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Improvement in Sewing Machines.

On the 9th of last month (October) a patent was granted to C. J. Cowperthwaite, of Philadelphia, Pa., for the improvements on Sewing Machines illustrated in the accompany engravings.

Fig. 1 is a side elevation of the machine; fig. 2 is a front view of the same; fig. 3 is a plan view of the shuttle race and part of the feed motion. Fig. 4 is a side view of the weighted trip lever on a larger scale than the other figures. Fig. 5 is a section of the spool. Fig. 6 is a diagram illustration, which will hereafter be referred to. Similar letters refer to like parts.

The nature of the invention consists of two parts; first, in the employment of a weighted trip lever to apply the necessary pressure to confine the cloth to the surface, by which the feeding movement is imparted to the cloth. Second, in having a certain oblique arrangement of the shuttle race relatively to the line of the feeding movement of the sewing needle, whereby the stitches formed by the needle and shuttle are produced in line with each other.

A is the table of the machine. B is the needle bar, carried along to operate the needle, *a*. C is the lever, and D the cam which operate the needle bar. E is a thin ring of metal, the external face of which imparts the feed motion to the cloth; it is therefore serrated. F is a wheel fitted loosely to the interior of ring, E. It has about a quarter of an inch of its upper part cut away, to make room for a fixed sector, G, the arc of which fits to the interior of the ring. This sector is secured close under the table of the machine, and is so much smaller than the omitted portion of the wheel, F, as to allow the latter to be moved a little way upon axle *b*. The positions of wheel F and sector G are such, that the outer surface of the ring stands just level with, or slightly above the table, A, through an opening, in which it works like the feed wheel of many sewing machines. The wheel, F, carries an arm, *c*, which projects outwards beyond the ring, and has a lever dog, *d*, pivoted to it, the point of which is in contact with the outer face of ring E, and the opposite end rests upon the front end of lever H, which hangs under the table. The back end of lever H, is depressed at every revolution of a cam, *e*, on the principal shaft, I, and by that means its front end is thrown up and caused to act upon the lever dog to make it confine the ring, E, to the wheel, F, and having done so, to move the wheel upon its axle, *b*, thereby moving the ring to produce the feed movement of the cloth; the ring is only allowed to move in the proper direction for this purpose. It is prevented from moving in an opposite direction by a spring dog, *f*, attached to a brace, *g*, that extends from axle *b*, to one side of the stand of the machine—the dog clamping the ring to a projecting piece, *f'*, which is secured to the back of the brace, *g*, and stands within an opening, *g'*, in the periphery of wheel F. The ring, E being retained in this way, the wheel, F, is allowed to be returned alone, to be ready for the next feed movement by a spring, *h*, connecting an arm, *i*, of it to the table. The length of feed movement may be regulated by a screw

applied either to the arm, *i*, or the lever, H. J is an upright bar fitted to slide in the stand of the machine, and provided with a bent foot, *j*, at the bottom, to bear upon the upper surface of the cloth, and confine it to the surface by which the feed motion is imparted. This bar, or its equivalent, is rigidly secured in sewing machines, to confine the cloth. The common method, however, is to use a spring to press down the bar to confine the cloth. This bar requires to be raised to adjust a piece of cloth to start the work, and when a defect in the seam has to be remedied; when raised, it requires to be secured by a set screw. On account of this raising of bar J, the needle bar cannot be allowed to descend within some distance of the table, for if it were set in motion with the bar, J, raised, it would strike, and bend or break off the foot. For this reason, the needles of common sewing machines have to be made very long, and their great length renders them weak. To obviate this difficulty, and allow the needle bar to approach near the table, and thus allow a short needle to be used, the weighted trip lever, K, is employed to give pressure to bar, J, and also to hold it up as long as it is not struck by the needle bar in its descent, and then to let it drop. This weighted trip lever, K, fig. 4, has two curved slots, *k* *l*, in it. The former slot is nearly horizontal at its back part, and from there it gradually descends until it is nearly vertical at the front; it receives a stationary fulcrum pin, *m*, attached to the stand of the machine. The slot, *l*, is in the form of an inverted arc, and receives a pin, *n*, which is secured near the upper end of bar J. This lever, K, has also a curved inclined piece, *o*, projecting from its under side. When the bar, J, is down, the lever, K, occupies the position shown in full lines, figs. 1 and 4, the pin, *n*, at that time occupying the extreme back of slot, *k*, the lever being prevented from moving backwards on the pin, *n*, by the projecting piece, *o*, on its under side, it being in contact with a

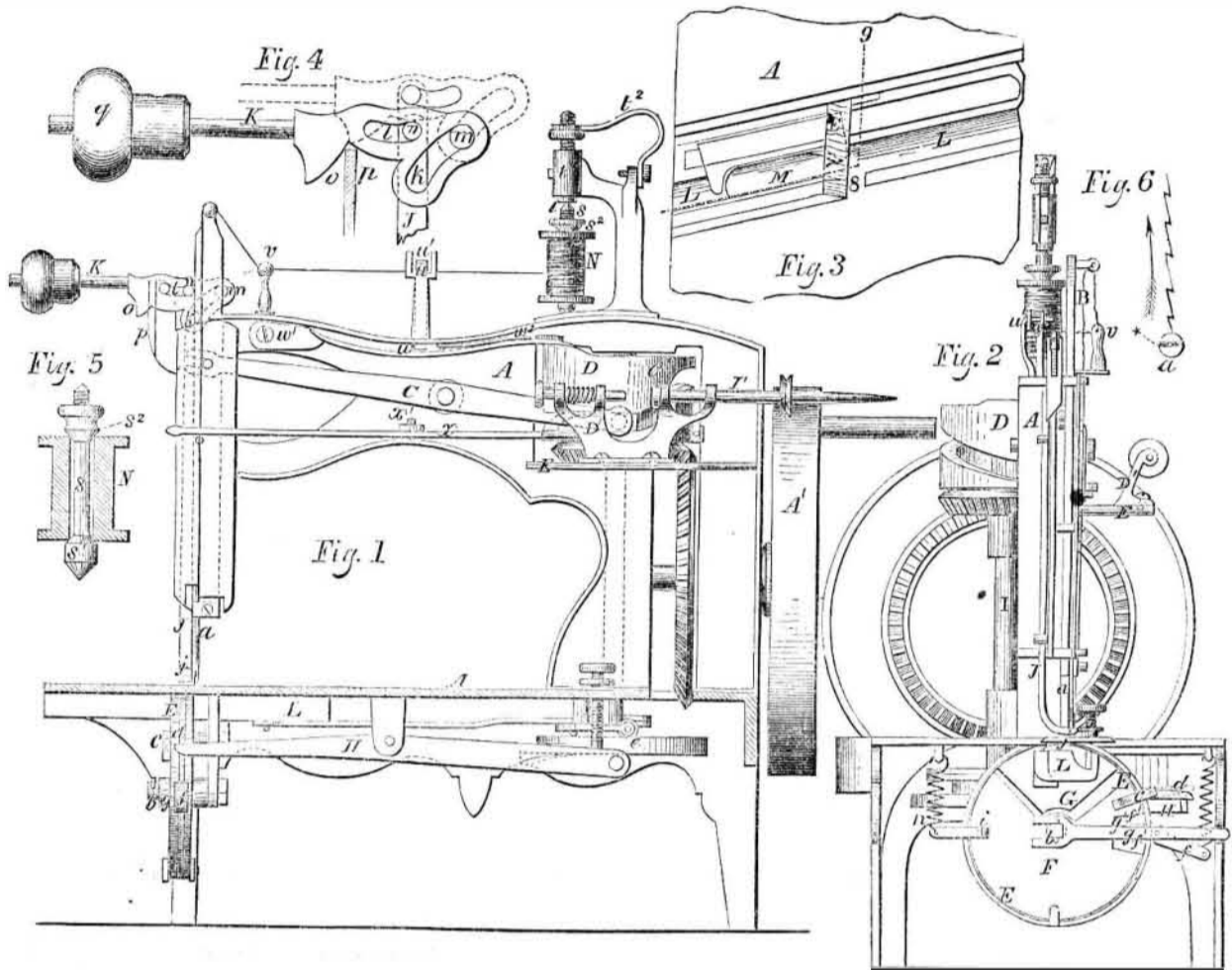
fixed stop piece, *p*, attached to the stand of the machine. In this condition the lever, K, gives the bar, J, such an amount of downward pressure as is due to the weight, *q*, on the lever. To raise bar J, the operator takes hold of the weighted end of the lever, and pushes it upwards or backwards until the bottom of the projection, *o*, on the lever arrives at the top of the stop piece, *p*, as shown in dotted lines, figs. 1 and 4, by which movement the character of the lever is changed from one of the second to one of the first order with *p* for a fulcrum; and instead of pressing on bar J, it holds it up. When the lever, K, is in this position, with the bar, J, raised, if the foot should be struck by the needle bar, and commence to be pushed down, the slot, *k*, would move down the pin, *m*, and, by moving a very little distance, would throw the lever bodily forward, and throw the bottom of the projecting piece, *o*, off the top of the stop piece, *p*, allowing the inclined back side of the projection to slide down the stop piece, *p*, and the slot, *k*, to slide all the way down the pin, *m*, bringing down the bar, J.—Another quality of this lever, K, is, that it does not readily yield to any sudden upward impulse which the bar may receive, consequently, if any accidental knot or kink occurs in the thread under the cloth, the foot will not yield to the next upward movement of the needle, but will still confine the cloth to the table, perhaps causing the thread to break, but doing no injury to the needle, as is often done with knots and kinks in machines where springs are used to confine the cloth.

L, fig. 3, is the shuttle race. It is parallel with another line, forming angles of about 105 degrees and 75 degrees with the line, *s* 9, in which the cloth moves, or with the plane of revolution of feed ring, E. The greater angle is on that side of the line, *s* 9, from which the shuttle advances, and is towards that side of shuttle, M, which is furthest from the needle. The most common arrangement in sewing machines is to have the shuttle race parallel with

the feed in the direction of the arrow, fig. 6; the eye* of needle, *a*, being at right angles, or nearly so, to the path of the shuttle. In this way the ends of those parts of every two consecutive stitches, which are seen on the upper side of the cloth, are placed side by side, as shown by fig. 6, which gives the seam a zig-zag appearance. By arranging the shuttle race as shown in fig. 3, obliquely, the dragging action of the shuttle on the outer side of the loop, or side furthest from the needle, draws every stitch into its proper place. The proper form of angle, L, *s* 9, depends on the form of the shuttle.

N is the spool which carries thread for the needle; *s* is a screw spindle which passes through the hole in the center of N; its head, *s'*, fig. 5, is conical inside, and enters a short distance in the hole. *s* 2 is a nut which secures the spool to the spindle; it is also conical inside, and the two cones of *s'* and *s* 2, entering the spindle. This spindle is centered on the top of stand A at one end, and the other end in the small slider, *t*, working in a fixed guide, *t'*. The slider, *t*, has a spring, *t* 2, applied to force its center into contact with the end of spindle, *s*. This mode of setting and arranging the spool insures its working concentrically and with uniform friction, on its centers. This contributes to the production of uniform stitches, which cannot be obtained from common spools running loosely on a common spindle. The length of thread let off from the spool is regulated positively by a device consisting of a double fork, *u* (fig. 2 on the top of the stand,) and a movable clamping check piece, *u'*, between which two pieces the needle thread passes on its way from the spool to the fixed guide, *v*, through which it is conducted to a guide at the top of the needle bar. The movable piece, *u'*, is connected with a lever, *w*, which swings from one end on a pivot, *w'*, and has its other end bearing upon the top of the cam, D, which operates the needle bar. The

COWPERTHWAIT'S PATENT SEWING MACHINE.



lever, *w*, is depressed by a spring, *w2*, to pull down the clamping piece, *u*, to make it bite the thread. The upper part of the cam is so formed as to leave the clamping piece entirely under the influence of the spring, and in operation upon the thread during the entire revolution of the machine, except from the time the point of the needle leaves the cloth till the ascent of the needle terminates, when it acts upon the lever, *u*, to raise up the clamping piece to free the thread, and allow a proper quantity to be drawn from the spool by the ascent of the needle; but during the time the needle is in the cloth, and when the interlacing of the two threads is being performed, it serves as a positive check to the needle thread. The length of thread given out is varied by moving the guide, *v*.

The device by which the thread is extended before the needle enters the cloth, consists of a lever, *x*, working horizontally on a pivot, *x'*, having one arm opposite to the lower portion of cam *D*, and the other arm (which is elastic) so placed as to be capable of clamping the needle thread some distance above the needle, against the upright slide in which the needle bar works. The part of the cam which works on this lever is so formed as to leave it free, and not allow it to clamp the thread, except from the time the descent of the needle commences until the eye thereof reaches the cloth, thus keeping the thread extended as the needle enters the cloth and at the right side of the needle, thus preventing the kinking of the thread, and ensuring its entrance on the proper side of the needle. The thread must be liberated as soon as the eye of the needle has reached the cloth, to enable the needle to complete its descent without breaking the thread.

Attached to this machine there is also a very convenient small winding apparatus. It is secured on the plate, *E'*, fig. 1, and is driven by the hand wheel, *A'*, from which there passes a cord around the small grooved pulley on a spindle, *P*, supported on the arch, *D'*, which holds the spools. The improvements in this patent embrace useful improvements, highly approved by those who have devoted attention to the numerous sewing machines brought before the public, and who know their defects and requirements.

More information may be obtained by letter addressed to Mr. Cowperthwaite, No. 1 Paul st., above 6th, Philadelphia.



[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS Issued from the United States Patent Office FOR THE WEEK ENDING NOV. 20, 1855.

CUTTING TEETH OF GEAR WHEELS.—G. W. Bigelow, of New Haven, Conn.: I claim giving the blank or wheel to be cut, an automatic feed motion, by means of the pulley, *P*, on the shaft, *M*, said pulley having a coil spring, *Q*, within it, the screw, *S*, on the shaft, *L*, the worm wheel, *P*, on the lower end of the shaft, *F*, and the circular plate, *O*, having projections, *c, c*, upon its periphery, and the pawl, *X*, and bar, *Y*, provided with the arm, *Z*, the cam being operated by the pins, *i*, on the inner side of the pulley, *D*, the parts being arranged substantially as shown and described.

[Common gear-cutting machines require the assistance of an attendant for every tooth that is cut. The blank is placed upon a table, and after the tool has descended and cut the tooth, an attendant rotates the table to the proper distance for a new incision.]

Mr. Bigelow's improvement consists in the introduction of a feed motion, which is self-acting, and so arranged that after the blank is once secured in its proper place, it will be rotated at the right intervals and distances without the help of an attendant. All the hand labor required is simply to remove the finished wheels and substitute fresh blanks. One man may thus attend a dozen machines in stead of being confined to a single one, as at present. We are much pleased with this invention. It is quite simple in its construction.]

LOCKS.—J. H. A. Bleekmann, of Ronsdorf, Prussia: I claim the mode of constructing and arranging one or a number of tumblers, as described, which may be locked and opened with changeable key bits, as set forth.

COTTON GINS.—L. S. Chichester, of New York City: I claim giving to one or both of the rollers of a roller gin, the separating motion, substantially such as described, to separate the rollers, for discharging the seed, after the fibers have been separated, as set forth.

I also claim the guard and discharge plate, substantially such as described, in combination with the two rollers of a roller gin having the separating motion, substantially as described and for the purpose set forth.

And I also claim the cleaning and collecting brush, arranged substantially as described, in combination with the ginning rollers, substantially as and for the purpose set forth.

POTATO DIGGER.—A. A. Marcellus, of New York City: I claim, in combination with the revolving racks, the banding surface separator, *C*, and receiver, *O*, when arranged in the manner and for the purposes set forth.

KNITTING MACHINES.—Timothy Bailey, of Ballston Spa, N. Y.: I claim, first, actuating the sinking or other burrs, by means of a gear wheel, whose teeth are actuated or rather act upon by the needles, as a rack, whereby the wings in said burrs are freed from contact with the needles, and do not nip the yarn, tightly, between said wings and needles, substantially in the manner and for the purposes described.

Second, I claim carrying back the old stitch, and holding it back by means of a disk wheel and segment, having a planetary motion, as set forth, and also the leading of the finished cloth through a ring, or its equivalent, surrounding a shaft, having a planetary motion, whereby the action of the drag weights is properly adjusted upon different portions of that circuit of the cloth which is being acted upon by the needles and levers, substantially as specified, and in combination with a cloth or knitted tube, to which is imparted, substantially such a revolving motion as is described.

Third, I claim a self-adjusting climbing drag weight, constructed substantially in the manner set forth.

Lastly, I claim a stationary series of needles in circuit, when constructed and arranged substantially in the manner described, in combination with revolving levers, driven by indirect gearing, and revolving from a common axis, whereby the turning of the finished cloth on its own axis is avoided, and all difficulties incident thereto obviated.

MOP HEADS.—Alex. Barns, of Ashtabula, O.: I claim attaching the screw, *C*, to the cross piece, *B*, and fitting it in such a manner that its revolution is not obstructed, combined with the bow and nut, as described, for the purpose specified.

MARBLE SAWING MACHINE.—F. Noette & A. Schmidt, of Brooklyn, N. Y.: We claim the combination and arrangement of the above-described devices, when the same are all arranged and operated in the precise manner, and for the purpose described, and not otherwise.

[In this improvement the block of marble to be sawn stands on end, instead of laying horizontally, and the taper is cut from the apex down to the base. The saws are strained between rods furnished with right and left screw threads; the spreading of the saws is accomplished by means of pins, which, at every stroke of the saws, come in contact with nuts on the screws; the movement of the nuts forces the saws apart.]

DOUBLE ACTING PUMPS.—D. W. Clark, of Bridgeport, Conn.: I do not claim the mere intermediate arrangement of the driving gear to the two pistons in the one cylinder, as such is old; neither do I claim operating the pistons of pumps, by revolving cranks or eccentrics, whether pitched in relation to each other, so that the pistons move simultaneously in opposite directions for the full length of their strokes, or only for the partial length thereof, when the said pistons operate in separate chambers, or barrels, and are not driven by intermediate gear in the one cylinder, or barrel, in their joint action.

I claim giving to the two reciprocating pistons, when arranged to move in the one cylinder, by intermediate gear, as specified, a simultaneous travel in the same direction, at or about the period of change of stroke in the pistons, while, for the remainder, or the greater part of their stroke, they travel in opposite directions, to effect the required double action specified, of the two pistons in the one cylinder, or barrel, and whereby the one piston serves to follow up the movement of the other in their joint action upon the one body of water, between the pistons, till a fair hold is got upon the water, to render the suction continuous, neutralize the effect of leakage, and prevent the formation of an air or vacuum space, between the two pistons at their turning stroke, and run apart from the water between them, substantially as specified, by means of the revolving eccentrics, *c, c*, or their equivalents, pitched or set with lead, in relation to each other, and the two pistons of the single cylinder, as set forth.

[In this pump two pistons are employed working in one barrel; both pistons are operated by a crank, and connected in such a manner that, by turning the winch, a steady continuous stream of water is thrown, without the employment of an air vessel. This improvement combines the advantages of a rotary pump together with those of the ordinary construction. It is strong, simple, compact, effective, and comparatively cheap. As a fire engine it may be employed with success, we should think, in stores, factories, vessels, and wherever it is desirable to force a steady stream to a great elevation.]

TICKET HOLDERS.—E. P. Fraissinet and H. E. Rebol, of Paris, France. Patented in France Feb. 2, 1855: We do not confine ourselves to the forms described, as they may be varied, without deviating from the principle described.

But we claim the construction of an apparatus, or instrument, for carrying, securing and exhibiting tickets, as described and referred to.

PRINTING YARNS AND CLOTHS.—Thos. Henderson, of Lowell, Mass.: I claim, first, the printing or coloring types, *B*, arranged and operated, essentially and for the purposes set forth.

Second, I claim the coloring distributors, and boxes in which they revolve, when they are constructed and operated, substantially as described, for the purposes set forth.

Third, I claim the types, *B*, in combination with Jacquard operation, for printing and coloring figured goods, when they are arranged and operated substantially and essentially as set forth.

Fourth, I claim the coloring distributors, and boxes in which they revolve, types, *B*, in combination with the color distributors and boxes, arranged and operated essentially as set forth.

POLICEMEN'S RATTLES.—Joseph McCord, of Philadelphia, Pa.: I claim in policemen's rattles, the securing of the handle to the edge of the ratchet wheel, and at right angles to the axis of the latter, for the purpose of turning down the handle, out of the way, thereby rendering the instrument more convenient to carry in the pocket, and for the further purpose of combining a mace and rattle in one instrument, substantially in the manner set forth.

RAILROAD STATION INDICATORS.—C. A. McEvoy, of Richmond, Va.: Disclaiming the use of an indicator, pointing to fixed signs, and also movable signs, where but one side is visible.

I claim presenting a movable sign, or symbol, to passengers of a railroad car, so that both sides of said sign shall be visible and utilized as annunciators, by swinging said signs to the angles of a polygonal reel, in such a manner as to make each sign in turn drop through a slot, substantially as set forth.

GUN LOCKS.—John Pin, of Rochester, N. Y.: I claim securing accuracy of aim and safety in the use of trigger cocks, by means of a spring, substantially as described, which consist, first, in the seat, *s*, and spring, *i*, to hold the hammer up.

Second, in the spring, *a*, acting on the trigger to release said hammer.

COTTON PRESSES.—Wm. F. & Charles J. Provost, of Selma, Ala.: We claim, first, the manner of hanging and holding the platen, *D*, by means of the rod, *k*, and the coupling link, *r*, so that the platen may be swung round out of the way, and the rod, in, let down, as described.

We also claim, in combination with the levers, *G, F*, and their fulcras, the pivoting of the long one of said levers to one side of the center of the follower *c*, and, to apply the power of the press in as near a direct line to the resistance as possible, as described.

COAL SIFTERS.—Gerard Sickels, of Brooklyn, N. Y.: I claim the peculiar manner of dividing the cylinder at *A, A'*, for the purpose of furnishing a receptacle for the separated coal, substantially as described.

[The above improvement is intended for use in private families, the object being to separate the good coal from the ashes, without creating a dust. The contrivance consists of a round box, something like a half barrel. In the upper end, and set at an angle, there is a screen, between the bars of which the teeth from a revolving horizontal shaft pass. The ashes, as they slide down the screen, fall through into a receptacle immediately below, while the coal coming in contact with the teeth, is knocked along out of the way of the ashes, and falls into a separate receptacle. Housekeepers, we think, will be much pleased with this invention.]

PREPARING LEATHER FOR THE MANUFACTURE OF BOOTS AND SHOES.—Charles Rice, of Boston, Mass., and Sylvanus H. Whorf, of Roxbury, Mass.: We claim, first, the retracting guard, *G*, in combination with the spring, *n*, and rod, *m*, when constructed, arranged, and operated from the rakers' seat, in the manner and for the purposes specified, and not otherwise.

Also the grain guard, *P*, when constructed, arranged, and operated in the manner, and for the purposes specified, and not otherwise.

TREATING LEATHER FOR ENAMELING.—T. P. Howell & N. F. Blanchard, of Newark, N. J.: What we claim in our machine for softening tanned and dry leather, is not the details thereof, separately and apart from their use in combination.

We claim the combination of the cylinder, as constructed, with the elastic slotted bags, as constructed and used, for softening tanned and dry leather, for japanning purposes.

HAND SEED PLANTER.—D. V. Hughes, of New London, Mo.: I do not claim, separately, or in itself, the perforated side, *D*, working in a seed box for distributing seed, for that is an old and well known device.

But I claim the seed box, *C'*, and perforated slide, *D*, when attached to the blades, *A, A'*, connected by a joint, *a*, arranged substantially as shown, for the purpose specified.

[Mr. Hughes' hand planter consists of two parts, pivoted together like a pair of tongs. The planting is done by thrusting the bottom parts, closed, into the ground, and then opening them by the handles at the top. The openings done with the fingers, while the implement is in the ground; by this action the hole is enlarged and the right quantity of kernels deposited therein: the feeding of the grain is done by a slide which opens and shuts, in accordance with the opening and closing of the legs of the apparatus. This is quite a novelty among corn planters.]

ATTACHING TOPS TO SEATS OF CARRIAGES.—Lyman Jacobs and E. C. Landon, of Castile, N. Y.: We claim the described method of concealing the back rails of seats to carriages, by means of grooves in the back of the tops.

And we further claim, in combination with the grooves, the mode of inserting tops to seats of carriages, by means of beveled pins and bolts, as represented at *E, E'*, and *D, D'*, fig. 1, and *F, F'*, and *G, G'*, fig. 2.

METHOD OF INSERTING TUBES IN EVAPORATING PANS.—Geo. H. Thomas, of Kingston, Mass.: I claim the method of securing tubes to tubs, sheets, by making the tubes without projections on the surface, that they may be inserted directly through holes in the tub sheets, substantially as described, in combination with clamps at the ends of the tubes, and overlapping the joints, substantially as, and for the purpose specified.

REVOLVING MEASURING WHEELS.—Louis Young, of New York City: I do not claim the manner of transmitting the motion from the measuring wheel, *a*, to the connecting wheel, *b*.

But I claim the arrangement of the box containing the count wheel, *b*, in connection with the stock carrying the measuring wheel, *a*, in such a manner that said box is made to serve as a convenient handle for working the instrument.

NUTMEG GRATERS.—Hiram Carley, of Lynn, Mass., assignor to himself and Edmund Brown, of same place: I claim the combination of the box and holder, and the pressure spring or contrivance with the rasping surface of the grater, the whole being applied and made to operate together, substantially as specified.

LIFTING JACKS.—Francis Drew, of South Boston, Mass., assignor to himself and Solomon S. Gray, of same place: I claim the described jack, consisting of the sockets, *F, F'*, with their connecting arms, *H, H'*, and pawls, *I, I'*, in combination with the ratchet wheels, *K, K'*, and cog wheels, *C, C'*, arranged and operating in the manner set forth.

FILTERING FAUCET.—Louis Finger, of Boston, Mass., assignor to himself and Lazarus Schell, of same place: I claim the brush, *O*, in combination with the plate, *L*, and passages, *K*, operating in the manner, and for the purpose substantially as set forth.

STREET SWEEPING MACHINE.—M. W. St. John & Isaac Brown, of Leonardville, N. Y.: We claim, first, the reciprocating brooms or brushes, *W*, attached to a bar, *T*, which is connected with the pitmans, *P, P'*, the parts being arranged as shown, or in an equivalent way.

Second, we claim the endless apron, *X*, placed underneath the machine for the purpose of receiving the dirt from the brooms or brushes, *W*, and conveying it from underneath the machine, and depositing it in winrows in the street, as described.

Third, we claim the combination of the endless apron, *X*, and reciprocating brooms or brushes, *W*, arranged as shown and described.

Fourth, we claim connecting the swivel wheel, *J*, with the back end of the draughtpole, *L*, by a bar, *N*, substantially as shown, for the purpose specified.

Fifth, we claim placing the driving wheels, *C, C'*, and pinions, *F, F'*, loosely on their respective shafts, and operating the ratchets, *G, G'*, by means of the slanted sliding plate, *H*, substantially as shown, for the purpose of throwing the working parts of the machine in and out of gear with the driving wheels.

[Street sweeping by machinery is no longer a novelty; it is rapidly becoming one of the common institutions of society. In London, Paris, New York, Philadelphia, and other populous cities, the hand broom is fast disappearing, and the mechanical sweeper doing ten times the work, operating with equal certainty in the night time or the day, and never becoming weary, is taking place.]

Rotary brushes, operated by means of gearing connected with the cart wheels, are employed in most of the sweeping machines; but in the present improvement reciprocating brushes are employed. The brooms are made to move back and forth, and sweep over the ground in almost precisely the same manner as the hand broom.

Each brush works independently of the other, and is pressed into place by a spring from behind; this arrangement permits a yielding movement, and allows the brooms to lift, separately, over stones or other impediments, which happen to lie in their way, without disturbing the other brooms. The dirt is swept on to an endless revolving belt, which carries it one side and discharges the same on to the ground. As the machine advances through a street, the filth will be thrown up into long winrows, to be subsequently removed by shovels or by another machine.

There are some other excellent features belonging to this patent, one of which is a novel way of connecting the third or steering wheel with the draft tongue of the cart. Taken altogether the invention strikes us as one that promises to be of great value and utility.]

MILLS FOR GRINDING COFFEE, &c.—Cornelius W. Van Vleet, of Fishkill Landing, N. Y., assignor to Charles Parker, of Meriden, Conn.: I claim the peculiar arrangement of the crushing and the grinding cones, as described, and in combination therewith the passage, *i*, leading from the largest circumference of the upper cone to the smallest circumference of the lower cone substantially as set forth, and for the purposes specified.

ENVELOPES.—Emanuel Harmon, of Washington, D. C.: I claim the manufacture or preparation of envelopes with parallel lines on the interior of the back, as set forth.

GRINDING APPLES.—W. O. Hickok, of Harrisburgh, Pa.: I do not claim the cylinders on whose surfaces grooved and fluted helical ribs are formed, and which move with different velocities, as these were patented by Samuel W. Powell, in 1849.

But I claim the breakers, *d, d'*, constructed and applied substantially and for the purpose as described and set forth, whether the said breakers are used in combination with the helical ribs, *c, c'*, and the tube, *b, b'*, so as to produce a separate and distinct depression, *e*, around each tooth, as described and set forth, or whether the said breakers are used in combination with the teeth above, as shown.

DESIGN.
STOVES.—Benj. Wardwell, of Fall River, Mass.

Making Hams.
As this is about the period of the year when most families lay down their meat for winter use, a few suggestions on the subject will be acceptable to many.

PORK HAMS.—When the meat is perfectly cold, after being killed, it is ready to be salted. The salt should be of the best quality—solar evaporated, ground fine, is, perhaps, the best kind—and to every pound of it one ounce of fine white sugar should be added. The hams should be laid upon a table or bench, and every part carefully rubbed with this salt; then they should be laid in a dry tub until the next day. The same operation should be repeated every day for four days, taking care to turn the hams in the tub every time they are laid down. After this, the operation may be repeated once every two days for a week, when it will be found that the meat has absorbed sufficient salt to preserve it for family use. After this they may be slightly smoked, or hung up to dry. Hams intended for sale should be once rubbed over with the salt, as described, then placed in a strong pickle. This pickle should be made of the best salt—10 lbs. to the 100 lbs. of pork, with one ounce of sugar to the pound added, and half an ounce of saltpeter to the ten pounds of salt, all boiled for about fifteen minutes, and the froth skimmed off; it is then set aside to cool. When cold, the hams may be placed in this pickle and left for three weeks. They should then be lifted, hung up for three or four days to drip, and are then fit to be smoked.

For family use, instead of smoking the hams after they are salted and dripped, if they are simply rubbed over with black pepper and hung up for a few days to dry, the meat acquires a very fine flavor. A mild smoky taste may be given to hams without smoking them, by simply smoking the barrels in which they are to be laid down in pickle. This is a good plan, because the taste of the smoke—which some persons like—is given to the meat without discoloring it. Sides of pork should be treated in the same manner as hams laid in the pickle; but for home use, during winter, by merely rubbing the sides with salt every day for a week or ten days, then hanging them in a moderately cool place to dry for use, the meat is much sweeter than that laid down in pickle. This information we have derived from one long engaged in curing pork, and we have satisfied ourselves, practically, of its correctness. The amount of salt for rubbing on the meat does not require to be stated; no person can go wrong by rubbing on too great a quantity. The sugar is used for the purpose of nullifying the bitter taste of the saltpeter, and also that of any *bitterin*—sulphate of magnesia or sulphate of soda—that may be in the salt.

BEEF HAMS.—The finest beef hams are made by cutting out the entire bone of the hind-quarter, then rubbing in the salt and sugar, the same as described for pork hams, turning them over and rubbing them every day for one week. After this they are hung up to drip in a cool dry place for three days. They are now taken down and rubbed all over, on a table or bench, with some fine salt, black pepper, and cloves, all ground together. About one ounce each of salt and pepper and half an ounce of cloves are sufficient for thirty pounds of meat, but the exact quantity cannot be given. No person can go wrong if he rubs every part of the whole surface of the ham with some of this salt and pepper composition. The ham is now fit to be rolled. This is accomplished by rolling it into a cylindrical form, swilling it round from the narrow to the thickest end, and hanging it up to dry for about ten days before it is used. It is cut in round slices for frying by commencing at the butt end. A stout cord is used to swill, or tie such hams, and it must be looped or turned under on both sides along the coils of the cord, so as to have every coil firmly bound and held in place when the ham is being cut in slices for daily use. Hams made in this manner are the finest in the world—a luxury.

Smoked beef is to be found in abundance in our markets, but it is a poor eatable of the meat kind in comparison with beef prepared as described. We hope some of our farmers will make some such beef hams this fall for family use. They will not keep in summer weather so well as smoked beef—so it is said—but of this we are not certain.