P. HANSON.

CLOTHES WASHER.

APPLICATION FILED JAN. 20, 1910.

995,346. Patented June 13, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

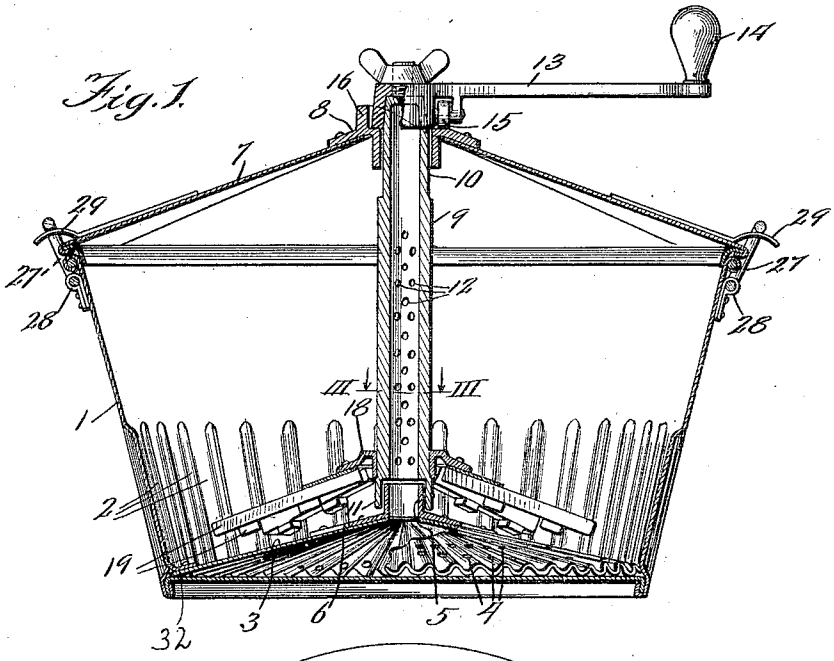
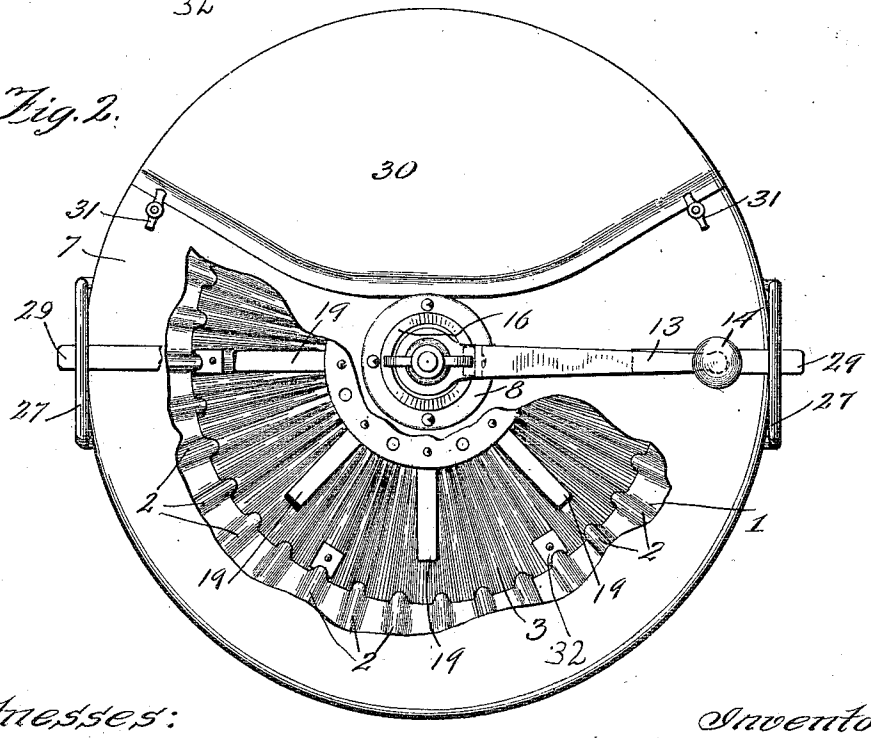


Fig. 2.



Witnesses:

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2 SHEETS—SHEET 2.

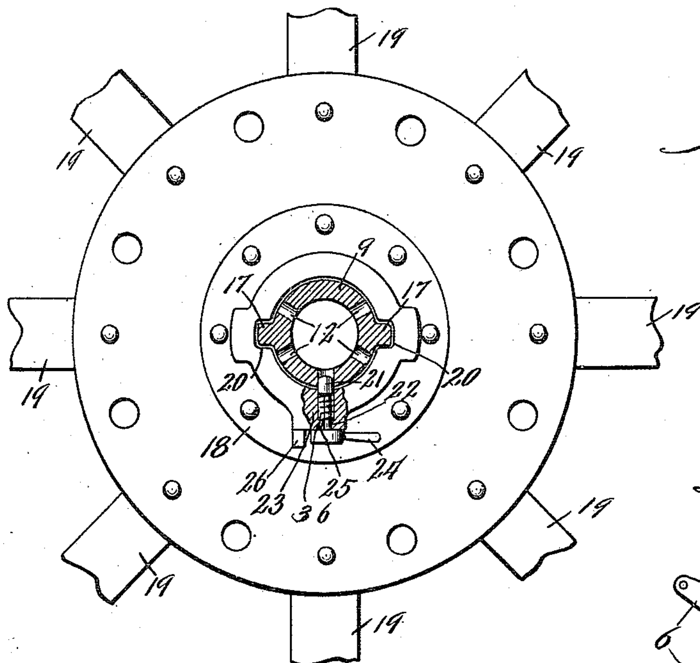
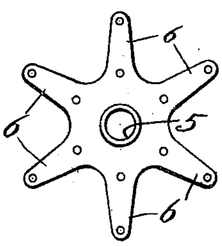


Fig. 3.

Fig. 5.



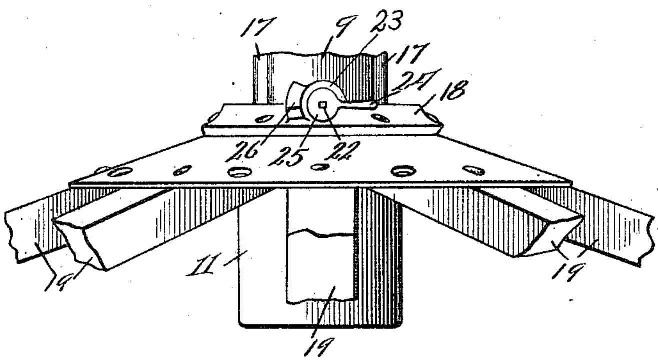


Fig. 4.

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UNITED STATES PATENT OFFICE.

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CLOTHES-WASHER.

995,346. Specification of Letters Patent. Patented June 13, 1911.

Application filed January 20, 1910. Serial No. 539,001.

To all whom it may concern:

Be it known that I, PAUL HANSON, a citizen of the United States, residing at Wild Horse, in the county of Cheyenne and State of Colorado, have invented certain new and useful Improvements in Clothes-Washers, of which the following is a specification.

This invention relates to clothes washers, and has for its main general object to provide an improved construction, combination and arrangement of parts in a clothes washer with a view to obtaining a more efficient circulation of the washing fluid.

One of the objects is to provide an improved device which can be simply and economically constructed, which will be efficient and durable in operation, and the parts of which will be readily accessible for repairs or adjustment.

Another object is to provide an improved construction, combination and arrangement of parts in the scrubbing head of a washing machine.

Another object is to provide improved means for operating the scrubbing head.

Another object is to provide improved means for adjusting the position of the scrubbing head in the receptacle.

More specifically, another object is to provide a receptacle of improved construction.

Other and further objects will appear in the specification and be more specifically pointed out in the claims, reference being had to the accompanying sheets of drawings exemplifying the invention in its application to a hand driven machine.

In the drawings—Figure 1 is a medial vertical section through the washer. Fig. 2 is a top plan view partly broken away of the washer shown in Fig. 1. Fig. 3 is a section on the line III—III of Fig. 1. Fig. 4 is a side elevation of that portion of the machine shown in Fig. 3. Fig. 5 is a plan view of the spider surmounting the false bottom at its apex.

Referring to the drawings in detail, and first to Figs. 1 and 2, the washing machine as exemplified in the present embodiment of my invention comprises a receptacle 1, which may be a tub, or other similar vessel, which receptacle is provided for a portion of its height around the lateral walls thereof with a plurality of scrubbing protuberances 2. Within the receptacle 1 is provided a false bottom 3 preferably conical in form, said bottom, according to the present embodiment, being provided with radiating corrugations, as shown clearly in Figs. 1 and 2. Said bottom is, moreover, provided with peripheral recesses which engage the protuberance 2 to hold it against turning, and with a plurality of perforations 4 through which the washing fluid descending through the clothes, may return to the space therebeneath. Upon the upper surface of the false bottom and preferably on the tops of some of the corrugations therein, are a plurality of clamping brackets or plates 32 which engage under the lower ends of some of the protuberances 2 formed in the inner wall of the receptacle 1. Said false bottom is provided at its center or apex with an opening, said opening being surmounted by an apertured spider 5 provided with arms 6, in connection with which it is secured to the false bottom by means of rivets or other suitable fastenings. At the central opening in said false bottom, said spider is provided with an elongated hollow journal projecting upwardly through which the washing fluid may be ejected when subjected to a boiling temperature during the progress of the washing operation. The receptacle 1 is provided with a cover 7 provided centrally with a bearing cap 8 secured to said cover in any suitable manner. Said bearing cap is provided with a bearing opening therethrough, and coaxially arranged with respect to the journal in said spider 5. In order to provide means for mounting a scrubbing head rotatably and reciprocably within the receptacle 1, a spindle 9 is provided having an elongated journal portion 10 at the top, and with a tubular elongated bearing 11 fitting over the journal carried by spider 5. In order to provide means for conveying the washing fluid from beneath the false bottom, said spindle 9 is made tubular or hollow, as shown in Fig. 1, and is furthermore adapted to distribute the washing fluid radially throughout the washer by means of a plurality of perforations 12 provided in the cylindrical wall thereof. Rigidly secured to the upper end of the tubular spindle 9 is a crank arm 13 provided on its outer end with a handle 14 for turning the spindle, said crank arm being further provided adjacent the spindle with a cam roller 15 rotatably mounted thereon. The cam roller 15 provides a friction-reducing connection between the crank arm 13 and a vertical movement cam 16, which is rigidly mounted on

the cover 7 of the receptacle, and preferably forms an integral portion of the bearing cap 8. It will appear, therefore, that as the crank arm 13 is rotated, the cam roller 15, by reason of its engagement with the cam 16, will reciprocate the spindle 9 longitudinally along its axis.

As shown more clearly in Figs. 3 and 4 of the drawings, the spindle 9 is provided exteriorly with splines or ribs 17, by means of which a scrubbing head 18 may be mounted thereon to be adjustable longitudinally of the spindle while being forced to rotate therewith. Said scrubbing head comprises a plurality of scrubbing arms 19 arranged radially about a perforate cap which forms a part of said scrubbing head, said scrubbing arms being suitably disposed to coöperate with the corrugated false bottom, and with the protuberances 2 in the lateral wall of the receptacle 1. As will be seen by an inspection of Fig. 3, the hub portion of the scrubbing head 18 is provided with grooves 20 slidably engaging the ribs 17. In order to provide means for preventing the scrubbing head from dropping from the lower end of the spindle 9, the lower bearing end of said spindle is enlarged, as shown more clearly in Fig. 1.

Referring now to Figs. 3 and 4, means for releasably securing the scrubbing head 18 at suitable points along the axis of the spindle 9 are provided by a radially mounted bolt 21, which bolt is provided with a stem portion 22 reciprocably mounted in a lug 23 on the hub portion of the scrubbing head 18. On the outer end of the stem 22 is provided a crank arm 24, which is adapted to slidably engage a cam 26 rigid with the said scrubbing head. A spring 36, or other suitable resilient member is interposed between the enlarged portion of the bolt 21 and a shoulder 25 at the outer end of lug 23 to press the bolt 21 resiliently into engagement with the spindle 9, which movement causes said bolt to enter one of the perforations 12 when in register therewith. It will be seen from an inspection of Figs. 3 and 4, that the bolt 21 is permitted to enter one of the perforations 12 when the crank arm 24 is in the position shown in said figures. When the scrubbing head is thus locked in any desired position on the spindle, the machine is adapted to act with a rotary movement of the scrubbing head accompanied by a dashing action of the same. When, however, the crank arm 24 is thrown over into a position diametrically opposed to that shown on the drawings, the scrubbing head is left free to rise and fall on the spindle during the rotary movement. Should it be desired to raise the scrubbing head temporarily out of the way, said scrubbing head is shifted along the spindle 9 until its hub portion reaches the elongated journal 10 at the top thereof. Said journal is of sufficient length to provide a recess or neck between the ribs 17 and the bearing cap 8 to permit the scrubbing head to be rotated a portion of one revolution, so as to lock it against descent temporarily.

As shown in Figs. 1 and 2, the receptacle 1 is provided with links 27 pivotally mounted at 28, said links being adapted to be oscillated into engagement with clips 29 mounted upon the cover 7. A portion 30 of the closure or cover 7 is made removable to permit inspection of the articles, or for their introduction into and removal from the receptacle, said portion 30 being removably secured to the cover 7 by means of suitable fasteners or buttons 31.

The operation of the washing machine is as follows: The receptacle having been placed upon a heater of any suitable kind, the fluid beneath the false bottom is raised to the boiling point. As soon as ebullition takes place, the conformation of the false bottom serves to direct the boiling fluid to the apex opening therein, when the impetus imparted to said fluid causes it to rise in the tubular spindle and to be discharged radially in all directions over the clothes in said receptacle. The machine is thus adapted, when the tubular spindle remains stationary, to cleanse all clothing not requiring a scrubbing operation. When, however, it is desired to wash woolens or other clothing which it is undesirable to subject to a boiling temperature, the hollow spindle may be rotated and the scrubbing head may be used in any other way hereinbefore alluded to.

What I claim is:

1. In a washing machine, the combination of a receptacle, a false bottom therein, a hollow laterally apertured spindle in communication with the space beneath said false bottom, said spindle being journaled and movable axially within said receptacle, and a scrubbing head mounted on said spindle.

2. In a washing machine, the combination of a receptacle, a conical false bottom therein apertured at the center, a hollow laterally apertured spindle open at its lower end and provided with an axially slidable and journaled connection with the aperture in said bottom, and a scrubbing head mounted on said spindle.

3. In a washing machine, the combination of a receptacle, a false bottom apertured at the center, a hollow laterally apertured spindle in communication with the space beneath said false bottom, said spindle being journaled and movable axially within said receptacle, and a scrubbing head slidably mounted on said spindle, said scrubbing head being provided with means for releasably engaging in said apertures.

4. In a washing machine, the combination of a receptacle, a false bottom apertured at the center, a hollow laterally apertured

spindle open at its lower end and provided with an axially slidable and journaled connection with the aperture in said bottom, a scrubbing head movable axially on said spindle, and means for releasably securing said head to the spindle.

5. In a washing machine, the combination of a receptacle having a conical false bottom open at the apex and provided with perforations and corrugations, a perforated tube projecting vertically from the open apex of said false bottom, and a dasher head reciprocably mounted on said tube, said tube being rotatable and reciprocable.

6. In a washing machine, the combination of a receptacle having a corrugated conical false bottom, said bottom being provided with an opening at its apex, a perforated vertical tube in connection with the space below the false bottom, a scrubbing head reciprocably mounted on said tube, and means carried by said scrubbing head for releasably engaging in the perforations in said tube.

7. In a washing machine, the combination of a receptacle and corrugated conical false bottom therein, said bottom being provided with an opening at its apex, a perforated vertical tube reciprocably and rotatably connected at its lower end with the apex of the bottom, said tube being in communication with the space below the false bottom, a scrubbing head reciprocably mounted on said tube, and means carried by said dasher head for releasably engaging the perforations in said tube.

8. In a washing machine, the combination of a receptacle, a corrugated, conical false bottom therein, said bottom being provided with an opening at its apex, means for locking said false bottom against rotation, a perforated tube reciprocably journaled at its lower end around the apex opening of the bottom, a scrubbing head mounted on said tube, said scrubbing head being provided with radial arms coöperatively arranged with respect to the corrugations in the false bottom, and means for rotating said tube.

9. In a washing machine, the combination of a receptacle provided interiorly with scrubbing protuberances, a perforated conical false bottom provided at the apex thereof with an opening, a hollow bearing cap mounted in said opening, a cover for said receptacle provided with a bearing coaxial with said bearing cap, a hollow perforated spindle provided with elongated bearings above and below and adapted to be reciprocably and rotatably journaled in the bearings in said cover and bottom, a scrubbing head mounted on said spindle, and means for reciprocating said spindle while it is rotated.

10. In a washing machine, the combination of a receptacle provided interiorly with scrubbing protuberances and perforated conical false bottom having scrubbing protuberances and provided at the apex thereof with an opening, a hollow bearing cap mounted in said opening, a cover for said receptacle provided with a bearing coaxial with said bearing cap, a hollow perforated spindle provided with elongated bearings above and below to adapt it to be reciprocably and rotatably journaled in the bearings in said cover and bottom, a scrubbing head reciprocable on said spindle and held against rotation relative thereto, a pin carried by said head, said pin being movable into and out of engagement with the perforations in said spindle, a vertical movement cam on said cover, and a crank secured to said spindle, said crank having a cam roller running on said cam.

11. In a washing machine, the combination of a receptacle provided on the inner lateral wall thereof with scrubbing protuberances, a corrugated conical false bottom having the outer ends of its corrugations interlocked with said protuberances, said bottom being provided at its apex with a nipple, a hollow rotatable spindle provided with lateral perforations and journaled at its lower end upon said nipple, said lower end being provided with a tubular flange extending around the nipple to permit a longitudinal movement for said spindle, a cover for said receptacle provided with a bearing for the upper end of the spindle, a vertical movement cam fixed to said cover, a crank rigidly secured to the upper end of said spindle, said crank being provided with a cam roller engaging said cam, a dasher head reciprocably mounted on said spindle, and scrubbing arms carried by said dasher head.

12. In a washing machine, the combination of a receptacle provided on the inner lateral wall thereof with scrubbing protuberances, a corrugated conical false bottom having the outer ends of its corrugations interlocked with said protuberances, said bottom being provided at its apex with a nipple, a hollow rotatable spindle provided with lateral perforations and journaled at its lower end upon said nipple, said lower end being provided with a tubular flange extending around the nipple to permit a longitudinal movement of said spindle, a cover for said receptacle provided with a bearing for the upper end of the spindle, a vertical movement cam fixed to said cover, a crank rigidly secured to the upper end of said spindle, said crank being provided with a cam roller engaging said cam, a dasher head reciprocably mounted on said spindle, scrubbing arms carried by said dasher head, a radial bolt slidably mounted on said dasher head, resilient means for forcing said bolt into locking engagement

with said spindle, and a cam for retracting said bolt and holding it out of engagement with the spindle.

13. In a washing machine, the combination with a receptacle and a cover therefor, of a conical scrubbing bottom apertured at its apex and provided with an elongated journal at said apex, said cover being provided with an elongated bearing coaxial therewith and having an opening therein, a hollow spindle rotatably and reciprocably engaging said journal and bearing, a scrubbing head adjustable on said spindle, and a closure for said opening in the cover.

14. In a clothes washer, the combination of a receptacle, a spindle rotatably and reciprocably journaled therein, said spindle being provided with longitudinal guide-ways and a neck of reduced size at the top, a scrubbing head reciprocably engaging said guide-ways, said neck being adapted to receive said head and to permit said head to be rotated into a position locking it against reciprocable engagement with said guide-ways.

15. In a clothes washer, the combination of a receptacle, a spindle, a scrubbing head reciprocably mounted on said spindle, said spindle and head being provided with inter-engaging guides and said spindle being provided with an elongated journal at the top, a bearing extending only a portion of the length of said journal and permitting a reciprocable movement of the spindle therein, the excess length of said journal over the bearing being sufficient to permit said inter-engaging guide-ways to be disengaged to hold the head at the top of said spindle.

16. In a clothes washer, the combination of a receptacle, a hollow spindle provided with perforations in the cylindrical wall thereof, said spindle being provided with longitudinal guide-ways, a scrubbing head provided with means reciprocably engaging said guide-ways, said spindle being provided with an elongated journal at the top, and a bearing for said journal, said bearing being of less length than that of the journal to permit the scrubbing head to be moved out of engagement with said guide-ways, and to be locked at the top of said spindle.

17. A clothes washing machine comprising a receptacle, a conical false bottom forming an ebullition chamber in said receptacle, said bottom being provided with perforated corrugations, a tube projecting vertically from said false bottom and in open communication with said chamber, said tube being provided with lateral apertures for the discharge of the washing fluid, and a scrubbing head rotatable and reciprocable along the axis of said tube.

18. A clothes washing machine comprising a receptacle for clothes, a conical false bottom provided with corrugations diverging from the apex thereof, said apex being provided with an opening for the discharge of the washing fluid, a tubular spindle disposed vertically above said apex opening, the walls of said spindle being provided with apertures for the radial discharge of the washing fluids, a spider provided with arms whereby it is secured to said false bottom, said spider being provided with a tubular journal for said spindle through which said spindle is placed in communication with the space beneath said false bottom, and a scrubbing head reciprocably mounted on said spindle, said scrubbing head being provided with means for rigidly securing it to said spindle.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 17th day of January A. D. 1910.

PAUL HANSON.

Witnesses:
A. O. KNIGHT,
J. H. JOCHUM, Jr.