

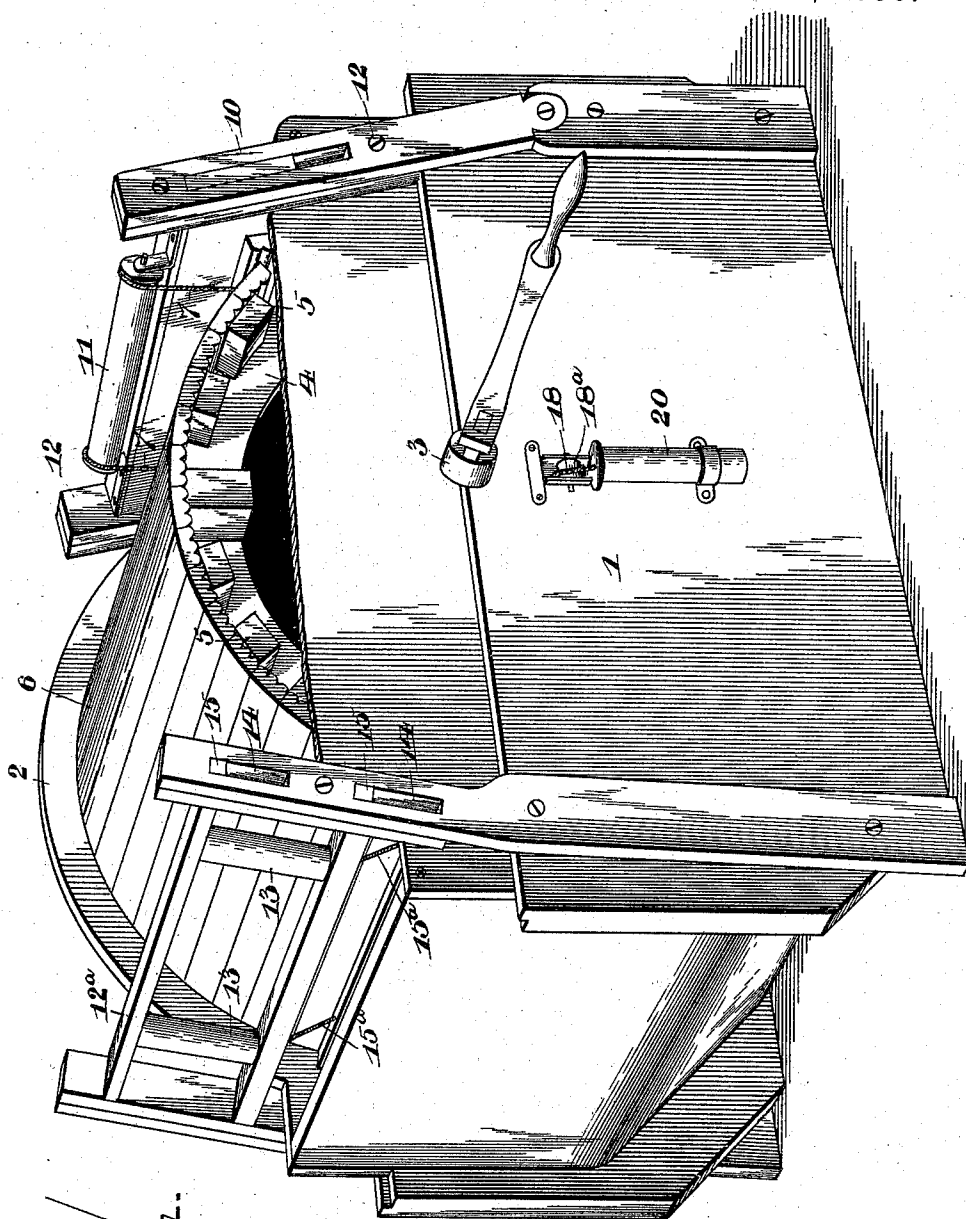
(No Model.)

2 Sheets—Sheet 1.

J. H. ESTES.
WASHING MACHINE.

No. 571,304.

Patented Nov. 10, 1896.



Witnesses

W. T. Doyle
H. T. Riley

By his Attorneys,

John H. Estes,

C. A. Snow & Co.

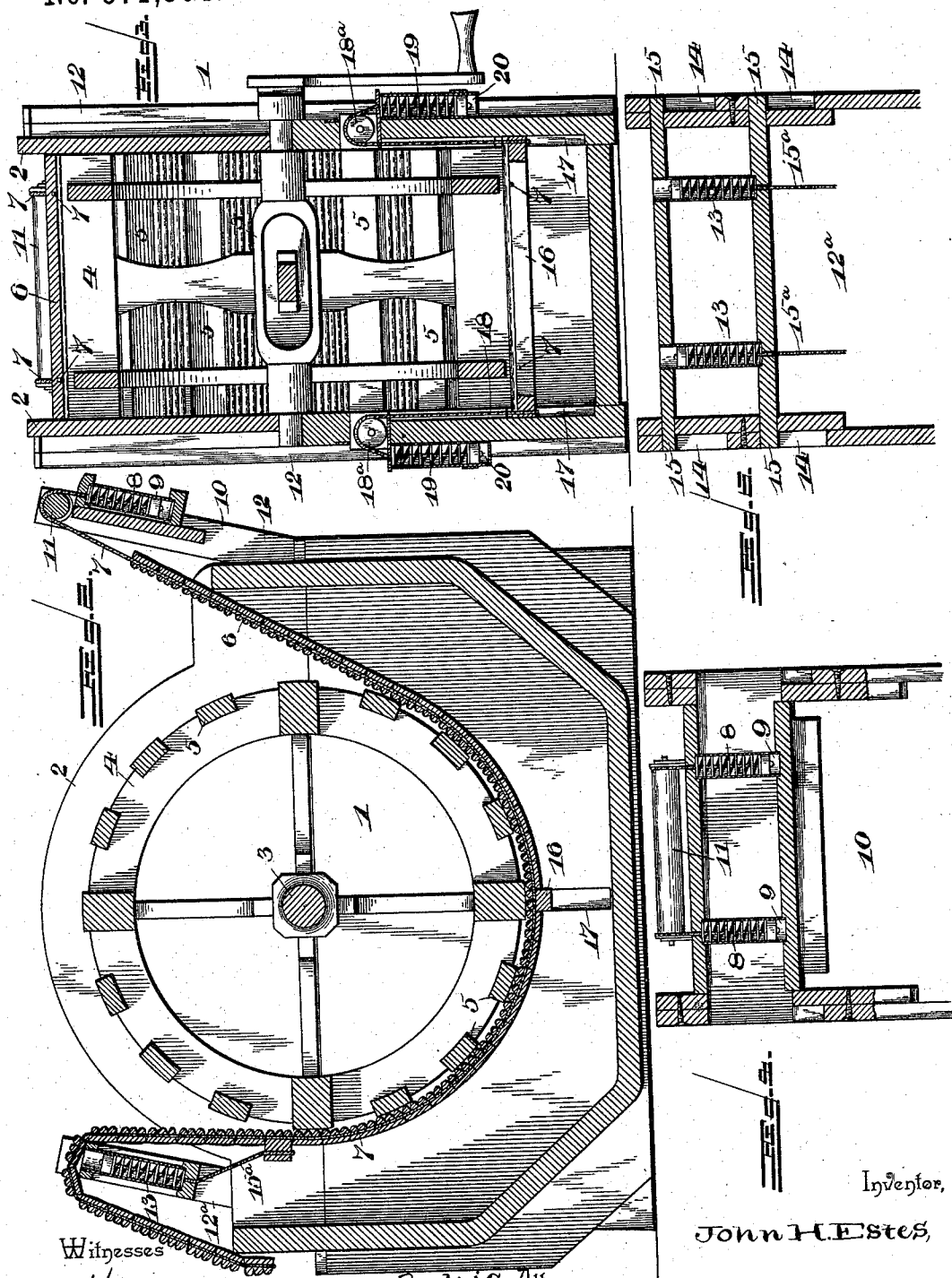
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By *his* Attorneys,

Inventor,

John H. Estes,

Cashnow & Co.

UNITED STATES PATENT OFFICE.

JOHN H. ESTES, OF EVERTON, MISSOURI, ASSIGNOR OF ONE-HALF TO JOSEPH W. SPRINGER, OF SAME PLACE.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 571,304, dated November 10, 1896.

Application filed February 24, 1896. Serial No. 580,415. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. ESTES, a citizen of the United States, residing at Everton, in the county of Dade and State of Missouri, have invented a new and useful Washing-Machine, of which the following is a specification.

The invention relates to improvements in washing-machines.

The object of the present invention is to improve the construction of washing-machines and to provide a simple, inexpensive, and efficient one capable of rapidly and thoroughly washing clothes at the expenditure of a minimum amount of labor.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a washing-machine constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view. Fig. 3 is a central transverse sectional view. Figs. 4 and 5 are detail views illustrating the manner of adjustably supporting the flexible washboard.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a washing-machine constructed in any suitable manner, preferably polygonal in longitudinal section, and having at its sides semicircular extensions 2. Within the washing-machine body, on a transverse shaft 3, is journaled a cylindrical rubber 4, provided at its periphery with transverse bars 5 and coöperating with a cylindrical washboard 6, extending around the entire periphery of the cylindrical rubber. The cylindrical rubber has its transverse bars 5 smooth and spaced apart to permit a ready passage of the water and suds employed in washing, and one end of the shaft is provided with a crank-handle.

The cylindrical washboard 6 is flexible, being composed of a series of slightly-curved transverse bars or slats having their inner faces corrugated and perforated adjacent to their ends for the reception of a cord 7 or other suitable connection, on which the slats

or bars are strung. The flexible cylindrical washboard extends around the entire periphery of the cylindrical rubber or wheel, and its upper portion is adapted, as illustrated in Fig. 2 of the accompanying drawings, to be swung backward out of the way to permit clothes to be introduced into or removed from the washing-machine.

One end of the cylindrical rubber is connected with spiral springs 8, housed in tubular casings 9 of a frame 10, the sides of the cord 8 or other suitable flexible connection employed passing over a transverse roll 11 and connected with the lower ends of the spiral springs 8.

The frame 10 is arranged at one end of the washing-machine body and consists of sides 12, pivoted at their lower ends to the body to adapt the frame to swing inward and outward, and a transverse portion located above the adjacent end of the body and provided with transverse strips between which the tubular casings are mounted, the strips being provided with perforations for the passage of the sides of the cord, the latter having blocks or other suitable bearings for engaging the lower ends of the spiral springs 8. By swinging the frame 10 inward the adjacent end of the cylindrical washboard is carried toward the cylindrical rubber or wheel and the frame is adapted to be swung outward to facilitate placing clothes within or removing them from the washing-machine body. The other end of the washing-machine body has mounted on it a rigid frame 12^a, constructed substantially similar to the frame 10 and consisting of sides and a transverse portion in which tubular casings 13 are mounted. The sides of the frame 12 are provided with longitudinal slots 14 to receive tenons or projections of the transverse portion of the frame, and the said transverse portion of the frame 12 is adapted to be raised and lowered to adjust the cylindrical washboard to the proper tension. Within the tubes 13 are arranged spiral springs, the upper ends of which are engaged by blocks or bearings of a cord 15^a, having opposite sides connected with the cylindrical washboard at a point below the transverse portion of the frame 12^a.

At the bottom of the washing-machine body

a transverse bar or slat 16 of the cylindrical washboard extends beyond the other transverse bars or slats and engages vertical grooves 17 of the inner face of the sides of the washing-machine body. The grooves 17 form guides for the transverse bar or slat 16. Cords 18 are connected with the latter and extend upward in the grooves 17, passing over pulleys 18^a at the top thereof and connected with spiral springs 19. The spiral springs 19 are housed in tubular casings 20, which are mounted on the exterior of the sides of the washing-machine body, and the cords 15 are provided with blocks or bearings to engage the lower ends of the spiral springs 19.

During the operation of washing the cylindrical rubber or wheel is rotated and the clothes are rubbed against the cylindrical washboard, which extends around the entire periphery of the rubber or wheel, and it will be apparent that the clothes are thoroughly and rapidly washed. It will also be apparent that the cylindrical washboard is adapted to exert the necessary pressure on the clothes being washed and that it is capable of yielding to accommodate thick or heavy clothing and to prevent fabrics from being injured.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What I claim is—

1. In a washing-machine, the combination of a body provided at opposite sides with vertical grooves forming guides, a cylindrical rubber journaled in the washing-machine body, a flexible washboard extending entirely around the cylindrical rubber and having at its bottom a transverse slat projecting laterally from the washboard and extending into and guided by said grooves, supporting-frames mounted on the body at the ends thereof, one of the frames being rigid and the other frame being pivoted and connected with the adjacent end of the flexible washboard and adapted to swing the same to and

from the cylindrical rubber, springs mounted on the frames and connected with the washboard, pulleys mounted at opposite sides of the body in openings thereof and arranged at the top of the vertical grooves, cords connected with the projecting ends of the transverse slat, arranged within the grooves of the body and passing over the said pulleys, and springs connected with the cords, substantially as described.

2. In a washing-machine, the combination of a body, supporting-frames mounted on the body at the ends thereof, one of the frames being rigid and the other being pivoted and capable of swinging inward and outward, springs mounted on the frames, a rotary rubber journaled in the body, and a flexible cylindrical washboard extending around the entire periphery of the rubber and having one end connected with the springs of the pivoted frame, substantially as described.

3. In a washing-machine, the combination of a body, a rotary rubber journaled therein, a flexible cylindrical washboard extending around the entire periphery of the rubber and composed of transverse slats and cords or the like, having the slats strung on them, a pivoted frame mounted on the front end of the body and provided with a transverse roll receiving the cords at the adjacent end of the washboard, springs mounted on the pivoted frame and connected at their lower ends with said cords, a rigid frame mounted on the body at the rear end thereof and having an adjustable transverse portion, and springs mounted thereon and connected at their upper ends with the adjacent portion of the washboard, 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 H. ESTES.

Witnesses:

THOMAS J. BLAKEY,
SANDERS H. MERICK.