No. 657,645. Patented Sept. 11, 1900.

J. W. CLAYTON.

WASHING MACHINE.

(Application filed Oct. 2, 1899.)

(No Model.)

Fig. 1.

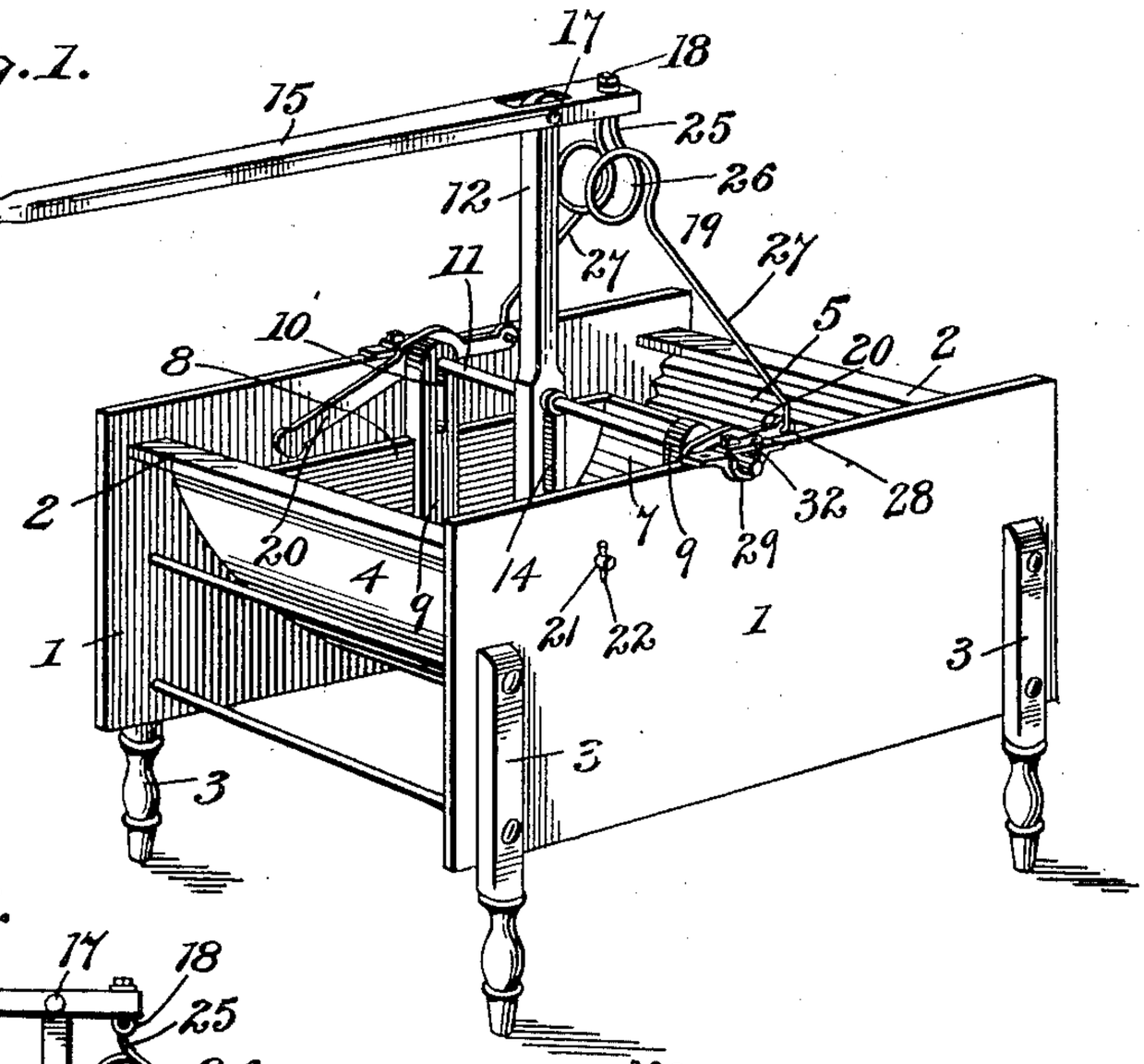


Fig. 2.

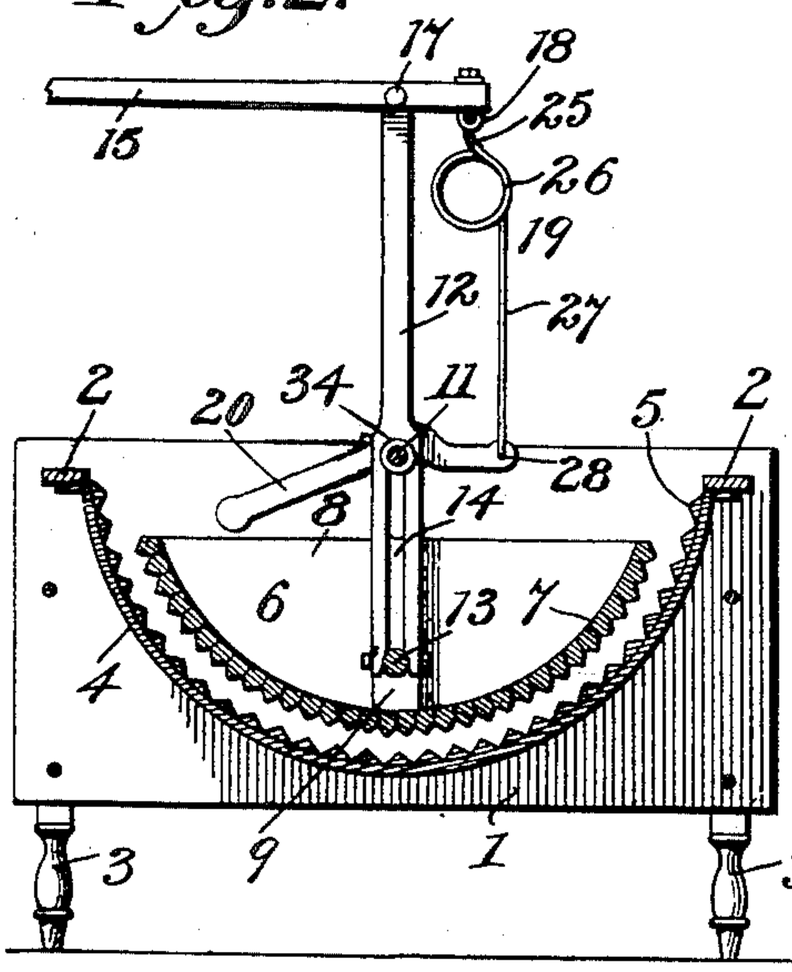


Fig. 3.

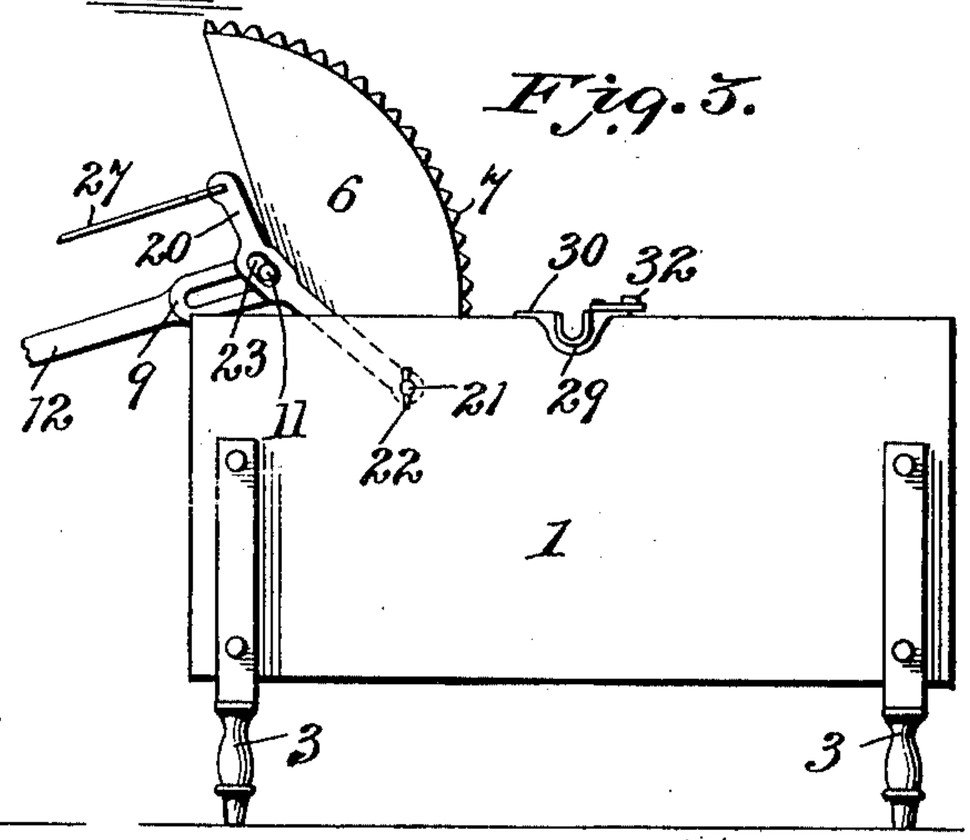


Fig. 4.

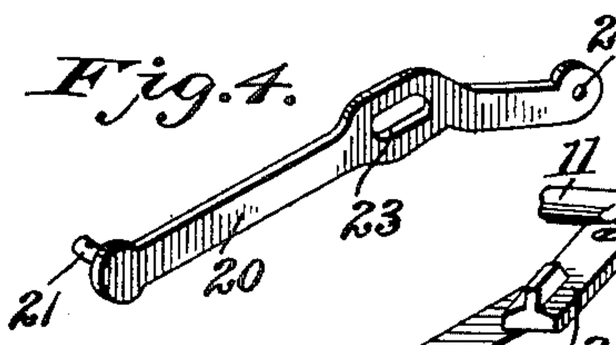


Fig. 5.

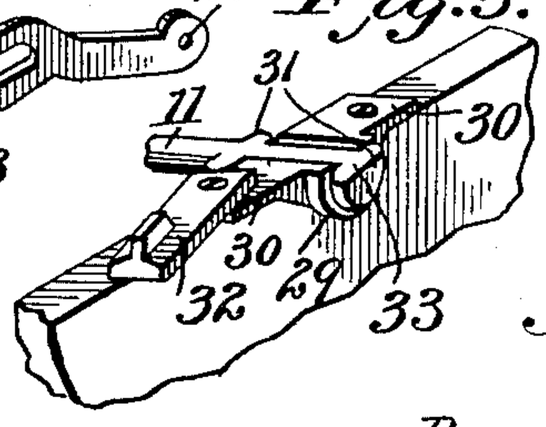
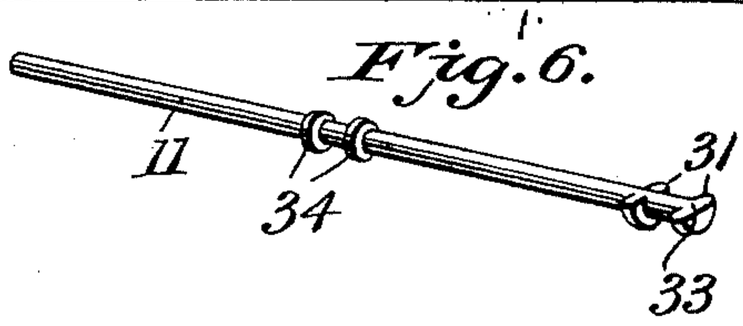


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN WILLIAM CLAYTON, OF ATLANTA, GEORGIA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 657,645, dated September 11, 1900.

Application filed October 2, 1899. Serial No. 732,373. (No model.)

To all whom it may concern:

Be it known that I, JOHN WILLIAM CLAYTON, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented a new and useful Washing-Machine, of which the following is a specification.

This invention relates to washing-machines of the rubber type; and it has for one object to simplify and improve the construction of washing-machines of the character referred to, to the end that the yielding pressure of the rubber upon the clothes may be regulated by the operator and controlled by the amount of pressure applied by the operator to the operating lever or handle by which the machine is driven. The construction of the machine aims to secure greater simplicity, cheapness in manufacture, greater compactness, and ease of storage or transportation.

Other objects and advantages of the invention will appear in the course of the subjoined description.

The invention consists in a washing-machine embodying certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a washing-machine constructed in accordance with the present invention. Fig. 2 is a central longitudinal section through the same. Fig. 3 is a side elevation showing the rubber lifted from the suds-box and thrown backward toward one end of the machine. Fig. 4 is a detail perspective view of one of the hanger-arms. Fig. 5 is a similar view showing the manner of detachably mounting the shaft on the washing-machine body. Fig. 6 is a detail perspective view of the shaft detached.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the drawings, the washing-machine body comprises upright sides 1, connected by suitable cross-bars 2 and supported upon legs 3 in the usual manner. Extending transversely across, between, and connecting the sides 1 is the concaved bottom 4 of the suds-box, the said bottom being provided upon its inner surface with ribs or corrugations 5, forming the stationary rubbing-surface and bottom of the suds-box. Within said box is arranged an oscillating rubber 6, the rubbing-surface of which is concentric with the bottom of the box and also provided with slats or ribs 7, having convex working faces, all of said parts being of the usual construction and arranged in the ordinary manner.

Extending upward from the side pieces 8 are arms 9, the same being rigidly secured at their lower ends to the rubber and having their upper portions slotted, as shown at 10, to slidingly embrace a horizontal shaft 11, which is removably fitted to the body of the machine. Arranged centrally of the rubber is a standard 12, which is bolted or otherwise secured at its lower end to a cross-bar 13, connecting the sides of the rubber. The standard 12 is also provided with a longitudinal slot 14, whereby it is adapted to slidingly embrace the shaft 11 and slide thereon simultaneously with the arms 9. The standard 12 is extended to a considerable height and has pivotally connected to its upper end an operating handle or lever 15, provided at one end with a suitable hand-grip 16 and extended at its opposite end beyond the pivot or fulcrum 17, where it is provided with an eyebolt 18, the eye of which is arranged on the under side of the lever to receive the upper looped portion of a spring 19.

20 designates a pair of hanger-arms, each of which is provided at one end with a stud or pintle 21, which passes from the inside through one of the sides 1 of the body, its outer end being provided with an opening to receive a cotter-pin 22. The hanger-arms 20 are pivotally connected with the body in transverse alinement with each other and are provided intermediate their ends with longitudinal slots 23, through which the shaft 11 passes and by means of which the shaft is supported on the hangers. The hangers extend beyond the shaft 11 and are provided at their free ends with openings 24 to receive the inbent extremities of the spring.

The spring 19 is preferably formed in one piece of spring material, the blank from which the spring is formed being doubled at its central portion to form a loop 25, after which the

two arms at opposite sides of the loop are bent to form one or more coils 26, which lie beneath the operating lever or handle. After forming the coils the terminals are extended divergently from each other to form the inclined portions 27, and the extremities of said portions are bent inward, as shown at 28, to spring into the openings 24 in the ends of the hanger-arms. The spring formed in this way is capable of expansion or contraction lengthwise, and being interposed between the operating handle or lever and the hanger-arms, which are normally stationary, the yielding properties of said spring are communicated through the lever or handle 15 to the standard 12, which is thus adapted to yield up and down, carrying with it the rubber 8, and thereby automatically regulating to a considerable extent the pressure of the rubber upon the clothes.

From the foregoing description it will be seen that the rock-shaft 11 is supported in fixed bearings on the suds-box and that the rubber has its slotted side-bars and the standard loosely fitted on the rock-shaft, so as to swing back and forth thereon when operated by the handle or lever, said slotted arms and the standard of the rubber being also free to slide on the rock-shaft, according to the variation in the quantity of clothes, which are interposed between the working face of the rubber and the segmental bed opposed to said face of the rubber.

The spring-support of my invention is disposed at one side of the rock-shaft, and this spring-support is connected pivotally at its lower ends with the hangers 20, while its upper end is made fast to one end of the operating-lever. This spring-support serves as the fulcrum for the lever, and the standard 12 of the rubber is pivoted to said lever at a point intermediate of its length. In the normal position of the parts the spring-support sustains one end of the lever in proper relation to the standard of the rubber, and the slotted rubber arms and the slotted standard drop within the suds-box into engagement with the shaft, so as to limit the downward movement of said rubber with relation to the segmental bottom of said suds-box. When the fabrics are placed within the suds-box between the bed and the rubber, the latter is raised more or less, according to the quantity of clothes in the suds-box. To operate the rubber, it is necessary for the attendant to press down upon the lever and to swing the latter back and forth. The spring-support, serving as the fulcrum of the lever, is constructed to flex or give at a point between its attachment to the lever and its pivotal connection to the hangers under the pressure exerted by the operator on the lever or handle, and thus the pressure exerted on the rubber by the operator pressing on the lever or handle is assisted by the plunger of the spring-support. This spring-support is furthermore adapted to swing in the oscillations of the lever and the standard 12 of the rubber when the machine is operated for the purpose of washing the fabrics, and thus the spring-support is made to act as a shifting-fulcrum for the lever. In introducing or removing the fabrics into and from the suds-box the shaft 11 is released from its bearings, and this shaft is shiftable with the hangers, the parts of the rubber, and the lever to the position indicated by full lines in Fig. 3, whereby the operator is able to obtain free and unobstructed access to the suds-box.

The shaft 11 is mounted at its ends in semicircular bearings 29, arranged upon the upper edges of the sides 1 and provided with oppositely-extending perforated ears 30, by means of which said bearings, are secured to the machine. The shaft is provided at one end with circumferential flanges or collars 31, which bear against the inner and outer faces of the bearing and which prevent the shaft from moving longitudinally and getting out of place. The dislodgment of the shaft is further prevented by means of a pivoted button 32, which may be moved across the open upper side of the bearing, so as to extend over that portion of the shaft which works in the bearing, and in order to enable said button to be thrown inward and outward the outer collar or flange is cut away at one side, as shown at 33. When the button has been closed over the shaft, the latter may be partially turned, thereby locking the button against moving outward accidentally. A similar button is provided for the opposite end of the shaft. The shaft is also provided at points equidistant from its center with collars or flanges 34, which lie upon opposite sides of the central standard 12, thus properly positioning said standard while allowing it to slide freely on the shaft.

By means of the construction above described the operator at all times has complete control of the rubber, which adjusts itself automatically to the quantity of clothes within the suds-box, and the pressure applied to the rubber by the spring may be readily increased or diminished by depressing or elevating the outer end of the lever or handle.

The machine is simple in construction, compact, and may be economically manufactured. The operating mechanism may also be readily disassociated for the purpose of storage or transportation. By opening the buttons and drawing backward the operating lever or handle the shaft 11 may be lifted from its bearings and the operative parts of the machine elevated and thrown backward out of the way, as shown in Fig. 3, for the purpose of introducing or removing clothes.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described machine will be readily apparent to those skilled in the art without further description, and it will be understood that various changes in the form, proportion, and minor details of construction

may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. A washing-machine comprising a suds-box, an oscillatory rubber having an upwardly-extending standard, a spring provided near its upper end with the coils 26 and extended into the loop, 25, a lever pivoted at a point intermediate its length to the standard and fulcrumed at its end by fastening the same to the loop of said spring and means connecting the lower end of the spring with the suds-box, substantially as described.

2. A washing-machine comprising a suds-box having a concave bottom, a shaft arranged above said bottom, an oscillatory rubber having short slotted arms which slidably embrace said shaft, a standard fastened to the rubber and extended above the slotted arms, hangers in which said shaft is mounted, a doubled spring having the terminal portions connected respectively to the hangers and provided with the intermediate coils, and a lever-handle attached to the standard and fulcrumed on the spring above the coiled portions thereof, substantially as described.

3. A washing-machine comprising a suds-box having a concaved bottom, a shaft arranged above said bottom, an oscillatory rubber having the short slotted arms fitted slidably on said shaft, a slotted standard fastened to the rubber, slidably embracing the shaft and extended above the slotted arms, pivoted hangers provided at points intermediate of their length with slots for the reception of said shaft, a spring having its terminal portions connected with the hangers and provided with the intermediate coils, and an operating-lever pivoted to the standard and fulcrumed on the spring above the coiled portions thereof, substantially as described.

4. A washing-machine comprising a suds-box having a rubbing-surface, an oscillatory rubber, the hangers pivoted to the suds-box and shiftable with the rubber away from the rubbing-surface of said box, a spring pivoted to and shiftable with said hangers and provided near its upper end with the coils which are extended to form the loop, a lever attached to the loop of said spring, a shaft, means for holding the shaft on the suds-box, and a standard attached at its respective ends to the rubber and to the lever and slidably embracing the shaft at a point intermediate of its length, substantially as described.

5. In a washing-machine, the combination with the suds-box, and an oscillating rubber mounted therein, of a shaft for said rubber detachably mounted on the suds-box, collars on said shaft forming spaced shoulders one of which is cut away at one side, forming an open-sided bearing receiving the shaft between said collars, and a pivoted keeper or button adapted to close the open side of the bearing and to be locked in such position by said collars upon a partial rotation of the shaft, substantially as described.

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

JOHN WILLIAM CLAYTON.

Witnesses:
M. HOLMES,
GEO. BECKING.