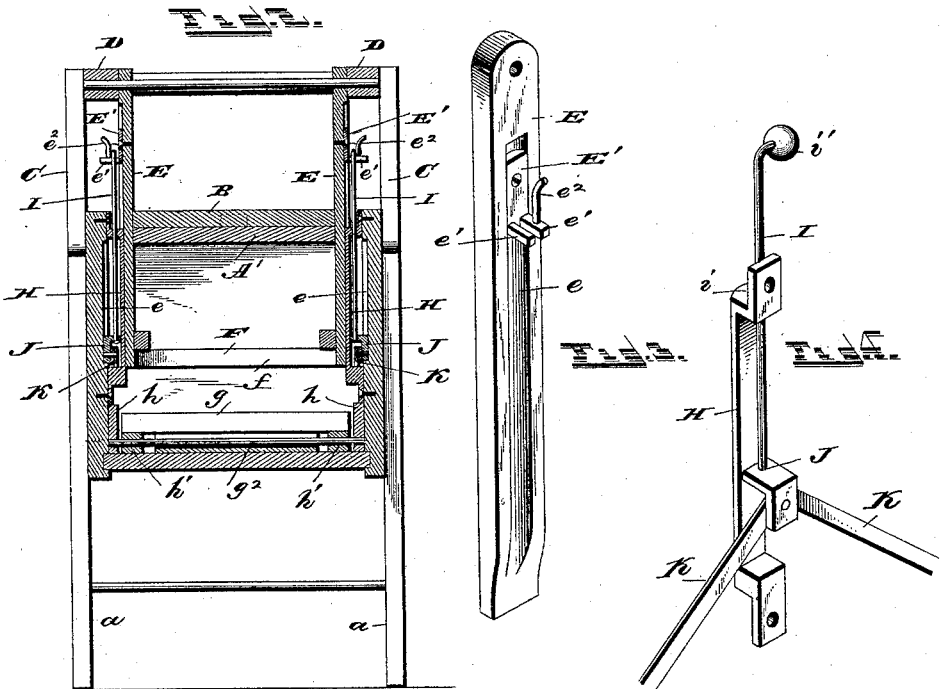
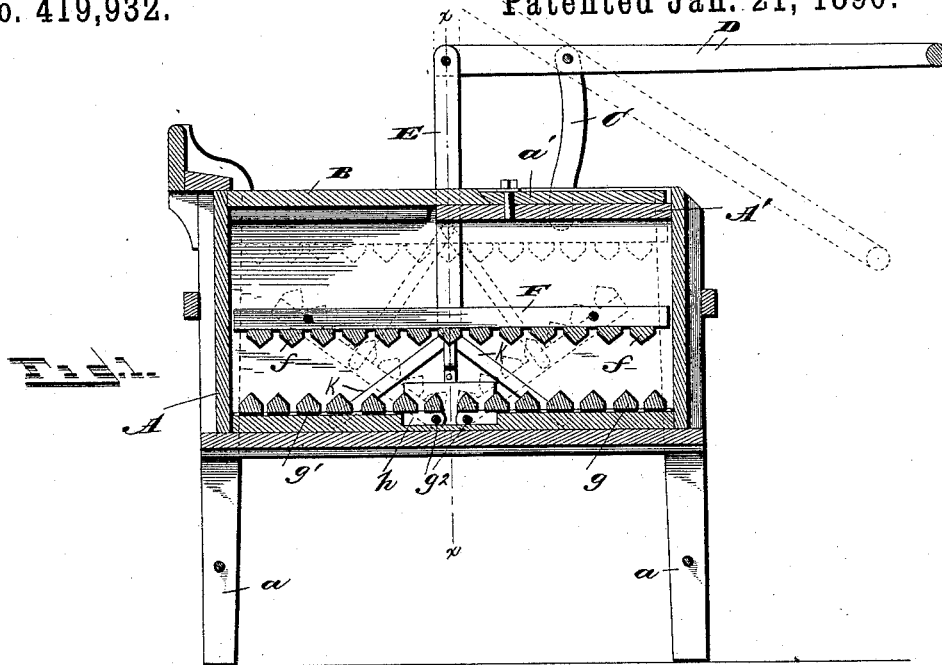


(No Model.)

H. ERNST.
WASHING MACHINE.

No. 419,932.

Patented Jan. 21, 1890.



Witnesses

G. S. Elliott.
E. W. Johnson

By his Attorneys

Henry Ernst.

Inventor

UNITED STATES PATENT OFFICE.

HENRY ERNST, OF PONCA, NEBRASKA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 419,932, dated January 21, 1890.

Application filed May 16, 1889. Serial No. 310,934. (No model.)

To all whom it may concern:

Be it known that I, HENRY ERNST, a citizen of the United States of America, residing at Ponca, in the county of Dixon and State of Nebraska, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to certain new and useful improvements in washing-machines, the object of the same being to provide a machine by means of which clothes can be cleansed by agitating them between two boards, one of which reciprocates vertically, while the other, made up of two parts, moves upon pivots toward the upper board, both of the boards or washing-frames being located within the box or tub and adapted to be operated by a single handle, as will be hereinafter fully set forth; and my invention consists in the special construction and combination of the parts to be hereinafter particularly claimed.

In the accompanying drawings, Figure 1 is a longitudinal section of a washing-machine constructed in accordance with my invention. Fig. 2 is a vertical sectional view taken through the line *xx* of Fig. 1. Fig. 3 is a detail perspective view showing the construction of one of the vertical strips to which the handle-bars are attached. Fig. 4 is a detail perspective view showing the means for connecting the lower pivoted frames with the vertical strips shown in Fig. 3. Fig. 5 is a view on an enlarged scale of one of the cross-strips attached to the washing-frames.

A refers to a rectangular box or tub mounted on legs *a a*, said box being provided at one end with cross-boards to which the wringer can be attached. This box or tub A is provided with a rigid cover or top A', which covers about one-half of the upper part of the box, and to this cover is attached a suitable turn-button *a'*, for retaining in place a removable top B, which rests upon strips secured to the tub.

To near one end of the box or tub A are pivoted arms or links C, the lower ends thereof being secured to the sides of the box, while the upper ends are pivoted to the handle-bars D. To these handle-bars are pivoted side pieces or bars E, which are rigidly connected at their lower ends to the rectangular frame F, provided on its under side with cross-strips *f*, said cross-strips having angular faces provided with longitudinal grooves, as shown in Fig. 5. The bars E pass through openings or recesses in the top A', and the outer edges thereof are grooved longitudinally, as shown at *e*, and in the upper part of said grooves are secured castings E', provided with outwardly-projecting arms *e'*, one of said arms carrying an upwardly-projecting pin *e''*, for the purpose to be hereinafter set forth.

It will be obvious that when the handle-bars are operated the frame F will be reciprocated vertically, and when it is desired to place the clothes within the tub this frame F can be swung out of the tub to permit free access thereto.

The lower frame G is made up of two sections *g* and *g'*, secured to a board attached above the bottom board of the tub, and this board is cut away centrally to provide a space within which the transverse rods *g''* may lie, said rods connecting the inner ends of the side pieces of the frame to blocks *h h*, secured to the inner sides of the box or tub at the center thereof. These rods *g''* pass through the side strips *h'* of the frames *g g'*.

H refers to guide pieces or castings secured to the inner sides of the box or tub, these castings being provided at their upper ends with perforations *i*, through which pass rods I, the upper ends of which are bent at right angles and provided with handles or knobs *i'*. The lower ends of these rods I are journaled in a casting or angular piece J, to which are secured the ends of bars K K, said bars being pivoted at or near the center of the sides of the frames *g g'*. It will be obvious that when the rods I are raised the frames *g g'* will be inclined upon their pivots, as shown in dotted lines, Fig. 1. When it is desired to connect the pivoted frames *g g'* to the reciprocating bar E, the upper end of the rod I is placed between the outwardly-pro-

jecting lugs e' of the casting E' , and the handles on the rods I are turned so that the bent ends thereof will lie between the pin e^2 and the casting. Thus the parts will be connected, 5 so that when the frame F is reciprocated the pivoted frames $g g'$ will be drawn to and from the same. These frames are adapted to fit snugly above each other, and the cross-pieces attached to the frames intermesh with each 10 other.

The clothes are placed between the two frames, and when the handle is reciprocated the clothes will be cleansed in a short time by the pressure of the frames upon each other 15 without rubbing or injuring the fabric in any manner.

I am aware that prior to my invention it has been proposed to provide washing-machines with frames within which the clothes 20 are placed and cleansed by pressure or by causing said frames to move together, and I do not claim such construction, broadly; but

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

25 1. In a washing-machine, the combination of a reciprocating-frame F , frames pivoted within the tub, and provided with arms $K K$, connected to a rod I , said rod being adapted to engage with fastenings attached to the reciprocating bars, carrying the frame F , substantially as shown, and for the purpose set 30 forth.

2. In a washing-machine, the combination of the handle-bars D , connected to the tubs 35 by links C , vertical reciprocating bars secured to the handle-bars and provided with a frame which is adapted to move vertically within the tub, connecting-bars E , having

grooves e and a casting E' with outwardly-projecting pins, a two-part frame pivotally 40 secured to the lower part of the tub and provided with links $K K$, connected to a rod which can be thrown in and out of engagement with the casting E' , the parts being organized substantially as shown, and for the 45 purpose set forth.

3. The combination, in a washing-machine, of a reciprocating frame having vertical bars 50 E secured centrally thereto, and a bottom frame made up of two sections, said sections having arms $K K$ pivoted thereto and connected to the bar E of the upper frame, substantially as shown, and for the purpose set forth.

4. The combination, in a washing-machine, 55 of a tub or receptacle A , provided centrally with castings or guides H , a two-part frame pivoted centrally to the tub, so that the free ends thereof can be raised within the tub, links $K K$, pivoted to said arms and connected 60 to a casting J , said casting also being connected to a rod I , the upper end of which is bent as shown, and a frame F , having bars E , said bars carrying castings E' , with which the end of the bar I is adapted to engage, said 65 bar being secured at its upper end to the handle-bars D , connected to the tub by links C , the parts being organized substantially as shown, and for the purpose set forth.

In testimony whereof I affix my signature in 70 presence of two witnesses.

HENRY ERNST.

Witnesses:

A. G. KINGSBURY,
O. E. MARTIN.