(No Model.)

O. F. GLIDDEN.

WASHING MACHINE.

No. 435,822. Patented Sept. 2, 1890.

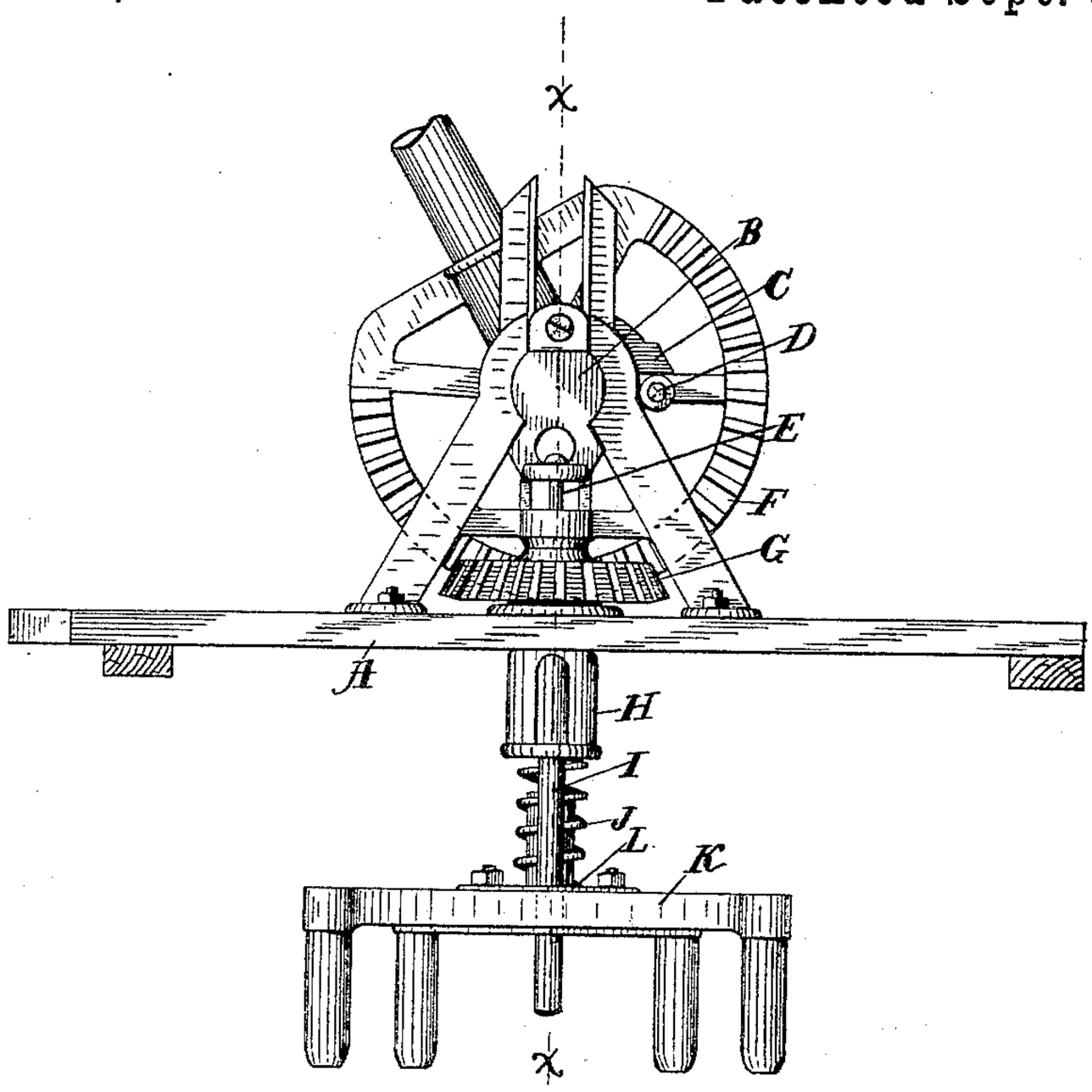

FIG. 1.

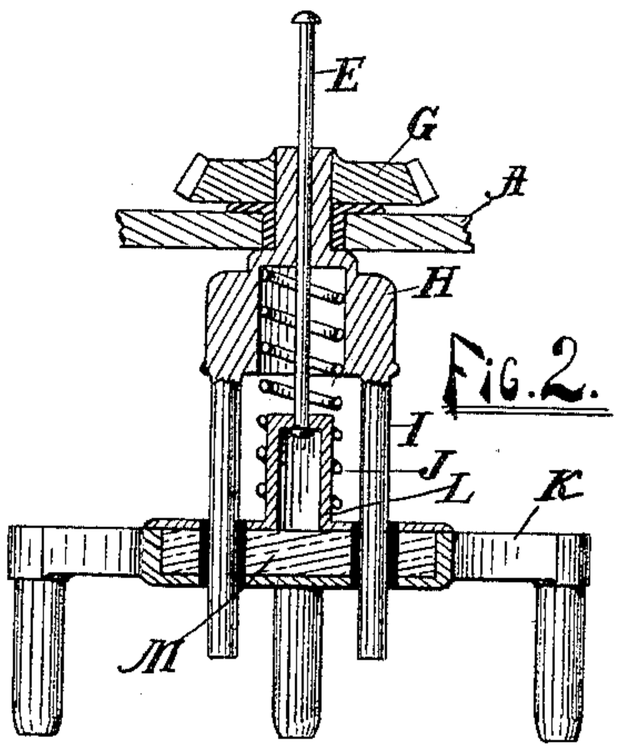

FIG. 2.

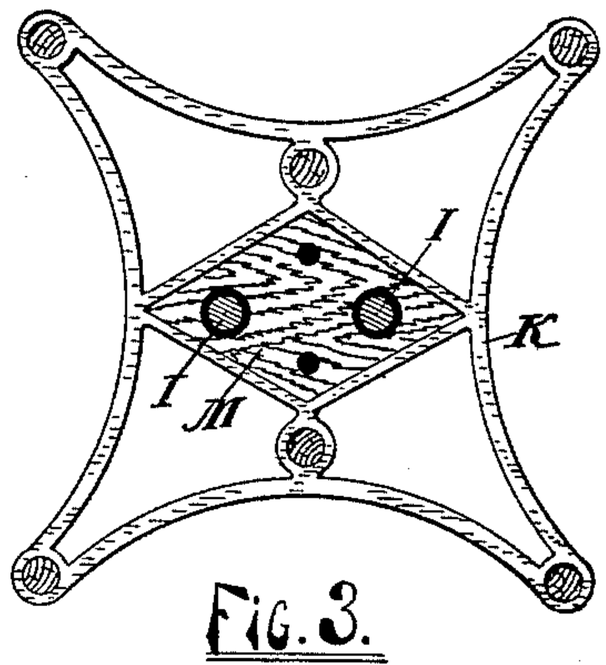

FIG. 3.

WITNESSES:

Harry P. Van Wagner.

Hugh C. Wilson

INVENTOR

Oscar F. Glidden

BY

Edward Taggart

His ATTORNEY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

OSCAR F. GLIDDEN, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO THE MICHIGAN WASHING MACHINE COMPANY, OF SAME PLACE.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 435,822, dated September 2, 1890.

Application filed April 19, 1890. Serial No. 348,612. (No model.)

To all whom it may concern:

Be it known that I, OSCAR F. GLIDDEN, a citizen of the United States, residing at the city of Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification.

My invention relates to that class of washing-machines provided with a stirring device having a rotary motion and operated by suitable mechanism, in connection with a tub or vessel to which the mechanism is applied, and more particularly relates to certain improvements in the stirring device, which stirring device may be operated by the mechanism shown and described in the patent issued upon my application filed May 23, 1887, the patent being dated May 22, 1888; and the object of my invention is to provide a packing for the frame of the stirring device which will allow the frame to slide vertically upon the guide-rods with very little friction and prevent the wearing of the rods. This object I accomplish by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the working parts of a washing-machine provided with my invention. Fig. 2 is a vertical sectional view on line *x x* of Fig. 1, and Fig. 3 is a plan view of the metallic frame-work of the stirring device, having the upper plate removed in order to show the position of the packing within the stirring device.

Similar letters refer to similar parts throughout the several views.

A represents the cover of the tub.

B represents a sliding attachment operated by the cam D on the gear-wheel F.

C represents a shoulder or projection on the slide B.

D is a cam or pin on the wheel F.

E is a connecting-rod attaching the slide to the stirrer.

F is a gear-wheel, and G is a beveled gear-wheel for the purpose of giving a rotary motion to the stirrer. H is the shaft of the wheel G. This shaft has projecting guide-rods, (shown by I I,) which pass downward through the opening in the stirrer.

J is a coiled spring for forcing the stirrer down after it has been released by the cam.

K represents the metallic frame-work of the stirrer, and L represents a cap rigidly attached to or made integral with a plate upon the stirrer, designed to protect the rod E and allow for an upward and downward motion of the stirrer without the rod E coming in contact with the clothes. The rod E is used to connect the stirrer with the sliding device B.

The operation of raising and lowering and rotating the stirrer may be the same as described and shown in my patent, No. 383,425, above referred to.

M represents a friction-packing, which is supported by the metallic frame K. The frame may be made in any suitable form; but I prefer to have it provided with four projections, as shown, and the central part square or diamond-shaped, formed for a packing which will completely fill the space designed to receive it. The plates above and below are cut away so that the guide-rods I can only come in contact with the packing.

In constructing washing-machines the rods I I and frame-work of the stirrer are usually made of galvanized iron, in order to secure strength and prevent oxidation. If the iron part of the stirrer should come in contact with the surface of the guide-rods, the surface of the rods would be abraded, and then they would quickly rust, rendering the whole machine wholly unfit for use; but by providing a packing M, of wood or other suitable material, which will not wear the rods, the galvanized iron will not rust, and the stirrer may be used indefinitely without injury.

In Fig. 2 I have shown the frame K of metal. The lower part of the receptacle for the packing M may be integral with the rest of the frame and the top part made of a single piece attached to the frame-work K. This attachment may be made by any suitable means, such as nuts and bolts. Instead of making the lower part of this receptacle for the packing M integral with the frame-work K, it may be made of a separate piece, and the top

might then be made integral, if desired. It will be evident that the form of inclosing this packing is not material so long as the packing alone can come in contact with the guide-rods I I.

Having thus described my invention, what I claim to have invented, and desire to secure by Letters Patent, is—

The combination of the hollow metallic stirrer-frame, a suitable packing inclosed within said hollow frame, guide-rods adapted to pass loosely through the packing and stirrer, and suitable mechanism to raise and rotate the stirrer, substantially as described.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

OSCAR F. GLIDDEN. [L. S.]

Witnesses:
ARTHUR C. DENISON,
HUGH E. WILSON.