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## Test Papers.

On the otherwise barren rocks which fringe the shore of the Cape de Verd Islands grows the archil—a famous seaweed of lichen, renowned among dyers. By a particular process of manufacture this archil yields a beautiful blue pigment, known in the chemical laboratory by the name of *litmus*. Few colors are more fugitive than litmus. Being a fine violet-blue, it is changed to red by so minute a portion of any acid that it becomes, when properly applied, a test of the presence of the latter substance. As it is so frequently desirable to know whether a fluid be acid or alkaline, one of the first practical lessons to a student in chemistry is to prepare litmus test paper thus: Put into a tumbler half an ounce of litmus and three ounces of water; let them remain together in a warm place for a few hours, then filter the dark blue liquid from its impurities, divide the solution obtained into two parts, pour one portion into a saucer, and soak strips of white writing paper in it until it has acquired a distinct blue color. If not colored enough by once dipping and drying, repeat the operation. When dry, preserve these strips in a box labelled "Blue litmus test papers." These serve to test any fluid, to ascertain if it has an acid reaction. It is instructive to learn how very small a portion of any acid in water will be indicated by the reddening of the litmus. With the second portion of the fluid mix cautiously a few drops of lemon juice until it is red; then color paper as before. When dry, this "red litmus test paper" serves to indicate the presence of alkalies, a class of bodies opposed to acids. Red litmus test paper on being put into any fluid that is alkaline, such as lime water, is immediately restored to its original blue color. Put the ashes of a cigar into water; the liquid when "tested" will indicate the presence of an alkali. To test stale milk; if blue paper becomes red the milk is sour—it is acid.

## A Perverted Nautical Taste.

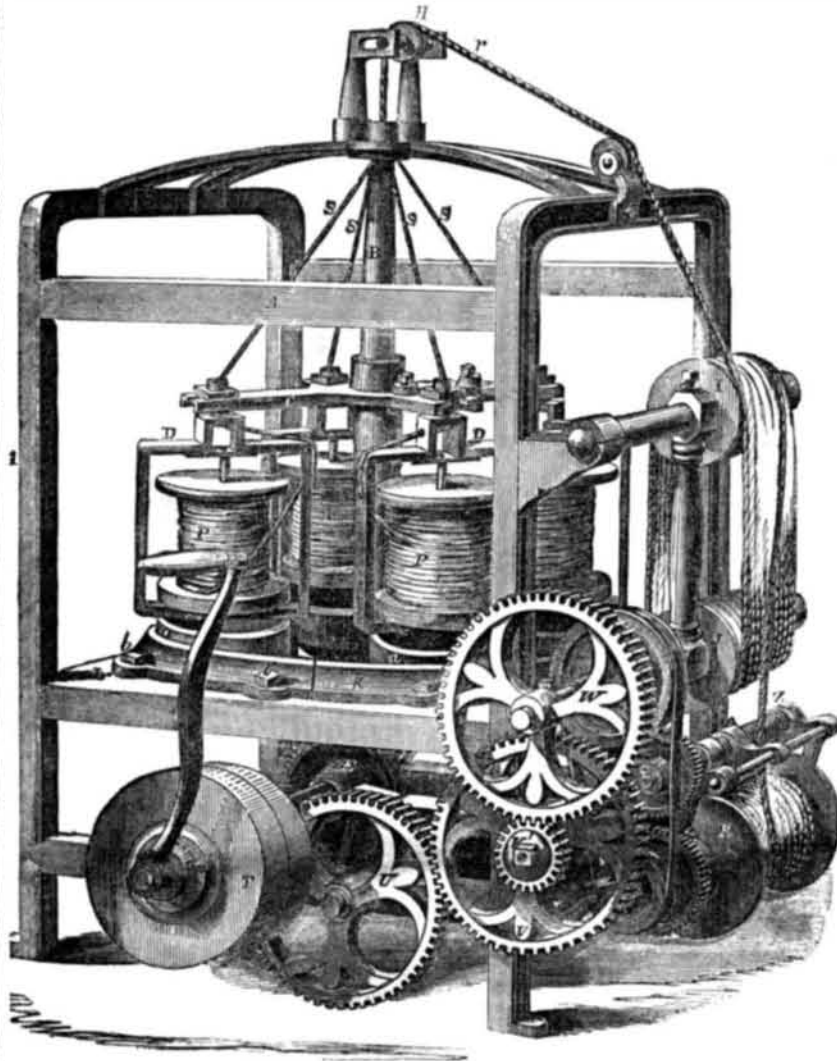
The editor of the London *Mechanics' Magazine* says "the frigate *Niagara* is without exception the ugliest man-of-war we have ever seen. On visiting her at Gravesend, we approached her on the bow, and looked in vain for a single beauty of form about her."

What a nautical taste! If the *Niagara* had a bow as bluff as a tub, and overhanging like the mountains in a Chinese picture, it would no doubt have excited the admiration of our cotemporary.

## Erratum.

Mr. Willis Humiston's candle machine, illustrated in our last number, was patented July 24, 1855. The patent of 1854—the date of which was given by mistake—was for another and less valuable improvement, in which the candles are drawn from the molds by pulling on the wicks. We may add that both inventions are applicable to the manufacture of sperm and stearine, or adamantine candles, as well as tallow.

## WALLWORK'S ROPE MACHINE.



The accompanying figure is a perspective view of the improved rope-making machine, for which a patent was issued to Milton Wallwork on the 7th of April last. The improvement relates to the "sun and plane" rope machine, and consists in the means of controlling the speed of the strand flyers, for enabling the twist of the strands to be varied with facility. The figure represents the application of the machine to laying rope in a very small space, obviating the use of long rope walks.

A represents the frame of the machine, and B is the upright or main laying spindle, which rotates in suitable bearings in the frame, and carries a spider, C, at the top, and one at the foot above the table or platform. These contain the bearings of the journals of the strand flyers, D D, in which are the strand spools, P P P, but cans may be employed instead of the spools. E is a horizontal driving shaft, on which, under the table, is a bevel wheel, gearing into a bevel pinion on the foot of the laying spindle, B. Above this spindle is a guide pulley, H, to conduct the rope *r*—formed by twisting the strands, S S, S S, in the laying top—to the reel rollers, I J, from which it is carried and wound up regularly, as fast as it is made, on the capstan, R.

By the rotation of the laying spindle, B, it will be observed how the strands, S S, are laid or twisted into rope in the laying top, and afterwards wound or built on the capstan. But in laying rope, the twist given to the united strands being contrary to that of the strand twist, it is necessary to give the strands a counter twist at the time the laying twist is given to the united strands. It is desirable and necessary that means should be provided to give the strands a variable twist according to the kind of rope to be manufac-

tured. In this machine the devices for accomplishing this object are exceedingly simple.

Each of the flyers, D D, is furnished—just above its lower journal—with a roller, *a*. Immediately below the level of these rollers on the table, L, (which has a circular opening in it, large enough to allow the whole frame of flyers to revolve,) there are bolted a series of segments, K, which form portions of a stationary ring encircling the rollers, *a*, and in contact with them. These segments are adjustable by means of the screw bolts, *b b*, passing through slots. As the spindle B rotates, carrying the strand flyers round, the contact of the rollers, *a a*, with the interior face of the segments, K, causes these rollers to rotate the strand spindles, thus giving them rotation in a contrary direction to that of the lay of the rope, and the necessary motion to produce the counter strand twist. One or more of these segments may be easily moved out of contact with the rollers, *a a*, or taken off altogether. When all the segments, K, forming a continuous ring, touch the rollers, *a*, the flyers receive a motion on their axes during their whole revolution round the spindle, and thus give the maximum twist to the strands. By the removal of one or more of the segments K from the circle, the rotation of the strand flyers on their axes is graduated; the greater the number of segments removed, the less will be the twist of the strands. To prevent the untwisting of the strands when the rollers *a* are passing those parts of the circle where they do not touch the segments, there are ratchets and pawls (not seen) which allow the rollers, *a a*, to turn only in one direction. In this manner the strand spindles are rotated, and their motion regulated as desired by

the simple stationary sectional ring K.

The take-up motion is produced by gearing from a pinion on the main shaft of pulley T, giving motion to wheel U, thence to wheel V, pinion V', and wheel W, on the shaft of roller J; a band passing from a pulley on this roller shaft rotates the capstan R; the rope is laid regularly on the capstan by a traversing guide on the rotating double screw shaft Z, and the take-up of the capstan, as the coil increases in size, is regulated by graduating its rotation through compensating gearing. This rope machine is compact in form, and very simple in its construction and arrangement of parts. The efforts made to construct short rope machines of as great simplicity as the machinery now employed in long rope walks will doubtless result in practical success.

For more information address Mr. Wallwork, or Mr. Stephen Williams, at Hoosick Falls, N. Y.

## Interesting Gunpowder Experiment.

The following is from the *Druggists' Circular*, a very useful and able new weekly, published in this city:—

In his seventh lecture, at the Smithsonian Institute, Dr. Reid described the failure of an intending incendiary to do a great act of mischief by the very means he adopted to make his success more certain. Thus to ensure an explosion of gunpowder in a certain case, the fellow had covered it with a quantity of spirits of turpentine, but on igniting it only the turpentine burnt, and the powder contained as before. The philosophy of this the lecturer showed, by a striking experiment wherein, again and again, turpentine poured on a quantity of gunpowder was ignited and burned out, and the powder remained unburnt. This was explained on the principle of the candle, that the gunpowder acts as a wick to the turpentine, and will not itself ignite so long as any of the turpentine remains to burn. A piece of common cotton cloth, such as ladies' dresses are made of, was then burnt; and then a piece of similar texture which had been dipped in a solution of sal ammoniac, was exposed to the action of fire, but would not burn. A similar piece, steeped in a solution of silicate of potash, was also shown to be quite incombustible.

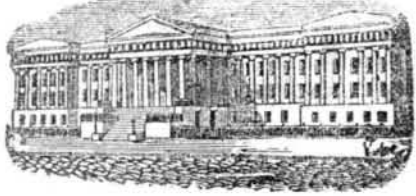
## Silver in New Jersey.

Paterson and vicinity apparently is destined to be one of the most noted spots in the country. Already it has become celebrated for the discovery of pearls, and now, the *Guardian* states that veins of copper and silver have been struck in Garret mountain. A shaft about fifty-five feet deep has been sunk, and a bed of copper ore, sixteen feet thick, has been found. Some distance below the copper a vein of silver ore has been struck. The thickness of this at the place where the shaft was sunk is stated to be between two and three feet. No intimation is given of the nature of the ores of either metal, and if not entirely a myth, analysis will probably show both these "ores" to be much too poor for working.

## Collodion Photography.

English papers record the decease of Frederick S. Archer, the inventor of the "collodion process" in photography. After numerous experiments, he discovered the mode of rendering collodion sensitive and obedient to the photographic process, by means of which the most interesting objects in nature as well as art are now portrayed, not only with unerring correctness, but are also transfixed almost as quick as the lightnings' flash. The collodion process has enabled skillful artists to take copies of shore scenes while passing along on board of a steamboat.





LIST OF PATENT CLAIMS FOR THE WEEK ENDING JUNE 9, 1857.

BLOTTER—R. G. Allerton, of New York City: I claim a blotter constructed substantially as described, having a convex surface containing the blotting material, with a handle in the opposite side, so as not to revolve, but to be used by a single rocking motion.

REPAIRING R.R. BARS—Lyman Beebe and George F. Smith, of Michigan City, Ind.: We claim the wedge-shaped jaws fitted to the iron to be worked, in combination with the iron bed block fitted to receive them, into which they slide, and by which they are firmly held. We also claim the two jaws, in combination with the double lever, in which they rest, and by which they are readily opened by raising to receive and discharge the rails.
HOLDING THE BIT IN THE BRACE—George Benjamin, of Avoca, N. Y.: I claim the invention of the hook and lever and standard, as shown, Nos. 3 and 4, as applied to the brace socket, and the application of the spring, No. 6, the burr, No. 7, and the notch, No. 8, on the outside of the brace socket, as represented and described.
ROUNDING AND BACKING BOOKS—Theodore Bernger, of Philadelphia, Pa.: I am aware that a roller and swing frame are employed in the backing machine of John A. Elder, patented July 23, 1853. I therefore do not claim the parts.
BUT I claim first, Giving a sliding motion to the clamps, F, F', by means of segments, M, M', and pinions, q, q', or any equivalents to the same, substantially in the manner and for the purpose specified.
Second, I claim the sliding table, D, plate, E, E', and clamps, F, F', in combination with the swing frame, Z, and roller, W', the whole being constructed and operating substantially in the manner and for the purpose set forth.
Third, I claim the employment, in combination with the sliding clamps, of adjustable blocks, I, substantially in the manner and for the purpose described.
COVERING INSULATED WIRE WITH LEAD OR OTHER DUCTILE METAL—Samuel C. Bishop, of New York City: I claim causing the metal and insulated wire to move in separate channel toward a die, where they are to be united, and preventing the gum from being heated while it and the lead advance toward the die by a current of fluid, passing in a suitable vessel or vessels between the metal and gum to receive and carry off the caloric, all substantially as described.
GROOVING STOVE PIPE—Charles Bigelow, of Hastings, Minn.: I claim the roller, D, having its periphery or face formed of a grooved or concave surface, and a flat surface, the roller being placed within a reciprocating bar, C, and within a yoke, E, arranged and actuated by the lever, F, and ledges, u, u, as shown, whereby the roller is shifted or moved automatically at the ends of its strokes or movements, and made to groove and close the joints or seams of the pipes at one operation.
I further claim the bar, B, when jointed to the upright A, and secured to the projection, c, by the pin, d, as shown and used, in connection with the lever, f, and spring, t, as described, so that said bar may be thrown out automatically from the projection, c, for the purpose of allowing the finished pipe to be removed readily therefrom, and another placed thereon.
[A roller having a groove and also a flat surface is employed in this machine, fitted into a reciprocating bar, and so arranged to shift automatically as to allow the grooved part and flat surface to pass successively over the seam of the pipe. The groove of the roller passes over the seam of the pipe while moving in one direction; the flat surface passes over it while moving in the contrary direction. All the parts are so arranged and operated that the seams of the pipes are closed in a most expeditious and perfect manner.]
STEAM HEATING STOVE—Asa Blood, of Norfolk, Va.: I claim the arrangement of the water chamber, N, chambers, E and L' and o, pillars, H, H', and H2, hollow gates and tubes, R and R', as set forth.
PARING, CORING AND QUARTERING APPLES—Chas. F. Bosworth, of Petersham, Mass.: I do not claim broadly paring, coring and quartering an apple by machinery.
But I claim, in combination with the stationary quartering and coring knives, the fork shaft, when so arranged in relation to each other and to the mechanism operating the machine that it shall steadily propel the apple in the direction of, and while revolving upon, the axis of the corer, whereby one or more apples may be graduated and cored while another is pared.
METALLIC BAND FASTENING FOR BALES, &c.—Asa O. Broad, of Louisville, Ky.: I claim a metallic hoop or band, whose ends are united by the bows or curves, a, a, slide, B, and pin, C, as set forth.
SELF-LOADING CART—J. S. Brown, of Washington, D. C.: I do not claim a revolving elevator nor a scraper alone.
But I claim the combination of a revolving elevator and a scraper, substantially in the manner specified.
I also claim the employment of the cranks, M, M', on the axle, for the purpose of raising and lowering the elevator and scraper by simply turning the axle half a revolution.
I also claim the use of the winch, o, attached to the projecting end of the axle, for the purpose of giving the proper movement to the said axle, in the manner described.
I also claim the arrangement of the lifting bars, Q, Q, cranks, M, M', hangers, S, S, and brace bars, R, R, substantially in the manner and for the purpose set forth.
I also claim the stops, m, m, on the frame, A, arranged in combination with the crank, l, l, substantially in the manner and for the purposes specified.
MANUFACTURING FELT CLOTH—Thomas B. Butler, of Norwich, Conn.: I do not claim the frame driving gear, B, gears, C, D, E, shaft, F, bevel gears, G, G, shaft, H, pinion gears, a, a, chains, h, the four carrier combs, i, i, i, comb circle and spring, j, tripping pins, i2, or the bearings upon the chains for the comb gudgeons, all which are essential parts of the machine as originally invented and patented by John Arnold, on the 15th of July, 1839.
But I claim first, The flanged track plates, o, arranged substantially as described, and for the purposes set forth.
Second, The movable tripping plates, l, l, arranged and operated substantially as described and for the purposes set forth.
Third, The rising frame, S, and rolls, e, e, operated and graduated substantially as described and for the purposes set forth.
CARPET FASTENINGS—David N. B. Coffin, Jr., of Newton, Mass.: I claim a screw having a head arranged at one side of its axis, so that it may be applied and operated as set forth, or so that the screws may require a turn of only a part of a revolution to secure or to release the carpet after being screwed into their places, and whereby it is made practicable to take up a carpet and replace it in a very short space of time, and with great ease. In other words I claim the eccentric headed screws for securing carpets to floors, and for similar purposes.
RAILROAD SWITCH LOCK—Wm. L. Cawthro, of Harper's Ferry, Va.: I claim the arrangement upon the lock plate of the curved securing arm, A, constructed and operated as described, for the purpose specified.

DRYING PASTEBOARD—Patrick Clark, of Rahway, N. J.: I am aware that hollow tables have been used for drying purposes, the materials spread on the top of them to be dried. But I am not aware that one heated hollow table was ever placed above another for such or any other purpose, or arranged in the manner I have described.

And I am also aware that heated hollow plates have been used for heating purposes. But I am not aware that they have been used in the manner described.
I claim the arrangement of the series of hollow heated plates for drying purposes, substantially as described and for the purpose set forth.
CATCH FOR DOORS—Jeremiah M. Crosby, of Norwalk, O.: I claim the employment of the additional soft spring, F, and connecting slide, S, or its equivalent, between and in combination with the bolt, B, and main spring, E, arranged and operated substantially in the manner and for the purpose specified.
BAKERS' OVENS—John Chilcott, of Brooklyn, N. Y.: I do not claim a continuously operating oven, as I am aware that endless chains have been employed in ovens to convey the bread from one part, where it is received, to another part from whence it is discharged, after having been baked during its travel from one part to the other.
Nor do I claim generally the employment within an oven of a horizontal rotating table, as I am aware that small ovens have been provided with such tables, to turn a loaf or other article placed upon it, from time to time.
But I claim providing each car by which the bread is conveyed to and from the oven with a pan or tray, that is hung upon journals, and is overturned at a suitable stage in the baking process, by the automatic mechanical agency described, for the purpose of inverting the position of the bread, and thus causing the bread to be baked more uniformly.
[This improvement is designed to obtain a continuous operation of the oven without any material interruption in the introduction of the dough, and its withdrawal after being baked into bread. It has a horizontal table rotating on a vertical axis, which is furnished with radial tracks, to receive and discharge at the doors covered perforated trays containing the bread. These tracks are so operated that the bread is turned in the oven, to bake all sides of the loaves equally.]
ROPE MACHINES—Wm. R. Dutcher, of Lansingburgh, N. Y.: I do not claim a friction applied between the motive power and the reel, and allow the latter to slip and only wind the rope as made. But I am not aware that an adjustable friction plate has ever before been applied in such a manner by the screw and spring, 23, as to be adjusted and adapted to different characters of rope.
I claim the self-adjusting thimble or cone, combined with the cone or thimble toward which the rope cone by suitable yielding pressure, for the purpose of laying up either the strand or rope and adjusting itself to any inequalities without breaking either the yarns or strands, substantially as and for the purposes specified.
ROOFING MACHINES—J. B. Driscoll, of Knoxville, Tenn.: In view of G. W. Burling's patent, Oct. 23, 1856, I disclaim the broad idea of folding the edges of metallic plates by means of a bar interposed between two parallel bars, one of which is movable.
I claim the employment of a swinging bar, E, hinged or swinging between the frame or side plates, D, D, in the manner and for the purposes substantially as described.
[This machine is designed for forming the vertical laps of sheet metal roofs that run in ridges from the eave to the crown. The sheets are prepared in long strips running from end to end of the roof; these strips are united together longitudinally on the roof, and receive a double lap. It has been very difficult to make such joints accurately. This machine forms them on the roof very rapidly, and in a most perfect manner, giving them a uniform and beautiful finish.]
GRAIN SEPARATORS—Elihu Doud, of Oshkosh, Wis.: I am aware that fans have been employed in various ways for generating blasts, and screens have also been used and applied in various ways in grain separating machines.
I therefore do not claim either of the parts described, separately, or in themselves considered.
I claim the vibrating shoe, N, provided with the screens, g, o, and arranged relatively with the box or chest, C, and deflecting board, b, as shown, in combination with trunk, D, and fan, E, for the purpose set forth.
In this grain separator the parts for executing the different operations required for separating the good grain from impurities are very simple in themselves, and are arranged in an excellent manner to execute their work very effectively.]
CARD PRINTING PRESS—Charles E. Emery, of Canandaigua, N. Y.: I do not claim the principle or manner described of applying the power.
But I claim, first, The general construction of the machine, and the arrangement and combination of its parts, said parts being arranged, combined, and operated in a manner equivalent to that described, so as to accomplish the object of the invention, the operation of each part being adapted to the vibratory movement by which the machine is operated, and the pressure feeding and discharging contrivances of the machine being combined with the inking arrangement described, or with equivalent to it.
Second, The manner of adjusting and operating the grippers, k, k, which hold the card, in combination with the manner of operating and stopping the operation of the plate, r, upon which the card is laid, both being operated by the simple vibratory movement of the moving surface, which gives the impression.
MAKING HORSE-SHOE NAILS—Calvin Carpenter, Jr., of Providence, R. I.: I do not claim the cutting of the nail plate in such a manner as to make the heads and points of the blanks iron opposite edges of the plate alternately, by turning over the plate, as that is done in cutting brads and other cut nails, for which purposes straight cutters are used.
But I claim first, The attachment of the lower die, b, to, or construction thereof, as a part of a plate, l, which has such a sliding movement, horizontally or otherwise, below the lower cutter, at right angles to the movements of the cutters, and closing movement of the dies, as described, that the die receives the blank from the cutters while it is in a stationary condition, and then conveys it under the top die, and in returning the finished nail pushed off it by the lower cutter, substantially as specified.
Second, The gage, K, applied to the lever, G, or its equivalent, which carries the upper die, and operating as described, in combination with a stationary slotted standard, T, by which it is moved out of the way as the dies close, and which also serves to adjust it to give a greater or less width to the nail blanks.
[All kinds of wrought iron nails with heads can be made by this machine, either from cold or heated iron. It has an adjustable gage, to receive plates of different sizes, for making long and short nails. A curved cutter is employed for cutting out the blanks, and the plate is turned over after every cut. The blanks for the nails are cut out without any waste of material.]
SELF-ACTING WAGON BRAKE—M. C. Chamberlain, of Johnsonburgh, N. Y.: I claim the arrangement of the brake bars, G, slotted arms, O, and levers, H, when used for self-acting brakes for vehicles, all operating in the manner and for the purpose set forth.
MITER BOX—George L. Chapin, of Perryburgh, N. Y.: I claim the arrangement and combination of the obtuse angled part, G, with the tilting box, C, F, both parts being adjustable relatively to each other, and to the fixed supporting frame, A, all substantially as described, and for the purposes set forth.
[This is a very convenient miter box, and is capable of operating on timber of any required length. The saw is guided to cut at any angle. A tilting block fixed on a partially rotating center holds the timber to be mitered, and it can be tilted with facility into variously inclined positions, while the stuff to be cut may remain always horizontal.]

PREPARING HUB BLOCKS FOR THE LATHE—Lovett Eames, of Kalamazoo, Mich.: I claim the vertical and stationary hollow auger, H, guide and rest plate, I, with cutters, J, attached, in combination with the rotating arbor, F, and screw clamp, E, attached to the sliding frame, D, the whole being arranged substantially as shown, for the purpose set forth.

[The object of this improvement is to prepare blocks for wheel hubs by boring the timber for a number of blocks at one continuous operation, then sawing them off, ready to be turned into hubs.]
MELODEONS—Wm. Evans, of Lockport, Ill.: I claim the arrangement of the swell to close by the movement upwards or away from the reed tubes, substantially as specified, and the arrangement of the reeds and reed tubes in the heretofore usual manner, for the purpose specified.
And I also claim the stop, D, against which the swell closes, attached to the reflecting board, so as to be removed therewith to leave the reeds exposed, as described.
[In this melodeon the swell closes by an upward movement, or away from the tubes. By this arrangement of the swell the tone of the instrument is greatly improved, and resembles that of the "open diapason" of the organ. The tone is rich and soft when the swell is closed, and very full, but mellow also, when it is open.]
MAKING WROUGHT NAILS—Smith Gardiner, of New York City: I claim, first, The feeding apparatus constructed substantially in the manner and for the purpose specified.
Second, I also claim projecting the finished nail to the reel, so that it can be cut off at the reel.
Third, I also claim the eccentric, y, and spring to hold the nail rod, when rapidly brought back to its place.
Fourth, I also claim vibrating the rod under the two hammers, so as to alternately receive a blow on its different sides, as set forth, and by means substantially as described.
Fifth, I also claim the general combination and arrangement of the several parts of the machine for feeding, presenting, swaging and cutting off the finished nail, by which I make a wrought iron nail of any specified pattern.
GUIDING AND CUSHIONING PUFFET VALVES—Joseph Hyde and Wm. Stearns, of Wilmington, Del.: We claim the application to steam engine pump valves of the V-brace, with the piston working into the chamber or cushion, in the precise manner set forth and described, to prevent mashing or bruising of the valves.
CAMP TENTS—Benjamin Hinkley, of Troy, N. Y.: I claim making the raftered frame of the tent in sections hinged together, so that the frame can be folded for convenient carrying, as described, the folding frame being provided with the jointed tie-braces, or equivalent devices, for keeping the sections in place when expanded, as set forth.
CLAY PULVERIZERS—Ira Mersey and James H. Van Riper, of New York City: We claim the combination of the grated cylinder or separator, O, open at its ends, and supported on its outside by the driving wheels, Q, Q, with the movable and adjustable beaters, M, M, on the shaft, C, C, when the same are constructed and arranged for joint operation, substantially as described.
CARRIAGE BRAKES—George Hanck, of Mechanicsburg, Pa.: I do not claim the arrangement of the block on the axle of a wagon, neither do I claim locking the wheel by means of a pin attached to a lever arranged in the axle.
Nor do I claim locking the wheel by means of a sliding clutch, both of said methods being old and objectionable on account of causing the wheel to be stopped suddenly, without allowing it a chance to slide, and thus causing damage to the wheel by the breaking off of the stop pin or teeth of the clutch.
But I claim providing the semi-circular locking block D with an extension arm, E, and pivoting it to a bracket of the axle some distance from the point of contact with the hub, and arranging it relatively to the lever F and spring G, substantially as and for the purpose set forth.
[This improvement provides a neat, simple and effective lock for braking up light carriages. The invention consists in placing a long lever on the front part of the hind axle, and arranging a pivoted block between the axle and lever, so that when the power is applied to the lever by a cord, the block will be caused to bear perfectly square upon the inner collar of the hub instead of inclining, as when no intermediate block is used.]
SOLAR LAMP—Joseph Hassell, of Brooklyn, N. Y.: I do not claim separately the elevating or depressing of the wick holder and its wick by turning the outer surrounding tube formed with a helix to act on a spring projecting from the wick holder, and the wick holder being prevented from turning by a pin projecting from its inner periphery, fitting into a sliding in vertical groove formed in the outer surface of the inner wick tube.
I claim making the outer and turning wick holder which surrounds the wick holder with a helix or helices to act on a pin or stud projecting from the said wick holder, and preventing the said wick holder from turning by a feather or leathers, or equivalents therefor, on the outer surface of the inner wick tube, substantially as described in combination with the making of the upper end of the inner and outer wick tubes cylindrical and with unbroken surfaces in contact with the wick as described, the better to keep the upper end of the wick parallel with the upper end of the said wick tubes, and for the further purpose of having the surface of the said tubes where they are in contact or close proximity with the wick to present unbroken cylindrical surfaces as set forth.
And I also claim, in combination with the turning wick tube provided with a helix or helices, substantially as described, the employment of a movable nozzle, substantially as described.
SEWING MACHINES—Daniel Harris, of Boston, Mass.: I claim the mechanism for forming and interlocking the stitches, consisting of the beak, a, the catch x, the plate b, and its projection, k, the spring, h, and the needle, when constructed, arranged and operated together in the manner as set forth.
WHEELWRIGHT'S MACHINE—E. N. Kilpatrick, of Byhalia, Miss.: I claim the combined arrangement of the spoke marking apparatus, cutter frames, gauge rod and hub holders in such relation to each other as to enable the spokes of the wheel to be marked and formed with entire uniformity, and unerring accuracy, substantially as specified.
COAL STOVES—John B. Kohler, of Philadelphia, Pa.: I claim the three cases, D, C, D, the fire chambers, M, M, 1 and M, 2, and their respective openings, the air chambers, N, N, 1 and N, 2 with their openings, and the partitions q and q, when the whole is arranged and constructed, substantially in the manner and for the purpose set forth.
BASIN FAUCET—Wm. C. Marshall, and Horace W. Smith, of Hartford, Conn.: We claim the arrangement, application and combination as herein described, for drawing hot or cold water through one nozzle, in the manner and for the purpose substantially as set forth and described.
MACHINE FOR FELLING TREES—Elliot T. Miller, of Chelsea, Mass.: I claim the vibrating bar, F, with cutter G, attached, constructed as shown, the bar F being pivoted in the sliding collar, E, provided with the pawls h, h, and fitted on the rack bar B, which is attached to the tree, I, by means of the brace H, and clamp formed of the screw rods D, passing through the nuts, P, attached to the segments bar, A, and retained in proper position by the bars, f, substantially as described for the purpose set forth.
[A cutter is employed in this machine attached to a vibrating bar, which is pivoted in a sliding collar placed in a rack bar. The latter is attached to the tree to be felled, by a clamp, and the cutter is vibrated by the bar and fed automatically to cut in either direction.]
NAIL MACHINE—E. W. Scott, of Lowell, Mass., and A. M. George, of Nashua, N. H.: We claim forcing the pointing rolls to revolve and advance at the same time to point the nails or spikes, substantially as specified.

HANGING DOORS—Albert W. Morse, of Eaton, N. Y.: I am aware that doors have been suspended upon rollers by means of a standard permanently attached to the door, therefore I make no claim to this.

Nor do I claim the standard roller or any of the parts of themselves.
But I claim giving the roller C an independent motion of the door, thereby allowing the roller to adjust itself to the rail and revolve on it, with its plane parallel with said rail in the manner and for the purposes set forth.
Not intending in these claims to limit myself to the precise arrangement of parts described, but to vary the same at pleasure, while the same ends are attained by means substantially the same.
PORTABLE FENCE—Wm. Morrison, of Carlisle, Pa.: I claim confining the panels together, and also to the braces and sill, by means of a single bolt in the manner described.
CONSTRUCTING WATCH AND LOCKET RIMS—Henry A. Phillips, of Providence, R. I.: I do not claim the striking up of the halves of a case for watches or lockets by means of a die and former.
Neither do I claim the making of locket rims out of single pieces of metal instead of two or more.
Neither do I claim making the same out of sheet metal instead of wire.
But I claim the shaping burnisher, fig. 3, or its equivalent, for the purpose of producing a continuous rim from the same metal upon the halves of watch and locket cases constructed, applied and operated in the manner and on the principle substantially as described.
ROTARY PUMPS—Robert Ramsden, of South Easton, Pa.: I claim the combination of a revolving piston, H, and taper-shaped screw, B, in the manner and for the purpose substantially as described.
[This rotary pump has a tapering screw combined with a scolloped revolving piston, the bearings of the latter being self-adjusting. It operates well, running either fast or slow, and is thus very different in its action from simple screw pumps. It is not liable to become choked with sand or gravel, and it operates with but little friction, and the casing is readily adjusted to enable the piston to work water tight to prevent leakage.]
AUTOMATIC FANS—Lawrence Rebstock and N. Reimel, of Philadelphia, Pa.: I do not claim broadly the driving of revolving fans by clockwork, as such contrivances have long been known and used.
Neither do I claim the revolving of mechanism around a given axis, by placing the mechanism upon movable frames. The rotating domes of observatories, telescope stands, and other species of mechanism are examples of this kind.
But to the best of my knowledge and belief there never has been made a fan driven by clockwork, and arranged as shown, so as to be capable of being readily turned upon an axis, without moving the whole apparatus. The current of air is thus readily directed towards any given point in an apartment. My invention therefore constitutes a new and useful article of manufacture. No apparatus like it has ever before been known or used. Therefore, I claim as a new article of manufacture a ventilating fan constructed as set forth.
[It is not new to operate fans by clockwork, but clock fans have not been made heretofore in such a manner as to change the position of the fan and direct the current of air to any given point in an apartment as is done by this machine. Such self-acting fans are very convenient for warm latitudes. One may be set on the head of a bedstead, and it will keep the air in gentle motion all night.]
SHIELD AND GUIDE FOR CIRCULAR SAWS—G. W. Rodeboy, of Milwaukee, Wis.: I claim, first, Suspending the upper half of a saw, which is arranged to hang over the log to be sawed, a stationary metallic shield for the purpose of supporting the muley-head, and serving as a guard to prevent injury to the operator, substantially as set forth.
Second, The peculiar manner of arranging the circular muley head on the stationary elevated shield, whereby the guides are capable of being adjusted to any position desired, without taking up any portion of the depth of the saw from the collar to the point of the teeth, and are always made to guide the saw just at and above the point of cutting, substantially as and for the purposes set forth.
Third, I claim the springs, n, n, when arranged on the rising and falling muley head and relatively to the saw, substantially as and for the purposes set forth.
[This invention provides a perfect guard against the operator having his hands or any part of his body coming in contact with the saw. It also provides an adjustable muley guide, whereby the saw is directed, just before the cut, at the point of contact with the log, and a full depth of saw cut is obtained in sawing large logs.]
MAKING LAMP GLASS—J. A. Roth, of Philadelphia, Pa.: My claim consists in supplying lamp glass ovens or the flues connected therewith with air pipes, substantially as described.
And I also claim the combination of the discharging flue or pipe, with a tank or reservoir filled with water, for the purpose substantially as described.
ADJUSTING CIRCULAR SAWS OBLIQUELY TO THEIR SPINDLES—G. R. Scriven, of Philadelphia, Pa. Antedated May 18, 1857: I do not claim the use of oblique circular saws for cutting grooves, as such are well known.
Neither do I claim the employment of two beveled washers between a fixed collar on the spindle and the circular saw, as that mode of adjustment presents disadvantages as set forth.
But I claim, first, The combination of the stationary beveled collar on the spindle with the single loose collar, having one beveled face, and the sliding pin connecting said loose collar with the saw, the arrangement and operation being as set forth.
Second, The plane-faced collar, f, fitting the spindle in such a manner as to be easily adjusted at an angle with the spindle between two circular saws, b and n, for cutting tongues and wide grooves in lumber as described.
Third, The sliding pin, h, in the collar g, and sliding through the same into the fixed collar b, or through the saws n, and into the collar f (fig. 2) as the case may be, for the purposes herein stated.
CARRIAGE WHEEL—J. D. Sarven, of Columbia, Tenn.: I claim the improvement in carriage wheels, which consists in the employment of flanged metallic collars, as described, or other equivalent devices, in combination with a wooden hub, and these in combination with the arrangement of the spokes at the hub as described, by which means strength and support is given both to the hub and to the spokes at or near the hub, and by which means I am enabled to use any desired number of spokes in each wheel, thereby preventing indentations being made in the rim of wheel between the spokes, and by which means I am also enabled to use a much smaller hub than those in general use, and at the same time retain a sufficient degree of strength at the hub, the whole being constructed and arranged, substantially as and for the purposes set forth.
I also claim the flanged collars as described or other equivalent devices when used in combination with a wooden hub, if the spokes are arranged as set forth or in any other manner.
HOB FOR CUTTING SCREW CHASERS—G. C. Schneider, of Washington, D. C.: I claim the hob for cutting the threads of screw chasers constructed in the manner described.
PAPERFILE—D. A. Stiles, of West Meriden, Conn.: I distinctly disclaim the use of springs for holding down the follower.
I also disclaim all and every portion of my device which is seen in Collard's patent aforesaid, or in any other bill holder.
I likewise disclaim the broad use of spring catches for sustaining objects; but the combination of a double self-acting spring catch, D, D, with the top or follower, C, of a bill holder in the manner described is to the best of my knowledge and belief a new combination, and is of importance and value so far as relates to that kind of instruments mentioned.
I claim the combination of the double self-acting spring catch, D, D, with the top or follower, C, as set forth.
[A double self-acting spring catch is combined with the upper surface of the top of the "bill holder," whereby

the latter is retained in position at any point to which it is raised. Common bill-holders press down upon the fingers, and thus hinder an examination of their contents.]

MOP HEAD.—E. P. Thompson, of Worcester, Mass. I do not claim a mop holder or clamp having a movable jaw operated by or secured in place by a screw or a ring and hook.

But I claim the improved self-acting mop-holder, made substantially as described, viz. with a spring, a and two bent legs or bars, b b' c c', applied together and operating in manner and in combination with a socket d, in the handle A, substantially as specified.

STUMP EXTRACTOR.—Peter Traxler, of Scottsburg, N. Y. I claim the combination of the three bars, a b c, with the slotted beam, B, and lever L, said beam B, being free to revolve in the manner described.

I am aware of the construction of the lever of Lagrouse and several modifications thereof, and do not claim the reciprocating lever thus used, but simply my combination substantially as set forth.

MANUFACTURE OF BOOTS.—James Scrimgeour, of Brooklyn, N. Y. I disclaim any form substantially like that described in the patent of Chilcott & Snell, before referred to.

But I claim the cutting out or otherwise forming a piece of leather or other material to the shape substantially as described and represented in fig. 1, and the folding of the same as described and illustrated in figs. 2 and 3, to produce the "upper" of a boot, as fully set forth.

[This improvement relates to cutting out the uppers of boots in such a manner that they do not require to be crimped. The seams or parts that have to be closed are brought together with a lap, and the closing operation can be executed with facility by a sewing machine.]

STEERING APPARATUS FOR SHIPS.—Phineas Smith, of Patchogue, N. Y. I do not claim the individual parts of the described apparatus.

But I claim the arrangement of the movable cog, d, d', plate c, pinion e, and ropes as set forth and shown in the drawings for operating the tiller by the steering wheel, A.

ROAD SCRAPER.—Hiram Van Pelt, of Bath, N. Y. I am aware that a scraper has been made to revolve upon pivots placed within a suitable frame, and therefore I do not claim such.

But I do claim the alternate arrangement of the sprockets, II, in combination with the draft rods, D D, substantially in the manner and for the purpose set forth.

GAS BURNERS.—John C. Walsh, of Lockport, N. Y. I am aware of devices having been used for the purpose of retarding the flow of gas through a burner, such as deflectors or circuitous passages. I lay no claim to these things.

But I do claim the arrangement within the burner of two or more hollow pillars, d and g, extending up into the chambers of the burner with holes, K, made obliquely into the upper end of said pillars as represented, for producing counter currents of gas as it flows through the burner to break its force and regulate the supply of gas to the tip of the burner, for the purposes mentioned.

WRENCH.—Edward J. Worcester, of Worcester, Mass. I do not claim the application of a screw and rack to the movable jaw and the stock of a wrench, in order to produce the required movements of the movable jaw with respect to the stationary jaw extended from the stock.

Nor do I claim a wrench having its movable jaw affixed to a tenon or slide made to work through a mortise in the other jaw, and to be clamped in position by the handle, as the same is set forth in the patent of Orin O. Withers, dated December, 1856.

I claim my adjustable fork jaw wrench as made with its jaws arranged and applied to its handle as described, and with a rack and rotary screw arranged in the handle and applied to the side of the movable jaw as specified.

SETTING TIRES ON WHEELS.—John H. Williams, of Pleasant Hill, O. I claim hanging the frame, to which the wheel is secured, to a revolving shaft, so that the wheel may be turned up into a horizontal position for the facility of working at it, and then into a vertical position to bring the perimeter of the wheel into the water trough, substantially in the manner and for the purpose as described.

DAMPER REGULATORS FOR STEAM BOILERS.—Pats. White, of Brooklyn, N. Y. I claim securing the ends of the flexible tube by the clamps, D D, and metallic plugs, K M, substantially as described.

NUT MACHINE.—Samuel H. Whitaker, of Cincinnati, O. I do not claim the employment of two punches entering the nut or washer from opposite sides, as I am aware that such a contrivance is described in the patent of Richard Coles, such punches, however, being parallel sided and arranged in line and operating differently to my taper punch and mandrel.

But I claim, first, the employment of a taper punch, p, a hollow plunger, l, or its equivalent, and a taper pointed mandrel, J, combined and arranged to operate substantially as set forth.

Second, the combination of the hollow sleeves, K, and the plunger, l, with the forming rollers, O O C M, substantially as described for the purpose of carrying the nut or washer blanks to and from the id roller.

The holes of nuts and washers are made with this machine without waste of cores or burrs. A heated strip of iron of proper width is fed through an opening in the frame of the machine, and the operations of punching in (not cutting out) the hole, cutting off the nut, and finishing the hole and outside, are all performed automatically, and the nuts are discharged in a very perfect condition.

MACHINES FOR FOLDING PAPER.—James F. Weeks, of Columbus, O. I do not claim the folding of paper by passing the sheets between revolving rollers.

Neither do I claim the arrangement of the rollers in the above described form, as they can easily be arranged to produce any other form of fold desired.

But I claim the manner of operating the feed roller and folders by means of friction rollers or their equivalents revolving upon the plane of a wheel or wheels (N figure 6) striking against fingers or tripping arms or their equivalents, keyed upon the rock shafts to which the feed roller and folders are attached substantially in the manner described, in combination with spiral springs upon said rock shafts, to return the feed roller and folders to their places substantially in the manner specified, the whole tending to facilitate the rapid, easy and certain operation of the machine.

I also claim making slots in said wheel or wheels in which to fasten said friction rollers or their equivalents at any desired point by means of the thimble, bolt and nut constituting the movable stud, substantially in the manner specified, so that said friction rollers may be moved forwards or backwards to cause the motion of said rock shafts to be sooner or later, as may be desired, in combination with the rock shaft, spiral springs, rollers and tapes, the whole operating substantially in the manner described for the purpose of forming any desired folds in paper, using any number of said slotted wheels, friction rollers, rock shafts, spiral springs, rollers, and tapes, or their equivalents, in combination necessary for the purpose of producing any number or form of fold required.

CHEESE HOOPS.—C. P. S. Wardwell, of Lake Village, N. H. I claim the combination of the hasps, D, having a bridge or bar, K, at the outer end of its slot arranged as described, with the oblong button, e, the two operating together, substantially in the manner and for the purpose specified.

AUTOMATIC SAW MILL BLOCKS.—Hiram Wells, of Florence, Mass. I claim the devices such as are described, or their equivalents, so constructed as to traverse the log towards the saw simultaneously on each head block, and set it automatically, or permit the workman to set the log on either head block, or on all at the same time, by the lever, g, when put into gear with the rack, k, as described.

METHOD OF INGRESSING HYDRANTS.—Wm. Bramwell, of New York City, (assignor to Samuel P. Ayres, of New Rochelle, N. Y.) I claim the casing or pipe, C, with its seat, e, and elastic washer, f, in combination with the hydrant pipe, g, and screws, p, substantially in the manner and for the purposes specified.

VALVULAR ARRANGEMENT FOR BASIN, ETC. COOKS—Edward G. Bunham, (assignor to himself and Henry A. Chapin,) of Springfield, Mass. I do not claim operating a valve by means of a cam, as this is found in various faucets.

Nor do I claim a faucet or basin cock as made with a turning bib or nozzle, and a tubular stem having a rotary valve working against a concentric seat, as such is liable to leakage.

But I claim the described new manufacture of basin cock or faucet, as made with a turning bib or nozzle, a sliding valve, and a tubular stem operated by means substantially as described.

FIRE GRATES, OR LINING OF FIRE POTS.—Daniel H. Dean, of Lowell, (assignor to Wm. T. Coggeshall, of Fall River, Mass.) I claim arranging the inner surface of each ring of the fire pot, cylindrical or vertically, the edges of the rings inclining inwards in such manner as to bring the upper edge of one ring on or about on a level with the lower edge of the ring directly over it as described, whereby advantages such as are stated are gained.

TONGUEING AND GROOVING HAND PLANE.—Porter A. Gladwin, (assignor to himself and Thos. F. Caldwell,) of Boston, Mass. I do not claim the combination of tongueing and grooving cutters upright and horizontal guides in one stock, wherein the tongueing and grooving cutters are arranged to slant in opposite directions.

But I claim the tongueing and grooving cutter or cutters in single throat and to slant in one direction, in combination with arranging the vertical guides, so that one shall stand below the other, and the horizontal tongueing guide be arranged between as specified.

FORGING HORSE SHOE NAILS.—Robert Cook, (assignor to himself and Samuel Norton,) of South Abington, Mass. I claim arranging each striker in a separate guide lever, and operating such striker by a spring and such guide lever, when the latter is actuated by means substantially as described.

I also claim combining with the pitman, M, and the lever, L, carrying the feeder, a catch lever, N, shoulder, w, and spring catch, O, whereby the said feeder may be moved and held up to the cutters and set free therefrom, as circumstances may require.

POWER PRINTING PRESSES.—Jedediah Morse, of Canton, (assignor to the S. P. Rugles Power Press Manufacturing Co., of Boston,) Mass. I claim the combination and arrangement of mechanism or devices for supporting the sheet of paper over the carrier or frisket carriage, and guiding and presenting it to the discharging apparatus, such devices consisting of the cords, n2 n2, the rollers l2 m2, the drum, o2, cord, p2, and the barrel or pulley, q2, provided with a spring or its equivalent as described.

I also claim the combination of the cam, u, and stud, v, with the rocker toggle and its operating cam, the same being for the purpose as specified.

I also claim the combination for regulating the rotary motion of the ink fountain rollers, the same consisting of the adjustable stop lever, m3, the connector rod, h3, the cam, c3, the lever, f3, the weighted plate, K3, and the pawl, l3, and the internal ratchet, s3, constructed and applied together substantially as specified.

I also claim combining with the pile platform and the fly, a mechanism substantially as described, which by the reciprocating movements of the fly, shall lower the platform in correspondence with the increase of thickness of the pile, such mechanism being the cam on the fly shaft, the pawl thereof and the train of gears and racks applied and operating as specified.

I also claim the mechanism of combination for imparting to the ink cylinder, h, endwise motions as described, and the means of presenting it to the printing apparatus, and the inclined gear, p, constructed, arranged, and applied together, so as to operate substantially as specified.

PEGGING BOOTS AND SHOES.—Benjamin F. Sturtevant, (assignor to himself and to the Board of Boston, Mass.) I claim in combination with the feeder wheel, K, and its rotary mechanism, a mechanism for imparting to said feeder wheel, and the last reciprocating intermittent endwise movements whereby the pegging of two ranges of pegs may be effected as described.

I do not claim a toothed or corrugated feeding wheel, nor one made with a series of holes for the pegs to pass through or into.

But I claim constructing the feed wheel, R, with two series of radial holes arranged in it as specified.

I also claim the stop lever, l', and its locking slide, h', in combination with the peg wheel feeding mechanism, and made to operate therewith, substantially as explained.

I do not claim a tubular peg carrier, provided with a cutter, as shown in the patent granted to A. C. Gallaher, August 16, 1855.

I also claim the tubular peg carrier, when provided with a cutter for separating the peg from the peg wood, and when arranged and made to operate with the peg wood feeder and the feeder, R, substantially as specified.

I also claim the method of manufacturing and producing a reciprocating intermittent endwise movement of the feeder wheel, R, the same consisting of the slider, u, the stud, v, the groove, w, the spring, s, the pin, c', the inclined cam, d', the pin, e', the tripping clutch, f', the lever, g', and the slide rest, o', the whole being applied together, substantially as specified.

I also claim the method of effecting the feeding of the peg wood, that is by the slider, M, of the peg carrier, the lever, b2, the serrated feeder, Z', and the spring, d2, operating together as specified.

CARPET BAGS.—Joseph Zepfel, (assignor to himself and John B. Radley,) of New York City. I claim attaching the half pieces of the divided bottom to the lower corners of the respective frames, at right angles or nearly so to said frames, thereby said divided bottom and frames support the flexible material of which the bags is composed, whether the same is open or shut, as specified.

BRICK PRESSES.—R. B. Harbour, of Oskaloosa, Iowa. I claim the employment in combination with the wheel, L, of the two sets of levers, H H' and K K', arranged eccentrically within a circle, and on a revolving circle plate, and connected with the tops of the molds of said plate, and with the followers of the same, substantially as and for the purpose set forth.

In this machine two sets of levers are used with a revolving circle plate. They are employed for opening and closing the top of the molds, and for exerting pressure on the "followers" of the molds. These levers are formed to act on the principle of a wedge, and to exert a gradually increasing pressure. One set have their fulcrum slightly in advance of the other, so that when one set has finished acting, the other set has commenced operating. It is a very ingenious and compact brick press.

RE-ISSUES. CAST IRON CAR WHEEL.—Anson Atwood, of Troy, N. Y. Patented May 15, 1847. I claim the connecting of the rim of the wheel with the hub in cast iron car wheels by means of two curved plates, starting from near the ends of the hub, and joining at a part of the distance between it and the rim, thus forming a hollow ring or arch around the hub, and joining said ring with the rim by a single plate or its equivalent.

SHIPS BLOCKS.—Cornelia Waterman, administratrix of Stephen Waterman, deceased, and Isaac D. Russell, of New York City. Patented January 31, 1844. We claim passing the straps through grooves in the inner faces of the cheeks of the blocks as described.

DESIGNS. BUSTS OF NAPOLEON BONAPARTE.—Thos. Ball, of Boston, Mass. ADDITIONAL IMPROVEMENTS.

FARM GATE.—Chas. N. Coode, of Pleasant Valley, N. Y. Patented May 13, 1856. I claim the arrangement and combination of the levers, B and C, with the ropes or chains, F F, and platform, A, A, forming a self-acting or balance gate, as fully set forth.

SPRING BED BOTTOMS.—Hiram Tucker, of Cambridgeport, Mass. Patented July 3, 1855. I claim arranging and combining with such bars and springs, substantially as specified, flexible bands or strips, g, or analogous devices, so that the several bars and springs may be connected and made to operate together, substantially as specified.

To Prevent Scale in Boilers.—Native Mother of Pearl.

MESSRS. EDITORS—I have noticed various remarks in your paper on the subject of incrustation of boilers from the use of limestone water. I was some years ago engaged in an establishment where steam power was used, and frequently spent leisure hours in conversation with the old engineer. He told me the best, most simple, and at the same time the most safe remedy, was the application of a few pieces of shell-bark hickory wood. The virtue, it appears, is in the inner bark, which could be easily taken off and thrown in the boiler without the wood.

Is there any method by which the pearl part of the muscle shell can be softened, or in any way managed, otherwise than sawing, so that it can be worked to advantage?

Our western waters abound with muscle shells from six to eight inches in length, and from 1-4 to 5-8 inch thickness, and some of it as firm as most of the pearl now used. I have frequently examined them, and wondered that some of our geniuses could not contrive some method to bring them into market. Steamboats could be loaded on some of the tributaries of the Ohio with this shell, that could be used for thousands of different purposes; and I have no doubt that in time they will be made useful and profitable.

T. W. POWELL.

Louisville, Ky., June, 1857.

[The effect is due to the tannic acid in the bark, and is analogous to that produced by the use, in the same manner, of oak or mahogany sawdust. All such materials, however, only keep the lime in suspension until the water can be blown off. It is better to purify the water by heating and allowing it to deposit its earthy matter, as is practiced in Wiessenborn's patent, see page 113, Vol. 11, before allowing it to enter the boiler.]

Pearl shells cannot be softened without injuring their beautiful lustre.

An Electric Locomotive.

The Detroit Free Press relates the following rather tough story:—

"A locomotive was being moved from the manufactory to the Central depot, in that city, and had arrived in the middle of the street, when suddenly all hands dropped the bars which they were moving the machine, and fell back in amazement. Resuming them at the order of the man in charge, they applied them again to the wheels, and again fell back paralyzed the instant they touched the iron. The director of the job caught up one of the bars, and making a savage thrust, planted it under a wheel, preparatory to giving a huge lift. No sooner had it touched, however, than he saw it fall from his grasp to the ground, as it had done in every case before. Such singular occurrences excited attention, and an examination was made as to the cause, when it was found that the locomotive, in passing under the telegraph line, had come in contact with a broken wire that hung sufficiently low to reach it. The whole mass of iron comprising the locomotive had thus become charged with electricity, which had communicated itself to the bars that the men held in their hands, and caused the effect above described. The wire was then removed, and the difficulty obviated in a moment."

Removing and Preventing Rust.

Some persons employ an acid to remove rust from knives; this should never be done under any circumstances. Nothing surpasses rotten stone and oil for scouring knives and forks. To prevent stoves and grates from rusting during summer if placed in damp situations, give them a thin coat of lard and resin melted together, in the proportions of three parts of the former to one of the latter.

Notes on Science and Foreign Inventions.

Parian Statuary.—Those who visited the New York Crystal Palace in 1853 will not readily forget the beautiful display of figures made of a composition called "Parian marble." They were arranged in the South Gallery, and were manufactured at Stoke-upon-Trent, England, in the factory of Alderman Copeland, of London. Such figures are

also common in the windows of some of our stores, and are generally of a diminutive size, but of a soft and agreeable tint, resembling that of ancient marble statues. "Parian" is a kind of porcelain prepared with great care, and from the difficulty of baking it, a great number of the figures come out of the kilns as waste. Owing to this feature in its character, it has hitherto been impossible to execute large figures of such material; but this difficulty, we understand, has been overcome, or rather removed, by the discovery of a new material called "porcelain ivory," which is of equal beauty with parian in point of tint, and stands the action of fire without distortion. Alderman Copeland has recently opened a large new show room in his manufactory, in which he displays figures of life size made of this material. Parian figures sell at very high prices, and we hope this new discovery will be the means of reducing the price of such beautiful works of art.

Gas Light in Railroad Cars.—A "first class" carriage on the Great Northern Railway, England, has been fitted with a gas meter, capable of holding sufficient gas for eight hours' consumption with three burners. The experiments with it are stated to have been perfectly successful. The gas meter is fitted into the bottom of the carriage, and is filled by a flexible tube from any of the main pipes at the railroad stations.

Navigating the Shallow Rivers of India.—The Manchester Chamber of Commerce has petitioned Lord Palmerston in very forcible terms to carry out a system of steam navigation for the shallow internal rivers of India, "proposed," it is stated, "by J. Bourne, C. E." The main difficulty to the navigation of these rivers by steam is the low state of their waters at certain seasons every year. The plan proposed by Mr. Bourne is "to employ steamers of shallow draught, and divide the cargoes among a number of shallow barges to be towed by the steamers." This is an old American plan, which any of the Manchester merchants can witness any day during the summer season by a trip to this city, thence up the Hudson river to Albany.

A Great Blast.—In a quarry at Holyhead, not far from Liverpool, where supplies of stone are being obtained for a large breakwater, 2000 pounds of powder were recently exploded simultaneously, by a galvanic battery consisting of forty-eight cups. It was situated 750 feet from the chamber where the powder was tamped. The explosion detached 160,000 tons of the rock, and shook the whole neighborhood like an earthquake.

Steam Cultivation.—Five different methods of steam plowing are now in the course of trial this season to England, and we hope the question of its economy in comparison with animal power will soon be fairly solved. It is not now a question of practicability, for steam plows do operate well, but hitherto their expense has been more in plowing per acre than by horses. The five systems embrace the traction engine, the stationary engine and stationary windlass, stationary engine and traveling windlass, rotary cultivator and a digging and forking steam plow. With regard to the traction engine, (which moves over the field dragging the plow,) the London Engineer says: "A vast amount of opposition has been advanced to the traveling of portable engines over arable land, but having got them in the field, apparently doing their work as economically as any of the other systems, and even more so, the more philosophical course is to leave the great practical questions at issue to be settled at the bar of experiment." This is a sensible advice. The traction system will yet be the one adopted, because it is the most simple.

A Great Railroad Enterprise.—A line of railroad is projected through Turkey to pass through the valley of the Euphrates, thence to India, which will be 3000 miles long. When completed, passengers can get into a train on the shore of the Mediterranean, and travel without a change of cars to Calcutta.

A great trial of agricultural machines took place at Vienna on the 11th of last month. We have not received full particulars, but our British exchanges state that the first prize medal for thrashing machines was awarded to Messrs. Davy, of Sheffield, England.