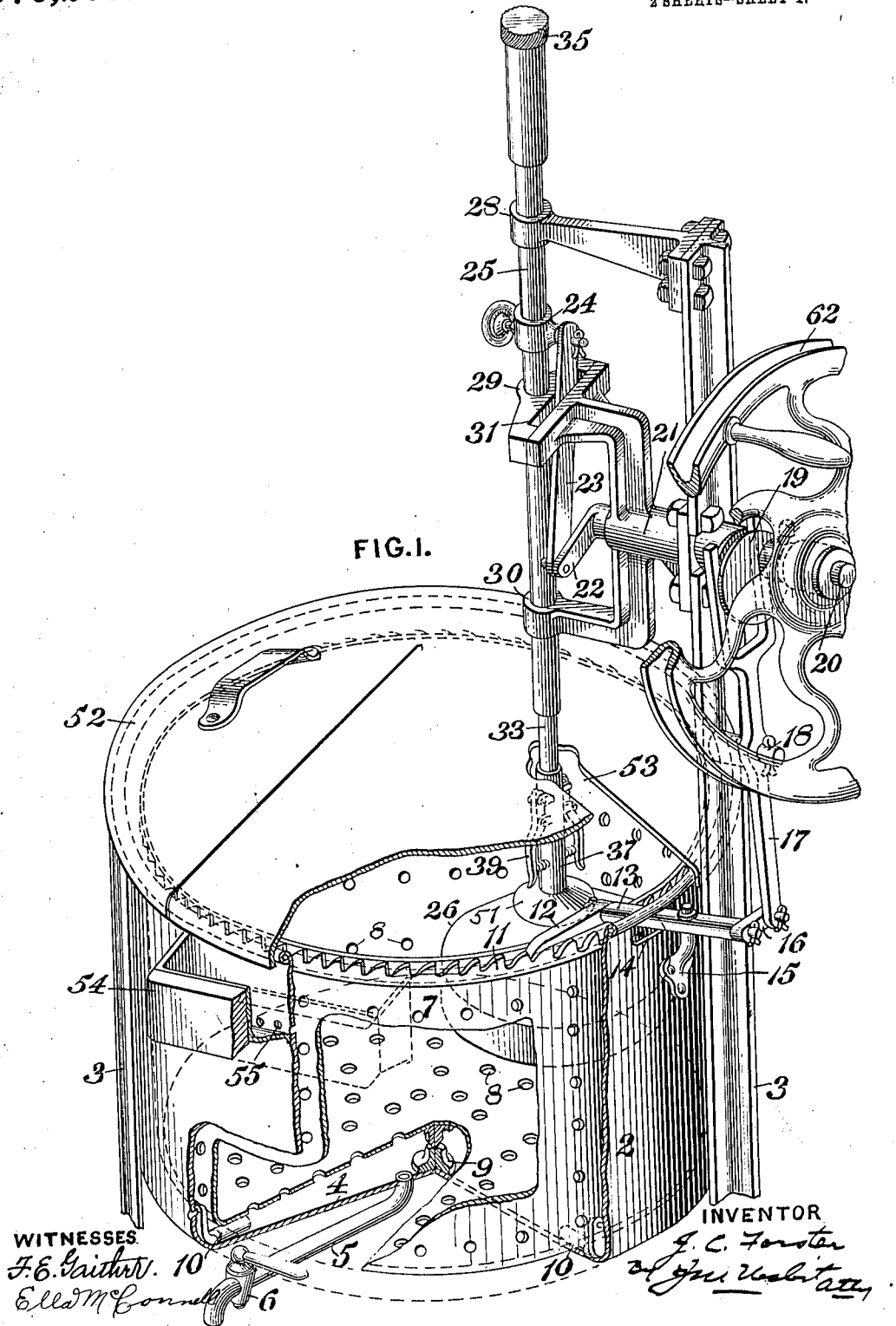


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 APPLICATION FILED NOV. 16, 1909.

Patented Sept. 13, 1910.

2 SHEETS—SHEET 1.

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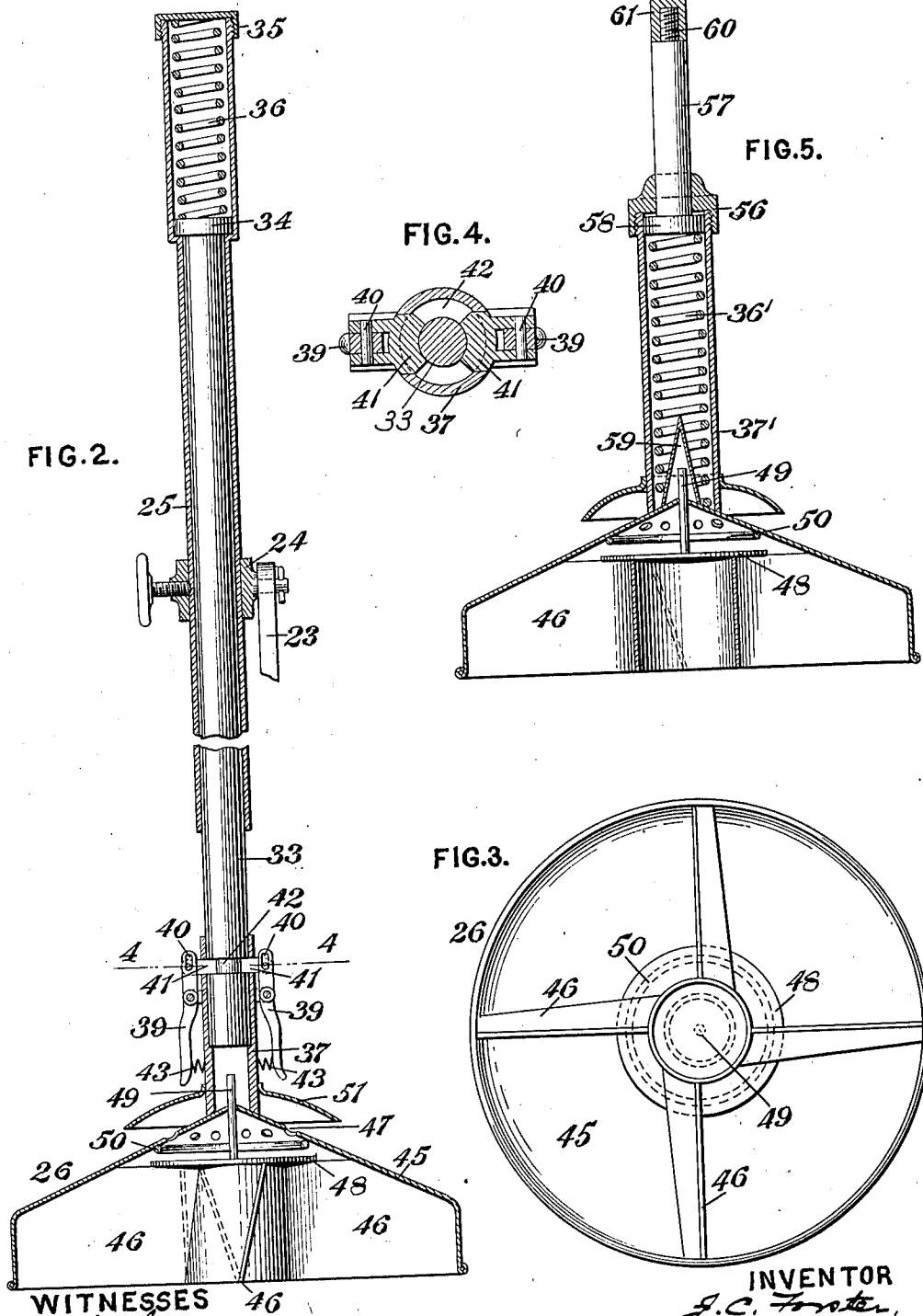


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WITNESSES
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JOHN C. FORSTER, OF PITTSBURG, PENNSYLVANIA.

WASHING-MACHINE.

970,205.

Specification of Letters Patent.

Patented Sept. 13, 1910.

Application filed November 16, 1909. Serial No. 528,320.

To all whom it may concern:

Be it known that I, JOHN C. FORSTER, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification.

The general object of this invention is to provide a simple, efficient and easily operated washing machine of an improved construction in which the articles to be cleansed are thoroughly and uniformly washed without liability to injury.

A further purpose is to provide for so moving the clothes during the washing process that all parts thereof are thoroughly cleansed.

The invention includes a pounder of improved construction which has the same effective action on either a large or small bulk of clothing, etc. In addition to a wide range of adjustment for the pounder, the invention includes means for detachably securing the pounder to its operating means.

The invention consists in certain novel features of construction, and in the assembly and combination of parts, hereinafter fully described and claimed, and illustrated in preferred form by the accompanying drawings, wherein—

Figure 1 is a perspective view of the improved machine, portions of the tub and the movable clothes carrier and the cover being broken away. Fig. 2 a vertical central section of the pounder and the member upon which it is carried. Fig. 3 a bottom plan of the pounder. Fig. 4 a horizontal cross section on an enlarged scale of the upper portion of the pounder, taken on line 4—4 of Fig. 2. Fig. 5 a view similar to Fig. 2, illustrating a modified construction of pounder and method of attachment to the carrying member.

Referring to the drawings, 2 is the tub, and 3 are the supporting legs of any suitable height. The tub 2 is provided with a slightly conical bottom 4 into which is tapped the drain pipe 5, provided with a stop-cock 6. An inner tub-like carrier 7, perforated at its bottom and sides at 8, is rotatably mounted within tub 2 upon a central pivotal support 9, and a series of rollers 10.

A circular rack 11 is secured to carrier 7 at or near its top, and is engaged by a dog 12 pivoted to the inner end of lever 13, the

latter extending outwardly through a slot 14 in tub 2, and pivotally mounted upon a bracket 15 secured to the latter. The outer end of lever 13 is connected by link 16 to the lower end of a vertical lever 17 pivotally mounted at 18 upon the upward extension of one of the supporting legs 3. The upper end of lever 17 is bifurcated and engages a cam 19 secured to horizontal main drive shaft 20, journaled in bearing 21 secured to leg 3. The inner end of shaft 20 extends beyond bearing 21 and is provided with a crank arm 22, connected by link 23 to clamp 24, through which extends the pounder-carrying stem 25. By this means the pounder may be raised or lowered as required for operating on either a small or large bulk of clothing. Stem 25 reciprocates in guides 28, 29 and 30, the last two being carried by bearing 21 and spaced apart sufficiently to permit crank 22 to rotate therebetween. Arm 29 is extended transversely and provided with a guide slot 31 for link 23.

As shown in Figs. 1, and 2, stem 25 is of tubular form, and slidable therein is rod 33 having head 34 at its upper end. The upper end of tubular stem 25 is enlarged to receive head 34 and is provided with a screw cap 35 and incloses spring 36, which latter holds the rod 33 and the pounder normally depressed. This spring permits the pounder to yield upwardly on its down stroke, thereby insuring effective pressure on the clothes without danger of breaking its operating parts. The rod 33 fits at its lower end in a vertical sleeve 37 secured to pounder head 26, and is locked thereon by two clutches, each consisting of a lever 39 pivoted to sleeve 37 and secured at its upper end by pin and slot connection 40 to a locking shoe 41 which engages a circumferential groove 42 in rod 33. The shoes 41 are normally held in their inner or locking position by springs 43.

The pounder head 26 is preferably formed of sheet metal, open at its lower end and of cylindrical form. Top 45 of the head is here shown conical in front, with its apex secured to the lower end of sleeve 37. Within the head and extending upwardly from the bottom plane thereof are the radially arranged blades 46, which are preferably inclined as shown to provide a feathering action when the pounder is reciprocating vertically, thus causing the latter to rotate on stem 33, the detachable clutch above described not interfering with such movement. The rotary

or turning movement thus imparted to the pounder in addition to its movement vertically greatly increases its efficiency.

To prevent the formation of a partial vacuum in the pounder which would tend to hold the articles therein on the up stroke, perforations 47 are formed in top 45 which are controlled by disk valve 48, normally resting on top edges of blades 46 and held in alinement by a vertical stem 49. A wire ring 50 surrounds the row of perforations 47 and serves as a seat for valve 48. A circular shield 51 carried by sleeve 37 deflects downwardly any water forced through the perforations.

Tub 2 may be provided with a cover 52, slotted at 53 to permit of its being readily slipped into place and removed when the pounder is in position. If desired a wringer trough or box 54 may be secured to one side of the tub and provided with openings 55 to drain it into the tub.

In the construction shown in Fig. 5, the pounder carrying sleeve 37' is made somewhat longer than sleeve 37, Fig. 2, and is provided with a screw cap 56, through which passes a short stem 57, provided at its lower end with a head 58. A spring 36' is interposed between said head and the pounder and serves to hold the latter normally in its lowest position, similarly to spring 36, Fig. 2. A conical cap 59 incloses the valve stem 49 and excludes water from the spring-inclosing sleeve. The upper end of stem 57 is detachably secured to the operating member by a threaded connection 60, the operating member in this instance consisting of a solid rod 61 which is substituted for tubular stem 25 of the construction first described.

In operating the machine, the pounder 26 is adjusted to the proper height, determined by the bulk of clothing, and secured by clamp 24. Main shaft 20 is then rotated either by hand wheel 62, or by a belt from a motor, not shown, and carrier 7 is intermittently rotated through the medium of ratchet 11, dog 12, cam 19 and their attendant mechanism, and at the same time crank 22 and its connections impart a vertically reciprocating motion to pounder 26, which, owing to spring 36, engages the clothes with an effective yielding pressure, and the slight twisting of the articles and the accompanying deflection of the water, due to the inclination of the blades, greatly increases the efficiency of the pounder. The twisting and turning of the clothes by the pounder and their progressive movement by the perforated carrier results in thoroughly cleansing all portions thereof.

I claim:

1. In a washing machine, the combination of a tub, a perforated clothes carrier movably mounted therein, a toothed rack en-

circling the carrier, a dog engaging the rack, dog actuating means, and a pounder operative within the carrier.

2. In a washing machine, the combination of a clothes container, a horizontal bearing supported above the container, guide arms projected from the bearing, a vertically movable pounder having an operating stem guided by said arms, a crank shaft journaled in the bearing with the crank thereof arranged between said arms, and an adjustable connection between the crank and the pounder stem.

3. In a washing machine, the combination of a tub, a perforated clothes container rotatable within the tub, a circular rack carried by the upper portion of the container, a dog movably mounted on the tub and operatively engaging the rack, and dog operating means.

4. In a washing machine, the combination of a tub, a perforated clothes container rotatably mounted in the tub, a cover for the tub, and container moving means operative at the exterior of the tub and extending into a portion thereof beneath the cover and operatively engaging the upper portion of the container.

5. In a washing machine, the combination of a tub, a perforated clothes container rotatably mounted in the tub, a cover for the tub, a circular rack secured to the upper portion of the container, an arm mounted to oscillate on the tub and extending into the space beneath the cover, a dog on the arm for engaging the rack, and arm oscillating means at the exterior of the tub.

6. In a washing machine, the combination of a tub having a side opening adjacent its upper edge, a cover for the tub, a perforated clothes container rotatably mounted in the tub, a circular rack carried by the upper portion of the container, and container actuating means extending through the side opening in the tub and operatively engaging the circular rack.

7. In a washing machine, the combination of a tub having a side opening adjacent its upper edge, a cover for the tub, a perforated clothes container rotatably mounted in the tub, a circular rack carried by the upper portion of the container, a horizontal arm pivotally mounted on the exterior of the tub and extending through the side opening thereof, a dog on the arm for engaging the rack, and arm operating means at the exterior of the tub.

8. In a washing machine, the combination of a tub, a horizontal bearing above the tub, a guideway rigid with the bearing and extending outwardly beyond the same and formed with a guideway and with a horizontal slot adjacent the guideway, a pounder, a pounder stem movable in the guideway, a shaft journaled in the bearing

with a crank on the shaft, and a link extending through the slot in the guideway with its ends connected to the crank and pounder stem, respectively.

5 9. In a washing machine, the combination of a tub, a horizontal bearing above the tub, arms rigid with and extending upwardly and downwardly from the bearing with the extremities of the arms disposed outwardly beyond the bearing and with vertical guide-ways in the extended portions of the arms, the upper arm having a horizontal slot disposed transversely of the bearing axis, a pounder, a pounder stem movable vertically in the arm guideways, a shaft journaled in the bearing with a crank on the shaft between said arms, and a link extending through the slot of the upper bearing with its ends connected to the crank and pounder stem, respectively.

10 10. In a washing machine, the combination of a tub, a post raised from the tub, a horizontal bearing supported by the post beneath the upper end of the latter, a guide arm extending from the upper end of the post, angular guide arms above and below

the bearing and rigid therewith and extending outwardly beyond the bearing, each of said arms formed with a vertical passage, a pounder, a pounder stem movable vertically in the passages of said arms, a shaft journaled in the bearing and provided with a crank, and a link connecting the crank and pounder stem.

11. In a washing machine, the combination of a tub, a post extending above the tub, a horizontal bearing secured to the post, a pounder, a shaft journaled in the bearing having a crank, an operative connection between the crank and pounder, a clothes container movably mounted in the tub, a lever mounted to oscillate on a horizontal fulcrum, an eccentric on the shaft engaging and oscillating said lever, and means actuated by the lever for moving the container.

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

JOHN C. FORSTER.

Witnesses:

J. M. NESBIT,
F. E. GAITHER.