(Model.)

N. H. HAWKINS.

WASHING MACHINE.

No. 363,462. Patented May 24, 1887.

Fig. 1.

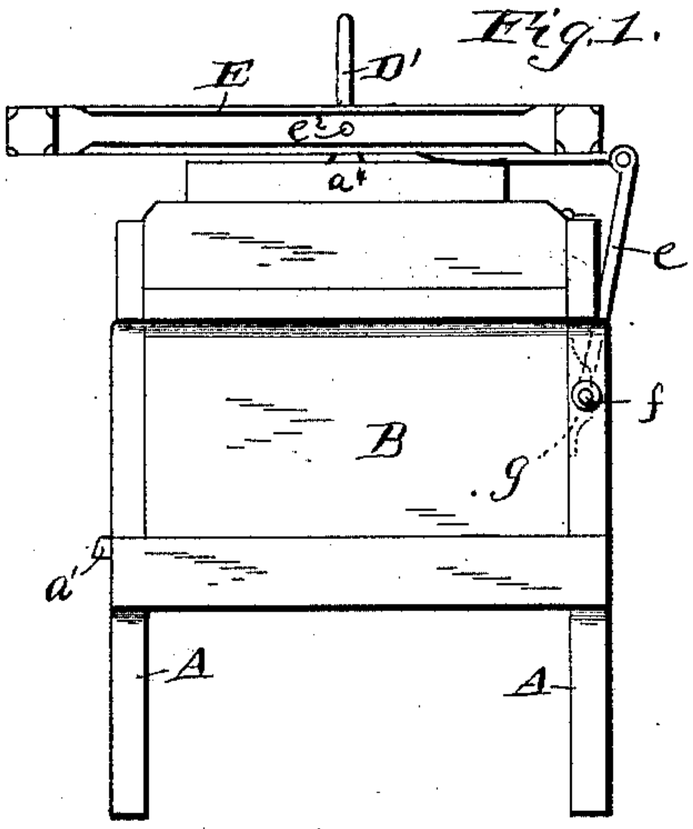


Fig. 3.

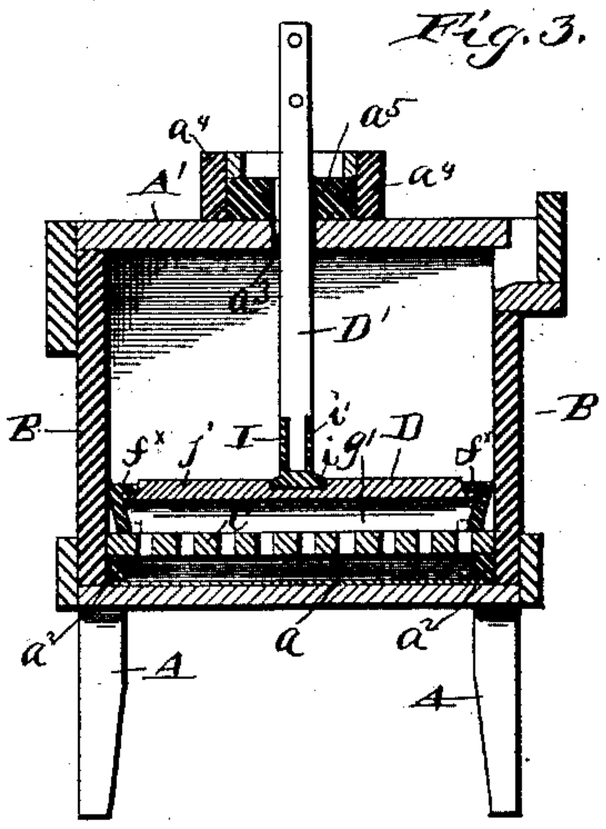


Fig. 2.

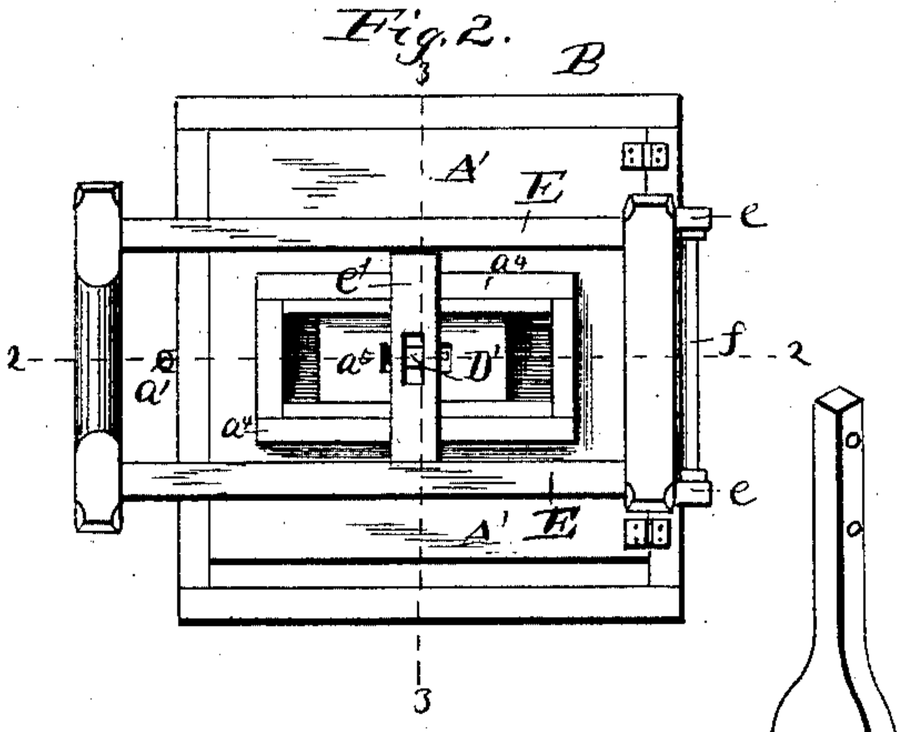


Fig. 4.

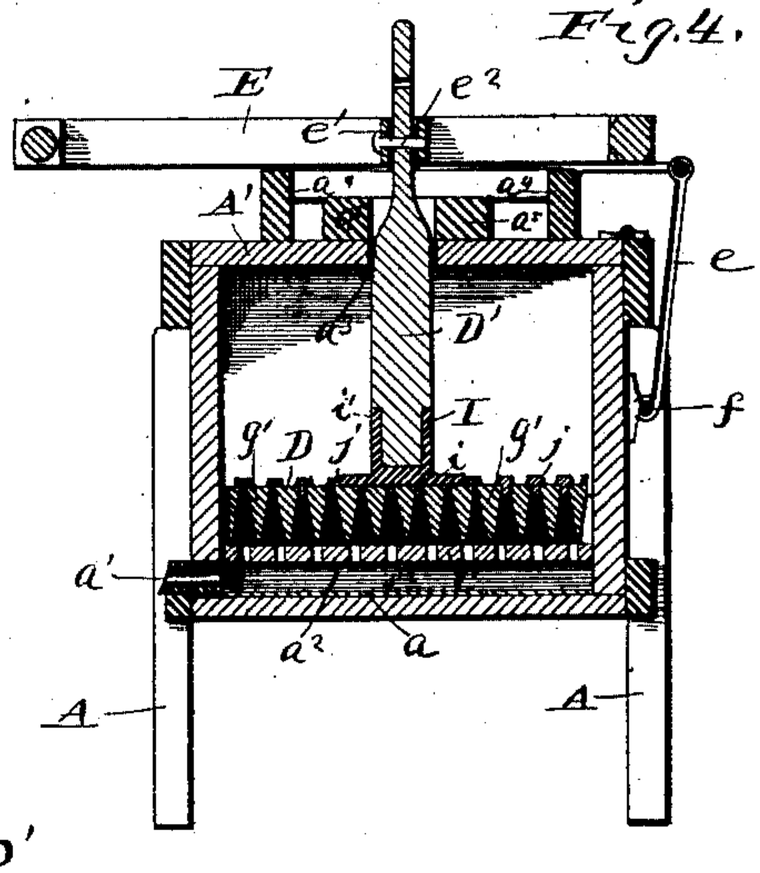


Fig. 5.

Fig. 6.

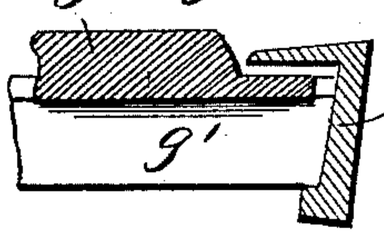
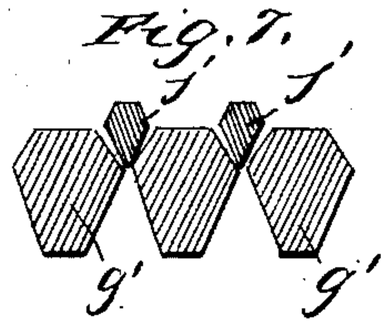


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

NATHAN H. HAWKINS, OF NORTH BRANCH, KANSAS.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 363,462, dated May 24, 1887.

Application filed August 24, 1886. Serial No. 211,758. (Model.)

To all whom it may concern:

Be it known that I, NATHAN H. HAWKINS, a citizen of the United States, residing at North Branch, in the county of Jewell and State of Kansas, have invented a new and useful Improvement in Washing-Machines, of which the following is a specification.

My invention relates to the frames or receptacles of washing-machines; also, to the plungers for the same, and to the connections for guiding and otherwise operating the plungers.

The object of my invention is to produce a machine in which the water shall be thoroughly forced through the clothes, and thus effect a thorough cleaning of the same; also, to completely remove the sediment from the clothing, and to provide for the proper movement and ready removal of the plunger.

To the above purposes my invention consists in certain peculiar and novel features of construction and arrangement relating to the body of the machine, to the plunger, and to the connections for operating and removing the plunger, all as hereinafter described and claimed.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved washing-machine. Fig. 2 is a plan view of the same. Fig. 3 is a vertical cross-section of the same on the line 3 3 of Fig. 2. Fig. 4 is a similar section on the line 2 2, Fig. 2. Fig. 5 is a perspective view of the plunger detached from the machine. Figs. 6 and 7 are detached detail views of portions of the plunger.

In the said drawings, A designates the four uprights which support the body B of the machine. The body of the machine is provided with an impervious true bottom, *a*, of zinc or other similar material, an outlet, *a'*, being provided for draining the water off the bottom of machine. Around the inside of the body A are placed strips a^2, which occupy the angles of unison between the bottom and sides of the body, and upon these strips rests a perforated false bottom, C, of such size as to fit snugly within the body. Thus a space is left between the true and false bottoms of the machine-body, for a purpose to be hereinafter explained.

A' designates the cover of the machine-body, said cover being hinged to one side of the body, as shown, and having an elongated slot, a^3, formed therein. Upon the upper side of the cover and surrounding its slot a^3 is a rectangular frame, a^4, in which works a slotted slide, a^5.

D designates the head of the plunger, and D' designates the stem of said plunger. The head D, which will be more particularly described further on, rests upon the false bottom C, or upon the clothes in the body of the machine, and its stem D' extends upward through the slot a^3 of the top A and slot of the slide a^5.

E designates a rectangular frame, which is hinged at one end to bars *e e*, which are hinged to a cross-rod, *f*, secured to the machine-body. The lower ends of bars *e* are prevented from moving laterally upon the bar or rod *f* by keepers *g*, secured to the body A, contiguous to said bars *e*. Midway of its length the frame E carries a cross-piece, *e'*, the ends of which are trunnioned in the side pieces of said frame. The upper end of the stem D' passes through the cross-piece *e'*, and is secured adjustably therein by a pin, e^2, passing laterally through the cross-piece and through one of a series of holes in the upper end of the plunger-stem.

The construction of the plunger-head D will now be explained. $f^\times$ $f^\times$ designate a pair of inverted-L-shaped metal strips, into which are inserted the ends of a series of strips, *g'*, which are secured to the strips $f^\times$ by screws *h h'*. These strips *g'* have the appearance in cross-section of an isosceles triangle provided with a V-shaped base and inverted, or, to be more exact, has the outline of a figure which would be formed by inverting an isosceles triangle and resting a trapezoid upon the same, as will be readily understood from the drawings. This construction, it will be readily understood, leaves open spaces between the sides of the slats, which spaces diverge toward the top and bottom. In the upper portions of these spaces, resting upon the strips *g'*, are a series of valve-strips, *j*, the ends of which are reduced so as to fit loosely beneath the flanges of strips $f^\times$. To a number of these strips, *g*, in the center

of the head, is secured the socket I for the stem D′. This socket consists of a base, *i*, through which screws or similar devices are inserted into the strips *j*, and a socket proper, *i′*. The end of the stem D′ is reduced and fits snugly within the socket *i′*, and is secured therein in any suitable manner. The end of the stem is reduced in such an amount that when the stem is inserted in the socket the walls of the socket will be flush with the sides of the stem, thus leaving no projecting edges or corners to tear or otherwise injure the clothes.

From the foregoing description it will be seen that as the plunger-head is raised and lowered its valve-strips will open and close the spaces between the strips *g′*, and thus suck the water upward through the clothes and also force it downward through the same. The slide in the top A′ permits the plunger to be oscillated also, and thus thoroughly knead the clothes. The form of the frame E and its connection to the cross-rod *f* permits not only a direct up and down motion of the plunger, but also the oscillating motion thereof before described. It will also be observed that the plunger may be readily removed from the machine by simply removing the pin which secures the stem to the frame and drawing the plunger-head close up to the top of the receptacle, and then raising such top, after which the stem is drawn back out of the slot in the cover.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An improved plunger for washing-machines, consisting of a series of strips, *g′*, set rigidly in end pieces, *f*×, and a series of strips, *j*, interposed between the upper edges of strips *g′*, and set loosely in the said end pieces, *f*×, substantially as described.

2. The combination, with the washing-machine body, of the plunger working therein, the rectangular frame E, to which the plunger-stem is adjustably secured, the arms *e*, hinged at their lower ends to the side of the machine-body, and a cross-rod carried by the upper ends of the said arms, to which the rectangular frame E is hingedly secured, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

NATHAN H. HAWKINS.

Witnesses:

J. S. TURNER,

JAS. REYNOLDS.