H. GRANDJEAN.

Washing-Machines.

No. 152,556. Patented June 30, 1874.

Fig. 1.

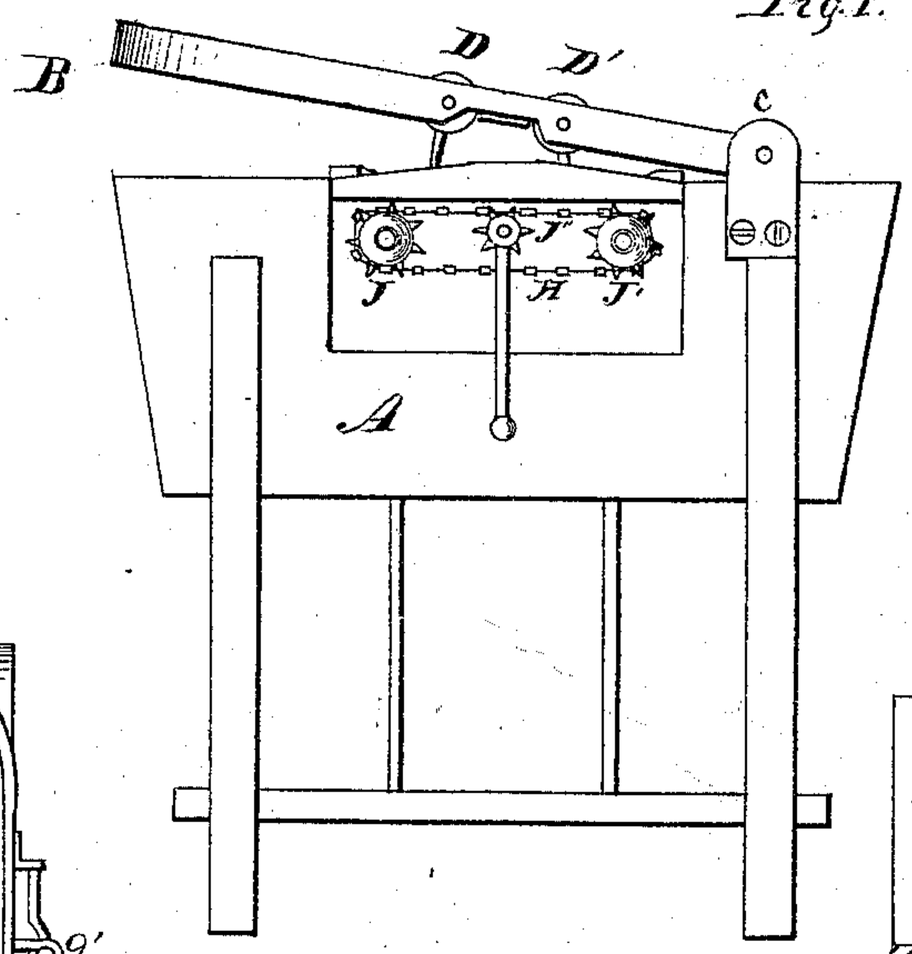


Fig. 4.

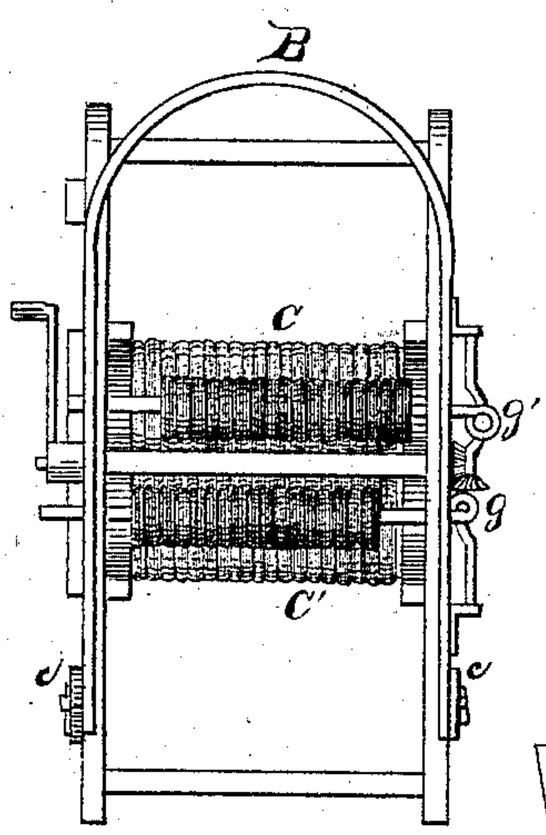


Fig. 3.

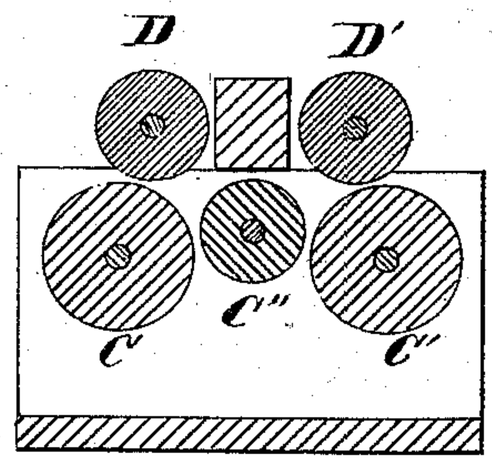


Fig. 2.

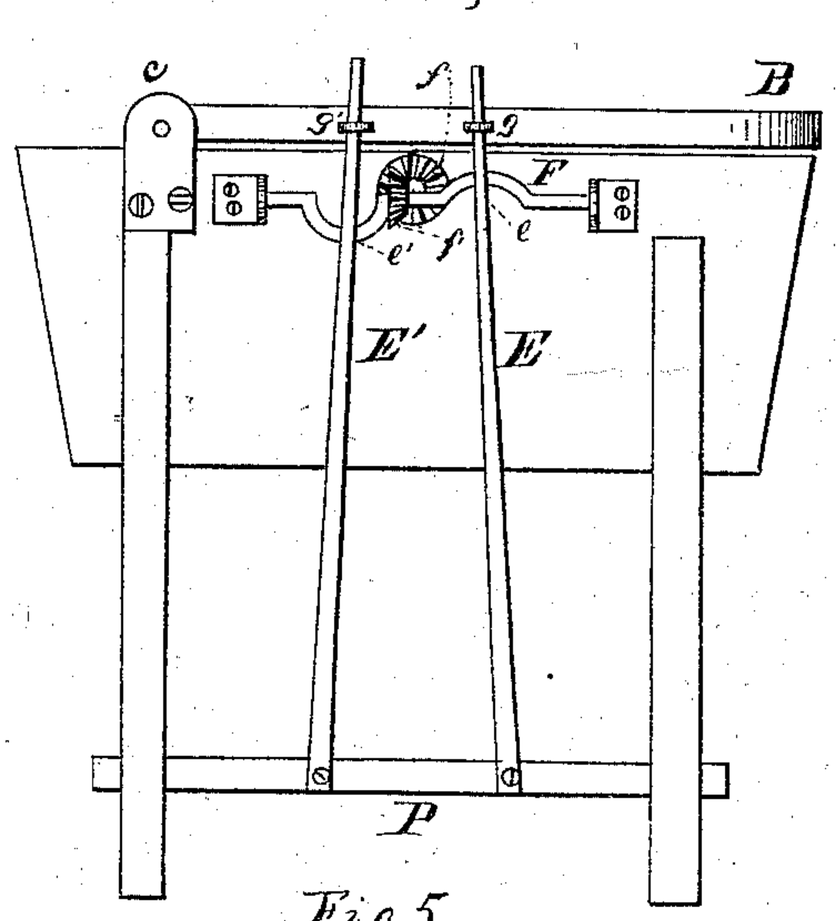
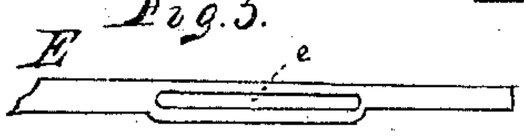


Fig. 5.



WITNESSES=

Philip W. Hale,

Wm Beale Hale

INVENTOR_

Henry Grandjean

per Geo. W. Richards

his Atty.

UNITED STATES PATENT OFFICE.

HENRY GRANDJEAN, OF NEW BERLIN, ILLINOIS.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **152,556**, dated June 30, 1874; application filed April 25, 1874.

To all whom it may concern:

Be it known that I, HENRY GRANDJEAN, of New Berlin, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form a part of this specification.

My invention consists in the devices and arrangements which are herein fully explained, with reference, by letters and figures, to the drawings, and pointed out in the claims.

Figure 1 is a front-side view with part of the box removed. Fig. 2 is a back-side view. Fig. 3 is a plan view. Fig. 4 is a section showing the arrangement of the rollers. Fig. 5 is the upper half of lever E, like E′.

A is the box for holding the water and clothes to be washed. At the center of the length of this box are mounted the corrugated rollers C C′, upon the front projecting shafts of which are the spurred wheels J J′. Between these two rollers is mounted the smaller corrugated roller C″, upon the front projecting end of the shaft of which is the spurred wheel J″, and also the operating-crank. The upper edges of these rollers are in line. A chain, H, passes around the wheels J J′ and over the wheel J″, the rotation of which, by means of the crank, causes its spurs to move the chain and thereby communicate rotary motion to the other spurred wheels and the rollers C C′. B is a frame hinged to the top of the box A at the ears *c c*, its other end extending a short distance beyond the end of the box. In bearings in this frame are mounted two corrugated rollers, D D′, one of which, when the frame is down, lies between C′ and C″, and the other between C and C″. These rollers rotate loosely upon their shafts, which do not turn. The projecting back ends of the shafts of the rollers D D′ terminate in loops or rings *g g′*, which fit over the ends of levers E E′, the lower ends of which are pivoted to a cross-piece, P, extending between the legs of the machine. A little above the middle of these levers are slots *e e′*, through which passes the double-crank rod F, the crank-bends playing in the slots when the rod is rotated by the bevel-gear wheel *f′*, receiving motion from the bevel-gear wheel *f*, which is on the back end of the shaft of the roller C″, and the alternate play of the levers E E′ causes an alternate reciprocating motion of the rollers D D′.

The operation of my machine is as follows: The soap-suds are prepared and the clothes soaped as in the ordinary manner, and a sufficient quantity of suds for convenience placed in the box, the clothes introduced between the top and bottom rollers sufficiently far to give the rollers a good hold by raising the frame B, which is then pressed down by the left hand of the operator, who turns the main crank with the right hand. The friction of the clothes causes a rotary motion in the upper rollers, which have at the same time the reciprocating scrubbing motion heretofore explained. The pressure exerted upon the clothes is regulated by the left hand of the operator raising or pressing downward the frame B. The number of times the pieces require to be passed between the rollers depends, of course, upon their condition.

Having now fully described the construction and operation of my invention, I claim and desire to secure by Letters Patent—

1. The combination of the corrugated rollers C′, C″, and C, the spurred wheels J, J′, and J″ on the shafts of said rollers, and the chain H, substantially as shown and described.

2. The combination of the double-crank rod F, slotted levers E E′, loose rollers D D′, and rings or loops *g g′* on the shafts of said loose rollers, substantially as and for the purpose set forth.

3. The combination of the adjustable rollers D D′, slotted levers E E′, having ends projecting through the rings, as shown, double-crank rod F, and bevel-gears *f* and *f′*, substantially as described.

In testimony that I claim the foregoing as my own invention, I affix my signature in presence of two witnesses.

HENRY GRANDJEAN.

Witnesses:
WM. GREGORY,
TH. BERGSCHNEIDER.