arranged as described, in combination with the pin C, and cross head, B, substantially in the manner and for the purpose set forth.

2d, The peculiar method, herein described, of attaching and supporting the side springs, D, consisting of the pipes F, and hooks a, in combination with the cross head, B, and loops, E, as and for the purpose specified.

84,832.—CLOTHES BOILER.—D. Kellogg, Ypsilanti, Mich.

I claim the removable caps, D, with their branch spouts, f, when combined with the perforated and slotted plates, a b, as herein shown and described.

84,833.—HARVESTER RAKE.—Wm. A. Kirby, Auburn, N. Y.

I claim, 1st, A combined rake and reel, the arms of which are capable of having a rolling motion on their axes, and in which any arm acting at the time being as a beater, or all of the beaters, can be raised or lowered while acting as such, by the operator riding on the machine, so that it or they may pass over the grain on the platform at any desired hight, substantially as described.

2d, Also, in a combined rake and reel, in which any arm thereof may be a rake or a beater, at the will of the operator, the so constructing and arranging the cam ways as that the arm that acts as a rake shall pass over the platform at a uniform fixed hight, while the arms that act as beaters may be raised or lowered in parallel lines, to pass over the grain on the platform at such hight as the operator may desire, substantially as described.

3d, Also, hanging the arms of a combined rake and reel at points remote from the center of motion of the wheel or head that carries them, so that in dropping or rolling the rake or beater arms into their working position they shall do so in a direction contrary to that in which the wheel, frame, or head that carries them is moving, and so that they may roll into a position to reach the adjustable-hinged lifting and lowering cam way, when used as beaters, and pass beyond or outside of it when used as a rake, substantially as described.

4th, Also, uniting a series of rakes and beaters to their journals, respectively, by curved or bent axles, crossing each other, one bent upward and the other downward, for the purpose of getting the centers of motion of the beaters or arms all in the same plane, so that they may all receive a uniform motion from the cam ways that guide or influence them, substantially as described.

5th, Also, the combination of the sleeve with its hinged dogs, the forked latch, k, and the cam way 12, for the purpose of enabling the operator on the machine to throw the arm that has been acting as a rake out, and hold it out, or to allow it or any other arm of the series to run into action as a rake while the remaining arms of the series act as beaters, substantially as described.

6th, Also, in combination with a series of arms that have a revolving, rising-and-falling, and a rolling motion on their journals, a hinged cam way that may be raised or lowered, to raise or lower the beaters, by means of a lever extending therefrom, so as to be within the reach of the driver upon the machine, substantially as described.

7th, Also, in combination with a series of arms, one of which acts as a rake, and the others as beaters, a series of hinged dogs, g, one of which shall serve to adapt an arm specially to raking, while the others shall adapt the other arms specially to reeing in the grain, substantially as described.

84,834.—HORSE SHOE.—Rudolph Laporta, New York city.

I claim the combination of the screwbar, C, with calk, I', nut, E, cross bar, H, having calks I I, with the shoe, A, when constructed and arranged to operate together substantially in the manner and for the purpose described.

84,835.—APPARATUS FOR MAKING PAPER BOXES.—Francois Leclere, Boston, Mass.

I claim for the purpose specified, the described process of using thin pulp in high columns over pervious formers, suostantially as set forth.

Also, the combination of the wheel, b, with cylinders, r, arranged to rise and fall over the formers, m, substantially as and for the purpose set forth.

Also, the combination of the wheel, b, and slides conveying the formers, m, with inclines to move the slides outward and inward, as the wheel revolves, substantially as and for the purpose set forth.

Also, the combination with the cylinders, r, and their conveyer, b, of the valves, o, and the incline, c1, operative thereon, substantially as and for the purpose set forth.

Also, the process of condensing the pulp on the former, and expelling the water therefrom against atmospheric pressure by covering the pulp-covered former with a close vessel, d1, and admitting therein air under pressure, substantially as and for the purpose set forth.

Also, the process of removing the paper from the pervious former, by covering the pulp on the former with a cap fitting thereon, and admitting an air-blast within the former, substantially as and for the purpose set forth.

Also, the process for removing the paper from the cap which received it from the former, and for transferring the paper to a receiving block, by covering the receiver-block with the cap, and admitting an air blast into the cap, substantially as and for the purpose set forth.

84,836.—BOTTLE-FILLING APPARATUS.—John Matthews, Jr., New York city.

I claim, 1st, The combination of a sirup pump or charging device with the filling head or corking plunger of a bottling machine, in such manner that said pump or charging device is operated automatically by the filling head or its corking plunger, to admit sirup or other flavoring mixture to the bottle, while the aerated water, or other liquid to be sweetened or flavored is separately supplied to said bottle as it remains under the filling head, substantially as specified.

2d, The arrangement, essentially as described, of the sirup pump or charging device made adjustable, to regulate its charge, as specified, with the filling head or corking plunger, for operation together, substantially as herein set forth.

84,837.—ROTARY HORSE BRUSH.—W. W. McKay, Ossian, Iowa.

I claim, 1st, The combination, in a frame of a rotary brush, and a slide arranged for communicating rotary motion to the brush, alternately in one direction and the other, as and for the purpose described.

2d, The brush, D, arranged in combination with the frame, A, so as to be readily attached to and detached therefrom, substantially as and for the purpose described,

3d, The combination with the brush, D, of the adjustable scraper, F, substantially as and for the purpose described.

4th, The arrangement of the brush, D, frame, A, pulleys, E, cords, D', and slide, C, substantially as and for the purpose described.

84,838.—BRIDLE.—John McKibben, Lima, Ohio. Antedated December 1, 1868.

I claim the reins, E, provided with the stops, h, in combination with the bit, having its side bars, g, provided with guides, f f, for the reins to pass through, and the tubes, e, at the rear edges of the blinders, through which the reins also pass, all arranged substantially as and for the purpose set forth.

84,839.—EXTENSION LADDER.—Warren Morehead, Parkersburg, W. Va.

I claim the arrangement of the sliding ladder, B, constructed as described, triangular ladder, A, with its guides, d d, and the latch, D, and slide, E, all constructed and operating as shown and described.

84,840.—ENVELOPE.—Charles R. M. Pohle, Richmond, Va. Antedated November 30, 1868.

I claim the closing of the envelope by the action of the double seal, substantially as described.

84,841.—WATER ELEVATOR.—L. Raymond, Greene, Ohio.

I claim the combination of the swing or trapeze, F, the inclined guide, G, and the cords and pendants, D E, all substantially as and for the purpose set forth.

84,842.—FLOUR COOLER.—Joseph S. Reynolds, Wauconda, Ill.

I claim the arrangment herein described, of the shaft, B, and agitators, D D, with the cooling pans, A A, provided with spouts, a' a', near their peripheries and screw conveyers, C, as and for the purpose set forth.

84,843.—BRIDLE BIT.—William S. Robbins, New Bedford, Mass.

I claim, 1st, The inner bit, B, attached to the outer concave bit, A, by means of the curved end springs, b, whereby the inner bit is adapted to be drawn out of the bit, A, its entire length, and parallel with said outer bit, as herein described for the purpose specified.

2d, Attaching the bridle to the outer bit, A, and the driving reins to the inner bit, B, as herein described for the purpose specified.

84,844.—HAND SUPPORTER FOR PIANOS, ETC.—Charles Sangalli, New York city.

I claim the apparatus hereinabove described, or its equivalent, suspending the hands or resting the wrists, without hindering the free movements of the fingers, and keeping thereby the hand or wrist, and in consequence thereof, the fingers upon the key board in the position desired, at the same time unhindering all the motions required to be made to use the same, and to play upon an instrument, as above described.

84,845.—DIES FOR MAKING CARRIAGE AXLES.—W. W. Simmons, Birmingham, Conn., assignor to himself, R. M. Bassett and T. S. Bassett.

I claim the dies, E, constructed as shown and described, for the purpose hereinbefore set forth.

84,846.—PUMP.—Oscar Snell, Williamsburg, Ohio.

I claim, in combination with the pumb proper, A, the valve chest, F, constituting also an air chamber, the slide valve, G, tube, K, and discharge pipe, L, when constructed and arranged to operate in the manner and for the purposes herein set forth.

84,847.—PLANING MACHINE.—Henry D. Stover, New York city.

I claim the frame of a planing machine, constructed, in the manner described, so that the arm cutters, F F, may operate simultaneously with the cylinder, D substantially as and for the purpose set forth.

2d, The oscillating clamp, R, when constructed in the manner and for the purpose described.

3d, The adjustable brackets, N, in combination with the frame, E, for supporting the driving shaft, O, and tighteners, when constructed and arranged as described.

4th, The clamp, R, when provided with a single hook at each end, to take hold of pins inserted in the sides of the carriage, as described.

5th, The iron uprights, E, in combination with a bed, A, when such bed is used for the support of the vertical and horizontal cutters, D and F F, in the manner described and for the purpose set forth.

84,848.—HYDRANT.—Solomon Tice, Cincinnati, Ohio.

I claim the combination, substantially as described, of the open-ended and perforated cylinder, A a, chamber, B b, inlet pipe, C, discharge pipe, D, collar, E, valve seat, F, packing G, stem, K, plunger, M m, valve, F, and contracted passage, P, all substantially as described, and for the object explained.

84,849.—CLOTHES DRYER.—Jarvis B. White, Detroit, Mich.

I claim the clothes dryer, consisting of the standard, A, part, C, hinged near the foot of standard, A, and carrying the clothes rack, D E F, straps, G, and windlass, H, all arranged and operating substantially as and for the purposes set forth.

84,850.—APPARATUS FOR CLEANING RAGS.—George L. Witsil, St. Louis, Mo., assignor to himself and T. L. Bates, Philadelphia, Pa.

I claim an apparatus for the uses specified, consisting of the cisterns, pipes, stop cocks, and air pumps arranged for operation substantially as set forth.

REISSUES.

77,476.—MACHINE FOR MAKING NUTS.—Dated May 5, 1868; reissue 3,223.—Matthew H. Foster and Hubert C. Hart, Unionville, Conn.

We claim, 1st, The combination of the sliding bed, B, with the mechanism for cutting, the mechanism for forming, and the mechanism for punching and swaging, substantially as described.

2d, The arrangement of the formers, f f', the blocks, k' k3, the set, t, the die, x, and the punch, p, constructed and operated as herein described.

3d, The peculiar arrangement of the cams, a b c d e s s' s" F, by which the several parts of the machine are made to operate at the proper time, substantially as herein set forth.

4th, The improved nut machine, consisting of mechanism constructed, combined, and arranged substantially as herein set forth.

82,683.—CHILDREN'S CARRIAGE.—Dated Oct. 6, 1868; reissue 3,224.—Francis Boylston, New York city.

I claim, 1st, The combination and arrangement of the fixed axle, A, having two revolving wheels thereon, and sills or supports, B B, when the same are attached to the front part of a children's carriage or perambulator, substantially in the manner herein shown and set forth.

2d, Attaching the fixed axle, A, to the supports, B B, by means of the brackets, C C, and secured by the screws, a a, or their equivalents, the whole of the parts being made and combined with a children's carriage or perambulator substantially in the manner herein shown and described.

3d, The combination and arrangement of the fixed axle, A, having thereon two loose wheels, D D, brackets, C C, and sills or supports, B B, the whole being made and combined, with respect to each other and to a children's carriage or perambulator, substantially as and in the manner herein shown and set forth.

45,302.—APPARATUS FOR CARBURETING AIR.—Dated Feb. 7, 1865; reissue 3,225.—Edmon L. Mix, Rochester, N. Y., and the Monumental Automatic Gas Machine Company, Baltimore, Md., assignees by mesne assignments of Hugh L. McAvoy.

We claim, 1st, An apparatus for manufacturing air gas and enriching other gas, in which the carbonaceous matter is inclosed within an air forcing apparatus, consisting of a gravitating air holder and water receptacle, substantially as described.

2d, Manufacturing air gas by the described mode of using a holder, C, to contain air, receive the carbonaceous matter as it rises from the oil in the form of vapor, and force the gas into a pipe, wherein it is conducted off, as explained.

3d, The plate, E2, employed in connection with the pan, E, to cause the air to pass to the pipe, B, in contact with the oil, and in a state of compressure, substantially as described.

4th, The sealing device consisting of the cup, F, cylinders, G G', and a body of liquid between the latter, substantially as described.

5th, An apparatus for carbureting air in which the vessel holding the hydrocarbon liquid is contained within the gasometer, in contact with the water in the cistern thereof, substantially as and for the purposes set forth.

23,978.—TACKLE BLOCK.—Dated Nov. 1, 1859; reissue 1 534, dated Sept. 8, 1863; reissue 1 932, dated April 11, 1865; reissue 3,226.—Isaac E. Palmer, Hackensack, N. J.

I claim the construction of a tackle block and pulley, whereby the rope or fall, when desired, may be clamped between a portion of the pulley and a portion of or surface connected with the block, substantially as herein described, by simply leading it in a direction oblique or lateral to the plane of revolution of the pulley, without tying, or the use of dogs or movable stops, or any other means of fastening.

30,446.—MAGAZINE FIRE-ARM.—Dated Oct. 16, 1860; reissue 3,227.—Winchester Arms Company (assignees by mesne assignments of B. Tyler Henry), New Haven, Conn.

We claim, 1st, In combination with the hollow breech pin, the spring catch m, on the breech pin and the piston, arranged for central or rim fire, or both, substantially as and for the purpose set forth.

2d, In combination with the carrier block, E, and the spring catch, m, placed on top of the breech pin, L, the so forming of the top of the said carrier block, near the rear end, as shown at d5, fig 4, as to strike the cartridge forward of the center, and thus raising the forward end of the cartridge, while the rear end is held down by the spring catch, tripping it over and freeing it from the spring, and ejecting it from the gun, substantially as described.

DESIGNS.

3,277.—SNUFF BOX.—F. C. Heiser, Brooklyn, E. D., N. Y.

3,278 to 3,290.—CARPET PATTERN.—Elemir J. Ney (assignor to the Lowell Manufacturing Company), Lowell, Mass. Thirteen Patents.

EXTENSIONS.

MANUFACTURING LEATHER BANDING FOR MACHINERY.—George Miller, Providence, R. I. Letters Patent No. 11,902, dated Nov. 7, 1854.

I claim my improved manufacture of round banding, as made substantially as described, that is to say, by reducing a strip of leather or other suitable material, to the shape denoted in fig. 1, and subsequently rolling and cementing it together into that essentially as exhibited in fig. 2, of the drawings hereinbefore mentioned.

BUCKLE.—Stephen E. Booth, Orange, Conn., administrator of S. S. Hartshorn, deceased.—Letters Patent No. 11,892, dated Nov. 7, 1854; reissue No. 2,955, dated May 26, 1868.

I claim, 1st, A buckle in which the tongues are formed from a single piece of metal, and constructed so as to clasp the divided side and turn freely thereon substantially in the manner herein set forth.

2d, The combination of the two parts or loops, one side of one of which is divided, and the two parts or loops hinged together as described, and the tongue clasped and hinged upon the divided side, as set forth.

SHINGLE MACHINE.—Harry H. Evarts, Chicago, Ill.—Letters Patent No. 11,858, dated Oct. 31, 1854.

I claim placing the blocks to be sawed into shingles in a rotating carriage, which is combined with inclined tables, p p (or a single table), and with saws o o (or a single saw), in such a manner that the blocks will be carried continuously forward and be automatically operated upon to convert them into shingles, substantially as herein set forth.

I also claim the arrangement of the weighted levers, H H, the fastening teeth, i i, and the inclined planes, l l, with each other and with the inclined tables, p p, and the other series of teeth in the ledge, r, substantially as herein set forth.

I also claim presenting the sides of the fibers of the wood to the action of the saws in the sawing of shingles, or equivalent articles, for the purpose of giving them smoother surfaces than can be produced by the usual mode of sawing, substantially as herein set forth.

DAGUERREOTYPE CASE.—Eliza Mascher, Philadelphia, Pa., administratrix of John F. Mascher, deceased.—Letters Patent No. 9,611, dated March 8, 1853; additional improvement No. 134, dated Feb. 19, 1856.

I claim constructing a daguerreotype case with an adjustable flap or supplementary lid, C, said flap or lid, C, being within the case, and having two ordinary lenses, D D, placed in it, by which, upon adjusting the flap or lid as shown, a stereoscope is formed of the case, and the two daguerreotypes, E E, by binocular vision, are apparently formed into a like figure.

ADDITIONAL CLAIM.—The combination and arrangement of a series of leaves, of any suitable material, containing photographic or other pictorial representations (interspersed or not with blank or printed leaves), with the supplementary lid or adjustable flap containing a lens or lenses as described, the same being united or bound together so as to form a book, substantially in the manner and for the purposes described.

LOOM FOR WEAVING FIGURED FABRICS.—George Crompton, of Worcester, Mass.—Letters Patent No. 11,933, dated November 14, 1854; reissue No. 639, dated December 28, 1858.

I claim combining with hook jacks which are connected with the harness, and with the mechanism for operating them to open the shed, substantially as described, a pattern chain, or cylinder, constructed with two or more patterns, and operated so that either of the patterns can be made to act on the hook jacks to place them in the required position to be operated upon by the mechanism for opening the shed, substantially as described.

I also claim, in combination with a pattern chain, arranged with two or more patterns in the direction of its length the mechanism, substantially such as herein described, for changing the movements of the chain to effect the changing of the pattern, as described.

I also claim placing two or more patterns upon the rods of a pattern chain, side by side, and operating them in succession by vibrating the chain laterally, in the manner substantially as described.

I also claim pivoting the lifting and depressing rods, G P at one end, the other being made adjustable, in the manner and for the purpose set forth.

And I also claim moving the rods or jacks out of contact with the rollers on the pattern chain before the chain is moved, by means of what are termed the vibrating fingers, or the equivalents thereof, substantially as described.

SEWING MACHINE.—Charles Parham, of Philadelphia, Pa. Letters Patent No. 11,971, dated November 21, 1854; reissue No. 1,562, dated November 3, 1863.

I claim 1st, So forming and constructing the shuttle driver of a sewing machine that, while it performs the required duty of driving the shuttle, it serves to maintain the latter in the desired proximity to the plate, C, as set forth.

2d, The combination of the driver, A, shuttle, B, and stationary plate, C, the whole being formed and arranged substantially as described, so as to retain the shuttle during its flight in its proper position for the purpose specified.

PRESSER BAR FOR PLANING MACHINE.—Clara M. B. Snow, of Independence, Iowa, executrix of Harvey Snow, deceased.—Letters Patent No. 11 984, dated November 21, 1854.

I claim combining the pressure bar, H, with the rotary cutters, so as to secure the same relative position of the inner edge of the bar, and the path of the cutting edge in holding and cutting the surface of a board throughout its varying thickness, substantially as described.

ANCHOR.—Samuel H. Miller, Dedham, Mass.—Letters Patent No. 9,076, dated June 29, 1852.

The nature of my invention consists in having two separate shanks (marked, A and B, in fig. 1 of the enclosed drawings) and flukes to them, C and D, the shanks being confined together near the rings by the bolt, E, secured at one end by a large head, and at the other by a strong nut or key, F, and separated at their elbows or crowns the length of one of the flukes by a spur or brace projecting from the shank, A. In the other shank, B, there is a hole through which the end of the spur, G, passes, and is secured by a nut or key at H. The flukes are pointed in opposite directions, and so disposed that it is impossible for the anchor to lie otherwise than with one of the flukes in the ground.

Specification 2.—There being no stock to this anchor, it is not liable to become "stock foul" in "letting it go," nor can a vessel be "stock rode," as it is termed, by the stock entering the ground and being dragged along it until it meets a hard vein of earth or a stone, when the stock is bent or broken, and the anchor is useless. But in this form, the instant a strain comes on the cable, the anchor enters, and is drawn down into the mud until the broad surface of the fluke presents its full power of resistance. The fluke sinks readily in the ground from the effect of its plowshare-like point, which passes the earth on one side, instead of lifting up and breaking it.

Specification 3.—By unscrewing the nut, F, and withdrawing the bolt, E, which connects the two shanks at the rings, and also detaching the shank, B, from the end of the spur, G, both flukes can be turned downward, and geared as in fig. 2 of the drawings, becoming in effect a double "mooring anchor," which sinks with certainty both flukes in the ground by attaching to the middle of the spar chain, I, which connects the two elbows, and is twice the length of one of the flukes, an empty beef barrel, small water cask, or anything of sufficient buoyancy to insure the turning of the flukes down by its resistance to the sinking of the anchor. To this chain the buoy rope is also made fast. In many ports ships are obliged to lie moored, and much inconvenience is experienced with the old form of anchor, by the fluke which stands up from the ground catching the cables of the ships as they sheer about with the wind or tide. In my anchor this difficulty is entirely obviated, for, when the flukes are sunk in the mud, there is nothing above the ground which can catch a chain or hawser. In anchoring upon a lee shore, the anchor, being disposed as above, will take a double hold of the ground, thus rendering the anchorage more secure.

Specification 4.—If one of the flukes or shanks should be broken near the elbow or crown, (the place where they usually break), this anchor can yet be made available by lashing a spar of the length of the shank and one fluke, across the remaining shank, to the spur or brace, G, as in fig. 3. It then becomes the same as the common one fluked mooring-anchor, and can be used in the same manner, or as the double anchor described in the third specification, by securing to the ends of the spar a temporary stock, a rope of twice its length, and from the middle or bight of that extend another to the ring at the elbow, then at the bight, or where the ropes are united, secure a buoy or small cask, and let go the anchor, the fluke will strike the point into the ground. Or it can be lowered down by a rope made fast to the elbow or crown, as is the mode with the mooring anchor now in use. In the old form of anchor, if the shank is broken, both flukes are lost, and the anchor is useless.

Specification 5.—It is frequently necessary to carry out anchors in boats; which service, if in the night time, or in a heavy sea, is always attended with great peril, because of the anchor stock lying athwart the boat's gunwales, embarrassing the men in rowing, and its liability to turn, and the stock catching in the boat's quarter, when about to be let go. In carrying out this anchor of my invention, there is no such danger. There being no stock, it lies along the middle of the boat, with flukes over the stern; and when the hawser is run out, the anchor follows, without the possibility of fouling or catching in the boat.

Specification 6.—By the mode in which this anchor is made, greater strength is insured than can be obtained in the old one with the same weight, each shank and fluke being in shaft forged into shape, and then heated at the proper place, and bent into the form requisite, without the necessity of welding any part but the spur or brace of the stock. In the old anchor there must be a weld (and commonly there are two) at the crown; and there they most frequently break.

Specification 7.—While making a passage, this anchor can be readily stowed by withdrawing the key, H, and lifting the shank, B, from the spur, G, and laying it upon the shank, A. The anchor, thus closed, occupies but little space. This can be done while the anchor hangs at the cat-head, and with greater ease than when on the deck, by taking out the key, drawing of the shank, B, and allowing it to drop to its fellow. Then, by the tackle hooked to the spur again, it is taken over the ship's side.

Specification 8.—In case of extremity this anchor can be separated and used as two, by lashing across the shank, A, at G, a spar for a temporary stock, and driving through the hole in the shank, B, at H, a handspike, and lashing thereto a spar, as on the shank, A; then rig them with buoys, as described in specification 4, and illustrated in fig 3. Thus arranged, the anchor being provided with two rings, can be shackled to two chains or cables, thereby securing greater safety to the ship than if moored with but one.

What I claim as my invention, and desire to secure by Letters Patent, is the above described anchor for holding ships.

Mrs. A. St. John, of Rochester, says that, during the past ten years, she has made more than three thousand five hundred vests with her Wheeler & Wilson machine, besides doing her family sewing, and that she has made over twelve hundred vests with the needle now in use.

MANUFACTURING, MINING, AND RAILROAD ITEMS.

The Bennington and Rutland Railroad Company are to extend their road to the marble quarries at West Rutland.

A single rubber manufactory in Providence, R. I., employs five hundred hands.

The lumbermen at Burlington, Vt., have adopted the ten hour system.

Mile posts are now being erected on the line of the Concord Railroad.

The earnings of the Central Pacific Railroad for October exceeded $300,000.

Business and Personal.

The charge for insertion under this head is one dollar a line. If the Notices exceed four lines, an extra charge will be made.

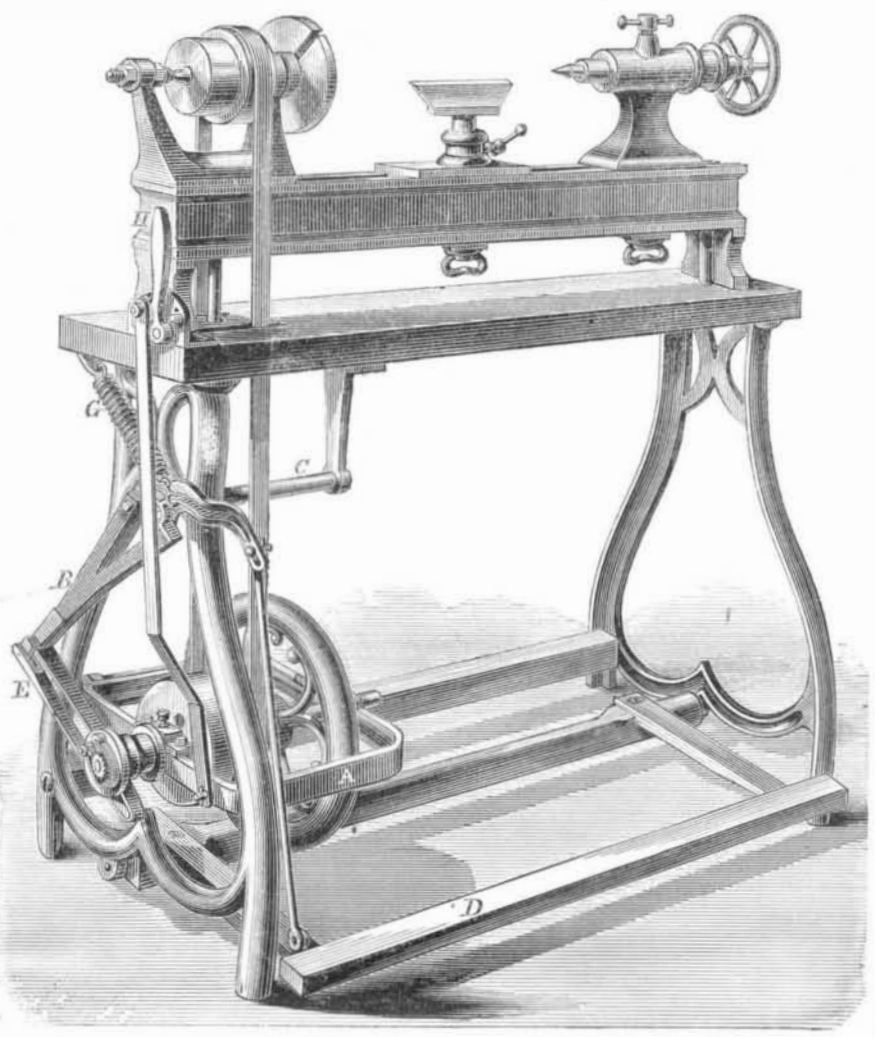
Improved Lathe for Dentists, Model Makers, etc.

Dentists, amateurs, and others who use the foot lathe, experience more or less annoyance from their inability to stop the head spindle suddenly, the momentum of the fly wheel being difficult to overcome. This entails a great loss of time, particularly if the work is to be examined frequently. The lathe herewith represented is intended to obviate these objections.

The driving shaft, carrying the cone pulleys and a small fly wheel, is mounted in a frame, A, under the head stock of the lathe, and is pivoted on stands secured to the rear bar of the lathe, so that the frame, with shaft and wheels, may be raised or lowered to a certain extent.

The wheel shaft projects beyond the end of the lathe, and carries a fixed ratchet wheel at the extreme end. Between the ratchet and the box of the shaft is a flanged pulley, turning loosely on the shaft, sufficiently wide to receive two narrow belts side by side. One of these is attached to the long arm of a pendulum lever, B, the shaft, C, being its fulcrum. To the other, or short arm of the lever, is pivoted the rod that connects with the treadle at D. Another narrow belt, which the flanged pulley receives, is fastened at one end to a guide bar or bow, E, pivoted to the long or lower arm of the lever, B. The other end of both these belts is secured to the face of the loose-flanged pulley, in such a manner that when one is wound on the pulley the other is unwound, as when the foot of the lever is furthest from the shaft the strap secured to B is run out, while that secured to E is wound up. A spring, G, balances the weight of the treadle and its appurtenances. A pawl and light spring on the outer head of the flanged pulley serves to make connection between the loose pulley and shaft by means of the ratchet. A bell-crank lever at H connects by a rod with the pivoted frame, A, by which the frame can be raised to slacken the belt, or lowered to tighten it. When raised, the driving belt will be slackened, so that the spindle may be instantly stopped. The treadle stops as soon as the foot is removed, and always at the highest point, while the driving shaft continues to revolve. It is evident that a very high speed may be obtained by this contrivance, while the stroke of the operator's foot may be of any limit required.

E. P. Rider, 220 Center street, New York city, manufactures these lathes largely to order for model makers, mathematical instrument makers, watchmakers, etc.



FOOT LATHE WITH IMPROVED DRIVING ATTACHMENT.

Improvement in Oiling Shaft Bearings and Loose Pulleys.

Some months ago we took occasion to speak, through our columns, on the enormous waste of lubricating oil in shops and manufactories, referring not only to oil used for tapping, cutting bolts, turning, and polishing, but to the waste in lubricating journals and bearings. The ordinary way of filling the cup on the top of a box, eccentric, or strap of a connecting rod, must of necessity entail a large percentage of waste. Centrifugal force throws the oil from the shaft, and it escapes from the box of a shaft at the ends and drops to the floor or is received into drippers. If contained in a cup on an eccentric, or strap embracing a wrist pin, the oil is thrown, in the same way, from the shaft rather than toward it. Loose pulleys, especially, waste the oil intended for their lubrication. At every revolution the oil is thrown out through the holes made for its reception.

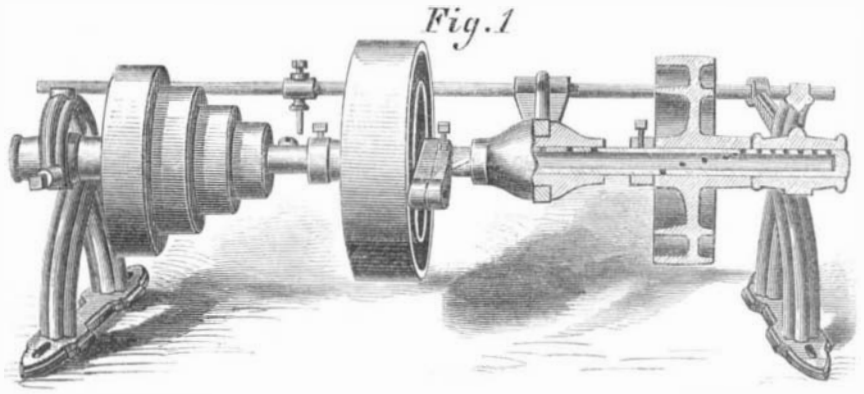
If cotton waste or other porous material is used to retain the oil and conduct it to the frictional surface, it soon becomes foul and needs to be frequently changed and fresh oil introduced. All the usual methods of oiling introduce the oil to the surface of the shaft from the outside; but the plan represented in Fig. 1 of the engravings is entirely different; the oil is placed in the center of the shaft and is fed or thrown outward to the surface. The engraving represents the ordinary counter shaft for a screw-cutting engine lathe, part of it in section and part in perspective. The shaft is hollow, plugged at the end by a screw. At the points where the journals come, a series of small holes are drilled from the outside to the central cavity; so, also, where the loose pulleys run and the clutch works.

These holes may be drilled in line or on a spiral, as may be considered most advisable. The internal cavity of the shaft is filled with oil through a hole in the side, that is stopped with a screw having a leather or rubber washer under its head. The apertures for the escape of the oil to the outside of the shaft are closed by little disks or plugs of leather to prevent undue leakage. Leather is found to permit the oil to pass freely through, sufficient for the purposes of lubrication, while the machinery is in motion, but, still, to prevent leakage when the shaft is at rest. Mr. Olmsted says that a countershaft for a lathe swinging fourteen inches, having two loose pulleys and two bearings, although in constant use, was run for eighteen months without re-oiling, the oil being contained in the shaft the space of which was that of a tube thirty inches long and half an inch in diameter. Other statements of a similar nature, by those who have made satisfactory tests of this method during the past four years, and are still using it, might be repeated. It is applicable to nearly all bearings and loose pulleys, and is in use on engines to oil crank pins, eccentrics, crossheads, etc. It is especially valuable on wood-working machinery which requires a rapid motion. The oil, being preserved from the air, does not oxidize or thicken, but remains pure and limpid.

There are some bearings in machinery where a hollow shaft is inconvenient or impossible. In such a case the inventor proposes a cup oiler as shown in Fig. 2. The globe is preferably of glass to exhibit the state of the oil. A stem of metal is inserted into the lower part of the globe, fitting by means of a gland of cork, the other end passing through the cap of a box, or the strap of a connecting bar or pitman, and reaching the surface of the shaft, or wrist pin. To hold the stem in the requisite position a moveable friction ring on the stem rests on the outside of the box, and the bottom of the stem or tube is plugged with a leather disk resting on an internal collar, as seen in the engraving.

Fig. 2

Fig. 1



OLMSTED'S PATENT SELF-OILER.

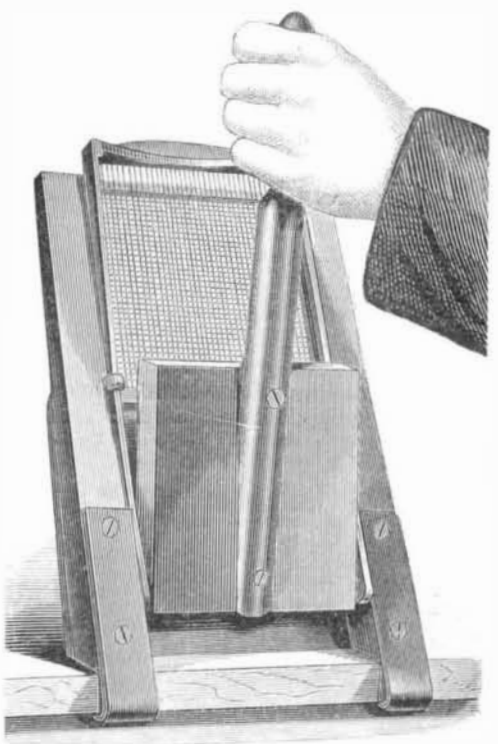
These oilers have stood a long and severe test, and been found to operate satisfactorily. The rotation of the shaft wipes the oil that exudes through the leather on to the shaft; but when the shaft is at rest the oil will cease to pass through and none will be wasted. There is nothing to get out of order, no screws to adjust, and no continual watching necessary.

Patented January 21, 1868, by L. H. Olmsted, manufacturer of fine machinists' tools, whom address at Stamford, Conn., or No. 1, Centre street, New York City.

BROWN'S VEGETABLE MASHER.

The pulping of vegetables preparatory to cooking or serving on the table is somewhat laborious, and the necessity of removing the rind or skin before this can be done, demands considerable time. To save this time and avoid much of the labor, the implement seen in the engraving has been contrived. By it potato, turnip, squash, stewed apple, and other vegetables and fruits, may be mashed or reduced to pulp without removing the skin, which is rejected and passed to one side.

It is a simple frame consisting of two uprights, or inclines, connected at top and bottom by cross bars, and adapted, as seen, to fit on a table or bench. The upper portion of the main frame has a series of parallel rods or wires, the interstices of which are small enough to prevent the passage through of parings or skin. Directly over this is another similar frame with wires running transversely to those of the main frame, so that the two combined form a sieve. A crusher, consisting of a block fitting the sieve, and a handle, has pivots or projections on its lower end traversing in slots in the sides, by which it may be moved up and down or to and from the sieve.



The operation is perfectly simple. In mashing potatoes, for instance, the potato is fed in with one hand while the masher is worked by the other; the pulp passing through the sieve, and the peel dropping down from the front of the sieve into a pan or other receptacle. The implement may be used in any position—horizontal, inclined, or vertical. Its parts may be easily separated for cleansing.

Patented through the Scientific American Patent Agency, May 19, 1868, by E. Brown. For further particulars address E. Brown, or Geo. D. Wright, at Burlington, Vt.

Excitement and Short Life.

The following, by an unknown writer, accords with our observation: The deadliest foe to a man's longevity is an unnatural and unreasonable excitement. Every man is born with a certain stock of vitality, which cannot be increased, but which may be husbanded or expended rapidly, as he deems best. Within certain limits he has his choice, to live fast or slow, to live abstemiously or intensely, to draw his little amount of life over a large space, or condense it into a narrow one; but when his stock is exhausted he has no more. He who lives abstemiously, who avoids all stimulants, takes light exercise, never overtasks himself, indulges no exhausting passions, feeds his mind and heart on no exciting material, has no debilitating pleasures, lets nothing ruffle his temper, keeps his "accounts with God and man duly squared up," is sure, barring accidents, to spin out his life to the longest limit which it is possible to attain; while he who lives intensely, who feeds on high seasoned food, whether material or mental, fatigues his body or brain by hard labor, exposes himself to inflammatory disease, seeks continual excitement, gives loose reign to his passion, frets at every trouble, and enjoys little repose, is burning the candle at both ends, and is sure to shorten his days.

MR. A. L. HOLLEY, Engineer of the Pennsylvania Steel Works, at Harrisburg, has also been appointed engineer of the Bessemer Steel Works of Messrs John A. Griswold & Co., Troy. These works, originally built by Mr. Holley, and consisting of a two tun converter and a pair of five tun converters and plant, were partially destroyed by fire in October. The small converter is already in operation and the works will be immediately rebuilt and considerably extended.