2 Sheets--Sheet 1.

J. C. GRANNAN.

Improvement in Washing-Machines.

No. 132,760. Patented Nov. 5, 1872.

Fig. 1

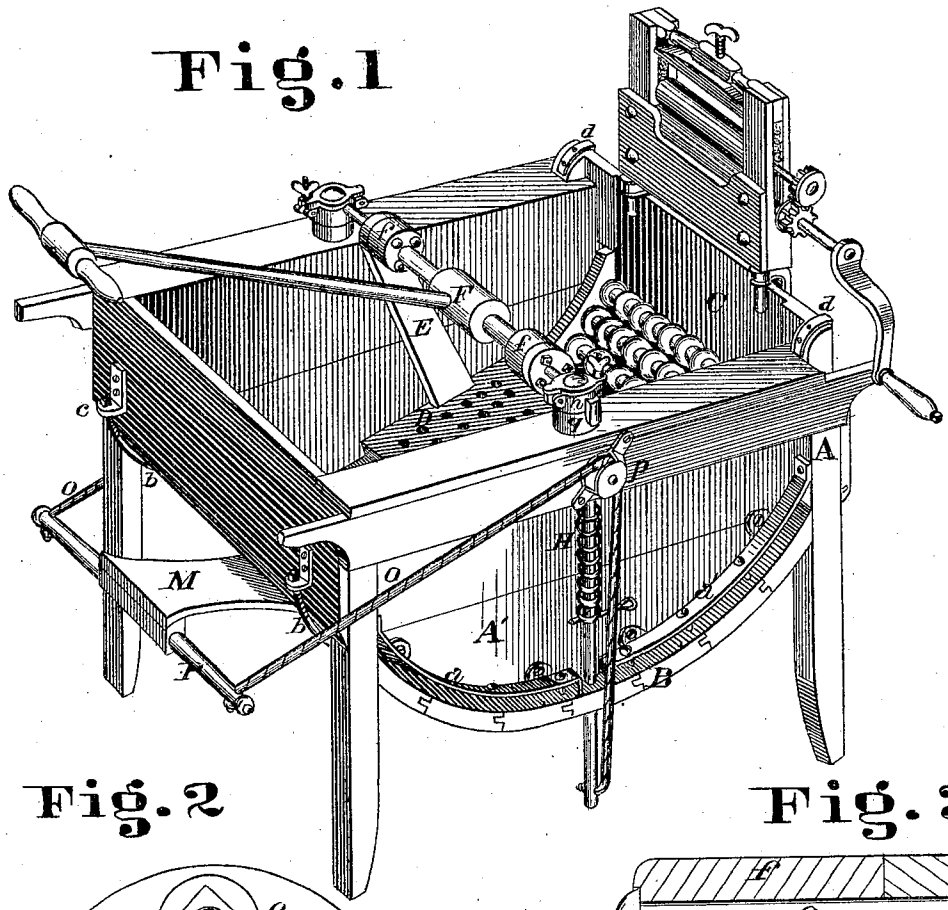


Fig. 2

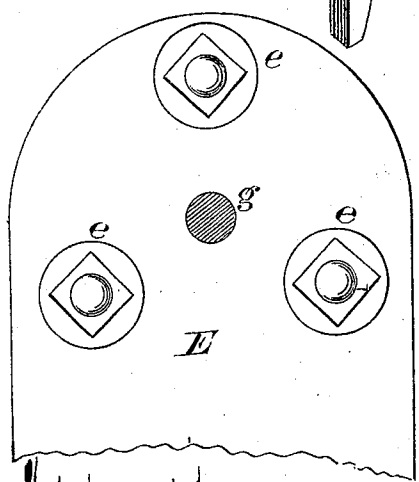
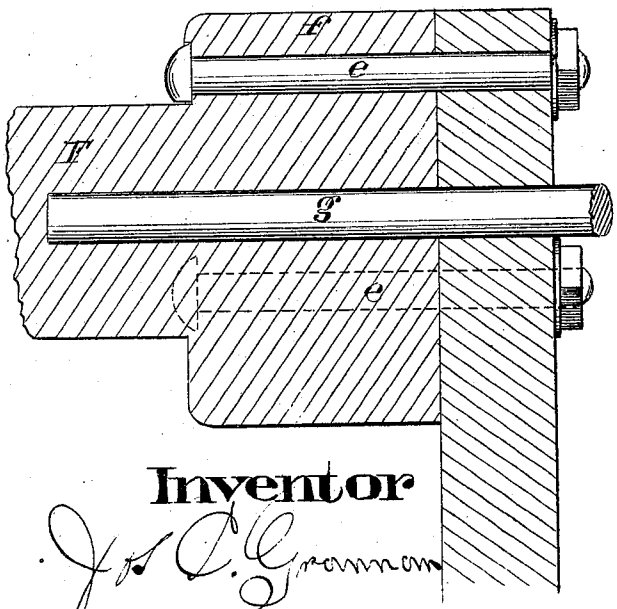


Fig. 3



Attest

H. Gray Millward

John Jones.

Inventor

J. C. Grannan

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J. C. GRANNAN.

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Fig. 4

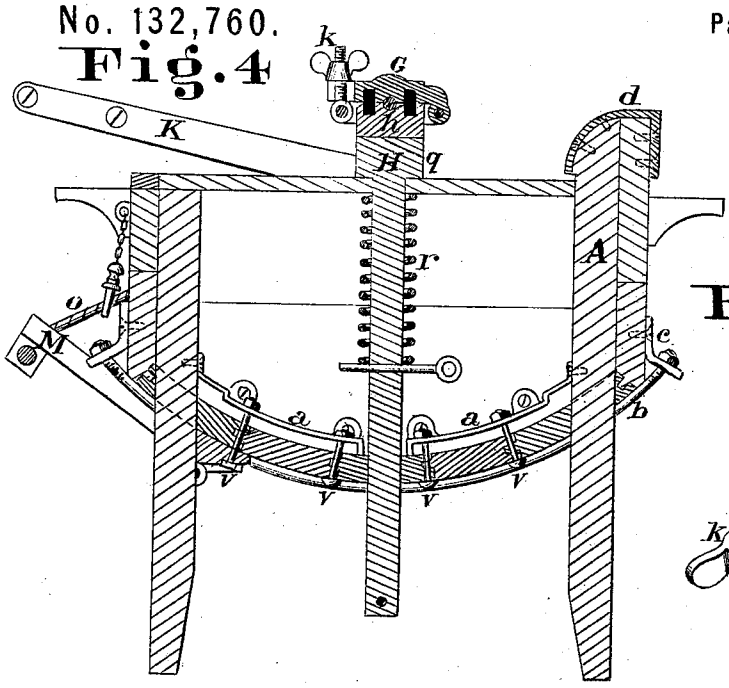


Fig. 6

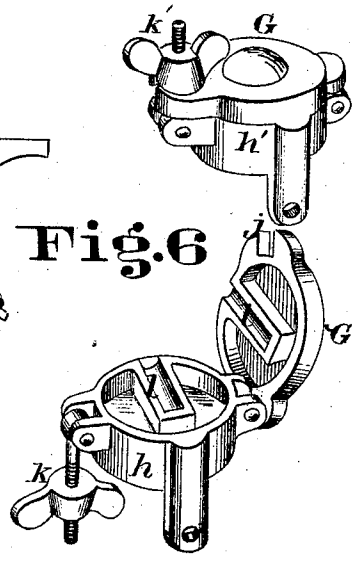


Fig. 8.

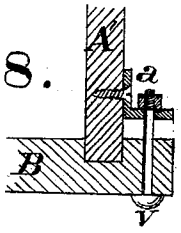


Fig. 5

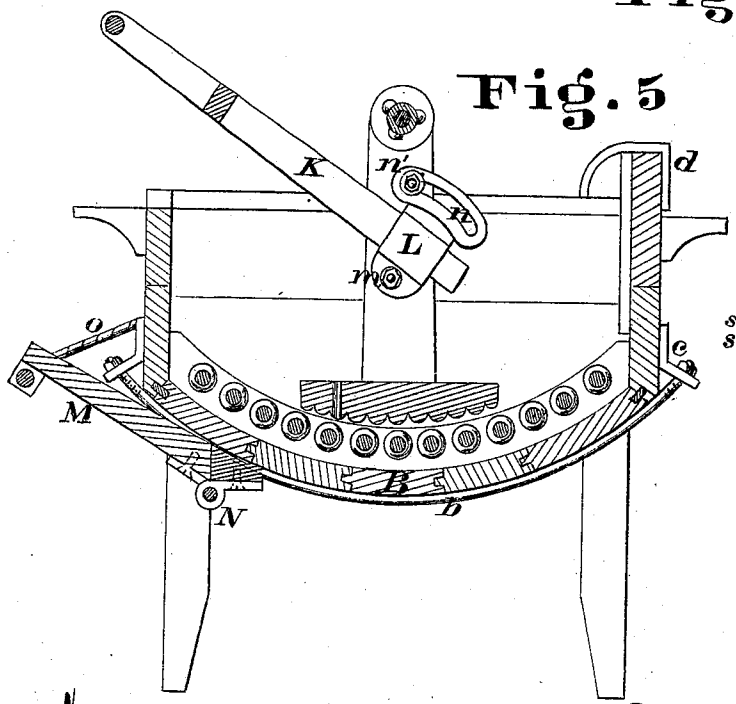
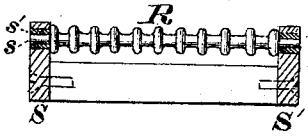


Fig. 7



Inventor

Attest
Wm. J. Millward
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Jos. C. Grannan

UNITED STATES PATENT OFFICE.

JOSEPH C. GRANNAN, OF CINCINNATI, OHIO.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **132,760**, dated November 5, 1872.

To all whom it may concern:

Be it known that I, JOSEPH C. GRANNAN, of Cincinnati, Hamilton county, Ohio, have invented a certain new and useful Improvement in Washing-Machines, of which the following is a specification:

Nature and Objects of Invention.

My invention relates to the construction of washing-machines operated by hand; and consists of certain means for insuring tightness of the joints between the curved bottom and the sides of the suds-box; of a device for attaching the working-handle to the reciprocating rubber by means of a pivoted rest having in its upper part a curvilinear slot, in which operates a thumb-screw by means of which the handle may be adjusted at any height convenient for the operator; and of a device for attaching the frame of the rubber to the rock-shaft for the more lasting security of the handle connection with the rubber.

Description of Drawing.

Figure 1 is a perspective view of a machine embodying my invention; Fig. 2 is an elevation; and Fig. 3, a section of a portion of the rubber-frame, showing the device by which it is secured to the rock-shaft; Fig. 4 is a vertical section through the frame of the machine, showing journal-boxes and device for tightening the joints of the staves that compose the bottom of the machine; Fig. 5 is a transverse section near the middle of the machine, showing the corrugated rollers and fluted reciprocating rubber; Fig. 6 shows the hinged journal-boxes for the journals of the rubber, with the swiveling thumb-screws, showing one closed and the other open; Fig. 7 is an elevation of one of my corrugated rollers; and Fig. 8 is a section of the rabbeted joint by which the sides are jointed to the staves composing the bottom, with bolts for tightening said joint.

General Description.

A is the frame of a square washing-machine, supported upon four legs, and having a curved bottom, B, composed of tongued and grooved staves having a rabbet near each end to receive the perpendicular sides A′, while the back and front are connected by a tongue and groove. The sides are further secured to the bottom by means of plates of metal *a a′*, screwed to the side parallel to the curve of the bottom, and bolts *v*, which pass through the tongue of the joints and are secured to said plates by nuts, enabling the rabbeted joint of the side and bottom to be drawn tight for the purpose of rendering said joint water-tight. Curved rods *b* pass around the curved bottom from front to rear of the machine, and are secured by lugs *c c* and nuts to the front and back, and enable the staves to be drawn closer together to make a tighter and more water-proof joint. The back of the machine, C, which may be made to support a wringer, is firmly clamped to the upright posts or legs A by metallic clamps *d d′*, to prevent any opening of the joints. D is a fluted and perforated rubbing-board, connected by two uprights, E, with a rock-shaft, F, said rock-shaft having a collar, *f f′*, at each end, and being attached to the uprights E by bolts *e e′* passing through said collar near its circumference. It rotates upon short metallic journals *g*, inserted through each upright into the ends of the shaft, and having their bearings in the journal-boxes *h h′*, which are fastened by metallic ears to the upright posts H. These journal-boxes have caps G G′ hinged at one side, and having slots J at the opposite side, in which operate swiveling thumb-screws *k k*, the release of which allows the caps G G′ to be lifted and the rubbing-frame removed. The bearings *l l′* for the journals do not reach entirely across the boxes, and the ends of the bearings pressing against the end of the journals prevent any lateral motion of the rock-shaft. The rubbing-frame is operated by means of the framed handle K, whose ends are inserted in metallic rests L pivoted upon bolts *m*, and having in their upper portion curvilinear slots *n* to receive thumb-screws *n′*, enabling the framed handle to be adjusted to the height most convenient for the operator. M is a treadle, attached by a hinge, N, to the bottom of the machine, and operating as follows: Cords O O′, connected with the cross-bar P of the treadle, pass over sheaves *p* made fast to the sides of the machine, and are attached to the lower ends of the sliding upright posts H which support the journal-boxes of the rubber. These uprights are sustained by a collar, *q*, which rests upon the frame through which they are allowed to slide

when lifted by the operation of the treadle, and have coiled around them a spiral spring, *r*, operating in connection with the treadle to regulate the pressure of the rubber. Corrugated rollers R, of wood, having metal journals *s*, and bearings also bushed with metal *s'*, are supported by wooden ribs S S' upon the curved bottom of the tub, and upon these the clothes to be washed are placed, the curve of the bottom and the ribs being described from the same center as that upon which the rubber swings, so that by the operation of the treadle and springs the rubber may be adjusted to an even pressure upon the clothes during its entire motion.

Steam or hot-water pipes may be connected with the bottom of the machine for warming the water should it become cold during the process of washing.

Claims.

1. In combination with the curvilinear tongued and grooved bottom B the metal plates *a a'* and radial bolts *v v* for tightening the joints between the sides and bottom, substantially as specified.

2. In combination with the curved tongued and grooved bottom the curved rods *b* and lugs *c c*, arranged and operating substantially as and for the purpose specified.

3. The combination, with the journal-boxes, of the collared rock-shaft F *f f'*, bolts *e e'*, and short journals *g*, substantially as specified.

4. In combination with the rubbing-frame and handle, the pivoted rests L, curved slots *n*, and thumb-screws *n'*, arranged and operating substantially as specified.

In testimony of which invention I have hereunto set my hand.

JOS. C. GRANNAN.

Witnesses:
J. L. WARTMANN,
C. A. SAUTMYER.