(No Model.) 2 Sheets—Sheet 1.

C. G. PATTERSON.

WASHING MACHINE.

No. 425,693. Patented Apr. 15, 1890.

Fig. 1.

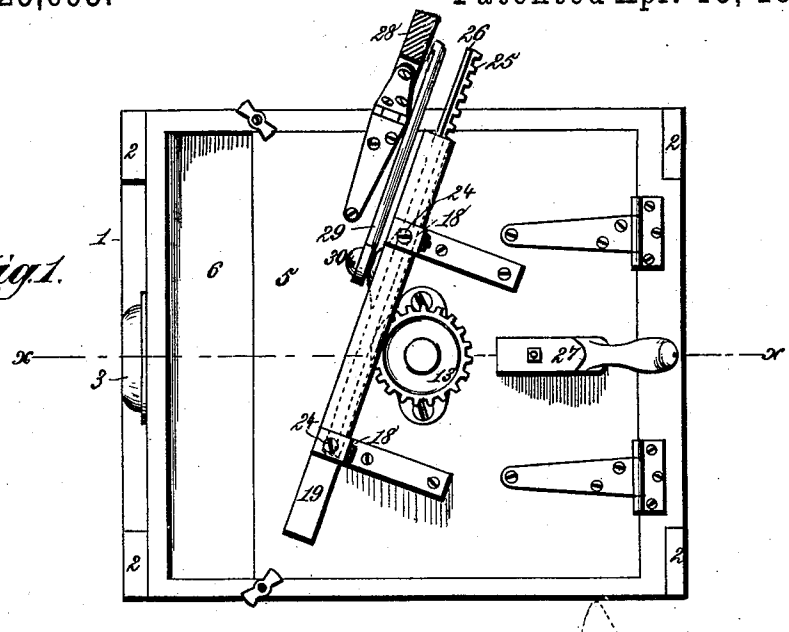
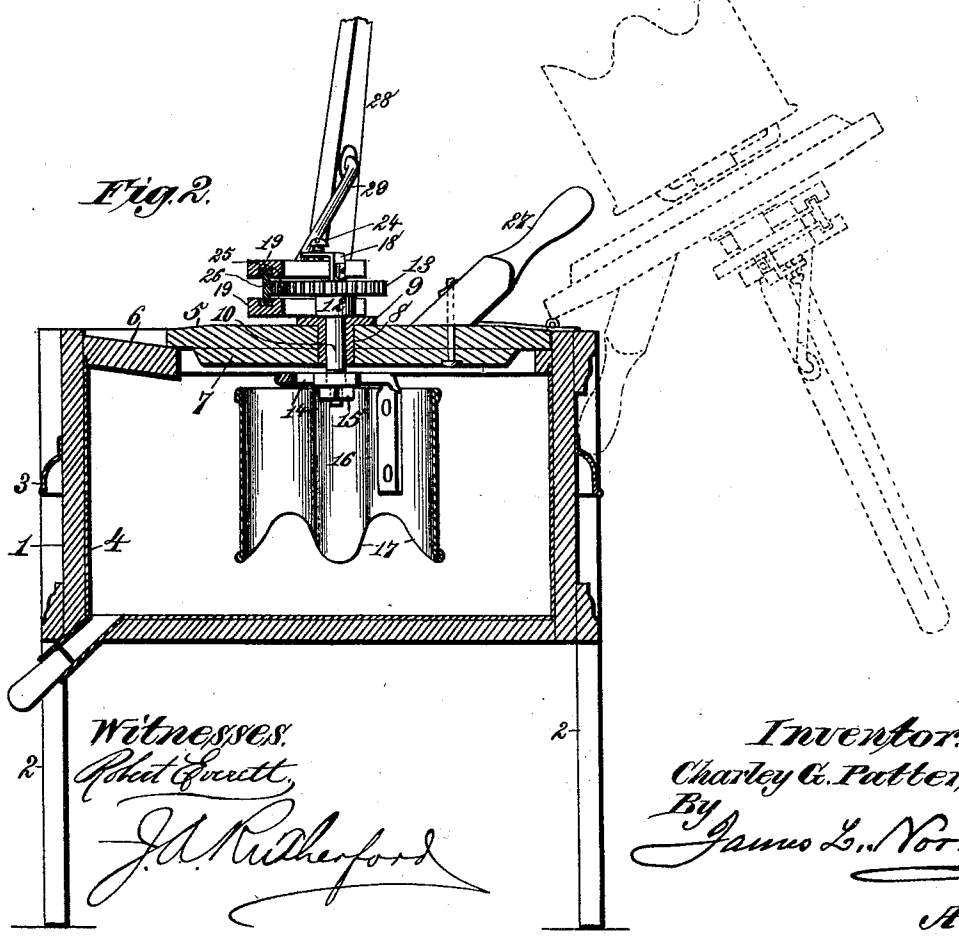


Fig. 2.



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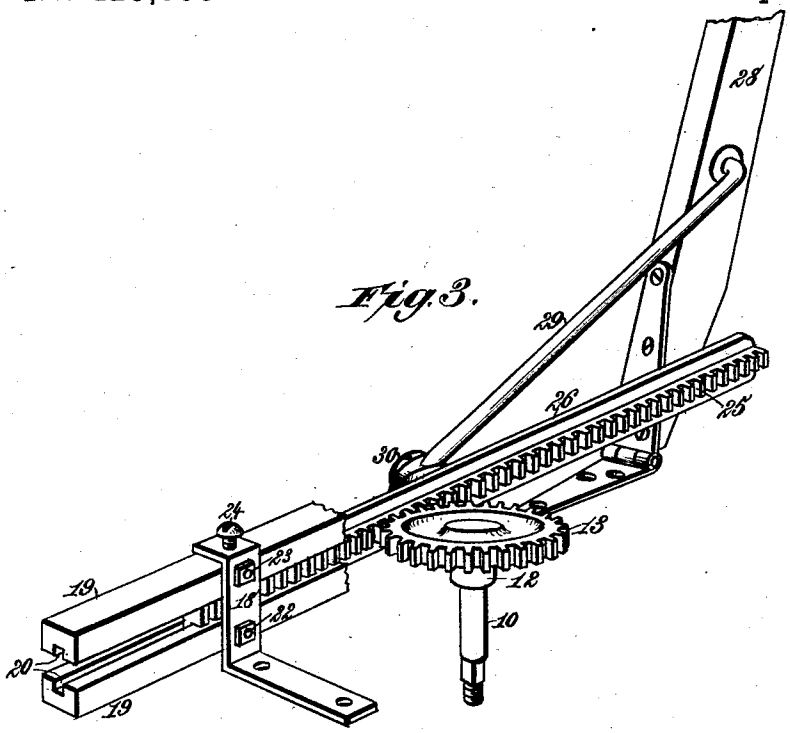
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Fig. 3.



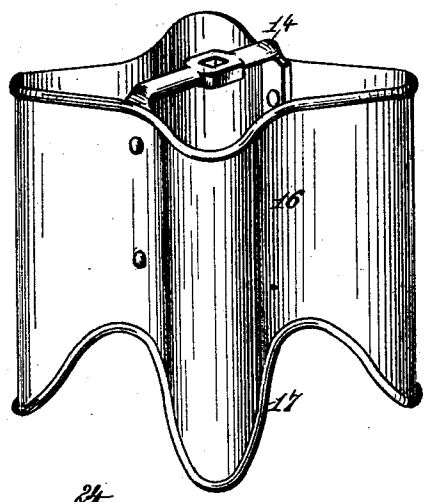
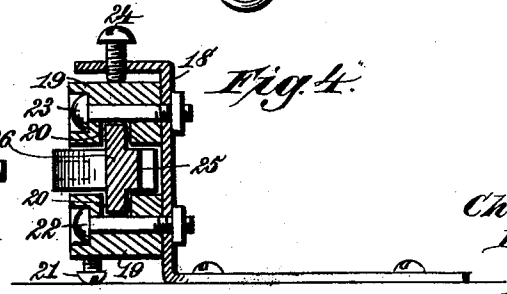


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLEY G. PATTERSON, OF YOUNGSTOWN, OHIO.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 425,693, dated April 15, 1890.

Application filed January 23, 1890. Serial No. 337,828. (No model.)

To all whom it may concern:

Be it known that I, CHARLEY G. PATTERSON, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented new and useful Improvements in Washing-Machines, of which the following is a specification.

This invention has for its object to provide novel mechanism for washing clothes and other articles; and it consists in the features of construction and the combination or arrangement of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a plan view of the machine. Fig. 2 is a central vertical section of Fig. 1 on the line *x x*. Fig. 3 is a detail perspective of the operative parts detached from the machine-body and shown in their proper relative position. Fig. 4 is a transverse section of the guides and rack-bar, taken through one of the supporting-brackets.

In the said drawings, the reference-numeral 1 indicates the body of the machine, which may be rectangular, polygonal, or round, although I prefer the form first named as being of simpler and cheaper construction. This body is supported upon legs 2, and is provided with handles 3 to facilitate its removal from place to place.

The interior of the chamber inclosed by the machine-body 1 is provided with a lining of galvanized iron 4. This chamber is closed by a lid 5, hinged upon one side, its free edge resting upon a shelf 6, set a little below the upper edge of the rectangular wall, and having a slight inclination to form a rest for a wash-board when the cover is turned back and the machine-chamber employed as an ordinary wash-tub.

Upon the under surface of the lid 5 is attached a disk or block 7, having substantially a central arrangement with relation to the chamber of the machine. Through the cover and through the center of this disk drops a sleeve-bearing 8, forming part of a plate 9, which rests upon and is screwed to the top of the cover. Within this bearing lies the beater-shaft 10, having an enlarged neck or collar 12, which rests and turns upon the plate 9, and is provided with a pinion or gear 13, rigid with said collar.

Upon the lower end of the beater-shaft is mounted a yoke 14, consisting of two depending arms or bars united by a horizontal bar, in which is formed a central opening, which receives the diminished end of the shaft, a nut 15 being turned thereon below the yoke to lock it in position. Upon this yoke is mounted the beater 16, which is preferably formed of a sheet of material—such as galvanized iron—bent to form in cross-section a figure approximating a shape of a four-pointed star, the extremities of the rays being rounded. Between these extremities or points the lower edge of the beater is cut away to form a waved or scalloped edge 17, thereby giving each of the depending rounded points a form somewhat resembling a scoop. This edge, as well as the upper edge of the beater, is wired to strengthen and stiffen the metal.

Upon the upper surface of the lid I mount two metallic brackets 18, having each a vertical arm, from the upper end of which extends a short horizontal plate, a longer plate extending in the opposite direction from the lower end of the vertical arm. These longer plates afford means for attaching the brackets to the lid. Mounted upon said brackets are the ways or guides 19, within which reciprocates the rack-bar imparting movement to the pinion or gear 13. These guides each consist of a bar of wood or metal, of suitable length, having a slot or channel 20 cut therein, and said guides are so arranged that these channels face each in a vertical plane to receive the upper and lower rib or flange upon the rack-bar. The lower guide is provided with two or more screw-bolts 21, which are tapped into its back and rest upon the lid or cover, thereby supporting the said guide against vertical strain in a downward direction. The lower guide is connected with the vertical arms of the brackets 18 by means of bolts 22, passing horizontally through the guide-bar below the channel or slot 20 and through said bracket, nuts being turned on the ends of said bolts to draw the guides closely against the arms. It will be seen that the screws 21 afford support against all strain having a tendency to bend the attaching-bolts 22 downward. The upper guide is secured to the vertical arms of the brackets 18 by bolts 23 in a similar manner, and is supported ver-

tically by threaded bolts 24, tapped through the short horizontal arms of said brackets and resting against the top of the guide-bar.

The rack-bar 25 is of such width as to enable it to lie and move between the adjacent parallel edges of the two guides, its teeth projecting laterally between said edges and making a meshing engagement with the pinion 13. This bar is either mounted upon or forms part of a flat bar or plate 26 of greater width, its edges extending equally upon each side of the rack-bar and forming feathers or splines, which fit within the channels or slots 20 of the guides. By this construction the rack-bar 25 is brought between and may have bearing upon the adjacent edges of the guides lying next to the gear or pinion 13, thereby affording an additional support and frictional bearing for the rack-bar.

The screw-bolts 24 support the upper guide 19 against vertical strain in an upward direction, and by tightening the screw-bolts 21 and 24 they are caused to respectively bear against the guides with the required pressure to relieve the horizontal bolts 22 and 23 from vertical strain. The two rack-guides 19 are preferably arranged diagonally on the lid 5, to enable the operator to stand in a natural and easy position with one hand grasping an inclined handle 27, rigidly mounted on the lid. This handle not only provides a convenient means for steadying and supporting the body during the reciprocation of the rack, but also forms a support for the lid when thrown open, its end resting upon one of the handles 3. The rack-bar is reciprocated by means of a lever 28, hinged or pivoted upon the cover, and connected with the rack by a pitman 29, pivotally attached at one end to a stud 30 on the spline-plate 26 and at the other end to the lever.

What I claim is—

1. In a washing-machine, the combination, with a rotary beater and its pinion, of a lid, brackets secured to the lid, a pair of parallel rack-guides arranged one above the other and connected with the brackets, screw-bolts attached to the under side of the lower rack-guide and having a bearing on the lid, screw-bolts engaging the brackets and bearing against the upper rack-guide, a rack reciprocating between the rack-guides, and means for operating the rack, substantially as described.

2. In a washing-machine, the combination, with a vertical shaft having bearing in the cover, of a sheet-metal beater mounted on a yoke carried by said beater-shaft, the beater being wired at both its edges to stiffen it and having the form, substantially, of a four-pointed star, and cut out and scalloped between the points, substantially as described.

3. In a washing-machine, the combination, with a beater carried by a shaft vertically journaled in the hinged lid, of guides having channels adapted to receive splines or ribs on a rack-bar meshing with a gear on said shaft, brackets mounted on the lid and receiving horizontal bolts passing through the guides below and above their channels, screws tapped into the back of the lower guide and resting with their heads upon the lid, and screws tapped through horizontal plates on the brackets overhanging the upper guide and resting with their points upon the back of the latter, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

CHARLEY G. PATTERSON.

Witnesses:

D. W. STAFFORD,

E. E. FLAUGHER.