(No Model.)

R. N. REID.

MANGLE.

No. 419,795. Patented Jan. 21, 1890.

Fig. 1

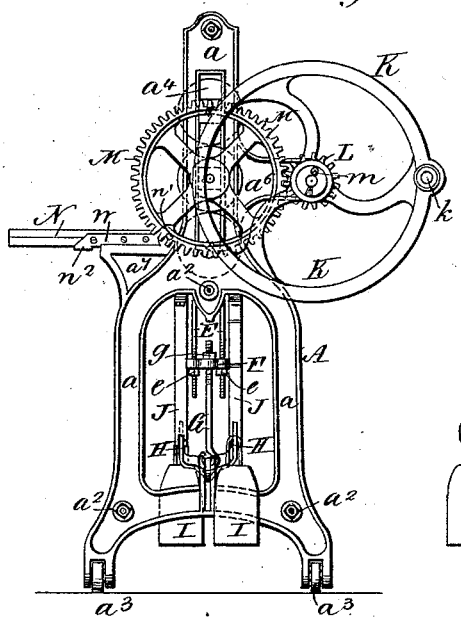


Fig. 2.

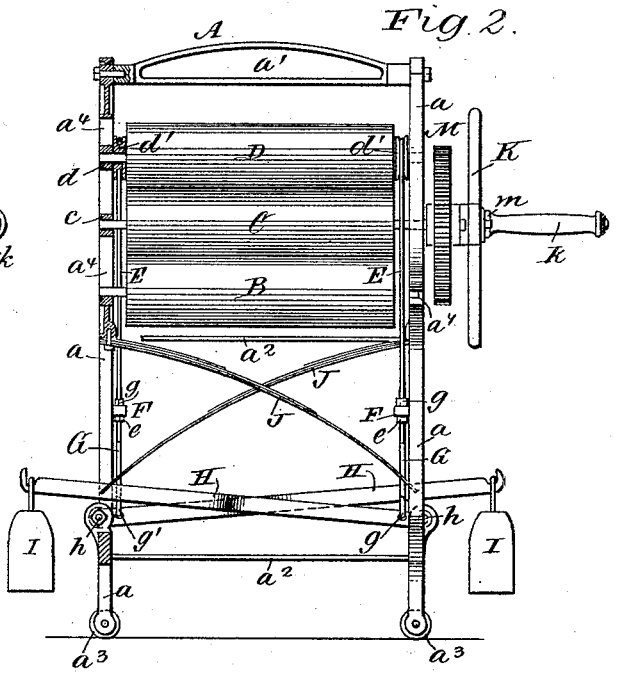


Fig. 3.

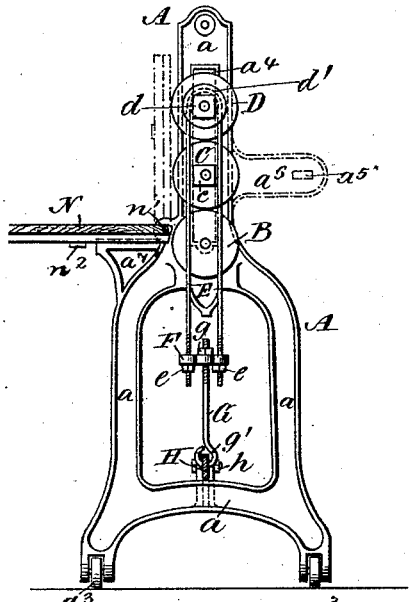
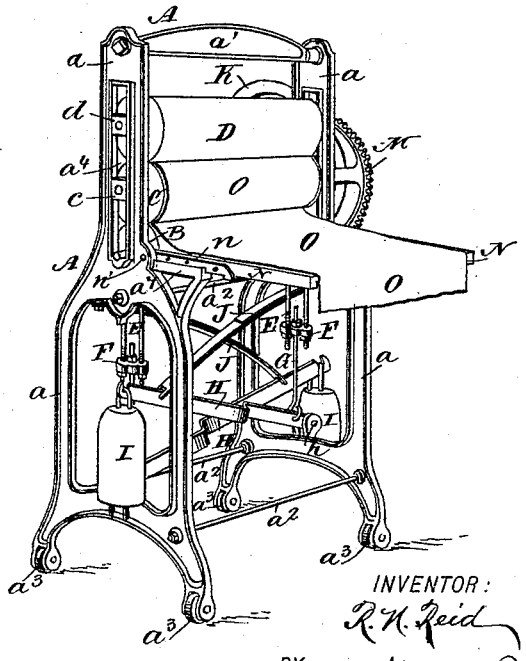


Fig. 4.



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MANGLE.

SPECIFICATION forming part of Letters Patent No. 419,795, dated January 21, 1890.

Application filed October 2, 1889. Serial No. 325,764. (No model.)

To all whom it may concern:

Be it known that I, ROBERT N. REID, a subject of the Queen of Great Britain, residing at Orange, in the county of Essex and State of New Jersey, United States of America, have invented a new and Improved Mangle, of which the following is a full, clear, and exact description.

My invention relates to machines for mangling or pressing clothes, and has for its object to provide an inexpensive and efficient mangle adapted more especially for household or family use and for mangling a large variety of fabrics, such as table and bed linen and clothing. The machine is both adjustable and self-adjusting to provide for its easy, smooth, and almost noiseless operation.

The invention consists in certain novel features of construction and combinations of parts of the mangle, all as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side or end view of my improved mangle. Fig. 2 is a rear view thereof with one side or end part of the frame in central vertical section. Fig. 3 is a view at the reverse side or end of the machine from that shown in Fig. 1 with parts shown in vertical section and in dotted lines, and Fig. 4 is a front perspective view of the machine as it appears when in operation.

The frame A of the machine is substantially made of two end or side uprights *a a*, stayed one to the other by a rigidly-connected headpiece or cross-bar *a'* and a series, preferably three, of stay bolts or rods a^2. The uprights are mounted on caster wheels or rollers a^3, allowing easy movement of the machine into working position and return of it to the corner of a room or into a closet when out of use. The uprights are each provided at their narrower upper parts with a vertical slot a^4, in which are placed the journals of the three rollers B C D, which rollers normally rest one on the other. The journals of the lower or bed roller B rest directly in half or open-topped bearings provided at the bases of the frame-slots a^4, and the journals of the intermediate roller C and upper roller D have bearings in full boxes *c d*, respectively, which are fitted for vertical movement in the frame-slots a^4. The boxes *d* of the upper roller D are provided with inward extension-pieces *d'*, which are grooved or suitably shaped at their upper parts to receive and securely hold or support the upper bends or cross-bars of two pendent stirrups E E, each of which is provided with screw-threads and nuts *e e* at the extremities of its limbs. These nuts sustain saddle-plates F F, which are slipped one onto the lower ends of each of the stirrups before the nuts are applied, so that the nuts sustain the saddles on the stirrups and allow them to be adjusted higher or lower thereon. Each of the saddles F is also centrally bored to receive loosely the upper threaded end of a link-bolt G, which receives a nut *g* above the saddle, and at its lower end is provided with a hook or eye *g'*, which is engaged with a lever H near its fulcrum-pin *h*, which pivots it to suitable lugs provided on the lower part of the adjacent end or side upright *a* of the machine-frame. The two levers H H cross each other at the center of the frame, and each carries at its outer end a comparatively heavy weight I, of about fifty to sixty pounds in a mangle designed for household use. With this construction the two weighted levers H I exert a very powerful leverage to pull down the links G, saddles F, and stirrups E at both sides or ends of the machine, and consequently press the upper roller D to or toward the intermediate roller C and press the latter to or toward the lower or bed roller B, and by adjusting the nuts *e g* of the stirrups and links the pressure tending to draw the mangling-rollers together may be considerably increased or lessened, as may be required for any particular work in hand and without changing the weights on the levers.

To the opposite ends *a a* of the mangle-frame A are fixed, by bolts or otherwise, the upper ends of two springs J J, which cross each other and bear by their lower notched or forked ends upon the tops of the two weighted levers H H, preferably near their outer ends. These springs may be made in

any approved way. I show them each formed of a series of successively longer leaves or plates, which assure requisite elasticity and durability. These springs have for their object to prevent undue or prolonged vertical oscillation or movement of the weighted levers after a suddenly-increased thickness of fabric is passed through the mangle-rollers—the gathered waist portion of an underskirt or dress, for instance—as it is manifest that when the two upper rollers rise and fall rather suddenly under the passage of the thicker fabric the tendency of the weighted levers would be to jump upward at their weighted ends and make a disagreeable noise and bring undue strain upon the rollers and their bearings, the links and stirrups, and other parts of the machine. All this is quite effectually obviated by the springs J, which readily yield upward as the mangle-rollers rise more or less to accommodate the work and maintain sufficient constant pressure on the levers to check vertical jumping of them. The springs also prevent lateral swaying of the free ends of the levers, thereby obviating undue wear of their fulcrum-pins. The levers are preferably bent flatwise or laterally to cross each other while allowing them to be fulcrumed to lugs centrally located on the frame. (See Figs. 1 and 4 of the drawings.)

The mangle is operated by means of a driving or balance wheel K, having a handle *k*, and to which is held in any approved manner a pinion L, which has quite long teeth, which mesh with long or deep teeth of a larger gear-wheel M, which is fast on the shaft of the intermediate roller C of the machine. The shaft which sustains the balance-wheel and pinion K L is preferably fixed at one end into a rectangular slot a^5, made in a rearwardly-projecting lug a^6, cast on the right-hand end frame *a* of the machine; hence this shaft remains at rest, and when the wheel and pinion K L are slipped onto its rounded end a cotter or other suitable pin *m* is passed through a hole in the shaft outside the balance-wheel to hold it and its pinion in place while the machine is in use, but allowing removal of them to permit the more convenient shipment or storage of the machine by placing the wheel and pinion inside the main frame.

The machine-table N is preferably made of wood, provided at each end edge with a metal strap or plate *n*, which is prolonged rearward to allow it to be hinged by a bolt or pin *n'* to the main frame. These metal straps or plates *n* each have a front lug n^2, which underlies the table, while their main parts are screwed fast to the edges of the table. The lower edges of these side straps are thus adapted, when the table is lowered for use, to seat themselves into rabbets formed at the inner upper edges of a pair of brackets a^7 a^7, which are preferably cast upon the opposite ends *a* of the machine-frame. When the machine is not in use, the table N will be folded up against the roller, as indicated in dotted lines in Fig. 3 of the drawings.

The operation of the machine is very simple and effective, as follows: When the table N is lowered to horizontal position, the goods O to be mangled are passed along the table and between the two lower rollers B C and will wind around the intermediate roller C, while both the upper and lower rollers D B will, by the pressure exerted by the weighted levers H, operate on the goods on the roller C, to finish them smoothly and quickly. Quite a number of dampened pieces of goods—such as sheets, towels, table-linen, or other articles—may be wound upon the center roller C, one after the other, and be smoothly mangled by the rollers, and the two upper rollers are free to rise as the thickness of goods on the middle roller increases. It will be understood that the teeth of the driving-gearing L M are deep enough to always remain in mesh, while the rollers C D rise and carry the gear-wheel M with them. After the goods have been sufficiently pressed or mangled by the rollers, their direction or rotation may be reversed by reversing the motion of the driving-wheel K to allow one lot or batch of fabrics to be unwound and removed from the roller C prior to feeding the next lot into the machine.

The mangle will be made in various sizes for household and laundry use. For cold work the rollers will be made of wood, and for hot work they will be made of iron or steel or other metal, and will be hollow to be heated from the inside by steam or gas in the ordinary or in any approved manner.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a mangle, the combination, with a supporting-frame and mangling-rollers journaled therein, of weighted levers fulcrumed to the frame, connections, substantially as specified, between the upper roller and the levers, and springs held at one end to the frame and exerting pressure on the levers to prevent jumping of them, substantially as herein set forth.

2. In a mangle, the combination, with a supporting-frame, of three rollers B C D, journaled therein, the ones C D adapted for upward movement, two weighted levers H H, fulcrumed to the frame, stirrups E, saddles F, and links G, connecting the upper roller and the levers, and springs J J, held to the frame and having notched or forked ends engaging the levers H H, substantially as described, for the purposes set forth.

3. In a mangle, the combination, with a supporting-frame, of three rollers B C D, journaled therein, the two upper rollers C D, adapted for upward movement, two weighted levers H H, fulcrumed to the frame, stirrups

E E, having threaded lower ends, saddles F F, placed on the stirrups, nuts *e e*, retaining the saddles, links G G, connected at one end to the levers H H and having screw-threaded upper ends passed through the saddles, nuts *g* on the links above the saddles, and springs J J, held to the frame and having notched or forked ends engaging the levers H H, substantially as described, for the purposes set forth.

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