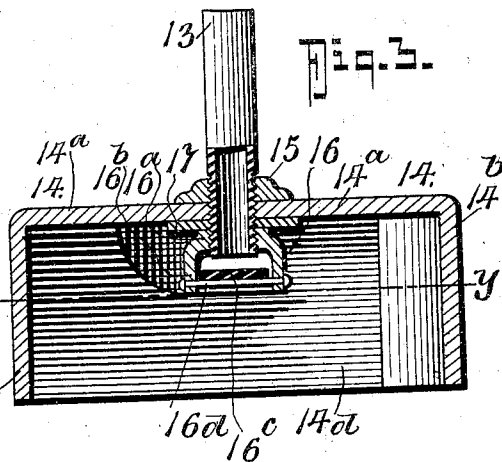
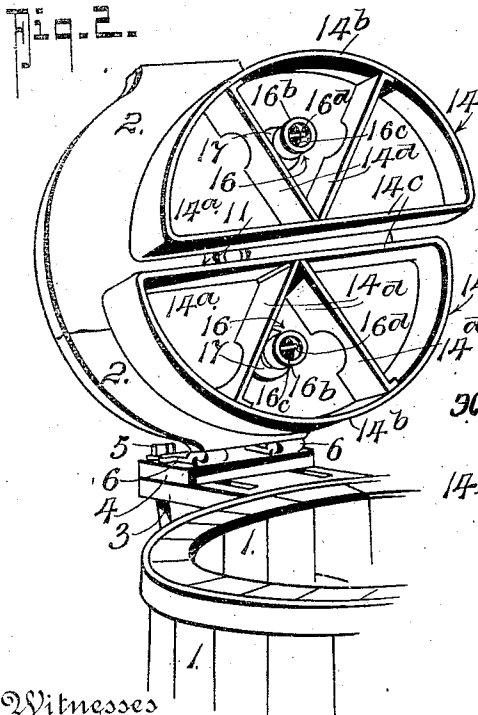
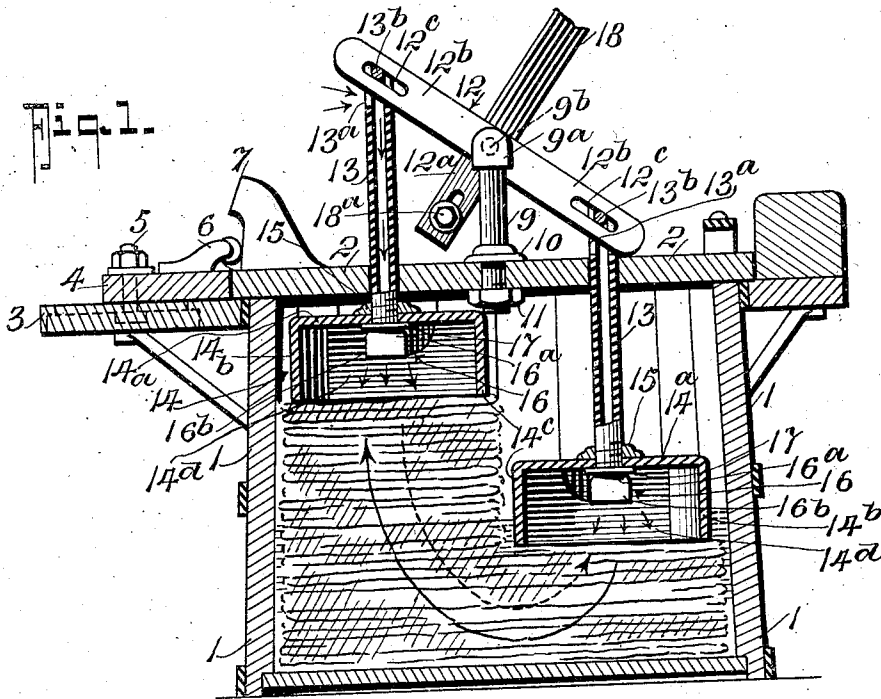


G. C. DUNHAM.
 WASHING MACHINE POUNDER.
 APPLICATION FILED DEC. 1, 1910.

Patented Jan. 9, 1912.

1,014,578.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE C. DUNHAM, OF CINCINNATI, OHIO.

WASHING-MACHINE POUNDER.

1,014,578.

Specification of Letters Patent.

Patented Jan. 9, 1912.

Original application filed January 14, 1910, Serial No. 538,079. Divided and this application filed December 1, 1910. Serial No. 595,066.

To all whom it may concern:

Be it known that I, GEORGE C. DUNHAM, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Washing-Machine Pounders, of which the following is a specification.

My invention is an improved washing machine pounder particularly designed for use in the machine which forms the subject-matter of my original application filed January 14, 1910, Serial No. 538,079, patented February 7, 1911, #983,611, and of which this application is a divisional part.

The invention included in this application comprises a pair of reciprocating pounder air compressor sections operating in a tub to impart an undulating motion to the clothes and washing fluid in the tub and to force compressed air and washing fluid to flow through the clothes, the compressor-pounder having provisions for obtaining a constant supply of air from the outside of the tub and the compressor-pounder sections also conforming in their outline or shape, each to substantially one-half the cross sectional outline of the tub in which they are used, thus insuring the greatest possible capacity to the compressor-pounder.

In its more subordinate nature, the invention also resides in those novel details of construction, combination and arrangement of parts, all of which will be first fully described, specifically pointed out in the appended claims, and illustrated in the accompanying drawings, in which:

Figure 1, is a central vertical longitudinal section of the invention in use, the compressor-pounder sections being at the limit of their stroke in one direction. Fig. 2, is a perspective view of the invention. Fig. 3, is an enlarged detail vertical section of one of the compressor-pounder head members.

Referring now to the accompanying drawings in which like letters and numerals of reference indicate like parts in all of the figures, 1 represents the tub or barrel which has its inner wall surface smooth, and is closed by a lid 2. The tub 1 is provided with a bracket 3 to which a block or plate 4 is bolted at 5, the bolts 5 passing the plate 4. The lid 2 is hinged at 6 to the plate 4 and has a stop 7 to engage the plate 4 and sup-

port the lid and its carried parts when the lid is open. The lid is securely held down to effect a tight closure of the tub by any suitable means.

9 is a post formed of a rod or pipe that is passed through a central hole in the lid 2 and secured rigidly in place by a collar 10 and nut 11, the post having an elbow 9^a terminating in a pivot bolt or pin 9^b to receive a walking beam 12. The walking beam 12 is secured to the pin to have pivotal movement thereon, and has a short arm 12^a and a pair of alining long arms 12^b at right angles to the arm 12^a. The arm 12^b has a slot 12^c near its ends for a purpose hereinafter to appear.

13—13 are two hollow pipes which pass through holes in the lid and whose upper ends are slit at 13^a to receive the ends of the arms 12^b of the walking beam 12 to which they are pivoted at 13^b. The arms 12^b are slotted to permit passage of the pivot pins or bolts 13^b and to form an opening into the pipe 13. The post 9, as before stated, is located centrally on the lid, while the pipes or hollow rods 13 pass through holes located about midway between the rim of the lid and the center of the lid.

Within the tub 1 the pipes 13 each carry a section of a compressor-pounder 14, formed of two-half sections, one of which is attached to each pipe 13, and the compressor-pounder 14, in plan view has an outline substantially that of the cross sectional outline of the tub. In other words, when the tub 1 is round or circular, in cross section, each compressor-pounder section will be of semi-circular form.

Each compressor-pounder section 14 comprises a base plate 14^a and a depending rim 14^b—14^c, the portion 14^b of which is curved to conform to the curvature of the tub, while the portion 14^c is straight across. The chamber formed in the rim 14^b—14^c is subdivided by partitions 14^d into a plurality of compartments, the partitions 14^d having portions cut away adjacent to the plate 14^a to form air passages. The pipe 13 passes through a hole in the base plate of the compressor-pounder section 14 and is secured thereto by a collar 15 and a valve casing 16 with the interposed washer 17. The collar 15 and valve casing 16 are threaded onto

the pipe 13, as indicated. The valve casing 16 has a reduced part 16^a that threads onto the pipe 13, and an enlarged part 16^b to receive the disk valve 16^c that closes the end of the pipe 13 on the down stroke thereof. A valve stop 16^d is carried by the casing 16 against which the valve 16^c rests on the up stroke of the pipe 13. The pipe 13 communicates with the central compartment of the respective compressor-pounder section.

When the invention is used as a hand power device an operating lever 18 is secured to the pivot 9^b and is secured at 18^a to the arm 12^a, as shown in Fig. 1 of the drawings. The lever 18 may be of any approved shape and design and varied to suit the requirements of the trade.

In the practical application of my invention the clothes to be washed are placed in the tub 1 together with the washing fluid. the lid is secured down, thus effecting a substantially tight closure of the tub. Power is then applied to the walking beam and the compressor-pounder sections are caused to move alternately up and down. This causes air to be admitted into the compressor-pounder section chambers on the up stroke of the respective section through the pipes 13 and valve mechanism 16. On the down stroke the air within the compressor-pounder sections 14 is forced through the clothes, together with the water, as shown in Fig. 1 of the drawings. As the compressor-pounder sections are alternately moved up and down, the clothes and washing fluid are caused to perform a continuous oscillating motion, thus effecting agitation of the same and by making the fluid level about one-half or three-fourths the tub's capacity, the clothes are alternately lifted out of the water and immersed under the same, as the sections 14 are reciprocated. By having the top fit tightly on the tub 1 the air from within the tub escapes but slowly so that a pressure greater than atmospheric pressure may be maintained within the tub during the washing operation to supply a greater quantity of air to the tub than is possible with an open tub and thereby affording a more abundant supply of oxygen to the washing fluid and thus assisting it in its detergent operations.

It will be noted that the lower open edge of the valve casing cup 16 is in a plane that intersects the partitions 14^a at a place about the lower limit of the openings in said partitions so that there will always be an air space or chamber to retain compressed air in the pounder heads above the line *x-y* in Fig. 3.

From the foregoing description taken in connection with the accompanying drawings, it is thought the complete construction, operation and advantages of my inven-

tion will be readily understood by those skilled in the art to which the invention appertains.

What I claim is:

1. In a washing machine, a compressor-pounder consisting of a plurality of sections, a pipe for each section, a valve mechanism for each section to control the passage of air through said pipes, each of said compressor-pounder sections consisting of a plate and a depending rim, and dividing partitions to form a plurality of chambers, said partitions having apertures adjacent to said plate to establish communication between said chambers, each of said compressor-pounder sections having a cross-sectional form or shape equivalent to that of one-half the cross-sectional form of the tub of the washing machine to closely conform thereto, said valve mechanism including a valve casing or cup secured to said pipe within said compressor-pounder, the open end of said cup lying in a plane with the lowest point of the outline of said partition apertures, being located adjacent to the top or closed end of the respective pounder section, substantially as shown and described.
2. In a washing machine pounder, a body consisting of a plate having a depending rim extending around the same to form a cup-like member, a pipe having one end projected through said body plate, means for securing said pipe to said body plate, said means including a valve casing, a valve in said casing to close over the end of said pipe, means for limiting the movement of said valve away from the end of said pipe, said body including partitions connecting said rim, said partitions having openings adjacent to said body plate, the depth of said openings corresponding to the depth of said valve casing whereby the open end of said valve casing will lie in a plane with the lower end of said openings.
3. A pounder consisting of a head formed of a body plate and a depending rim surrounding the same, partitions connecting the rim and dividing said head into a plurality of compartments, each of said partitions having an opening next to said body plate and extending downwardly therefrom, a pipe projected through said body plate, a collar threaded onto said pipe to engage the outer side of said body plate, a washer on said pipe within said pounder head to engage the inner side of said body plate, a cup-shaped valve casing threaded on said pipe against said washer, said valve casing having an enlarged portion for closing off the end of said pipe, and means carried by said valve casing for holding said valve in said casing.
4. A pounder consisting of a head formed of a body plate and a depending rim surrounding the same, partitions connecting

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the rim and dividing said head into a plurality of compartments, each of said partitions having an opening next to said body plate and extending downwardly therefrom, 5 a pipe projected through said body plate, a collar threaded onto said pipe to engage the outer side of said body plate, a washer on said pipe within said poulder head to engage the inner side of said body plate, a 10 cup-shaped valve casing threaded on said pipe against said washer, said valve casing having an enlarged portion for closing off the end of said pipe, means carried by said valve casing for holding said valve in said casing, the lower or open end of said valve 15 casing lying in a plane that passes over the lower edge of said partition openings whereby to maintain air in all of the poulder head chambers between the opening of said valve casing and the inner face of said body 20 plate.

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Witnesses:

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