

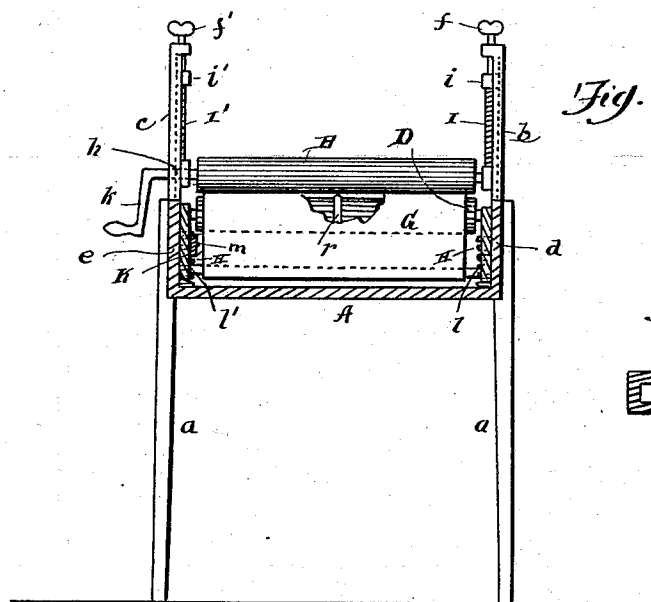
No. 624,475.

Patented May 9, 1899.

**E. C. GOODRICH.**  
**WASHING MACHINE.**

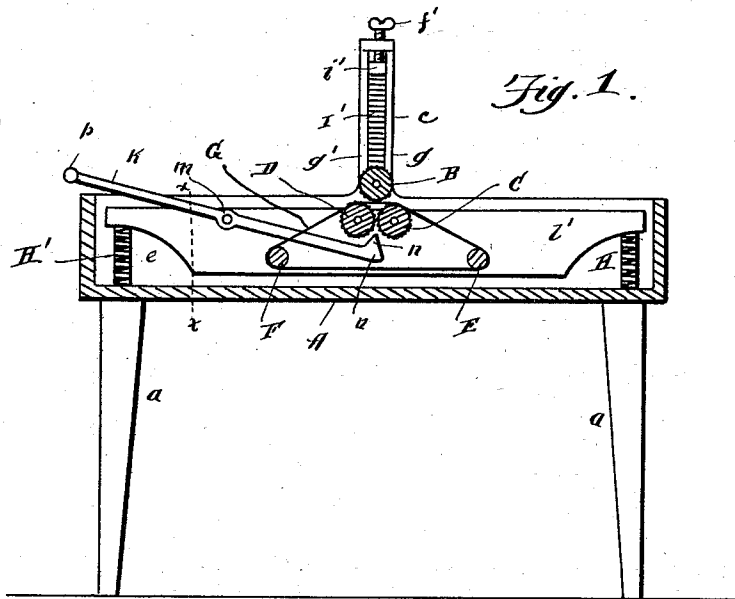
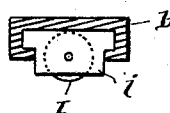
(Application filed Mar. 3, 1898.)

(No Model.)



*Fig. 2.*

*Fig. 3.*



*Fig. 1.*

WITNESSES.

*John A. Dougherty*  
*C. J. Lukan*

INVENTOR.

*Egbert C. Goodrich*  
By *D. O. Bradford*  
Attorney.

# UNITED STATES PATENT OFFICE.

EGBERT C. GOODRICH, OF DETROIT, MICHIGAN.

## WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 624,475, dated May 9, 1899.

Application filed March 3, 1898. Serial No. 672,391. (No model.)

*To all whom it may concern:*

Be it known that I, EGBERT C. GOODRICH, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to washing-machines, and has for its object to provide certain new and useful improvements whereby the operator is enabled to produce a scrubbing action upon any portion of the garment, similar to the action of the knuckles in scrubbing upon the common and well-known board.

A further object lies in the simple, economical, and durable construction.

The invention consists in the general construction and arrangement of the various parts to be hereinafter described and claimed.

Referring to the accompanying drawings, Figure 1 is a longitudinal section of the machine, and Fig. 2 is a transverse section taken at the line X X in Fig. 1. Fig. 3 is a cross-section of one of the standards.

Like letters of reference refer to corresponding parts throughout the figures.

A represents a tub or receptacle, preferably rectangular in form and having the legs *a* secured to the sides thereof, by means of which it is supported to the desired height. The standards *b* and *c* are secured to the sides *d* and *e* of the tub at points midway between the ends thereof, from whence they rise vertically and are turned inwardly at their upper ends to form suitable extensions through which the thumb-screws *f* and *f'* are threaded. These standards are constructed with the inwardly-projecting parts *g* and *g'*, as shown in Fig. 1, which are arranged to form guides for the slide-blocks *h* and *h'* *i* and *i'*. The blocks *h* and *h'* are provided to form journals for the shaft *j*, upon which the corrugated roller B is mounted, one end being carried through the block *h'*, where it is bent to form the crank *k*, by means of which the roller is rotated.

Within the tub, adjacent to the sides thereof, are two side pieces *l* and *l'* of an auxiliary

frame, which are united by means of the corrugated rollers C and D and the small guide-rollers E and F. The two large rollers C and D are preferably constructed of substantially the same proportions as the roller B, above referred to, having their outer surfaces corrugated, and are arranged in the same horizontal plane a short distance from each other, having their upper surfaces approximately in a plane with the lower surface of the driving-roller B. Both rollers are journaled in the side frames *l* and *l'*, so that they will rotate freely as the garment is passed between them and the driving-roller, to be hereinafter described. The rollers E and F are also journaled in the side frames and are adapted to act as guides for the fabric belt G, which passes over the two rollers C and D below the driver B and around the guide-rollers E and F, which are arranged at some distance from the vertical line of the driver. This fabric is constructed in an endless form, so that it will lead the garments between the rollers, as will readily be seen by reference to Fig. 1. At the ends of each side piece I provide coil-springs H and H', two of which are seen in Fig. 1 and which are arranged to exert an upward tension, carrying the auxiliary frame with them to force the cloth above the rollers C and D into engagement with the driving-roller B.

As a means for holding the driving-roller into its working position and to permit it to have a free vertical action when operated I provide the coil-springs I and I' between the blocks *h i* and *h' i'*, and as the set-screws *f* and *f'* are constructed to engage the upper ends of the blocks *i* and *i'* they may be turned down thereon to increase the tension of the springs or released to reduce the tension, if desired. It may thus be seen that the working rollers are held in the position against the garments upon which they are operating by the flexible tension of the springs, so that all variations are compensated for.

To secure the scrubbing action, I provide the brake-lever K, pivoted at *m* to the side piece *l'* of the auxiliary frame. One end of the lever is carried inward, where it terminates with a wedge-shaped head *n*, the nose *n'* turned upward, so as to be engaged between the rollers C and D and to act as a brake to check their rotation. The opposite end of the

lever is carried outward and backward in a convenient position for the hands of the operator, where it terminates with the handle *p*. It will be observed from this that as the garment is passed through the rollers by rotation of the driving-roller and causing the fabric belt *G* to travel upon the rollers the action of throwing the brake into engagement with the lower rollers *C* and *D* will cause the belt to cease its rotation, at the same time stopping the travel of the garment. In this position the driver may be oscillated backward and forward, producing a rubbing action upon that part of the garment lying between it and the lower rollers. If desired, the lower rollers may be belted together by any suitable means, so that their uniform travel will be rendered more positive. One means of accomplishing this result I have illustrated, consisting of providing grooves, one being seen in Fig. 2, where a portion of the fabric belt is cut away, and providing in these grooves an endless belt, which may be composed of any suitable material.

Having thus described my invention, what I claim is—

1. In a washing-machine, the combination of a tub, the side pieces *l, l'* within said tub, rollers journaled in said side pieces adapted to unite therewith to form an auxiliary frame within the tub, standards rising from said tub, vertical movable blocks held within said standards, the roller *B* journaled within said vertical adjustable blocks, springs adapted to normally hold said roller *B*, in its lowermost position, springs arranged to flexibly

support said auxiliary frame, an endless belt arranged to travel upon said rollers, whereby the articles of clothing being washed are carried between three of said rollers, two of which are journaled in said side pieces, and the third being carried in said vertically-adjustable blocks, and a brake arranged to check the movement of the said two rollers, substantially as described.

2. In a washing-machine, the combination of the tub *A* and the auxiliary frame having side pieces *l* and *l'*, said side pieces being united by the corrugated rollers *C* and *D* and guide-rollers *E* and *F*, all of which are journaled within said side pieces, the endless fabric belt *G* adapted to pass around said rollers, a third corrugated roller *B* mounted upon a shaft, sliding blocks *h* and *h'* adapted to form journals for said shaft, one end of which is carried out and terminated in the form of a crank, the springs *I I'* arranged above said blocks, means for adjusting the tension of said springs, the brake-lever *K* pivoted to the side piece *l'* of said auxiliary frame, having the wedge-shaped end *n* at its inner end, adapted to engage between the said corrugated rollers *C* and *D*, and the springs *H H'* adapted to flexibly support said auxiliary frame substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EGBERT C. GOODRICH.

Witnesses:

T. E. LOCKWOOD,  
F. W. EDDIE.