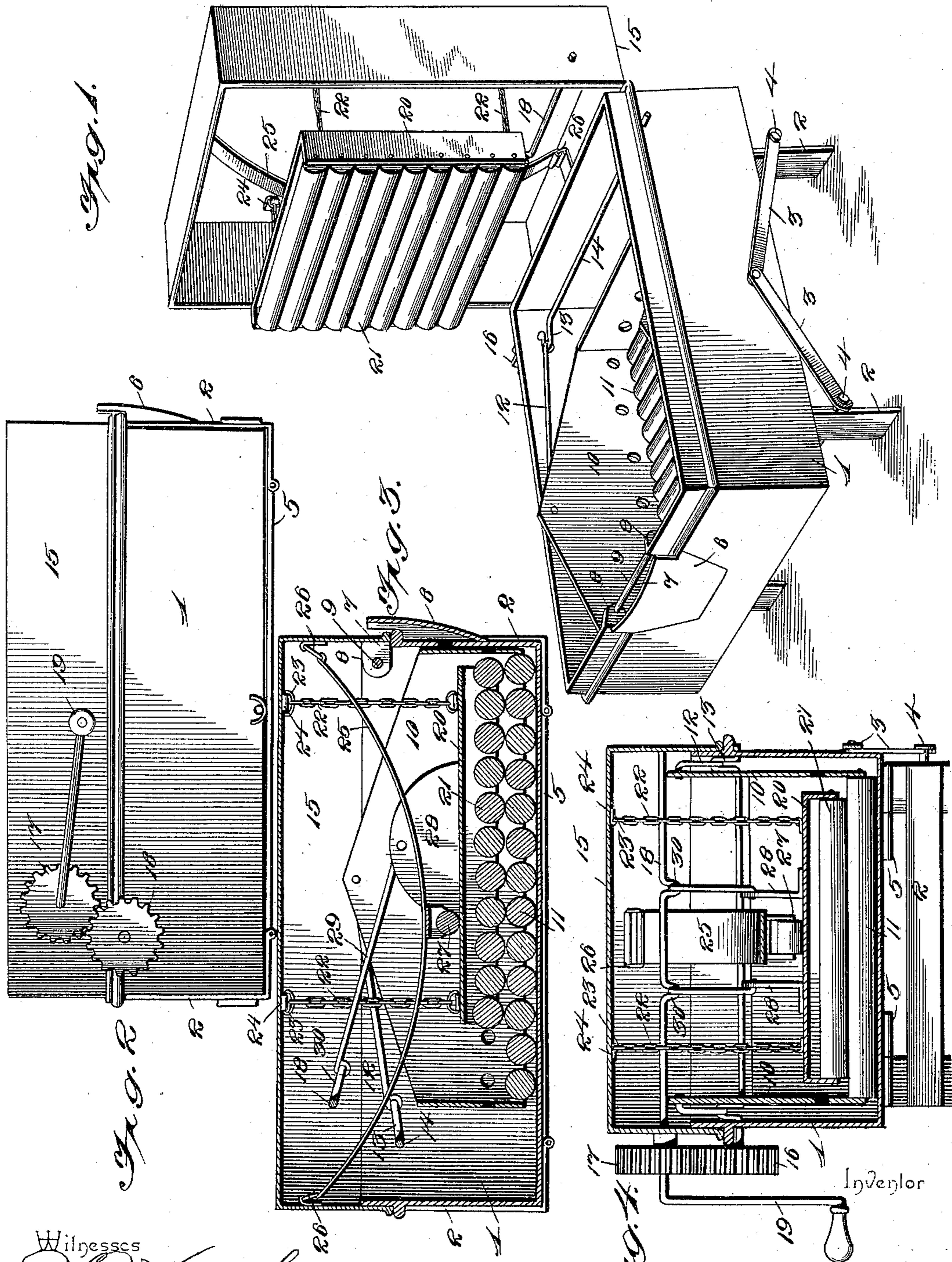


(No Model.)

L. BAIRD.
WASHING MACHINE.

No. 598,839.

Patented Feb. 8, 1898.



Witnesses
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UNITED STATES PATENT OFFICE.

LUTHER BAIRD, OF OMAHA, NEBRASKA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 598,839, dated February 8, 1898.

Application filed October 20, 1896. Serial No. 609,436. (No model.)

To all whom it may concern:

Be it known that I, LUTHER BAIRD, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented a new and useful Washing-Machine, of which the following is a specification.

This invention relates to washing-machines of the class which embody in their construction a suds-box, a movable roller-bed, and a reciprocating rubber, the latter acting jointly with the bed to effect a thorough cleansing of the clothes.

The purpose of the invention is to provide for the ready introduction of the clothing into the machine and the easy removal of the same therefrom after being cleansed and to secure a practically uniform compression of the clothing between the bed and rubber.

A further object of the improvement resides in the special means employed for connecting the rubber with the cover, whereby when the latter is turned back out of the way the rubber at the same time will be withdrawn from the suds-box and admit of the latter being accessible for the purposes noted.

Objects and advantages other than those called to attention will suggest themselves as the details of the organized machine are better understood; and to this and such other ends as pertain to the nature of the invention the latter consists of the novel features and combinations of parts, which hereinafter will be more particularly set forth, illustrated, and finally outlined in the subjoined claims.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a washing-machine constructed in accordance with this invention, the cover being thrown back, so as to expose the roller-bed, the rubber, and their connections. Fig. 2 is a side elevation showing the cover closed and the leg-sections folded. Fig. 3 is a longitudinal section of the machine. Fig. 4 is a transverse section thereof.

Corresponding and like parts are referred

to in the following description and indicated in the several views of the drawings by the same reference characters.

The suds-box 1 is of rectangular form and is preferably constructed of sheet metal and is mounted upon folding leg-sections 2, the latter being hinged to the bottom of the box a short distance from its ends and bent so as to fold against the ends of the box, as shown in Figs. 2 and 3. The bent portions of the leg-sections adjacent to their hinged ends engage with the bottom of the box and limit the opening of the leg-sections when the latter are turned into a position to support the box, as shown in Fig. 1. Braces 3 are pivoted at their inner ends to a side of the suds-box and are notched in their outer ends to make positive engagement with pins 4, extending from the leg-sections, so as to hold the latter in operative relation, as indicated in Fig. 1. The leg-sections are hinged to the terminals of strips 5, applied to the bottom of the suds-box for stiffening and strengthening the same. A support 6 to receive a wringer is applied to an end of the suds-box, and the latter is perforated at the lower end of the support to permit the suds-water to readily find its way from the space between the support and end into the suds-box when the wringer is in use. A notch 7 is formed in the rim of the suds-box opposite the support 6, and the terminal portions of the rim bordering upon the notch are bent inward, forming ears 8, which are apertured to receive a roller 9, which holds the clothes away from the upper edge of the suds-box when passing to the wringer.

The roller-bed consists of a rectangular-shaped frame 10 and a series of rollers 11, journaled at their ends in the side pieces of the said frame 10, and these rollers have their lower portions projecting beyond the plane of the lower portion of the frame 10, so as to travel upon the bottom of the suds-box and support the weight of the frame and the clothing placed therein and resting upon the rollers. The sides and ends of the frame 10 are perforated to admit of the free access of the suds-water thereto in the operation of the machine. The side pieces of the frame 10 gradually widen toward a middle point at their upper edges, and pitmen 12 connect the side pieces of the frame 10 at their highest point

with cranks 13 near the ends of a shaft 14, journaled in the sides of the suds-box near the end to which the cover 15 is hinged. A gear-wheel 16 is provided on one end of the shaft 14 and is adapted to mesh with a companion gear-wheel 17, secured to the end of a shaft 18, journaled in the sides of the cover 15, adjacent to its hinged end. The gear-wheels 16 and 17 mesh when the cover 15 is closed, and one of the shafts is positively rotated by means of a crank 19 applied thereto, and, as shown, this crank 19 is provided on the shaft 18.

The cover 15 closes the upper end of the suds-box and the notch 7, so as to prevent the splashing or escape of the water when the clothes are agitated. The rubber consists of a plate 20, having its longitudinal edges bent, and a series of rollers 21, journaled at their ends in the bent edges of the plate, and this rubber has positive connection with the cover by means of suitable connections 22, the terminals of the connections 22 having attachment with links 23, loosely held in ears 24, applied to the cover and rubber. By means of these connections 22 the rubber moves with the cover when the latter is turned back out of the way. A bow-spring 25 is interposed between the rubber and cover and exerts a pressure upon the rubber to hold the latter upon the clothes when the cover is closed upon the suds-box. This bow-spring is connected at its ends with the cover by swinging links 26, so as to admit of the spring contracting and expanding upon pressing its middle portion toward the cover. A roller 27 is journaled in a frame secured to the middle portion of the spring 25 and bears upon the rubber and reduces the friction incident to the reciprocating of the rubber to a minimum. Plates 28, extending in parallel relation, are secured to the back of the plate 20, and their upper edges are curved, so as to admit of the rubber rocking when adapting itself to the condition of the clothing confined between it and the roller-bed. The bow-spring operates between the plates 28, and the latter serve in a measure to centralize the rubber and its actuating-spring. Pitmen or rods 29 connect the plates 28 with cranks 30 of the shaft 18 and serve to transmit motion from the latter to the rubber.

In practice the clothes to be washed are placed within the frame 10 of the roller-bed and upon the rollers 11, and sufficient suds-water is supplied to the suds-box to cover the clothes. Upon closing the cover 15 the rubber will be pressed upon the clothes by the action of the spring 25, and upon operating the crank 19 the two shafts 14 and 18 will be rotated and by the connections herein referred to will cause the roller-bed and rubber

to reciprocate and thereby agitate the clothes and effect a cleansing thereof. By operating the roller-bed and rubber simultaneously the same effect will result as if either part received a stroke equal to the sum of the length of the stroke of both. This enables the suds-box to be very little longer than the roller-bed, thereby resulting in economy of space and material.

Having thus described the invention, what is claimed as new is—

1. In a washing-machine, the combination of a suds-box, a reciprocating frame having a bed, a cover, a rubber operating within the said frame and having connection with the cover so as to move therewith, a bow-spring having a roller exerting a pressure upon the said rubber and extending parallel with the line of motion of the rubber and frame, and links connecting the extremities of the bow-spring with the cover, substantially in the manner set forth for the purpose described.

2. In a washing-machine, the combination of a suds-box, a rectangular-shaped frame for receiving the clothing or articles to be washed mounted to reciprocate within the suds-box and provided with rollers forming a bed for the clothing and rotary supports for the reciprocating frame, a rubber located within the reciprocating frame and having an independent reciprocating movement, positive connections between the rubber and the cover, means for exerting a downward pressure upon the rubber, and actuating mechanism for imparting an independent reciprocating movement to the frame and rubber, substantially as set forth.

3. In a washing-machine, the combination of a suds-box, a frame loosely fitted within the suds-box and having a roller-bed, a shaft 14 having crank portions connected with the said frame for imparting a reciprocating motion thereto, a cover, a rubber operating within the said frame and having loose connection with the cover, a spring carried by the cover and exerting a downward pressure upon the rubber, a shaft 18 journaled to the cover and having crank portions connected with the rubber, and companion gears secured to the projecting ends of the shafts 14 and 18 and separable to admit of the cover being thrown back, and intermeshing when the cover is closed, substantially as shown and described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

LUTHER BAIRD.

Witnesses:

A. OGLE,
R. P. DAVIE.