A. W. Hall,

Washing Machine,

No. 63,509. Patented Apr. 2, 1867.

Fig 1

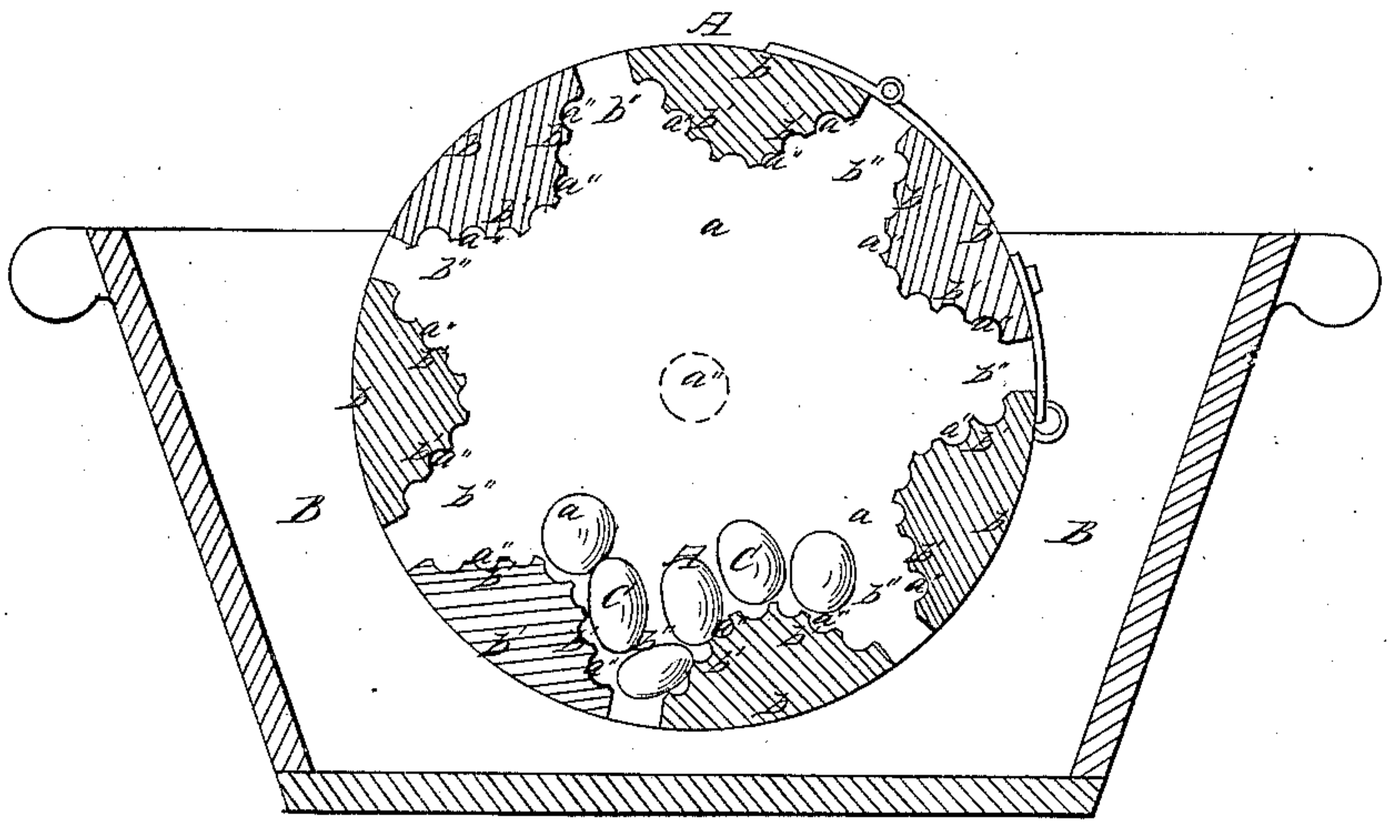


Fig: 2.

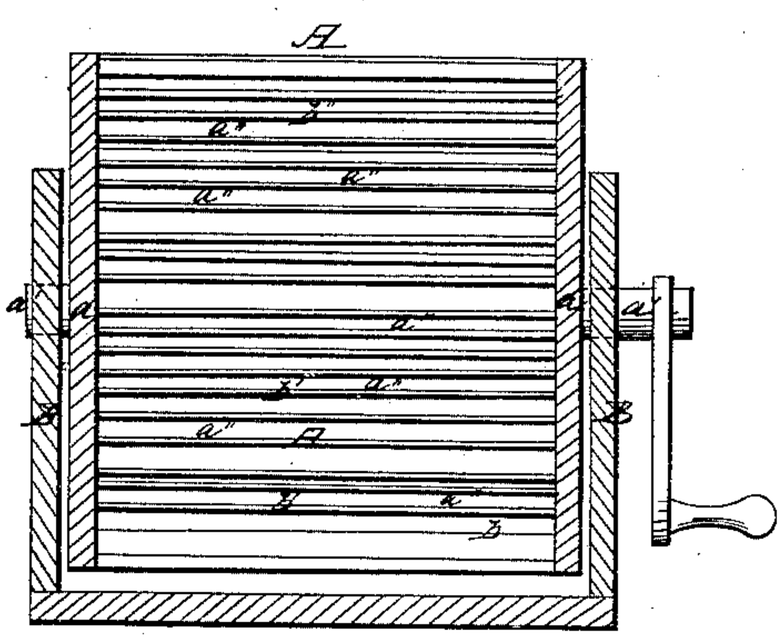
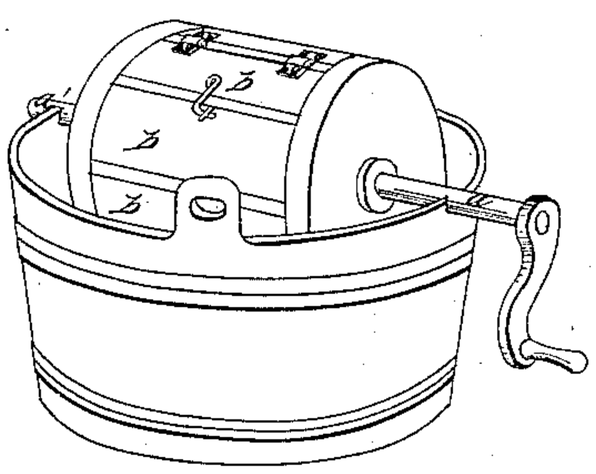


Fig: 3.



Witnesses.

J. W. Coombs

G. W. Reed

Inventor:

A. W. Hall

United States Patent Office.

A. W. HALL, OF NEW YORK, N. Y.

Letters Patent No. 63,509, *dated April* 2, 1867.

IMPROVED WASHING MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, A. W. HALL, of the city, county, and State of New York, have invented certain new and useful improvements in Washing Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a portion of this specification, in which—

Figure 1 is a vertical longitudinal section of a washing machine constructed according to my invention.

Figure 2 is a vertical transverse section of the same on a reduced scale, and taken in the line *x x* of fig. 1.

Figure 3 is a perspective view, showing my invention as applied to, or used in connection with, a common wash-tub, and also on a reduced scale.

Similar letters of reference indicate corresponding parts in all the figures.

This invention consists in a rotating tumbling-box or cylinder, constructed with inwardly-projecting ribs, grooved or corrugated lengthwise in such manner as to greatly facilitate the operation of the said tumbling-box in turning over, agitating, and rubbing the clothes or fabrics contained therein during the operation of washing the same, in combination with smooth stones, or balls of other suitable material.

To enable others to understand the construction and operation of my invention, I will proceed to describe it with reference to the drawings.

The tumbling-box or cylinder, in which the clothes or fabrics to be washed or cleansed are placed, is shown at A, and is formed of two circular end-pieces *a*, connected by an annular or concentric series of strong bars or slats *b*, the inner surfaces of which constitute inwardly-projecting ribs *b′*, as will be hereinafter fully set forth. Each circular end-piece *a* is furnished at its centre with an outwardly-projecting cylindrical pin, *a′*, the said pins constituting the shaft or axle, which supports the tumbling-box, and upon which it turns. the said pins *a′* being fitted into suitable bearings formed in the sides of the suds-box B, one of the said pins being furnished with a crank, as shown in fig. 2, in order to provide for the rotation of the aforesaid tumbling-box. The suds-box B may be of oblong form, with vertical sides, as shown in figs. 1 and 2, or may consist simply of an ordinary wash-tub, as will hereinafter be further explained. Each of the longitudinal bars or slats *b*, which constitute the circular or concentric sides of the tumbling-box, as hereinbefore explained, has its inner surface made angular, or curved, or semicircular, as may be desired, in such manner that the central longitudinal portion of such bar or slat projects inward, as shown at *b′*, and thus constitutes an internal rib, as represented more plainly in fig. 1, the said ribs *b′* being separated from each other by the intermediate spaces *b″*. Formed longitudinally in the surface of each of these inwardly-projecting ribs *b′* are any desired number of parallel grooves *a″*, which may be of semi-cylindrical form, and by means of which the aforesaid surface of the rib *b′*, or, in other words, the innermost surface of the bar *b*, in which they are formed, is ridged or corrugated. C represents pebbles or rounded stones, having a smooth surface, and either such as are found in water-courses, or, if desired, such as are wrought into shape by artificial means, the former being preferred, inasmuch as in most localities they can be obtained at no greater expense than that involved in selecting them from the beds of streams, or from other places in which they are found. These pebbles are placed within the tumbling-box A, together with the clothes or fabrics to be washed or cleansed; and a quantity of suds or water sufficient to immerse the lower portion of the tumbling-box being placed in the suds-box, a rotary movement is given to the tumbling-box by means of the crank, as hereinbefore mentioned, and the clothes or fabrics contained therein, together with the stones or pebbles C, being caught in the spaces *b″*, are carried upward until they are brought more or less toward the upper side of the tumbling-box, and falling back by their own weight to the bottom thereof, are thus turned over so that different portions of the said fabrics are brought in contact with the grooved or corrugated surfaces of the ribs *b*, at the same time that the pebbles or stones C, by rubbing or beating upon the clothes or fabrics simultaneously with the rubbing of the same upon the corrugated surfaces of the ribs *b′*, effectually expel the dirt and impurities therefrom, the said clothes or fabrics being kept wet and washed by the suds in which the lower portion of the tumbling-box is immersed, as hereinbefore explained. The direction in which the tumbling-box is rotated may be changed alternately at any desired intervals of time. The weight of the stones in proportion to their size being less than that of the wooden balls hitherto used in some cases, a much more effective operation thereof in cleansing the clothes or fabrics is secured than with such wooden balls, at the same time that any injury to

such clothes or fabrics from the excessive weight of the balls, or the rust or corrosion thereof, as when metal balls are employed, is equally avoided, while the excessive cheapness of the pebbles or stone balls very materially reduces the cost of manufacturing the machine. The ribs *b'*, projecting inward, serve to carry the clothes or fabrics upward, as described, at the same time that their longitudinally-corrugated surfaces act upon the said clothes or fabrics to assist the operation of the rubbing and pounding balls C in cleansing the same. If desired, the tumbling-box, instead of being used in connection with a suds-box, constructed as shown in figs. 1 and 2, and heretofore described, may be employed with a common wash-tub, as represented in fig. 3, two properly-shaped notches being formed, at points opposite each other, in the top or upper edge of the tub, to serve as a bearing for the shaft or axle of the tumbling-box when the machine is in use, having its lower portion immersed in suds or water contained in the aforesaid tub, and the operation of the apparatus in this case being the same as hereinbefore fully described.

What I claim as my invention, and desire to secure by Letters Patent, is—

The tumbling-box or cylinder A, constructed with a series of longitudinal corrugations on convex ribs, operating in combination with smooth stones, or balls of other suitable material, substantially as herein set forth for the purpose specified.

A. W. HALL.

Witnesses:

J. W. COOMBS,

G. W. REED.