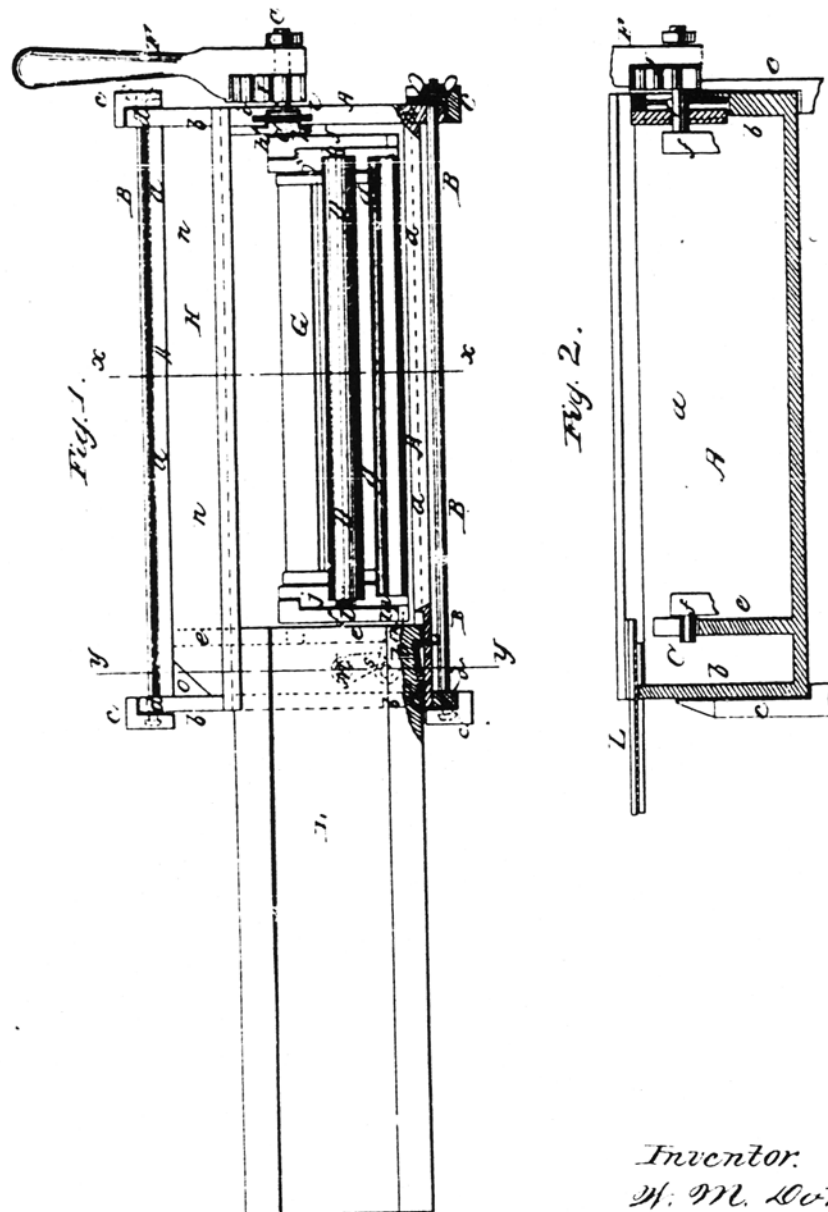


W. M. Doty,

Washing Machine,

No. 78,940,

Patented June 16, 1868.



Witnesses.
W. C. Ash, Clerk
J. A. French

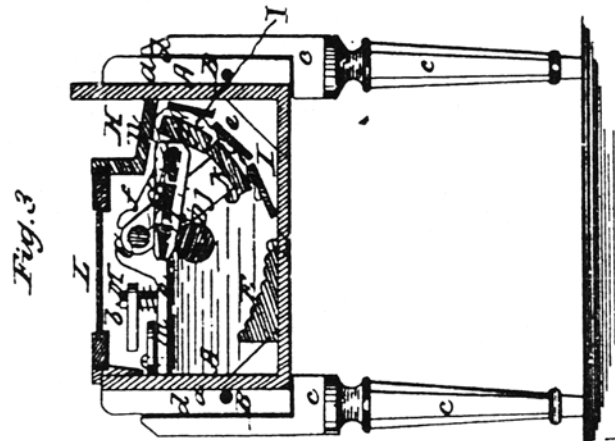
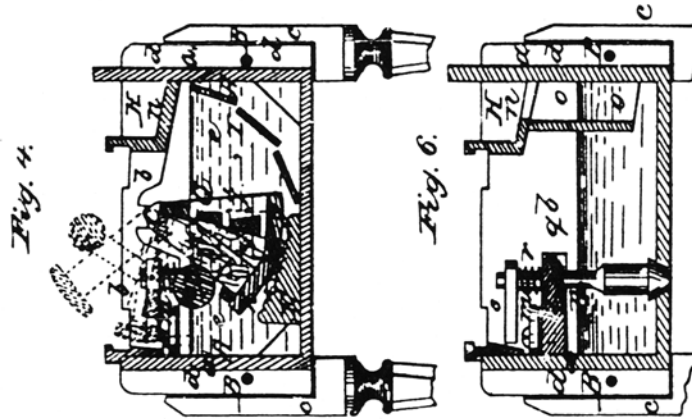
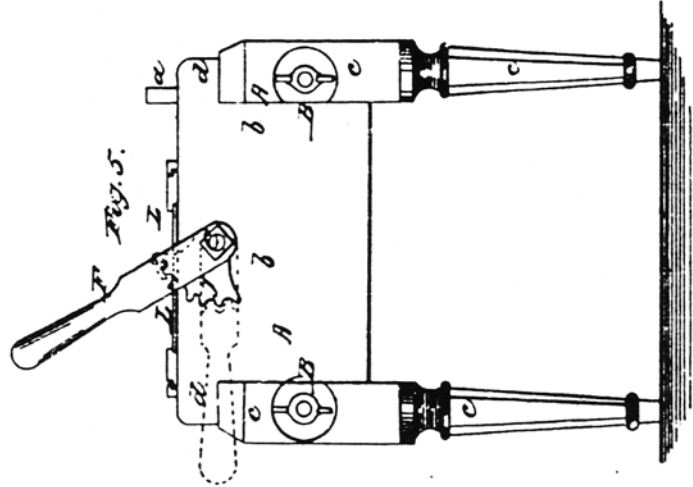
Inventor.
W. M. Doty
per Munn & Co.
Attorneys

W. M. Doty,

Washing Machine,

No 78,940.

Patented June 16, 1868.



Witnesses.
O. C. Ashkettle
J. A. Fraser

Inventor:
W. M. Doty
per Munn & Co
attorneys

United States Patent Office.

WILLIAM M. DOTY, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF, EZRA P. DOTY, AND ELLIS DOTY, OF JANESVILLE, WISCONSIN.

Letters Patent No. 78,942, dated June 16, 1868.

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, WILLIAM M. DOTY, of New York, in the county and State of New York, have invented a new and improved Washing-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1, Sheet I, represents a plan or top view, partly in section, of my improved washing-machine.

Figure 2, Sheet I, is a detail longitudinal section of the same.

Figure 3, Sheet II, is a vertical and transverse section of the same, the plane being indicated by the line *x x*, fig. 1.

Figure 4, Sheet II, is a similar view as fig. 2, showing the parts in a different position.

Figure 5, Sheet II, is an end elevation of the same.

Figure 6, Sheet II, is a detail vertical transverse section of the same, the plane of section being indicated by the line *y y*, fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to a new machine for beating, squeezing, rubbing, soaping, and washing garments and other articles, and consists in such an arrangement of parts that the machine can either be used for squeezing, or beating, or rubbing clothes, or for soaping the same; that it can be connected with a wringer without requiring the suds-box to be opened to let the steam out; that it will, when adapted to rubbing clothes, adjust itself automatically to the thickness of material held by the rubber. The machine is, furthermore, so arranged that the cover of the suds-box can be used as a table or shelf when open, while it will be a steam-tight cover when closed. The discharge of liquid from the suds-box can be regulated by means of a valve, which can be operated from the top of the machine.

The machine is, furthermore, so arranged that the lever for oscillating the rubber, beater, or squeezer can be set higher or lower, so that the machine can be adjusted to use for tall or small persons, and for the sitting or standing posture. The legs are secured to the suds-box, and the latter is strengthened and held together by means of two bolts, which pass through the end-boards of the suds-box, and through the legs.

A, in the drawings, represents a suds-box, of rectangular form, made of wood or other suitable material, of suitable size.

It consists of the side-boards *a a*, and of the end-boards *b b*, and is supported upon legs *c c*, as shown. The most simple and profitable plan for connecting the parts *a, b, c* of the box is that represented in fig. 1. In the same, the end-boards *b b* project beyond the sides of the box, and the legs, which have, at their upper portion, an L-shaped cross-section, are fitted around the flange *d*, thus formed. A bolt, B, passing through the two opposite flanges, *d d*, and through the legs appertaining to the same, serves to fasten the legs to the box, and thus, by means of two bolts, B, the four supports of the box are secured to the same, and the box itself is held together, and made strong and substantial. The flanges *d*, instead of being formed by the projecting end-boards, may be formed on the projecting side-boards of the box.

The interior of the suds-box is, by means of a partition, *e*, which is parallel with the end-boards of the box, divided into two compartments, of which the one is but very short, as shown in fig. 1.

The larger compartment is for washing purposes. In its end-boards *b* and *e* are the bearings for a shaft, C, as shown. The arms *f* of this shaft, which are rigidly secured thereon, are connected by a board, *g*, having a convex outer or lower surface, as shown in figs. 3 and 4. The shaft C can play up and down in its bearings, which are not covered in the partition *e*, while in the end-board *b* they are completely closed, as shown in fig. 2, so as to prevent water from escaping through openings in the ends.

To effect the closing of these bearings, and, at the same time, to allow an up-and-down motion of the shaft, the following device is found preferable: The end-board *b* is slotted far enough to allow the required up-and-

down play. This slot is closed by a plate, *h*, which fits close around the shaft *C*, and which moves up and down with the same. The plate *h* is fitted into the inner face of the board *b*, as shown, and is long enough to close the slot in the same at every position of the shaft *C*. To close the joints between the plate *h* and the board *b*, a narrow plate, *i*, has been fitted into the upper edge of the board *b*, as indicated in fig. 1, the plate *h* being slotted, to allow its up-and-down motion around the fixed plate *i*.

To the cranks *f* of the shaft *C*, or, if desired, to the shaft itself, are pivoted two arms, *j, j'*, which project from a board, *k*, of similar shape as the board *g*. The boards *g* and *k* come in contact with each other at their edges, and can be clamped together by means of an eccentric, *D*, which turns in arms *l*, that project from the cranks *f*, as shown in fig. 4. The outer face of the boards *g* and *k* forms a convex surface, as shown.

Upon the bottom of the suds-box is securely fastened a corrugated plate, *E*.

The shaft *C* is provided with a handle or crank, *F*, on the outside of the suds-box.

Garments to be cleaned can be clamped between the boards *g* and *k*, so that a required portion of the same may project beyond the outer surface of the boards, while the rest rests upon the inner faces of the same.

By moving the lever *F* back and forth, that portion of the garments projecting from the convex surface of the boards *g, k* will be rubbed upon the board *E*, as is indicated. The up-and-down play of the shaft *C* is required for the rubbing-process, so that the boards *g, k* may be raised when thicker articles are being rubbed.

To the partition *e*, or to some device in the small compartment of the suds-box, is pivoted a short arm, *m*, which, when the shaft *C* is turned so that the boards *g, k* are lifted out of the water, may be turned, so as to support the boards *g, k*, as indicated by red lines in fig. 4.

By turning the eccentric *D*, the plates *g, k* can be moved apart, so that garments to be rubbed can be placed between them, or can be removed or adjusted. The convex surfaces of the boards *g, k* adapt the same admirably to soaping-boards.

Between the cranks *f, f'* is also pivoted a frame, *G*, which consists of longitudinal slats, connected at the ends by suitable cross-pieces. The frame *G* is pivoted with its lower part to the lower part of the cranks, as shown in fig. 3, and its slats are arranged so that the lower edge of each projects beyond the face of that below, as shown in figs. 3 and 4.

Parallel with one of the side-boards of the suds-box is arranged along the same, within the box *A*, a trough, *II*, which extends from one end to the other of the suds-box, and which is not divided by the partition *e*. The bottom of the trough *II* is formed by a somewhat inclined board, *n*, which, in combination with the frame *G*, and with the outer edge of the board *g*, serves as a beater for the clothes.

I are a series of slats arranged with projecting edges, as shown, and fitted longitudinally within the large compartment of the suds-box, below the trough *II*, as shown.

When the machine is to be used as a beater or squeezer, the frame *G* is folded so as to rest against the eccentric, *D*, or some other suitable stop, and the garments are placed upon it, and when, then, the whole frame is oscillated, the garments are beaten and pressed between the frame *G*, the board *g*, and bottom board *n* of the trough. The slats *I* serve to hold the garments and prevent them from sliding to the bottom of the box. They are arranged in a concave form, as shown, and by their particular arrangement serve to promote the turning of the clothes when the swinging frame moves down, while the slats *G* facilitate the turning, when the frame is moved up.

When the swinging frame is to be used for rubbing clothes, the frame *G* is turned back away from the eccentric, *D*, as in fig. 4, so as to form a trough for that portion of the clothing which is not to be rubbed to lie in.

The handle *F* of the swinging frame is arranged adjustable on the same, so that it can be used by small or large persons, or in a sitting or standing posture.

The shaft *C* carries a segmental or complete toothed disk, *J*, which is mounted on it. The lever *F* has one or more teeth, which fit into the teeth of the disk *J*, as indicated in fig. 5, and thus, by adjusting the teeth on the lever into those of the disk, the position of the lever on the shaft can be varied at will.

The partition *e* is perforated, so that the suds or water may stand at the same height in both compartments. The trough *II* communicates with the smaller compartment by means of a tube or pipe, *o*. Thus, if a wringer is clamped to the box *A*, above the trough *II*, the water pressed out by the wringer will enter the box through the pipe *o*, as shown in fig. 6, and the box itself can in the mean time be kept closed, so that the steam need not escape.

The box can be closed by means of a sliding cover, *L*, which can be drawn out so as to keep the main compartment of the box open, while the small compartment is closed, as in fig. 1. The cover can in this position be used as a table for adjusting the articles to be washed, whether the machine be in motion or not.

The liquid can be discharged from the suds-box by opening a valve, *M*, which is in the small compartment, and which is arranged with a stop, *p*, working under an inclined plane of a board, *q*, in which the valve-stem works.

When the valve is turned so that its stop *p* comes as low as it can, the hole in the bottom of the box will be closed, while by turning it back the valve will be raised so as to open the discharge. A spring, *r*, between the board *q* and the handle *S* of the valve, serves to raise the latter, whenever its stop is on the inclined plane, so that but a slight move is required to cause the valve to be completely opened by the action of the spring.

A spring-catch, *t*, fig. 5, on the box *A*, serves to lock the cover *L* in the desired open position. The tube *o* may also be used to pass a pipe through to conduct steam into the box *A*, while it always prevents the escape of the same.

I claim as new, and desire to secure by Letters Patent—

1. The mode of connecting the legs with the suds-box by fitting the upper L-shaped parts of the legs around

flanges projecting from the box, and by connecting and holding together the same by means of ties or rods, substantially as herein shown and described.

2. The combination, with a suitable concave or rubbing-board, of a swinging or oscillating wash-board, formed in two parts, hung independently of each other upon the same axis, the one being rigidly connected to the said axis or shaft, and the other loosely mounted thereon, substantially in the manner and for the purposes set forth.

3. The oscillating and divided wash-board, composed of two parts or jaws, as herein described, in combination with a device for clamping and holding together said parts, substantially as and for the purposes herein shown and specified.

4. The combination, with the jaws of the divided wash-board, of the eccentric clamping-roll D, and the arms or links by which the same is held to the wash-board, substantially as herein shown and set forth.

5. The combination, with the divided wash-board and its clamping-device, of the shaft C and pendent arms, by which the said board is connected with the shaft, substantially as herein shown and set forth.

6. The oscillating and divided wash-board, and its clamping-device, in combination with the movable stop *m*, arranged and operating as herein shown and set forth.

7. The plates *h* and *i*, in combination with the slotted end-board *b* of the suds-box, all made and operating substantially as described, so as to form a closed up-and-down movable bearing for the shaft C.

8. I claim the combination, with the jaws of the divided wash-board, of a beating-frame, G, all arranged in one swinging frame, as described.

9. The beater-frame, when hinged or made movable within the swinging frame, substantially as and for the purpose herein shown and described.

10. The manner of arranging the slats in the beater or presser-frame so that the turning of garments is promoted, as set forth.

11. The beater-frame, when arranged as described, in combination with the boards *g* and *n*, and slat-frame I, under the arrangement and for operation substantially as herein shown and described.

12. The combination, with the shaft, for operating the wash-board, of a handle or lever mounted upon said shaft, substantially in the manner described, so that it may be set or adjusted to various heights.

13. The toothed disk J, in combination with the lever F and shaft C, the whole being arranged for operation substantially as herein shown and described, and for the purpose specified.

14. The valve M, when arranged as described, and when provided with a stop, *p*, working on an inclined plane, in combination with a suds-box, substantially as and for the purposes herein shown and described.

15. In a washing-machine in which the suds-box is divided into two compartments, as described, I claim the combination, with the larger compartment, containing the clothes-washing apparatus, of the smaller compartment and the tube or conduit therein for admitting water from the exterior into the said box, substantially in the manner and for the purposes herein shown and specified.

16. The combination, with the divided suds-box and the tube or conduit *e*, of the trough II, under the arrangement and for operation as herein shown and set forth.

The above specification of my invention signed by me, this 7th day of January, 1868.

WM. M. DOTY.

Witnesses:

J. A. SERVICE,
ALEX. F. ROBERTS.