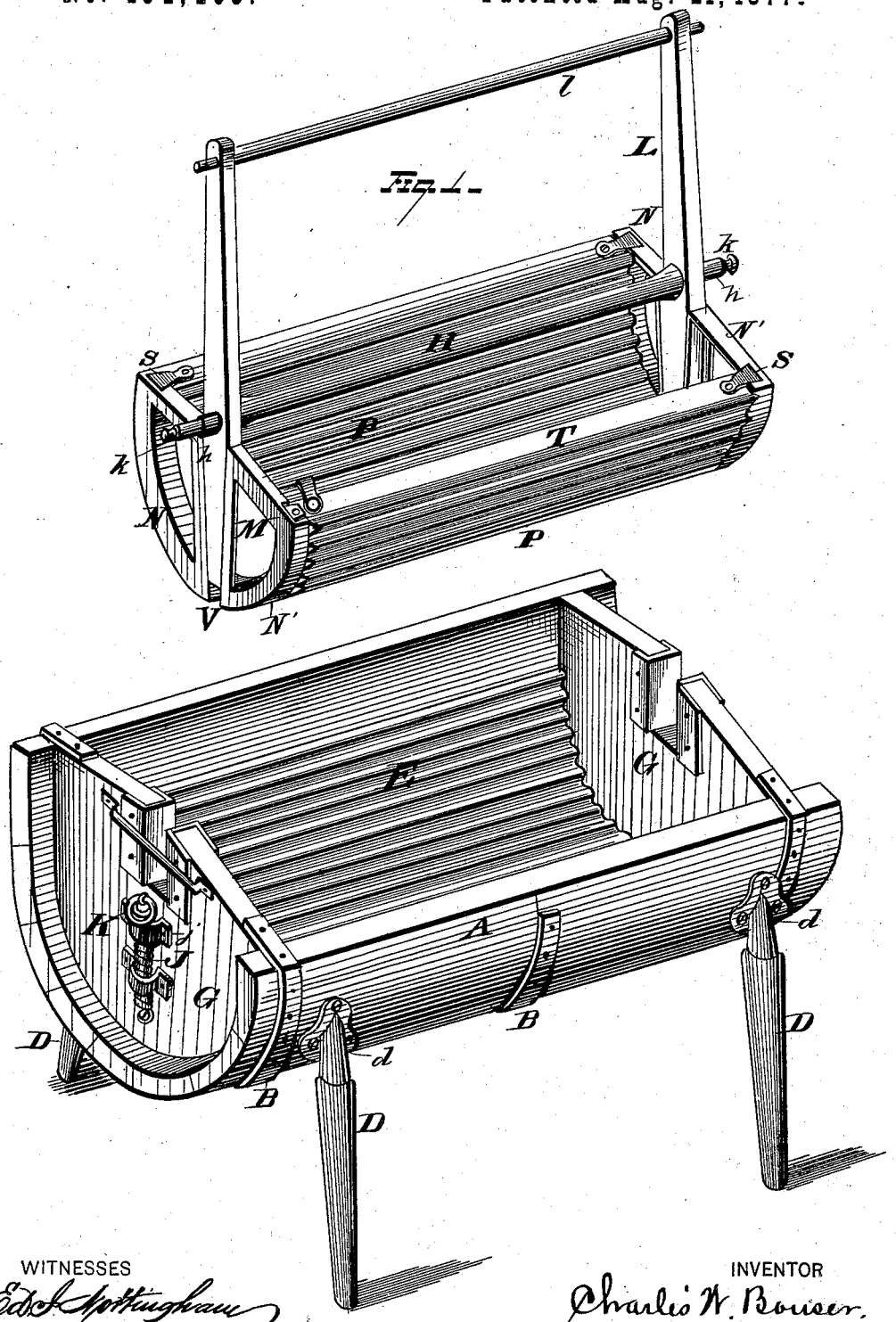
2 Sheets—Sheet 1.

C. W. BOUSER.

WASHING-MACHINES.

No. 194,406. Patented Aug. 21, 1877.



WITNESSES

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INVENTOR

Charles W. Bouser.

By Leggett and Leggett.

ATTORNEYS

2 Sheets—Sheet 2.

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Fig. 2.

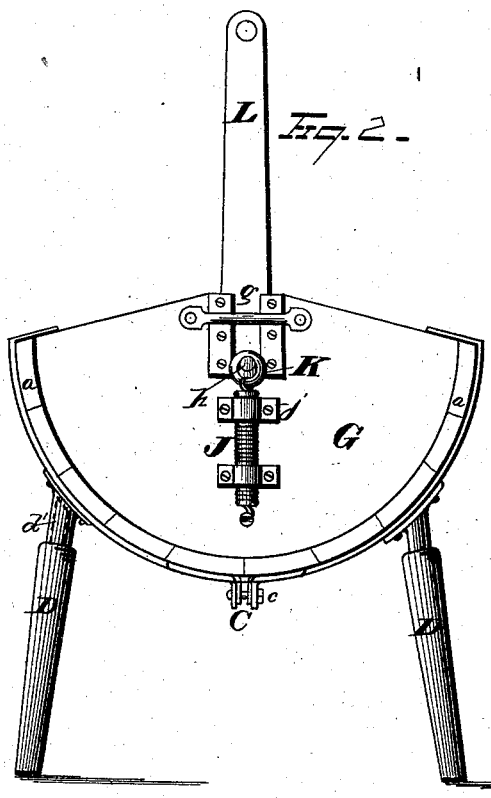


Fig. 3.

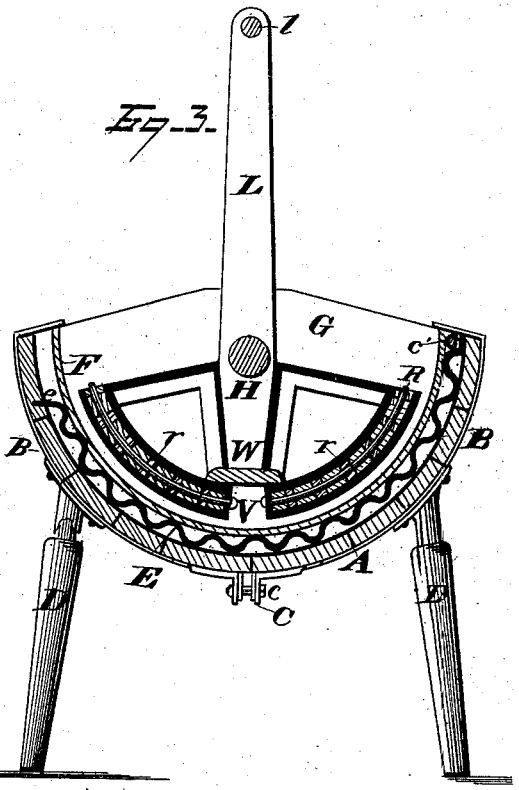
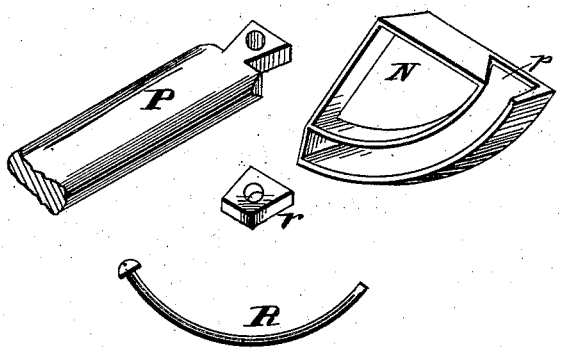


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES W. BOUSER, OF PARIS, ILLINOIS.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **194,406**, dated August 21, 1877; application filed February 14, 1877.

To all whom it may concern:

Be it known that I, CHARLES WHARTON BOUSER, of Paris, in the county of Edgar and State of Illinois, 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to washing-machines.

It consists, first, in providing the heads or end pieces of the semi-cylindrical suds-box with elongated slotted bearings, below which are located spiral springs, which latter are detachably connected with the axial roller of the rubber frame, constructed as is afterward described, and give to the latter a vertically spring-pressed adjustment; secondly, in sectoral castings adapted to engage with and support the working-bars of the rubber frame; thirdly, in making the end castings of the rubber frame in two parts, the upright radial arms of each of which being secured to both sides of vertical strips, the latter interposed between the two parts, and continuing upward to be connected at their top extremities by the actuating hand-roller; fourthly, in constructing the two-part end castings of the rubber with interior grooves, so that the longitudinal rubbing-bars may be secured therein by dovetail engagement; fifthly, in connecting together the dovetail-end extremities of the cleats of the rubber frame by a curved bolt having washers thereon, interposed between each consecutive pair of the cleats, so as to maintain suitable spaces in the frame for the passage of the suds, the said bolt, together with the tenoned ends of the cleats, being protected in use, and the frame also given a finished appearance, by small overlapping upper face-pieces secured to the ends of each top cleat, and fitting into the groove-recesses of the end-supporting castings; further, in certain details of construction, as are described at length, and finally claimed.

Referring to the drawings, Figure 1 represents, in perspective, my machine, the box and rubber being disconnected. Fig. 2 is an end elevation of the same as connected and in operative position. Fig. 3 is a transverse section, showing the manner of supporting and connecting the cleats of the rubber frame in the end castings. Fig. 4 represents parts in detail.

A is the main box of the machine, usually called the "suds-box," formed of a number of longitudinal sections, *a*, arranged so as to make the box semi-cylindrical, and bound together by transverse metallic straps B, which are provided with strengthening-clasps C, as they meet in respective lower extremities along the middle of the bottom of the box. These straps and clasps, being on the exterior surface of the box, and connected by adjustable engaging-screws *c*, or other analogous device, serve to bind the several sections together, and as they may become relatively loose by shrinkage or exposure, the straps, with their tightening mechanism, are enabled to bring the sections closely together in place, and produce again a perfectly-tight receptacle for the washing-suds.

The machine is supported upon detachable legs D, fitting into castings *d*, which latter are fixedly secured to the machine. The upper extremities of the legs seated into the castings have a beveled or strongly chamfered end surface *d'*, so that they may set closely and continuously against the curved side of the frame, which they support.

The inner surface of the box is lined with corrugated zinc E, one longitudinal edge of which is secured in a groove, *e*, at the side, while the opposite side is brought up to the extreme upper edge of the side of the box, and is there secured by a cleat, *c'*.

This latter construction allows of using that side of the box as an ordinary hand washboard or rubbing-surface, when desired, the rubber frame being removed from the box for such purpose.

Semicircular strips of wood, F, at either interior end of the box, aid in holding the zinc bottom securely in place.

The heads or ends G of the machine-box are provided with open vertically-elongated slots *g*, in which the axial roller H of the rubber frame finds bearing at either journal end. In vertical plane below these slots, and work-

ing in guides *j*, are the spiral springs J, the lower extremities of which are secured to the end pieces G, while their upper ends are free, and are provided each with a ring, K.

Upon seating the rubber frame in place, the journals *h* are engaged with the springs by slipping the rings K into the annular grooves *k* in the extreme ends of the journals. This construction gives vertical adjustment to the rubber while in operation, and also greatly assists the operator by bringing a pressure to bear upon the clothes independent of his action, the spring-pressure being especially adapted to this purpose.

The rubber frame has the uprights L at either end, which are connected at their upper extremities by the hand actuating-bar *l*, while the axial supporting-shaft H passes through the lower part of the uprights, extending from the horizontal plane of this axial roller H, down along to the extreme lower ends of the uprights L, and on either side of the latter are secured the vertical arms M, respectively, of the sectoral castings N N′. These castings are in distinct and two-part formation at either end of the rubbing-bars P, and support the latter by their introduction into the dovetailed or wedge-shaped grooves *p*, formed in the circular interior side of the arcs of the castings, the ends of the bars P being correspondingly tenoned to closely engage with the grooves. The ends of the bars are relatively arranged together, so as to leave suitable openings or spaces intervening between each two of the rubbing-bars, for the passage of water and suds. Small washers or stop pieces *r* are placed between the ends of the bars within the grooves of the sectoral supporting-castings for this purpose. A curved bolt or engaging-pin R passes through the tenoned ends of the bars within the grooves, and firmly binds them together and in place. The upper extremities of the respective bolts, one of each casting, are provided with a tapped nut for engaging the parts, and the whole is covered by the small guard-pieces S, which latter preserves the same from undue exposure to the water, and also gives a finished appearance to the frame. These guards S are secured by screws at one end to the upper sides of the top bars T, while their free ends move in a horizontal plane, adjustably from or over and fitting into the upper end recess formed in each casting by the grooves which support the tenoned ends of the rubbing-bars.

The arcs of the sectoral castings, as they come into vertical plane with the uprights L, are below the same in cross or horizontal measurement, so that a clear space, V, is formed along the entire middle length of the bottom of the rubber-frame, which admits of the gathering therein of the clothes. The rubbing-bars, being in the same circular plane with that of their supporting-castings, admit of the above-described space-opening, and the two lower middle bars have secured to their upper surfaces an intervening strip, W, which bridges over the space V. The upper extremities of the arcs of the castings have horizontally-inclining arms X, which act as strong lateral braces in binding the rubbing-bars to the vertical uprights L, and, by making the end castings in two parts, as described, the castings are made capable of being secured to both sides of the uprights, and thus insuring a firm connection of parts.

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

1. The rubber constructed with the two-part sectoral end castings, in combination with spring mechanism, as described, whereby the said rubber has a vertical spring-pressed adjustment, substantially as described.

2. The rubber in a washing-machine, constructed with metallic bar-supporting castings made in two parts at either end of the same, substantially as and for the purpose described.

3. The sectoral end castings of a rubber-frame, provided with dovetailed grooves on their inner curved sides for securely supporting the rubbing-bars, substantially as and for the purpose described.

4. In a rubber, the combination, with the sectoral castings having dovetailed grooves, of the rubbing-bars provided with correspondingly-tenoned end extremities, the latter relatively secured by a curved engaging device passing through the plane of the grooves, substantially as and for the purpose described.

5. The combination, with the sectoral castings, of the guard-pieces secured to the top rubbing-bars, and seating over the recess formed by the grooves in the supporting-arcs of the castings, whereby the engaging-bolt and tenoned ends of the bars are protected, and at the same time a finished appearance is given to the frame, substantially as and for the purpose described.

6. The sectoral metallic end pieces for supporting the rubbing-bars, the same secured by their vertical radial arms respectively to either side of the main uprights of the rubber, substantially as and for the purpose described.

7. The combination, with the lower middle bars, forming an enlarged transverse central space-opening in the working-face of the rubber, of a superposed longitudinal strip closely connecting the upper edges of the said middle bars, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 29th day of January, 1877.

CHARLES WHARTON BOUSER.

Witnesses:

F. W. LEVINGS,

R. H. KILE.