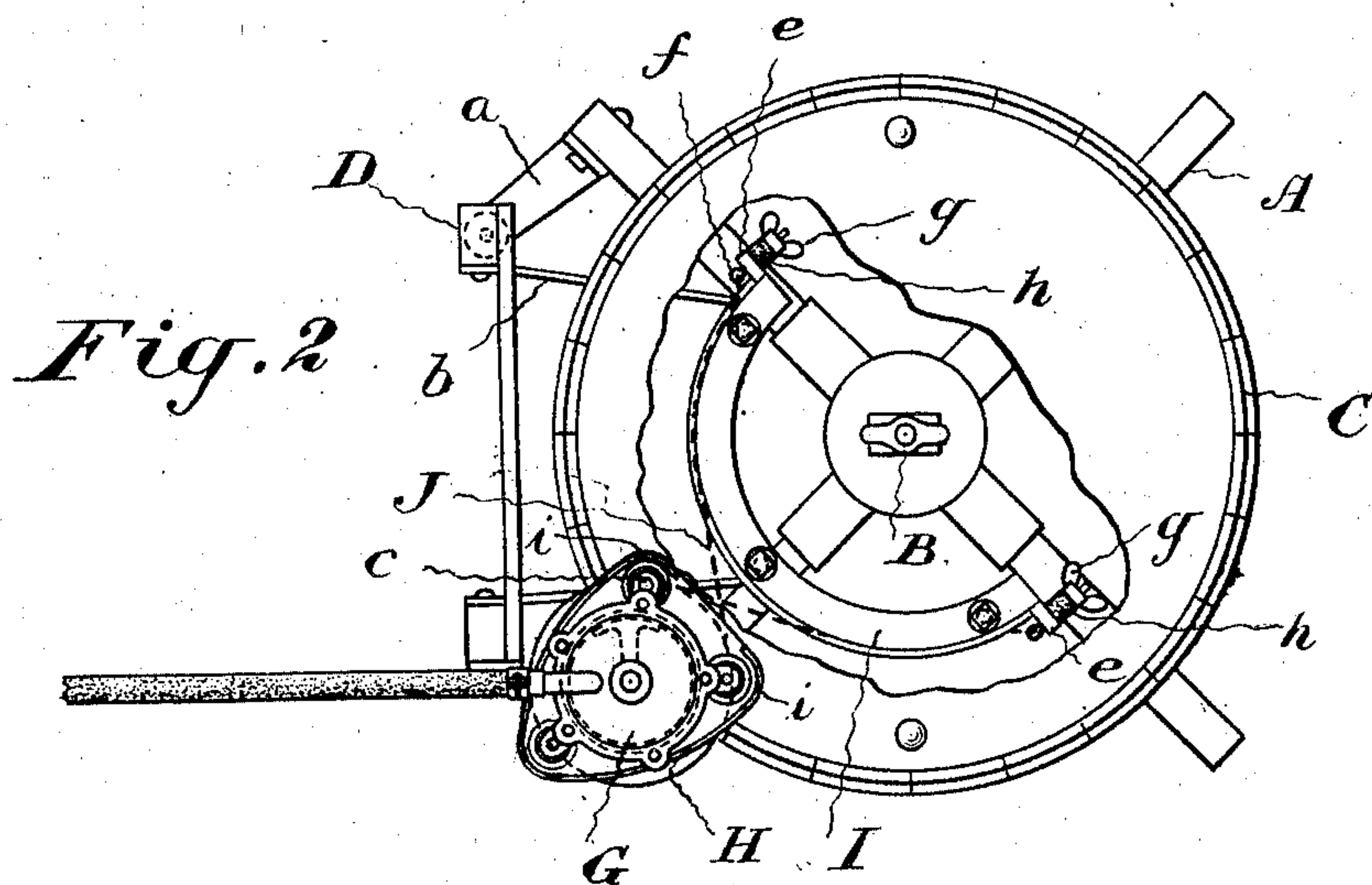
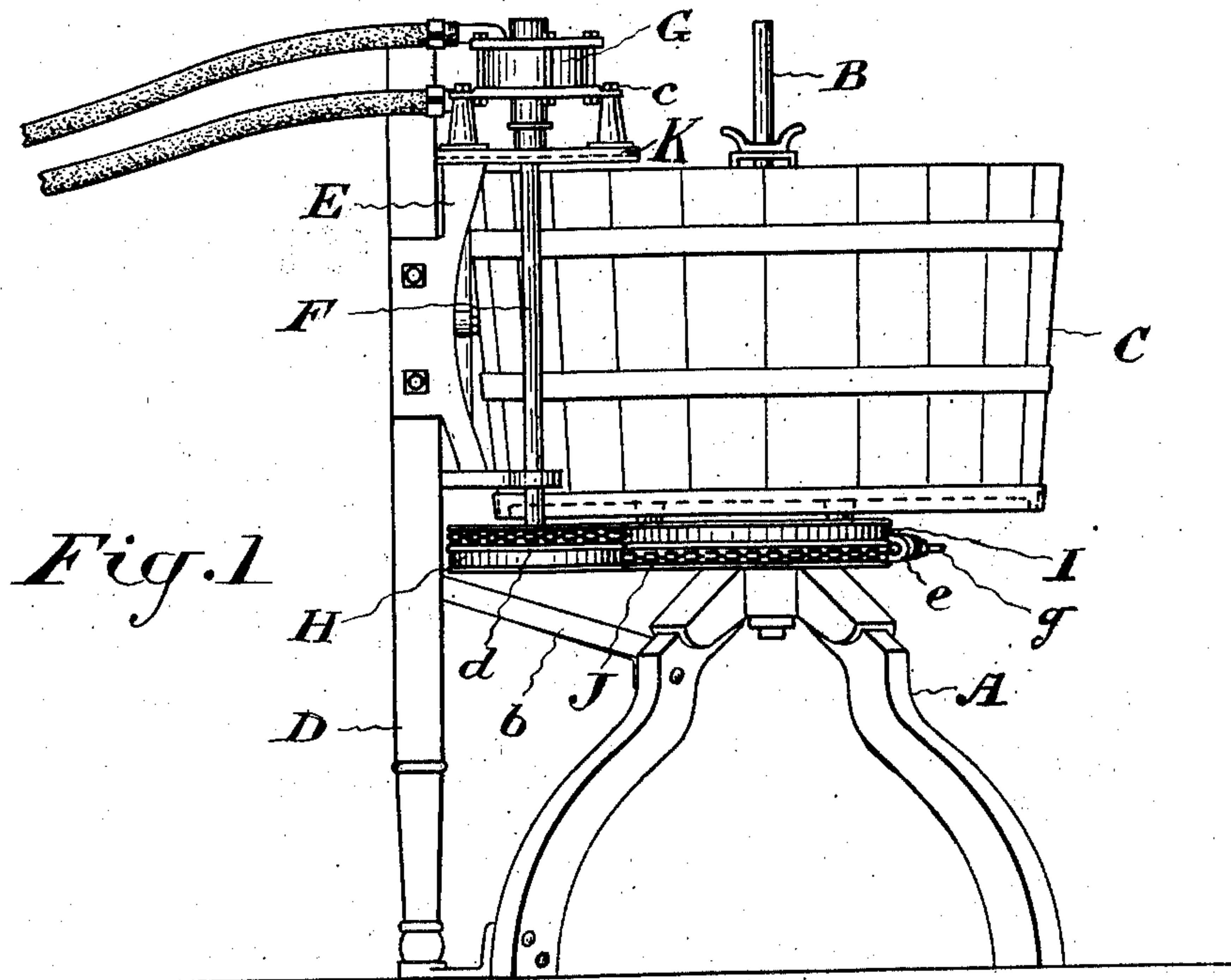


W. L. CUMMER.
OPERATING MEANS FOR WASHING MACHINES.
APPLICATION FILED DEC. 30, 1909.

986,805.

Patented Mar. 14, 1911.



WITNESSES:

H. G. McMillan
E. Hall.

INVENTOR.

BY *W. L. Cummer*
by Ridout & Mayhew
ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLIAM L. CUMMER, OF HAMILTON, ONTARIO, CANADA.

OPERATING MEANS FOR WASHING-MACHINES.

986,805.

Specification of Letters Patent.

Patented Mar. 14, 1911.

Application filed December 30, 1909. Serial No. 535,536.

To all whom it may concern:

Be it known that I, WILLIAM L. CUMMER, of the city of Hamilton, Province of Ontario, Canada, have invented certain new and useful Improvements in Operating Means for Washing-Machines and the Like, of which the following is a specification.

This invention relates to washing machines of the type in which the tub is rotatably oscillated, and my object is to devise means for applying a motor drive to such a washer which will be substantially noiseless, will operate with very little friction and which will not bind if the tub and motor get out of alinement.

I attain my object by a construction which may be briefly described as follows:

On a suitable frame the tub is journaled and also a vertical shaft close beside the tub. An oscillating rotary motor is connected to the top of the shaft and a pulley to the lower end thereof. A pulley, preferably segmental, is secured to the tub below the bottom thereof. Two chains, preferably crossed, are each secured at one end to one pulley and at the other end to the other pulley whereby the movements of the motor are transmitted to the tub.

Figure 1 is a side elevation of a washing machine constructed in accordance with my invention. Fig. 2 is a plan view.

In the drawings like letters of reference indicate corresponding parts in the different figures.

A is the tub stand which carries the spindle B on which the tub C is mounted for oscillatable rotation.

D is a frame comprising a pair of standards and suitable cross connections, which will usually be employed for the attachment of a wringer. This frame is suitably braced from the stand A by the braces *a* and *b*. To this frame is secured a bracket E, preferably formed of a malleable casting, adapted to furnish bearings for the vertical spindle F. A water-motor G, of the well-known oscillatable rotary type, has its movable part secured to the upper end of the spindle F, while its casing is secured by means of the bolts *c* to the upper end K of the bracket E. The location of the motor at the upper end of this spindle is important as suitable drainage must be provided.

Owing to the fact that the construction in such a washing machine is of wood and comparatively light, and also owing to the

fact that the tubs may warp out of shape, it is difficult to provide satisfactory gearing between the motor and the tub which will not bind and cause excessive friction. The construction I will now describe satisfactorily overcomes all objections.

To the lower end of the spindle F is connected a pulley H and to the underside of the tub is suitably secured the pulley I. As the tub ordinarily moves only through an arc of about 15 degrees on either side of its normal position, this pulley I may be a segment only as shown.

The constant change in the direction of movement of the tub renders any belt connection between the two pulleys inadmissible, and ordinary sprocket chains under the conditions obtaining are too noisy and involve excessive friction, to say nothing of the danger of catching and tearing the clothes of the operator. I overcome these difficulties by employing as the transmission means flexible bands or substantially flat chains J secured respectively at one end to the pulley H and at the other end to the pulley I. As it is desirable to cross the chains to keep them well underneath the tub where they are away from the pulleys, the chains are preferably secured to the pulleys H and I so that they can occupy different horizontal planes and in order to maintain this separation each pulley is provided with a rib *d*. The constant change of motion at the end of the arc of oscillation in either direction involves a considerable shock to the driving mechanism. To ease this shock I prefer to provide a cushion connection between one end of each chain and one of the pulleys, preferably the pulley I. This connection will best be seen on reference to Fig. 2.

It will be seen that at each end of the segmental pulley I a lug *e* is formed through which passes an eye-bolt *f*. Each eye-bolt is provided with a wing nut *g*, and on the stem of the eye-bolt between the lug *e* and wing nut is located a spring cushion *h*, preferably a block of rubber.

It will be seen that the top K of the bracket E is formed as a tray which projects over the top of the tub so that the drip from the motor is caught and discharged into the tub, the rim *i* of the tray being cut away over the tub to provide an outlet.

The transmission hereinbefore described will be found to satisfactorily transmit the

movement of the vertical spindle F to the tub, and will operate successfully under conditions where gearing of the ordinary type would be a failure, while the whole combination will be found to satisfactorily carry out the objects of my invention.

What I claim as my invention is:—

1. The combination of a suitable frame; a body mounted thereon for oscillatable rotation; a vertical shaft journaled on the frame; an oscillating rotary motor connected to said shaft at its upper end; a pulley on the lower end of said shaft; a pulley secured to said body below its bottom; and chain transmission means between the pulleys secured to each pulley.

2. The combination of a stand; a body mounted thereon for oscillatable rotation; a vertical frame braced from the stand below said body; a vertical shaft journaled on the frame; an oscillating rotary motor connected to said shaft at its upper end;

a pulley on said shaft at its lower end; a pulley secured to said body below its bottom; and chain transmission means between the pulleys secured to each pulley.

3. The combination of a stand; a body mounted thereon for oscillatable rotation; a vertical frame braced from the stand; a plate secured to the upper end of the frame; a vertical shaft journaled on the frame; an oscillating rotary motor having its stationary part connected to said plate and its rotary part connected to said shaft; a pulley on said shaft; a pulley secured to said body below its bottom; and transmission gear between the pulleys.

Hamilton, Ont., this 18th day of Decr. 1909.

WILLIAM L. CUMMER.

Signed in the presence of—
HAROLD H. CUMMER,
L. I. COLEMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."