

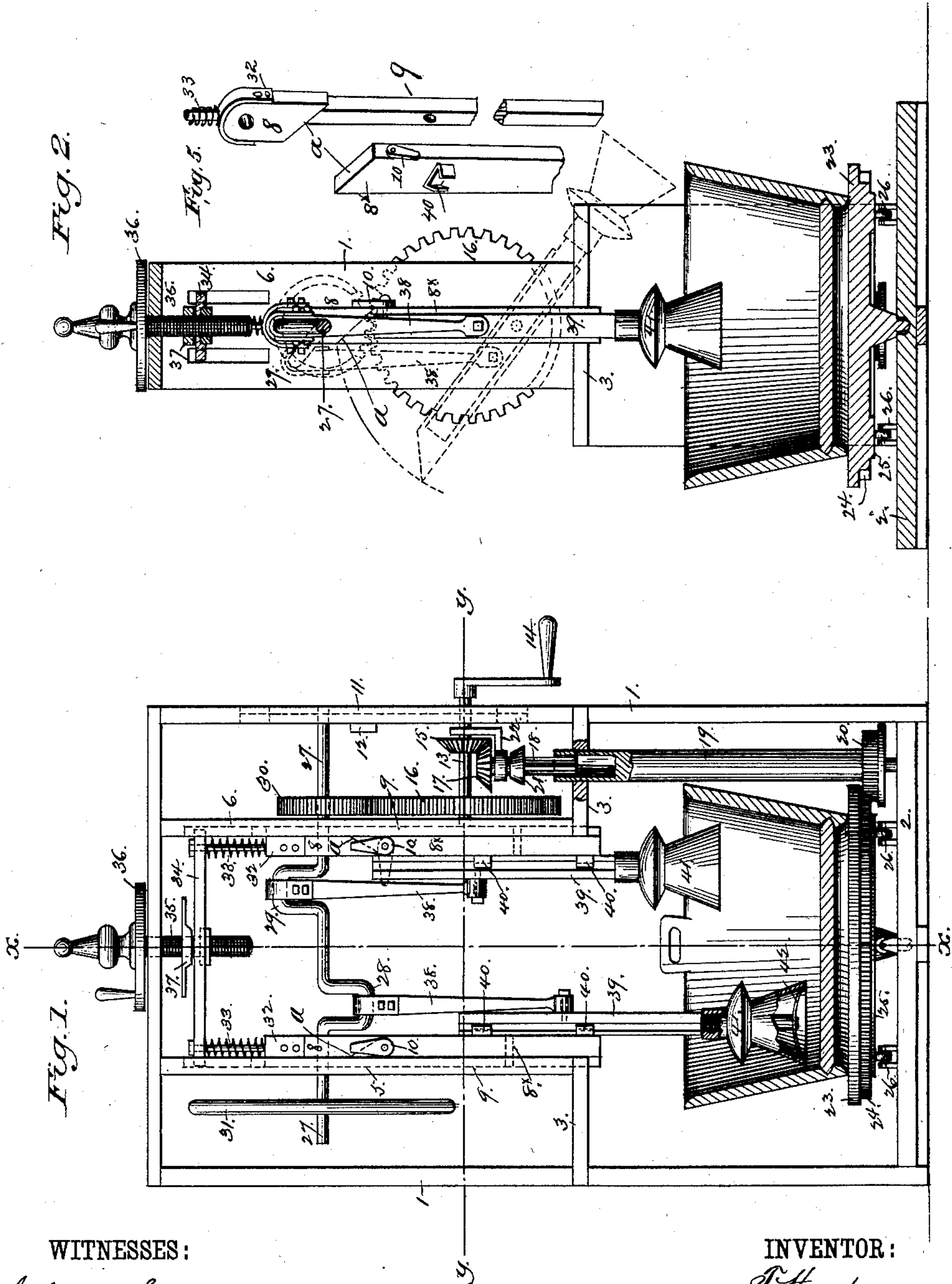
(Model.)

2 Sheets—Sheet 1.

T. HAND.
WASHING MACHINE

No. 363,742.

Patented May 24, 1887.



WITNESSES:

John A. Ellis.
Co. Butchwick

INVENTOR:

T. Hand

BY

Munn & Co.
ATTORNEYS.

(Model.)

2 Sheets—Sheet 2.

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Fig. 3.

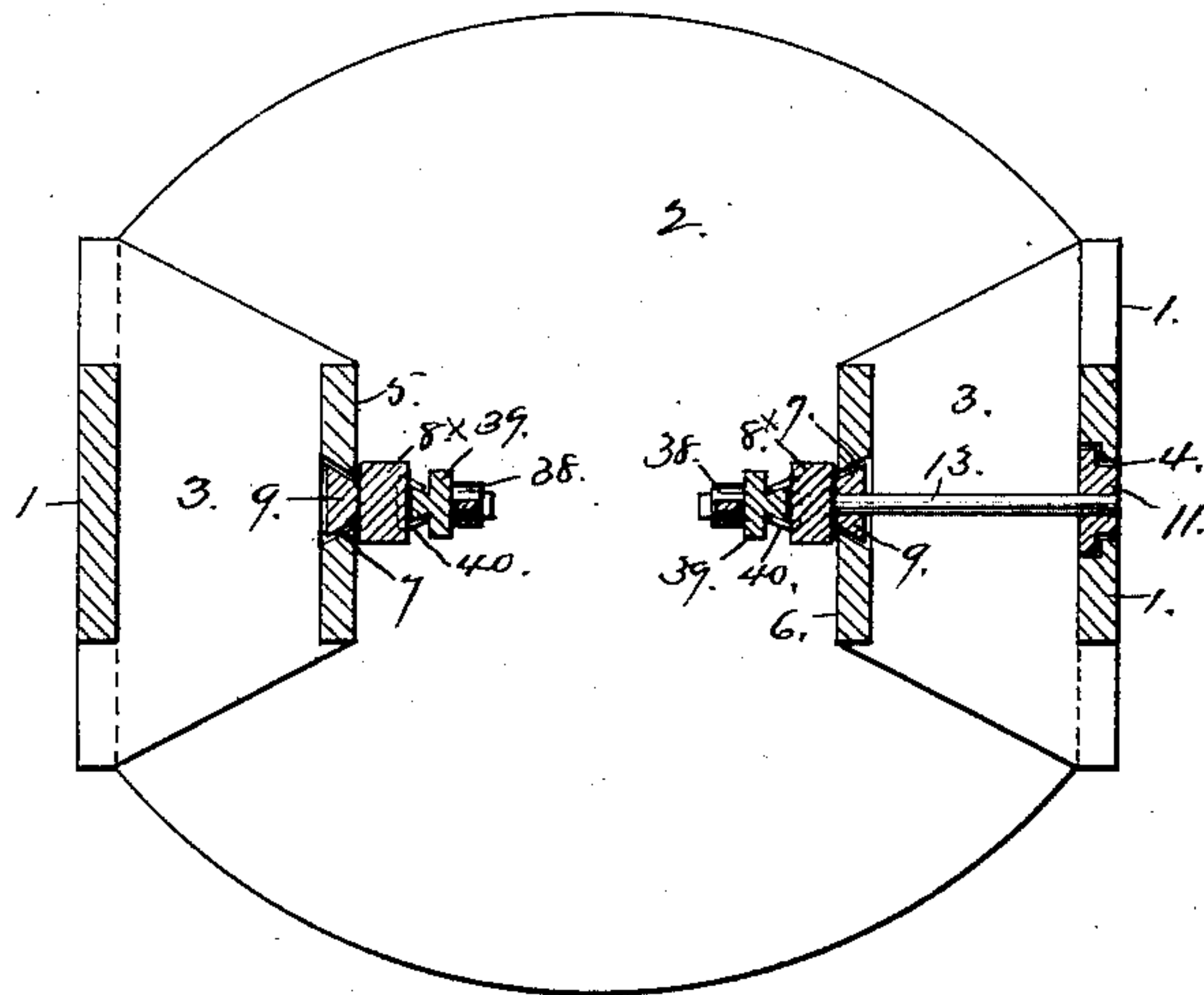
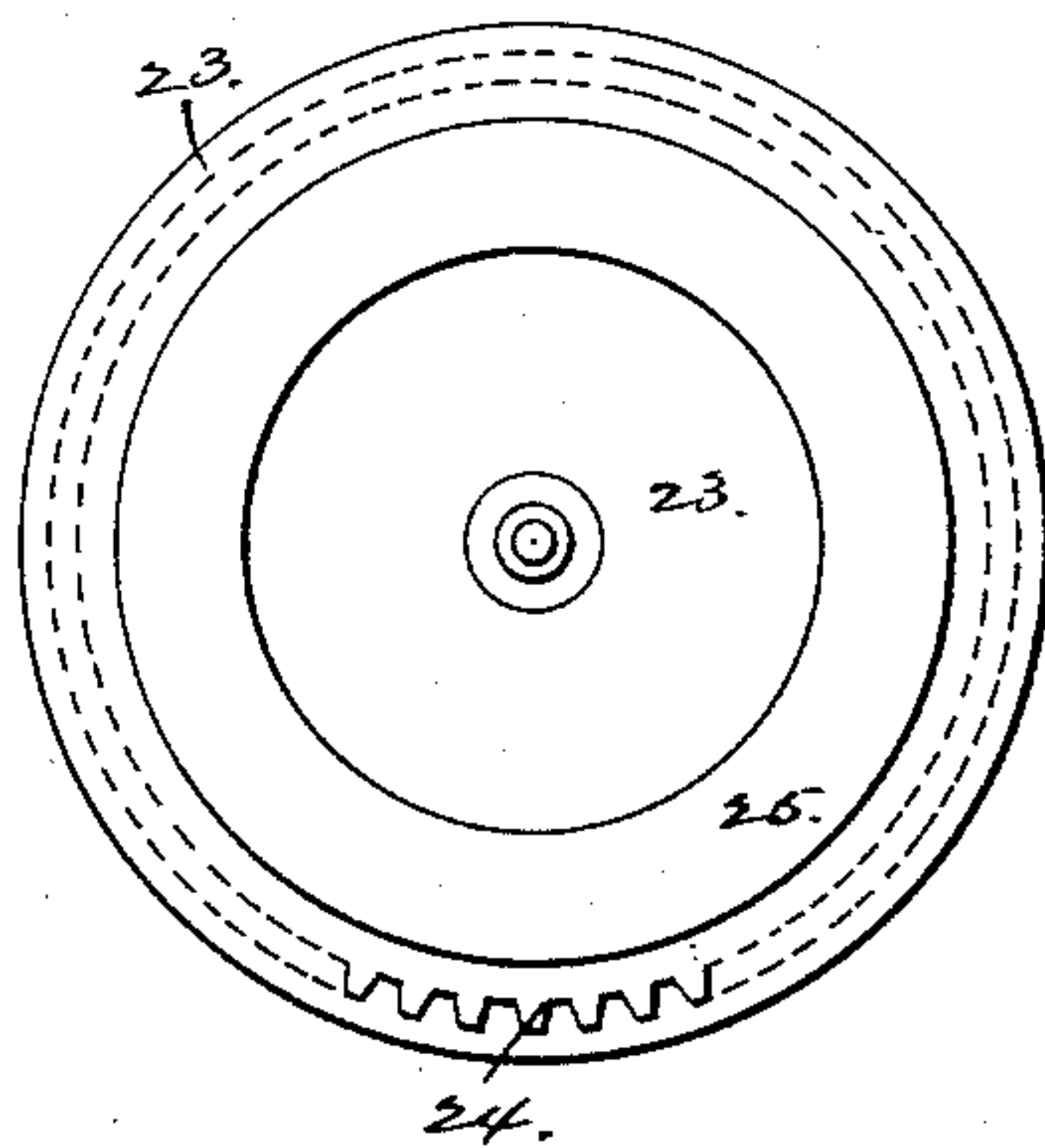


Fig. 4.



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UNITED STATES PATENT OFFICE.

TOWNSON HAND, OF SHELBYVILLE, INDIANA, ASSIGNOR OF ONE-HALF TO
OSCAR HAND, OF SAME PLACE.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 363,742, dated May 24, 1887.

Application filed September 13, 1886. Serial No. 213,433. (Model.)

To all whom it may concern:

Be it known that I, TOWNSON HAND, of Shelbyville, county of Shelby, and State of Indiana, have invented a new and Improved
5 Washing-Machine, of which the following is a full, clear, and exact description.

My invention relates to washing-machines, and has for its object to effect an improvement in the general construction of such machines,
10 whereby conical-shaped dashers are made to reciprocate vertically in a tub placed upon a revolving table, and wherein the machine is adjustable by means of a single tension-screw to operate upon a large or small number of
15 clothes within said tub; also, to provide means whereby the dashers may be readily and quickly changed from a vertical to an inclined or horizontal position to facilitate the withdrawal of the tub, and, finally, wherein, by
20 means of a telescopic connection, the upper operative parts of the machine may be adjusted vertically without interfering with the normal position of the lower operative mechanism.

25 The invention consists in the construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying
30 drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation, part sectional, and Fig. 2 a transverse vertical section through
35 line *xx* of Fig. 1. Fig. 3 is a horizontal section through the frame of the machine and its grooved connections, taken on line *yy*, Fig. 1, and Fig. 4 is a bottom plan of the platform. Fig. 5 is a detail view showing the sectional
40 carrier and its dovetail tongue.

The frame of my washing-machine, (represented by 1,) constructed preferably rectangular in form, is provided with a circular base,
45 2, and horizontal shelves 3, projecting from the side pieces of said frame and usually located below the center of said side pieces. The frame 1 is also provided with a vertical slot, 4, in the right-hand side piece thereof, located centrally between its projecting shelf
50 3 and the top of said frame.

The frame is completed by the attachment

of vertical guide-bars 5 and 6 to the upper face of the horizontal side projection, 3, at the inner end thereof, and to the under side of the top bar of said frame. Each of the said guide-
55 bars 5 and 6 is provided with a vertical dovetail slot, 7, which slots extend from the bottom nearly to the upper end, and the said slots are also continued downward through the horizontal side projections, 3, upon which said
60 guides rest.

The slots 7 of the guide-bars 5 and 6 are adapted to receive tongues 9 of the vertical carriers 8. The said carriers 8 are divided
65 (for a special purpose, hereinafter stated) near the upper end thereof by an inwardly-slanting cut, *a*, extending at an angle across the face, and the said tongues, which extend the length of the slots 7, are made integral only with the upper sections of the divided carriers, the
70 lower sections, 8^x, being simply pivoted centrally to said tongues. The two sections are held in engagement, however, by buttons 10, pivoted to the edge of the lower sections, 8^x, and adapted to cover the dividing-line. A
75 sliding plate, 11, is provided in the vertical slot 4 of the frame, and held therein by a transverse bar, 12. Into this sliding plate, near the lower end thereof, one end of the horizontal
80 drive-shaft 13 is journaled, carrying a crank, 14, the other end of which shaft finds a bearing in the tongue 9 of the adjacent guide-bar 8. The said drive-shaft 13 has keyed upon it near the frame a bevel-gear, 15, and close to the guide-bar 6 a toothed wheel, 16. The said
85 bevel-gear 15 is adapted to mesh into a like gear, 17, below it, secured at the end of the upper portion, 18, of a vertical telescopic shaft, the lower portion, 19, of which extends from within the horizontal side projection, 3,
90 downward to a pivotal connection with the circular bottom 2. The lower portion, 19, of the said telescopic shaft is provided at the bottom with a small toothed wheel, 20, and at its upper end with a square aperture adapted to
95 receive the lower square end of the upper portion, 18, which upper portion is provided with a collar, 21, and is held to move vertically up or down with the drive-shaft 13 by means of an encircling crank-arm, 22.

A circular horizontal platform, 23, provided
100 with an integral toothed wheel, 24, is pivoted

centrally to turn upon the circular bottom 2 of the frame through the meshing of the toothed wheel 24 of the platform with the lower bottom wheel, 20, of the telescopic shaft.

5 The rotary movement of said platform is facilitated by a track, 25, attached thereto, bearing upon rollers 26, secured to the bottom 2. The said platform is adapted to receive an ordinary tub, as shown in Figs. 1 and 2.

10 A crank-shaft, 27, journaled at one end in the upper portion of the sliding plate 11, is adapted to pass through the upper section of the sliding carrier 8 and tongue 9 upon that side and find a bearing in the upper section of the opposite sliding carrier 8 and its integral tongue 9. The said crank-shaft 27 is provided with opposing central crank-arms, 28 and 29, and with a toothed wheel, 30, keyed thereon between the slotted guide-bar 6 and the side of the frame, adapted to mesh with the lower and larger toothed wheel, 16, of the drive-shaft 13 and with a balance-wheel, 31, secured upon the other end of said crank-shaft, between the opposite slotted guide-bar, 5, and the other side of the frame.

The top of each upper section of the carriers 8 is provided with a metal cap, 32, having an integral upward-projecting pin, 33, surrounded by a coiled or spiral spring, which pins 33 are adapted to enter a tension-plate, 34, sliding in grooves in the upper solid portion of the guide-bars 5 and 6 at each end of said plate 34 and bearing upon the said encircling coiled or spiral springs at the bottom. A tension-screw, 35, provided with an integral hand-wheel, 36, is entered through the top of the frame and also through the central portion of the tension-plate 34, secured thereto by a nut bearing upon the under side of said tension-plate. A follower, 37, is also provided for the tension-screw 35 between said plate and the top of the frame, whereby the said plate is locked when the proper tension is had by the said follower bearing against the top of the frame.

Each crank-arm 28 and 29 is connected with a pitman, 38, which, extending downward upon their respective sides, are pivotally connected with grooved dasher-rods 39, which are adapted to slide vertically in metal ways 40, attached to the face of the lower section of the carriers 8.

Upon the ends of the dasher-rods 39 conical dashers 41 are attached in any desired or convenient manner. The said conical dashers 41 are usually made hollow with an open mouth spanned by semicircular strips which cross one another centrally, which strips are attached to the inner side of said dashers.

When it is desired to wash, and the machine is in position, as in Fig. 1, the clothes are placed in the tub and the dashers are made to accommodate themselves to the quantity therein by turning the tension-wheel 36 to raise or lower the said dashers, as the case may require. The entire upper working mechanism is thereupon carried upward or down with

the dasher, by reason of their bearing and connection with the outer sliding plate, 11, and the inner sliding carriers, 8, which are directly controlled by said screw through the tension-plate 34. When the proper adjustment is made, the lock-nut or follower 37 is screwed home, and the mechanism is secured in that position. The crank 14 is now turned, and the dashers will operate upon the clothes in the tub with a reciprocating vertical motion, the tub being constantly revolved through the lower gearing above described. When the upper working portion of the machine is raised or lowered, the lower operative parts are not affected. This is due to the telescopic connection between the two, as the upper portion, 18, of the vertical telescopic shaft, which is attached to the horizontal drive-shaft 13, enters far enough in the top square aperture of the lower portion to accommodate any upward or downward movement within the compass of adjustment.

After the clothes have been washed and it is desired to remove the tub, the button 10 upon the carrier 8, having attached thereto the most elevated dasher, is turned down, and the lower pivoted section, 8^x, thereof turned from a vertical to an inclined or horizontal position, which movement thereof will elevate the attached dasher-rod and dasher in the same plane, and consequently from within the tub. The crank-shaft is now operated so as to raise the other dasher to its highest point, whereupon the same operation is gone through with respect to its carrier 8 and section 8^x. The tub is then readily taken from the rotary platform, as shown in Fig. 2. In this position the dashers remain until the tub is again introduced for washing, whereupon they are brought to a vertical position once more.

The machine is also adapted for starching, doing the work when thus employed as effectually as when used to wash the clothes.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with vertically-adjustable driving mechanism, of the telescopic shaft operated thereby and provided with a gear at its lower end and the revoluble platform operated by the said gear, substantially as set forth.

2. The combination, with the frame, the vertically-adjustable carriers, and the dashers having an operating crank-shaft, of the vertical shaft 19, having an angular aperture in its upper end, the vertically-movable portion 18, having a gear, 17, operated from the dasher mechanism, the horizontal gear 20 on the lower end of the shaft, and the platform 23, having peripheral teeth 24, meshing with gear 20, substantially as set forth.

3. A washing-machine having adjustable carriers, and said carriers made in two sections, one of which is held to slide vertically and the other of which is pivoted to the sliding

section, and dasher-rods held to slide in said pivoted sections, substantially as and for the purpose set forth.

4. In a washing-machine, a divided carrier 5 having its upper section provided with a tongue and its lower section pivoted to swing on said tongue.

5. The combination, with the frame having inward-projecting shelves 3 and vertical slotted guide-bars 5 and 6, of the carriers 8, provided with tongues 9, the vertical bolts 33, encircled by springs, and sliding tension-plate 34, together with a tension-screw, 35, substantially as and for the purpose set forth.

6. The combination, with the frame 1, having inner projecting shelves, 3, and vertical slotted guide-bars 5 and 6, of the carriers 8, provided each with a tongue, 9, metal cap 32, and vertical upwardly-projecting spring-encircled bolt 33, the sliding tension-plate 34, and with a tension-screw, 35, provided with a lock-nut, 37, substantially as and for the purpose set forth.

7. The combination, with the frame 1, having inwardly - projecting shelves 3, vertical slotted guide-bars 5 and 6, carriers 8, adapted to slide in said slotted guide-bars and provided with metallic ways 40, of the crank-shaft 27, carrying a toothed wheel, 30, and a balance-wheel, 31, pitmen 38, dasher-rods 39, having attached dashers 41, together with the drive-shaft 13, provided with a large toothed wheel, 16, and crank 14, whereby said dashers are operated with a reciprocating vertical motion, substantially as and for the purpose set forth.

8. The combination, with the frame constructed as herein described, of the divided carriers 8, provided with a tongue integral with the upper portion thereof and having the lower section carrying ways 40, and centrally pivoted to said tongue, and provided with a button, 10, the crank-shaft 27, and pitmen 38, together with the dasher-rods 39 and dashers 41, whereby the lower pivoted section of said carriers 8 and the operative parts connected thereto may be carried from a vertical to a

horizontal or inclined position, substantially as and for the purpose set forth.

9. The combination, with a frame constructed as herein described, provided with an upper central tension-screw, 35, having a hand-wheel, 36, lock-nut 37, and tension-plate 34, together with a vertical end slot, 4, and sliding plate 11, of the sliding carriers 8, spring-encircled bolts 32, crank-shaft 27, pitmen 38, dasher-rods 39, and conical dasher 41, together with the horizontal drive-shaft 13, journaled in said sliding carriers and sliding plate, whereby the entire upper operative mechanism is adjusted vertically by said tension-screw, substantially as and for the purpose set forth.

10. The combination, with the horizontal drive-shaft 13, provided with a crank, 14, and bevel-gear 15, together with the tension device and mechanism for reciprocating the dashers herein described, of a vertical telescopic shaft provided with an upper section, 18, loosely attached to said drive-shaft 13 by an angular rod, 22, and having a bevel-gear, 17, collar 21, and a square lower end, and a lower section, 19, having a square upper aperture and a lower toothed wheel, 20, adapted to revolve the circular platform 23, whereby the lower operative portions remain undisturbed when the upper operative portions are adjusted vertically by the said tension device, substantially as and for the purpose set forth.

11. The combination, with a vertical telescopic shaft consisting of an upper section, 18, attached loosely to the drive-shaft 13 by an angular rod, 22, provided with a square lower end, a top beveled gear, 17, and collar 21, and a lower section, 19, having a square aperture in its upper end and a toothed wheel, 20, attached at its lower end, of the rotating circular platform 23, provided with an integral toothed wheel, 24, substantially as and for the purpose set forth.

TOWNSON HAND.

Witnesses:

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L. T. MICHENER.