R. L. WEARNE.

WASHING MACHINE.

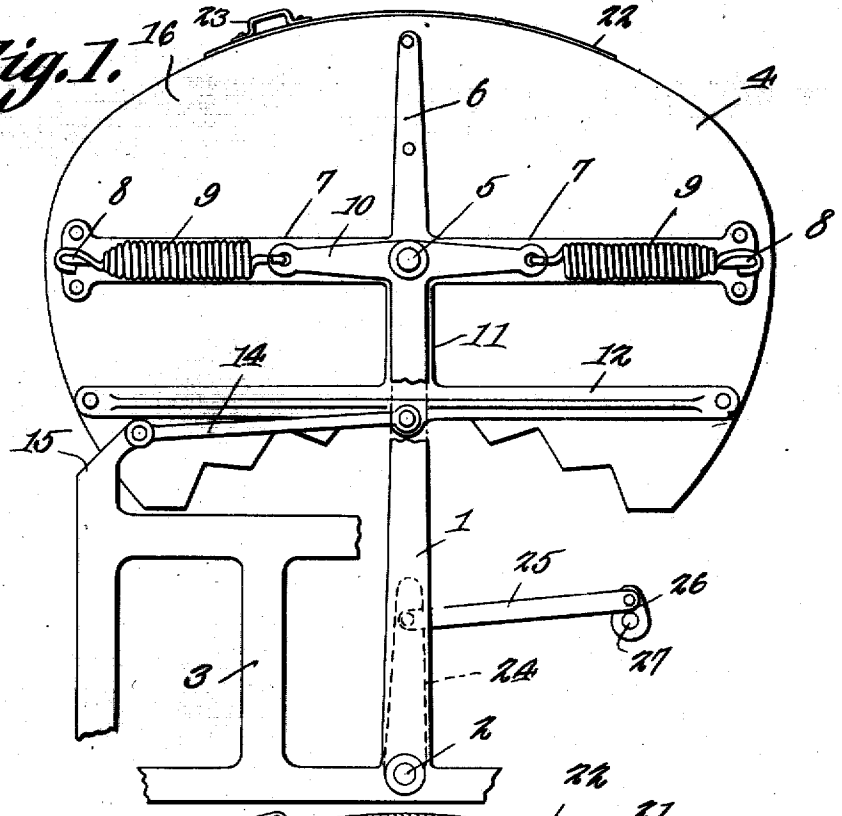
APPLICATION FILED DEC. 8, 1917.

1,319,314.

Patented Oct. 21, 1919.

2 SHEETS—SHEET 1.

Fig. 1.



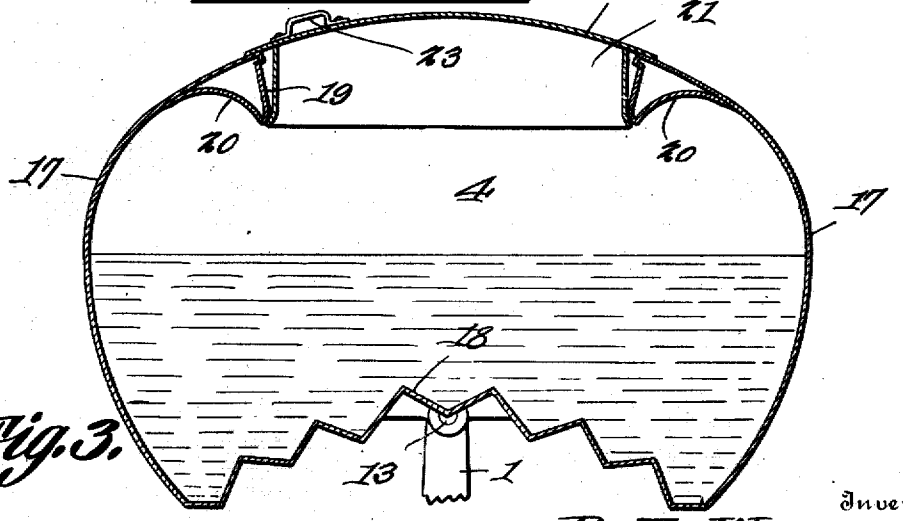


Fig. 3.

Inventor,

R. L. Wearne

Witness

J. R. Towers

By C. A. Snow & Co.

Attorneys.

R. L. WEARNE.

WASHING MACHINE.

APPLICATION FILED DEC. 8, 1917.

1,319,314.

Patented Oct. 21, 1919.

2 SHEETS—SHEET 2.

Fig. 2.

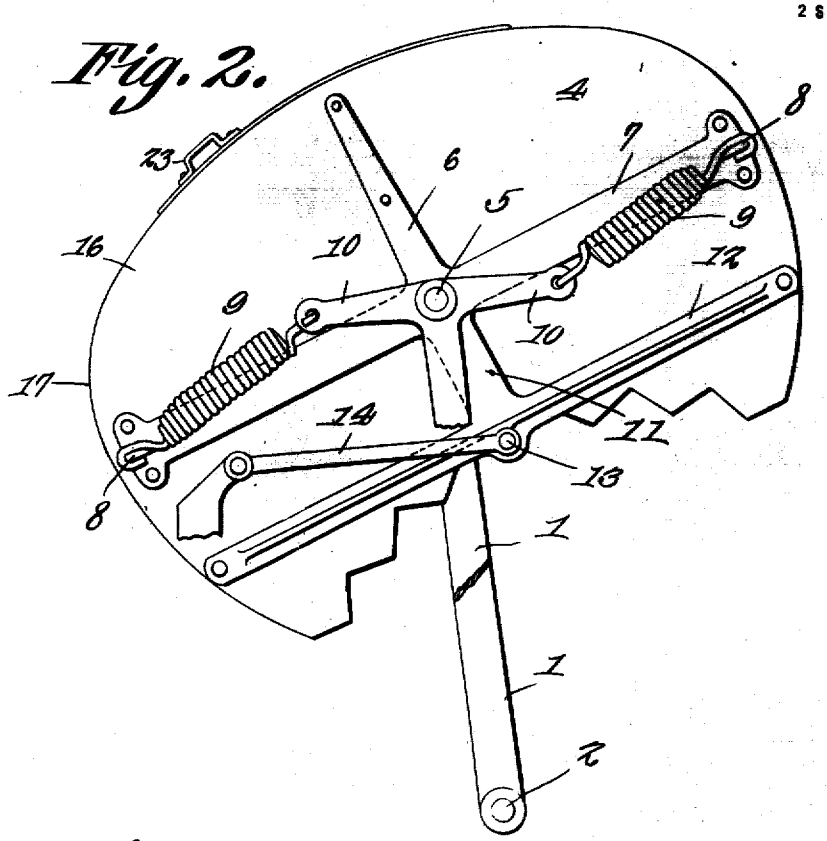
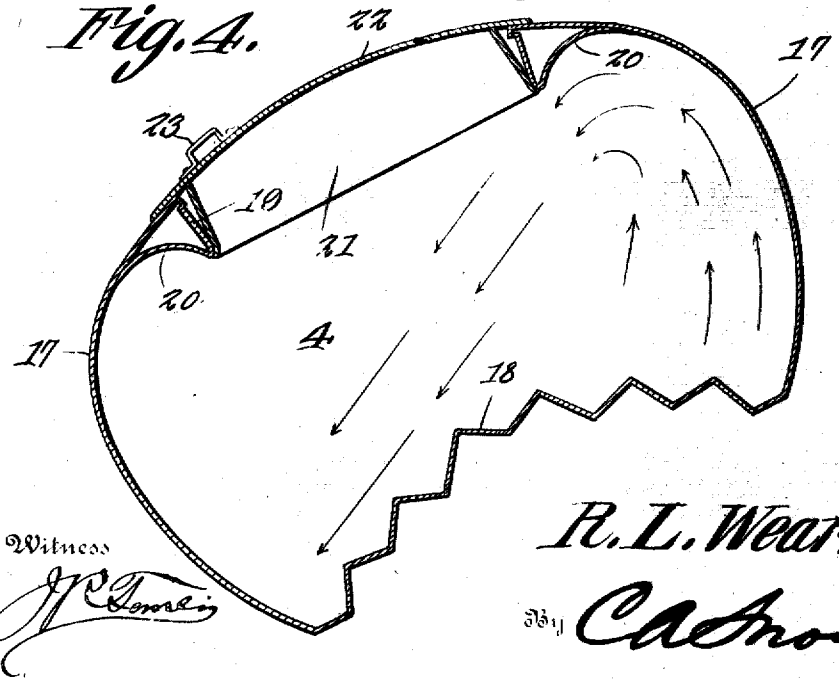


Fig. 4.



Witness

J. P. Lorsch

Inventor

R. L. Wearne

By C. A. Snow & Co

Attorneys

UNITED STATES PATENT OFFICE.

RICHARD LEDDICOAT WEARNE, OF BINGHAMTON, NEW YORK, ASSIGNOR TO THE BINGHAMTON WASHING MACHINE CO., INCORPORATED, OF BINGHAMTON, NEW YORK, A CORPORATION OF NEW YORK.

WASHING-MACHINE.

1,319,314. Specification of Letters Patent. Patented Oct. 21, 1919.

Original application filed March 18, 1915, Serial No. 15,222, (now Patent No. 1,147,285, dated July 20, 1915.) Divided and application filed May 13, 1915, Serial No. 27,897. This application filed December 8, 1917, Serial No. 206,228, which is a continuation of application Serial No. 27,897, filed May 13, 1915.

To all whom it may concern:

Be it known that I, RICHARD LEDDICOAT WEARNE, a citizen of the United States, residing at Binghamton, in the county of Broome and State of New York, have invented a new and useful Washing-Machine, of which the following is a specification.

This invention relates to washing machines.

One of the objects of the invention is to provide a novel form of tub or container coöperating with a support of peculiar construction whereby a compound movement is imparted to the tub while being swung back and forth, this compound movement producing a novel action of the water upon the fabric, due to the peculiar configuration of the tub or container.

A further object is to provide a mechanism of this character which will operate, during each movement of the tub, to toss a large proportion of the contents of the tub upwardly so that it will be deflected backwardly and dashed through the fabrics and along a portion of the bottom of the tub or container carrying portions of the fabric therewith so that said fabric will be thoroughly rubbed and cleansed, the water, in its circulation, describing a figure 8.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—

Figure 1 is a side elevation of that portion of a washing machine constituting the present invention, the tub or container being shown in its normal or intermediate position.

Fig. 2 is a side elevation of a portion of the structure shown in Fig. 1 and showing the tub at one limit of its movement.

Fig. 3 is a central longitudinal section through the tub when in its normal position.

Fig. 4 is a similar view showing the tub at one extreme position and indicating by dotted lines the direction of the current of water while being dashed against and through the fabrics to cleanse the fabrics and to drag them over a portion of the bottom of the tub or container.

Referring to the figures by characters of reference 1 designates the supporting arms mounted to swing about the pivot shaft 2, these arms being arranged within a frame 3 which carries the shaft 2. Said arms extend to opposite sides of a tub or container 4 and journaled within the upper ends of the arms are trunnions 5 extending from spiders 6 which are fixedly secured to the sides of the tub. Each of these spiders preferably consists of an upwardly and downwardly extending arm and of additional arms extending longitudinally of the tub. These last named arms, which have been indicated at 7, are provided, close to the ends of the tub, with outstanding ears 8 to which are secured the outer ends of the springs 9. The inner ends of these springs are attached to the free ends of fingers 10 extending in opposite directions from the upper ends of the members 1.

The downwardly extending arms 11 of the spiders 6 are formed integral with reinforcing strips 12 which are secured to the sides of the tub or container 4 adjacent to the bottom thereof and are provided, at their centers, with pivot studs 13 engaged by links 14 which, in turn, are pivotally attached to arms 15 forming a part of the frame 3.

The tub 4 is preferably made of sheet metal and includes the flat side walls 16 to which the spiders 6 are attached, and a continuous strip of sheet metal constituting the end walls 17 and the bottom 18 of the tub. The intermediate portion of this strip of metal forming the bottom 18 of the tub is bent to form angular transverse corrugations which are disposed in stepped relation from a point in line with the trunnions 13 and downwardly in opposite directions, the lowermost corrugations merging into the curved walls 17. Each terminal portion of the strip forming the bottom and end walls is bent downwardly from the upper end of the adjacent side wall, as shown at 19 and is then curved upwardly and outwardly as at 20 and soldered or otherwise secured to the end walls 17 so

that it will constitute a continuation of the inner surface of the end wall and form an involute curve. The space between the downwardly extending portions 19 is adapted to receive the flanges 21 extending from a closure 22 designed to rest at its edges upon the top portions of the walls of the container and which closure may be provided with a handle 23.

Importance is attached to the particular construction and arrangement of the bottom of the tub. It will be noted that the central depression of the corrguated bottom has its lowermost portion in line with the trunnions 13, the walls of this depression diverging upwardly and terminating in the parallel ridges of the adjacent corrugations. The angles of all of the corrugations are intersected or bisected by planes diverging from the center of the shaft 2 as will be apparent by referring particularly to Fig. 1. The foregoing applies of course to the structure when the parts are in their normal positions. This arrangement results in the different corrugation being successively brought to position to throw water outwardly and upwardly against the adjacent end walls 17 and the inwardly curved portions 20. This will result in the upwardly tossed water being deflected inwardly and downwardly onto the fabrics in the container or tub so as to be driven through the fabrics and at the same time drive the fabrics along the opposed corrugated portions of the bottom 18. The fabrics will thus be rubbed and at the same time the loosened dirt will be separated therefrom by the water circulating through them. On the completion of the tilting motion of the tub in one direction it will be abruptly tilted in the opposite direction, thus to reverse the motion of the water so that the currents set up will be substantially shaped like the figure 8. Obviously the pivotal center 13 of the tub will swing about the axis 2 during the actuation of said tub, but, as the center of the bottom of the tub is anchored to an extent by the links 14, this swinging action of the pivots or trunnions 13 will at the same time result in the rotation of the tub about the pivots 13. In other words when the supporting members 1 are swung to the left as in Fig. 1 the trunnions 5 will move therewith but the trunnions or pivot studs 13 will remain practically stationary. This will result in a quick upward swinging of the right-hand portion of the bottom of the tub with the result that the water will be thrown upwardly and outwardly in the manner hereinbefore stated and then dashed inwardly.

The tub can be actuated by any suitable mechanism. For example an arm 24 can be extended from the shaft 2 and connected by a pitman 25 to a crank arm 26 secured to a drive shaft 27.

This application is a continuation of my prior application filed on May 13th, 1915, Serial No. 27,897, said latter application and consequently this present application, being a division of my prior application Serial No. 15,222, filed on March 18th, 1915, now Patent No. 1,147,285, dated July 20th, 1915.

What is claimed is:—

1. An oscillatory tub for washing machines having side walls, a bottom having transverse angular corrugations arranged in stepped relation downwardly from the center thereof and end walls curved upwardly from the ends of the stepped bottom and having their upper portions curved inwardly and downwardly and overhanging the ends of the stepped portion of the bottom, the inner surfaces of said end walls being free from transverse corrugations or obstructions throughout.

2. The combination with opposed members mounted for swinging and abrupt tilting movement, of a tub interposed between and movable with said members and including side walls, a bottom having transverse corrugations angular in cross section and disposed in stepped relation downwardly from the center of the bottom, end walls curved upwardly and inwardly from and integral with the end portions of the stepped bottom and having their upper portions curved inwardly and downwardly and overhanging the end steps of the bottom, the inner surfaces of said end walls being free from transverse corrugations or obstructions throughout.

3. An oscillatory tub for washing machines having side walls, a bottom having transverse angular corrugations arranged in stepped relation downwardly from the center thereof, and end walls the inner surfaces of which are free from transverse corrugations or obstructions throughout and curved upwardly from the ends of the stepped bottom and having their upper portions curved inwardly and downwardly toward the stepped bottom, whereby substantially a figure 8 motion is imparted to the contents of said tub when it is oscillated.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

RICHARD LEDDICOAT WEARNE.

Witnesses:
GEORGE L. DAVIS,
O. A. BRAZIE.