60,969.—HOOP SKIRT.—Hunneville Vincent, New York City, assignor to Hugh B. Brown, Brooklyn, N. Y.

I claim the arranging of the wires or hoops in such a manner that each hoop crosses or intersects itself once or more in its passage around the skirt, substantially as and for the purposes herein set forth.

60,970.—DOOR LOCK.—Rudolph Vollschwitz (assignor to himself and J. J. Schlaepfer), New York City.

I claim the mortices g, in the tumblers, D, to operate in combination with the flat notched bit of the key, nuts, E, and bolts, C, substantially as and for the purpose described.

60,971.—GRANARY.—James Walsh, Valley Town, Ill.

I claim the granary and measurer, constructed of removable parts, substantially as described and represented.

60,972.—HOLLOW AUGER.—Joseph Ward, New York City.

I claim, First, The arrangement within the case, A, of the cutter stocks, B, constructed with discharge throats, C, and adapted for adjustment by means of the cam, E, and guides, a, as and for the purposes specified.

Second, I claim the within-described tool, adapted for cutting tenons and boring holes simultaneously, constructed and operating in the manner and for the purpose specified.

60,973.—MECHANISM FOR OPERATING DIES.—Hervey Waters, Northbridge, Mass.

I claim the combination with an eccentric hammer, crank press, or other similarly operating machine or machines of a means or system of mechanism by which the action of the machine or machines may be controlled substantially as set forth when such system of mechanism is so connected with the machine or machines as not to enter into the active operating structure thereof.

60,974.—LOCK AND KEY.—H. B. Weaver, Hartford, Conn.

I claim, First, The combination of the two spindles, D and D', the bolt, B, plate, C, and the tumblers, F, or their equivalents, the whole being constructed, arranged for joint operation, and applied to a lock case, substantially as and for the purpose herein set forth.

Second, The combination of the above and the fence, k', the whole being constructed, arranged, and operating as described.

Third, The bell crank, tumbler levers, F, hung to the spindle, D', and arranged in respect to the recess, k, of the plate, C, substantially as described.

Fourth, The tumblers, F, arranged in respect to the slot, l, in the stem of the handle, E', as described.

Fifth, The slot in the tubular stem of the handle, E' in combination with notches, p, in the edges of the key.

60,975.—RECTIFIER FOR STILLS.—A. Werne, New York City.

First, I claim the spiral channels formed in the covering plate, C, and in the box, B, by the spiral flanges, d and g, respectively, substantially as and for the purpose herein shown and described.

Second, I claim the annular plate, b, made substantially as and for the purpose herein shown and described.

Third, I claim the combination of the plate, b, box, B, and cooling cover, C, with the rectifier, A, substantially as and for the purpose herein shown and described.

60,976.—CULTIVATING HOPS.—E. A. Wightman and W. C. Williams, Livingstonville, N. Y.

We claim the sliding rod, B, arranged with the poles, A, as shown, adapted to be drawn therefrom when desired, substantially as represented and described.

60,977.—CORN HUSKER.—J. F. Winchell, Springfield, Ohio, assignor to himself and George C. Steele.

I claim the corn husker, consisting of the metal plate, A, and the strap, B, made adjustable in size, when constructed and arranged as herein shown and described.

60,978.—CHAIR.—G. C. Winchester and M. V. B. Howe (assignors to C. and G. C. Winchester), Ashburnham, Mass.

We claim combining the seat, a, with the stationary stool or base, b, by means of ball and socket joints, arranged not only to act as hinges but otherwise, substantially as described.

Also combining with such arrangement or construction, the spring, i, fixed to the bar and bearing against the rear part of the seat, substantially as shown and described.

Also the combining of the ratchet bar, pawl plate, shaft, and cam, when arranged to lock the seat in horizontal or inclined position, substantially as set forth.

Also, forming each side rail, f, and its leg, p, from a single strip of wood bent into shape, substantially as shown and described.

60,979.—CONSTRUCTION OF ORDNANCE.—W. E. Woodbridge, Little Falls, N. Y.

I claim, First, The employment, in the structure of cannon, of helices of wire of reversed obliquity, applied one over another, and brought into union by the intervention of a more fusible metal, employed as a solder.

Second, I claim, in general terms, the construction of cannon, substantially as herein described, modifying the selection and use of materials as herein set forth.

Third, I also claim the application of the mode of construction herein described, to tubes other than cannon, when the mechanical requirements are similar.

60,980.—BRIDLE BIT.—L. D. Woodmansee, Dayton, Ohio.

I claim the combination of the rigid bars, A and B, jointed directly to the mouth piece of a bridle bit, and operating in the manner substantially as and for the purpose described.

60,981.—GRATES.—Charles J. Woolson, Cleveland, Ohio.

I claim the tipping frame, A, provided with journals and bearings, B, in combination with the shackle or grate bar, D, arms, E, and link, O, and duplicate bearings, S.

60,982.—CULTIVATOR PLOW.—S. A. Wray, Greenfield, Ind.

I claim the combination of the beam, B and B', elastic plate, D, and hinge joint, E, with a device for retaining the beam in position, substantially in the manner set forth.

60,983.—WATER WHEEL.—Anthony Wrealsh and William Burns, Springfield, Ohio.

We claim, First, The buckets, D, when constructed with two or more faces, d and d', upon different radial planes, substantially as set forth.

Second, Constructing the inner set of concentric buckets or faces of the same bucket, d and d', shorter than the outer set, substantially as and for the purpose set forth.

Third, The combination of the guide wheels, E, intermediate plate, F, and gate ring, H, when constructed and arranged substantially as set forth.

Fourth, The raised crown of the intermediate plate, F, as arranged in relation to and serving as a bearing for the guide ring, H, substantially as set forth.

Fifth, The plate, F, when constructed and arranged between the guide wheel, E, and gate, H, substantially as and for the purpose set forth.

Sixth, The elevated bush, G, supported upon braces, resting upon the crown of the intermediate plate, F, and within the guide ring, H, substantially as and for the purpose set forth.

60,984.—COMPOSITION OF GLUE OR GELATINE AND OTHER MATERIALS CALLED DUROGEL.—Henry Wurtz, New York City.

I claim the combination of bichromate of potash with ordinary glue or gelatine, in the manner and for the purpose substantially as described in the foregoing specification.

60,985.—HOLLOW AUGER.—Emanuel Young, Amanda, Ohio.

I claim, as an article of manufacture, the hereinbefore-described tool, formed with the knives, C and E, attached to the hollow tapering body, B, formed with the shank, A, for attaching the tool to a brace, substantially as described.

60,986.—IMPONDERABLE FLUID AND MODE OF GENERATING THE SAME.—Martin Ziegler, Mulhouse, France.

I claim, First, Producing a new imponderable fluid in the manner and by the means herein set forth and described.

Second, The combination of two substances, the one containing azote, and the other containing carbon, in the manner substantially as herein described, so as to generate an imponderable fluid, and to excite or produce a current of the same, as and for the purposes set forth.

RE-ISSUES.

2,430.—PROCESS FOR PURIFYING METALLIC OXIDES.—Alfred Monnier, Philadelphia, Pa. Patented March 21, 1865.

I claim the treatment of metallic oxides for their purification, substantially as herein set forth.

2,431.—REFINING HYDRO-CARBON OILS AND UTILIZING WASTE PRODUCTS THEREFROM.—Henry Pemberton, Alleghany City, Pa. Patented Aug. 2, 1859.

I claim, First, Receiving the sulphuric acid contained in the residuum of the process of refining coal oil, petroleum and other hydro-carburets, by exposing the residuum, which is a compound of acid and tarry matters, to the combined action of water and heat whereby, under the influence of the high temperature, the attraction of the tarry matters for the acid is overcome by the superior affinity of the acid for the water, so that the acid separates itself from the tarry matter, and dissolves in the water, from which it may be obtained, in a concentrated state, and purified by various means, substantially as hereinbefore described.

Second, Purifying the dilute sulphuric acid recovered from the residuum which results from the refining of coal oils, petroleum and other hydro-carburets, by repeated processes of concentration and dilution with water, whereby the coloring matter is separated, and may be removed, substantially as hereinbefore described.

Third, The use of the sulphuric acid recovered from the residuum resulting from the refining of coal oil, petroleum and other hydro-carburets, for the decomposition of salt, in the production of sulphate of soda, as a step in the manufacture of soda ash.

2,432.—DRYING APPARATUS.—Edward Y. Robbins, Cincinnati, Ohio, assignee by mesne assignments of himself. Patented July 19, 1864.

I claim, First, So arranging the drying chamber, and drum or flue, B, and the furnace or stove for heating the wash water, that the drying chamber shall be heated by the surplus heat passing from the furnace or stove through a drum or flue, B, placed in the drying chamber, substantially as set forth.

Second, The application of a condenser to a drying chamber as above described, or any equivalent arrangement for producing the same effect, substantially in the same manner.

Third, I claim the netting when placed over the drum or flue to catch the clothes in case of falling, and thus prevent their being burned, the same being arranged substantially as set forth.

2,433.—LAP JOINT.—Henry Underwood, New York City. Patented Feb. 9, 1858.

I claim the union of the plates or straps, b, with the rivets, a a', which pass through outer and inner ends, A B, of the belt, substantially as and for the purposes described.

2,434.—MACHINE FOR MAKING NUTS.—William E. Ward, Port Chester, N. Y. Patented Oct. 7, 1856.

I claim as a new and as my invention, the two punches arranged side by side, and operated substantially as described for punching the central hole, cutting off the blanks from the bar, and discharging the same, substantially as described, in combination with the two holes or two dies, so that a hole is punched in the bar for another nut during the continued motion of the punch to discharge the nut which was cut off during the previous part of the same motion.

I also claim in combination with the punching and cutting mechanism either without or with the mandrel, or its equivalent, for entering the central hole of the nut blank, the employment of the spring jaws, or the equivalents thereof for transferring the nut blank from the die to the mandrel and there holding it until the mandrel enters the hole, substantially as described.

I also claim the mandrel for holding the nut blank in combination with the swaging surfaces by which the faces of the nut are formed, substantially as described.

I also claim in combination with the mandrel for holding the nut blank substantially as described, the hammers for hammering or swaging the edges of the nut, substantially as described.

And finally I claim the combination of the swaging surfaces for forming the faces of the nut with the hammers for forging the edges of the nut, substantially as specified, and for the purpose set forth.

2,435.—HEATING STOVE.—William A. Barlow, Elkhorn, Wis. Patented June 3, 1862.

I claim the base, A, composed of top and bottom plates only so formed and united as to inclose a hollow or space, under the whole body of the stove, and occupied throughout by the products of combustion in passing from the descending to the ascending flue or flues, substantially as and for the purposes herein specified.

I also claim the combination and arrangement of the projecting base, A, composed of top and bottom plates inclosing a space, the projecting top, C, similarly composed of top and bottom plates, and the pipes or flues, E E, and F, outside of and distinct from, the body of the stove, substantially as and for the purposes herein set forth.

In combination with the above, I also claim the dividing plates, a a, substantially as and for the purpose herein described.

2,436.—HEATING STOVE.—William A. Barlow, Elkhorn, Wis. Patented June 3, 1862.

I claim a heating stove having a double projecting top and an opening therein of the full or nearly full size of the interior of the stove body, and closed by a removable cover, substantially as and for the purposes herein specified.

In combination therewith I also claim a top, C, made of top and bottom plates with a heat-circulating space between them and projecting beyond the body of the stove sufficiently to admit flues or pipes extending from the top to the base of the stove, outside of the stove body, substantially as and for the purpose herein set forth.

2,437.—CAPSTAN FOR STEAM BOATS.—John Schaffer, St. Louis, Mo. Patented Oct. 21, 1856.

I claim the arrangement of the capstan barrel, A, with the wheels, e f, 6, 5, 4, 3, 2, and 1, provided with suitable shafting, when said wheels and shafting are used for connecting and rotating a capstan barrel by an auxiliary engine, said capstan and auxiliary engine being placed forward of the steam boilers on the bow of the boat, substantially as herein described and for the purpose set forth.

2,438.—RAKE FOR HARVESTER.—C. Aultman, Canton, Ohio, assignee by mesne assignments of S. A. Lindsay. Patented Dec. 11, 1860.

First, I claim a support for the revolving rake and reel shaft attached to and moving with the platform of a hinged bar machine.

Second, A support for the revolving rake and reel-shaft, attached to and moving with the hinged platform, in combination with a hinged platform suspended to the main frame.

Third, A support for the revolving rake and reel shaft, attached to and moving with the hinged platform in combination with the universal joint for drawing said shaft, and conforming the rake and reel to the movement of the platform.

Fourth, An automatic revolving rake, with a universal joint for driving it.

Fifth, The combination of a revolving rake and reel, a hinged platform, and a jointed tumbling driving shaft.

Sixth, A support for the revolving rake and reel shaft attached to and moving with the hinged platform in combination with a driving mechanism, which adapts itself to the rising and falling of the platform in passing over uneven ground.

Seventh, The combination of a revolving rake and reel, with a mechanism for adjusting the rake and reel together, with the cutting apparatus and platform so arranged that the driver can operate it without stopping the machine.

Eighth, The combination of a floating finger beam machine, a revolving rake and reel, so combined and arranged that the rake and platform shall rise and fall together while reaping, and that the rake and platform may be readily removed for converting it into a mower.

Ninth, The combination of a hinged platform and a continuously revolving rake shaft, support located on said platform, between the center of the draft frame and the outer divider.

Tenth, A standard or support, which sustains the sweep rake above the draft frame or driving wheels thereof, said standard or support being mounted on the hinged platform.

Eleventh, In a harvesting machine, which has its cutting apparatus hinged or jointed to the main frame, in such manner as allows it to conform at both ends to the undulations of the ground, and has a rake support mounted on said jointed platform, I claim so constructing and arranging the several parts that the support of the rake can occupy a position outside of inner drive wheel, or a position which is between the point of suspension of the platform and the outer divider, and so that said platform can also be hung or suspended below the draft frame.

Twelfth, An inclined rake shaft, a platform and spring, so arranged that the rake head shall be elevated sufficiently to pass above the main frame by the mere inclination of the axle, and shall be guided in passing across the platform by the sliding of the rake teeth on the platform, thereby dispensing with the use of a cam for elevating or guiding the rake.

Thirteenth, A continuously revolving rake, in combination with a shaft inclined toward the platform for forcing the rake down to the platform, and then elevating it up and out of the way of the wheels and main frame, in its revolution.

2,439.—HARVESTER.—C. Aultman, Canton, Ohio, assignee by mesne assignments of S. A. Lindsay. Patented Aug. 2, 1859.

First, I claim an automatic rake, delivering the grain in the arc of a circle in combination with a hinged platform.

Second, The combination of a revolving rake and reel, and a hinged platform.

Third, The combination of a revolving rake and reel, with a hinged platform suspended from the main frame.

Fourth, In a harvester, having a revolving rake and reel, I claim suspending the hinged platform to the main frame at one or more points between the driving wheels.

Fifth, The combination of a revolving rake and reel, with a hinged cutting apparatus, in such a manner that the said cutting apparatus can be raised and lowered without changing the relative position of the rake and reel to the platform.

Sixth, The employment of radial reel and rake arms attached to the central head or axis, by independent hinges or pivots for each radial arm.

Seventh, Attaching the beaters and rake heads at such an angle with a radial line, that the rake heads and beaters shall approach to and pass over the cutter in a line nearly parallel to the cutter when the axis of the rake and reel is located in the rear of the cutter bar.

Eighth, The boxes or bearings, K K, for carrying the pivoted radial arms in combination with the central revolving hub.

Ninth, The combination of a revolving rake and reel, a vibrating frame or its equivalent, and a hinged platform.

Tenth, Arranging the revolving rake and reel supported to vibrate about a gear center, so that the raising or lowering of the cutter does not interfere with the operation of the driving mechanism.

Eleventh, The combination of a revolving rake and reel apparatus which is supported between the driving wheels and a hinged platform by means of an intermediate connecting piece for the purpose of conforming the movements of the rake to the platform in passing over uneven ground.

Twelfth, The combination of a quadrant platform, a hinged finger beam, and a frame supported on two wheels.

Thirteenth, The combination of a quadrant platform and a hinged finger beam suspended from a frame supported on two wheels.

Fourteenth, The combination of a quadrant platform, a hinged finger beam, a two-wheeled frame, and a rake moving in the arc of a circle.

2,440.—CORN HARVESTER.—George Geer, Douglas, Ill. Patented June 2, 1863.

First, I claim the endless chain, M, provided with pivoted teeth, n, substantially as and for the purpose set forth.

Second, The serrated wheels, f f', arranged and applied to operate as and for the purpose specified.

Third, The cutter, U, operated by the treadle, n', and arranged and applied as and for the purpose set forth.

Fourth, The bar or guard, l, arranged and applied underneath the cylinder, H, substantially as and for the purpose set forth.

Fifth, The plate or guard, N, attached to the plate, J, as and for the purpose specified.

2,441.—FRUIT BOX—Nicholas Hallock, Flushing, N. Y. Patented Sept. 7, 1858.

I claim, First, A fruit box constructed of thin sheets or strips of material which form the body and bottom of the box, and secured together, substantially as described and specified.

Second, I also claim in combination with a box constructed of thin sheets or strips of material, substantially as described, so arranging the handle as that it may be attached to and folded closely within the box substantially as described and specified.

Third, I also claim defining the outline or shape of the box by means of grooves in the material forming the box, substantially as described and specified.

Fourth, I also claim in fruit boxes constructed substantially as described, making the bottom so that boxes may be placed one above the other without injury to the fruit in the one below it and for better ventilation of the fruit, substantially as described and specified.

2,442.—SPRING HOLDER FOR WIPING CLOTHS.—Henry Johnson, Chicago, Ill., assignee by mesne assignments of W J. Johnson. Patented Feb. 21, 1860.

I claim the spring holder for cloths consisting of two or more curved spring fingers, arranged substantially as and for the purposes described.

2,443.—NICKING SCREW HEADS.—George L. Morris, Taunton, Mass. Patented June 12, 1866.

I claim the improved nicked screws made either by casting or cutting, having the said nicks flaring at their outer ends and with the separating part between strengthening the head, the two nicks being made on the line of one and the same diameter of the screw head, all as and for the purposes specified.

2,444.—MACHINE FOR MAKING CLINCH RINGS.—G. M Patten, Bath, Me. Patented May 2, 1854.

I claim the combination of the retainer and clearer or part, G, and its springs, or the equivalent thereof, and the elastic seat, H, with the dies E and F, the upper die being provided with mechanism for operating it, as described.

I also claim the combination as well as the arrangement of the retainer or part, G, and its springs, or their equivalent, with a pinch and die or dies, E F, the said part, G, being to operate therewith, substantially as described.

2,445.—BREECH-LOADING FIRE-ARMS.—William Mont Storm, New York City. Patented July 8th, 1856.

First, I claim a breech piece, hinged at its front end, and swinging upward and over, substantially as described, in combination with a stationary, or fixed recoil-bearing at its rear end, having the characteristic features of being firmly connected with the barrel, and being extended above the line of the bore of the barrel, substantially as and for the purpose set forth.

Second, I claim cutting away the recoil-bearing surface, substantially as described for the purpose set forth.

Third, I claim the internal bolt, e, operated by a positive motion to lock in place the movable breech piece of a breech-loading fire-arm during the fall of the hammer, or its equivalent, substantially in the manner described.

Fourth, I claim forming a space or recess between the lower side of the breech piece and the seat into which it shuts, for the accommodation of dirt which would otherwise prevent the descent of the breech piece, as hereinbefore fully explained.

2,446.—BREECH-LOADING FIRE-ARMS.—William Mont Storm, New York City. Patented July 8, 1856.

First, I claim a chambered breech piece, when such breech piece is hinged at its forward end to the barrel, and arranged to swing over, substantially as described for the purpose set forth.

Second, I claim, in combination with the barrel and movable breech, a packing tube or ring, arranged to slide within the breech piece, and formed at the front end to enter the barrel, so that by the force of the discharge the said tube will be forced forward and into the barrel, and made to pack the joint between the barrel and breech piece to prevent the escape of the explosive gases.

Third, I claim the manner, substantially as shown and described, of coupling the bolt, e, with the tumbler, so that although said bolt is operated by a positive motion, as described, the lock can be removed regardless of the barrel and bolt, as hereinbefore set forth.

DESIGNS.

2,533.—TRADE MARK.—Charles C. Buckley and Louis Dovell, New York City.

2,534.—COACH LAMP.—E. R. P. Cowles (assignor to C. Cowles & Co.), New Haven, Conn.

2,535.—STOVE.—Harrison Eaton, Amherst, N. H.

2,536.—MEDALLION.—Orion Frazee, New York City.

2,537 and 2,538.—ROUND COMB.—W. S. Minges, New York City. Two Cases.

2,539.—HANDLE OF A FORK OR SPOON.—John Polhamus, New York City.

2,540.—HANDLE OF A CASTER.—Horace C. Wilcox (assignor to the Meriden Britannia Co.), West Meriden, Conn.

2,541.—CASTER FRAME.—Horace C. Wilcox (assignor to the Meriden Britannia Co.), West Meriden, Conn.

EXTENSIONS.

MACHINE FOR DRILLING STONES.—Joseph J. Couch, Brooklyn, N. Y. Letters Patent No. 9,415, dated November 23, 1852.

I claim the improvement of making the drill rod to slide through the piston rod, substantially in the manner above set forth.

And I also claim the combination of the rocker lever, K, the wedge, M, the bolt, P, within the lever, the two cam plates, N O, the spring catch, Q, the spring and the two projections, c d, as applied to the drill shaft, the carriage or block, I, and the slide ways thereof, and made to operate together, and to actuate the drill, substantially in the manner as hereinbefore set forth.

KNITTING MACHINE.—Daniel Tainter, Worcester, Mass. Letters Patent No. 9,435, dated November 30, 1852.

I claim to so combine a draft and take-up roller and mechanism for revolving it, with a rotary series or set of needles and other mechanism of the above-mentioned peculiar kind for knitting, that such draft roller shall rotate simultaneously, or with the same velocity with such series of needles, so as to prevent the longitudinal rows of stitches from being produced in helical lines, and the evil consequences resulting to the fabric therefrom.

I also claim the arrangement of the draft and take-up mechanism, in connection with the knitting mechanism supported by two separate frames, A T, and also their connection with the mechanism for producing an equal and simultaneous rotation of these frames, A T, all substantially as described, whereby there shall not only be no connection between the frames, A T, to extend through the fabric, but no projection from the frame, A, to come in contact with the presser, stitch wheels, and cam bar, or their respective supports, during the simultaneous and equal rotations of both or either of the said frames, A T.

GRAIN SEPARATOR.—John R. Moffitt, Chelsea, Mass. Letters Patent No. 9,432, dated November 30, 1852. Reissue No. 540, dated March 23, 1858. Again reissued No. 716, B 1, May 17, 1859.

I claim, in combination with a receptacle in which the tailings are deposited by the winnowing apparatus, the arrangement of the screw elevator, O, in relation to the thrashing cylinder, for the purpose of returning the tailings to be thrashed, as set forth.

MORTISING MACHINE.—Joseph Guild, Buffalo, N. Y. Letters Patent No. 9,431, dated November 30, 1852. Reissue No. 333, dated December 11, 1855.

I claim, First, The sliding wrist, o, connected with the chisel, and also with the driving power, in the manner described, in combination with the mechanism described, or its equivalent, for sliding said wrist, so that the operator can, during the motion of the machine, vary the depth of cut of the chisel, or cause it to be suspended without disconnecting the driving power.

Second, The combination in a mortising machine, substantially as described, of the treadle and opposing spring or weight connected to a toggle, one end of which being pivoted to the frame, the other is pivoted to a sliding wrist upon a vibrating arm, actuated by the power, the said wrist being slid out and in upon the arm with varying power and speed, by the action of said toggle and its attached weight or spring and treadle, as explained, or their equivalents.

MACHINERY FOR MAKING PILLS.—Erasmus A. Pond, Rutland, Vt. Letters Patent No. 9,455, dated Dec. 7, 1852.

I claim, First, Molding or forming pills by means of two cylinders, B B, having each a number of recesses, a a, in its periphery, the recesses in one cylinder matching with those in the other, and each matching pair forming a mold of the required form of the pill, the said cylinders revolving in opposite directions, and the pill mass being conducted between them, substantially as herein described.

Second, The bands, I I, of india-rubber, or any sufficiently elastic material passing around or partly around the mold cylinders, for the purpose of expelling the pills from the recesses, a a, after the molds are open, substantially as herein set forth.

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Containing Rules and Regulations in every thing relating to the Arts of Painting, Gilding, Varnishing, and Glass Staining: with numerous useful and valuable Receipts; Tests for the detection of Adulterations in Oils and Colors, and a Statement of the Diseases and Accidents to which Painters, Gilders and Varnishers are particularly liable, with the simplest methods of Prevention and Remedy. With directions for Graining, Marbling, Sign Writing, and Gilding on Glass. To which are added complete INSTRUCTIONS FOR COACH PAINTING AND VARNISHING. 12mo., Cloth. $1 50.

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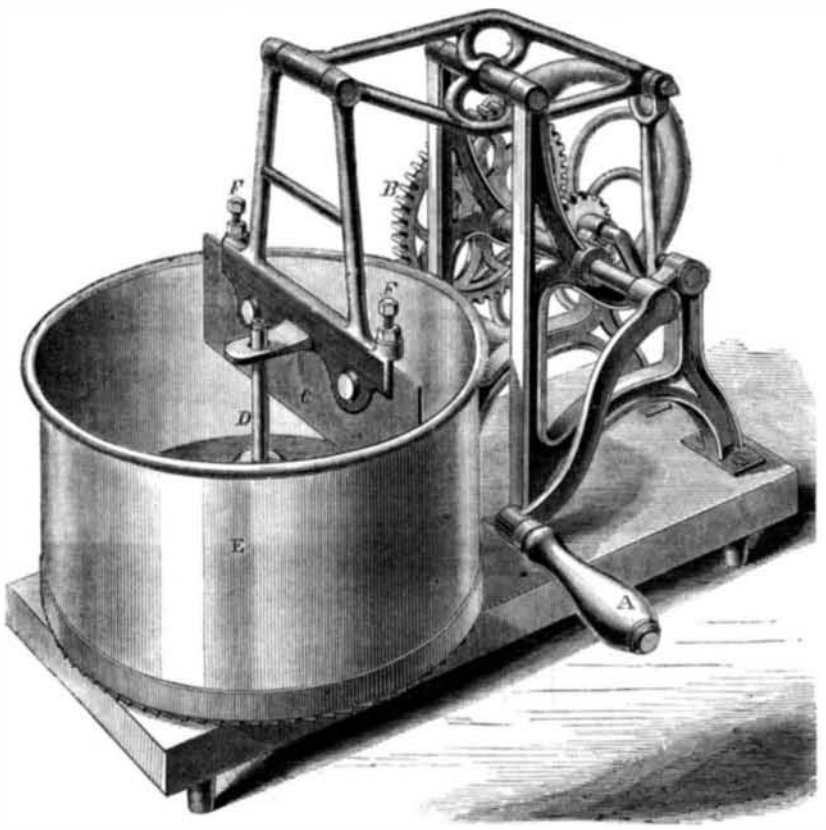
Improved Meat and Vegetable Chopper.

Not at the holidays alone, but at many other times, the business of mincing meat and vegetables is one which must engage the attention of the cook. Many object to the machines which grind instead of cutting, believing the process detrimental to the material to be eaten, and the use of the hand chopping-knife is wearisome and exhausting. The engraving represents one of those machines intended to obviate this labor and to insure a thorough and even chopping of the food.

As will be seen by the engraving, the contrivance is a simple machine secured to a wooden platform, which can be moved about or fastened permanently to a table. By turning the crank, A, the large gear, B is revolved, giving motion, by a pinion, to another crank on a shaft carrying a balance wheel.

To this crank is attached a connecting rod jointed to one end of a walking beam, to the other end of which is secured the knife, C, which has a reciprocating vertical movement guided by the fixed stud, D. The receptacle, E, is of tin or any convenient material, with a wooden bottom, and turns on the stud, D. The under outside edge of this vessel is a ratchet, by which it is rotated one tooth at every upward stroke of the knife, by a long pawl connected with a short crank on the shaft carrying the balance wheel. The difference between the large gear, B, and the pinion, gives four complete strokes to the knife, C, at every revolution of the handle, A. The knife may be adjusted, as it is shortened by grinding, by means of bolts passing through holes in the iron knife-frame and slots in the knife, C, and also by adjustable set screws, F.

The operation of the machine may be easily understood by a reference to the engraving. It appears to be well adapted to the purpose intended. The machines are built of different sizes, for families, restaurants, hotels, butchers, and bakers. It was patented May 23d, 1865, by L. S. Starrett, of Newburyport, Mass., at which place they are manufactured by L. S. Starrett & Co., to whom, or to Maxwell & Payson, 257 Front street, New York city, apply for rights to vend and manufacture.



STARRETT'S MEAT AND VEGETABLE CHOPPER.

Whitworth Ordnance.

Some time ago we described and illustrated Mr. Whitworth's plan for compressing steel immediately after its being run into molds for the manufacture of cannon, hollow projectiles, and various other articles Another patent has since been added to those previously taken out by Mr. Whitworth, and experiments are now being made at the Charlton street Works for perfecting this improved treatment of steel in making ordnance. A hydraulic press, capable of exerting a pressure of 2,000 tons, has been laid out for this manufacture. The steel manufactured at the Charltonstreet Works is all made in pots, and melted in coke furnaces; but the introduction of Siemens' gas furnaces is now under consideration, and will in all probability be effected at an early date. The results of experiments hitherto made of casting steel under great pressure, or rather of compressing steel in its liquid state, have been most satisfactory. The entire absence of air bubbles and spongy parts in the metal, and the strength of the steel so produced, give to these castings the same nature and character which steel acquires by the process of hammering or rolling. The precise method of this manufacture and the plan by which it is carried out is being kept secret as yet, until the first stages of experiment and study shall have been passed through.—*Engineering.*

In connection with the explanations and illustrations of the philosophy of waterspouts, lately given in the Scientific American, our readers will be interested in notices of three of these phenomena, from the Great Basin between the Rocky Mountains and the Sierra Nevada. Two of them are very recent. A waterspout burst on the city of Austin, Nevada, flooding the main street to such an extent as to destroy a number of houses. Another in El Dorado Cañon swept away large piles of wood and several wood-choppers with them. About two years ago, a waterspout in Esmeralda county, in the same state, burst upon a travelling carriage containing three persons, killing two of them outright, destroying the carriage, and fatally injuring one of the horses. These occurrences are characteristic of the country, having left their traces every where in the wild work of torrents among the hills.