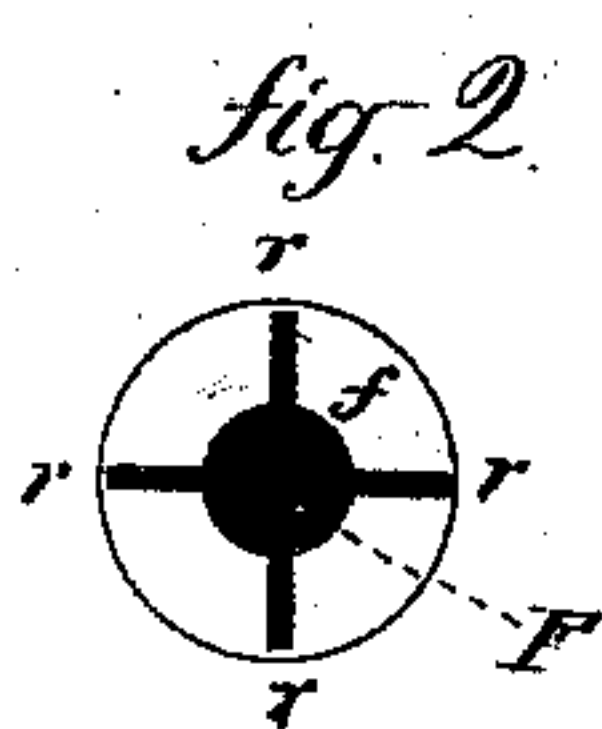
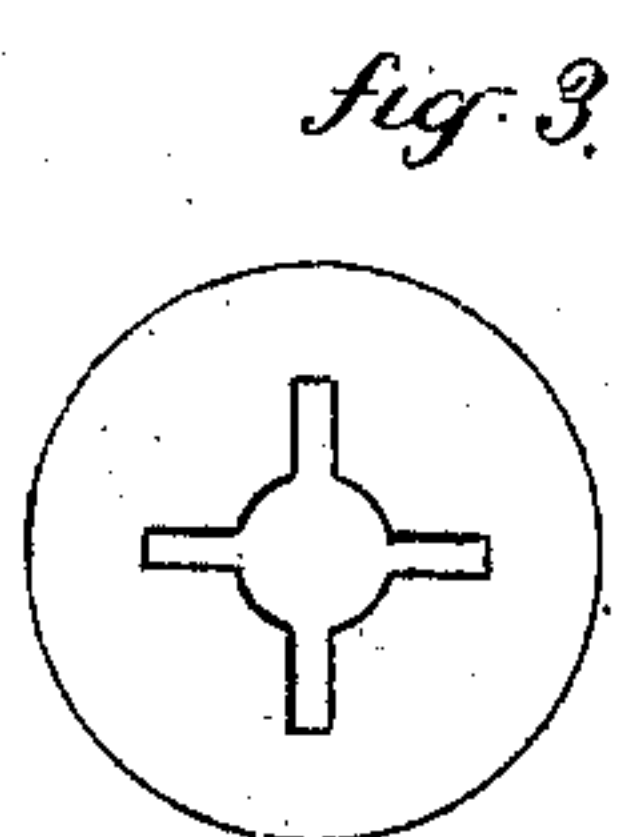
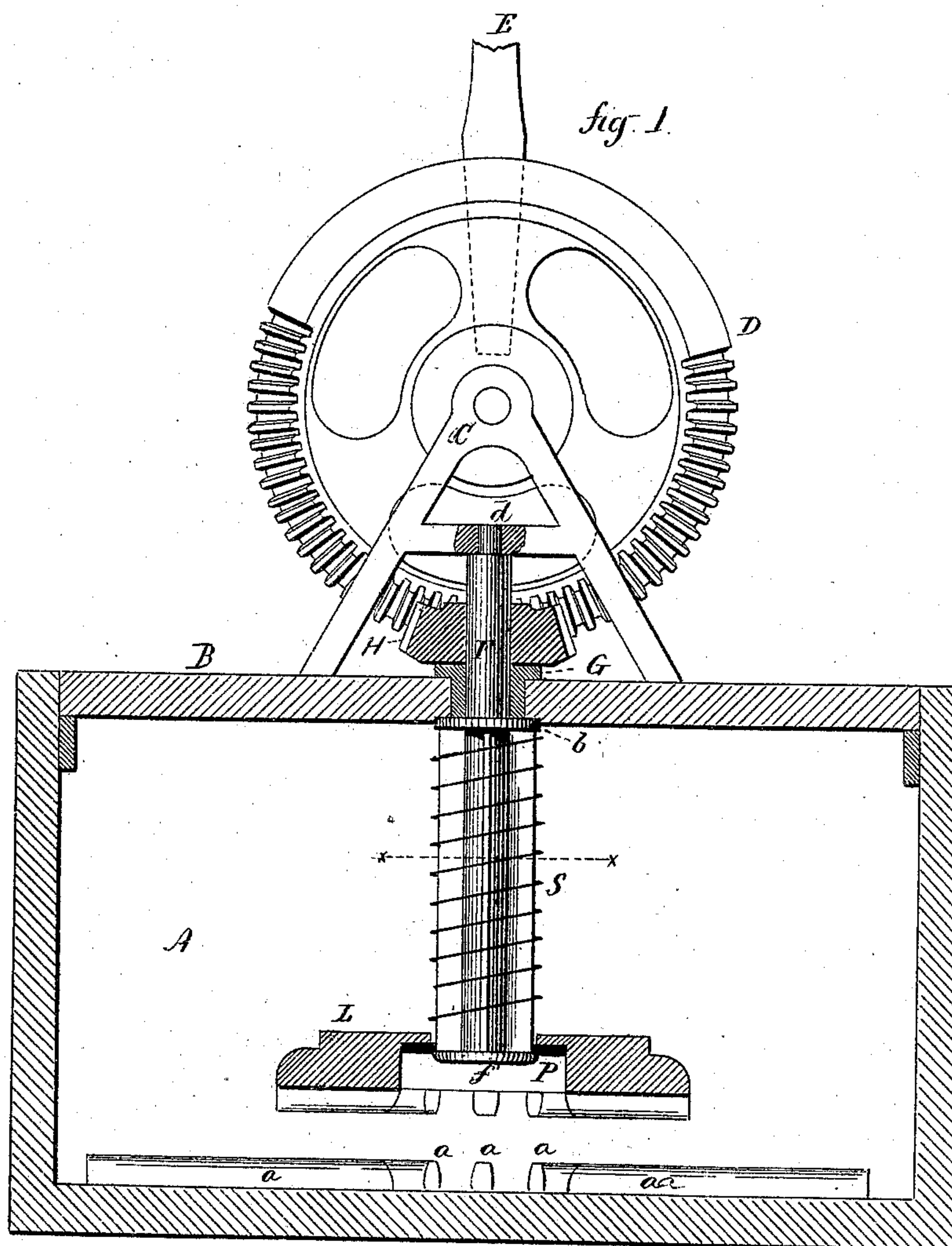


T. COLVIN & R. M. PATCHEN.

Washing-Machines.

No. 143,123.

Patented September 23, 1873.



Witnesses

J. H. Shumway
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By Atty?

John E. Earle

UNITED STATES PATENT OFFICE.

TIMOTHY COLVIN AND RUFUS M. PATCHEN, OF MERIDEN, CONNECTICUT.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **143,123**, dated September 23, 1873; application filed June 4, 1873.

To all whom it may concern:

Be it known that we, TIMOTHY COLVIN and RUFUS M. PATCHEN, of Meriden, in the county of New Haven and State of Connecticut, have invented a new Improvement in Washing-Machines; and we do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a vertical section, and in Fig. 2, a transverse section, of the shaft on line *x x*.

This invention relates to an improvement in that class of washing-machines which have upon the bottom numerous ribs running radially from the center, and above these a rotating plate with corresponding ribs upon its under side, so that the articles being washed are rubbed between the said plate and the bottom. The plate is rotated by a vertical shaft, to which it is attached, the said shaft receiving its rotary motion from a segmental wheel on the top of the machine.

In this class of machines the usual construction has been to make the shaft square within the machine, so that the head would play freely up and down, and yet be rotated by the shaft. To do this and not have the shaft too heavy, the shaft has been made from wood and covered with metal. This causes a rapid wearing in the head, and also the bearing of the shaft through the covers.

The object of this invention is to overcome these difficulties; and it consists in forming the shaft from metal entirely, with a light cylindrical center, and several radially-projecting ribs, the head fitted so that the said ribs cause the rotation of the head.

A is the tub, upon the bottom of which are several ribs, *a*, running radially from the center. B is the cover, fitted to close the tub, and upon the top of which, in suitable bearings C, a segmental gear, D, is arranged, to which a reciprocating movement is imparted by means of a lever, E. In the center of the tub a vertical shaft, F, is arranged, having its upper bearing in the frame-work above, as at *d*, and a second bearing in the bushing G in the cover. Upon this shaft a pinion, H, is fit-

ted, into which the gear D works, so that by the movement of the gear D in either direction a corresponding rotary motion is imparted to the shaft. Upon the shaft immediately below the head, and so as to bear against the bushing G, a collar, *b*, is fixed, and a corresponding collar, *f*, upon the lower end of the shaft, and between these two collars several ribs, *r*, are formed, running vertically on the shaft, and projecting radially therefrom, as seen in Fig. 2. The shaft in this form, with the exception of the collar *b*, is made from cast metal, and before the collar *b* is placed thereon the plate or head L is set onto the shaft. Upon the under side of the head a plate, P, of metal is arranged, which fits closely the ribs and shaft, and is secured to the head, so that the ribs of the shaft through this plate cause the rotation of the head, but allow the head to work up and down on the shaft. Over the head and around the shaft a spiral spring, S, is placed, as seen in Fig. 1, bearing the head down upon the lower collar *f*; then upon the upper end of the shaft the collar *b* is placed, and the whole set into place in the cover. The spring S, bearing against the upper collar *b*, forces the head down upon the articles to be washed, but allows the head to rise to adapt itself to different thicknesses or qualities of articles beneath, which are cleansed by the rotating of the head through the lever E.

We do not claim as our invention the ribbed-bottom tub, the rotating head, and vertical shaft combined, as such, we are aware, are not new. (See patent to Ainsworth, January 18, 1870, and others.)

We claim as our invention—

In a washing-machine, consisting of the tub A with radial ribs upon the bottom, the head L fitted to a vertical shaft and rotated from above, the said vertical shaft F formed with radially-projecting ribs *r*, and the collars *b* and *f*, and the plate P attached to the head, and fitting the said ribs and shaft, substantially as and for the purpose described.

TIMOTHY COLVIN.

RUFUS M. PATCHEN.

Witnesses:

CHAS. L. TAYLOR,

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