W. E. SINGER.

CLOTHES WASHING DEVICE.

APPLICATION FILED FEB. 10, 1910. RENEWED MAY 1, 1912.

1,048,363. Patented Dec. 24, 1912.

Fig. 2.

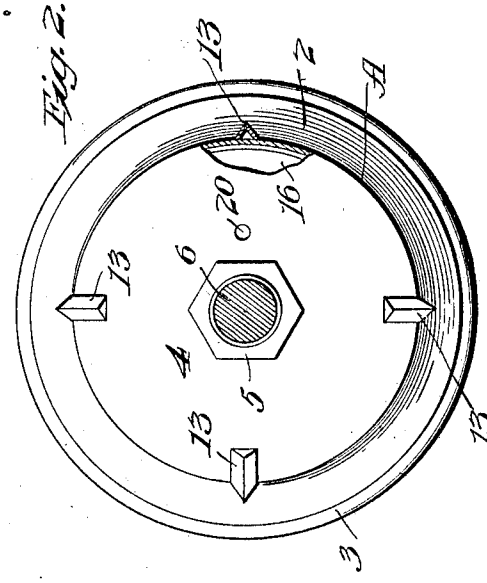


Fig. 3.

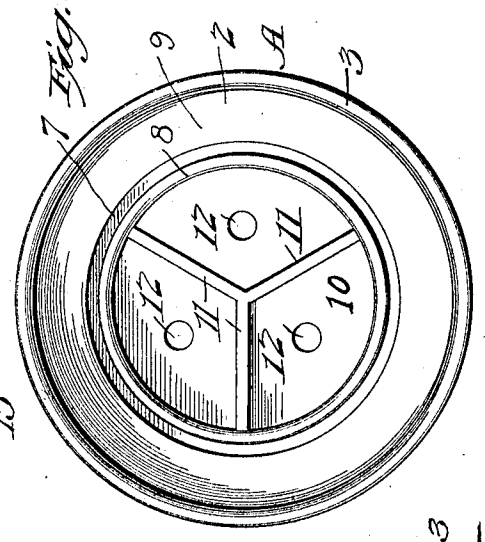
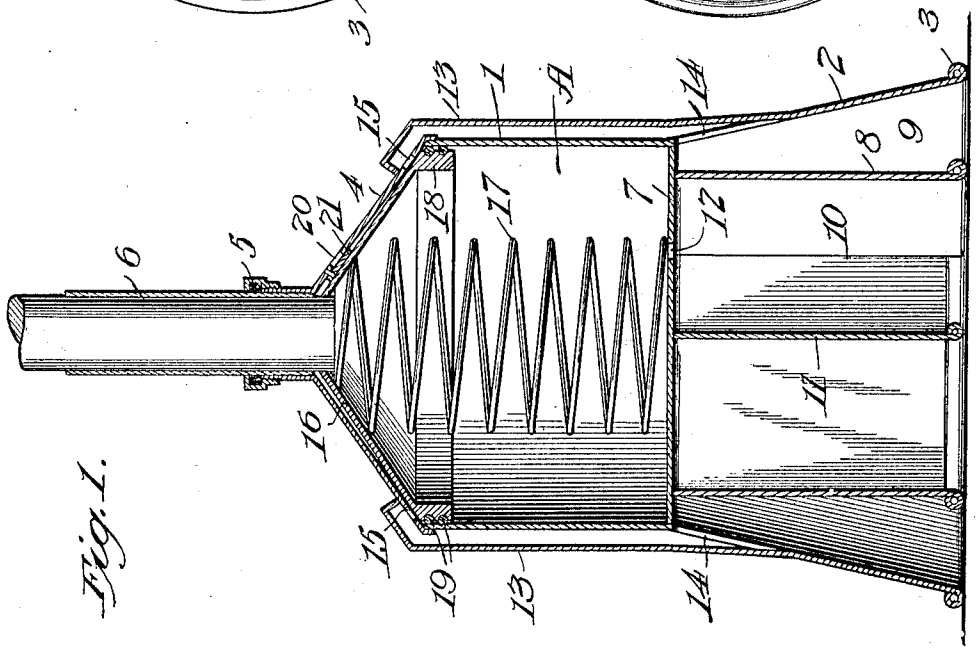


Fig. 1.



Inventor

William E. Singer,

By Victor J. Evans

Attorney

Witnesses

T. L. Mockabee

C. Bradway.

UNITED STATES PATENT OFFICE.

WILLIAM E. SINGER, OF COLUMBUS, OHIO.

CLOTHES-WASHING DEVICE.

1,048,363. Specification of Letters Patent. Patented Dec. 24, 1912.

Application filed February 10, 1910, Serial No. 543,048. Renewed May 1, 1912. Serial No. 694,526.

To all whom it may concern:

Be it known that I, WILLIAM E. SINGER, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented new and useful Improvements in Clothes-Washing Devices, of which the following is a specification.

This invention relates to a clothes washing device of the pounder type, the object of the invention being to provide an extremely simple, durable, and substantial washing machine which is highly efficient in operation and readily manipulated.

Another object of the invention is the provision of a novel arrangement of agitating or washing chambers in communication with the piston cylinder, whereby the alternate reciprocations of the piston in the latter will cause a washing action by the air and water forced through the clothes by the air under compression in the chambers.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one embodiment of the invention: Figure 1 is a central vertical section of the device. Fig. 2 is a top plan view thereof with a portion broken away. Fig. 3 is a bottom plan view.

Similar reference characters are employed to designate corresponding parts throughout the several views.

Referring to the drawing, A designates the body or shell of the device, which body is constructed with an upper cylindrical section 1 and a lower frusto-conical section 2, which has its lower edge formed into a reinforcing bead 3, the top of the body being closed by a shallow frusto-conical cover section 4, while the bottom of the body is open. At the apex of the cover 4 is a stuffing box 5, through which the operating rod or handle 6 reciprocates, and by this means, an air-tight joint is formed between the body of the pounder and the handle. Within the body is a horizontal partition 7 located at the lower end of the cylinder section and attached to the under side of this partition is a vertically disposed cylinder or annular partition 8, which divides the bottom or frusto-conical portion of the body into separate concentric chambers 9 and 10, the former of which is annular and surrounds the latter chamber. The partition 8 has its lower edge approximately in the same plane as the lower edge of the frusto-conical section 2, and the cylinder 8 is divided by radial partitions or walls 11 into sector-shaped compartments which are open at the bottom of the device as is also the chamber 9. The compartments are in communication with the bottom of the piston cylinder or section 1 of the body by means of apertures 12 in the partition 7, which forms the top wall of the compartments. The annular chamber 9 communicates with the top of the cylinder 1 by external conduits 13 formed by V-shaped members soldered to or otherwise secured to the outer surface of the cylinder 1. These conduits extend the full length of the cylinder and they communicate with the annular chamber 9 through openings 14 in the bottom section 2 of the device. The upper ends of the conduits extend a short distance inwardly on the top 4 of the pounder body and communicate with the cylinder through openings 15 in the top or cover 4. On the inner end of the piston rod or handle 6 is a frusto-conical piston 16, which is more shallow than the cover 4 so that it will not contact with the latter throughout its area and interposed between the bottom of the piston and the horizontal partition 7 is a helical compressed spring 17 that assists in the return or up-stroke of the piston. The piston has an annular flange or ring 18 that is circumferentially grooved to receive packings 19 that snugly fit the inner surface of the cylinder 1. The upper ends of the conduits 13 communicate with a space above the piston and the air is forced out of this space on the upstroke of the piston. On the downstroke of the piston air enters the space above the piston through an inlet 20 that has a flap or other valve 21, which closes outwardly and opens inwardly.

In practice, the pounder is placed in the

tub or receptacle containing the washing fluid and the cloth or fabric to be washed and by reciprocating the handle, the washing action is produced. During the downstroke, the air in the cylinder 1 below the piston is forced outwardly into the sector compartments through the ports 12 and the air being under compression in these compartments will act to force the watering fluid through the clothes. On the upstroke, the air which has entered the cylinder above the piston through the inlet valve 20, will be forced outwardly through all the conduits 13 to the annular chamber 9, and since the air is under compression, it will force the washing fluid through the clothes. It will thus be seen by the alternating reciprocation of the piston an effective agitating action is produced on the articles being washed. At the end of each upstroke, the pounder is bodily lifted so as to permit air to enter the piston cylinder through the ports 12.

From the foregoing description taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention relates and while I have described the principle of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative and that such changes may be made when desired as are within the scope of the invention.

What I claim as new and desire to secure by Letters Patent is:

1. A washing device comprising a cylinder section, a bottom section divided into separate chambers, there being ports in the bottom of the cylinder section communicating with one of the chambers, conduits located exteriorly to the cylinder and having the lower ends communicating with the outer lower chamber and the upper ends communicating with the top portion of the cylinder, a piston reciprocating in the cylinder to alternately discharge air into the said chambers through the ports and conduits, respectively, and means for admitting air to the cylinder space above the piston.

2. A washing device comprising a cylinder, a hollow frusto-conical section secured to the lower end of the cylinder, a cylindrical partition arranged within the said bottom section to form a surrounding annular chamber, partitions arranged within the first mentioned partition for providing separate compartments with the lower ends of the cylinder, there being ports between the said compartments and cylinder, a conduit connecting the said surrounding chamber with the upper end of the cylinder, a piston reciprocating in the cylinder for forcing air outwardly into the compartments through the said ports from the down stroke, and outwardly into the said surrounding chamber through the conduits on the upper stroke, means for reciprocating the piston, and means for admitting air to the cylinder space above the piston.

3. A washing device comprising a cylinder, a base section under the cylinder divided into separate chambers, separate means for connecting one of the chambers with the upper end of the cylinder the other chamber being connected with the lower end of the cylinder and a piston reciprocating in the cylinder for forcing air alternately from the cylinder to the said chambers.

4. A washing device comprising an upper cylinder section, a lower frusto-conical section connected with the lower end of the cylinder section, a horizontal partition secured between the sections, a cylindrical wall of less diameter than the cylinder section and wholly supported by the horizontal partition in concentric relation to the frusto-conical section to form an annular chamber, a plurality of upwardly extending conduits secured to the outside of the cylinder section and having their lower ends communicating with the said annular chamber and their upper ends communicating with the cylinder section, radial partitions arranged within the cylindrical wall and secured thereto and to the said horizontal partition for providing separate compartments, there being openings in the horizontal partition to form ports between the said compartments and cylinder section, a piston reciprocating in the cylinder section, and an operating handle extending into the cylinder section and connected with the piston for reciprocating the same.

5. A washing device comprising a unitary structure, composed of the cylinder section having a shallow frusto-conical top, a frusto-conical bottom section, secured to the cylinder section, a fixed horizontal partition secured between the sections, a cylindrical wall disposed under and secured to the horizontal partition and of less diameter than the frusto-conical section to provide an annular chamber open at its bottom, a plurality of partitions arranged within the said wall and secured thereto and to the horizontal partition to form separate compartments, there being openings in the top of each compartment to communicate with the cylinder section, and a plurality of conduits extending vertically along the outside and secured to the cylinder section to communicate with the upper end of the latter and with the said annular chamber in combination with a piston mounted to reciprocate in the cylinder section, a rod extending into the cylinder section through the top thereof and connected with the piston for reciprocating the same, and means for admitting air to the cylinder section above the piston therein.

6. A washing device comprising a cylinder having a frusto-conical top, a bottom section divided into separate chambers, one chamber communicating with the top and the other with the bottom of the cylinder, a frusto-conical piston mounted for reciprocation in the cylinder, said piston being more shallow than the top of the cylinder, and means for admitting air to the cylinder space above the piston.

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

WILLIAM E. SINGER.

Witnesses:
EUGENE LANE,
W. W. SIMMONS.