

Jan. 15, 1924.

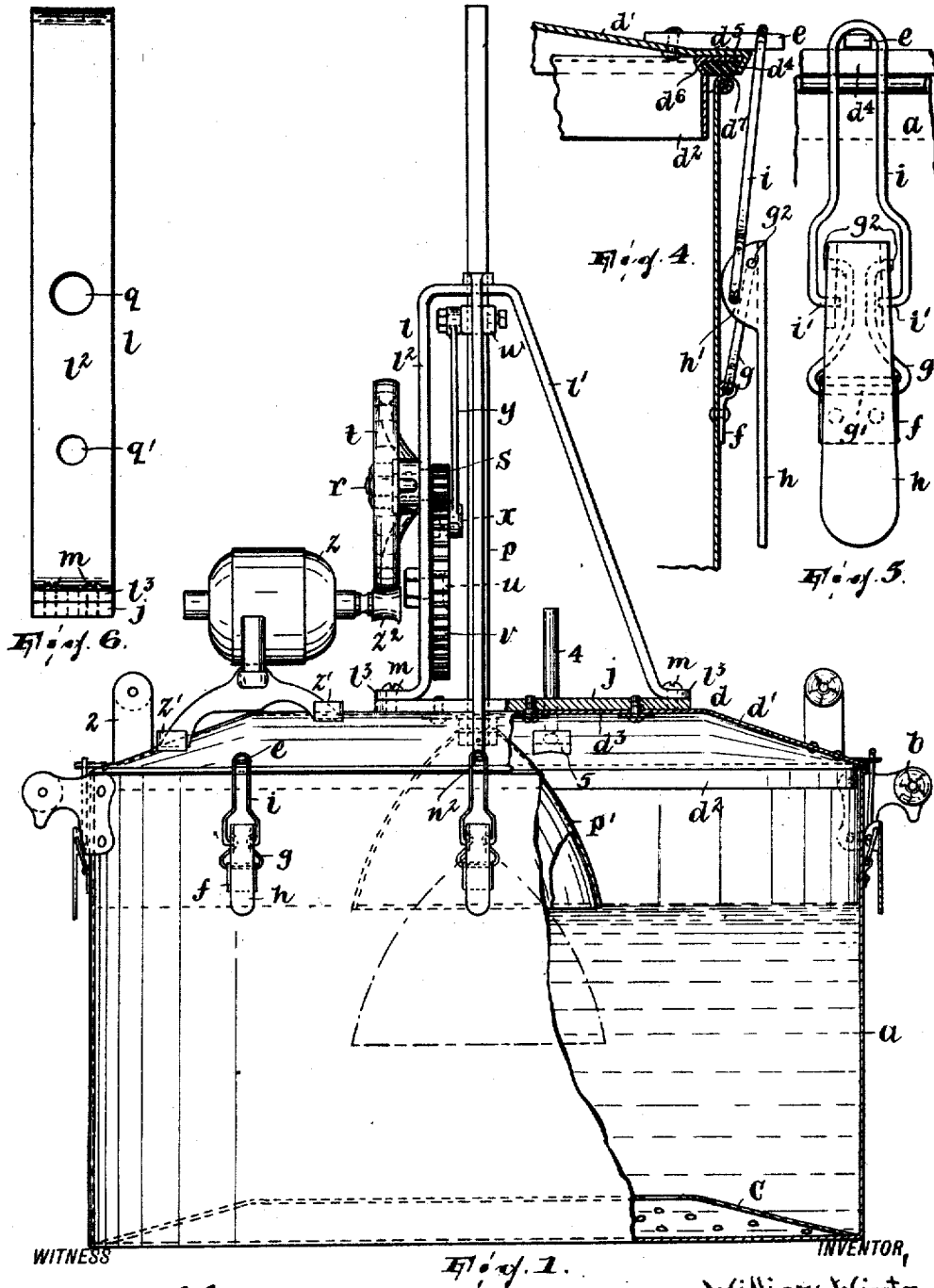
W. WIRTZ

1,480,705

WASHING MACHINE

Filed Nov. 28, 1921

2 Sheets-Sheet 1



WITNESS
Wm. L. Hall.

Fig. 1.

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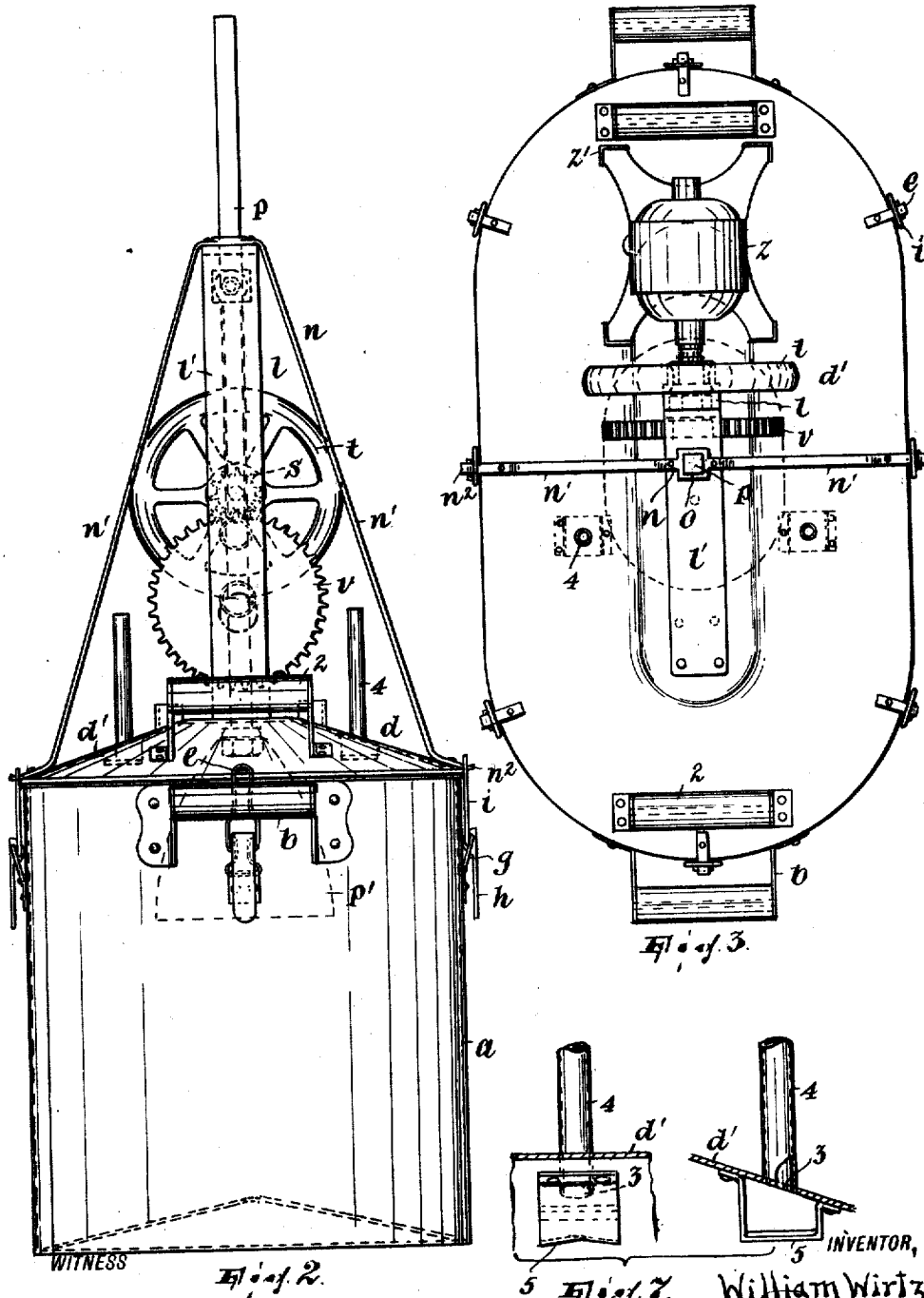
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WITNESS

Fig. 2.

Fig. 4.

Fig. 5.

Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM WIRTZ, OF CRISTOBAL, CANAL ZONE, PANAMA.

WASHING MACHINE.

Application filed November 28, 1921. Serial No. 518,206.

To all whom it may concern:

Be it known that I, WILLIAM WIRTZ, a citizen of the United States, residing at Cristobal, Canal Zone, Panama, have invented certain new and useful Improvements in Washing Machines, of which the following is a specification.

This invention relates to that class of washing machines in which there are a vessel for the clothes or the like to be washed, a cover therefor, and mechanism mounted on the cover for agitating the contents of the receptacle.

My principal object is to utilize an ordinary wash-boiler as the receptacle of such an apparatus, so that the agitating mechanism mounted on the cover thereof can be made to operate while the boiler is on a stove or the like and its contents are being boiled, the simultaneous agitating and boiling of the contents of the receptacle being found to expedite and make more thorough the cleaning process. I have sought to carry out this object in such a manner that the agitating mechanism would not add unduly to the weight of the cover of the receptacle or necessitate too radical changes in its form. Another object is to provide such an agitator proper of the kind which reciprocates vertically and is formed concavo-convex with its open side down that the water will be well lifted thereby on each upstroke, whereby to obtain a violent agitation of the water not possible with other such agitators proper. Another object is to provide for the tight closing of the cover with respect to the receptacle so that the water in the latter on being agitated cannot spill over, and also for the venting of the steam generated without the water escaping at the venting points on account of its being agitated.

In the drawings,

Figure 1 is a side elevation, partly in section, of the improved washing machine;

Figure 2 is an end elevation thereof;

Figure 3 is a plan;

Figure 4 is a sectional detail illustrating how a sealed joint is formed between the boiler and its cover;

Figure 5 is an outside elevation of what is shown in Fig. 4;

Figure 6 is an end elevation of the main upright; and

Figure 7 shows the venting means in two

different elevations at right angles to each other, certain parts appearing in section.

The receptacle *a* is an ordinary wash boiler having handles *b* and containing an inverted dished and perforated and removable false bottom *c* on which the clothes rest while being treated. The cover *d* of the boiler may be of substantially usual form, having a concavo-convex main wall *d'* provided with the usual depending flange *d''*; but it preferably has the center portion *d'''* thereof formed flat or planiform, and also means to form all around a tight joint with the mouth or upper edge of the boiler, said means being as follows: The edge of the wall *d'* is circumferentially bent downwardly and inwardly at a slight angle as at *d''*, and the flange *d''* is formed of a strip of metal whose upper edge *d'''* is bent outward horizontally and is connected with the flange *d''* by a portion *d'''* which is inclined reversely to the edge *d''* of the wall *d'*, so that *d''* and *d'''* form a dove-tailed groove in which is fitted a conforming rubber gasket *d'''* adapted to bear all around against the mouth or upper edge of the boiler *a*. The object is to prevent the agitated water in the boiler from spilling over out of the same, and to hold the cover with its gasket *d'''* bearing tightly against the upper edge of the boiler clamping means are provided at suitably spaced points around the housing formed by the boiler and cover. To this end there are provided on the cover, as by being riveted thereto, projecting lugs *e*. In registry with each of these there is riveted to the boiler a clip *f*. In the clip is pivoted a wire link *g* whose center portion *g'* forms the bearing in the clip and whose extremities extend in the same direction from the bearing portion and then have their free ends *g''* bent outwardly from each other, being both disposed in a line parallel with the portion *g'*; a lever *h* forming a handle and composed of a plate having at one end parallel upstanding ears *h'* has the ends *g''* pivoted in said ears more or less near their outer ends. In the ears, inward of the points where the ends *g''* are pivoted, are pivoted the inturned ends *i'* of the extremities of another link *i* formed of wire bent into a loop at a point midway its length. The loop-end of the link *i* is adapted to be hooked over the lug *e* when the handle *h* is swung outward and upward from the position shown in Fig. 4, where-

upon on forcing the handle downward it will coact with the links g and i in an obvious manner to put the gasket d' under compression and so seal the joint between the boiler and cover. The bearing points for the ends i' for the link i are so arranged as to be somewhat inward of the bearing points g^2 of the link g so that they will automatically retain that position until the free end of the lever h is moved outward again.

Secured upon the flat portion d^3 of the cover, as by screws k , is a substantial base-plate j . This plate forms the base for an upright supporting structure constructed as follows: l is an upright which stands in a vertical plane coincident with the longitudinal axis of the boiler. It is formed by a strip of metal bent transversely at about its mid-length so that the leg or portion l' at one side of the bend when the upright is arranged inverted on the base-plate stands inclined and the portion l^2 at the other side of the bend stands vertically, said portions having their ends l^3 bent off to form feet and secured by screws m to the plate j .

n is another upright formed of a strip of metal bent also at its mid-portion into substantially inverted V-shaped form, the same straddling and bearing down on the upright l , its portions n' being riveted to the wall d' of the cover and projecting therefrom at n^2 . Two of the aforesaid clamping means are arranged on the boiler a so that the links i thereof are adapted to be operatively engaged with the ends n^2 the same as the links i of the other clamps are engaged with the lugs e . Where the uprights l and n intersect they are formed with a bearing o (Fig. 3).

A pounder or agitator is adapted to be reciprocated vertically, the same including a stem p arranged to slide in the bearing o and penetrating the cover and the plate j and a pounder proper p' which is concavo-convex in form, simulating the shape of the pointed end portion of an egg, and is secured at its apex to the lower end of the stem p so that its open-side is downward. My object is to agitate the water as much as possible, and to this end I provide a pounder proper whose suction on the up stroke will lift the water to the maximum extent; I have found that if the device is formed substantially as I have specified it will accomplish this object.

The vertical portion l^2 of the upright l is formed with holes q and q' , one above the other. The hole q forms a bearing for a short shaft r on the inner end of which is fixed a pinion s and on the other end a friction-wheel t . The other hole q' has fixed therein a stud u on which is journaled a gear v in mesh with the pinion s . On the stem p is adjustably secured a collar w which is pivotally connected with an eccentric pivot

z on the gear wheel by a pitman y . This means for reciprocating vertically the pounder or agitator may be driven by a motor z which may be removably mounted in rests z' on the cover and the shaft of which carries a grooved friction wheel z^2 which is below the wheel t and is held in frictional contact therewith by the weight of the motor.

The cover is equipped with substantial handles 2.

In order to allow the steam to escape from the housing formed by the boiler and cover when the latter is clamped down in sealing relation to the former at the time the apparatus is in use I provide in the cover vents 3 preferably having upstanding vent-tubes 4, and in order to keep the water from spilling out of these vents, as an incident of the agitating thereof caused by the pounder and the boiling process, I provide a U-shaped baffle plate 5 which is arranged opposite and under each vent 3 and secured to the cover.

So far as I am aware it is new in washing machines to provide as a supporting structure for means for actuating the agitator inverted bifurcated uprights arranged in planes crossing each other and one bearing down on the other and means to connect the lower ends of said uprights to the housing of the machine. In the construction herein actually set forth one of the uprights is mounted on the cover and the other (the one which straddles the first) is adapted to be directly connected at its said ends to the receptacle, the supporting structure being thus substantially braced by being anchored to the then-weighted boiler itself. Moreover, at this time the gasket plays a part both in forming a seal and as a yielding medium to assume the compressing force exerted by the receptacle and supporting structure. By forming the upright l with a substantially vertical portion l^2 it is well adapted for the mounting of the gearing, while its portion l' serves as a brace for the portion l^2 , the upright as a whole, when formed as described, being a simple, inexpensive and durable means in which to guide the agitator and mount the gearing.

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

1. A washing machine including, in combination, with a housing comprising a receptacle and a cover therefor, inverted bent uprights forming a supporting structure and arranged in planes crossing each other and one straddling and bearing down on the other, the latter upright being mounted on the cover, means to detachably clamp the first-named upright to said receptacle, an agitator projecting into the housing, and means on said structure to actuate the agitator.

2. A washing machine including, in combination with a housing comprising a receptacle and a cover therefor, an upright upon the housing above the cover and consisting of a strip of metal bent transversely of its length and having the portions on opposite sides of its bend extending downwardly from the bend one substantially vertically and the other at an incline, means to connect the lower ends of said portions to the housing, agitating means extending through the cover and having a bearing in the upright at the bend therein, and means arranged on the vertical portion of the strip for actuating the agitator.

3. A washing machine including, in combination with a housing comprising a receptacle and a cover therefor, inverted bent

uprights forming a supporting structure and arranged in planes crossing each other and one straddling and bearing down on the other, the latter upright being mounted on the cover and consisting of a metal strip bent transversely of its length and having the portions on opposite sides of its bend extending downwardly from the bend one substantially vertically and the other at an incline, means to detachably clamp the first-named upright to the receptacle, agitating means extending through the cover and having a bearing in said structure, and means arranged in the vertical portion of said strip for actuating the agitator.

In testimony whereof I affix my signature.

WILLIAM WIRTZ.