

We have left but a word to speak of the printing process. This does not differ very widely from other printing processes, except in being done wholly by hand. Two persons operate the press together. The first inks the plate and so prepares it for the press, adjusts it in its place, and by a turn of the wheel applies the pressure; a second cleans the plate off and prepares it for a second printing. This is done, first, by wiping off the remaining ink with a cloth, and then polishing the plate with whiting, rubbed on with the palm of the hand. Long experience has demonstrated that there is no such polisher as the human hand; but it gets fearfully dirty in the operation. In Washington a register, analogous to that attached to an ordinary gas meter, is connected with every machine, which thus registers every impression taken. This register is locked and the key is in the possession of the superintendent, who thus has a means of proving that no money has been abstracted from the printing room. In the printing room at the Treasury Department eighty of these presses are in simultaneous operation; in one of the print rooms of the National Bank Note Company of New York there were one hundred and sixteen. The men are paid by the piece, and work with marvelous rapidity, and the room presents a very striking picture of busy activity. It can hardly be credited, but it is the fact, that the wiping of the plate by the hand sensibly wears away the steel, and the difference in value of different workmen is measured by the skill with which they succeed in polishing the surface with the least wear—producing the greatest cleanliness and the least attrition of the plate.

The money is now substantially ready for the market. It only remains to print upon it the seal of the United States—a red stamp, which is affixed to all bills, whether issued by the United States or the National banks, and is always printed at the Treasury Department—to add the number, which is changed with every printing by an ingenious contrivance, which our space does not permit us to describe but which gives to every note its own number—and finally to divide the notes, which are printed six or eight on a single sheet and must be separated, an operation which is done in Washington by an ordinary bookbinder's cutting machine but which requires the greatest skill in its manipulation, in order not to mutilate any portion of it. The money is then packed in boxes; if printed by a private bank note company, it is sent to Washington to receive the Government stamp; if in the Treasury Department, it is sent down to the Treasurer, where it is stowed away in vaults, ready for use. Just before our visit to the Treasury Department there had been a careful counting of the money in the vaults. It amounted to \$1,038,000,000: or, if the reader gets no very clear idea from figures expressed in billions, and we confess we do not, he may get a better conception from the statement that it comprised ten cords of paper money.

There are some of the products of the press room which, however, never get to the Treasurer. These are the mutilated and imperfect bills. Along with these are bonds and bills worn out by long use and sent to the Treasury to be redeemed. These are carried to a furnace room a few rods from the main Treasury building, and there, in the presence of a committee appointed to witness their destruction, they are burned, the smoke being forced through water to prevent any part of the charred paper from being carried off and picked up for future presentation.

The most wonderful thing concerning these operations remains to be told—the accuracy with which they are conducted. A single sentence from the report of Mr. George B. McCartee, chief of the Bureau of Engraving and Printing, sums up the results of this painstaking care: "It affords me great pleasure to state that, in the engraving, printing, and finishing of \$890,483,995, notes, bonds, and other securities, and 104,140,286 stamps during the year (1871), not one note or sheet of paper has been lost to the government."

The Cat Show at The Crystal Palace.

There can be very little question as to when the first animal show occurred. According to Archbishop Usher's calculation, it was in the year 2349 B. C., and the place where it was held was Noah's Ark. It lasted for at least nine months, says *Land and Water*, and must have been a hard time for Noah and his family if the antediluvian animals wanted anything like the attention that their descendants get in these days at the Regent's Park. How they fed the *carnivora* at all, and how they stowed away enough green food or hay for the *graminivora*, is an interesting subject of inquiry which I must pass over for to-day. Further on in history there were grand beast shows at Rome. Sulla exhibited 100 lions, Scaurus a hippopotamus and five crocodiles, Pompey 600 lions and twenty elephants, Julius Cæsar several giraffes, Augustus a snake fifty cubits long, Trajan 11,000 animals in all, and Probus 1,000 ostriches, among other live luxuries. In all these cases the enjoyment of the Roman citizens, who were the principal witnesses of the show, was heightened by the death of the curious beasts which had cost their exhibitors so much money and trouble; and the same strange principle was adhered to later in history, when the Smithfield Club, so lately as in 1798, took to exhibiting fat cattle, which were killed by the butcher instead of killing each other. It was not till 1838 that the Royal Agricultural Society hit on the brilliant idea that an animal need not be killed because it had been exhibited, and as soon as mercy prevailed over sacrifice the system became popular.

The fourth cat show, which lately closed its doors, was an improvement, both as to the quality and the number of entries, on any previous. The arrangements were very good and the comfort of the animals so strictly studied that they suffered as little as possible from their confinement, and only lifted up their sweet voices occasionally. But five days in a

cage is a great trial for a cat which is used to liberty, and it is no matter of wonder that some of the prisoners were looking very weary before the time came for their release. Perhaps variety of color was the most striking feature of the show. White and black, tabby and tortoiseshell, and their various combinations, are familiar to all of us, but here in addition were mouse color, whity brown, bright reddish yellow, pale grey, pug dog brown, a greenish grey, like a Scotch hare, and other strange shades, causing the visitors to play desperate havoc with the tenth commandment. Cats and kittens all told, and without including certain interlopers in the way of puppies and birds which were in the cages with the cats, there must have been about four hundred animals in the show, the largest and finest being No. 257, a monstrous tabby tallow cask of a cat, with a splendid skin, weighing nearly twenty-two pounds, and superior in all respects to the well known "Museum Street Jack," the heavy weight champion of previous shows, who never quite reached twenty pounds in weight. Perhaps the handsomest cat exhibited was No. 281, a magnificent *van doré* from Paris, "Fritz" by name, only two years old, and with a face like an eagle owl's, beautiful to the last degree, and capable of looking exquisitely savage on very slight grounds. Most cats are self-satisfied enough, but "Fritz" was absurdly consequential, and held his dainty little nose in the air with the look of an opera *prima donna* obliged to sing in a barn.

Erratum.

In our article entitled "Scientific and Mechanical Possibilities," on page 329 of the current volume, it is stated that "it is not within the possibility of mechanism to bore 4,000 feet more." It should read: "Is it not," etc.

CROSS BREEDING OF FISHES.—Mr. B. Hanson, of Stavanger, in Norway, has, according to a correspondent of the *London Athenæum*, accomplished a novel feat in pisciculture by producing a new hybrid species, a cross between *Salmo alpinus* and *Salmo eriox*, the former species spawning four weeks before the latter. Mr. Hanson's manner of bringing together the spawning maturity of the two species is ingenious. When *Salmo alpinus* has been spawning for some time, Mr. Hanson secured a female fish in an interesting condition, and imprisoned her in a perfectly dark tank, where he left her alone. In a like manner Mr. Hanson, as soon as possible, secured the sire of the first couple of *Salmo eriox* he found in mature condition for spawning, and put him under a similar arrest, and kept a close watch over both until the time of the sire came. In this manner Mr. Hanson has succeeded in rearing, with only a loss of one per cent, in his spawning boxes (supplied from a subterranean well which flows with a uniform temperature of +5° Réaumur all the year round) a new species, which attains full development in four years, and is remarkable for its exceeding vigor and wildness in water, and its palatableness on the table. Mr. Hanson entertains sanguine hopes of this species becoming self-productive in course of time, contrary to all experience of hybrid fish, because he has already caught in his pond several individuals with roe in them.

DANGEROUS DIETS.—The failure of the potato crop in England is likely, from what we read, to bring about an epidemic of scurvy, unless the public can be better informed of the requirements of an antiscorbutic diet. The fact, therefore, cannot be too widely made known that pease pudding, haricot beans, and boiled rice, which have been suggested in the journals as substitutes for potatoes, will not prevent the occurrence of scurvy. In the absence of the potato, an excellent antiscorbutic, fresh green vegetables or fruits will be requisite, or the health will certainly fail, even though fresh meat be taken. Amongst the vegetable material which may be used, the *Lancet* states, are the various forms of cabbage, lettuce, oranges, lemons, onions, mustard and cress, dandelion, and sorrel. The experience of the crews of vessels on long voyages has shown, over and over again, the uselessness of the pea and bean tribe in preventing scurvy.

VELOCITY OF NINE-POUNDER SHOT.—Experiments have recently been made to determine the velocity of the nine-pounder shot when fired with various charges of powder. From the nine-pounder gun of 8 cwt., with 3½ lbs. of rifle large grain powder, a velocity of about 1,500 ft. per second was registered, the gun being quite uninjured. In order to obtain these results on service a stronger carriage is required, and will probably shortly be made. The carriage on which Sir J. Whitworth's new gun was fired on the sands at Southport has endured the strain of the heavy charges exceedingly well.

AIR was compressed by Professor Tyndall, by means of a column of water 260 feet high, to one eighth of its original volume (120 lbs. to the square inch) and then allowed to escape. As it rushed out, it expanded so violently and caused such an intense cold that the moisture in the room was congealed in a shower of snow, while the pipe from which the air issued became bearded with icicles.

SCIENCE is studied by the observation of facts. But observation is not easy. It requires more memory and a further perspective than most men possess. Experiment, too, is necessary, which is a series of questions put to Nature, and no witness can be found more difficult to examine.

MANUFACTURE OF LETTER ENVELOPES.—One establishment in New York city, that we know of, is now turning out nine hundred thousand letter envelopes daily.

DECISIONS BY THE COMMISSIONER OF PATENTS.

Horse Rake Patent.

CALISTA E. COX, EXECUTRIX.—*Extension.*

In the matter of the application of Calista E. Cox, executrix of the estate of Harvey W. Sabin, for extension of patent No. 7,813, for improvement in horse rakes, granted December 3, 1850. Extension granted for seven years from June 8, 1872.

Preserving Hops.

BATES vs. SEEGER & BOYD.—*Interference.*

Appeal from the Board of Examiners-in-Chief in the matter of the interference between the application of Benjamin Bates and the patent of Seeger & Boyd for an improvement in preserving hops.

To pack goods of various kinds in bottles or cases made airtight, in order to preserve their contents more effectually, has been common from time immemorial, and cannot be monopolized under a patent.

THACHER, Acting Commissioner:

The patent was granted to Seeger & Boyd, December 12, 1871, application therefor having been filed the 20th of October preceding.

The application of Bates was filed January 13, 1872.

The patent contains two claims. The first is in interference, and is as follows, viz:

As a new article of manufacture and trade, hops ground or pulverized and incased in airtight packages, as and for the purpose set forth.

The gist of the invention is the airtight package. Neither party claims here the article itself, and, in fact, there is proof in the case that it is entirely destitute of novelty.

I can find nothing whatever patentable in what Bates has done. Covered cans and boxes, and corked bottles, are the most common devices in the world for securely keeping solids and liquids of every description. There is no more reason for granting a patent for a bottle or can of ground hops than of ground pepper, ground spice, or any other pulverized substance.

It will undoubtedly be said that objections of this nature apply with equal force to what is called an invention in the patent of Seeger & Boyd. I freely admit it. Why such a patent should ever have been allowed is beyond my comprehension. It has been the practice to hermetically seal cans, bottles, and packages of every description from time immemorial, and for the purpose of preserving their contents in their original condition. The result in this case is precisely what every one would have expected; there is no new discovery whatever. Not even special skill is required to practice the wonderful art described; much less is there the least demand for the exercise of *inventive genius*. A mere child can put ground hops into a bottle and cover the cork with sealing wax.

The grant of such patents, for what is utterly unworthy to be called invention, is a fraud upon the public, and is to be condemned in the strongest terms.

Unfortunately, the patent of Seeger & Boyd is beyond the control of the Commissioner, and it therefore becomes necessary to formally pass upon the question of priority.

Judgment on this point must be given in favor of the patentees.

Lead Pencil Eraser.

Appeal from the Board of Examiners-in-Chief in the matter of the interference between the applications of Samuel D. Hovey, Joseph Illfelder, Philip Hufeland, J. Reckendorfer, and T. H. Muller for letters patent for an improvement in eraser attachments to lead pencils.

THACHER, Acting Commissioner:

The inventor of a short paper sleeve, which serves only to connect an India rubber eraser to a pencil, and does not cover the rubber so as to protect it and make it firm, is entitled to a patent for what he has invented only, and not for such a one as would embrace the latter feature.

Notwithstanding the patent thus allowed, a subsequent inventor of a paper sleeve, made long enough to cover and protect the rubber and strengthen the connection, may have a patent for it.

Where there is reason to doubt whether the only invention to which the successful party in an interference is found to be entitled is new, his application should be referred back to the Examiner to investigate the question.

The testimony in interference cases should be so construed as to conform to the preliminary statement of the party producing it; and such as is inconsistent with it should be disregarded.

The date of an invention originated abroad can be carried back no further than the time when specimens embodying it are shown, on satisfactory evidence, to have reached this country.

Judgment in favor of Hufeland.

DECISIONS OF THE COURTS.

United States Circuit Court, District of Connecticut. RUSSELL AND ERWIN MANUFACTURING COMPANY vs. MALLORY *et al.*

A suit in equity, brought by the Russell and Erwin Manufacturing Company against Mallory, Wheeler & Co., under letters patent granted to Rodolphus L. Webb, December 31, 1867, for "improvement in reversible locks and latches."

Before Judges WOODRUFF and SHIPMAN. DEFENSES NOT SET UP IN THE ANSWER—COMBINATIONS—ABANDONMENT—ESTOPPEL—WEBB'S PATENT FOR REVERSIBLE LOCKS AND LATCHES.

If Webb's reversible latch was new and useful it was patentable, and his patent is not to be held invalid because he only claims the latch *when used in an outer case containing also lock mechanism*—and this even though there be no relation between the latch and the lock.

The statute secures to the inventor an interval of two years in which to test the usefulness and the value of his invention by putting it into use and on sale, without being thereby barred of his patent; and it necessarily follows that, from the mere lapse of the period mentioned, no presumption of abandonment can arise.

When by express enactment an inventor may have two years of trial in the public markets, putting his invention in use and on sale, and yet be entitled to a patent, there is no reason for concluding that he may not also have the like period at least within which to offer his right as an inventor to others—submit the invention to that test of its usefulness and value—and yet be entitled to his patent.

Where it appeared that, during a period of delay in applying for a patent, the first inventor had asserted a continuous claim as such, and a purpose to secure a patent on his invention, and had shown some, though inadequate, appreciation of its value, although another meanwhile had made the same invention and put it on sale: *Held*, that there was no abandonment.

ment of the invention by the first party, either as a useless experiment or by a surrender of it to the public.

Where an inventor makes no secret of his invention, cherishes and declares his purpose to procure a patent therefor, and exhibits it to those who, being engaged in the manufacture of articles of a similar character, are competent to judge of its value, in the hope that they may purchase, he himself being in no situation to engage in manufacturing, he is not estopped to assert a right to the invention and to claim a patent because his application is not made until nearly two years have elapsed.

Apart from the question of abandonment, the mere fact that, prior to the application for the patent, some one has obtained knowledge of the invention and placed the thing invented on sale, whether innocently or fraudulently, does not cut off the prior right.

As between the first inventor and the prior manufacturer no equity can be urged in favor of the latter, except that the former cannot claim damages or profits arising before his patent is granted.

The circumstance that such prior manufacturer is also an original inventor, and believes himself to be the first inventor, does not affect the question. He is in no better situation than one who ignorantly and innocently supposes that the invention is open to the public.

Infringement was admitted. The defenses urged at the hearing were non-patentability of subject matter, lack of priority of inventorship, abandonment of the invention, and estoppel, as is fully set forth in the opinion of the Court. Patent sustained.

B. F. Thurston and *C. E. Mitchell*, for complainants.
C. F. Blake and *C. R. Ingersoll*, for defendants.

Supreme Court of the United States.

Lamp Patent.

CARLTON et al. vs. BOKEE.

In equity. Appeal from the Circuit Court of the United States for the District of Maryland.

MR. JUSTICE BRADLEY delivered the opinion of the Court: William Carlton and the Bridgeport Brass Company, as assignees of Christian Reichmann, filed their bill in equity in the court below to restrain the defendant, maker of the Comet burner, from infringing a patent for an improvement in lamps, granted to Reichmann on the 21st of September, 1858, and reissued to Carlton and one Merrill on the 11th of August, 1868. The lamp as patented to Reichmann was one of a large number of attempts made about that time to utilize petroleum and its various products for purposes of illumination. The old lamps adapted to sperm oil, lard, and other gross and sluggish oils were unfitted for the use of so volatile and dangerous a substance. In them the flame was set close to the lamp, and the tube holding the wick was projected downward into the oil, so that the heat of the flame might be communicated thereto in order to render it susceptible to the capillary attraction of the wick. Such an arrangement as this with petroleum would have produced a speedy explosion. This article required that the flame should be elevated as far as possible above the lamp, and that the metallic wick-tube should not communicate any heat to the fluid. This was one object to be attained in the burners required for the use of the new illuminator. Another was some contrivance for concentrating a current of air upon the flame itself so as to consume as perfectly as possible all the rapidly escaping volatile gases, both as a saving of light and as a preventive of the disagreeable odors which they would otherwise diffuse.

Two well known burners are conceded to have been in use before Reichmann's invention, which have a material bearing on his claims—the Vienna burner and Stuber's burner. These have been exhibited to us. The Vienna burner contained the flat wick-tube, the ratchet wheel attached thereto (but covered and not exposed as in Reichmann's), and a slotted dome above the wick for the flame to pass through, and a chimney. But the dome was not supported by slender arms, as in Reichmann's, but was connected with a gallery which supported the chimney and surrounded the wick tube and dome, and rested on the lamp or cap below, so that all the light of the flame below the dome was inclosed and lost, and could not issue out, as in Reichmann's burner. The Stuber burner, invented by John Stuber in 1856, and made in considerable quantities in that and the following years at Utica, New York, was an improvement on the Vienna burner in this, that the gallery was so low as to leave a considerable open space under the dome for the reflected light to pass out in a downward direction, and the dome was supported by slender arms; but these arms were attached to the gallery and not to a sleeve fitted on to the wick tube. It differed, therefore, from Reichmann's in these respects: The chimney was supported on a low gallery instead of the dome itself, and the dome was supported by arms attached to this gallery, instead of arms attached to a sleeve on the wick tube. Therefore, with these burners before us, all the invention we can discover in Reichmann's burner is the peculiar mode of supporting his dome by slender arms attached to a sleeve fitted on to the wick tube, and the elevation of the chimney on the outer edge of the dome. The latter peculiarity, as we have seen, is a defect which rendered the burner nearly useless.

We are constrained to hold, therefore, that the Comet burner is not an infringement of Reichmann's original patent or of the invention which is exhibited in his original specification.

It is proper next to inquire as to the bearing of the reissue patent on the question in litigation between the parties. The defenses made by the defendant against this reissue are, first, that it was obtained illegally, wrongfully, and by false pretenses, and because it seeks to claim things of which Reichmann was not the original and first inventor. Secondly, that the original patent itself was void because the only thing in it which Reichmann had any pretense of inventing was anticipated by a man by the name of Michael H. Collins as early as 1843.

The specification of the reissued patent describes the burner of Reichmann substantially as was done in the original patent, being interspersed, however, with observations as to the uses and objects of particular parts, evidently borrowed from subsequent experience and events. The single claim of the original patent is expanded into seven distinct claims.

If they mean anything more than the claim in the original patent, they are void. Being identical with that, they are needlessly multiplied, and by exhibiting a seeming of claims to which Reichmann was not entitled, they are calculated to confuse and mislead. We think it proper to reiterate our disapprobation of these ingenious attempts to expand a simple invention of a distinct device into an all-embracing claim, calculated by its wide generalizations and ambiguous language to discourage further invention in the same department of industry and to cover antecedent inventions. Without deciding that a repetition of substantially the same claim in different words will vitiate a patent, we hold that, where a specification, by ambiguity and a needless multiplication of

nebulous claims, is calculated to deceive and mislead the public, the patent is void.

Our conclusion, therefore, is that the Comet burner is no infringement of Reichmann's reissued patent so far as that patent is valid.

Decree affirmed.
J. H. B. Latrobe and *B. R. Curtis* for appellants.
C. F. Blake and *C. M. Keller* for appellee.

United States Circuit Court, Eastern District of Pennsylvania.

ADAMSON vs. DEDRICK.

MCKENNAN, Circuit Judge:
This was a suit in equity, brought by William Adamson against Charles H. Dedrick, under the provisions of section 58 of the Patent Act of 1870, for the purpose of setting aside certain letters patent granted to the defendant June 18, 1872, and alleged in the bill to be for the same invention as the patent granted to complainant January 31, 1865.

The invention, as set forth in defendant's patent, had for its object the economizing of time, labor and material in the manufacture of the soles and heels of boots and shoes, and it consisted in cutting, from the raw hide, pieces approximately of the form required and applying the tanning process to these pieces alone. There was thus saved the additional time, labor and material that otherwise would have been required in tanning the "waste pieces;" the cuttings, being in the condition of rawhide and not of tanned leather, were valuable for glue and other purposes, and it was claimed that the soles and heels produced were of better quality.

The complainant's patent was for precisely the same invention, except that he did not limit himself in the application of this process to the manufacture of boots and shoes; his claim being for—

"Cutting from raw or un-tanned hides or skins, or parts of the same, pieces of the size or about the size and form required for useful articles of tanned leather, and tanning the said pieces after they have been thus cut from the raw or un-tanned hides, as and for the purpose herein set forth."

The bill was filed on the 24th day of July, 1872, and the writ of subpoena issued thereupon was duly served upon the defendant; but the defendant failed to enter an appearance, and thereupon—namely, on the 17th day of October, 1872—the Court, upon motion of C. Howson, Esq., counsel for complainant, granted a decree declaring said patent of Dedrick wholly invalid, inoperative, and void.

Guard Plates for Stoves.

STUART et al. vs. SHANTZ et al.

MCKENNAN, Circuit Judge:
A guard plate for stoves, consisting of a series of projecting or deflecting shields, united by ornamental tracery, and so arranged as both to conceal the fire pot and to direct the radiant heat downward toward the floor, is essentially different in form, operation, and effect from a fender consisting of a series of hollow frustums of cones so arranged that the hot air passes obliquely upward and outward from the stove.

That the effects claimed to be produced by the patented invention are produced to a useful and valuable extent, an inference from the public recognition of its merits.

This was a suit in equity, brought by David Stuart and Richard Peterson, trading as Stuart, Peterson & Co., against Enos S. Shantz and Oliver B. Keeley, trading as Shantz & Keeley, for an alleged infringement of certain letters patent for guard plates for stoves granted to complainants, as assignees of David Stuart and Alexander Wemyss, on the 18th day of May, 1868.

As the defendants sought to justify their infringement by setting up a license under a patent granted to W. L. McDowell, April 28, 1863, which was earlier than the date of the invention by Stuart and Wemyss, the validity of complainants' patent was directly called in question. The case was thus made to turn upon a comparison of McDowell's invention with that covered by complainants' patent.

Patent sustained.
C. Howson and *F. Sheppard*, for complainants.
Frank Wolfe, for defendants.

A Perpetual Motion.

A correspondent, Mr. H. R. Birdsall, of Green, New York, sends us a description of a perpetual motion, constructed by an adventurer, which worked so well that he succeeded in obtaining sums of money (\$2,500, \$1,800 and others) from various simpletons, and then left "to secure his European patents. He has not returned, and a visit to his deserted apartment has revealed a hole in the wall and certain surreptitious mechanism by which the perpetual motion was driven. The beautiful device which elicited the subscriptions of the inhabitants of Chenango county was a self-moving pump, and, actuated by some concealed clock springs, it was the delight and wonder of the vicinity.

NEW BOOKS AND PUBLICATIONS.

ENCYCLOPEDIA OF PRACTICAL RECEIPTS AND PROCESSES, containing 6,400 Receipts, embracing Thorough Information, in plain language, applicable to almost every possible Industrial and Domestic Requirement. By William B. Dick. Price \$5. New York: Dick & Fitzgerald.

This is a handsome volume of practical information, partly original and partly collected from the best and most trustworthy sources. Many directions for processes, originally published in our columns, are here collated and compared with other information on the respective subjects. The chief recommendation of a book of this species is the accuracy of the information therein contained; and an investigation of the contents of this encyclopedia has impressed us most favorably as to the value of the processes and recipes, which have been selected with much labor and care. It is a well gotten up book, and is worthy of a place in the library of any home, workshop, factory or laboratory.

Inventions Patented in England by Americans.

- [Compiled from the Commissioners of Patents' Journal.]
From October 21 to October 31, 1872, inclusive.
BOOT HEEL.—*J. R. Ryerson*, Maine.
CIGAR MAKING MACHINE.—*G. W. Tanner* (of Providence, R. I.), London, Eng.
CUTTING SCREWS.—*J. M. Carpenter*, Pawtucket, R. I.
ELECTRIC TORCH.—*W. W. Batchelder*, New York city.
MAKING GUN COTTON.—*J. W. and I. S. Hyatt*, Albany, N. Y.
MANUFACTURE OF OAKUM, ETC.—*T. H. Dunham*, Boston, Mass.
MARKING INSTRUMENT.—*S. Holman*, Philadelphia, Pa.
OBTAINING ANTHRACENE.—*J. C. F. Cheever*, New York city.
PAPER FILE, ETC.—*W. A. Amberg*, Chicago, Ill.
PISTON VALVE.—*T. Critchlow*, Baldwin, Pa.
STEAM GENERATOR.—*J. M. Hicks*, New York city.
SUBMERGED PUMP.—*A. J. Reynolds* (of White Plains, N. Y.), London, Eng.
TELEGRAPHING APPARATUS.—*D. Craig*, New York city.
UMBRELLA, ETC.—*A. & I. Herzberg*, Philadelphia, Pa.
VISE.—*T. Hall*, Florence, Mass.

Facts for the Ladies.—*Mary J. Clook*, New York, has used her Wheeler & Wilson Lock-Stitch Machine fifteen years, averaging, for the first five years, more than \$500, making boys' suits and general sewing. See the new improvements and Woods' Lock-Stitch Ripper.

Business and Personal.

The Charge for Insertion under this head is One Dollar a Line. If the Notice exceed Four Lines, One Dollar and a Half per Line will be charged.

Patent for Sale, through agents or otherwise. Article for domestic use, of universal application, made by wood-workers. Already tested and of undoubted value. Owner has not time to push it. Address, Useful & Ornamental, Box 5374, P. O., New York.

For Sale, two Patents. Address H. S. Ball, Spartanburg, S. C.

Wanted—A responsible party to manufacture a patent spool holder for Sewing Machines. Machinists who would like to make a contract for the above, can learn particulars by addressing F. A. K., Station A., P. O., New York.

Dobson's Patent Scroll Saws make 1100 strokes per minute. Satisfaction guaranteed. *John B. Schenck's Sons*, 118 Liberty St., N. Y.

Permanent Photograph Printing, just what is wanted by Manufacturers. Send for Circular to Amer. Photo Relief Printing Co., 1002 Arch St. Philadelphia, Pa. *John Carbutt, Sup't.*

Valuable Patent Right for Sale. The amusing Toy Attachment for Pianos, illustrated in SCIENTIFIC AMERICAN, October 28th, 1871. Address *G. L. Wild & Bro.*, 420 11th St., Washington, D. C.

Boston Fire! Goodnow & Wightman, 23 Cornhill, were not burned out, and are ready to fill all orders for Tools and Materials. Catalogues were all burned, but will have more in about two weeks.

First Class Steam and Vacuum Gauges, Engine Registers, Davis' Recording Gauges. *New York Steam Gauge Co.*, 46 Cortlandt St., N. Y.

Water Front for Factories, Rope-walks, Lumber-yards, &c.—Lots for Sale or Lease. Blocks of lots on Newtown Creek, near East River, adjoining New York and Brooklyn Cities; prices \$300 to \$1,000; terms easy. Apply to *S. R. Schieffelin*, No. 15 East 26th St., New York.

Water Wheel Regulators—warranted, or no sale. Address *F. B. Bowen*, Pawtucket, R. I.

Soluble Glass, Water Glass, Liquid Quartz, Silicates of Soda and Potash for Concrete Cements, Fire and Waterproofing, manufactured by *L. & J. W. Feuchtwanger*, Chemists, 55 Cedar St., New York.

Oxide of Manganese, highest test, from our own mines, for Steel manufacturing, Patent Dryer, Paints and Glass, at lowest prices, by *L. & J. W. Feuchtwanger*, 55 Cedar St., New York.

Nickel Salts, double Sulph. and Ammonia, especially manufactured for Nickel Plating, by *L. & J. W. Feuchtwanger*, Chemists, 55 Cedar St., New York.

Dickinson's Patent Shaped Diamond Carbon Points and Adjustable Holder for dressing emery wheels, grindstones, etc. See Scientific American, July 24 and Nov. 20, 1869. 64 Nassau St., New York.

Wanted—A Small New or Second Hand Iron Planer for light work. Apply to *J. H. Killey & Co.*, Hamilton, Ont.

Four Brick Machines, Combined with Steam Power (Winn's patent), makes 40 M. per day, for sale at a bargain. Address the manufacturers, *John Cooper and Co.*, Mount Vernon, Ohio.

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