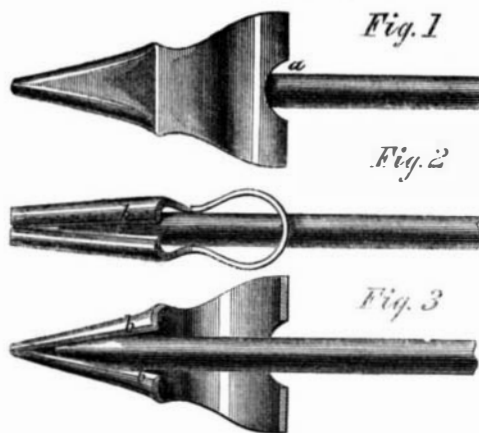


**HEATH'S PATENT VALVE FOR CANAL LOCKS.**

not pay? Patents on small articles for which there is a great public demand always prove remunerative to the owner.

**FUNSTON'S PENCIL SHARPENER.**

We here illustrate one of those neat and convenient little inventions for which our countrymen are already famous—a device for sharpening slate pencils. Children's teeth are set on edge by the repeated



gritting, and grinding, which attends the important operation of getting a nice point on the instrument in question; to prevent this, and the spoiling of penknives, this invention was made. It consists of a single piece of sheet steel cut out blank from the material; the two sides of each end are then doubled over so that the edges form an oblique angle with the

**THE POLYTECHNIC ASSOCIATION.**

On another page will be found a report of the proceedings of the Polytechnic Association, on the evening of October 23d, and it will be seen that the report is unusually long. This is owing to the fact that the discussion was of more than usual interest. It so happened that the inventions presented to the notice of the Society either had been recently illustrated in our paper, or were so simple that they could be made intelligible without engravings, and they were all of public interest. Mr. Knight's experiment with his improved process of electrotyping particularly attracted the attention of the meeting.

**India-Rubber Pen Rack.**

An improved article of a pen rack has been laid upon our table by Mr. O. P. Smith, of No. 519 West Twenty-third street, which seems to us the best article for the purpose we have ever seen. It consists of a disc of india rubber confined between two brass plates, and has niches cut in its edge of various widths, into which the pen handle or pencil is inserted, the elastic nature and peculiar surface produced on the cleanly-cut rubber, retains the pens in their positions. The disc is not fastened rigidly to the standard, but revolves upon it, so that all parts are easy of access. The base is of marble and the whole affair presents quite an ornamental appearance.

A STEEL suspension bridge of one hundred yards span is now undergoing the scientific test at Birkenhead, England. The steel used in its construction stood the handsome test of seventy tons per square inch of tensile strain.