

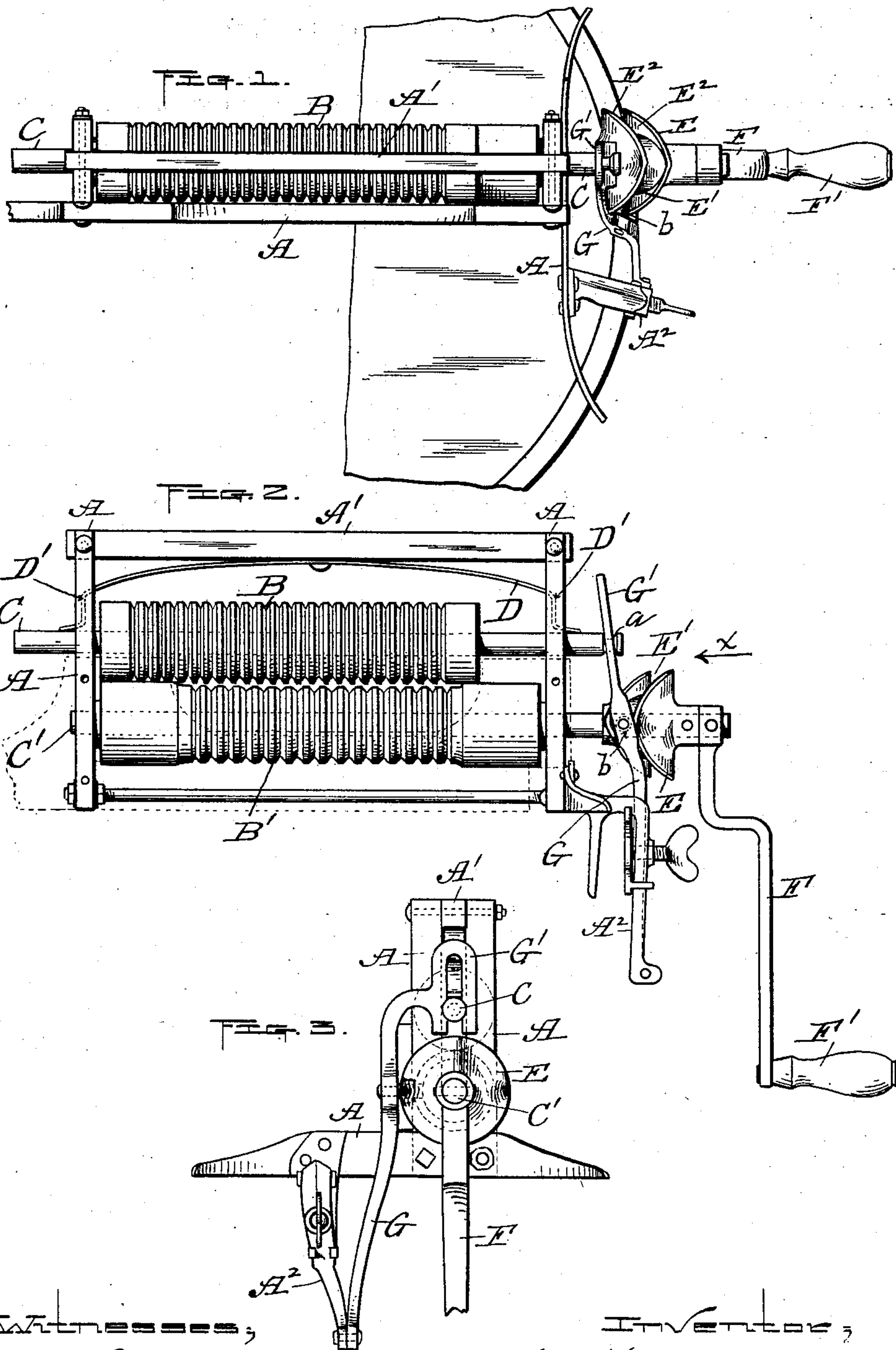
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Patented Aug. 2, 1898.

O. HAMMARSTROM.
CLOTHES WASHING MACHINE.

(Application filed Nov. 15, 1897.)

(No Model.)



Witnesses;

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UNITED STATES PATENT OFFICE.

OLAF HAMMARSTROM, OF WORCESTER, MASSACHUSETTS.

CLOTHES-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 608,257, dated August 2, 1898.

Application filed November 15, 1897. Serial No. 658,518. (No model.)

To all whom it may concern:

Be it known that I, OLAF HAMMARSTROM, of the city and county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Clothes-Washing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a plan of my improved clothes-washing machine and part of an ordinary portable washtub to which it is applied. Fig. 2 is a front side view of the machine; and Fig. 3 is an end view thereof, looking in the direction of arrow *x* in Fig. 2, with part of the crank-handle broken away.

The object of my invention is to provide a washing-machine whose mechanism shall be as simple in construction and operation as possible; and it consists in combining with the frame and rolls of a clothes-washing machine an arm or lever pivoted at its lower end to said frame and adapted to engage with the shaft of the top roll at its upper end, also having a friction-roll or boss mounted thereon between its ends, and a cam, mounted on a shaft of the bottom roll, with which said friction-roll or boss engages, whereby when said bottom roll and its shaft are turned said arm or lever is rocked back and forth laterally with reciprocating movements, thus imparting to the top roll and its shaft longitudinal reciprocating movements, said top roll also at the same time being turned by friction, with the cloth carried through between said rolls by the rotation of the bottom roll in the operation of washing, as will be hereinafter more fully set forth.

In order that others may better understand my invention, I will now proceed to describe it more in detail.

In the drawings, A represents the frame of the machine, which is provided with suitable bearings, in which the shafts C C' of the top and bottom rolls B B' may turn. The bearings for the top-roll shaft are made so that said shaft and the roll may move vertically, the top roll resting on the bottom one, and a downward-yielding pressure being imparted to the top roll to produce the requisite pressure on the clothes passing through between the

rolls in washing by a spring D, interposed between the roll-shaft and the cross-bar A' of frame A. In this instance a flat spring is employed for said purpose fastened at the center to the under side of said cross-bar A', and whose ends D' D' are turned down to bear upon the shaft, as is shown in Fig. 2. Upon one end of the shaft C' of the bottom roll is mounted and secured at a short distance from frame A a cam E, having a transverse irregular-shaped peripheral groove E', forming two inner cam-surfaces E² E², for the purpose hereinafter explained. Outside of said cam on shaft C' is fastened in this instance a crank-arm F, provided with a handle F', whereby it may be turned to operate the machine. In lieu thereof said shaft may in practice be connected with mechanical driving power, if desired, instead of operating the same by hand.

To the frame A is secured a downwardly-projecting clamping-arm A², which is adapted to be fitted over the top edge of the washtub and clamped thereto by means of a suitable thumb-screw and loose plate (see Fig. 2) adapted to bear against the outside of said tub when the machine is fitted over the latter, as is shown in Fig. 1. To the lower end of said clamping-arm A² is pivoted the lower end of a long arm or lever G, made of curved or irregular shape and provided with a forked upper end G', adapted to engage with a peripheral groove *a*, formed in the end of the top-roll shaft C, or otherwise connected in such a manner that when said lever G is moved toward or from the rolls the top roll and its shaft will be carried with it.

Upon the inner side of lever G, next to and in horizontal alinement with the center of the groove in cam E, is mounted a friction-roll *b*, adapted to fit and travel in said groove when said cam is turned. Said groove is made so as to move said friction-roll, and in consequence the lever G, toward and from the main rolls B B' with short reciprocating movements, therefore likewise moving the top roll B and its shaft through the aforesaid connection with longitudinal reciprocating movements to rub the cloth laterally as it passes through between the top and bottom rolls, both of the rolls being preferably provided with corrugated surfaces to facilitate

cleansing the clothes in the rubbing and washing process.

The essential feature of my invention consists in the construction and arrangement of the laterally-reciprocating lever G in relation to the cam E, its pivotal and top-roll shaft connections, and the means for clamping the machine to the washtub. I am aware that it is not new to employ mechanism for imparting longitudinal reciprocating movements to the top roll at the same time that the bottom roll is rotated; but I am not aware that the construction and arrangement of mechanism herein set forth and shown has heretofore been employed. As will be observed, said mechanism is very simple in construction, is easily manipulated, and it has been fully demonstrated that the best results are obtained in its practical application to use.

The machine shown in the drawings is designed to be applied to an ordinary round portable washtub; but, if desired, it may of course be adapted in making the same to be attached to ordinary square set tubs as well.

The arm A^2 , to which the lever G is pivoted, is in this instance shown as being adjustably

secured to frame A, so that the lever may be adjusted to cam E and the top-roll shaft as required to properly operate. I do not, however, limit myself thereto or to the exact shape of said lever and cam E.

Having now described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

In a machine for washing clothes the combination of frame A, top-roll shaft C, its roll B, bottom-roll shaft C', its roll B' and cam E mounted on said bottom-roll shaft, with the downwardly-projecting clamping-arm A^2 on frame A whereby the machine may be clamped to the edge of the washtub, swinging lever G pivoted at its lower end to arm A^2 , adapted to engage at its upper end with the end of the top-roll shaft and having a laterally-projecting boss or friction-roll between said points adapted to engage with the cam on the bottom-roll shaft, and means for turning said bottom-roll shaft substantially as set forth.

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