

No. 627,789.

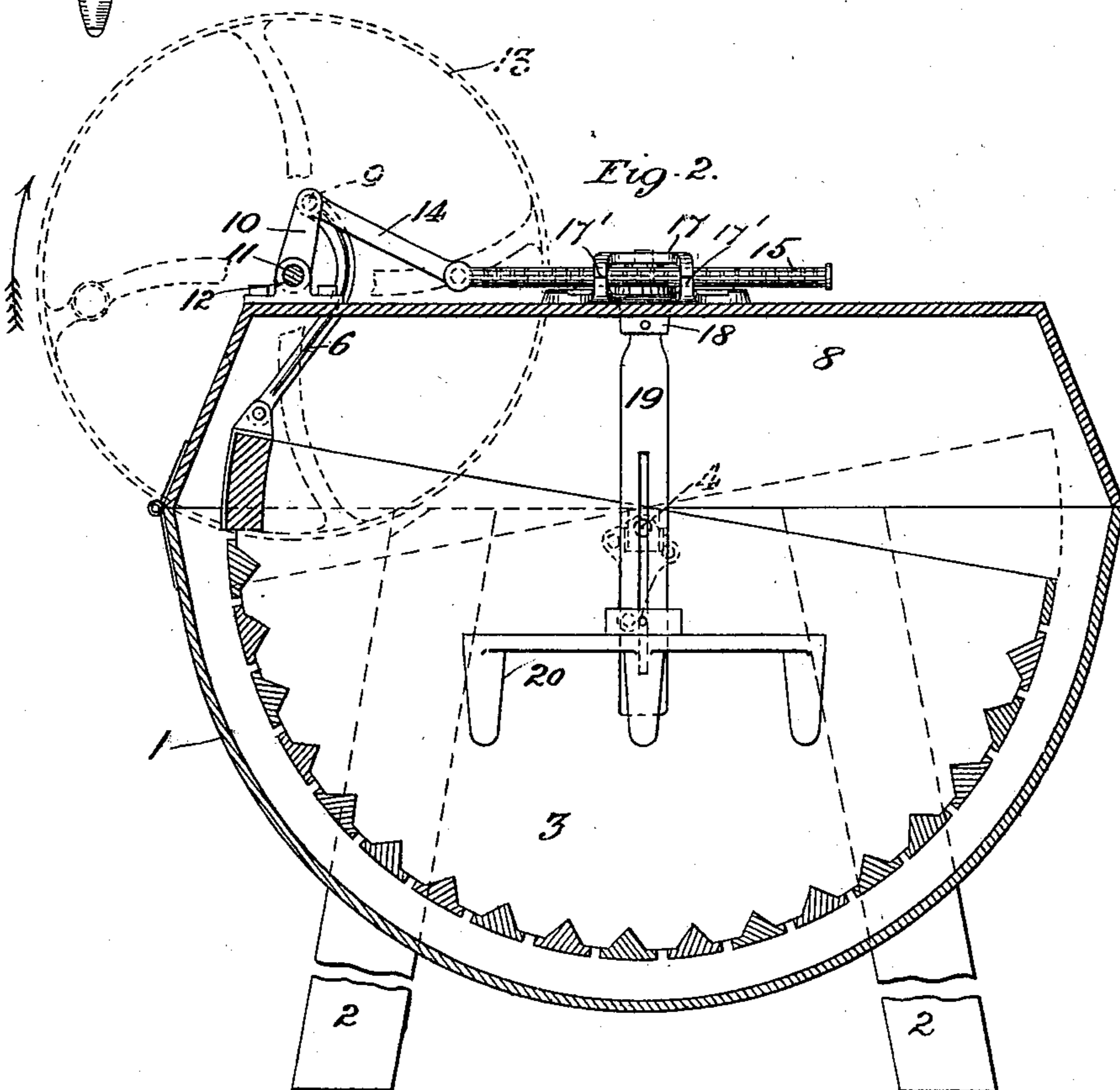
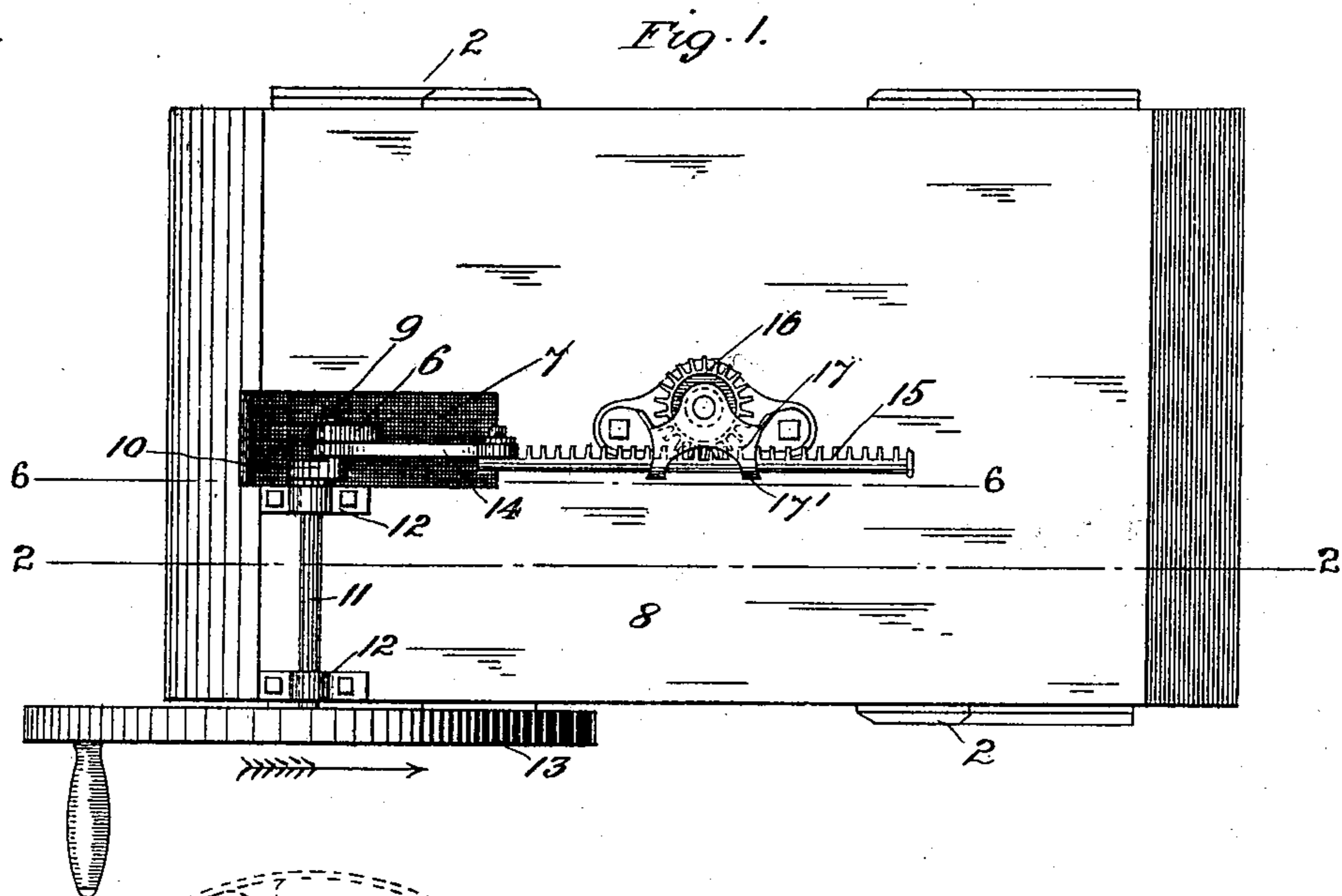
Patented June 27, 1899.

H. W. WICHMAN.
WASHING MACHINE.

(Application filed Mar. 20, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES
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INVENTOR,
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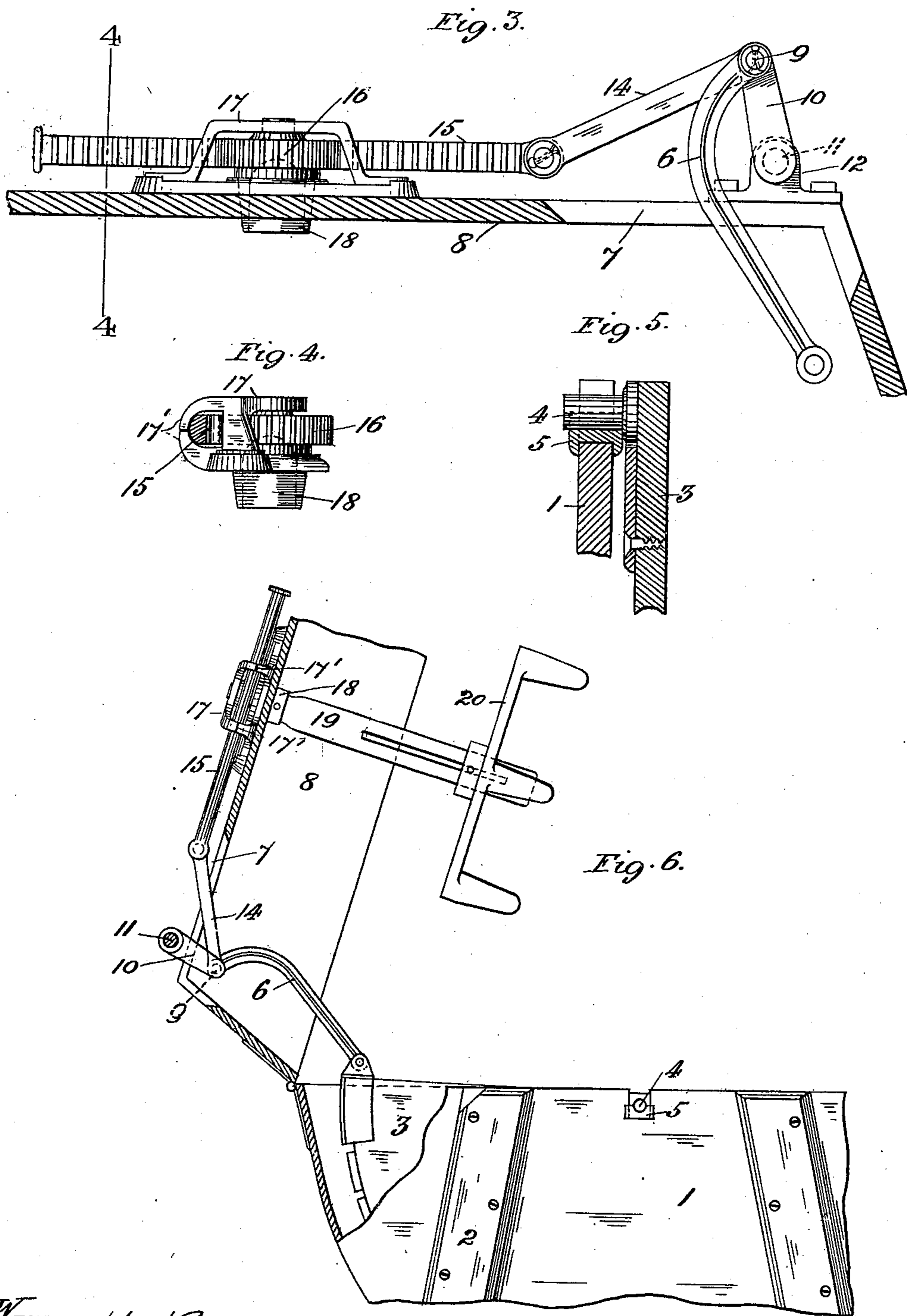
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UNITED STATES PATENT OFFICE.

HERMAN W. WICHMAN, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE ANTHONY WAYNE MANUFACTURING COMPANY, OF SAME PLACE.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 627,789, dated June 27, 1899.

Application filed March 20, 1899. Serial No. 709,819. (No model.)

To all whom it may concern:

Be it known that I, HERMAN W. WICHMAN, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Washing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in washing-machines; and it consists in the novel arrangement and combination of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a top plan view of the machine, the lid being closed. Fig. 2 is a longitudinal vertical section on line 2 2 of Fig. 1, showing the crank-arm in its upward position. Fig. 3 is a detail showing the gear mechanism in elevation, the upper wall of the lid being shown in section. Fig. 4 is a section on line 4 4 of Fig. 3, omitting the lid and crank-arm connections. Fig. 5 is a sectional detail showing manner of mounting the oscillating rubber on the wall of the tub, and Fig. 6 is a section along the line 6 6 of Fig. 1, showing the lid thereof open, parts being shown broken away and the tub and lower rubber being shown in elevation.

The object of my present invention is to combine in one machine a rubber of the oscillating type with a rotary rubber operating in conjunction therewith and rotating about a relatively stationary or fixed axis.

A further object is to simplify as much as possible the mechanism by which the two rubbers are simultaneously actuated.

In detail the invention may be described as follows:

Referring to the drawings, 1 represents the outer casing or tub within which the rubbers operate, and 2 the supporting-legs for said tub. Mounted pivotally along the upper edge of the end walls of the tub is the lower oscillating rubber 3, the same being suspended from suitable bosses or gudgeons 4, resting in metallic bearings 5. Pivotally secured at the medial portion of the rear edge of the rubber 3 is the lower end of an inwardly-curved pitman 6, the said pitman passing through a suitable opening 7, formed in the hinged

cover or lid 8 of the tub, the upper end of the pitman loosely embracing the crank-pin 9 of the crank-arm 10, carried at the inner end of the operating-shaft 11 of the machine, the shaft being mounted in suitable bearings or standards 12, secured on top of the cover, at the rear end thereof. The outer end of the shaft 11 is provided with a hand-wheel 13, by which the shaft is turned.

Loosely embracing the crank-pin adjacent to the pitman 6 is the rear end of a connecting-rod 14, the opposite or forward end thereof being pivotally connected to the adjacent end of a rack-bar 15, the teeth of which mesh with those of a pinion 16, mounted in a sectional frame or bracket 17, secured on top of the cover, at the center thereof. The rack-bar is kept in positive engagement with the pinion 16 and is guided in its reciprocations by the arms 17', formed with the respective sections of the frame 17, the ends of said arms meeting or abutting so as to form a positive bearing for the outer face of the rack-bar. The lower face of the pinion has formed with it a hollow hub 18, which passes through the lower section of the frame 17 and through the lid 8, the hub having inserted therinto and secured thereto the upper end of the stem 19, which directly supports the rubber 20, as is usual in machines having the rotary type of rubbers, the rubber 20, as in all machines of its class, freely riding along the stem to accommodate variable thicknesses of clothes under it, while at the same time it is free to rotate with such stem. As in machines of the oscillating rubber type the rubber 3 is made of substantially two semicircular heads, the outer curved edges of which are connected by slats. The opening 7 cut in the walls of the lid is extended sufficiently to allow for the necessary play of the connecting-rod 14 during the travel of the same.

Assuming the lid to be closed, the operation of the machine can be readily understood from the description. Upon turning the hand-wheel, say in the direction indicated by the arrows in Figs. 1 and 2, it is apparent that rotation will be imparted to the crank-arm 10, the latter, through its connection by the pitman 6 to the rubber 3, imparting an oscillating motion to the latter about its

supporting-gudgeons 4. At the same time, through its connection by the connecting-rod 14 to the rack-bar 15, it will impart a reciprocating motion to said rack-bar; but the latter in its reciprocations will successively reverse the rotation of the pinion and rubber 20, secured thereto, thus imparting to the latter an alternating rotary motion about an axis which is stationary, being, as it is, carried by the lid which forms a part of the outer stationary tub 1, the rubber 3 all the time rocking or oscillating about its axis of suspension.

By the combined oscillating and rotary motion of the rubbers there is imparted a maximum amount of agitation to the clothes interposed between the two rubbers, and the washing can be effected in a minimum amount of time. It is of course to be understood that I need not limit myself to the precise driving mechanism here described in detail, for it is obvious that the machine may be subjected to many changes without departing from the spirit of my invention.

Having described my invention, what I claim is—

1. In a washing-machine, a suitable stationary tub, an oscillating rubber suspended within the same, and a rotary rubber mounted above the oscillating rubber, and rotating about a stationary axis depending, vertically over the oscillating rubber, substantially as set forth.

2. In a washing-machine, a suitable oscillating rubber, a rotary rubber mounted about a stationary axis and operating in conjunction with the oscillating rubber, and means for reversing the rotation of the rotary rubber during the oscillation of the first rubber, substantially as set forth.

3. In a washing-machine, a suitable stationary tub, an oscillating rubber mounted within the same, a rotary rubber carried by the tub and superposed over the oscillating rubber, and means for reversing the rotation of the rotary rubber during the oscillations of the oscillating rubber, substantially as set forth.

4. In a washing-machine, a suitable tub, an oscillating rubber, mounted within the same,

a lid or cover for the tub, a rotary rubber depending from the lid and occupying a position over the oscillating rubber, and suitable driving mechanism for imparting a swinging motion to the oscillating rubber and a simultaneous alternating rotary motion to the rotary rubber, substantially as set forth.

5. A washing-machine, comprising a suitable tub, a rubber pivotally suspended within the tub from the walls of the latter, a cover or lid for the tub, the latter having an opening cut or formed at one end thereof, an operating-shaft mounted on top of the cover adjacent to said opening, a crank at the inner end of the shaft opposite said opening, a pitman having its opposite ends pivotally secured respectively to the crank-pin of the crank and to the adjacent end of the swinging rubber and passing through the opening formed in the cover, a pinion mounted on the lid and having a hub projecting through the lid, a stem carried by, or secured to said hub, a rubber carried by said stem, a rack-bar meshing with the pinion, means for guiding said rack-bar, a connecting-rod having its opposite ends respectively and pivotally secured to the crank-pin and to one end of the rack-bar, a hand wheel or crank for the drive-shaft, the parts operating substantially as and for the purpose set forth.

6. In a washing-machine, a suitable tub, a rubber having terminal bosses resting in suitable bearings on the opposite walls of the tub, a cover or lid adapted to close over the said rubber, a second rubber depending from the cover and superposed over the first rubber, and intermediate connections between the rubbers, whereby an oscillating motion is imparted to the rubber suspended within the tub, and an alternating rotary motion to the rubber depending from the cover, substantially as set forth.

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

HERMAN W. WICHMAN.

Witnesses:

EMIL STAREK,
GEO. L. BELFRY.