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Fig. 1.

Fig. 2.

Fig. 3.

Fig. 3. A perspective view of the device. It shows the upper member (1) and the lower member (2) connected by a central body (3). A connecting rod (4) is attached to the upper member. The lower member has a central opening (5) and a side opening (6). The upper member has a central opening (7) and a side opening (8). The central body has a central opening (9) and a side opening (10). The connecting rod has a central opening (11) and a side opening (12).

Fig. 5.

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JOSEPH C. GRANNAN, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF HIS
RIGHT TO WM. A. BITNER, OF SAME PLACE.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. 125,190, dated April 2, 1872.

I, JOSEPH C. GRANNAN, of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification:

My invention consists in a number of new devices which will facilitate the operation of a washing-machine of the class shown in the accompanying drawing, wherein—

Figure 1 is a side elevation of the machine. Fig. 2 is a view in perspective of the journal-box, which will be more fully referred to hereafter. Fig. 3 shows the foot-piece on the treadle. Fig. 4 is a central vertical longitudinal section of the machine. Figs. 5 and 6 are representations of devices, which are explained below in the general description, in which—

A is a rubber, oscillating upon and secured to a rock-shaft, B, by uprights C. On the bottom of this rubber A, and secured to it by galvanized iron staples or screws, are corrugated half-round strips of wood running across the rubber, and placed in such relative position to each other that the corrugations on each succeeding piece are alternated and fit into those of the preceding one. These corrugations extend crosswise on the strips, but may be made to extend lengthwise, in which latter case the strips are not half round, but flat, and fit tight together. The rubber A is oscillated by a handle, D, projecting upward from the center of the rock-shaft, being simply driven into an orifice in the shaft B and secured there by wedging. The usual method of securing this handle is by iron bolts, which corrode and damage the clothes. The rock-shaft B, which is of wood with metallic journals, swings in the journal-boxes E, shown in perspective in Fig. 2. These journal-boxes E fit into an upright slot in the top of the sliding rod F; the lower part of the box being set in permanently, while the upper part is adjustable, is held in place by a movable pin, and may be removed when it is desired to take out the rubber. The bearing in these journal-boxes runs but partly through them. The ends of these bearings, being in contact with the ends of the journals on the rock-shaft B, prevent it from moving laterally, which would cause an impeding friction between the rubber and the side of the tub. A pin, G, attached to a small

rope or chain on the front end of the tub is used to hold the rubber up from the bottom of the tub, as shown in Fig. 1, by inserting it in an orifice on the bottom of the rubber, and resting it on the top of the tub. The object of thus elevating the rubber is to permit the clothes to be placed in the bottom of the tub. H is a rubber band connecting a pin, I, in the sliding rod F, with a stationary hook or other device upon the side of the tub. The object of this rubber band is to produce a pressure upon the clothes by drawing down the sliding rod F, in the top of which the rubber oscillates. The adjustment of this band may be varied. Several different methods of applying it are shown by the dotted lines J and K. L is a treadle to raise the rubber A by means of the rope M, connecting it with the sliding rod F. In the center of this treadle is a foot-piece shown in Fig. 3. The advantage of a single foot-piece in the center of the treadle is that the foot will always be placed in the center and produce an equal strain upon each of the two sliding rods, thereby preventing them from being twisted, which would retard their motion. The fixed fulcrum X, on which the foot-piece swings, is secured to the body of the tub by the thumb-screws Y penetrating a ledge on the bottom of the tub, and readily permitting the removal of treadle. The tub has a zinc lining, N, which forms an interior water-tight vessel to provide against the contraction of the wood, and a bottom of copper or galvanized iron. The machine being intended for use in connection with a small furnace placed under it, I project downward from the bottom a sheet-metal flange, Z, of sufficient width to confine the heat of the furnace to the bottom of the tub and prevent the surrounding wood-work from being burned. The zinc lining N is secured to the tub by being lapped over the top of the tub, and held there by wooden cleats O screwed down over it. The clothes are placed upon a curved series of corrugated rollers, P, shown in Fig. 6, the curve being described from the same center as that upon which the rubber swings. These rollers are set in a frame, Q, which rests on the inclined sides of the tub. The two end rollers are longer than those between, and serve as cross-end pieces for the frame. To

prevent the journals of these rollers from cutting and wearing away their bearings in the frame I sink a plate, R, of brass or other non-corrosive metal, in the side of the frame Q, and into perforations in this plate the journals of the rollers are inserted, and thus their motion is facilitated and the wearing away of the frame is prevented. The rear end of the tub is raised higher than the other sides for the purpose of affording a place to fasten a wringing-machine.

What I claim as new, and desire to secure by Letters Patent, is—

1. The journal-box E, in combination with the sliding rod F and rock-shaft B, substantially as and for the purpose specified.

2. The rubber band H, in combination with pin I, sliding rod F, rope M, treadle L, fixed fulcrum X, and thumb-screw Y, substantially as and for the purpose set forth.

3. The treadle L having a center foot-piece, in combination with the fixed fulcrum X, sliding rods F, rubber band H, rope M, and thumb-screw Y, substantially as and for the purpose set forth.

4. The plate R, in combination with the frame Q and rollers P, substantially as and for the purpose specified.

JOS. C. GRANNAN.

Witnesses:

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