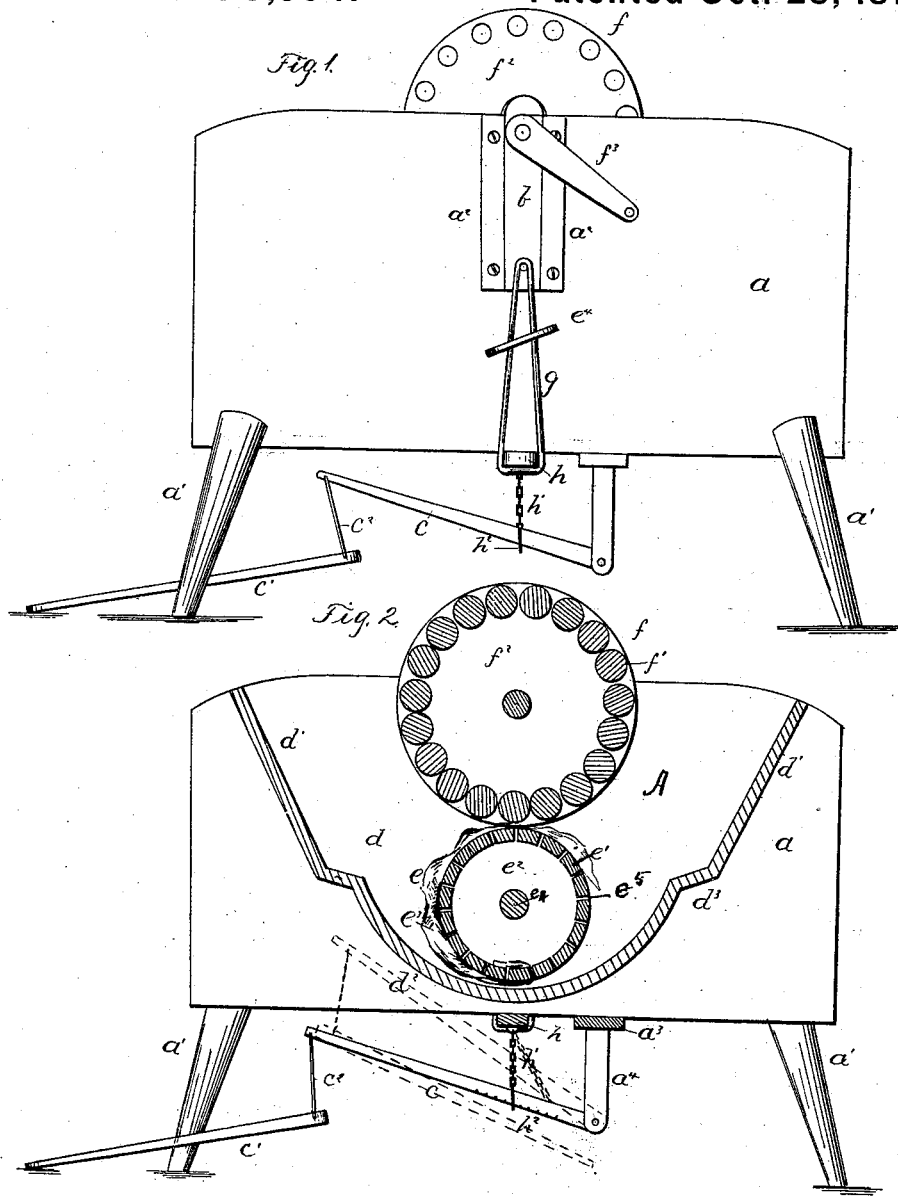


J. SHARP & J. S. BRANDT.
Washing-Machines.

No. 220,994.

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UNITED STATES PATENT OFFICE.

JULIUS SHARP AND JACOB S. BRANDT, OF CRIDERSVILLE, OHIO.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **220,994**, dated October 28, 1879; application filed July 3, 1879.

To all whom it may concern:

Be it known that we, JULIUS SHARP and JACOB S. BRANDT, of Cridersville, in the county of Auglaize and State of Ohio, have invented certain new and useful Improvements in Washing-Machines; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention has for its object to furnish a cheap and substantial washing-machine which will do thorough work; and it consists in the construction and arrangement of the trough, wheels, and other mechanism, all of which will be hereinafter fully set forth.

In the drawings, Figure 1 is a side elevation, and Fig. 2 is a vertical longitudinal section, of a washing-machine constructed according to our invention.

A is the reservoir which holds the water and clothing, and within which are placed the operating wheels or rollers. This reservoir or tank is formed of two vertical side boards, between which is fixed an irregular-shaped cross-board.

For convenience in description, the several parts of the reservoir will be referred to separately in the following specification. The lower portion of the cross-board will be referred to as the trough or the trough-shaped bottom, and the other parts thereof will be lettered in the drawings, and specifically referred to.

a a are the side boards or walls, to which are affixed the legs *a'*. On the outer sides of the frame or reservoir A, near the center, there are fixed guide-bars *a²*, having the inner edges slightly beveled, under and between which is placed the sliding bar *b*, which slides up and down, for purposes hereinafter explained.

Across the under side of the machine we fix a cross-bar, *a³*, having the arm *a⁴* projecting downward, and to the end of which is fixed a lever, *c*, and treadle-bar *c'*, the latter being connected by a link, *c²*. Between the side

boards *a a* we fix the cross-board *d*, which, with the straight sides *a a*, forms the clothes-receptacle, in which the washing is done.

The cross-board *d* is made of irregular contour, as shown. The inclines or parts *d'* *d'* are straight and flared outward, while the part *d²* is a regular curved bottom or trough, in which the lower washing-wheel revolves. The inclines *d'* *d'* and edges of the trough *d²* are united by short connections *d³*. The portions *d³* are inclined so that the water will not lie on them, and they are designed to serve as shoulders or supports to aid in holding the clothes when the latter are being soaped or otherwise handled before being passed between the rollers. The flat and flaring sides *d'* serve for plain straight surfaces, against which the clothes are manipulated. *e* is a hollow roller composed of a series of slats, *e'*, curved on their outer edges, and fixed rigidly on the disks or heads *e²*. The slats are arranged with a narrow space between them, so that a cloth, *e³*, can be passed around and fixed to any one of them.

The wheel *e* is journaled on the points of thumb-screws *e⁴* passed through the side boards *a*, and it is arranged so that its periphery turns close to the lowest part of the trough *d²*. Its diameter is but slightly longer than the vertical depth of the trough, so that in the process of washing it is nearly submerged by the water.

f is a large presser-wheel, composed of a series of small rollers, *f'*, journaled near the rim of the heads or disks *f²*. The disks are provided with suitable pins, which are journaled in the upper ends of the sliding bars *b*. The rollers *f'* may be so arranged as to have their peripheries flush with the peripheries of the disks, or the latter may be made large enough to extend past the ends of the wheel *e*, forming a guard that will prevent the clothing from slipping endwise off the said wheel *e*. The rollers *f* are arranged to touch, or nearly touch, the slats *e'* when no clothing is between the wheels. The roller *f* is turned by the crank *f³*.

g are elastic cords or springs, which are passed around pins *b'* on the sliding bars *b*, and

around the ends of an equalizing-bar, h , placed under the machine. To the center of the bar h is affixed a connecting rod or chain, h' , which is also attached to the lever c by a loop, h^2 , which may be slipped back and forth along said lever, so that the power of the latter may be increased or diminished when desired. The loop h^2 may also be slipped into a notch toward the free end of the lever, and hold the latter up, as indicated in dotted lines, and out of the way when the machine is not in use.

By pressing with the foot on the treadle c' the pressure of the wheel f against the wheel e is increased.

In washing clothes the end of the first garment is placed between the slats of the wheel e , and by the revolution of wheel f is wound around the said wheel e . The end of the next garment is put between the end of the preceding garment and the wheel, and so on. The suds being in the trough d^2 , the revolution of the wheels gives a constant pressure and washing to the clothes.

It will be seen that the trough d^2 being small, but a little water is required to submerge the garments on the wheel e , and thereby saves the labor, time, and expense of heating a great deal when but a small quantity is needed, as in cases where it is better to wash garments in a first and then in a second clean water, and where but a single article is to be cleansed, and in other like instances.

The diameter of the wheel e being greater than the depth of the trough d^2 , a portion of the wheel is constantly revolving above the water, bringing the garments out of it and in contact with the upper wheel, f , the pressure of which forces the water, impregnated with the dirt of the clothes, from and leaving them comparatively dry preparatory to being again submerged. When the garments are sufficiently cleansed they can be received from the wheel e in proper condition for boiling without first wringing, as in the ordinary methods.

The wheel f being much larger than the wheel e , gives power to press the suds from the clothing, and frequent revolutions to the lower wheel, at each of which the dirty water is pressed out, affording rapid changing and frequent application of the suds in the trough

d^2 in and to the garments, securing thereby speedy and thorough cleansing.

The rollers f' being arranged in the large wheel f reduces wear on the clothes by bringing but one portion of friction in contact with them at one time, and by such a gradual rolling motion as to have but very slight wearing action.

We secure cleansing by frequently passing water through the goods and drying them each time, rather than by friction, as in ordinary methods.

The peculiar shape of the tank enables us to keep the clothing in compact form, and at the same time have all the needed facilities for handling and changing.

We prefer to use the cloth e^3 , as described, as it greatly facilitates the commencement of the work, but it may be dispensed with, in which case a little more time will be required in putting the first garment around the wheel e , after which the work proceeds as in the first instance.

What we claim as our invention is—

The combination of the box or reservoir A , having the trough-shaped bottom d^2 , the smaller wheel e , having the slots e^3 , and journaled in the sides of the box A , so as to have its periphery revolve near the bottom of the trough d^2 , and its upper portion revolve above the depth of the said trough d^2 , the larger roller-wheel, f , journaled in the sides of box A , over and with its periphery in contact with the periphery of the wheel e , so as to communicate motion thereto, the said wheel f provided with rollers circumferentially arranged and journaled in the edges of the flanges f^2 , the crank f^3 , and the tension mechanism composed of the guide-bars a^2 , sliding bar b , spring g , equalizing-bar h , lever c , and treadle c' , all substantially as and for the purposes set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

JULIUS SHARP.
JACOB S. BRANDT.

Witnesses:

NATHANIEL B. MURDOCK,
DAVID SHANKS.