

45,184.—Field Fence.—F. L. Sexton, Wellington, Ohio : I claim the special arrangement of rectangular bars, a, stiles, b, posts, b, in combination with the braces, g, g, and m, and pins, p and h, when constructed as and for the purpose set forth.

45,185.—Raking Attachments to Harvesters.—Wm. T. Shaw and John Manz, Wilmington, Del. : First, I claim the extensive tumbling shaft, I I, attached directly to the main driving shaft, a, in combination with the gearing, G H, and independently hinged rakes, K K, arranged and operating as and for the purposes herein specified.

Second, I claim the revolving head, H H', made in two disconnected parts, adapted to be coupled and uncoupled by means of the key, h', and recess, h2, so as to cause the rakes to operate when the machine is moving forward, and to remain at rest during the backward movement thereof.

Third, I claim the frame or casing, F, formed with the guide, f f', for controlling the movement of the rakes and reels, as described.

Fourth, in combination with the aforesaid guide, f f', I claim the roller, L, arranged and operating substantially as described, to initiate and assist in the elevation of the rake and reel arms, as and for the object specified.

45,186.—Harvesting Machines.—Jonathan B. Smith, Windfield, N. Y. : First, I claim the cam lever, a, when constructed and arranged to operate in combination with the rods, C, and finger bar, B, in the manner and for the purpose set forth.

Second, I claim the stop, i, applied to the cam lever a, substantially as and for the purpose set forth.

45,187.—Forge Hammer.—Edward Spaulding, Worcester, Mass. : I claim the blocks I I, with their inclined adjacent faces, when arranged in respect to each other to the anvil, H, and to the hammer, E, to which a reciprocating movement, unvarying in extent, is imparted, and when operated substantially as and for the purpose specified.

45,188.—Mode of Extracting Gold and Silver from Ores, by means of the Vapor of Mercury.—Robert Spencer, New York City : I claim, first, Subjecting ores, while under pressure and in a disintegrated state, to the action of the fumes or vapors of mercury, substantially as and for the purpose herein described.

Second, Desulphurating and also exposing ores to the action of the fumes of mercury, in a single chamber, substantially as described.

45,189.—Weather Strip.—Stephen G. Spicer, Philadelphia, Pa. : I claim the combination of the three strips, g h i, hinges j, and flat spring, s, the latter applied to the outer end of the weather strip, g, and all arranged in the manner herein shown and described, to operate in combination with a recess T, in the rabbet of the door frame.

45,190.—Feed Manger.—C. E. Steller, McGregor, Iowa : I claim, in combination with the hopper or feed receptacle, B, and manger, A, a valve, C, or its equivalent, for the purpose of regulating a supply of food to the manger, as set forth.

[This invention consists in providing a feed manger with a hopper or feed receptacle, which communicates with the manger, and is provided with a valve arranged in such a manner that the manger will be supplied with feed as rapidly only as the animal can eat it, thereby preventing the waste of feed which now occurs with the ordinary mangers, in consequence of the animal throwing it out of the manger by the movement of his head, and also preventing the feed being damaged and rendered useless by slobber, etc., etc.]

45,191.—Water Wheels.—Amos Stewart, Mt. Lebanon, N. Y. : I claim the serpentine buckets, b, having a concave surface, e, at their outer ends, and a convex portion, e', from the concave surfaces, e, to the hub of the wheel; in combination with the two water discharge passages, E E, placed at opposite sides of the box, A, and the gate, F, connected by the bar, I, which is to be controlled by the governor.

[This invention relates to the peculiar form or shape of the buckets, and to a particular manner of applying the water to the wheel, whereby the journals of the wheel shaft are not subjected to any lateral pressure, and much friction thereby avoided, and the admission of the water to the wheel alluded to be regulated by a governor, so as to enable the wheel to operate evenly or uniformly, with a greater or less power, as may be desired.]

45,192.—Corn Planter.—Volcott D. Stoddard, Muscatine, Iowa : I claim the armed wheel, C, in combination with the runners, B, elbow lever, D, lever, F, movable pin, e, and seed slide, F, all constructed and operating in the manner and for the purpose herein shown and described.

45,193.—Abdominal Supporters.—Harriet H. Thompson, Washington, D. C. : I claim the back brace, A, abdominal supporter, H, cushion, K, with their adjustable and yielding straps, C E, and J, when constructed, arranged and combined as herein described, and for the purposes set forth.

45,194.—Churn Dashers.—Howard Tilden, Philadelphia, Pa. : I claim the combination and arrangement of the perforated disk, B, with the perforated dash bottom, A, substantially as described, and for the purposes set forth.

Also the arrangement of the wings, C C, in the manner and to act as set forth.

45,195.—Paper-Ruling Machines.—Chauncey Walton, Washington, D. C. : First, I claim the springs or bar, L, operating, as herein set forth, to gradually elevate the fountain as the same is depleted, so as to maintain an unvarying level of the ink.

Second, I claim the adjustable weight, D2, or its equivalent, employed in combination with the shaft, D D D', operating to balance the fountain and equalize the power applied to hold the pens in working position, substantially as described.

Third, I claim the combination of the arm, K, and adjustable support, k, fitted to turn on a vertical pivot, to serve as a pen rest, or retain the clamp, C, in any desired position.

Fourth, I claim the siphon cloths, I I, tapering or converging from their central portion toward their respective ends, in the manner and for the purpose herein shown and described.

Fifth, I claim the pen, N N N, constructed substantially in the manner and for the purpose herein set forth.

Sixth, in combination with the pens, N N N, I claim the rods or wires, m m m2, arranged and operating substantially as described.

Seventh, I claim a ruling pen constructed with two, three, or more points, set at any distance asunder by a screw, n3.

Eighth, I claim the treble pen, substantially as represented, with a right and left screw for adjusting the outer points simultaneously and equally.

Ninth, I claim the bar, m', applied and operating as described, as an additional support for the pens.

Tenth, I claim the bar, M, employed to depress or raise any desired number of the pens at will, as explained.

Eleventh, I claim a ruling pen, constructed with an extensible point, substantially as described.

Twelfth, I claim the sponge S, employed, in the manner described, as an ink holder and filter.

45,196.—Pruning Shears.—George F. Walters, Waterville, Maine : I claim a pair of pruning shears composed of a fixed chisel-shaped cutter, C, and a curved knife, D, applied to the plate of the cutter, C, constructed substantially as shown, so as to operate with a curved, drawing cut, as described.

45,197.—Grain Shovel.—George V. Watson, George Milsom, and Henry Spendlow, Buffalo, N. Y. : I claim, first, making a scraper or shovel having a pointed or hinged entering piece, for the purpose and substantially as described.

Second, Placing and operating two, three, or more scrapers on one chain or line, and imparting to said scraper a short vibrating motion, so that one scraper will deliver its load to the one next

in advance of it, and so on, until the end scraper delivers to the elevating, substantially as described.

Third, Arranging two or more scrapers in line, so as to have a clear space between them, so as to allow the grain to flow in between them and into their track, as set forth.

Fourth, Connecting these scrapers, thus arranged, by stiff bars, D, on each side, jointed and hinged to the scrapers, so as to allow of a free movement upon the joints, and yet keep the scrapers an equal distance apart, and so that power is applied to the forward scrapers only, it will be communicated through these stiff bars to each scraper in the line.

Fifth, Arranging and operating the scrapers in the four quarters of the vessel simultaneously, for the purpose and substantially as described.

Sixth, Imparting to the scrapers a vibratory motion, whereby the scrapers shall be caused to scrape the grain to the elevating leg, for the purposes and substantially as herein described.

45,198.—Sheep Shears.—Herman Wendt and Henry Seymour, of Elizabeth, N. J. : We claim as a new article of manufacture the sheep shears herein described, consisting of the backs, A, and blanks, B, B, connected by the iron blade plates, C C, straps, A, and steel blade plates, D D, all constructed and combined in the manner and for the purposes specified.

[This is an ingenious improvement in the mode of constructing the shear, by which an important economy is secured which enables the manufacturers to furnish an article equally as good as the best heretofore known, at a less cost. Agriculturists will be benefited by this invention.]

45,199.—Steam Engines.—S. Lloyd Wiegand, of Philadelphia, Pa. Ante-dated Nov. 9, 1864 : I claim, first, closing the induction valves by a positive movement of a cam, which, while it is adjusted and controlled in position by a centrifugal regulator, is locked or secured during the closing movement of the valve, so as to prevent the resistance of the valve gear from reacting upon the governor, substantially in the manner set forth and described.

Second, Combining a centrifugal regulator whose plan of motion is coincident with or parallel to the plane of motion of the adjustable cam, in the manner set forth and described.

Third, The arrangement of rock shaft in combination with the mechanism for imparting motion thereto, substantially as hereinbefore set forth and described for operating the valves of steam or pneumatic engines.

Fourth, Suspending the oscillating cylinder upon a universal joint, substantially as set forth and described.

Fifth, Combining the centrifugal regulator with the fly wheel in the manner set forth and described.

45,200.—Ambulance Carriages.—Thomas Wilkins, of Greenville, Ill. : I claim, first, an ambulance carriage having its front and rear axles, A B, connected by an elastic bottom board, C, with a frame E, resting on a crossbar, D, attached to C, with springs, b, of steel or wood, interposed between them, the front part of the bottom board being hollowed out to admit of the cramping of the front wheels, and all arranged substantially as herein set forth.

Second, The litters, L, composed of frames, M, with cloth, k, attached, substantially as and for the purpose herein set forth.

[This invention relates to a new and improved ambulance carriage for carrying the wounded from the field of battle to the hospital or place designated for their subsequent treatment.]

45,201.—Pipe for Gas, Water, &c.—Arcalous Wyckoff, of Elmira, N. Y. : I claim the combination of a composition of hard boiled tar and sawdust with wooden pipes applied in the manner and for the purpose set forth.

[This invention consists in the application or use of a composition of sand or sawdust and hard-boiled tar, in combination with wooden pipes, in such a manner that by coating said pipes on the inside and outside with the composition the wood is rendered perfectly impervious to water or gas, and preserved against the injurious influence of moisture from the inside or outside.]

45,202.—Breech-loading Firearms.—Alexander J. Bergen and David Williamson (assignors to the Moore's Patent Firearms Company), of Brooklyn, N. Y. : We claim, first, the spring catches, 7, in combination with the sliding breech block, d, and grooved housing, b, substantially as specified, whereby the said springs both guide the breech block and draw out the cartridge case as set forth.

Second, We claim the shoulders, 4, 4, within the housing, b, extending below the breech block, d, from the rear end of the barrel to the forward end of the vertically sliding block, e, for the purposes, and as set forth.

Third, We claim forming the tumbler of the hammer with a notch taking against the stop pin, 9, at the extreme movement of the hammer in both directions as set forth, in combination with the removable block, g, whereby opportunity is afforded for the introduction of both the tumbler and stop pin as set forth.

45,203.—Water Alarm Gauges.—John D. Hall (assignor to himself and Osborn Conrad), of Philadelphia, Pa. : I claim the arrangement of the float, G, the lever, D, the valve, C, and steam whistle, A, substantially in the manner and for the purpose specified.

45,204.—Locomotive Smoke Stacks.—Seth Ham, of Philadelphia, Pa., assignor to himself and Wm. H. McCafferty, of Alexandria, Va. : I claim, first, the curved deflecting plate, E, and inner journal shaped casing, D, arranged in respect to the inside pipe, A, and outer casing, B, substantially as and for the purpose specified.

Second, The plate, E, inner casing, D, and plate, C, with its flange, a, arranged in respect to each other and the inner pipe and outer casing substantially as set forth for the purposes described.

45,205.—Automatic Air-Holder for Gas Apparatus.—Hugh L. McAvoy (assignor to himself and Elias S. Hutchinson), of Baltimore, Md. : First, I claim an air-holder automatically charged and discharged by the action of syphon and an induction pipe, operated substantially as herein described.

Second, I claim the syphon, E, having a valve, EI, which is operated by the arm, E2, and projections, b1 b2, for the purpose of opening and closing the syphon, substantially in the manner and for the purpose herein set forth.

Third, I claim the pipe or tube, F, adapted to be opened to the external air by the withdrawal of the water by the syphon, E, and to supply air to the holder, B, as explained.

Fourth, I claim the induction pipe, G, and valve, G1, the latter being provided with an arm, G2, which is moved by the float, G3, so as to open and close the valve, G1, substantially as and for the purpose specified.

45,206.—Apparatus for Carbureting Air.—Hugh L. McAvoy (assignor to himself and Elias S. Hutchinson), of Baltimore, Md. : I claim the combination of the inverted bowl or open-mouthed chamber, E, with the air discharging pipe, B, beneath it, substantially as and for the purpose described.

45,207.—Low-Water Detector for Steam Boilers.—Bernard Schaer, of Buckau, Magdeburg, Prussia, assignor to himself and Christian Budenberg, of New York City : I claim, first, the employment or use of the ball-shaped valve, C, in combination with the adjustable float, D, and whistle, A, as described, leaving the valve free to accommodate itself to the motions of the float, and preventing the valve from sticking by the motions of the float.

Second, The arrangement of the tube, r, and set screws, s s, in combination with the float, D, and valve stem, C', as specified, whereby the float can be adjusted to the desired position, and a free communication between the interior of the float and the steam space of the boiler is effected.

45,208.—Looms for Weaving Hats, etc.—Phineas L. Slayton (assignor to Almet Reed), of New York, N. Y. : I claim giving the web pressing devices of a circular or rotary

loom a movement toward and from the center of the loom during each of the revolutions of the loom, substantially as and for the purpose herein specified.

And I further claim the attachment of the plate, R, to the sleeve or its equivalent, by means of a ball and socket, or other flexible joint of similar character, substantially as and for the purpose here in specified.

45,209.—Horse-Hair Woven Garments.—Phineas L. Slayton (assignor to Almet Reed), of New York City : I claim as an art-improved article of manufacture a garment composed wholly or in part of horse hair, woven in one piece, substantially as herein set forth and described.

45,210.—Priming Metallic Cartridges.—Charles E. Snelder (assignor to himself and Thos. Poultney), of Baltimore, Md. : First, I claim a cartridge consisting of a casing, A, a transverse pin, B, fixed in the said casing and an aperture, a2, in the casing opposite the end of the pin B, for the application of a percussion cap, C, to the end of the pin through the side of the casing, as here in explained.

Second, I claim the movable cap or cover, D, employed in combination with the aforesaid casing, A, to close the aperture, a2, and check the escape of gas.

45,211.—Cancelled.

45,212.—Composition for Coating Ships' Bottoms.—Frederick Newton Gisborne, of London, England. Patented in England Oct. 30, 1863. I claim my invention the composition substantially as hereinbefore described.

45,213.—Centrifugal Crushing Mills.—C. H. Griffin, of Chelsea, Mass. : I claim combining with the projectors or impelling arms of a centrifugal crushing or pulverizing machine a series of rotating teeth or percussion surfaces, rotating in the opposite direction, substantially as set forth.

I also claim the employment of the pipe, Z, in combination with the receiver and pulverizer, substantially as described.

RE-ISSUES.

1,823.—Stoves.—Dennis G. Littlefield, of Albany, N. Y. —Patented Jan. 24, 1854; re-issued Nov. 19, 1861; again re-issued Aug. 26, 1862; again re-issued May 19, 1863. I claim the arrangement, adaptation and combination with a fuel-supplying stove of a cover so hinged to the top plate of the stove that it may be swung open on a horizontal plane, substantially in the manner and for the purposes specified.

1,824.—Harvesters.—David S. McNamara, of Troy, N. Y.—Patented June 30, 1857. I claim, first, the combination of a pointed or hinged lever and caster wheel, with the dropping end of the main frame and finger beam of a harvester when arranged in relation to said main frame and finger beam, substantially as and for the purpose set forth.

Second, The combination of lever, I, frame, A, and caster wheel and leading wheel, substantially as and for the purposes set forth.

Third, An adjustable leading and supporting wheel in combination with the shoe part of the main frame which supports the heel of the finger beam in a mowing machine, when arranged so as to run directly in advance of the heel end of the finger beam and cut bar and the bearing part of the shoe, and when the axis of said wheel is rigidly connected with the main frame, substantially in the manner and for the purposes herein set forth.

Fourth, The combination and relative arrangement of frame, A, finger beam, G, lever, I, caster wheel, J, and leading wheel, M, substantially as shown and described.

Fifth, The combination and arrangement of the main frame, finger beam, shoe, part F of the main frame and crank shaft, substantially as and for the purposes set forth.

Sixth, Connecting the shaft, t, by means of the arm and link with the rod placed at the underside of the draft pole, and connected with the yoke ring, substantially as described for the purposes set forth.

1,825.—Machine for Cutting Paper for Paper Twine, &c.—John B. Wortendyke, of Godwinville, N. J.—Patented Sept. 13, 1864. I claim, first, the two rollers, C C, in combination with the cylinder, B, arranged relatively with each other to operate in the manner substantially as and for the purposes herein set forth.

Second, The employment in combination with cutting devices for cutting paper into strips, of separate sets of receiving or take-up rollers, for receiving or taking away the cut strips from the said cutting devices, whereby the strips are separated from and prevented from interfering with each other, in a manner substantially as herein described.

Third, In combination with the cutting devices for cutting the paper into strips I claim the securing of the receiving or take-up rollers, which take the strips of paper from the cutters to their respective shafts by means of friction devices, for the purpose of allowing the several rollers to have separate or independent movements, substantially as set forth.

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FOR SEVENTEEN YEARS.
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In connection with the publication of the SCIENTIFIC AMERICAN, have acted as Solicitors and Attorneys for procuring "Letters Patent" for new inventions in the United States and in all foreign countries during the past seventeen years. Statistics show that nearly ONE-THIRD of all the applications made for patents in the United States are solicited through this office; while nearly THREE-FOURTHS of all the patents taken in foreign countries are procured through the same source. It is almost needless to add that, after seventeen years' experience in preparing specifications and drawings for the United States Patent Office, the proprietors of the SCIENTIFIC AMERICAN are perfectly conversant with the preparation of applications in the best manner, and the transaction of all business before the Patent Office; but they take pleasure in presenting the annexed testimonials from the three last ex-Commissioners of Patents.

Messrs. MUNN & Co.—I take pleasure in stating that, while I held the office of Commissioner of Patents, MORE THAN ONE-FOURTH OF ALL THE BUSINESS OF THE OFFICE CAME THROUGH YOUR HANDS. I have no doubt that the public confidence thus indicated has been fully deserved, as I have always observed, in all your intercourse with the office, a marked degree of promptness, skill, and fidelity to the interests of your employers. Yours very truly,
CHAS. MASON.

Judge Mason was succeeded by that eminent patriot and statesman, Hon. JOSEPH HOLT, whose administration of the Patent Office was so distinguished that, upon the death of Gov. Brown, he was appointed to the office of Postmaster-General of the United States. Soon after entering upon his new duties, in March, 1859, he addressed to us the following very gratifying letter.

Messrs. MUNN & Co.—It affords me much pleasure to bear testimony to the able and efficient manner in which you discharged your duties as Solicitors of Patents, while I had the honor of holding the office of Commissioner. Your business was very large, and you sustained (and I doubt not justly deserved) the reputation of energy, marked ability, and uncompromising fidelity in performing your professional engagements. Very respectfully, your obedient servant,
J. HOLT.

Hon. Wm. D. Bishop, late Member of Congress from Connecticut, succeeded Mr. Holt as Commissioner of Patents. Upon resigning the office he wrote to us as follows:
Messrs. MUNN & Co.—It gives me much pleasure to say that, dur-

ing the time of my holding the office of Commissioner of Patents, a very large proportion of the business of inventors before the Patent Office was transacted through your agency; and that I have ever found you faithful and devoted to the interests of your clients, as well as eminently qualified to perform the duties of Patent Attorneys with skill and accuracy. Very respectfully, your obedient servant, Wm. D. Bishop.

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Persons having conceived an idea which they think may be patentable, are advised to make a sketch or model of their invention, and submit it to us, with a full description, for advice. The points of novelty are carefully examined, and a written reply, corresponding with the facts, is promptly sent, free of charge. Address MUNN & CO., No. 37 Park Row, New York.

As an evidence of the confidence reposed in their Agency by inventors throughout the country, Messrs. MUNN & CO. would state that they have acted as agents for more than TWENTY THOUSAND inventors! In fact, the publishers of this paper have become identified with the whole brotherhood of inventors and patentees, at home and abroad. Thousands of inventors for whom they have taken out patents have addressed to them most flattering testimonials for the services rendered them; and the wealth which has inured to the individuals whose patents were secured through this office, and afterwards illustrated in the SCIENTIFIC AMERICAN, would amount to many millions of dollars! Messrs. MUNN & CO. would state that they never had a more efficient corps of Draughtsmen and Specification Writers than those employed at present in their extensive offices, and that they are prepared to attend to patent business of all kinds in the quickest time and on the most liberal terms.

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The service which Messrs. MUNN & CO. render gratuitously upon examining an invention does not extend to a search at the Patent Office, to see if a like invention has been presented there; but is an opinion based upon what knowledge they may acquire of a similar invention from the records in their Home Office. But for a fee of \$5, accompanied with a model, or drawing and description, they have a special search made at the United States Patent Office, and a report setting forth the prospects of obtaining a patent, &c., made up and mailed to the inventor, with a pamphlet, giving instructions for further proceedings. These preliminary examinations are made through the Branch Office of Messrs. MUNN & CO., corner of F and Seventh streets, Washington, by experienced and competent persons. Many thousands of such examinations have been made through this office, and it is a very wise course for every inventor to pursue. Address MUNN & CO., No. 37 Park Row, New York.

HOW TO MAKE AN APPLICATION FOR A PATENT.

Every applicant for a patent must furnish a model of his invention if susceptible of one; or, if the invention is a chemical production, he must furnish samples of the ingredients of which his composition consists, for the Patent Office. These should be securely packed, the inventor's name marked on them, and sent, with the Government fees, by express. The express charge should be pre-paid. Small models from a distance can often be sent cheaper by mail. The safest way to remit money is by a draft on New York, payable to the order of Messrs. MUNN & CO. Persons who live in remote parts of the country can usually purchase drafts from their merchants on their New York correspondents; but, if not convenient to do so, there is but little risk in sending bank bills by mail, having the letter registered by the postmaster. Address MUNN & CO., No. 37 Park Row, New York.

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The Patent Laws, enacted by Congress on the 2d of March, 1861, now in full force, and prove to be of great benefit to all parties who are concerned in new inventions.

The law abolishes discrimination in fees required of foreigners, excepting natives of such countries as discriminate against citizens of the United States—thus allowing Austrian, French, Belgian, English, Russian, Spanish and all other foreigners, except the Canadians, to enjoy all the privileges of our patent system (except in cases of designs) on the above terms. Foreigners cannot secure their inventions by filing a caveat; to citizens only is this privilege accorded.

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Inventors will do well to bear in mind that the English law does not limit the issue of patents to inventors. Any one can take out a patent there.

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Inventors who come to New York should not fail to pay a visit to the extensive offices of MUNN & CO. They will find a large collection of models (several hundred) of various inventions, which will afford them much interest. The whole establishment is one of great interest to inventors, and is undoubtedly the most spacious and best arranged in the world.

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EXTENSION OF PATENTS.

Many valuable patents are annually expiring which might readily be extended, and if extended, might prove the source of wealth to their fortunate possessors. Messrs. MUNN & CO. are persuaded that very many patents are suffered to expire without any effort at extension, owing to want of proper information on the part of the patentees, their relatives or assigns, as to the law and the mode of procedure in order to obtain a renewed grant. Some of the most valuable grants now existing are *extended patents*. Patentees, or, if deceased, their heirs, may apply for the extension of patents, but should give ninety days' notice of their intention.

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Parties sending models to this office on which they decide not to apply for Letters Patent and which they wish preserved, will please order them returned as early as possible. We cannot engage to retain models more than one year after their receipt, owing to their vast accumulation, and our lack of storage room. Parties, therefore, who wish to preserve their models should order them returned within one year after sending them to us, to insure their obtaining them. In case an application has been made for a patent the model is in deposit at the Patent office, and cannot be withdrawn.

It would require many columns to detail all the ways in which the inventor or Patentee may be served at our offices. We cordially invite all who have anything to do with patent property or inventions to call at our extensive offices, No. 37 Park Row, New York, where any questions regarding the rights of Patentees, will be cheerfully answered.

Communications and remittances by mail, and models by express (prepaid) should be addressed to MUNN & CO. No. 37 Park Row, New York.



W. E. C., of Conn.—It is quite possible that your shaft does not get oil on the bottom. Many shafts heat from this cause. If it is collar bound or too tight between the collars, it will heat. File the sides of the brass away 3 inches from the top, so that they clear. If all these plans are of no avail change the brass. A journal that is too small and has a heavy strain on top is very apt to heat the bottom brass unless oil grooves are cut in the same. We should regard the arrangement of the boiler mentioned as undesirable. The temperature of the heat passing over the top of the boiler may not be high but it must be enough to superheat the steam within, which is itself a source of deterioration to the iron.

C. B. M., of Ohio.—Five sided rimmers cut better than square ones, because there are no two edges opposite each other, one edge being always backed up by two others.

B. J. R., of Conn.—Try aluminum bronze in your hot bearing. We have known mandrels run 7,000 revolutions per minute with this composition, and remain perfectly cool when all others failed. Aluminum can be had of metal dealers in all the large cities. To make it, use copper 90, aluminum 10 parts.

C. D. S., of Wis.—The focus of a concave mirror is the point where the rays emanating from it converge.

J. B. of Conn.—Tempered steel at 32° according to Walston and Lavoisier, expands at 212°, 1 in 926, in length, and 1 in 309, in bulk.

B. J. R., of U. S. N.—The engines of the new sloops-of-war are steple engines placed horizontally. You need not go out of your own ship to see a steple engine.

S. C. H., of Conn.—The tendency of superheated steam is to corrode the parts with which it comes in contact. Bourne states that felt applied to boilers has been known to materially in-

crease the corrosion, and he accounts for this fact by its preventing radiation; consequently increasing the steam heat within the boiler.

A. S. A., of Maine.—We are unable to publish your views on boiler explosions. They take a narrow view of the subject. The area of the safety valve is not the only thing, as you say, that requires consideration. A boiler would explode if it had fifty safety valves, all in a row, from the dome to the smoke stack, unless properly taken care of.

T. B. H., of R. I.—There is no danger of your bursting the crank by shrinking it on, unless you allow too much shrinkage. For a 12-inch shaft allow a sixty-fourth of an inch. You must not heat the crank so hot as to raise a scale on it. Expedition must be used in getting it to its place, for we have known cranks stick fast when half home and have to be broken off. All caused by carelessness.

C. P., of Cal.—Your communication is received, and, notwithstanding its formidable length, is under consideration.

M. R., of Mo.—We are much obliged for your receipts but shall give them a trial before we publish them.

D. L. W., of Mich.—There is but one self-propelling steam engine in this city, the J. G. Storm, and it is seldom used except for great fires.

T. T., of Vt.—If, as you state, your cylinder is oval when taken out of the lathe although it was true before its removal, you must have sprung it in bolting it down. When the bolts were taken off it assumed its distorted shape. The fastenings on every cylinder should be eased up before the last cut.

C. H. W., of N. Y.—The number of square feet of heating surface necessary to evaporate a cubic foot of water in a marine boiler is from eleven to fifteen.

R. S. T., of Cuba.—The weight of your fly-wheel rim can be found by multiplying the mean diameter in feet by the area of its transverse section in square inches and multiply this product by 9.817 pounds.

Money Received

At the Scientific American Office, on account of Patent Office business, from Wednesday, Nov. 16, 1864, to Wednesday, Nov. 23, 1864:—

- W. W. S., of N. Y., \$100; J. & S., of Conn., \$41; E. S., of N. Y., \$35; C. L. L., of Pa., \$16; L. S., of Pa., \$15; G. K. W., of Conn., \$12; T. H. S., of N. Y., \$15; A. W., of Maine, \$16; M. H., of Mass., \$16; G. C., of N. Y., \$25; J. & S., of Conn., \$25; S. G. G., of Ohio, \$15; S. G., of Pa., \$25; W. A. D., of N. Y., \$17; J. W. N., of Mass., \$31; A. B., of N. Y., \$20; J. T., of N. J., \$20; J. H. G., of Ohio, \$15; E. & S., of N. Y., \$45; T. G. O., of N. Y., \$15; E. S., of Iowa, \$45; D. M. M., of Vt., \$20; T. G., of N. Y., \$20; J. & J. M., of N. Y., \$15; J. G., of Mich., \$15; J. J. S., of Conn., \$15; A. & B., of Maine, \$20; A. E., of Ohio, \$25; G. L. S., of Mass., \$10; J. B. T., of Pa., \$30; G. C. P., of N. Y., \$15; L. C. W., of N. Y., \$15; C. L. B., of Conn., \$25; S. & H., of Conn., \$45; W. & S., of Pa., \$15; S. G., of N. Y., \$25; W. R., of N. Y., \$16; T. B. T., of N. Y., \$22; T. D. B., of N. Y., \$45; J. C., of N. Y., \$20; S. L. F., of Pa., \$30; H. E. G., of N. Y., \$15; McK. & W., of Wis., \$20; C. M. M., of N. J., \$20; G. W. R., of Ill., \$20; C. F. R., of N. Y., \$15; A. R., of Iowa, \$35; J. L. H., of N. Y., \$16; A. Y. McD., of Iowa, \$28; I. A., of N. Y., \$16; H. H. H., of —, \$20; W. R. T., of Pa., \$16; S. W. F., of Mass., \$32; S. T., of Ky., \$25; J. L. T., of Maine, \$15; C. C., of N. Y., \$15; A. T. F., of N. Y., \$30; A. M., of Ark., \$75; T. L., of Conn., \$15; H. H., of Conn., \$25; E. B. L., of Conn., \$15; N. S., of Ohio, \$15; J. M., of N. Y., \$45; S. T., of Ill., \$20; P. H., of N. Y., \$20; G. F. I. C., of N. J., \$40; F. F. C., of N. Y., \$22; J. K., of N. Y., \$15; J. P., of Canada, \$20; H. J., of N. Y., \$15; T. B. T., of N. Y., \$15; J. S., of N. Y., \$40.

Persons having remitted money to this office will please to examine the above list to see that their initials appear in it, and if they have not received an acknowledgment by mail, and their initials are not to be found in this list, they will please notify us immediately, stating the amount and how it was sent, whether by mail or express.

Specifications and drawings and models belonging to

parties with the following initials have been forwarded to the Patent Office, from Wednesday, Nov. 16, 1864, to Wednesday, Nov. 23, 1864:— W. B. C., of R. I.; M. J. S., of N. Y.; T. A. H., of N. Y.; E. & S., of N. Y., (2 cases); S. E. H., of Conn.; S. T. S., of Ky.; M. B. & N. A. P., of Tenn.; C. L. B., of Conn.; S. G., of Pa.; J. T. P., of N. Y.; J. S., of N. Y.; S. L. F., of Pa.; F. F. C., of N. Y.; A. Y. McD., of La. A. E., of Ohio; S. & H., of Mass.; G. C., of N. Y.; J. & S., of Conn.; H. H., of Conn.; J. W. N., of Mass. (2 cases); G. F. I. C., of N. J.; T. G., of N. Y.; O. E. R., of Maine; R. K., of Ill.; E. R., of Mich.; A. T. F., of N. Y.; D. & O., of France; S. G., of N. Y.; J. Y., of N. Y.

RATES OF ADVERTISING.

TWENTY-FIVE CENTS per line for each and every insertion, payable in advance. To enable all to understand how to calculate the amount they must send when they wish advertisements published we will explain that ten words average one line. Engravings will not be admitted into our advertising columns, and, as heretofore, our publishers reserve to themselves the right to reject any advertisement they may deem objectionable.

ARMY SUPPLIES.

OFFICE OF ARMY CLOTHING AND EQUIPAGE, No. 602 Broadway, New York, Nov. 23, 1864.

SEALED PROPOSALS WILL BE RECEIVED AT this office until 12 o'clock a. m., on Tuesday the 29th instant, for baling Army Blankets, until the 1st of May next, the Contractor to furnish all materials necessary to bale the blankets in a satisfactory manner to this department. The services to be performed in the buildings of this Depot, the Contractor to supply the machinery.

Further information can be obtained at this office. Bidders will state the number of bales they can put up per week, and send with their proposals a proper guarantee signed by two responsible persons, stating that if a contract is awarded to the bidder, they will enter into bonds for the faithful performance of the work. The United States reserves the right to reject all bids deemed objectionable.

Proposals should be endorsed "Proposals for Baling Blankets," and addressed to COL. D. H. VINTON, D. Q. M. Gen. U.S.A.

THE PATENT OUNCE BOOT JACK.—SEND FOR my circular. EGBERT P. WATSON, Box 773, New York P. O.