(No Model.)

W. H. HAIRE.

WASHING MACHINE.

No. 452,670. Patented May 19, 1891.

Fig. 3

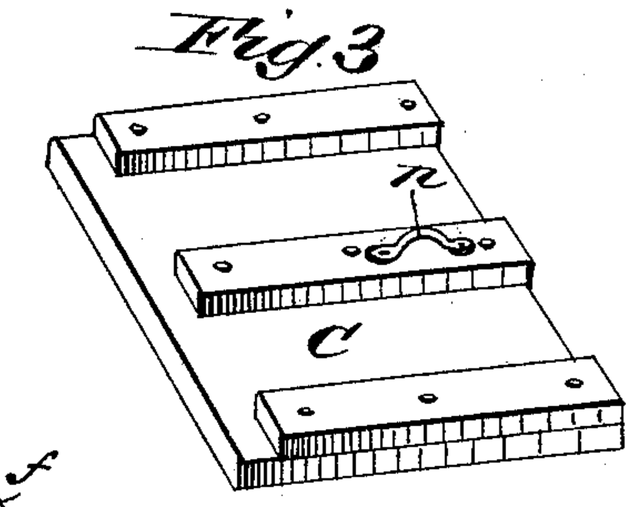


Fig. 1.

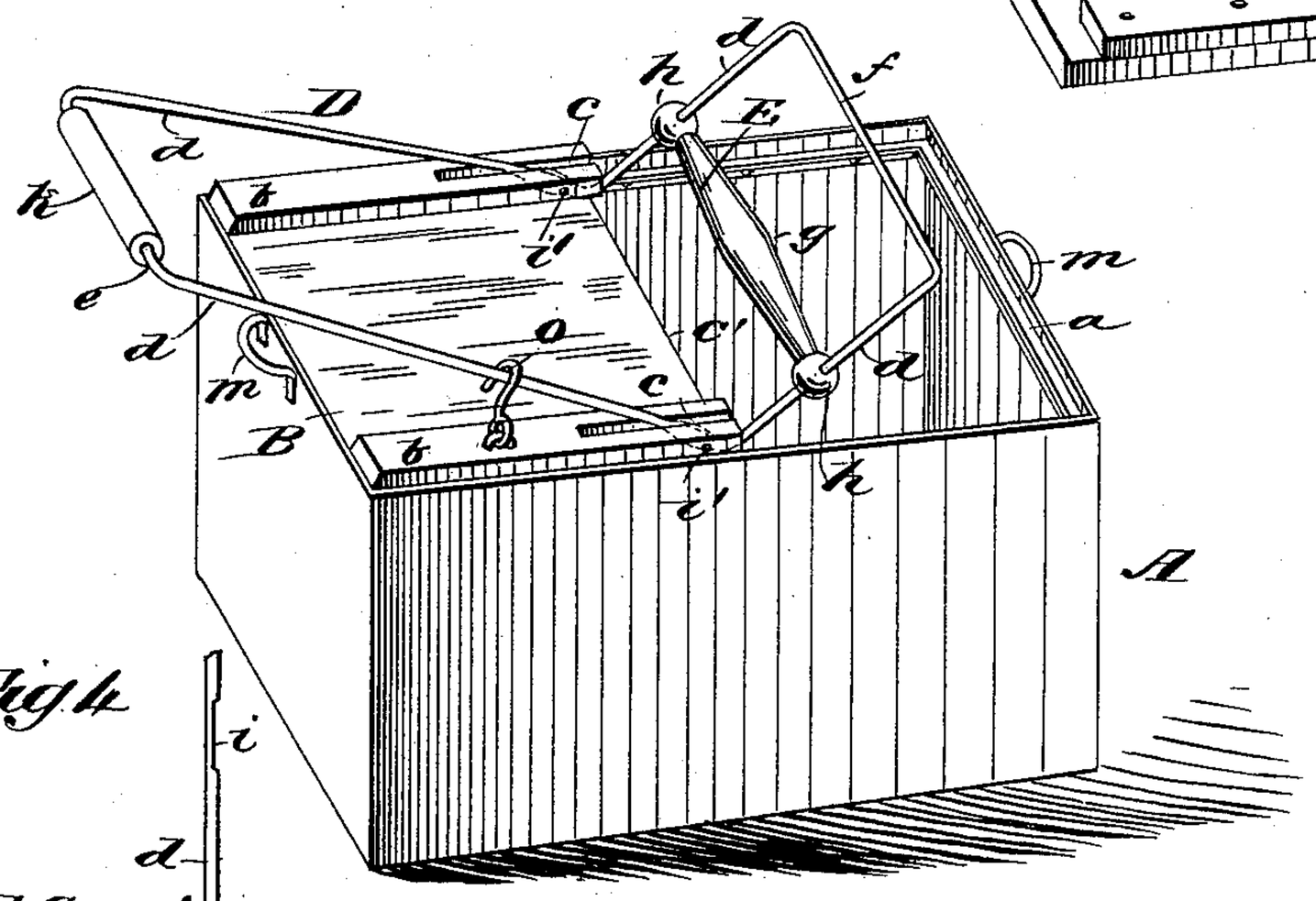


Fig. 4

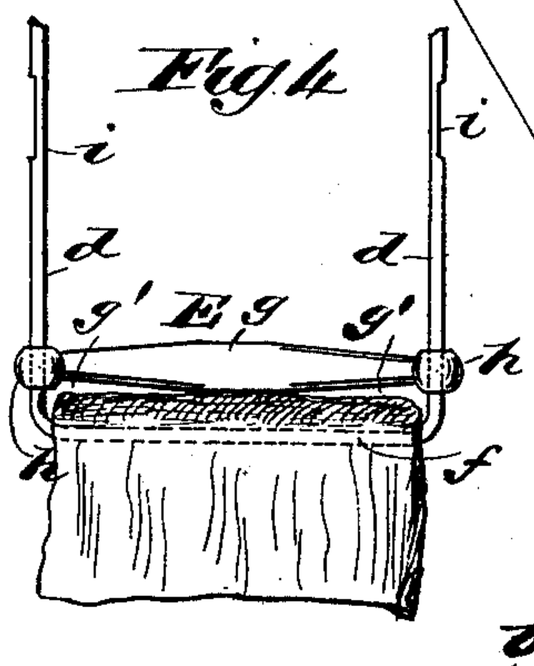
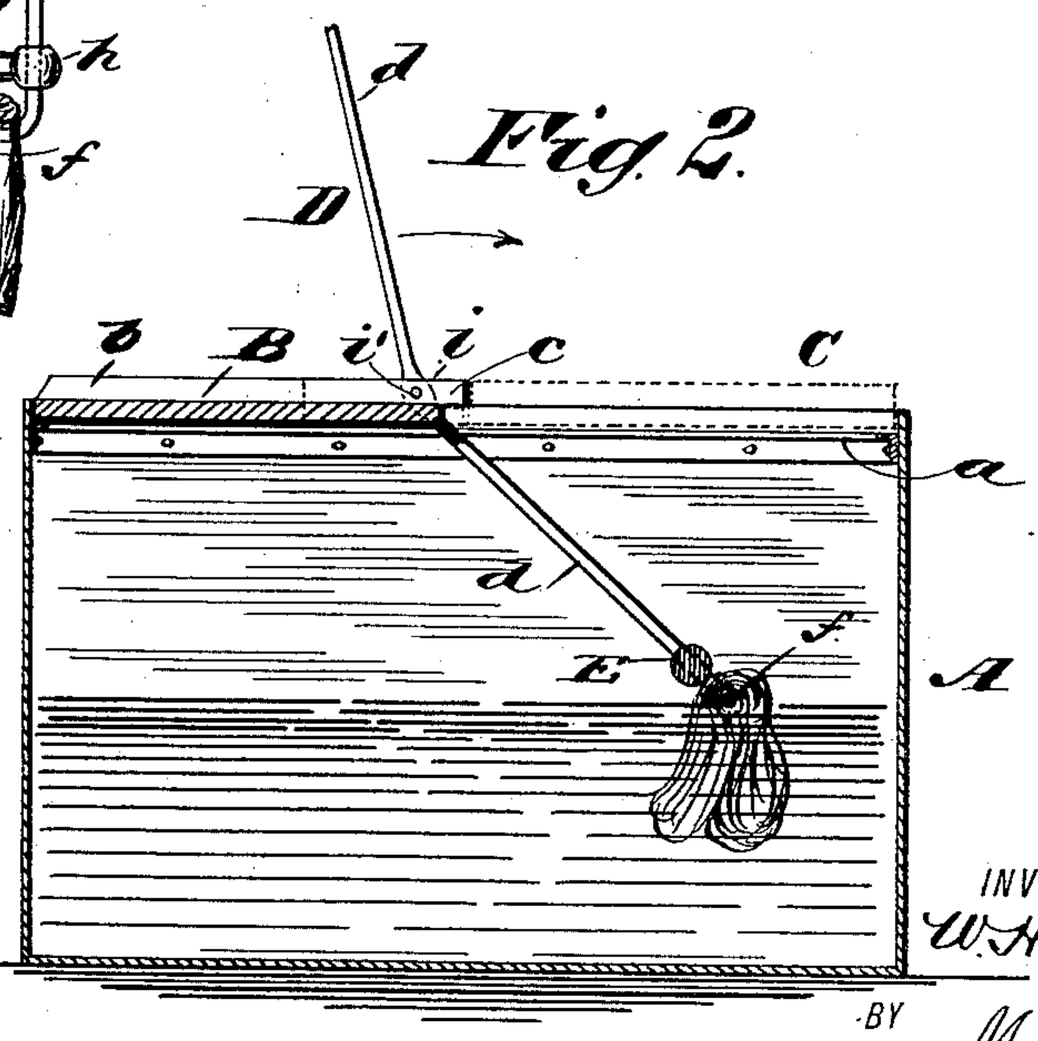


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM H. HAIRE, OF MORRISTOWN, TENNESSEE, ASSIGNOR OF ONE-HALF TO ROBERT WOOD, OF SAME PLACE.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 452,670, dated May 19, 1891.

Application filed September 20, 1890. Serial No. 365,626. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. HAIRE, of Morristown, in the county of Hamblen and State of Tennessee, have invented a new and useful Washing-Machine, of which the following is a full, clear, and exact description.

This invention relates to an improved washing-machine of a type employing vibratory agitators, and has for its objects to produce a simple and efficient device of low cost and durable construction which will afford a vessel wherein the water may be heated which is used to wash the soiled fabric, and which when operated will rapidly renovate the soiled goods by manipulation within the machine.

To these ends my invention consists in the construction of parts and their combination, as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the device with the loose lid removed and the parts adjusted to receive articles to be washed. Fig. 2 is a sectional side elevation of the same. Fig. 3 is a perspective view of the loose lid of the machine; and Fig. 4 is a detached view of the clothes-clamping agitator device broken, showing material that is to be washed in clamped connection with the agitator.

The body of the washing-machine consists of an elongated rectangular chamber A, that is preferably made of galvanized sheet-iron. Said chamber, having suitable dimensions for efficient service, is stiffened at its upper edge by an angle-iron ledge *a*, which is secured within the chamber near the top by rivets or other means. Upon the ledge *a* the cover of the chamber A is located, which cover is comprised of two sections B C of equal dimensions. The portion B of the cover is constructed of wooden material, preferably, and has the stiffening-battens *b* secured on its top surface near the side edges, said cover-section being secured on the ledges *a*. A longitudinal slot *c* is formed in each batten *b* and through the board cover-piece B, which slots extend from the inner edge *c'* of the cover-piece a proper distance toward the other end of said portion B.

The device for agitating the material to be washed within the chamber A consists of an elongated frame D, made of a metal rod bent to form two side bars *d* and two end cross-bars *e f*. There is a clothes-clamping block E mounted on the side bars *d* of the agitator-frame D and adapted to slide freely. As shown, the clamping-block E is formed of metal and is tapered from a central point *g* toward the ends *h*, where rounded bosses are produced, which are perforated in parallel planes for their loose engagement with the bars *d*, as before stated. The side bars *d* of the agitator-frame D are flattened at *i* and oppositely perforated in these flattened portions for the pivotal support of the frame that is slid within the slots *c* of the cover-piece B and adapted to vibrate in the slots by an engagement of transverse pins *i'*, which pass through the edges of the battens *b* and the perforations in the flattened parts *i* of the side bars. The points of pivotal support afforded the agitator-frame D on the cover-piece B are such a proportionate distance from the cross-bar *f* that the latter-named portion of the frame will properly vibrate above the bottom of the chamber A when the device is in use. At points immediately below the pivots in the flattened parts *i* of the side bars *d* these portions of the agitator-frame D are equally bent in the same direction at an obtuse angle, as shown in Fig. 2, which will incline the portions of the side bars that lie below the pivot-pins *i'* when the upper portions of said side bars are nearly vertical.

On the upper cross-bar *e* a handle *k* is loosely secured, which handle is made of wood or other material which is a poor conductor of heat, and loop-handles *m* are secured on each end wall of the chamber A to afford means for its portage.

The cover-section C is preferably made of wooden plank of proper thickness, and is battened, as shown in Fig. 3, to prevent warping, a handle *n* on its upper surface affording means to conveniently manipulate the cover-section. The dimensions of the loose cover-section C are proportional to the size of the chamber A, so that it will fit neatly when it is placed on the ledges *a*, and thus close the entire top of the chamber.

In putting the washing-machine into service the chamber A is placed on a stove, range, or furnace, with sufficient clean water in it to produce a requisite amount of suds for washing the articles to be operated upon. When the water is properly heated, the lid or cover-piece C is removed and the frame D is rocked into the position shown in Fig. 1, and so retained by an engagement of the hook *o* with one of the side bars *d*. The elevation of the lower portion of the frame D, which is effected by the depression of the upper portion, as stated, will permit the heavy clamping-block E to slide away from the lower cross-bar *f* of the frame, so that garments or any fabric to be washed within the capacity of the machine may be hung on the cross-bar. Then a release of the hook *o* from the upper part of the agitator-frame D will allow the clothes to enter the water in the chamber A by reason of their gravity and the added weight of the block E, which will slide down on the goods and clamp them in place on the cross-bar *f*. The material to be washed having been soaped, or soap or other detergent having been placed in the chamber A with said material, the vibration of the frame D after the cover C has been placed on the chamber A will thoroughly agitate the water and cause it to penetrate the porous fabric, so as to remove dirt therefrom.

The peculiar shape of the clamping-block E is one of the important features of the device, as from its shape its center *g* will bear on the clothes near the center of the bar *f*, and will leave spaces *g'* between the clothes on the bar and the sloping portions of the clamping-block, whereby currents of the suds-water are projected through the loosened portions of the clothes and through these spaces *g'* forcibly when the frame D is rocked, which action will speedily remove dirt from the clothes.

From the construction of the device convenience is afforded for the frequent inspection of the fabric while it is being washed in the machine, and, if desired, the water may be kept boiling on the source of heat-supply—such as a range or furnace—while the washing is in progress.

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

In a washing-machine, an agitator-frame composed of a single bar of metal bent into elongated rectangular form, having its side limbs flattened oppositely and perforated for pivotal support, a handle that is heat-resisting loosely mounted on the upper cross-bar of the agitator-frame, and a heavy metal clamping-block which is tapered from its center toward the ends, which are perforated, to slide on the side bars of the frame, substantially as set forth.

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