

(No Model.)

F. M. WATKINS.

DRIVING MECHANISM FOR WASHING MACHINES.

No. 321,555.

Patented July 7, 1885.

Fig. 1.

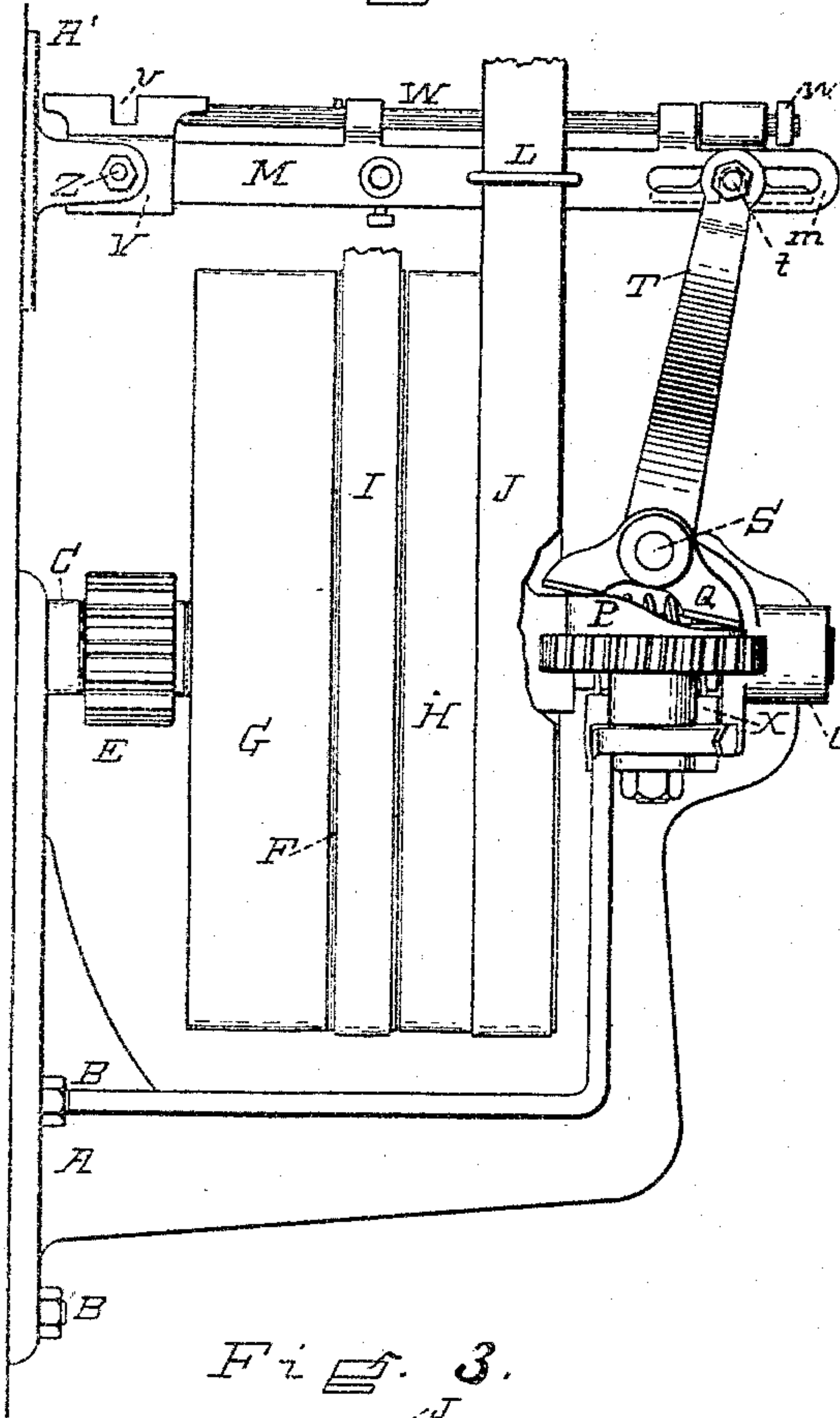


Fig. 2.

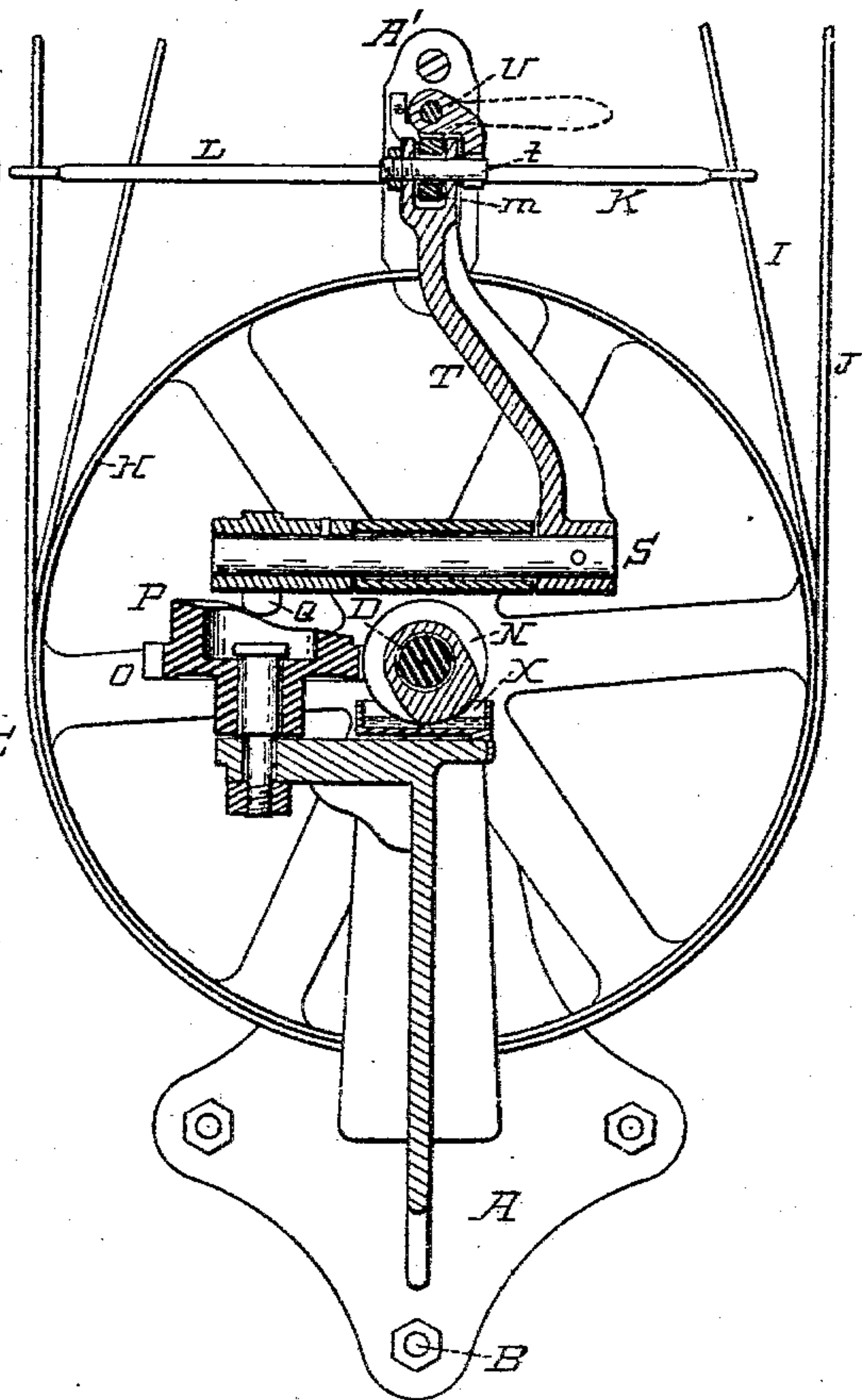


Fig. 3.

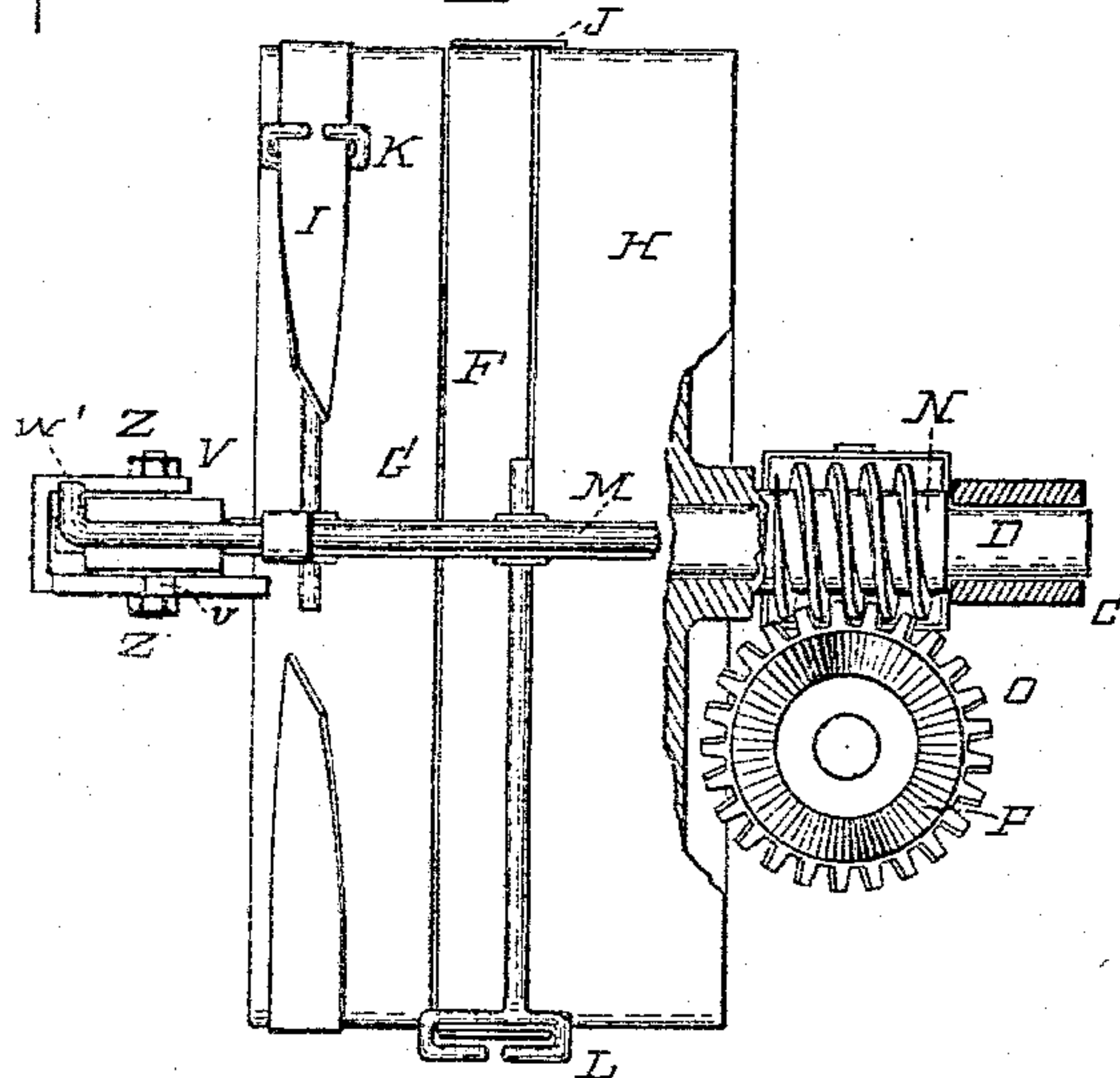
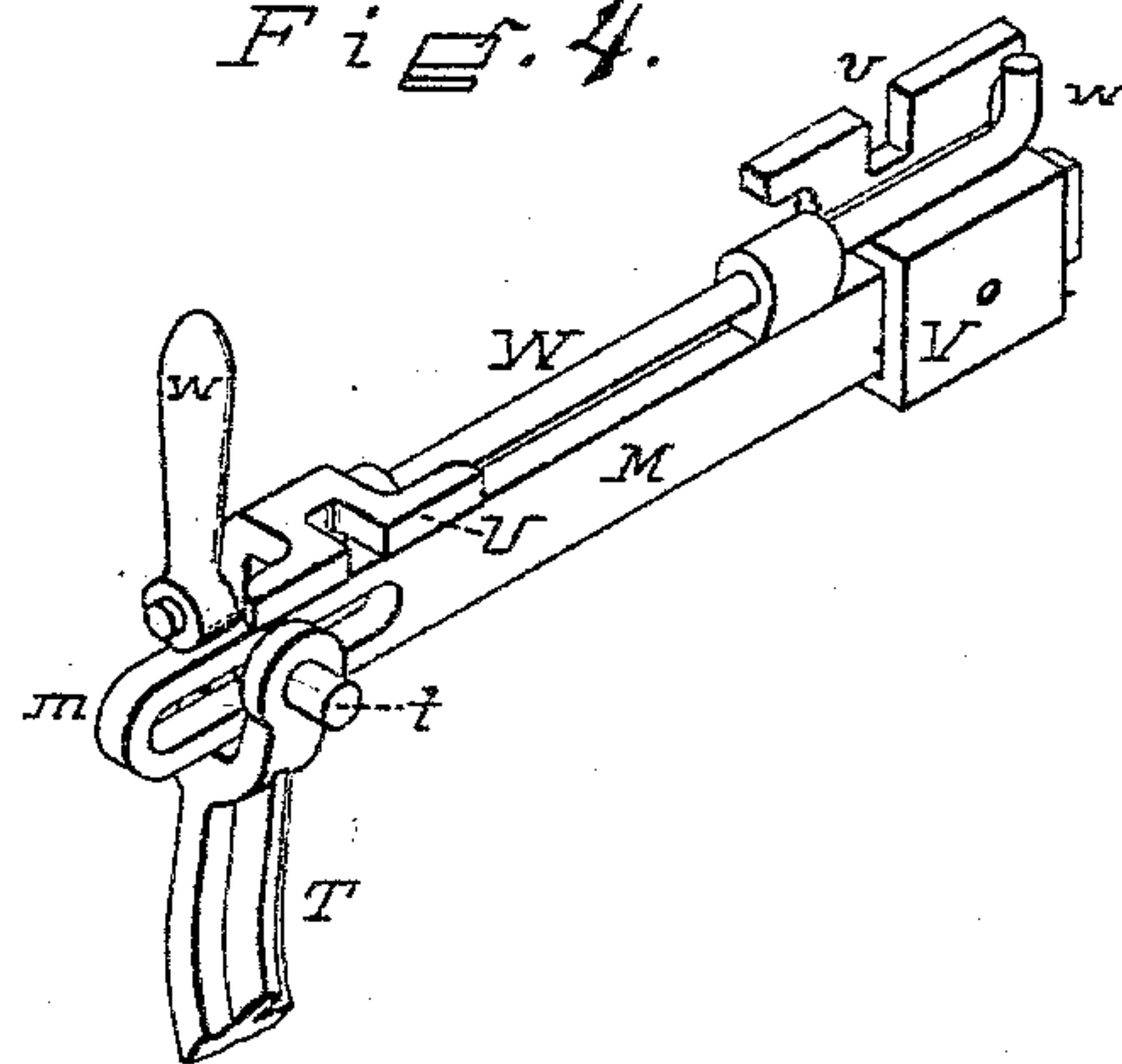


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRANK M. WATKINS, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF TO
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DRIVING MECHANISM FOR WASHING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 321,555, dated July 7, 1885.

Application filed May 23, 1885. (No model.)

To all whom it may concern:

Be it known that I, FRANK M. WATKINS, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Driving Mechanisms for Washing-Machines, &c., of which the following is a specification.

My invention is more particularly designed for imparting a periodically-reversed rotation to the cage or dasher of a washing-machine; and it consists of the combinations of mechanical devices hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a driving mechanism embodying my improvements, a portion of one of the loose pulleys and of its belt being broken away. Fig. 2 is a transverse section on the line of the cam-axis. Fig. 3 is a top view from which a portion of the belt-shipper has been removed. Fig. 4 is a perspective view of the belt-shipper mechanism proper.

My present invention not including any part of a washing-machine proper or other driven mechanism, none such are included in the description.

A A' represent two frames or brackets, which support the operative members of my driving mechanism. Said brackets may constitute integral portions of the frame of the washing-machine or other driven mechanism, but preferably consist of such separate castings as represented, which are secured to the frame proper by suitable bolts, B. Horizontal journal-bearings C in the bracket A support a shaft, D, to which is secured a pinion, E, and the tight pulley F. The same shaft, D, carries, one on each side of the tight pulley F, two loose pulleys, G H, of like diameter, but of somewhat greater breadth of tread.

I J are two belts, which revolve in opposite directions and which occupy appropriate yokes, K L, on a belt shipper or shifter, M, whose rear end slides in and is supported by a guide, V, secured to the bracket A' by pivots Z, and whose slotted front end, m, receives and is supported by wrist t on an arm, T, of the rocker to be presently described.

When the above parts are in their intermediate or inoperative condition, (see Fig. 2,) each belt occupies its appropriate loose pulley, neither touching the tight pulley. If, now, the belt-shipper be shifted to the right, (see Fig.

1,) the belt I is thereby transferred from its loose pulley G onto the tight or operative pulley F, and rotation of pulley E ensues in what may be called, for distinction, the "forward" direction. If, on the contrary, the shipper be moved leftward, the belt I is thereby removed from the tight pulley F to the loose pulley G, and becomes inoperative, (see Fig. 3,) while the oppositely-revolving belt J is, by the same movement, shifted partly onto the tight pulley F, so as to revolve it and the pinion E in the reverse or retrograde direction. The belt J is made of sufficient width to always partly occupy its loose pulley H, in order that said pulley may be kept constantly revolving, because it is this pulley which communicates motion to the belt-shipper mechanism proper.

Fast to and revolving with the pulley H is the vertically-revolving worm N, that gears in a horizontally-revolving worm-wheel O, which wheel is crowned by a cam, P, upon which rests the foot Q of the rocker Q S T, before spoken of. The wrist t of said rocker is made capable of engagement in a yoke, U, that projects from a rod, W, journaled in the belt-shipper M. Said rod has a handle, w, which enables its rotation downward, so as to engage its said yoke U with said wrist t, for effective action of the reversing mechanism or its vibration upward, so as to engage its hook w' in the notch v upon the shipper-guide, so as, for the time being, to hold the said yoke out of engagement with said wrist, and thus isolate the shipper from the reversing mechanism.

The worm N, in consequence of revolving in a vertical plane, is capable of being maintained in a consistent condition of lubrication by immersion of its lower portion in an oil-tank, X.

I claim as new and of my invention—

1. In a reversible rotary driving mechanism, the combination, with the vertically-revolving worm N upon one of the loose pulleys H, and in gear with the horizontally-revolving worm-wheel O, crowned by cam P, which supports and operates the foot Q, of a rocker, Q S T, which is coupled to the belt-shipper in the manner and for the purpose set forth.

2. In an automatically-reversing driving mechanism for washing-machine cages and other rotary objects, the combination of the shaft D, carrying a tight pinion, E, and a tight

pulley, F, flanked by loose pulleys G H, having reversely-moving belts I J, the belt-shipper M, the vertically-revolving worm N upon loose pulley H, gearing in worm-wheel O, whose
5 cam P supports and operates rocker Q S T, whose wrist *t* occupies a slot in and supports the belt-shipper M, and engages in the vibratable yoke U of said shipper in the manner set forth.
10 3. In the described combination with the automatically-reversed driving mechanism of

a washing-machine, the rod W, journaled in the belt-shipper M, and having the yoke U, the handle *w*, the hook *w'*, and the notch *v*, as
and for the purpose explained.

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In testimony of which invention I hereunto set my hand.

FRANK M. WATKINS.

Attest:

GEO. H. KNIGHT,
CHAS. E. PRIOR.