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New Printing Press.

The accompanying engravings represent different perspective views of an improvement in printing presses, invented by J. H. Utter, a practical printer in this city, and for which application for letters patent, is now pending. Too much importance can hardly be attached to any improvement in the "art preservative of all arts." This invention is not of a class designed to expedite what may be called rapid power printing; but to render easier and faster the operation of what is ordinarily termed a hand-press, or one in which the motive power is entirely manual. It is well understood that hand-presses produce the best work, and that fine wood engravings, and the like, when it is necessary to give them the best possible effect, are always worked on some form of this species of press.

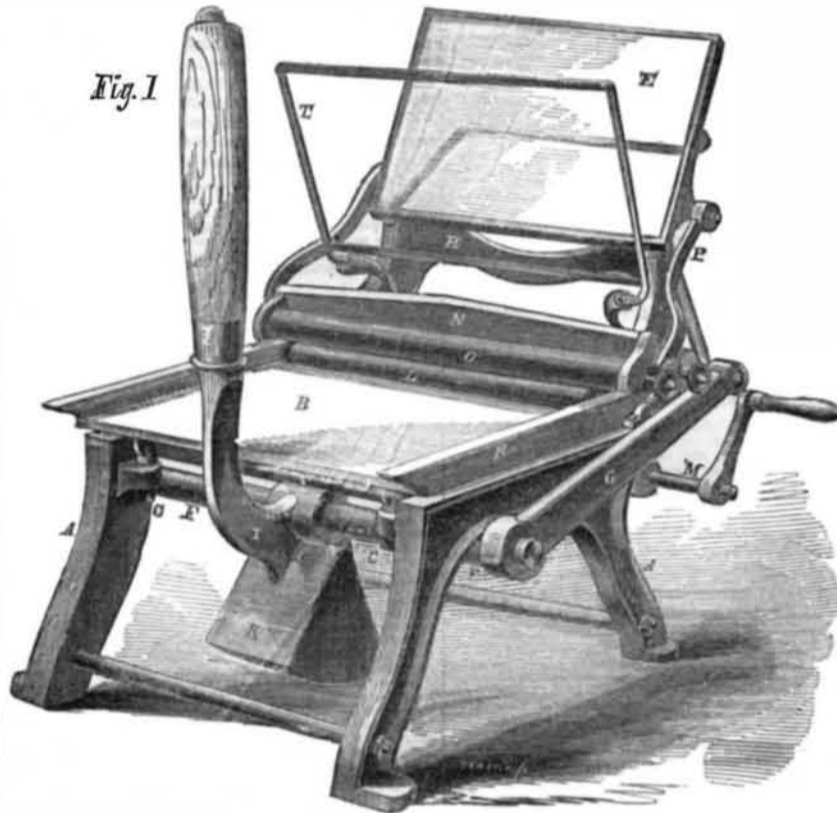
Those familiar with the operation of the common hand-presses, will readily appreciate the importance of this improvement, on learning that the whole operation of rolling the form, flying the frisket, folding down the tympan, moving the bed, and producing the impression, is, with this press, performed by a single movement of the lever or handle I. A is the frame, and B the stationary bed on which the form is supported. C C are screws which serve to regulate the height of either side or the whole of the bed, to produce a perfectly even impression, or to balance any preponderance of type or engraved face which may offer more resistance to the impression on one side than the other. D D are centers, to which are rigidly hinged the platen E, the face of which carries the blankets, which serve their usual purpose of softening and equalizing the impression. F is a stout shaft mounted in suitable bearings beneath the bed. G G represent stout levers, keyed on each extremity of F. H represents a casting which acts as a toggle lever, to transmit the force of the impression to the platen. I is a stout handle fixed on F, by which the motion is imparted. K is a heavy mass, cast on I, and which serves partially to balance the gravity of the other parts. L is an ink distributing roller, mounted in fixed bearings, and which receives both motion and ink, from other rollers, actuated (when commencing to work) by giving a few turns to the crank M. N is a light frame, in which are mounted the soft inking rollers O. The frame N is connected to the platen E by the links P, and is free to travel across the bed on the side bearers R, whenever such motion is imparted by the movement of E. S is a shaft, mounted nearly in the axis of motion of E. It carries a light frisket, I, which is impelled by a coiled spring shown in Fig. 2, into tolerable vigorous contact with the face E, so as to confine a sheet thereon, in the usual manner, by covering its edges.

Fig. 1 represents the press in the proper position to receive a form of type on the bed B, and to receive a sheet of paper on E. The frisket T is held away from the face of E, by its contact with a fixed stop, not represented. On imparting a downward motion to the

handle, the arms G are elevated, and through the medium of the casting H, the platen E is moved forward, claspings the paper between itself and T, and descending into contact with the form, on the bed B, when it assumes the position represented in Fig. 2. Meantime, the

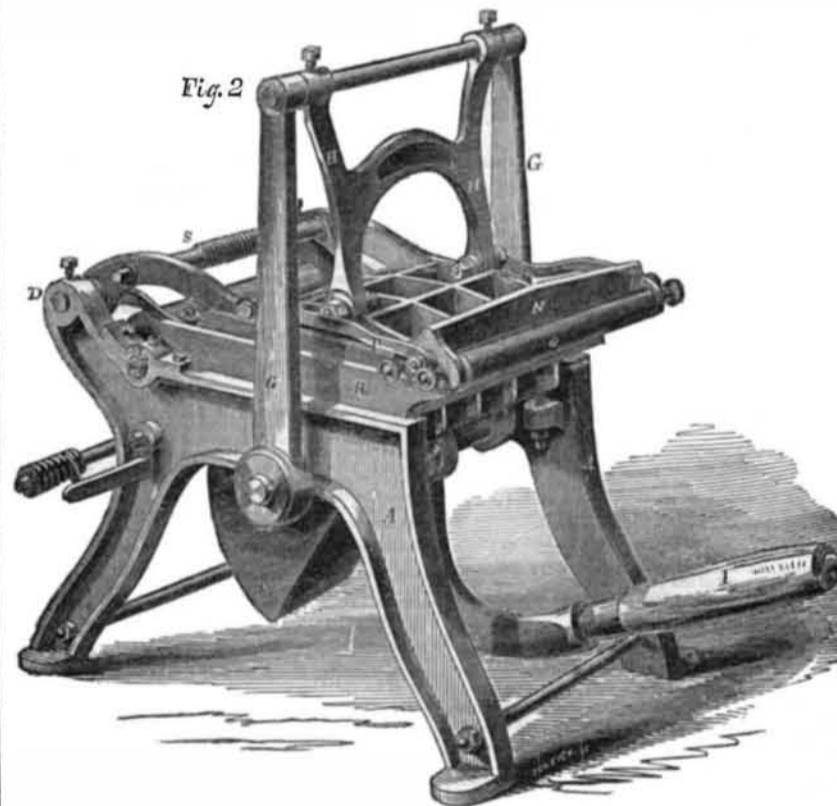
links, P, have pushed the frame N, and with it the inking rollers O, across the form, and laid the ink thereon, in the usual manner. The final termination of the downward motion of I acts, as will be observed, from the position of the parts in Fig. 2, at a great purchase, so

UTTER'S PRINTING PRESS.



as to produce a very powerful impression on the form. On lifting I, all the motions are reversed, the levers G move backward, acting on H, to elevate the platen E, and while these parts are returning to their places, the rollers

O are drawn again across the form, inking it for a new impression. As the platen E recedes into the position represented in Fig. 1, it leaves the frisket T in the position indicated, and allows the printed sheet to be readily



removed, and another to be substituted in its place. It will be observed that the inking rollers O, which are two in number, are compelled by the motion of N to travel twice across the form—once, as the platen is brought down, and again as the platen is elevated—so that the types are liberally and uniformly inked as by the ordinary arrangement, and the whole operation is conducted not only rapidly and easily, but with a very high degree of

perfection. By means of a simple device, not distinctly represented, motion is imparted to the distributing apparatus M L, at each movement of E, so that the crank M does not require to be touched after the operation of printing is fairly commenced, and is only employed to give a suitable distribution of the ink at the commencement. We have seen the press in operation, working very rapidly. There are many points in this machine, among

which may be mentioned the ordinary axial motion of the rollers, &c., which being common to all of the best presses, we have not deemed it necessary to describe. As a whole, the press appears highly efficient and durable, and we predict for it a quite extensive use for printing all moderate sized jobs. For further information the inventor may be addressed at No. 9 Spruce street, this city.

The Benefits of Machinery.

The *British Workman*, a periodical devoted to literature as connected with mechanical pursuits, contains in its number for the past month a very able article on improvements in the "pottery art," in which it very graphically sets forth the benefits conferred upon workmen by improved machinery. It says:—

"Time works many changes both in men and things, and the last thirty years have shown not a few instances which at the time were regarded by the working classes as injurious, have, in the course, of time, been found to be 'blessings in disguise.' Within the recollection of many persons, horses and even hand power were in use at the Lambeth potteries for crushing the clay; and the potters all used wheels, called 'kickers,' which were turned by the foot. When Mr. Green determined to introduce the new wheel into his manufactory, the whole of the workmen struck. All the men left, except one, who was allowed to continue at his kicker until his death, a period of fifteen years. He earned 30s. a week, while the man with the improved lathe, who sat next to him, earned double that sum. So much quicker could the potter work at the new wheel than the man at the kicker, that he could make as many stoneware ink bottles for 6d. as the other could throw off by his machine for 1s. 3d. Since the day of the kicker the number of men and boys employed at Mr. Green's pottery alone has increased fivefold. What strikes and riots were witnessed in Lancashire and Yorkshire in bygone years on the introduction of power looms and other machinery. Shortsighted policy said—'These will injure the working classes, and reduce the number of hands employed.' The result, however, has been very different from what the desponding and faint-hearted dreamed of. Those very inventions which were regarded with such bitter hostility, have, in the providence of God, been the means of extending the commerce of our nation to an extent previously unknown.

The old kickers could not possibly have supplied the present demand for pottery, neither could the old hand looms have produced one-half of the cloth now required for the clothing of the people. Men and women are now employed by tens of thousands in the weaving mills throughout the manufacturing districts, and they can produce far more work and earn better wages than under the old system. What was thought to be a national evil has proved a national good."

Iron Churches.

Iron churches, 70 feet long, 40 feet wide, and 20 feet high, capable of accommodating 700 persons, and costing about \$5000 each, have been erected recently in the neighborhood of London. They are lined with wood, and papered. They can be taken down and moved to other locations, if desired. Although more iron houses have been built in New York than in other city in the world, we have never heard of an iron church having been erected in any of our cities.

We learn from the *Lake Superior Journal*, of the 20th ult., that there was plenty of ice in the Lake on that date. This has been the most backward season on record.



[Reported officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING JUNE 30, 1857.

FOUNTAIN LAMPS—Henry W. Adams, of New York City. I claim providing the burner cup with an internal cylinder or lining, E, to leave an open bottomed, but close topped passage, A, around the burner, in communication with the tube or passage, D, coming from the fountain or reservoir, said internal cylinder or lining being provided with an opening, C, opposite the tube or passage, D, substantially as and for the purpose specified.

[This improvement has for its object the prevention of the overflow of oil at the burner cup when the lamp may be carried carelessly and tilted, also the prevention of oil running down the outside of the lamp. The sides of the burner cup are extended above its cover, to form a receptacle for the oil that may flow over when expanded by heat—useful improvements.]

SMELTING FURNACE—Charles C. Alger, of Newburgh, N. Y. I claim an improved furnace constructed substantially as described, that is, with its hearth or crucible and boxes of an elliptical or elongated form, substantially as and for the purposes specified, in combination with two mouths—one at each end for working and tapping—and two or more tweezers at each side, so arranged as to introduce the blast in the direction of the breadth, and for the objects explained.

MAKING BOLTS AND RIVETS—Joel R. Bassett, of Cincinnati, O. I claim first, the clamp, e f d r t, constructed substantially as described, and arranged on the periphery of a rotating stock in such manner as to be readily accessible for inspection and replacement, in combination with the friction roller, p, for the clamping and releasing of the bolt or rivet.

Second, in combination with the above, the yielding rest, i, j, and divided cutter, k, l, by means of which the rotation of the clamp stock severs the blank, the end of the rod being contracted during the act of separation, and afterwards released by the retraction of the rest and cutter, i, j, k.

Third, the arrangement of heading dies, s, and adjustable stationary cam, n, o, in combination with the clamps and the perpendicular face of the plate, l, substantially as and for the purposes set forth.

MACHINE FOR RIVETING BOILERS—Sylvester Bennett, of New Orleans, La. I do not claim of itself the employment of a set or tubular punch, to close the metal around the rivet before the riveting operation, when such set is uncombined with the riveting punch or other devices, by which the upsetting or heading up of the rivet is effected, and has to be removed before the said punch or other device can be operated, as such sets are used in riveting by hand.

I claim the employment, in combination with a riveting punch or plunger of a hollow set, fitted to slide upon the exterior of the same, and operated to close or set the metal around the rivet before the operation of the punch or plunger commences, and hold the same closed during such operation, substantially as described.

[This invention relates to the construction of boilers by steam power, and consists in fitting to the exterior of a plunger for riveting, a tubular die, to serve as a "set" to close the plates to be riveted together in making boilers, &c. When a rivet is inserted in a hole that has been punched for it in the plates, steam is admitted under the piston of the set, and the latter is forced upon the metal surrounding the rivet, and exerts a great pressure; the punch is then brought into action, by steam pressure, on the point of the rivet, and completes the operation of riveting.]

IRON PAVEMENTS FOR STREETS—Geo. W. Bishop, of Brooklyn, N. Y. I do not limit my claim to the use of all the features of my invention in connection, as good results may be obtained by the use of some of them without the others; but the best results will be obtained when all the parts are used in connection.

Nor do I limit myself to the making of the blocks of a quadrangular form, as other forms, such as the hexagonal may be substituted, although I prefer the quadrangular form.

I do not claim paving streets with blocks of cast iron. But I claim making cast iron paving blocks with a series of transverse draining grooves, substantially as described, which when completed and laid will form grooves running from the middle of the street towards the side gutters or sewers, as set forth.

I also claim forming the surface of iron paving blocks with a series of inclined planes and shoulders, substantially as described, to prevent horses from slipping, while at the same time carriages will roll over the surface without serious impediment or concussion.

And I also claim the said series of inclined planes and shoulders, in combination with the lateral grooves for draining, but which also answer the purpose of preventing horses from slipping, as set forth.

And finally I claim the means of uniting the iron blocks in laying a pavement, by the alternating over and underlapping of the series of blocks, substantially as described, whereby the blocks are enabled to sustain one another, and thereby more effectually maintain the required grade.

MAKING PAPER—Edward B. Bingham, of Brooklyn, N. Y. I do not claim to be the first inventor of agitators for moving the filers of the pulp, and thus causing them to inter-weave.

I especially disclaim the employment of spiral agitators, as in Mackay's patent.

I claim the employment or use of the endless aprons, C, one or more placed within the pulp vat, adjoining the cylinder, B, for the purpose set forth.

[This improvement relates to the cylinder paper machine, and consists in the employment of an endless apron, placed at each end of the cylinder, and close to it, and having a traversing motion to that of the cylinder. The apron lays the pulp like a cross lap on a web of cotton batting, thereby rendering the paper made by such machines much stronger and more difficult to tear, while at the same time it is of a more uniform texture. An excellent improvement.]

BLAST BLOWER—John Brough, of Aurora, Ill. I claim the wind or blast wheel, constructed of the circular plates, b, b, having openings, h, made through them, and provided with hoods, i, the plates having a bucket or piston, d, one or more secured between them, when the wheel thus constructed is fitted within the fan box, A, constructed in the form of a scroll, substantially as described, for the purpose set forth.

[This fan blower is provided with two circular plates, having a bucket secured between them, and each plate has curved openings in it. These plates and bucket form a blast wheel, and are placed within a scroll-shaped box, and so arranged that a good blast is produced when they are revolved; this blower is very easily operated.]

GAS BURNERS—Asa D. Gates, of Binghamton, N. Y. I claim attaching to the top of, or slipping over, the usual burner, the conical or cylindrical supplemental chamber burner, as and for the purposes set forth.

MAKING HORSE SHOES—Henry Burden, of Troy, N. Y. I do not claim the process of passing the shoe between the revolving dies generally, but limit myself to the particular devices by which I have rendered it practical.

First, I claim the described feeding apparatus, and in connection therewith the mode set forth of cutting off the rod; also the self-acting device for stopping the feeders, and the mode of renewing their action at the proper time.

Second, I claim the mode of bending the rod and placing it in its proper position between the swaging dies as described.

Third, I claim the flange on the upper swaging die, for the uses and purposes specified.

Fourth, I claim the combination of the revolving, creating and punching die with the revolving swaging dies, by which the operations are successively and automatically performed.

Fifth, I claim the devices set forth for taking the shoe from the upper and confining it to the lower dies, and finally taking it from the lower dies and conducting it to the flattener.

Sixth, I claim also the means described for flattening the shoe.

Seventh, I claim the combination and arrangement of machinery by which the several processes described are performed successively by one machine, and without aid from attendants.

I do not mean to limit myself to the precise means for performing the operations set forth, as they evidently admit of several variations.

But I claim those devices or their equivalents which shall substantially effect the same purpose.

STEAM RADIATOR FOR HEATING APARTMENTS—J. H. Chester, of Cincinnati, O. I do not confine my claim to gas as the only means of heating the portable radiator, but intend to use any method of heating to secure the object as set forth.

I claim the portable radiator, A, constructed with plain inner surfaces, the deflector, B, boiler, C, and tube, D, all constructed and arranged substantially as and for the purposes set forth.

DISTRIBUTING APPARATUS OF FLOURING MILLS—Alfred T. Clark, of Lancaster, Pa. I am aware that a single series of spouts has been connected with a bolt, as in the patent of E. & J. M. Clark, patented June 6, 1854. I shall not therefore lay any claim to this device, but limit my claim to the double series of spouts and valves, so arranged in connection with the bolt and open conveyor, A, as to give me facilities for separation and mixing not attainable by a single series.

I claim as my improvement on the mill of E. & J. M. Clark, patented June 6, 1854, the double series of spouts and valves, arranged and connected with the bolting chamber, substantially as set forth.

I also claim the arrangement of the conveyor, A, in combination with the double series of valves and spouts, as set forth.

WHIFFLETREE HOOK—Anthony Cooley, of Paw Paw, Mich. I claim providing the outer extremity of the hook socket, A, with an open slot, C, and spring seat, D, and fitting the feather spring, F, and the shank of the snap, G, in the same, substantially as and for the purposes set forth.

Second, I claim furnishing internally each of the cheek pieces of the open slot, C, of the hook socket, A, with an acroslot, H, and the snap, G, with two short journals, I, and fitting these journals in said slots, and holding them in place by means of the feather spring, F, substantially as and for the purpose set forth.

[This is a neat, simple and useful device, and apparently superior to anything heretofore contrived for confining the trace to the whiffletree, because it has no springs or projections exposed for dirt to collect upon; and by simply pressing the thumb upon the snap of the hook, the trace can be instantaneously detached or confined.]

EARTH EXCAVATOR—Curtis Colby, of Wilson, N. Y. I do not claim the mounting and using an excavator upon wheels; nor suspending its sides upon pivots or gudgeons; neither for escape of the earth by letting the bottom free, as I am aware of these being machines used with those principles.

Neither do I claim the method of elevating the excavator by the cog wheels, C and D, acting upon the drums, H H, or the chains attached thereto; nor the method of varying the direction of the machine by the tiller, K.

But I claim first, The use of the levers, E and F, with their combination, for the purposes set forth.

Second, The suspending the arms, S S, to the frame at a point, P, above the level of the top of the excavator, thus securing the elevation of the hind as well as the fore part at the same time.

Third, I claim causing the return of the bottom of the excavator to its proper position for reloading by means of the strap, I, and roller, L, as described.

UTERINE SUPPORTERS—W. E. Cooke, of Philadelphia, Pa. I do not claim the pivoting of the bars, B B and E E, together at the points, c r.

But I claim first, The manner of uniting the bars, B B and E E, to each other and to their pads respectively, through the intervention of the side or hip bars, C C, so that the truss and supporter may not only be adjustable, but also self-adjusting to the person or body of the wearer as set forth.

I also claim in combination with the front pad A, an adjustable pessary, made and operating substantially in manner set forth.

GAS REGULATORS—John H. Cooper, of Philadelphia, Pa. I do not claim the inverted cup spring and valve, as such are common to other gas regulators.

Neither do I claim broadly the hinging of the cup and valve to the interior of the casing.

But I claim the combination of the inverted cup, C, arm, D, and valve, H, when both valve and cup are attached directly and permanently to an arm hinged to the interior of the casing, substantially in the manner set forth and for the purpose specified.

HORSESHOE—Wm. Cooper, of Brooklyn, N. Y. I claim the use of a metallic plate horseshoe covering the base of the hoof, having a suitable stopper fitting into a screwed opening in the same, or an equivalent therefor, constructed in the manner and for the purposes substantially as described.

PRINTING INK—George Matthews, of Montreal, C. E. I claim the use of the calcined green oxyd of chromium for making ink for printing from engraved plates, from types, or for other kinds of printing, as described.

VALVE GEAR FOR STEAM ENGINES—Sidney Maltby, of Dayton, Ohio. I do not claim effecting the reverse and cut-off by having the wrist adjustable on a link or slotted arm, because with the first device great complication is necessary in order to produce the desired results, and in the second a like complication is necessary in order to effect the reverse and cut-off while running.

But I claim the means described for effecting the reverse cut-off and lead, when said means are arranged directly on the wrist of the engine crank, and used as a substitute for the common link and hook motions, substantially as and for the purposes set forth.

[This invention is one of great importance, as it dispenses entirely with the complicated link and hook motions usually employed for effecting the reverse of the engine and cut-off and lead of the valve. The improvement consists in the direct attachment of the adjusting devices to the wrist of the engine crank, said devices being used as a substitute for the link or hook motion.]

RAKING ATTACHMENT FOR HARVESTERS—John McIntosh, of Geneva, Ill. I am aware that endless aprons and sliding plates have been frequently employed on harvesters, for the purpose of discharging the cut grain from the machine, and I therefore do not claim the employment or use of such separately or in themselves considered.

But I claim the peculiar method described for withdrawing and releasing the sliding plate C, when the same is used in combination with the endless belt, B, in the manner and for the purpose set forth.

[This raking attachment is automatic. It consists of an endless apron, combined with a reciprocating discharge plate. The cut grain falls on the apron, and is gathered towards the discharging plate, and at every revolution of the wheel this plate is drawn out by a cord attached to a hub, and the gavel of cut grain falls. A spring then forces the plate back into place, ready for another operation. It can be set to gather gavels of different sizes.]

HARVESTERS—D. S. McNamara, of North Hoosick, N. Y. I do not claim the lever E, for that has been previously used, and is quite a common device for raising and lowering the sickles of harvesters.

But I claim connecting the shaft, I, by means of the arm, K, and link, l, with the rod, F, placed at the underside of the draught pole, C, and connected with the yoke ring, substantially as described for the purposes set forth.

[This is an improvement in means for adjusting the sickles of harvesters, whereby a sickle may be conveniently secured at the desired height from the ground at the will of the driver to pass over obstructions. The device for executing this object is very simple, and by merely backing the team, if the cutter should become clogged, it can be instantly raised.]

FENCES—James Moore, of Pittsburg, Pa.—I do not claim the use of wire or other metallic wire as being new in the construction of fences.

But I claim the use of lozenge-formed slats, and the alternate twisting of the wires between the slats as herein described, and for the purpose set forth.

FRAME FOR COMBINED MOWERS AND REAPERS—J. A. Moore and A. H. Patch, of Louisville, Ky. We do not claim making the rear and outer end of the frame in one piece; nor do we claim the indiscriminate use of "angle iron."

But we claim making the rear and outer end of the frame of a combined mower and reaper of a single bar, E, of angle iron, when said bar E is bent into the form, and united to the frame bars, A, A', C, and to the finger bar, D, and shoe, F, as described, and shown in the drawings.

[This improvement consists in the peculiar construction of the frame of the machine, whereby the platform for securing the cut grain may be readily adjusted to the frame when the machine is to be used for a grain harvester, and this frame offers no obstruction to grass when this machine is used for a mower. This construction is of angle iron, and also possesses the advantage of protecting the shoe at the point of its union with the finger bar.]

CHILLING PLOWSHARES—James Oliver and Harvey Little, of South Bend, Ind. We claim the process described, consisting in placing the surface of the chill in such a position in relation to the other parts of the mold that the melted metal shall first come in contact with the chill at the edge of the share, in the manner and for the purpose specified.

ELASTIC LOOP FOR BEDSTEAD SLATS—Chas. Robinson, of Cambridgeport, Mass. I claim an elastic self-attaching loop for bedstead slats, substantially as specified, as a separate article of manufacture not heretofore known.

STREET LANTERNS—John Reese and C. N. Tyler, of Washington, D. C. We do not claim the conical aperture or the valve in themselves.

But we claim the arrangement of the funnel-mouthed aperture D, and the valve, F, in the bottom of the lamp, substantially as and for the purposes set forth.

PRESERVING GREEN CORN—David Rowe, of Baltimore county, Md. I claim the art and process of preserving green corn in the ear, by extracting the pith or heart from the cob, and seasoning and drying the inside of the cob as rapidly as the outside for preserving the virtues and juice of the grain, and preventing the collection of mold or corruption, as described, and for the purposes set forth.

FIREARMS—Jacob Shaw, Jr., of Hinckley Township, Ohio. I claim, first, The combination and arrangement of the trigger with the cocking ratchet and hammer, whereby the force of the main spring will cause the trigger to continue its motion in a backward direction after it has been forced back to a certain point, and the introduction of the hair trigger as described, whereby the trigger may be arrested when it has reached that point, and the hammer by this means be held at the cock point, or by a simultaneous action of a force on the hair trigger in a backward direction, the backward motion of the trigger may be allowed, and a consequent disengagement of the hammer be produced to effect a discharge.

Second, I claim the combination and arrangement of the trigger with the rotator ratchet and locking lever, and the revolving chambered cylinder or block, whereby this block is revolved and locked from the front, substantially as set forth and described, instead of the usual mode of the ratchet wheel and pawl in the rear, intended and designed hereby to claim each part and all the parts named in the above claims in connection with each other, without intending to limit myself to construct them in the precise form set forth and described in the specification or of any particular dimensions, but intending to reserve the right to vary them as I may deem expedient, while I attain the same ends by means substantially the same.

FARM GATES—Wm. Sherwood, of Beloit, Wis. I claim the use of the crank, M, M', M'', in combination with the latch N, or its equivalent, and the weight, W, for the purpose of opening and shutting a sliding gate E, in which arrangement the gate E' is opened by one-half revolution of the crank M, and shut by the other half revolution of the same; the latch N stopping the crank, M', M'' at the end of each half revolution, and the whole being set in motion by a weight, W, which may be wound up when necessary like the weight of a clock.

I also claim the arrangement and combination of the lever Z, and the connecting rods, Y, Y', with the two parts of the gate E 1 and E 2, by means of which one part of the gate E 1 when moving in one direction opens or closes the other part of the gate E 2, by a corresponding motion at the same time in the opposite direction as described.

BRAKE FOR WAGONS—Hugh Slater, of Auburn, N. Y. I claim the peculiar arrangement and combination of devices by means of the tongue or pole, a, a, the hinge b b, the V shaped connection, c c c, the brake rod or bar, D, D, and the connections with the brake arms, substantially as described.

I also claim the combination of the pole or tongue, a, a, and stop-bar, c c, with the sliding bar, D, D, or its equivalent, whereby the stop is raised when the carriage is backed, and lowered when it is moved forward, substantially as described.

MORTISING MACHINE—H. B. Smith, of Lowell, Mass. I claim, first, The adjustable compound treadle, H, when used in combination with a mortising machine for the purpose, and substantially as described.

Second, The pawl, E, or its equivalent, in combination with the table, B, to prevent the cutting of the chisel from jarring the foot, not intending by this to confine myself to the exact form represented, but adopting any other substantially the same.

CARTRIDGES—Gilbert Smith, of Buttermilk Falls, N. Y. I do not claim generally the making of the joint between the barrel and the breech by the expansion of a cartridge case so as to be retained in the chamber after the discharge.

But I claim making the cartridge case, or at least, the cylindrical portion thereof, of india rubber cloth or vulcanized india rubber, so that though entering loosely into the chamber by confining it within the chamber, it may be expanded laterally by the force of the explosion of the charge against a joint between the barrel and breech made near the middle of the chamber to close the same hermetically, and (unlike metal) may after the explosion contract itself by its own elasticity, so as to admit of its being easily withdrawn from the chamber by the fingers of the operator, substantially as described.

[A portion of this cartridge case is made of india rubber cloth, or vulcanized india rubber, for the purpose of serving as an elastic packing by its lateral expansion consequent upon the explosion of the charge, and thus prevent leakage.]

RAKING APPARATUS FOR HARVESTERS—Daniel C. Smith, of Tecumseh, Mich. I claim the mode of operating the rake of a grain harvester, by means of the mechanism described.

GAS GENERATORS—J. W. Smith, of Washington, D. C. I claim the combination of the retort, B, with the partitions, F, when the said partitions are furnished with openings, I, arranged in such a manner that the oil or other fatty matter, and the gas produced by its decomposition shall flow through the retort in currents crossing each other, and alternately dividing and uniting in the manner described, and for the purpose specified.

HARVESTERS—Chas. T. Stetson, of Amherst, Mass. I am aware that the finger and cutter bars of reaping and mowing machines have been variously attached, so as to conform to the irregularities of the ground, and I therefore do not claim attaining this end irrespective of the peculiar means employed for that purpose.

But I claim attaching the finger bar, C, to the frame, A, by means of the guides, I, I', and the grooved segment guides, e, the inner end of the bar being provided with friction rollers, d, which are fitted and work in said segment guides, e, the parts being arranged substantially as described for the purpose set forth.

[This improvement relates to peculiar devices for raising and lowering the sickle and finger bar, and adjusting them more or less obliquely with the surface of the ground. The finger bar is also connected to the main frame in such a manner, whereby it and the sickle are allowed to rise and fall independently to a certain extent of the frame, to conform to inequalities of the ground.]

JOURNAL BOXES FOR SHAFING, &c.—Daniel Taylor, of Carbondale, Pa. I claim as a new article of manufacture a journal box or section of a journal box composed of a brass lining and an iron body, when the two are solidly united together by casting the latter upon the former, substantially as set forth.

DIE STOCK—James Teachout, of Waterford, N. Y. I claim constructing the die holder, B, of the screw cutting die stock in the particular manner described, so as to give firm support to the inner portion of the top of the dies, as well as to their bottoms and sides, and thereby relieve the scroll and guard plates from all the upward strain or pressure otherwise upon these plates by the inner portion of the dies in cutting screws.

COLORING YARN IN THE BOBBIN—James Thomson and W. P. Wakelee, of New Hartford, N. Y. We are aware that a vacuum has been used to facilitate the admission of the dyeing material into the pores and around the fibres in the dyeing of cloth. We do not therefore claim the use of a vacuum for the purpose of dyeing generally.

We claim the use of a vacuum, in combination with our arrangement of apparatus to render the same available in the dyeing of yarn in the cop, bobbin, and the like, without first reeling it into hanks or skeins as described. The whole apparatus being constructed and operating substantially in the manner and for the purposes set forth.

SEPARATING OIL FROM STEAM—Robt. Hale, of Roxbury, Mass. I claim the described apparatus for separating oil from steam, operating in the manner substantially as set forth.

HARVESTERS—Henry D. Hammond, of Batavia, N. Y. I claim the shaft, p, with arms, q, and related parts, attached thereto as described, in combination with the swinging flanged supporting bar, B, and the journaled cutter and finger bar, l, connected with arm o, when said parts are arranged for joint operation in the manner and for the purposes described.

ADJUSTABLE FENDER POSTS FOR SAW MILLS—Henry Harpold, of Racine, O. I claim first, The fender posts arranged in two parts and adjustable, secured together by hook bolts, and working on a pivot on the fender beams, all operating in the manner and for the purpose set forth.

Second, I claim the jaws and blocks attached to the saw sash and working on a swivel arranged with the adjustable fender posts, for the purpose of giving the saw pitch, and making it follow a desired curve, as set forth.

HARVESTING MACHINES—John K. Harris, of Allensville, Ind. I claim imparting to the cutter bar of harvesting machines a uniform reciprocating motion, by means of the duplex drive wheel, K K', when used in combination with the rocking pinion, L, said wheel and pinion being geared by means of alternate and oblique sets of cogs, k' k' l', in the manner set forth.

ELECTRIC TELEGRAPHS—Harrison G. Dyar, of New York City. Patented in England Feb. 3, 1851; I do not claim any particular mode of obtaining the synchronism of the vibrations; nor confine myself to vibrations or any particular form of motion to produce the like effect, nor the use of any particular means for obtaining the electric action; nor the kind of signals, signs, marks or recording; nor particular modes of arranging the apparatus, leaving it to those who use my invention to employ such apparatus, whether vibratory, rotary, or oscillatory, as they may deem best suited to accomplish the object desired and under the different circumstances which may arise.

But I claim constructing and operating signaling telegraphic apparatus in such manner that electric pulsations representing signals, resulting from the actions of two or more operators at work at the same time, are imparted alternately and successively to a single main conductor or wire of communication, and are received at the station and distributed in the same alternating succession, whereby a single main conductor may be made the instrument by which two or more operators can be simultaneously employed in sending different messages, either in the same or in opposite directions, substantially as set forth.

I also claim transmitting different electric signals, resulting from the actions of two or more operators working at the same time, at the same or opposite ends of a single main conductor, by means of a single main conductor combined with two or more sets of corresponding signal-sending and signal-receiving conductors, which represent the different signals in use, and are appropriated to different operators by means of intermediate circuit-making and circuit-breaking apparatus, which are moved in harmony at the signal-sending and signal-receiving stations, in such manner as to present themselves successively in all the positions required to permit currents of electricity to be passed alternately through the corresponding members of the signal-sending and signal-receiving conductors, whereby the apparatus at each station can at the same time be employed in transmitting and receiving signals representing messages, substantially as set forth.

I also claim transmitting electric pulsations to a main conductor, and distributing them from the same main conductor by two sets of circuit-making and circuit-breaking apparatus, which are moved in harmony at each other, but are moved by the mechanism independently of the other portions of the telegraphic apparatus, in such manner that the harmonious movement of the circuit-making and circuit-breaking apparatus at either end of the main conductor is not impeded or controlled by the irregular movement of other parts of the telegraphic apparatus.

I also claim sending and receiving signals, as stated, by apparatus so arranged and combined with the main conductor that in operating, the impulse that closes the circuit shall last but for a moment, while the contact maintained at the station where the shall is received shall last a longer period, so as to signal the necessity of exact synchronism in the movement of the mechanism at the two stations.

SEWING MACHINES—Elias Howe, Jr., of Cambridge, Mass., and Wm. R. Bliss, of Boston, Mass. We claim first, In connection with the mode of forming a seam by means of two threads, as described, we claim the sewing and holding of the loop of the needle thread after it is inserted, by means of the point, c, of the shuttle and finger, V, or their equivalent, and the withdrawing of the needle from the material to be sewed before the shuttle thread is passed through the loop, substantially in the manner and for the purpose described.

Second, We claim the combining and arranging of the mechanism which works the shuttle through the sewing and holding of the loop of the needle thread, and in connection therewith so arranging the mechanism which works the needle thread as that they shall co-operate and form the seam when the standard is inserted in objects of a tubular form, as described.

CARRIAGE TOP—R. S. Jennings, of Waterbury, Ct. I claim the hood or attachment constructed of the jointed bow, A, provided with the screen or apron, C, and provided with loops, f, at its upper part, and tenons, e, at its lower part, and applied to the top as shown and described, for the purpose set forth.

[This improvement consists in providing a screen of prepared cloth attached to a folding bow and applied to a carriage, whereby the carriage seat may be conveniently and easily enclosed, and the occupants of the carriage completely sheltered when caught in a storm of rain.]

PERMUTATION LOCK—Frank G. Johnson, of Brooklyn, N. Y. I claim the combination together of the tum-

blers, 1111—using two or more of said tumblers—with the exterior pins, n n n, and the pins, n' n' n', with the springs, s s s, the bolt, E, and locking latch, G, substantially as set forth.

METALLIC PACKING FOR STEAM PISTONS—Daniel Lasher, of Brooklyn, N. Y. : I do not claim metallic springs intervening between the piston and the packing rings.

But I claim the manner described of constructing the bent or folded metallic springs, to take an even and extended bearing on the inner side of the packing ring or rings, when provided with the lips or projections, 2, to keep the springs properly in place, substantially as specified.

IRON TRUSS FRAMES FOR BRIDGES—Francis C. Lowthorp, of Trenton, N. Y. : I do not desire to confine myself to the precise form of straining plate described, as the same may be adapted to receive a greater or lesser number of lower cord rods, or to any description or number of diagonals and verticals.

But I claim the straining plate, B, in combination with the rods, G and H, when the latter are connected to the plate, substantially in the manner set forth, and when the said plate is arranged to receive the vertical or verticals and diagonals of iron truss frame bridges.

SELF-ACTING RAKES FOR HARVESTERS—S. T. Lamb, of New Washington, Ind. : I claim, in combination with a rake having the motions described, the gyratory beam, M, and the rock shaft L, when the rake is attached to said rock shaft as shown, and the whole operates in the manner set forth.

I also claim in combination with a rake operating as above described, the slotted guide G, for regulating or governing its motions, when combined with the beam M and shaft L, as set forth.

I also claim, in connection with a rake having the motions described, the combined use of the spring K, for holding it in place, and the set screw M, for regulating the extent of descent of said rake, substantially as set forth.

SAWING MACHINE FOR FELLING TREES—Matthew Ludwig, of Boston, Mass. : I claim the combination of the vibrating radius, with the pitman I, and saw stack, M, for the purpose of guiding and rocking the saw circularly in its own plane, substantially as and for the purpose set forth.

[This machine is simple and well adapted for sawing down the giants of the forest. It requires but a small amount of power to operate, as the saw is arranged to move over friction rollers, and in its movement back and forth rocks circularly in its own plane, and is thereby caused to take hold of only a small portion of the diameter of the tree at a time.]

COMPOUND FOR COVERING HAMS—Carter Van Veeck, of Macomb, Ill. : I claim the described composition for covering hams and other provisions, or other bodies, for the purpose of preserving them from decay or decomposition, consisting of rosin, gutta percha, and tallow, in the proportions substantially as specified.

[This composition is rendered liquid when heated, and is easily applied; and, when cool, it makes a most complete air and water-tight coating for preserving hams, and other animal substances from decay by exposure to the oxygen of the atmosphere. High testimony to its utility and efficiency has been given by persons of long experience in the meat-packing business, who have given it a thorough trial.]

STARCH FROM MAIZE—William Watt, of Belfast, Ireland : I claim the manufacture of starch from maize or Indian corn, substantially as set forth, by steeping the whole or uncrushed corn in water heated to a temperature of from seventy to one hundred and forty degrees Fahrenheit's thermometer, such water being changed several times during the steeping, or applied in continuous or intermittent streams, and then grinding or levigating it with water heated to a temperature of from seventy to one hundred and forty degrees of Fahrenheit's thermometer, and then separating the starch as described.

CONDENSING LIQUIDS IN GAS MAIN PIPES—John Walton, of Louisville, Ky. : I claim the employment substantially as described at any convenient place or places in the gas pipes of one or more vessels or receptacles containing alcohol or other hygroscopic agent, for the purpose specified.

[This is a useful improvement for remedying a great evil with which those who burn gas are too well acquainted, namely, the choking of gas pipes during winter by severe frost. This evil is caused by freezing the moisture carried off by the gas into the pipes. The improvement consists in placing vessels containing alcohol or other agent having a great affinity for water, in such situations as to absorb all the aqueous vapor in the gas, before it enters the service pipes for distribution to consumers.]

SLIDE VALVES FOR STEAM ENGINES—Thomas Winsor, of Baltimore, Md. : I claim the connecting of the passage through the ends of the main valve, denominated the Meyer's valve, by the channel or opening described.

DECATING CANE JUICE—Leonard Wray, of London, Eng. : Patented in Belgium, June 20, 1854. These comprise the whole of my treatment, and I submit that they constitute an entirely distinct and new process, being one whereby excellent crystallized sugar has been, and can always be, made from the plants I have before named; and I therefore claim the process set forth.

LOCKS—Ludwig Baier (assignor to Joseph Lippincott and Wm. C. Barr), of Pittsburg, Pa. : I claim, first, The sliding tumbler box, E, carrying the tumblers, e, e, which by the sliding motion of the box are brought into contact with the bits of the key, when arranged and constructed substantially as and for the purpose described.

Second, The three armed "follower" G, when arranged, constructed, and operating on, and in combination with, the tumbler box, E, bolt, B, and tumblers, e, e, with their slots, n n, substantially as and for the purpose set forth.

I am aware that bit plates of various shapes are used, and a well known device, but the same have been in all cases simple. I do not claim these, but what I do claim is, the key, H, when constructed so as to form a double bit plate, and operating on the tumblers in the manner substantially as described.

SHIPS' CAPSTANS—Robert Dunbar and John F. Robertson (assignors to the Buffalo Eagle Iron Works Co.), of Buffalo, N. Y. : We do not claim giving a variable movement to the capstan, irrespective of the particular means employed for effecting the purpose, for capstans have been so arranged as to have a variable movement.

But we claim the arrangement of the cam, J, and eccentric, h, upon the shaft G, operated by the lever, I, for throwing in and out of gear the pinions J and I, as set forth.

[This improvement has for its object the imparting of a variable movement to a capstan, so that it may be operated either by a quick or slow motion, as required; this is accomplished in an effectual and simple manner by a peculiar arrangement of the devices claimed.]

AUTOMATIC RAKE FOR HARVESTERS—Joseph S. Manning, of Philadelphia, Pa. : I claim the described raking device, consisting of cross bar I, teeth, 2, 2 and 3, swinging bars, 4, 4, and supporting roller, 5, when the same is used in combination with the peculiarly constructed platform, P P R R, in the manner and for the purpose set forth.

STRAP PILLW BLOCK FOR SHAFING, &c.—George H. Reynolds, of Medford, Mass. (assignor to himself and D. B. Hinckley), of Bangor, Me. : I do not claim dividing journal boxes vertically, as this has been done before.

But I claim the described journal box, consisting essentially of the pieces of bushings, B B', and strap, B, constructed and operated in the manner and for the purpose set forth.

SEWING MACHINES—William Sage, of Durham Center, Conn. (assignor to Henry Sage), of Berlin, Conn. : I claim, first, Combining the spring stop plate with the needle, and loop former as described for the purpose set forth.

Second, Giving the point of the loop former an up-

ward motion as the needle rises, and the point of the loop former expands to form the loop, substantially as described, and for the purpose stated.

Third, The construction of the loop former and its arrangement in connection with the trip, h, and slide N, by which it is made to open to spread the loop for the reception of the needle, and close to enter the next loop as set forth.

VALVES IN STEAM CYLINDERS—M. E. Stacy (assignor to W. John Way), of Flemington, Ga. : I claim the arrangement of valves in steam cylinders described, operating in the manner and for the purpose set forth.

CROSS CUT SAWING APPARATUS—Henry F. Wilson (assignor to himself and Henry B. West), of Elyria, O. : I claim the radius bars in combination with the vibrating bars for the purpose of straining the saw, so as to enable me to give the saw a reciprocating motion without guides.

Second, I claim placing pins, b, c, at a greater or less distance apart than pins, d, d, for the purpose of giving a rocking motion to the saw while reciprocating, said motion to be graduated according to the kind of wood to be sawed, the whole to be arranged, constructed, and operated in the manner and for the purpose specified.

RE-ISSUES.

PORTABLE FIELD FENCE—James G. Hunt, of Cincinnati, O. : Patented Dec. 16, 1856; I claim connecting the panels or sections of a fence by the projection of one or more rails in whole or in part from one section or panel, beyond the slats or battens, and between the slats or battens of the adjoining panel, and supporting and locking the fence by compound triangular braces, substantially as shown and described and arranged with reference to the projection of the rails, or their equivalent keys, for the purpose specified.

LOOMS FOR WEAVING PILED FABRICS—Mertown C. Bryant, of Lowell, Mass. (assignor to E. B. Sigelow, of Boston, Mass.) : Patented May 19, 1856; First, I claim the method of transferring the pile wires in series from the cloth to the shed of the warps, substantially as specified.

Second, I also claim the method of successively cutting the rows of loops or pile on the pile wires substantially as specified.

MACHINES FOR MANUFACTURING HAT BODIES—Jas. S. Taylor and Elijah Sturdevant, of Danbury, Conn., and administrators of Hiram J. Sturdevant, deceased, assignees of Lansing E. Hopkins, of New York City. Patented Dec. 7, 1852; What is claimed to be the invention of Lansing E. Hopkins, is the method of felting hats by passing them or rolling them between the revolving endless planking table and series of rollers as described, or their equivalents, whereby a vibrating, reciprocating, and forward motion is communicated to the hats, thereby working it up in a perfect manner. But this we claim only when the vibrating and reciprocating motion is communicated to the hats in the direction of the revolving motion of the traveling belt, so as to give the hats a rolling motion alternately forward and back as they pass through the machine.

Objections to Hollow Walls.

MESSRS. EDITORS—I do not agree either with you or your correspondents in your advocacy of hollow walls, for the following reasons:—

Such a wall must necessarily be weak, it has one vast joint pervading it from top to bottom, the occasional binding or heading bricks recommended not being sufficient to hold it properly together. The great crying fault of American houses (brick ones especially) is, that they are built too weak; this system would lead to still greater evils in this direction. The gable-end walls of ordinary dwelling houses are seldom more than one brick thick, laid with six or eight courses of stretchers and one course of headers. As a general thing, the brick are now miserably laid as regards strength; the back joints are not regularly mortared, and the bricks are not kept wet during the process of building. Now if the hollow system be introduced, builders will still endeavor to construct the end walls as before, one brick thick, plus the hollow or space in the middle—in short, the wall will be built up in two distinct portions, each entirely of stretchers, with here and there a header, which will, of course, not come flush with the inside of the wall by the thickness of the space allowed in the center of wall; but no matter, they will fill this want with mortar, and when all is finished, who will be the wiser? The ordinary wall is weak enough in all conscience, but still there is some little adhesion between the face and back stretchers, independently of the header courses, as some of the mortar of the bed squeezes up and partially fills the back joint. In the hollow wall, there would of course be no cohesion at all beyond the few headers which might be introduced. In the case of fires, the present kind of wall, when the wood-work, which in a measure supports it, is burned, falls down too readily—then, what would be the chance of the hollow wall standing? We would have more firemen killed and wounded than there now are, though the number is great enough at present. An effort ought to be made to strengthen our walls, not weaken them, egg-shell and flimsy as they are.

Another reason why I object to the hollow wall is, that it forms a receptacle for vermin; it would be an intolerable nuisance to have rats and mice eternally quadrilling up and down these vertical ball rooms. Still greater would be the annoyance when they turned them into cemeteries.

And further, I think the hollow walls are not needed at all, for the very reason why their advocates press their adoption, viz., that they cause greater dryness in the house. The great fault of the climate on this continent is

its great dryness and stimulating qualities. The evil has been much increased by the introduction of close stoves, and, above all, hot air furnaces, or heating apparatuses. I think that it would much conduce to the health of the people, if some measures were taken to make the air of rooms damper instead of dryer than it now is. When I advocate a moderate degree of humidity in the atmosphere, I would be understood as referring only to healthy moisture, not the foul exhalations from damp cellars, which people generally seem quite to ignore. Does any house improver want a giant evil to eradicate?—if so, let him attack foul air. There is one great necessary of life that we want in all our dwellings, that is scientific ventilation. ED. M. RICHARDS. Lebanon, Pa., July, 1857.

[Our correspondent supports his first objection to hollow walls, by facts drawn from the bad workmanship of masons. This is a very poor foundation on which to build solid arguments for solid walls. If the hollow is better than the solid wall, it should stand upon its own merits, and not be condemned, because masons are in the habit of building miserable solid walls upon a principle, never advocated by us, to be applied to hollow walls. We have constantly referred to the construction of hollow walls in connexion with the use of the Flemish bond—(one header and one stretcher, succeeding one another in each row of brick)—and we do not wish to be held responsible for any other view of the question. He also objects to hollow walls, on account of their want of strength, assuming that they must be weaker than solid walls, composed of the same amount of material. We believe he is not correct on this point. Walls constructed with a row of headers to every two rows of stretchers, would be stronger than solid walls, and not so dangerous to firemen in cases of fire. The hollow wall would not be "one vast joint," as he states, but would be formed of a series of cells. It has been found that cellular hollow girders, made of iron, are stronger than those not cellular, constructed with the same amount of material. His objection to such walls, being grand ball rooms for rats and mice, is somewhat musical, and apparently he makes a good opera out of it, winding up, as he does, with the "dead march."

He also objects to hollow walls, because they are drier than those which are solid. The argument he advances is the super-dryness of our climate, which requires moisture to be healthy. This is a strange idea to advance. Every person knows that damp walls are unhealthy; they are frequently the cause of rheumatism and chills and fever. Every means which can be provided against such dampness in walls, should be employed, and if hollow walls afford a remedy, they certainly should be advocated, not condemned.

We are as strong advocates as he is for good ventilation, and have no doubt but he is right in his remarks respecting the want, generally, of the proper amount of humidity in rooms heated by hot air furnaces; but these are questions quite separate from that of "hollow and solid walls."

Natural Self-Printing.

A new era has dawned in the publication and historical representation of scientific objects by the introduction of natural self-printing. This is the most important discovery made in the art of printing since Gutenberg's invention, and the honor of it is due to Dr. Alois Auer, of Vienna. We will here describe the successive steps of this process. In order to obtain a copy from the original corresponding thereunto in its minutest details, be it a plant, a flower, an insect, a piece of cloth, or any inanimate object, we must proceed in the following manner: Place the object to be printed between a well polished copper plate and a lead plate, and then let the two plates pass between two cylinders moving parallel to each other. The pressure produced by the cylinders causes the original to leave a perfect picture of itself upon the lead plate. This lead plate needs no special preparation, but the common lead-plates used in every tinstore will answer every purpose, if they are only smooth on one side. After being submitted to this pressure between the

cylinders, the lead plate will no longer be perfectly flat, but slightly bent to the form of the cylinder; it must therefore be placed upon a smooth, hard surface, that its shape may be restored both through its own weight and a little mechanical aid. As soon as this is done, one or more copies can be taken from the plates, if it be charged with any colored fluid, and treated generally as any copper-plate form when you wish to get an impression. It is evident that the copies taken directly from the lead plate must be limited in numbers, as the soft lead cannot long resist this pressure, and soon becomes, in consequence, unimpressible. But to obtain a large number of copies the lead form may be stereotyped, or a galvanic precipitate thrown upon it to make a printing plate from which a proper form may be obtained. The lead plates only need to be subjected to the action of a smoothing cylinder to render them again fit for use, and the copper plates may also be used again. N. G.

[Our contributor has furnished us with some beautiful impressions of leaves, which were taken in the manner described.]

Patent Case.

A case was tried before Judge Ingersoll, United States Circuit Court, in this city, on the 2d inst., relating to the machine for cutting moldings, patented by Alfred T. Serrell, May, 1848, re-issued patent June, 1853. An injunction was moved for against Collins & Pell, for infringing this patent. The motion was denied, and the case ordered to be tested by a trial at law, the plaintiff being required to establish the validity of his patent at the next term, before an injunction can be issued; but if the defendants are not then ready to try the case, an injunction will be issued against them without the trial.

Chloroform in Seasickness.

Dr. Landenen, a physician at Athens, informs us that he has discovered a specific for seasickness, viz.: ten to twelve drops of chloroform in water. He says the chloroform, in most cases, stops nausea, and that persons who have taken the remedy are soon able to stand, and get accustomed to the motion of the vessel. Should the sickness return, repeat the dose. This remedy was tried on twenty passengers during a very rough sea voyage from Zea to Athens, and all, with the exception of two, were cured by one dose. The minority (two ladies) recovered on taking a second dose.—Medical Times and Gazette.

Fish and Flesh as Food.

Now, when the price of meat is so high, it will not be out of place to call attention to the nutritious qualities of fish. Payen fed a dog on a mixture of 80 grammes of eels and 50 grammes of bread. On comparing the excrement with the digested food, he discovered that 85 per cent of the fat and 92 per cent of the nitrogen of the eel had passed through the intestines. Feeding him afterwards on bread alone, the excrement was found to be much poorer, containing less fat and nitrogen. After being fed on eels and mackerel the animal grew larger and fatter.

Lemon Juice in Dropsy.

Lemons are recommended for dropsy in a Russian medical journal, and are said to be beneficial in the most hopeless cases. The first day one lemon was given, after taking the peel off, and cutting it up into small pieces in sugar; the two following days three were given, and afterwards eighteen every day. For nourishment, meat was given. In every case the water came off on the seventh day.

Eggs for Burns.

The white of an egg has proved of late the most efficacious remedy for burns. Seven or eight successive applications of this substance soothe the pain and effectually exclude the burned parts from the air. This simple remedy seems to us far preferable to collodion or even cotton.

Lime in the Eye.

If quicklime gets into the eye, so as to darken the cornea by the lime penetrating the coating itself, the best remedy is water saturated with sugar.