No. 675,813. Patented June 4, 1901.

A. G. CARLING.

CLOTHES WRINGER.

(Application filed Apr. 25, 1900.)

(No Model.)

Fig. 1.

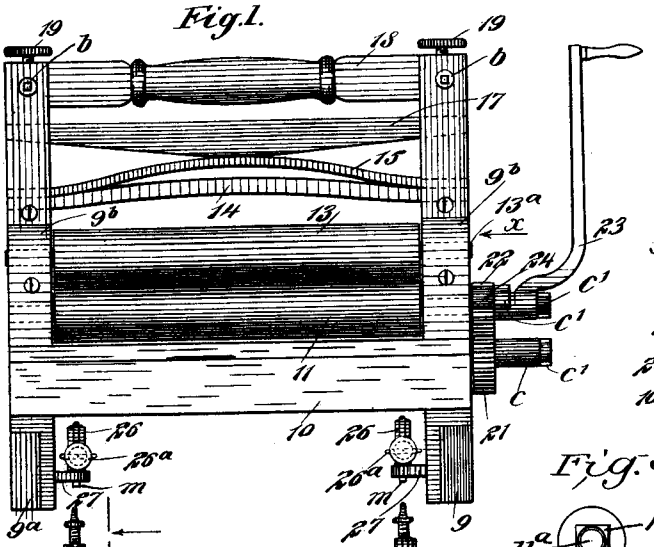


Fig. 2.

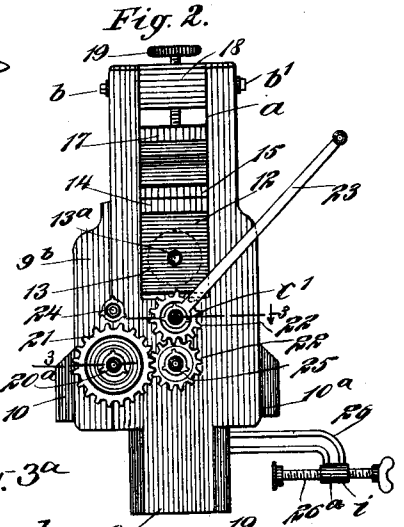


Fig. 3.

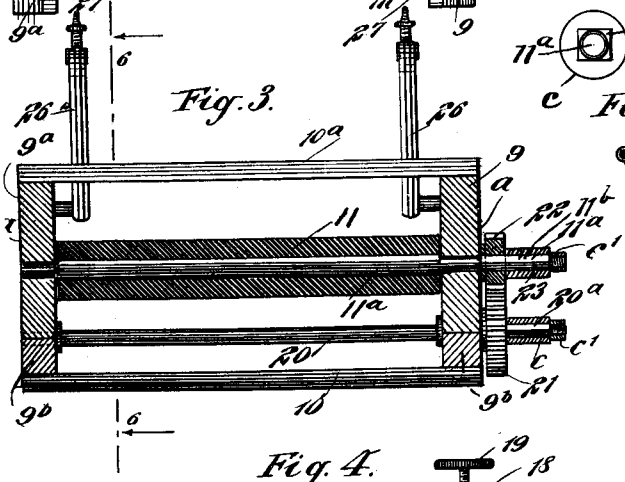


Fig. 3a

Fig. 5.

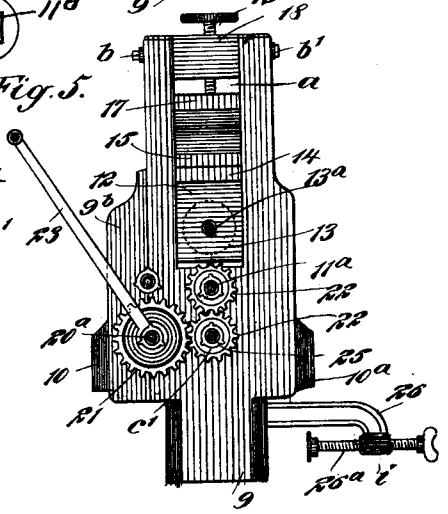


Fig. 4.

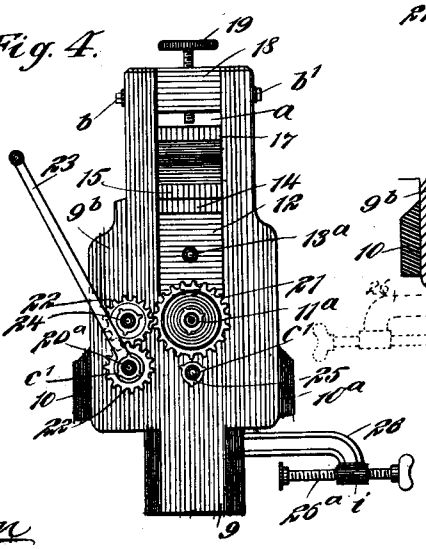


Fig. 6.

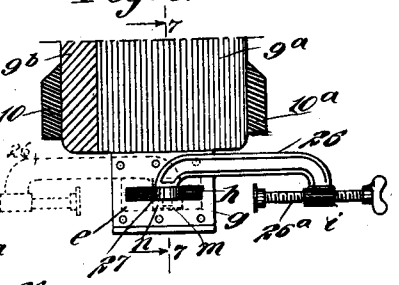
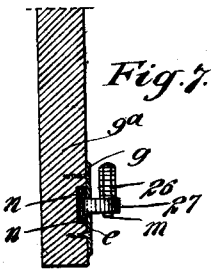


Fig. 7.



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ALBERT G. CARLING, OF HACKENSACK, NEW JERSEY.

CLOTHES-WRINGER.

SPECIFICATION forming part of Letters Patent No. 675,813, dated June 4, 1901.

Application filed April 25, 1900. Serial No. 14,290. (No model.)

To all whom it may concern:

Be it known that I, ALBERT G. CARLING, a citizen of the United States, and a resident of Hackensack, in the county of Bergen and State of New Jersey, have invented new and useful Improvements in Clothes-Wringers, of which the following is a full, clear, and exact description.

This invention has for its object to provide novel features of construction for a device of the indicated character which will enable the clothes-wringer to be actuated speedily for light work and by an expeditious change of working parts be adapted for slow movement with great increase of power when heavy work is to be effected on the machine.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended claims.

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

Figure 1 is a front side view of the improvements applied upon a clothes-wringer. Fig. 2 is a right-hand end elevation seen in direction of the arrow x in Fig. 1, showing the crank-handle connected with the shaft of the lower wringer-roll to drive it without change of speed from that given to said crank-handle. Fig. 3 is a partly-sectional plan view of the device, taken substantially on the broken line 3 3 in Fig. 2. Fig. 3^a is an enlarged end view of the lower-roll shaft, showing the angular construction of an extension thereon and a spacing-sleeve mounted upon said shaft extension. Fig. 4 is a right-hand end elevation of the machine, showing the gearing therefor arranged to reduce the speed of rotation given the lower wringer-roll as compared with that manually given to the crank-handle which drives said roll. Fig. 5 is a right-hand end view of the wringer device, showing the actuating mechanism therefor arranged to accelerate the speed of the lower wringer-roll by changing the positions of the gearing from that shown in Fig. 4. Fig. 6 is a transverse sectional view substantially on the line 6 6 in Fig. 3, showing the inner side of a lower portion of one end of the wringer-frame and a clamping device for the wringer held adjustably thereon; and Fig. 7 is a transverse sectional view substantially on the line 7 7 in Fig. 6.

The frame of the wringer comprises two end pieces 9 9^a, respectively located at the right-hand and left-hand ends of the machine, said frame portions being held spaced apart by the transverse strips 10 10^a, which are respectively secured by their ends upon the normal front and rear side edges of the end pieces at opposite points.

In the end pieces 9 9^a a lower wringer-roll 11 is held to rotate by the journaled engagement of the ends of its shaft 11^a with opposite perforations in said end pieces or boxings therein, as may be preferred. The end pieces 9, 9^a are vertically slotted above the lower wringer-roll 11, as shown at a, and in said slots two similar journal-boxes 12 are held to reciprocate and are oppositely perforated to receive the journal ends of the shaft 13^a, which is central within the upper roll 13.

It is of course understood that the bodies of the two wringer-rolls 11 and 13 are formed of vulcanized gum, as usual, and they are preferably of equal diameter, their length adapting them to loosely contact at the ends of the same with the inner sides of the upright end pieces 9 9^a. Upon the boxes 12 opposite end portions of an upwardly-arched pressure-bar 14 are respectively seated and adapted to reciprocate in the slots a. An upwardly-concaved plate-spring 15 has its ends extended into the slots a and rested upon the end portions of the pressure-bar 14, and a top pressure-bar 17, that tapers somewhat from points near the center toward each end on the lower side, is seated centrally upon the upwardly-arched spring 15 and thence extends into the slots a, having clearance from the ends of the plate-spring it rests upon.

Immediately above the top pressure-bar 17 a spacing-bar 18 is positioned and forms a part of the machine-frame. The ends of said bar that pass into the slots a are held clamped between the slotted portions of each end piece 9 9^a by the transverse bolts b and nuts b', as usual, said spacing-bar having a handle formation thereon intermediate of its ends to adapt it to serve as a convenient means for moving or carrying the machine, this being a common feature of construction. In the han-

dle-bar 18, near its extremities, two similar pressure-screws 19 are held by a screwed engagement with tapped vertical holes in said bar, these screws by their adjustment and pressure upon the top pressure-bar 17 facilitating the depression of the upper wringer-roll 13.

A driving-shaft 20 is held to revolve on the end pieces 9 9^a between the side strip 10 and the lower roll 11, and at the right-hand end of the shaft it is suitably extended outside of the machine-frame, said extension 20^a being preferably rectangular in cross-section to adapt it for reception of any one of three gears that may be placed thereon and held from displacement by the sleeve *c* and nut *c'*, the latter having threaded engagement with a reduced threaded end portion of the shaft extension 20^a, as shown in Fig. 3. The three gears comprise a spur-gear 21 and two similar pinions 22 22, which have a less diameter than the spur-gear, but a like pitch given to their teeth, so that they will mesh indiscriminately.

At the right-hand end of the lower roll 11 the supporting-shaft 11^a therefor is extended beyond the end piece 9 of the machine-frame and is preferably squared in the body, as at 11^b, to receive either one of the pinions 22 or the spur-gear 21, it being understood that the central perforations in said gears are shaped to fit neatly upon either of the shaft extensions 11^a or 20^a.

A crank-handle 23 is provided for a rotatable movement of the lower roll 11 either directly or by a geared connection with the shaft 20, as will be hereinafter explained, and the laterally-projecting hub on one end of the crank-handle is perforated in a like manner with the perforations in the gears 21 22 22, so as to fit upon the extension of either shaft 11^a or 20, as may be desired, a nut *c'* holding the crank-handle in place upon either shaft extension.

While the shaft 20 may be journaled in the end pieces 9 9^a in any suitable manner, it is found advantageous for assemblage of parts to provide cap-pieces 9^b, which are secured removably upon the front edges of the end pieces 9 9^a toward their lower ends, and the perforations or boxing wherein the shaft 20 is journaled is positioned partly in the cap-pieces and partly in the frame portions they are secured upon, as indicated in Fig. 3.

A journal-stud 24 is projected from the end piece 9 and is preferably held in place a proper distance above the shaft extension 20^a by a clamped engagement of the same between the cap-piece 9^b and the frame end piece mentioned, said journal-stud serving to support either of the pinions 22 free to rotate thereon. A similar journal-stud 25 is projected from the frame end piece 9 at a proper point below the shaft extension 11^a, and said stud is provided to support for free revoluble movement either of the pinions 22. The studs 24 and 25 have their ends projected exterior of the pinions when the latter are mounted thereon, and said projected portions of the studs are threaded to receive winged nuts *c'*, that serve to hold the pinions loosely in place when this is desired.

In Figs. 1 and 2 the crank-handle 23 is represented as mounted upon the extension of the lower-roll shaft 11^a and held in place by a nut *c'*. When the crank-handle is thus connected with the lower roll 11, it is obvious that the rotatable movement of the crank-handle will correspondingly actuate the lower roll, and the latter by friction will rotate the upper roll 13 in an opposite direction if it is pressed upon the lower roll, this manner of actuating the machine being adapted for wringing fibrous material that requires but a moderate application of power to operate the machine. In case the crank-handle 23 is secured upon the lower-roll shaft 11^a, as just explained, the gears 22 22 may be respectively positioned, as shown in Fig. 2, one on the lower-roll shaft 11^a, the gear 21 being located on the driving-shaft extension 20^a adjacent to the frame end piece 9. To more specifically describe this arrangement of gears, a sleeve *c* is placed upon the driving-shaft extension 20^a, and a nut *c'* is screwed upon the threaded end of the shaft extension, holding the spacing-sleeve and gear in secured position on the driving-shaft extension. In a like manner one of the pinions 22 is slid upon the lower-roll-shaft extension 11^a. Then the hub of the crank-handle 23 is mounted thereon, and a nut *c'* is screwed upon the threaded outer end of the roll-shaft, securing the gear 22 and crank-handle in place. The remaining pinion 22 is placed upon the stud 25 and held thereon free to rotate by the nut *c'*, and it will be understood that the gears as arranged are merely held in relative positions meshed together to prevent their loss, as in the described arrangement thereof they run idle.

In Fig. 4 is shown an arrangement for the gearing 21 22 22 which is advantageous when bulky and heavy fibrous material is to be passed between the wringer-rolls, and consequently a slower speed and considerable increase of power are necessary to effect the operation without an increase of manual labor. In this case one of the pinions 22 is mounted and loosely secured upon the journal-stud 24 and the other one is slid upon the driving-shaft extension 20^a, the hub of the crank-handle 23 occupying the remaining portion of the driving-shaft extension outside of the pinion, except the threaded end thereof, on which the nut *c'* is screwed to hold the pinion and handle in place. The spur-gear 21 is mounted upon the lower-roll-shaft extension 11^a and held thereon by a sleeve *c* and nut *c'*, the sleeve *c* being exchangeable from one shaft extension to the other, and the nut for the stud 25 is screwed against a shoulder on said stud to jam it and prevent its accidental displacement. The pinions 22 mesh together,

and the upper pinion also meshes with the spur-gear 21, which will manifestly reduce the speed of rotation had by the lower-roll shaft when the gearing is actuated by a rotatable movement of the crank-handle 23.

In Fig. 5 the gearing is shown arranged to give the wringer-rolls a greater speed than is manually communicated to the driving-shaft 20. To this end the spur-gear 21 is mounted upon the shaft extension 20^a, and the hub of the crank-handle is then slid upon said shaft extension outside of the spur-gear, these parts being held from displacement by a nut c'. The pinions 22 22 are in this arrangement respectively mounted upon the lower-roll-shaft extension 11^a and upon the stud 25, the sleeve c and nut c' being employed to keep the pinion on the roll-shaft extension 11^a and a nut c' to prevent displacement of the pinion 22 from the stud 25.

By arrangement of the gearing as just described a large quantity of thin light goods may be quickly operated upon and the work greatly expedited.

The crank-handle 23 is given a suitable bend to permit it to rotate and have clearance from the shaft extension that it is not occupying, the sleeve c then taking the place of the crank-handle hub, as hereinbefore explained.

Two clamps 26 are provided for affixing the machine in place upon a washtub. These clamps are mainly of the usual form; but their manner of connection with the end pieces 9 9^a of the wringer-frame is novel and advantageous.

As shown, the foot portion of each end piece 9 9^a is reduced in width and beveled at the edges, which permits these lower portions of the frame to readily engage the inner concave wall of a circular washtub. A transverse recess e is formed in the inner face of each foot of an end piece 9 9^a, and preferably said recess is elongated, as shown by dotted lines in Fig. 6. A cap-plate g is secured over each recess e, and at a suitable point a transverse slot h is formed in the cap-plate of less width than that of the recess it is opposite the center of.

Each clamping-bar 26 is bent at each end to afford two short depending portions thereon, one of these portions terminating in a hub i, that is horizontal and longitudinally perforated, said perforation being threaded for engagement of the clamping-screw 26^a, of ordinary construction. A pivot-stud m projects down from the other depending formation on each clamping-bar 26 and has a loose engagement within a perforation vertically formed in the outer portion of a bracket-arm 27, which engages the inner side of a foot portion of a frame end piece 9 or 9^a.

As shown in Figs. 6 and 7, where one of the two similar bracket-arms 26 appears, the end portion of the bracket-arm that engages the frame end piece consists of a flat bar, which is widened at the inner end to provide two like flanges n, that respectively extend above and below the body of the arm, said widened portion of each arm being seated in one of the recesses e.

In assembling the parts the cap-plate g for each frame end piece 9 or 9^a receives the body of one of the bracket-arms 26, which passes outwardly through the slot h in said cap-plate, the widened or flanged portion of the bracket-arm being seated in the recess e and therein held to slide by the cap-plate, that is secured by screws upon the inner side of the frame end piece, as represented in Figs. 6 and 7.

It will be seen that the construction and arrangement of the two clamping devices on the end portions of the machine-frame permit the clamps to be projected from the rear side of the machine and clamp it upon a tub. In some cases, however, particularly when the wringer is to be secured upon a stationary tub, it is found desirable to clamp the clothes-wringer thereon with the normal front side of the wringer disposed rearwardly. To this end I have provided the improved construction that has been described, which permits the clamping-arms 26 to be swung toward and beyond either the rear side or the normal front side of the machine, and also be moved in the recesses e therein, which will so extend the arms as to enable them to coact with lower ends of the side pieces 9, together with the screws 26^a, for effecting a clamped adjustment of the machine upon a tub with either side of the machine-front.

Locating the driving-shaft 20 inside of the machine-frame renders the machine less bulky sidewise and permits the use of gearing having comparatively small diameter.

The described arrangement of the three gears, whereby they are adapted for convenient change in position, is very advantageous as it enables the quick adjustment of these parts to give a quicker speed to the wringer-rolls than is given to the crank-handle, also to reduce the speed of said rolls as compared with that of the crank-handle, and, furthermore, to hold the gearing upon the machine idle when the crank-handle is employed to directly drive the wringer-rolls.

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

1. In a clothes-wringer, the combination with a frame, a lower roll, an upper roll, shafts rotatably supporting said rolls, an angular-bodied extension on the shaft carrying the lower roll, a driving-shaft journaled on the frame parallel with the lower-roll shaft and having an angular extension disposed opposite the roll-shaft extension, exchangeable gears adapted for mounting on the shaft extensions and also upon studs that project from an end piece of the frame, a crank-handle transferable from the shaft extension of the lower roll to the extension of the driving-shaft and the reverse, and means to detach-

ably secure the gears and crank-handle in place.

2. In a clothes-wringer, the combination, with a frame, a lower roll held to rotate in bearings in the frame, a shaft extension at one end of said roll, a vertically-slidable upper roll, and means for pressing the upper roll toward the lower roll, of a driving-shaft held to rotate within the frame and extending at one end thereof, a stud above the driving-shaft, adapted to hold a gear for rotation, a stud below the lower roll to support a gear for rotation, a spur-gear, and pinions exchangeable in position on the shaft extensions and the studs, and a crank-handle securable either on the lower-roll shaft or upon the end of the driving-shaft.

3. In a clothes-wringer, the combination with a frame the end pieces of which are vertically slotted, of a rotatable lower roll, the shaft of which is extended beyond one frame end piece, an upper roll rotatable in boxes that are slidable in the slots of the frame end pieces, a driving-shaft removably journaled in end pieces of the frame and cap-pieces thereon, said driving-shaft having an extension at the same frame end with the other shaft extension, a journal-stud on the frame above the driving-shaft extension, a like stud on the frame below the lower-roll-shaft extension, gears interchangeable on the studs and shaft extensions, a crank-handle bent to clear either shaft extension, and means to hold the gears and crank-handle on the studs and shaft extensions.

4. In a clothes-wringer, the combination with a frame, of clamping devices for the wringer, comprising two clamping-bars, adjusting-screws on outer depending ends of said bars, a pivot-stud depending from the opposite end of each clamping-bar, a bracket-arm loosely engaged by each pivot-stud, and having two flanges one above and one below on the body thereof at the inner end, said portion of each bracket-arm seating in a transverse recess formed in each end piece of the frame near its lower end, and a transversely-slotted cap-plate secured over each recess, one of the bracket-arms passing out through the slot in each cap-plate.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT G. CARLING.

Witnesses:
WM. P. PATTON,
EVERARD BOLTON MARSHALL.