J. W. WALTER.

WASHING MACHINE.

APPLICATION FILED NOV. 3, 1909.

956,458. **Patented Apr. 26, 1910.**

3 SHEETS—SHEET 1.

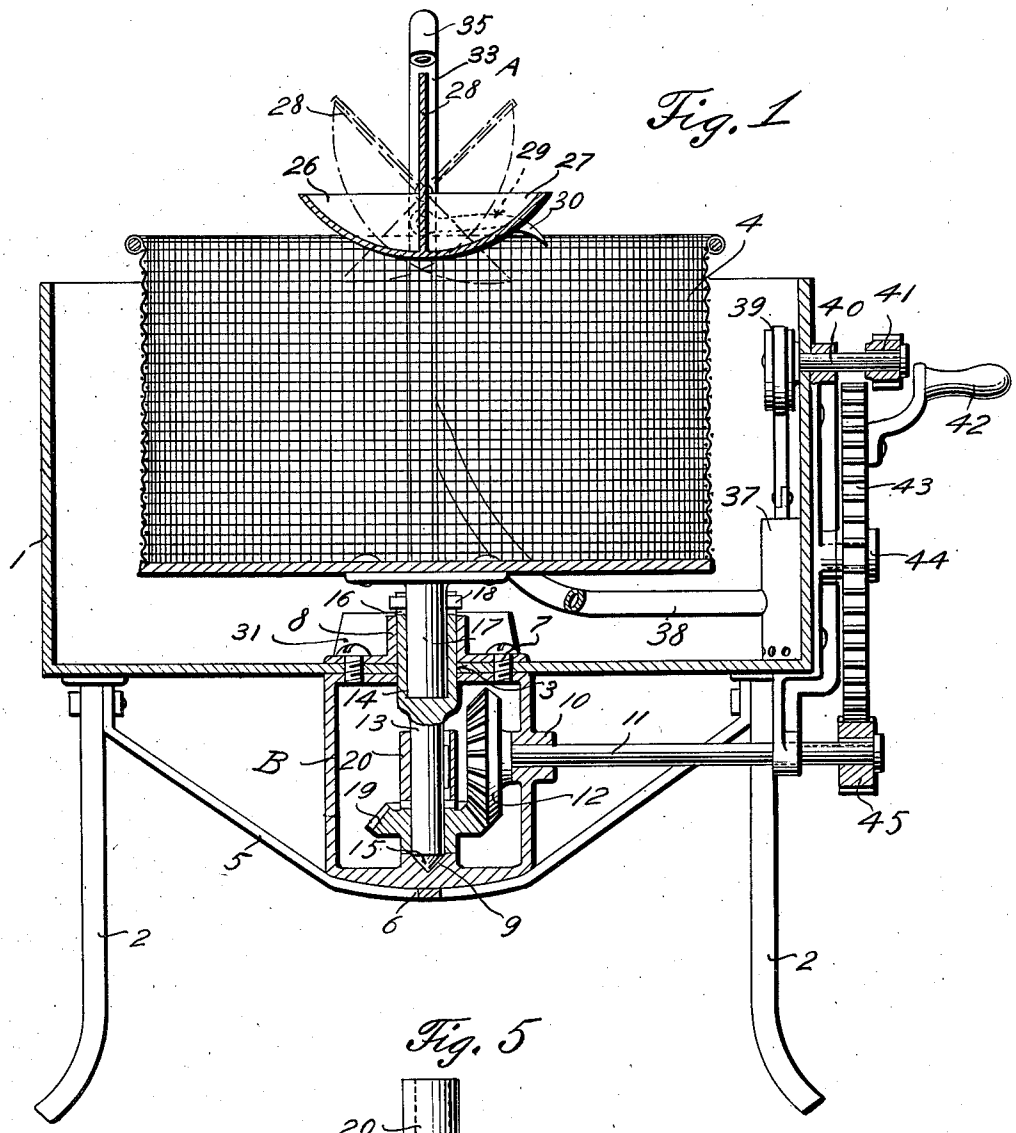
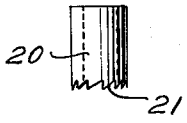


Fig. 1

Fig. 5



Witnesses

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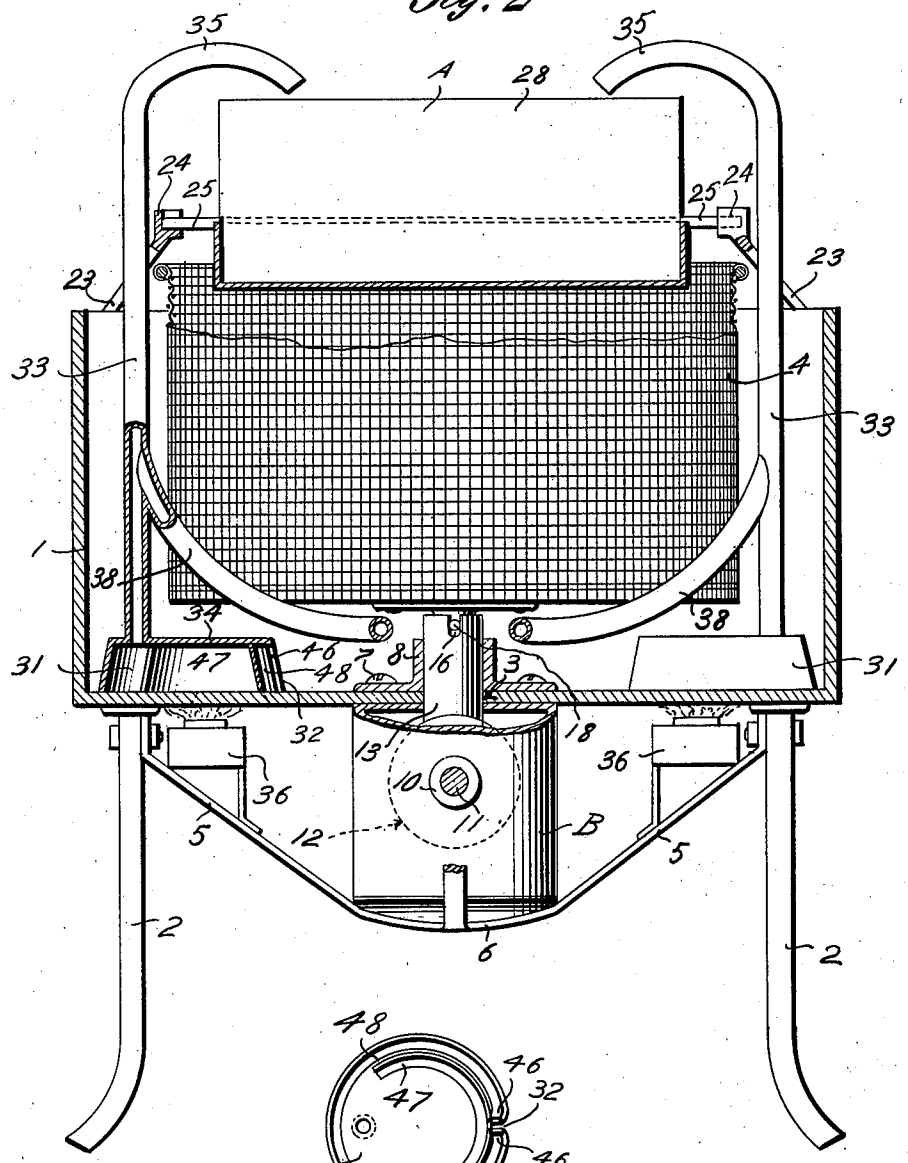
3 SHEETS—SHEET 2.

Fig. 2



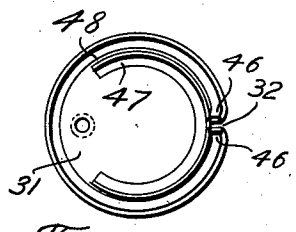


Fig. 6

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3 SHEETS—SHEET 3.

Fig. 3

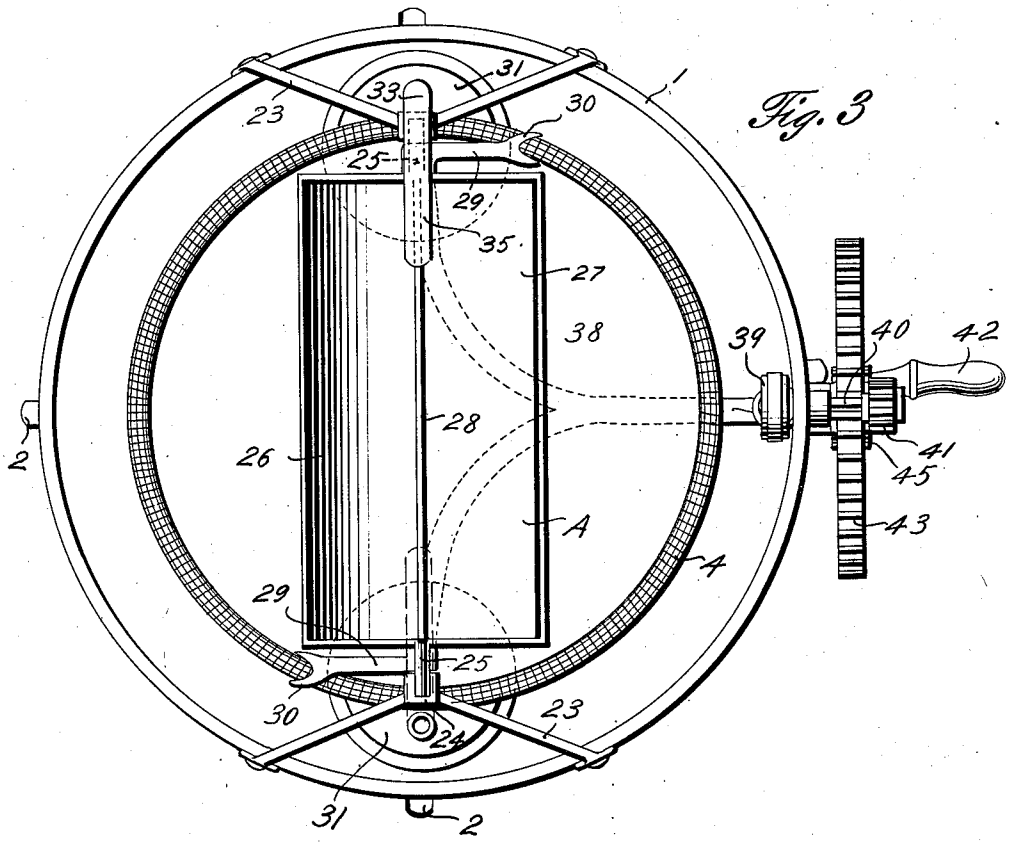
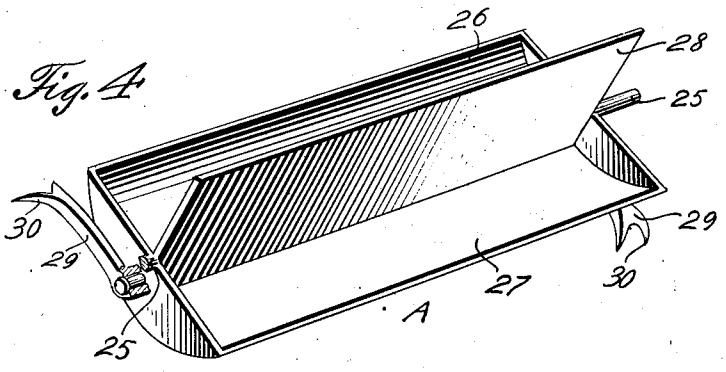


Fig. 4



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UNITED STATES PATENT OFFICE.

JOHN W. WALTER, OF BELLEFONTAINE, OHIO.

WASHING-MACHINE.

956,458. Specification of Letters Patent. Patented Apr. 26, 1910.

Application filed November 3, 1909. Serial No. 526,052.

To all whom it may concern:

Be it known that I, JOHN W. WALTER, a citizen of the United States, residing at Bellefontaine, in the county of Logan and State of Ohio, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification.

This invention relates to washing machines, more particularly, however, to that class of washing machines which operate automatically and perform their functions by the passage of boiling suds through the clothes, at no time allowing the clothes to remain stationary in the water; subsequently preventing the sediment, etc. from being in contact therewith.

This invention further contemplates the construction of a clothes washer which will not only wash the clothes, but will rinse and wring the same.

With the above and further objects in view, this invention consists in the construction, combination, and arrangement of parts, all as hereinafter more fully described, claimed, and illustrated in the accompanying drawings, wherein:—

Figure 1 is a central longitudinal section of a washing machine constructed in accordance with my invention, setting forth the pumping and power transmission gears; Fig. 2 is a similar view taken at right angles to Fig. 1; Fig. 3 is a top plan view; Fig. 4 is a perspective view of the operating oscillator; Fig. 5 is a side elevation of the clutch; Fig. 6 is a bottom plan view of one of the steam generators.

Throughout the following detail description, and on the several figures of the drawings, similar parts are referred to by like reference characters.

In carrying out the present invention an outer tub 1 is supported on the legs 2 in any desired manner, and is provided with a centrally disposed opening 3 in the base thereof, said opening being adapted to act as a bearing for the inner rotatable tub 4. Carried on the under face of the outer tub 1 and secured to the legs thereof is the bracket 5, said bracket being so constructed that at the point of convergence of the arms there is a seat 6 for the reception of the gear casing B. This gear casing B is secured to the bottom of the outer tub 1 by the bolts 7, said bolts passing through the sleeve 8 surrounding said opening on the interior of the tub and the upper side of the casing. The casing is approximately rectangular in formation and has a tapering opening 9 in the base side thereof, said opening registering with the opening 3 in the base of the tub. A journal 10 is formed in one side of the casing adjacent the operating mechanism and forms a bearing for the shaft 11, said shaft carrying a gear 12 at its inner extremity. A shaft 13 having the hollow longitudinal bore 14 at its upper extremity and its lower end 15 tapered, is adapted to rotate within the openings 3 and 9 and has the coinciding recesses 16 at its upper extremity. A post 17 is secured to the bottom of the inner tub 4 and is provided adjacent said tub with a transverse pin 18, said pin being received in the recesses 16 and thus is adapted to rotate and be rotated by the shaft 13. A gear 19 is loosely mounted on the shaft 13 adjacent its lower extremity and meshes with the similarly formed gear 12 carried at the inner extremity of the shaft 11. A clutch 20 is keyed to the shaft 13 above the gear 19 and is adapted to slide vertically having a series of ratchet teeth 21 adapted to engage similar members on the gear wheel, thus when the shaft 11 rotates the teeth come into active engagement, and as a result rotate the shaft 13, while should the inner tub 4 be rotated by the oscillator A no power would be transmitted from the shaft 13 to the shaft 11.

Diametrically disposed on the sides of the outer tub 1 are the converging supporting arms 23 having at their point of convergency the bearing 24 for the reception of the stub shaft 25 centrally disposed on the oscillator A. This oscillator comprises an approximately semi-circular receptacle having two compartments 26 and 27 formed therein, said compartments being separated by the partition 28 which extends vertically some distance above the horizontal plane of the top of the oscillator. Eccentrically disposed on the sides of the oscillator are the feed latches 29 having a bifurcation 30 adapted to engage the upper periphery of the inner tub 4. These latches extend in opposite directions with respect to each one, and are so constructed that when one of the same is rotating the tub 4 the other is recovering to take a stroke.

Oppositely disposed in the bottom of the outer tub 1 and on the same side as the supports 23 are the steam generators 31 com-

prising vessels entirely closed with the exception of the vertical slits 32 having the sides 46 thereof curved inwardly. A partition 47 is interposed between the top and the base of the generator and is adapted to take the configuration of said generator and adapted to extend partially about the sides of the same, having the space 48 formed therebetween. A pair of pipes 33 are secured to the upper side 34 of the steam generators and extend upwardly curving over the oscillator at the upper extremities 35. Thus it will be seen that upon tilting the oscillator in one direction the water flowing through the pipes 33 will fall upon the partition 28 and will pass into one of the chambers, say 27, and as a result tilt the oscillator in the opposite direction, thus permitting the water to flow from the pipes into the opposite chamber 26, and as the oscillator tilts one side will be emptied and the other be filled; consequently causing a continual motion as long as the water flows through the pipes. It will also be seen that as the oscillator rocks eccentrically disposed latches 29 resting upon the upper periphery of the inner tub 4 will engage the same and upon each oscillation of the oscillator will rotate the inner tub 4.

In order to cause the water or suds in the steam generators 31 to pass through the pipes 33, a pair of heaters 36 are secured on the under face of the tub and will retain the same constantly at a boiling temperature. The water will be forced up through the pipes 33 by the expansion of the same in the steam generators inasmuch as it can in no way escape therefrom through the inlet 32 due to the construction of the partition 47 and the pressure of water in the narrow passage 48 between said partition and the side of the generator.

When it is desired to force water through the pipes when the burners 36 are not operated, a force pump 37 is mounted within the outer tub 1 and is connected by the upwardly curved pipe 38 to the delivery pipes 33. The eccentric 39 of this pump is mounted on the stub shaft 40, said shaft having at its outer extremity the gear 41 slidably mounted thereon. A large gear 43 carrying the handle 42 is mounted on the stud 44 below the shaft 40, and is adapted to mesh either with the gear 41 on the said shaft 40 or with the gear 45 slidably mounted on the outer extremity of the shaft 11.

When it is desired to operate the pump 37 the gear 41 is meshed with the gear 43 and the gear 45 is taken out of motion, thus upon rotating the handle 42 the shaft 40 is revolved as a result the pump is operated, forcing water through the pipes 38 and into the delivery pipes 33 from which it passes into the oscillator A. However, should it be desired to rotate the shaft 11 as it is when it is necessary to wring the clothes, the gear 41 is made passive while the gear 45 is made active, and as a result upon the rotation of the handle 42 the shaft 11 is rotated and power transmitted from the gear 12 to the gear 19. Said gear 19 through the instrumentality of the ratchet teeth carried on its inner surface which coact with the similar members on the clutch 20 imparts a rotating motion to the shaft 13 which as a result rotates the drum or inner tub 4. The drum or inner tub 4 being of a mesh construction permits the water to pass through the clothes and due to the rotation thereof continually changes the position of the same and allows the free passage of the water therethrough. When the drum is rotated without the passage of the water therethrough, the centrifugal force will pass all loose water from the clothes, and thereby effectually wring the same. When in operation suds are placed in the outer tub 1 so that the same completely cover the steam generators 31 and the burners 36 being directly under the steam generators 31 cause the suds in said generators to boil, forcing the same up through the pipes 33 into the oscillator A, said oscillator imparting the necessary motion to the inner tub 4. When being rinsed the suds are drawn off through the exhaust and clear water placed within the outer tub 1, said clear water being forced through the pipes 33 by the pump 37 when the same is cold, but can be also forced through said pipes in a manner similar to that in which the suds are when the burners are used.

Having thus described the invention, what is claimed as new is:

1. A washing machine of the class described, comprising an inner and an outer tub, means including an oscillator for rotating said inner tub by the passage of water acting on said oscillator.

2. A washing machine of the class described comprising an outer tub, a perforated inner tub rotatably mounted therein and adapted to contain the clothes, means superposed above said inner tub and mounted on said outer tub adapted to rotate said inner tub, and means for conveying water from the interior of said outer tub to a point over said rotating means, causing the same to operate and deliver water on the clothes.

3. In a washing machine of the class described comprising an outer tub, a perforated inner tub rotatably mounted therein and adapted to contain the clothes, an oscillator mounted on said outer tub and spanning said inner tub, and means for conveying water from said outer tub to a point over said oscillator, causing the same to operate and rotate said inner tub, delivering the water upon the clothes.

4. A washing machine of the class de-

scribed comprising an outer tub, an inner tub mounted in said outer tub, an oscillator arranged on said outer tub and spanning said inner tub, means for conducting water from said outer tub to a point over said oscillator, and means whereby said oscillator will rotate the inner tub constantly in one direction.

5. A washing machine of the class described comprising an outer tub, a perforated inner tub rotatably mounted therein, an oscillator pivotally mounted on said outer tub and spanning said inner tub, means carried by said oscillator for engaging the edge of the inner tub and to rotate the same upon the oscillation thereof, and means whereby water may be conveyed to a point above said oscillator operating the same and causing it to rotate the inner tub and deliver water upon the clothes.

6. A washing machine of the class described comprising an outer tub, a perforated inner tub rotatably mounted therein, an oscillator pivotally mounted on said outer tub and arranged over said inner tub, means eccentrically carried by said oscillator for engaging the upper edge of the inner tub to rotate the same, and means for conveying water from the outer tub to a point over said oscillator causing the same to operate, rotating the inner tub and delivering water upon the clothes.

7. A washing machine of the class described comprising an outer tub, a perforated inner tub rotatably mounted therein, an oscillator pivotally mounted above said outer tub and arranged on said inner tub, eccentrically disposed claws carried by said oscillator and engaging the upper edge of said inner tub adapted to rotate the same constantly in one direction, and means whereby water is conveyed to a point over said oscillator, causing the same to operate, rotating the tub and delivering water upon the clothes contained in said tub.

8. A washing machine of the class described comprising an outer tub, a perforated inner tub rotatably mounted therein, a double compartment oscillator pivotally mounted on said outer tub and centrally spanning said inner tub, claws eccentrically disposed on said oscillator and extending in opposite directions adapted to engage the upper edge of said inner tub and rotate the same upon the movement of said oscillator, means for conducting water from said outer tub to a point above said oscillator causing the same to operate and rotate the inner tub, and means whereby water may be delivered into either compartment of said oscillator insuring the movement of the same.

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

JOHN W. WALTER.

Witnesses:
G. Ed. Knight,
Henry E. Thompson.