diameter. The whole feed nump, steam and water cylinder would easily go into a small thimble. This is a working model, as we saw it in operation, throwing a stream about the size of a pin 4 feet 6 inches. Mr. Fichtel may congratulate himself on having produced the most complete specimen of skill and patience that has been seen in a long time.

The results of the playing of the engines are given below. The time given may not accord with that of the judges fowing to the difference in watches) in relation to the start, but the mean time of playing and the results-both steam and water-are derived from official sources, and is the only authentic account published.

Steamer No. 5, City of New York .- Lee & Larned machine.—Signal to make ready given, at 10 o'clock 25 minutes, 50 seconds; signal to start fire given at 10 o'clock, 40 minutes, 50 seconds. Engine began to work in 7 minutes 52 seconds from signal; water from pipe almost instantaneous; water in boiler perfectly cold; no fluid grease, or anything foreign in the boiler; the average of the steam taken every five minutes was at the start 3 pounds, in 10 minutes 45 pounds-subsequently ranging from 154 to 40 lbs., on the fourth 5 minutes, this result arose from over-firing; in five minutes after, the steam ran quickly up again until they stopped with 135 lbs.; this boiler steamed perfectly free, the fuel being coal. The results obtained through 50 feet of Boyd's hose, out of 13 in. nozzle, were 200 feet; for the far, the plunger pump party have the best of it, in disfirst 6 minutes the wind was rather fresh, and blew the tance, and also in quantity; but this must not be taken stream about some-last 4 minutes no wind whatever; auxiliary feed pump on boiler. On quantity, same engine, through 800 feet of hose; signal to start at 11.25; steam at start, 140 pounds; fuel, wood and coal; pumped 15 minutes on the tank, whose capacity was 2,459 gallons to a foot, size of tank 15 by 22 feet; stopped playing at 11.40, and lowered water in tank inches on distance, out of the same sized nozzle. We cannot discuss this matter at present, as at our time of 1 foot and 20-100 of a foot.

Steamer Mechanics' Own-Third class engine.-Trial on distance, 50 feet of hose, 12 inch nozzle; started at 12.01, stopped at 12.31, having thrown 174 feet against a good cross breeze. This engine did not commence playing until 11 minutes from signal; cause, some obstructions in the smoke pipe unavoidably overlooked; the steam subsequently ranged from 8, 9, 12, 55, 140, 100. 105 lbs.; fuel, wood. Same engine pumping on tank, 800 feet of hose, open butt. Started at 12.38; pumped in 15 minutes 1 foot and 26-100 of a foot from tank 15 by 22 feet; steam ranging from 150 lbs. at the start to 155 lbs. at the close; fuel, wood and coal.

The next engine was No. 2 Amoskeag-Second class -L. H. Straw, agent; engine described previously. Started at 1.11; water from pipe in 7.30 from application of torch; no wind at all during trial; played 30 minutes through 11 in. nozzle 160 feet 3 inches; water gage indicated 50 pounds per square inch; last minute 100 lbs.; the steam ranged from 20 lbs. at the start to 75 lbs. on the last stretch: but the average was very poor indeed, owing to an inferior quality of coal, imported from Liverpool; the mean pressure during this trial was 51 pounds. This was a single plunger pump engine. Same engine on quantity-Started at 1.55; water pressure on hose, 140 pounds; steam at the start 135, ranging to 65 lbs. at stopping; quantity exhausted from tank, 1 foot 53-100 of a foot. The steam was better during this trial, but there seemed to be a lack of fire-surface for continued playing.

Next engine-Silsby, Mynderse & Co.-One first class machine. Started at 2.34; steam in six minutes from signal; water from pipe in 7 minutes 20 seconds threw an inch and a quarter stream 216 feet: no wind whatever: fuel used, coal. Played 26 minutes and was then ruled out by the judges; cause, joint blowing out of the steam cylinder; this machine stood steadier than any of the others whilst playing. Same engine on tank-Signal given at 3.16, stopped at 3.31, quantity discharged from tank, 1 foot 29-100 of a foot; steam ranged from 90 to 82, 60, 55 lbs. This engine should have pumped 18 in. against time from its class; but it was overlooked by the judges.

Next engine-Steamer Hwon-First class-Built for the city of Detroit by the Amoskeag Co. Signal to start fire at 3 o'olock 562 minutes; water from pipe in 6 minutes 30 seconds from signal; no wind during trial; distance thrown through 13 in. nozzle, 223 feet 9 inches; during the last five minutes ran very irregular- better success,

ly; steam ranged 23,40, 85, 125, 130, 150 lbs. - stopped at 90 lbs. On quantity-same engine, pumping 18 inches out of tank against time; 800 feet of hose, open butt: 13.30 seconds.

Next engine-Lee & Larned's self-propeller, Niagara. Signal to start at 5 o'clock 11 minutes: water from pipe, 6 minutes 30 seconds, through 15 in. nozzle; distance thrown, 208 feet 8 inches. At this point, after having played 16 minutes, the cast-steel pump shaft, 34 inches in diameter, was twisted off, and the engine was ruled out very reluctantly by the judges. Fuel used, wood; steam at starting, 5 pounds, ranging from thence to 120.

Steamer Southwork.—Lee & Larned engine. Signal at 5 o'clock 50 minutes, 30 seconds; water from pipe in 6 minutes 47 seconds from signal; whistle blown 6 minutes from signal; started with 10 pounds of steam; distance thrown against a stiff breeze, through 50 feet of hose, and 11 inch nozzle, 172 feet; the darkness prevented us from taking the steam, but the average was not over 75 pounds. Same engine on tank through 800 feet of hose, pumping 18 inches against time, 14 minutes 25 seconds; average steam 80 pounds; 579 gallons per minute discharged from pump. & This engine ended the trial.

It will be seen, by examining the figures, that, thus as evidence of the superiority of one over the other, both parties claiming, from their experience, that their respective pumps are the ones which do the best service. The hand engines of Messrs. Lee & Larned are much smaller than the one of Amoskeag No. 2 pattern, yet their engine pumped within 27-100ths of a foot as much on quantity as the Amoskeag, and beating them by 13.9 of going to press, the judge's verdict was not made public. The award will, however, probably be given to the rotary pump of Cary, with Lee & Larned's boiler, as regards distance, and to the Amoskeag on quantity discharged in a given time. The Silsby & Mynderse enmany excellent features as regards its ar-ad general construction. The boiler steamrangement and general construction. The boiler steamed very freely, and seemed to make plenty of vapor for an engine that took a good deal. Their stream, however, was not so solid in its body as those of other exhibitors. The committee propose to offer a premium the next year, of \$1,500, for the best steam engine drawn by hand. This is the true way to encourage inventors to step forward and try their several inventions; and we doubt not that it will result in bringing the steam fire-engine system to a degree of perfection not yet attained. Any man who looked upon the friendly strife upon that day in the field, and saw the solid columns of water flying swiftly through the hose, could not but wish that such a stream were turned upon the old hand engines, and they washed away entirely. The number of steamers multiply rapidly, we are happy to say, and each company and city is becoming more and more emulous in so good a cause. May the day soon come when none else shall be used; with every exhaust and every separate impulse of the water, they work out prac-tical victories, and attain to greater results in the public mind than any pen or tongue could effect in a year. John C. BOYD'S HOSE.

We saw this excellent hose fully tested at the trial of steamers, last Thursday, and can speak of its merits per-sonally. Through all the tremendous strain which the steamers put upon it, even when the Niagara accident took place, there was not enough moisture on the out-side to soil a handkerchief. It is made of tour-ply cot-ton goods, lined with a composition, and has successfully withstood a pressure of over 360 pounds per square

We desire to return thanks in this place, to Wm. E. Hagan, chairman of the committee, for a place on the judge's stand. It is wholly due to this gentleman's ex ertions that the affair was pushed forward with the spirit in which we have set forth.

The judges on this occasion were, Daniel Doncaster, L. A. Orcutt and J. P. Collins, Esqs.

The engines upon exhibition have all of them

done much better than upon this occasion. It seems at times when the best duty is required, that circumstances will not mold themselves to suit the will. It seems

The time of raising steam varied but 30 seconds the whole number of engines, with the exception of the Mechanics' Own, whose pipe was choked, and we are pleased to be able to record so signal a success in the way of steady playing as these engines accomplished. One half hour of such work with a steamer is a worse test upon it than half-a-day at a fire, on account of the desire of all parties to do their very best, and the rapid rate of working to which the machines are subjected. The accident to the Niagara was unavoidable, and could not have been foreseen; we hope it may not be long be-fore we shall have another such trial to record, with



ISSUED FROM THE UNITED STATES PATENT OFFICE FOR THE WEEK ENDING REPTEMBER 25, 1860.

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Pamphlets giving full particulars of the mode of applying for ratents, size of model required, and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the Scientific American, New York.

30,109.-Ethan Allen, of Worcester, Mass., for an Im-

provement in Metallic Cartridges:
I claim constructing a metallic cartridge with a projection or lip, for the reception of the fulminate, substantially in the manner and for the purpose set forth and described.

30,110.-L. L. Alrich, of Carthage, Mo., for an Im-

30,110.—L. L. Airich, of Carinage, Mo., for an Improvement in Faucets:
I claim the valve plug C, with its key-hele recess, g, and spring, G, in combination with the cylinder, F, and the faucet portions, A a and B, the whole being arranged and operated by a key, in the manner and for the purposes set forth.

[This invention is an improvement in faucets wherein a key is used to open or close the faucet. It consists in operating a plug or valve that is fitted into a cylindrical chamber projecting up from the topof the faucet, so that it may be moved up and down, but which will not turn in the cylinder; said plug being seated in such a manner in the faucet tube and acted upon by a spring that the flow of liquid can only be obtained by using a key adapted to the faucet.]

30.111.-G. B. Arnold, of New York City, for an Im-

30,111.—G. B. Arnold, of New York City, for an Improvement in the Manufacture of Ruffles:

I claim, as newarticle of manufacture, the ruffle or plaited fabric made as described; that is to say, the fabric to be plaited or ruffled being operated upon so as to be ruffled by the feeding device, and fastened by the stitching apparatus of a sewing machine at one and the same operation, when no binding or foundation fabric is employed.

30.112.-G. R. Arnold and Alfred Arnold, of New 30,112.—G. B. Arnold and Alfred Arnold. of New York City, for an Improvement in Sewing Machines: We claim, first, In a sewing machine, the employment of the separator, C, or its equivulent, for the purpose of separating two pieces of cloth. E and F, and thereby protecting F from the action of the gathering mechanism, substantially as set forth.

Second, Gathering cloth and stitching or fastening the gathers on a sewing machine, by the combined action of the single feeding device, A. presser foot. B, and separator, C, or their equivalents, substantially in the manner described.

Third. Regulating the length of the stitches in the production of a gathered fabric, by changing the position of the separator, C or of C, and the presser foot B, relatively to the forward extremity of the path traversed by the feeder, A, substantially as set forth.

30,113.-J. C. Baldwin, of Waterville, N. Y., Baldwin, of Brantford, C. W., and Robert Brayton, of Buffalo, N. Y, for an Improvement in Pre-

serving Hops: le claim the described process of preparing and preserving hops, stantially as set forth.

30,114.-G. S. Ball and Wm. H. Nauman, of Dayton, Ohio, for an Improvement in Seeding Machines: I claim the arrangement and combination of the feeder, a, the indicator, D, graduated arc, E, slides. B B, and cut-off, F, the whole constructed and operating us set forth.

30,115.—Benj. Barnard, of Farmington, Ohio, for an Improvement in Seeding Machines:

I claim the arrangement of the plates, n h g j, slide, v, scrapers, a, and bars, K L, and rod, M, as and for the purpose shown and described.

[This invention consists in an improved seed-distributing apparatus, the mode of constructing and arranging it, together with gages for regulating the depth of the planting of the seed, and agitators for preventing the choking of the seed in the seed-boxes, the parts eing so arranged, whereby an exceedingly simple and efficient mg. chine is obtained for the purpose specified, and one not liable to get out of repair or inoperative by use.]

30,116.—G. E. Beach, of Jersey City, N. J., for an Improved Railroad Switch:

Improved Railroad Switch:

I claim, first, So hinging and connecting two rails, B C, or J K, in in a continuous series that their positions may be shifted, for the purpose of guiding a train upon another track without breaking their continuity, substantially as set forth.

Second, I claim the fixed bearings, m m, in combination with the forked bar or rod, P, and the hinged continuous rails, B C, and J R, substantially as and for the purpose described. Third, I claim, in combination with the hinged continuous rail, or rails, B C J K, the employment of the tongue or tongues, E G, operating together, substantially as and for the purposes described. Fourth, I claim, in combination with the hinged continuous rails, B C J K, and tongues, E G, the spring or springs, R T, or their equivaleuts, arranged substantially as and for the purpose set torth.

30,117.—S. A. Black and F. C. Ford, of Erie, Pa., for

a Substitute for Railroad Frog:

We claim the arrangement of the levers and bers set forth, in combination with the piece, c, of the rail, supported upon the charrand operated as described.

30,118—J. H. Boyd, of Baltimore, Md., for an Improvement in Saddles:
I claim the application to the cantle of saddles of an india-rubber roll, as described.

30,119.—T. E. C. Brinly, of Louisville, Ky., for an Improvement in Cultivators:

I claim the combination and arrangement of the plow heam, A, provided with removable feet or standards, D.C.F., and the two Prips of adjustable rings or arms, H.N.N. provided respectively with the shares, J, and teeth, L, as and for the purposes set forth.

[The object of this invention is to combine the plow, harrow and control of the provided respectively with the shares.]

cultivator in such a manner or by such an arrangement of parts that the device may be used in any of the capacities aforesaid by a very simple adjustment, and made to work under any of its adjustmen equally as well as those implements intended for any of the above named purposes separately.]

30.120.-J. Card, of Gleveland, Ohio, for an Improved

Carriage Jack:
I claim the special arrangement of the wheel, A, lever, E, and fooleec, D, operating as and for the purpose set forth.

30,121.-Alfred Carson, of New York City, for an Im-

proved Stench Trap for Sinks:
Iclaim the arrangement of the chamber, B, plate, a, partition, a, screen, d, and pipe, C, with the basin, A, in the manner and for the purposesshown and described.

[The object of this invention is to construct and arrange the parts compressing the stench trap, and apply them in such a way that the trap will be equally as efficient as those ordinarily used, and at the same time be perfectly accessible, so that in case the trap or eduction pipe become choked or clogged they may be readily cleaned and put in proper order by any person of ordinary ability, no mechanic or artisan being required, as is the case with the ordinary traps; the latter being below the article to which they are applied, altogether inaccessible except the pipe enclosing the same be

cut, an operation attended with considerable trouble and expense.] 30,122.-Wm. Cleveland, of Orange, N. J. for an Improvement in Faucets:

provement in Faucets:
claim, in combination with the body and top of a faucet, one of
ich is packed with suitable flexible material, the elastic washer,
or the purpose and substantially in the manner described,
also claim the recesses, m m, in the inside of the body of the
cet, to allow the packing to swell or distend into, and thus prevent
rom being injured or misplaced by the turning of the tap, subntially as described.

stantially as described.

I also claim, in combination with the packing, the ribs or projections, o, that embed themselves therein, to prevent said packing from slipping, substantially as described,

30,123.-J. W. Cochran, of New York City, for an

30,123.—J. W. Cochran, of New York City, for an Improvement in Projectiles:

Iclaim, first, The construction of projectiles with corrugations or hollow beads, a a b b, made and applied substantinlly as set forth and described, so that the force of the explosion of the charge will cause said corrugations to be expanded laterally, as and for the purpose set forth and described.

Second, The mode of providing for the lubrication of the gun by the perforations, n in the beads, fillets, or corrugations of the cup or other portion of the projectile.

Third, Placing the missiles or substance to be scattered by the explosion of a hollow projectile within a cylindrical casing, D, fitted to the interior of the projectile, substantially as and for the purpose described.

described. Fourth, The employment of the cap, C. or its equivalent, with the cylinder, A, as and for the purposes set forth and described. Fifth, The arrangement of the tube, F, nipple, g, plunger, G, and spring, H, in combination with the powder cylinder, E, substantially as described.

30,124.—Patrick Cody, of Hamilton, N. Y., for an Improved Clothes' Frame:

I claim the connecting of the inner ends of the arm, E, of a folding clothes frame by bevel or miter gears, C, substantially as set forth.

fThis invention relates to an improvement in that class of clothesdrying frames, in which folding arms are employed. The inven-tion consists in connecting the inner ends of the arms together by gears, and using in connection therewith retaining pawls, whereby the arms may be readily and compactly folded when for use, and also readily adjusted in proper position to receive the clothes when required.1

30,125.-G. W. Cunningham, of Paris, Mo;, for an

Improvement in Plows:
I claim the arrangement in a plow of a moldboard, I G J, open at a a a a, coulter, H, sharp edges, M L, furrow side, E, handles, D C, and bearer, A, as and for the purposes described.

30,126.—P. Davy, of Portsmouth, Ohio, for an Improvement in Iron Ties for Cotton Bales:

I claim the manner described of fastening the ends of an iron tie, by means of the elevations, a', fitting into the corresponding depressions, a, when used in connection with a keeper. B, or its equivalent, all substantially as and for the purpose specified.

30,127:—A. G. Davis and H. S. Frost of Watertown,

Oon., for an Improvement in Parasols:

We claim the combination and arrangement of the duplex spring catch, E, and the two slots, de, with the tubular slide, b, and the reception tube, D, of the folding joint, C, of a parasol stick, the whole being to operate in manner as specified.

30,128.-P. S. Devlan, of Elizabethport, N. J., for an Improvement in Journal Boxes:
I claim the employment of paper pulp to form boxes for bearings of journals of shafts and axles, substantially as before described.

provement in Seeding Machines:
I claim the arrangement of the citters, M. guards, K. and adjustable bars, J. with the variable cells, c.c., covers, I, seed boxes, E. E. elastic plate, 1, pole, N, and frame, A, as and for the purposes shown and described,

This invention consists in the employment of certain parts, so arranged and disposed as to possess many advantages, and render the machine exceedingly efficient in its operation.]

the machine exceedingly efficient in its operation.]

30, 130. — Wm. Dougherty, of Philadelp hia, Pa., for an Improved Saw-grinding Machine:

Iclaim, first, The reciprocating frame, Q, and the frames, R and S, connected together and arranged substantially as set forth, in combination with the revolving grindstone.

Second, The frame, R, hung to the reciproceating frame, Q, substantially in the manner described, in combination with the arm, q, and the adjustable slotted har. Us the whole being avranged and opporating substantially as and for the purpose set forth.

Third, The frames, S, its rib, w, and the stationary arm, V, or its equivalent, in combination with the reciprocating frame, for the purpose specified.

valent, in combination with the reciprocating frame, for the specified. areth, The yielding plate, TT, with their rollers, p p, when an ed in respect to the frame, substantially as and for the purpose

30, 131, -Silas Dodson, of San Francisco, Cal., for an Improvement in Machines for Cleaning Rice:

In provement in Machines for Cleaning Rice:
I claim, first, The blocks, G C, composed entirely of stone, forming a vertical hollow cylinder with uninterrupted inner surface, when the said blocks are arranged and combined with the drum, J, and its sheepskin strips, as and for the purpose set forth.

Secondly, The drags or scrapera, n n, hung loosely to twithin the folds of the sheepskin strips, and arranged in respect to the stone cylinder, as specified, in combination with the sheepskin strips, arranged as described.

30, 132.—C. J. Fay. of Hammonton, N. J., for an Improvement in Hay Rakes:

I claim, first, The revolving cylinder, E. provided with the self-adjusting teeth, i, arranged substantially as and for the purpose set forth.

forth.

Second. The combination of the revolving toothed cvlinder, E, guides, G, and intermittingly rotating crib reel formed of the shaft, n, and rode, o, as and for the purposes specified.

[This invention consists in employing a rotating cylinder provided with movable or adjustable teeth, and using in connection with the sam e elastic guides and an intermittingly rotating crib reel for effecting the desired end.]

30,133.—R. W. Fenwick, of Washington, D. C., for an Improvement in Metallic Bands for Cotton Bales:

claim the fastening, substantiallý as described, ids for cotton bales.

30,134.—E. C. Ford, of New York City, for an Improved Apparatus for Opening and Closing Hatch-

ways:

I claim opening and closing hatchways automatically by means of a revolving screw and came, or their equivalents, such came and screw having a relative motion to the hoisting gear and to the ascent and descent of the load, and which are so arranged and connected with the latches that each of them, respectively, shall thereby open at the passing of the load and close again after its passage, substantially as set forth.

30,135.-H. H. Foye, of Ottawa, Ill., for an Improve-

ment in Harvesters:
I claim the arrangement of the reel post, P and Q, with respect to the main frame draught bur, J, and the cutting apparatus, substantially in the manner described and for the purpose specified.

30, 136 .- E. J. Fraser, of Kansas City, Mo., for an Improvement in Plows:

I claim connecting the plow beam, K, to the bar, G, through medium of the pendent bar, I, provided with the slide, i, and bolt in connection with the clip, J, attached to the plow beam, K, provided with the slot, I, substantially as described.

[This invention relates to certain improvements in that class of plows which are connected with wheels, and are frequently termed sulkey plows, and possesses several advantages over others hither to devised.1

30,137.—Henry Franz, of Philadelphia, Pa., for an Improvement in Floors for Malt Kilns;
I claim the wire rail plate described, the same being constructed substantially as described and for the purpose specified.

30,138.—George Frost, of Brooklyn, N. Y., for an Im-

provement in Cut-off Valves for Steam Engines:
I claim, first, The opening of the balance poppet valve, D, by its
valve rod, E, coming in connect with the adjustable stop, F, through
the movement of the box slide valve, A,
Second, The retaining of the balance poppet valve, D, after it is
opened by the catch, K or its equivalent, until the proper per od for

Second, The retaining of the parameter, until the proper per od for opened by the catch, K or its equivalent, until the proper per od for tripping it again occurs.

Third, Tripping the catch, K, by the pins, L, on the sliding bars, M, they being in connection with the governor.

Fourth, The opening of the balance poppet valve, D, the reverse way, by means of a lever, W, in the manner as described and set forth, through the movement of the box slide valve, A.

Fitth, The closing of the balance poppet valve, D, by a small cylinder and piston, Y, having steam continually impinging on its piston when the catch, K, is disengaged, which cylinder and piston, Y, can be arranged in any required position, the whole being combined, arranged and operating substantially as described and set forth.

30,139.-J. L. Garlington, of Snapping Shoals, Ga., for

an Improvement in Sowing Machines:
I claim the vibrating hopper, D. in connection with the fixed base.
F, and stationary standard, H, provided either with the rod, I, wit arms, m, attached, or provided with the supplemental bag, n, as an for the purpose as set forth.

[The object of this invention is to obtain a simple and efficient machine for planting all kinds of seed, and also for sowing pulveru-lent manures. There are some kinds of seeds extremely difficult to plant with machines, such, for instance, as cotton seed, beet seed, &c., and also seeds which are naturally smooth, but are rendered adhesive by being rolled in moistened pulverulent manures previous

30,140.-J. L. Hall, of Cincinnati, Ohio, for an Improvement in Locks:

provement in Locks:

I claim, first, The peculiar construction of the bolt, D, and its arrangement with reference to the other parts of the lock, whereby the whole mechanism is inclosed within and protected by the bolt. Second, I claim the combination with the tumblers, 12, &c., of the the central plate or disk, F, as constructed, the same being made to operate in connection with the central stem, H, in the manner as and for the purposes specified.

Third, I claim making the tumbler, 2, with an internal sectoral enlargement, z, for the purpose of affording space, u, for the guard plate, J, without destroying the continuity of metal composing the tumbler.

niste, J, without destroying the continuity of metal composing the tumbler.

Fourth, I claim the conical key blocks, I I', constructed substantially as described, and inserted into the door plate with reference to the stems, G and II, for the purpose of operating a cambination lock from without by means of a key, in the manner specified.

Fifth, I claim the peculiar construction and adaptation of the stems, G H, so that the relative position of the same, with reference to their corresponding key blocks, I I', may be varied in the manner and for the purpose specified.

Sixth, I claim the combined arrangement of the internal enlargement, y, upon the tumbler, 4, the pin, w, upon the outer surface of the same, and the corresponding pin upon the under surface of disk, F, and the lug, K, upon the stem, H, for the purpose of rendering the combinations of the lock, and particularly the changes thereof, more obscure and intricate, as described.

Seventh, I claim the manner of changing the combinations without the necessity of removing the lock for that purpose, by allowing the stem, H, to be withdrawn from the inside of the lock and replaced in the contemplated new position, in the manner substantially as described.

scribed.

Eighth, I claim the key, 12, and the portable index plate, combination, the former constructed with a part, x, fitted to entering an aperture in the index plate in various positions forming therewith an element in the combination of the lock.

30,141.—Jacob Haller, of Ann Arbor, Mich., for an Improved Electro.magnetic Burglar Alarm:
I claim, first, The arrangement of a series of ropes or chains, B, extending over pullers, a b, in combination with the double armed levers, c d, rockshaft, E, and alarm, F, or its equivalent, constructed and operating substantially in the manner and for the purpose specified.

Second, The arrangement of the nin no on the hammer that the

fied.

Second, The arrangement of the pin, p2, on the hammer, t, of the alarm, in combination with a self-lighter, H, substantially as described, so that, by the action of the hammer itself, the light is

truck.

Third, The arrangement of the circuit breakers, r and w, and their connecting wires, in combination with the armature, n, of the electro-magnet, and with the hammer, t, and bell, u, constructed and operated substantially in the manner and for the purpose set footh.

forth.

Fourth, The arrangement of the spring frame, G, in combination with the electro-magnetic alarm, F, constructed and operating substantially as and for the purpose specified.

[A full description and engraving of this invention will appear in early number of the Scientific American.]

30,142.—Zebulon Hunt, of Hudson, N. Y., for an Im-

provement in Cooking Stoves:
I claim placing the bridge or brace, B, or any similar device, within the ventilated chamber, A, substantially in the manner and for the purpose set forth.

30,143.-John Jacobs, of Columbus, Ohio, for an Im-

provement in Beehives:
I claim, first, The arrangement of the posts, A, joists, B, top and bottom honeitudinal strips, b b', adjustable notched cross pieces, e', detachable shouldered cross pieces, e', detachable longitudinal central strips, d, and sectional bottomless hives, g g'g", when the

whole is constructed and operated in the manner and for the purposes described.

poses described.

Second, In combination with the above, the wire gauze ventilating valve, s, when said valve is constructed and arranged in the manner and for the purpose described.

[This invention consists of narrow frames for supporting a series of bechives above the ground. The hives are made in horizontal sections and have no buttons, but are provided with a wire gauze, which ventilates the whole series of sections. The frame is so constructed that any one of the hives can be removed without disturbing those adjoining it. We regard this a capital arrangeme will prevent the destruction of the bees by frost and afford great convenience in handling the hive.

30,144.—G. W. Kersey and J. J. Kersey, of Beartown, Pa., for an Improvement in Potato Planters:

I claim the rotating disk, F, armed with hooks, a, in connection with the hopper, G, and rotating brushwheel, H, the above parts being placed on a mounted frame, A, and arranged relatively with each other, to operate as and for the purpose set forth.

[This invention consists in the employment or use of a rotary disk armed with hooks at its periphery, which pass through a slot in a hopper, and using, in connection with said disk, a rotary stripping brush, the above parts being placed on a mounted frame, and so arranged in relation with each other that, as the machine is drawn along, the hooks on the rotating disk will take the potatoes from the hopper while the stripping brush will disengage them from the hooks at the proper point, so that they may drop in the furrow or drill.]

30.145.—Charles Kingler, of New York City, for an

30,145.—Charles Kingler, of New York City, for an Improved Sugar-cutting Machine:
I claim the arrangement of the plates, A and B, made to move towards and from each other, and provided with knives running parallel to each other, and attached perpendicular on the faces of said plates, directly opposite each other, in combination with two rollers, H and H, provided with knives, in m, running horizontally across the surfaces of said rollers, and so combining said rollers that, in operation, these horizontal knives will act simultaneously on each side of the slabs or pieces of sugar, the whole being arranged and combined in the manner substantially as described.

30, 146 .- W. H. Livingston, of New York City, for an Improvement in Fastening Axes to Handles

I claim the arrangement of the wedges, D D', cap, E, and scr, with the strap, C, helve, B, and ax, A, as and for the purphown and described.

[The object of this invention is to attach the implement to the handle in such a way that it may be readily detached when necessary, and also readily secured thereto and a firm connection obtained; the invention admitting of the implement being adjusted on its handle by any person of ordinary ability, and with the aid only of a simple wrench. The ordinary mode of attaching axes, and similar tools, to their handles; to wit, by wedging the end of the handle in the eye it forms a very insecure connection, for, on the least shrinking of the wood, the handle becomes loose and is liable to fly off when the implement is used; besides, the old mode does not admit of the handle being readily removed from the implement in case a new handle is required, nor can the handle, in case of its becoming loose in the eye, be tightened with facility. By tion, it is believed that these difficulties are obviated.] By this inven-

30, 147.-Ferdinand Luedke, of New York City, for an

Improvement in Factitious Beer:
I claim the combination of sugar, red wine, gum arabic, bounte of soda and tartaric acid, in the manner and for the peet forth.

30. 148.—Franklin Maynard, of Cambridge, Mass., for

30, 148.—Franklin Maynard, of Cambridge, Mass., for an Improvement in Shoe Lasts:
I claim providing that part of the last on which the pegging is performed with any substance or material of a plastic nature, or which can be re-solidified and re-surfaced for continued use without removal from the body eithe last, and be preged into without abrasion or destruction, in the same or any equivalent manner set forth and described.

30, 149.—Charles Messenger, of Warren, Ohio, for an

Improved Chair for Invalids:
I claim the seat, A, movable piece, A', support, W, and button, G, then these parts are constructed, arranged, combined and operated

I clays the same constructed, arranged, when these parts are constructed, arranged, as set forth.

I also claim the lids, M N, slides, R, cord, S', pulley, L', and ring, O', when these parts are constructed, arranged and operated as specific parts are constructed.

30,150.—James Millholland, of Reading, Pa., for an Improvement in Slide Valves:

I claim, first, The cap, C, with its annular flanges, fand e, and the spinal spring, D, or its equivalent, when the flange, e, is so adapted to the hub, c, of the valve, that the said hub shall resist all lateral strains imparted to the cap, and when the whole is applied and arranged in respect to the valve, substantially as specified.

Second, I claim the described application of one or more severed metallic rings, i, lifted into grooves in the annular flange, d, of the valve, and henring against the annular flange, f, of the cap, as and for the purpose set forth.

Third, I claim beveling the upper sides of the annular recesses.

for the purpose set forth.
Third, I claim beveiling the upper sides of the annular recesses,
h h, so is to present a sharp edge, for the purpose specified.

30, 151.—J. B. Murray, of New York City, for an Improved Prepaid Envelope:
I claim, first, A prepared postage stamp, of suitable size and form, for a post-ul wrapper for newspapers, periodicals, &c., substantially as described, and in contradistinction to the letter envelope stamp and the small stamp in common use.

Second, I claim, in connection with the wrapper stamp, parallel Thud, I claim, in combination with the wrapper stamp, a marginal conting of gum arabic, or other adhesive material, substantially as described.

Fourth, I claim a prepaid content of the substantially as described.

described.
Fourth, I claim a prepaid postage stamp, which is also a ruled and self-sealing newspaper wrapper, substantally as described.

-W. T. Nicholson, of Providence, R. I., and T. Earle, of Smithfield, R. I., for an Improved Egg-beater:

m the arrangement of the propeller blades, G G, in com-with the wire frame, I I, substantially as described, for the oination with the ourposes specified.

30,153.—Isaac Pelham, of Ithaca, N. Y., for an Improved Method of Attaching Handles to Cross-cut Saws:

I claim the rod, C. E., fitted in the handle, A., and provided with the screw nuts, D. E. and slotted parts, d. the latter being fitted on the saw, and having their ends in notches, e., therein, the ends of the saw being fitted in the bent notched ends, h. h, of the plate, g, essentially as and for the purpose set forth.

30,154.—Ira Perego, Jr., of New York City, for an Improvement in Shirt Bosoms:
I claim a shirt bosom, made with stiffening strips of the same or other meterial as the bosom, applied substantially as and for the purposes set forth.

[This invention consists in the insertion of one or more stripe of iDen, cotton, or other suitable material, in the plaits of the Dosam, whichstrips extend down from the collar band of the shirt to about

one-third of the length of the bosom, more or less, and are stitched to the plaits in stitching their edges, thus, when the bosom is starched and ironed, it will possess greater stiffness, as far as the stripe ex-tend, than the double ply of the plaits, and that por ion of the bosom below the inserted strips being m ore flexible than that above it it will "break" and have the effect of keeping the upper portion stiff and "unbroken" for a considerable length of time.1

30,155.-J. M. Robb, of Charleston, S. C., for an Im-

proved Railroad Frog:

I claim the combination of the rods, C C' B B', and the curved chilled ridge, DI D2 D2, when the chilled curved ridge has projections, b' b', formed on it, and the bottom flunges of the rails has recesses a' a', cut in them, substantially as and for the purposes described.

30,156.—Wm. Ralph, of Holland Patent, N. Y., for an Improvement in Cheese Vats:

an Improvement in Cheese Vats:

I claim, first, The employment or use of a stove or heater, B, fitted within a jacket, b, and applied to the water claimber, A, of a cheese vat, substantially as and for the purpose set forth.

Second, In combination with a stove or heater, B, thus applied to the water chamber, A, the oblique strips, d, attached to the bottom of said water chamber, for the purpose specified.

Third, The warm water reserve-chamber and refrigerator, E, applied to the vat, and arranged substantially as shown, to be used jointly either within the stove or heater, B, and water chamber, A, as occasion may require, for the purpose specified.

[This invention has for its object the subjecting of the mllk in the innervatioan equalor uniform heat, so that the whole mass will be quickly brought to the desired temperature favorable for coagulation. The invention also has for its object a ready means for re-supplying, for a second congulating process of the milk, the water chamber or the water space between the inner and outer vats with warm water after the withdrawing of the previously heated water and the substitution of cold water, for the purpose of cooling or settling the curd; said means also furnishing a supply of properly heated water for the proper cleansing of various articles pertaining to cheese-making. The invention has further for its object the keep ing of the milk at a proper low temporature, to preserve the same in suitable condition a convenient length of time in warm weather.]

30,157.-P. H. Roots, of Connersville, Ind., foran Im-

provement in Blowers:
I claim the combination of the pistons, D D, and recesses, E E, then so constructed as to present but four essential points of positive contact, as described, and for the purposes set forth.

30, 158.—W. G. Savage, of Clinton, Ill., for an Improvement in Corn Planters:

I claim the arrangement of the slides, e e, boxes, B, levers, d d, slide, E, adjustable seat, G, seat, C, axle, H, pole, J, and lever, K, all as shown and described for the purposes set forth.

[This invention relates to an improvement in that class of corn planters which have their seed-distributing devices operated manually, the operator sitting on the machine.]

30,159.-C. S. Schmidt, of New York City, for an Im-

proved Mop Wringer:

I claim combining with the board, A, having a slot, C, cut in it, as described, the pivoted arm, E, and arm, F; the same being arranged and operating as and for the purposes set for h.

[This invention is to be applied to a tub or pail which is used with a mop for washing and scrubbing purposes, for clamping and holding the end of the mop while itcan be wrung out. The invention con-sists in the use of a semi-circular board with a slot cut in it sufficiently large to receive the mop, which board is firnished with cleets that will prevent it from slipping off the tub or pail on which it is placed for use, in combination with a fixed and a movable clamping arm, between which arms the end of the mop is held while the water is

30,160.-Wm. J. Scott. of Albany, N. Y., for an Im-

proved Lock for Burglar-proof Pockets, &c.:
I claim the method of constructing a lock of two plates or metal, held together, when locked, by spring head belts attached to one of the plates passing through suitable apertures made in the other plate, together with the key for separating the plates, substantially for the purpose and in the manner set for h in the within specification.

30, 161.—Ives Scoville, of Chicago, Ill., for an Improve-

ment in Hemp Brades:

I claim the arrangement of successive sets of breaking, beating and cleaning rollers running at different speech, and the lower rollers, M'N'O', having their bearings in a frame, B, vibrating upon the driving shaft, D, in combination with a treadle, I, substantially as and for the purposes set forth.

30,162.-Wm. H. Scoville and Ives Scoville, of Chicago, Ill., for an Improvement in Quartz Pulver-

cago, 111., for an improvement in Quartz Involizers and Amalgamators:
We claim the arrangement of a double trough, R U, and sutter,
Q, in combination with four crushing and driving wheels, B B B B,
two grinding rollers, H H, and two breaking rollers, J J; they arrive parts of the machine being connected and placed in relation to
each other substantially as and for the purposes set forth.

30,163.-J. C. Sellers, of Woodville, Miss., for an Im-

provement in Cotton Cultivators:

I claim the arrangement of a reciprocating spring hoe frame. N
G, and cam grooves, L H, in combination with an independent
volvingshaft, E, and with the plowshares. V V, and coverers,
U, of a cotton-thinning plow, substantially as and for the purpose

30,164.—Kirby Spencer, of Minneapolis, Ind., for an Improved Refrigerator:

Improved Retrigerator:
I claim the apartments, f, in combination with the ventilating apertures g, the apartment, x, the sliding covers, j, the ventilating flue, K, the pipe, L, the refrigerating chamber, x', the apertures, h, and the aperture, l, constructed substantially in the manner specified and operating together for the purposes above described.

30,165.—Thomas Spencer, of Syracuse, N. Y., for an Improvement in the Manufacture of Common

I claim the admixture with common salt, after crystallization, of sulphate of soda, or its equivalent, as and for the purposes set forth.

30,166.—T. T. Strode, of Mortonville, Pa., for an Improved Calender Clock:

I claim, first, The arrangement and combination of the year wheel, C, with the grooves, n n' n\*, and o o' o\*, or their equivalents, the month wheel, D, the levers, h i, and b c, the pine, m and e, and the pawls, I and f, constructed and operating substantially in the manner and for the purpose described.

Second, The arrangement of the grooves, n n' n\*, pin, e, and pawl, f, substantially as set forth, for the purpose of controlling the motion of the month wheel according to the variations in the lengths of bje months.

pawi, i, substantially as specified, for the purpose of controlling the pawi, i, substantially as specified, for the purpose of controlling the notion of the yearwheel.
Fourth, The manner in which the names of the months are ar-

ranged on the face of the year wheel, viz: marking the name of each long month once, and the name of each short mouth twice, in two consecutive spaces, as and for the purpose set forth.

Fifth, The employment of the year wheel, C, constructed substantially as specified, for the purpose of controlling its own motion and that of the month wheel, D.

30,167.-W. S. Stetson, of Baltimore, Md., for an Im-

provement in Reaping Machines:
I claim the improved implement for harvesters, the same consisting of the combination of a rake and fork su stantially in the maner and for the purposes set forth.

30, 168.—S. E. Tompkins, of Newark, N. J., for an Improvement in Saddle Trees:

I claim, first, A metal frame. A, for saddle trees, whea said frame is cast with depressions, s s, flanches, e e, and holes, f f, in the manner and for the purposes described.

Second, The use of a piece of leather, D, of a form and size corresponding to the underside of the seat, B, in combination with a frame. A, which is constructed with depressions, s s, flanches, e e, and holes, f f, in the manner described.

Third. The combination of the rear shoulder, m', of the hook, H, with the log, n, of the tree, in the manner and for the purpose described.

Equal to the purpose set for the seat of the seat shoulder, m', of the hook, H, with the log, n, of the tree, in the manner and for the purpose described.

scribed.

Fourth, The combination of the projections, h h, of the tree with the shoulders or sockets, j j, in the underside of the seat, in the manner and for the purpose described.

30,169.—John Underwood, of Cameron, Ill., for an Im

provement in Corn Planters:

I ciaim the relative arrangement and combination of the adjing wheels, H H, with their framer, supporting and mark wheels, B B, pitman, C C, dropping wheels, a a, and open wheels, E E, operating as and for the purposes set forth.

30,170.-Walter Warren, of Penn Yan, N. Y., for an Improvement in Plows:

I claim the arrangement of the beam, A, when made from its forward par tonear its union with the mold board as described, with the standard, E, of the fore plow, D, and mold board, B, as specified, for the purposes set forth.

30, 171.—James White, of Cleveland, Ohio, for an Improvement in Smut and Scouring Machines:
I claim, first, The frame, F, springs, L, perforated adjustable plate, E, wire screen, I, and plate, K; the several parts being arranged and operated as described.

Second, I claim the adjustable beaters, T, constructed, arranged and operated substantially as and for the purpose specified.

30,172.-J. G. Whitwell. of New York City, for an

Improved Curtain Fixture:

Ipclaim the arrangement of spiral springs, d d, between the divided half circles, α a, of a roller end, which, by expanding, holds a cord or band against a circular surface, f, as described, substantially as and for the pupose specified.

30, 173. - J. F. Wood, of Houma, La., for an Improvement in Cultivators:

I claim the arrangement of the hinged a djustable wings, E. when used in combination with the adjustable fame. A, showels, D, and rakes, C, substantially in the manner and for the purpose set forth.

[This cultivator is intended for cultivating sugar cane, corn, d it is designed te straddle one row and to work both sides of the plant at once; or it may also be used for planting corn or cotton, by seed to any desired depth.]

30,174.-Joseph Worcester, of Newport, Ky., for an

Jo, 112.—Joseph Worcester, of Newport, Ky., for Improved Annealing Apparatus:

I claim the dwarf sleeper walls, e.e., in the annealing furnace, affording a bed for the annealing box, B., when used in combinat with the carriage, G, or any similar carriage for raising or lower its load; all substantially arranged as described and for the pury set for h.

30, 175.—A. S. Ballard (assignor to himself and R. J. Robeson), of MountPleasant, Ind., for an Improve-

ment in Earth Borers for Post Holes: aim the manufacture of earth borers in separate part d and operating substantially as and for the purposes

76.—George Burnham (assignor to himself W. D. Rinehart and C. A. Nauman), of Pittsburgh, Pa., for an Improvement in Oscillating Valves

Steam Engines:
I claim so constructing the plug and seat of cylindrical or valves, substantially as described, as that the live steam from the plug presson both sides of the valve plug, while the steam will pass through a central cavity in the plug, for the of equalizing the pressure of the steam on the plug, so as to the valve wearing unevenly and to reduce the friction of the inside the valve seat.

30,177.-H. W. Collender (assignor to himself and Michael Phelan), of New York City, for provement in Cushions for Billiard Tables:

provement in Cushions for Billiard Tables:

I claim making cushions for billiard tables of two thicknesses of what is known as the soft compound of vulcanized india-rubher, or allied gum, with an interposed thickness of what is known as the and compound of vulcanized india rubber, or allied gun, or, as the equivalent thereof, with an interposed thickness of the soft compound of vulcanized india-rubber, or allied gum, rendered hard by the admixture of fibrous or equivalent substance, substantially as and for the purpose specified.

30,178.—S. F. Gelston and J. T. Johnson, of Buffalo, N. Y., and C. R. Tompkins, of Rochester, N. Y., assignors to S. F. Gelston and J. T. Johnson, aforesaid, for an Improvement in Stave Machines: We claim the method of adjusting the machine to operate on staves of different lengths by means of the index driving wheel, N, in combination with the rib, b, substantially as described.

30,179.—John Lyker (assignor to himself and J. I. Brown), of Argosville, N. Y., for an Improvement in Combined Roller and Manure Spreader:
I claim the arrangement of the rollers, B. B., with the frame, A., gear wheels, f.g., connecting rod, E., hopper, D., pendant, c., and slide, b, all as shown and described for the purposes set forth.

(This invention consists in the employment of a box or hopper placed on a suitable frame which is mounted on rollers, and provided with a reciprocating, perforated slide operated from one of the rollers; all being so arranged that the ground may be rolled, and guano, ashes, lime, plaster or other fine, pulverulent fertilizer

30,180.-Antonio Meucci, assignor to the New York Paraffine Candle Company, of Richmond county, N. Y., for an Improvement in Apparatus for Mold-

in I., for an Improvement in Apparatus for Molding Candles!

I claim the combination of die and candle guide substantially as described, for the fittpose of finishing candles.

I also claim the combination of an elastic strapwith the receiving bed, for the purpose of holding the candle in contact therewith.

I also claim the combination of die, candle guide, K., and candle receiving bed, substantially in the manner and for the purpose described.

30,181.—D. D. Parmelee, of Salem, Mass., assignor to the Beverly Rubber Company, assignors to J. H. Cheever, of New York City, for an Improvement in Restoring Waste Vulcanized Rubber:

I claim the process herein described of rendering waste vulcanized, "hermized" or "changed" india-rubber useful and capable of being re-worked, for the manufacture of articles of trade and comerce, by reducing said rubber to a fine or powdered state, and then combining with the same india-rubber which has been modified by heat, so as to obtain it either in a semi-liquid or melted condition, or in a liquid or vaporous condition, i. e., in the form of its products of distillation, substantially in the manner and modes herein set forth,

30,182.-J. W. Parnell (assignor to James Morrison: Jr.), of Troy, N. Y., for an Improved Stove Grate,

claim an improved fire grate for stoves, consisting of the frams, the aeparate and parallel grate hars (R), and the rocker (E), structed and arranged as herein described and set forth.

30,183.—H. W. Putney, of Lyons, N. Y., assignor to himself and C. C. Crane, of Penn Yan, N. Y., for for an Improvement in Sieves for Separating

Grain, &c.:

I claim the ariangement of the distributing board, C, the conducting board, D, and auxiliary sieve, F, when applied to the frame, A, and guage, B. in the manner and for the purpose specified.

30,184.-John Randall, of Elmira, N. Y., assignor to himself and R. R. Smalley, of Troy, N. Y., for an Improvement in Slide Valve:

I claim the employment, in combination with the valve, constructed with a single opening, b, right through it, of the induction cavity, b, in the seat, the plate, E, and set screws, FF, applied to the back of the valve, and a valve chest, in constant communication with the eduction pipe, the whole arranged and operating substantially as herein set forth.

This invention consists in certain means whereby the valve is relieved of all pressure toward its seat, and is made to work with a very inconsiderable amount of friction.

30,185.-J. C. Richards (assignor to himself, J. Hubbbler and R. M. McGrath), of Lafayette, Ind., an Improvement in Corn Shellers and Cleaners:

I claim, first. The cylinder, k, made up of rods and arranged in relation to the revolving screen, and operated as herein set forth.

Second, The arrangement of the toothed cylinder, i, within the rod cylinder, k, and revolving screen cylinder, n, with the hopperat the one end and the cob chute at the other end—the corn being delivered through the rod cylinder to the screen, the cobs being conveyed to the chute by the helical arrangement of the teeth, as described.

Scribed.

Third, The revolving screen or cleaner, n, in combination with a sheller composed of the toothed cylinder and rod cylinder or is equivalent, said cleaner rotating around the whole length of the sheller, and the entire surface of both sheller and cleaner being operative surfaces, as set forth.

30,186.-J. J. Walsh (assignor to himself, T. L. Braynard and H. C. Adams), of New York City, for an Improvement in Gun Carriage:

an Improvement in Gun Carriage:

I claim the use and arrangement of the hand wheel, D, and gear wheel, B, in combination with the supporting and pivot wheel, A, substantially as described, for the purpose of running out and in and training cannon as described.

I also claim the arrangement of the said wheels, D and B, in combination with the geared sector, J, for the purpose of elevating or depressing the gun as described.

I also claim the arrangement of the rode, L, links, h h, and levers, k, k, in combination with the two carriages substantially as described, for the purpose of lessening the extent and force of the recoil of the gun.

coil of the gun.

I also claim the arrangement and combination of the screw, 12, and the pivot wheel, A, substantially as described, for the purpose of elevating and lowering the gun carriage, for the jurposes set forth.

30,187.—F. H. West, of San Francisco, Cal., assignor to T. S. Seabury, of Stony Brook, N. Y., for an Improved Compass Protractor:

I claim the combination with ordinary parallel rulers, A, of a mov-able circle, B, graduated as a compass and provided with a semi-cir-cular central opening, b, with the exact center of the circle marked therein, substantially in the manner and for the purposes herein set forth.

-W. T. Zollickoffer (assignor to himself and W. Brown), of Shelbyville, Tenn., for an Improvement in Plows:

ment in Flows:

I claim the arrangement of the curved bar, C, foot, D, and beam, with the serrated bar, E, slotted clevis, F, pawls, e.e., and hooks, d', all in the manner and for the purposes herein shown and de-

[This invention relates to certain improvements in that class of plows which are more especially designed for the cultivation of crops, such as cotton, corn, and other crops which are grown in hills and drills. The invention consists in the employment or use of a reversable standard, so constructed and arranged in relation with the share-foot, that the former may be reversed and the plow fied as occasion or the nature of the work may require. tion also consists in a novel and improved clevis whereby the line of draft may be varied relatively with the plow as may be desired.]

### RE-ISSUES.

J. L. Booth, of Rochester, N. Y., formerly of Cuyahoga Falls, Ohio, for an Improvement in Grain Separators. Patented Sept. 20, 1859:

I claim, first, The combination of the zig-zng screens and boxes, BC, having a shake motion given them so as to have the grain pass consecutively over and through them, and arranged relatively with seach other to operate substantially as and for the purpose set forth. Second, The inclined zig-zag screens and boxes, BC, with or without the troughs, E, in connection with the revolving fan, G, and spont, H, arranged substantially as and for the purpose set forth.

This invention consists in the employment or use of zig-zag grains invention consists in the emptoyment or use of zag-zag servens and boxes having a proper shake motion communicated to them, and so arranged that the grain may pass consecutively over and through them, and be subjected to a thorough screening operation. The invention also consists in using in connection with the zig-zag screens and boxes aforesaid, a revolving fan and spout so arranged that the grain will be subjected to an efficient blasts for the separation of all light impurities therefrom.

Sylvester Ferguson and G. H. Ferguson, of Malden Bridge, N. Y., for Machine for Feeding Paper to Printing Presses. Patented July, 26, 1859:

We claim, Feeding sincle sheets of paper to a printing press, paper ruling or other machine requiring the freed of a single sheet at a time by means of the feed roller, I, and friction stop, I, or the equivalents thereof, when the same are arranged and combined eraparisally as set forth.

We also claim in combination with the roller, I, and friction stop, I, the feed roller, G, or its equivalent, substantially as described, for the purposes herein set forth.

William Fulton, of Cranherry, N. J., for Improvement

William Fulton, of Cranherry, N. J., for Improvement in Lamps. Patented August 3, 1858. Re-issued Sept. 13, 1859:

I claim, first, The perforated plate, C, or the gauze wire, C, for the purpose of regulating the elastic force of the air so that it may be Presented everly to the fiame or their equivalent.

Shown in Fig. 1, in combination with the perforated or air distributing plate, C, or the gauze wire, C, or their equivalent.

Third, I claim the register formed of the perforations, e, in the bottom, A, as shown in Fig. 5, in combination with the perforated plate or gauze wire, C, and the holes, b, in the lower part of cap, D, as shown in Fig. 1, the whole being arranged substantially as and for the purpose herein described.

William Joslin, of Cleveland, Ohio, formerly of Waterford, N. Y., for an Improvement in Machinery for

nora, N. 1., for an Improvement in Machinery for Manufacturing Cordage. Patented Jan, 19, 1847: I claim the employment of a condensing tube and laying block or other equivalents thereof, in combination with the means of giving the fore twist to the strands, and the twist to the laid rope, substantially as described, or the equivalent thereof, for the purpose specified.

stantially as described, or the equivalent thereof, as specified.

I also claim the series of fivers turning in stationary bearings to give the fore turn or twist to the strands, as described, in combination with the fiver for giving the twist to the rope, and provided with cross capstan, and means of giving tension to the rope, substantially as described.

Described.

Reserve Mass for a Plate Holder

as described.

A. S. Southworth, of Boston, Mass., for a Plate Holder for Cameras. Patented April 10, 1855:
I chim, bringing the different portions of a single plate or several smaller plates successively into the field of the lens of the camera, substantially in the manner and for the purpose specified.

B. Sexton, of East Windsor, Conn., for an Improve-ment in Machinery for Drying Cloth. Patented

ment in Machinery for Drying Cloth. Patented May, 8, 1860:

I claim combining with the wheels armed with tenter hooks substantially as described, the arrangement of rollers, or equivalents thereof, for presenting and drawing off the cloth, so that is shall form part of the periphery of a hollow vessel, substantially as described, and an apparatus, substantially as described, alone where the end wheels and between the place where the wet cloth begins to form the periphery of the said hollow vessel, and where the dry cleft is drawn off, substantially as and for the purpose specified.

N. C. Travis, Nathan Johnson and Richard Emerson, of Alton, Ill., assignees of Nathan C. Travis, aforesaid, for an Improved Regulator Valve for Steam

Engines. Patented Oct. 11, 1859: Veclaim, first, The arrangement and combination of the valve A, and casing, C, as and for the purposes herein shown and

Second, The arrangement and combination of the screw socket, k, Second, The arrangement and combination of the screw socket, k, stem, i, rod, i, arm, p, groove, q, and hand wheel, J, so that by turning the hand wheel, J, the stem, I, may be elevated and depressed irrespectively of the rise and fall of the rod, I, and without retaing the latter, all as herein shown and described.

[This invention was illustrated on page 321, Vol. 1, new Series of Scientific American.]

DESIGNS.

Thomas Loring, of Blackwoodtown, N. J., for a design for Sad Irons.

James Horton and John Martine (assignors to David Stuart and Richard Peterson), of Philadelphia, Pa., for Design for the Plates of a Stove.

James Horton and John Martine (assignors to David Stuart and Richard Peterson), of Philadelphia, Pa., for Design for the Plates of a Cylinder Stove.

W. Stanard (assignor to S. S. Jewett and F. H. Root), of Butfalo, N. Y., for Design for a Cook's

W. Stanard (assignor to S. S. Jewett and F. H. Root), of Buffalo, N. Y., for Design for a Cook's

Note. - The number of patents reported in the above list is eighty-NOTE.—The number of patents reported in the above list is eightyeix. Out of this large—considering the season—number, ThirtyFOUR of the cases were solicited through the Scientific American
York.

HOW TO MAKE AN APPLICATION FOR A PATENT. Patent Agency.

### MONEY RECEIVED

At the Scientific American Office on account of Patent Office business, for the week ending Saturday, Sept. 29, 1860 :-

C. G., of Pa., \$30; W. L., of Conn., \$25; J. H. L., of Ky., \$25; J M. N., of Pa., \$30; L. S., of Ky., \$30; C. D., of Mass., \$30; E. L. G., of Conn., \$30; D. L., of Ill., \$30; W. H. H., of Ala., \$25; P. II., of Mo., \$25; II. & H., of Ind., \$25; W. C. E., of Tenn., \$30; J. S. Jr., of Pa., \$30; N. J., of N. Y., \$30; H. S. H., of N. Y., \$30; F 6. S. of N. Y., \$25; J. B. & S. of N. J., \$100; Z. F., of Mo., \$10; G. & S., of Mass., \$30; V. Van V., of N. Y., \$25; L. G., of La, \$30; A. R., of N. J., \$196; H. & K., of Ill., \$30; C. W.W. S., of Fla., \$30, O. B. L., of N. Y., \$25; G. K. W., of R. I., \$30; C. W. M., of Mass, \$3; S. & L. of Pa, \$100; D. B. B. of Pa, \$25; W. A. D. of Ill., \$35; G. S. R., of Miss., \$35; G. W. H., of Pa, \$30; C. F. McN. K. Co., of N. Y., \$30; C. H. B., of Conn., \$30; J. P. F., of N. Y., \$30; J. R. J., of Ky., \$25; R. T. K., of Pu., \$30; J. H. of N. Y., \$53; H. Van S., of Conn., \$55. McN. K. Co., of N. Y., \$30; C. H. B., of Conn., \$30; J. P. F., of N. Y., \$33; J. H. B., of N. Y., \$10; I. M., of Olio, \$25; C. R. O., of N. Y., \$40; J. J. S., of N. Y., \$30; J. B. VanD., of N. Y., \$25; W. S., of N. Y., \$40; J. J. S., of N. Y., \$30; J. B. VanD., of N. Y., \$30; J. B. C., of Ohio, \$70; H. S. M., of R. I., \$30; C. G. C., of N. Y. \$25; J. O., of Pa., \$30; B. C., of Pa., \$30; S. & G., of Ill., \$10; A. F., of N. Y., \$13; R. L. U., of N. Y., \$20; W. A. L., of N. Y., \$25; H. McD., of N. Y., \$30; S. L., of Ohio, \$25; W. D. A., of N. Y. \$32; F. W. H., of Conn., \$110; T. S., of N. J., \$25; H. W., of N J., \$25; D. M., of N. Y., \$25; G. H., of N. Y., \$25; A. T. B., of N.

Specifications, drawings and models belonging to par-

Specifications, drawings and models belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, Sept. 29, 1860:—
F. W. H., of Cond. (2 cases); W. H., H., of Ga.; W. L., of Conn; C. L. of Cul; J. M., of M. ine; F. & S., of N. Y.; A. T. B., of N. Y.; T. B. J., of III.; N. F. B., of III.; J. J. P., of Austria; E. G. C., of N. Y.; W. H. L., of N. Y.; W. D. A., of N. Y.; J. H. L., of Kr.; J. W., of Engkud; H. W., of N. J.; D. M., of N. Y.; S. L., of Ohio; H. H., of Iowa; A. A., of N. Y.; F. & H., of Va.; L. L., of N. Y.; J. B. C., of Ohio; J. J. McC., of N. J.; A. C., of Mass.; T. S., of N. J.; Z. G. A. N. P.; O., of France: O. B. L., of N. Y.; G. H., of N. Y.; J. W., of Ohio; C. A., R., of Ala.; H. S., W., of R. J., H. M., of Ohio; H. M. OD., of N. Y. In Ma of Ohio; H. McD., of N. Y.

# THE RISE AND PROGRESS OF INVENTIONS.



During the period of Fourteen Years which has elapsed since the business of procuring patents for inventors was commenced by Munn & Co., in connection with the publication of this paper, the number of applications for patents in this country and abroad has yearly increased until the number of patents issued at the United States Patent Office last year (1859) amounted to 4,538; while the number granted in the year 1845-fourteen years ago numbered 502-only about one-third as many as were granted to own clients last year; there being patented, through tific American Patent Agency, 1,440 during the year 1859. increasing activity among Inventors has largely augmented the number of agencies for transacting such business. In this profession, the publishers of this paper have become iden-

tified with the universal brotherhood of Inventors and Patentees at home and abroad, at the North and the South; and with the inthis time, when we find ourselves transacting a larger businessin this profession than any other firm in the world.

We may safely assert that no concern has the combined talent

and facilities that we possess for preparing carefully and correctly applications for patents, and attending to all business pertaining

### FREE EXAMINATION OF INVENTIONS.

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

PRELIMINARY EXAMINATIONS AT THE PATENT OFFICE.

The advice we reuder 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 we may acquire of a similar invention from our long experience, and the records in our Home Office. But for a fee of 85, accompanied with a model or drawing and description, we have a special search made at the United States Patent Office, and a report setting forth the prospects of obtaining a patent, &c., made np and mailed to the inventor, with a pamphlet, giving instructions for further proceedings. These preliminary examinations are made through our Branch Office, corner of F and Seventh streets, Washington, by experienced and competent persons. Over 1,500 of these nations were made last year through this office, and as a m sure of prudence and economy, we usually advise inventors to have a preliminary examination made. Address MUNN & CO., No. 37 Park-row, New York.

# CAVEATS.

Persons desiring to file a caveat can have the papers prepared on reasonable terms, by sending a sketch and description of the invention. The government fee for a caveat is \$20. A pamphlet of advice regarding applications for patents and caveats furnished gratis on

Ever- 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 is composed for the Patent Office. These should be securely packed, the inventor's name marked on them, and sent, with the government fee, by express. The express charges should be prepaid. Small models, from a distance, can often be sent cheaper by mail. The safest way to remit money is by draft on New York, payable to Munn & Co. Persons who live in remote parts of the country can usually purchase drafts from their merchants on their New York correspondents; butif 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.

REJECTED APPLICATIONS.

We are prepared to undertake the investigation and prosecution of rejected cases, on reasonable terms. The close proximity of our Washington Agency to the Patent Office affords us rare opportunities for the examination and comparison of references, models, drawings, documents, &c. Our success in the prosecution of rejected cases has been very great. The principal portion of our charge is generally left dependent upon the final result.

All persons having rejected cases which they desire to have prescuted are invited to correspond with us on the subject, giving a briefhistory of their case, enclosing the official letters, &c.

FOREIGN PATIENTS. very extensively engaged in the preparation and s of patents in the various European countries. For the transaction of this business we have offices at Nos. 66 Chancery Lane, London; 29 alevard St. Martin, Paris; and 26 Rue des Éperonniers, Brussels. We think we can safely say that three-fourths of all the European patents secured to American citizens are procured through our

patents secured to American citizens are procured through our Agency.
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.

Circulars of information concerning the proper course to be pursued in chaining patents in foreign councies through our Agency the requirements of the different Patent Offices, Sc., may be had gradis appearable and office in the council of the council o

## CAUTION TO INVENTORS.

Messrs, MUNN & CO. wish it to be distinctly understood that they neither buy nor sell patents. They regard it as inconsistent with a proper management of the interests and claims of inventors, to participate in the least apparent speculation in the rights of patentees. They would also advise patentees to be extremely cautious into whose

hands they entrust the power to dispose of their inventions. Nearly fifteen years observation has convinced us that the colling of patents cannot be conducted by the same parties who solicit them for others, without causing distrust.

### BUSINESS CONDUCTED CONFIDENTIALLY.

We would inform inventors that their communications are trepted with the utmost confidence, and that the secrets of inventors confided to us are never divulged, without an order from the inventor or his acknowledged representative.

### TESTIMONIALS.

The annexed letters, from the last three Commissioners of Patents, we commend to the perusal of all persons interested in obtaining Patents:—

Messrs. Munn & Co.:—I take pleasure in stating that while I held the office of Commissioner of Patents, more than one-fourm of all the office of Commissioner of Patents, more than one-fourm of all the bubble of Commissioner of Patents, work than one-fourm of all the bubble 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.

Immediately after the appointment of Mr. Holt to the intersects of your employers. Yours, very truly,

Immediately after the appointment of Mr. Holt to the office of Postmaster-General of the United States, he addressed to us the subjoined very gratifying testimonial:

Messrs. Munn & Co.:—It affords me much pleasure to lear testimenty to the able and efficient manner in which you have discharged your duties of 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.

Messrs. Munn & Co.:—Gentlemen: It gives me much pleasure to say that, during 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 geneve, 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.



- S. B. L., of N. Y .- We know of no instrument which is specially manufactured for testing the strength and purity of cider. A hydrometer would be of some use, but not soreliable as the judgment of an expert, founded on inspection and tasting. Pure milk and pure cider are seldom found in commerce. The purest cider is sometimes called champagne.
- O. C. W., of Pa.—The yellow substance in the stones which you send us is mica, one of the three constituents of granite
- O. G., of Minn.-We have worn out several pairs of india-rubber soles on leather boots, and liked them very much. Manufacturers have them put on at 75 cents per pair. Any one may be very thoroughly and carefully performed, or they will peal off.
- J. C. R., of Ind .- Your question has been thoroughly answered on page 313, Vol. II. (new series), of the Scientific Am-ERICAN. Whether it is competent for State laws to authorize the transfer of an interest in a patent, by levy and sale, has never, as we believe, been settled by judicial decisions. It certainly cannot be done as the laws now stand.
- A. L., of Ohio .-- Your mode of driving the needle in sewing machines is not patentable, unless some nevel effect is obtained by it, as it would be regarded as a mere substitution of one mechanical equivalent for another. We think a very limited claim might be obtained on the feed. The thread controlling opparatus does not differ sufficiently from others that are in use, to be arus ... ~tentable.
- E. E. W., of N. H.—You will find pretty good treatises on pyrotechny in any of the large encyclopedias. Professor Cutbush, of West Point, published a large book on the subject about 30 years ago. The only other book we remember is a small treatise by Mr. Mortimer.
- G. H. A., of Wis .- The recipe you name is correct, and in skilled hands will produce a good article. We know of no cheap varnish which is durable. The cheapest varnishes are made of white turpentine or resin dissolved in oil of turpentine; dryers should be added
- T. D. S., of Pa .- We put little faith in fly traps and fly poisons. The molasses or sugar which it is necessary to mix with the poison attracts to a house about as many as are killed. We know of no substance which will killflics and at the same time be safe for a child to eat.
- C. H Y., of N. Y.—The most approved process for case-hardening is to inclose the article to be hardened in a case filled with horn or similar substances, and heat it for about 6 or 8 hours, according to the size of the article.
- T. M., of Mo.—The only reliable way to determine the variation of the magnetic needle is by actual experiment. On certain lines upon the earth's surface, called "lines of no variation," the needle points towards the northpole. Such a line at the present time passes a little centh of Cape Lookout, and through the center of Luke Erie, in a N. N. W. direction. The magnetic poles are about 15° from the poles of the globe, and they change their longitude about 1° in 12 years, vibrating between certain limits. In Londan, in 1576, the variation was 11° casterly; from 1657 to 1662, it dan, in 1576, the variation was 11° easterly; from 1557 to 1502, it was reduced to nothing, and then slowly advanced to its maximum in a westerly direction, which, in 1812, was 2-10 17' 18". Since that time it has been slowly decreasing. On the N. E. boundaries of the United States, the variation is full 17° West; in Wisconsin, about 9° East; and in Oregon, about 22°, the needle there pointing nearly N. N. E.
- L. H. R., of Ill.-The idea of carrying the smoke and cinders of a locomotive, by a pipe, over to the rear of a train of cars, is an old device. It was illustrated in Vel. II. (old series) of the SCHENTIFIC AMERICAN.
- J. M. M., of Mo .- To learn with certainty which are the five highest structures in the world would require more labor than the knowledge is worth.