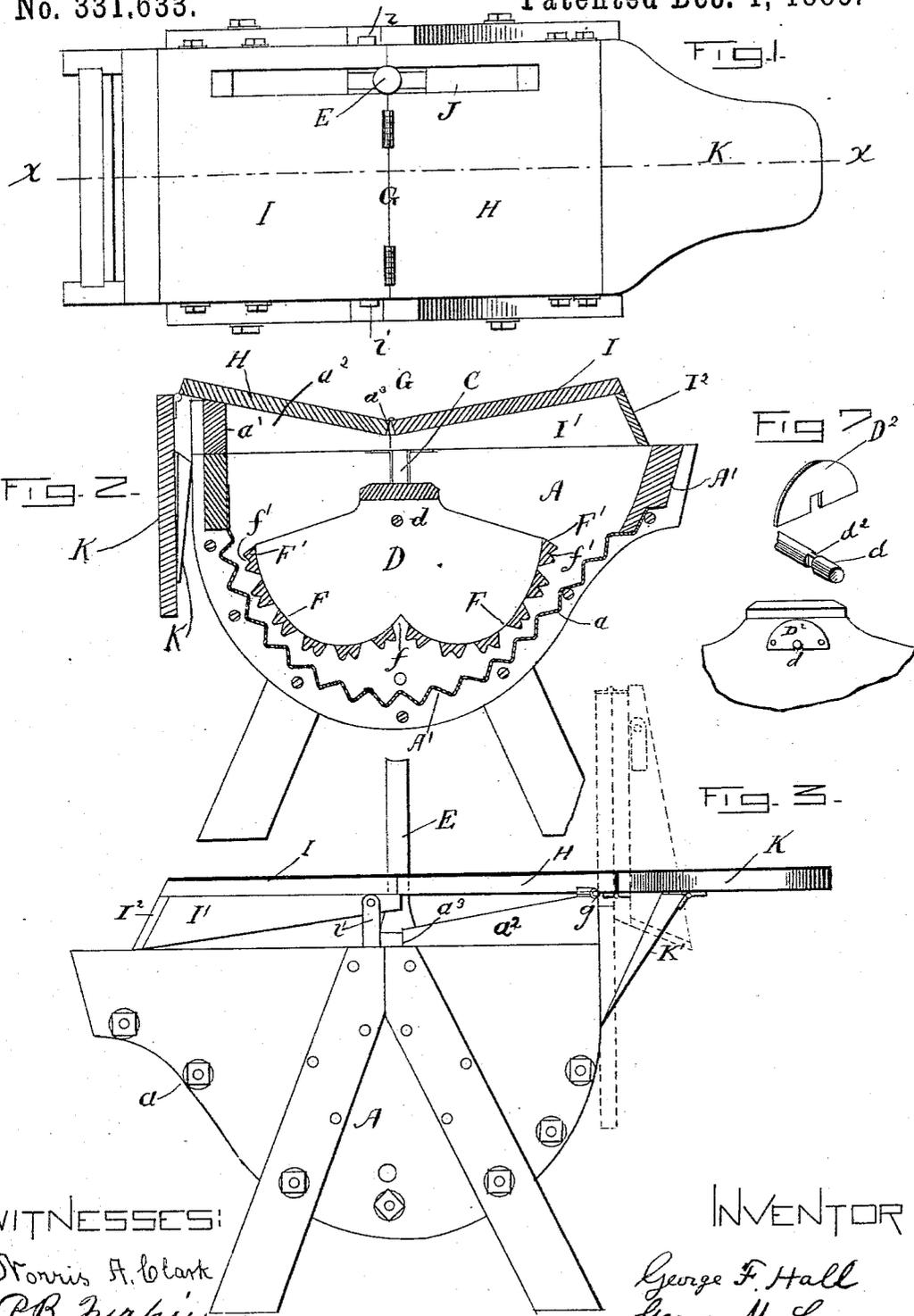


G. F. HALL & G. M. LANE.

WASHING MACHINE.

No. 331,633.

Patented Dec. 1, 1885.



WITNESSES:
 Morris A. Clark
 P. B. Turpin.

INVENTOR
 George F. Hall
 George M. Lane
 By R. S. & A. Lacey ATTYS

(No Model.)

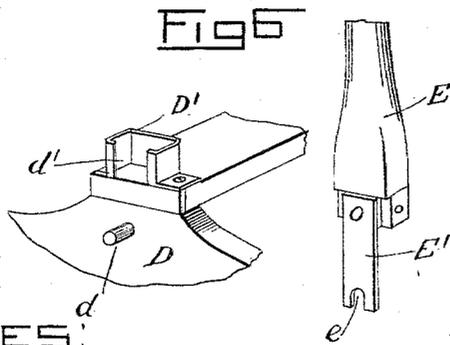
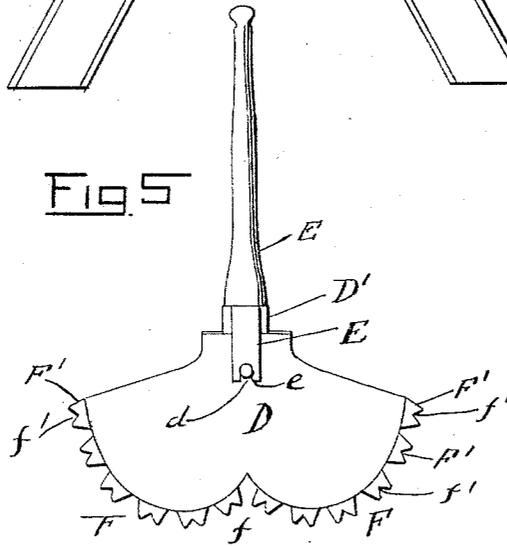
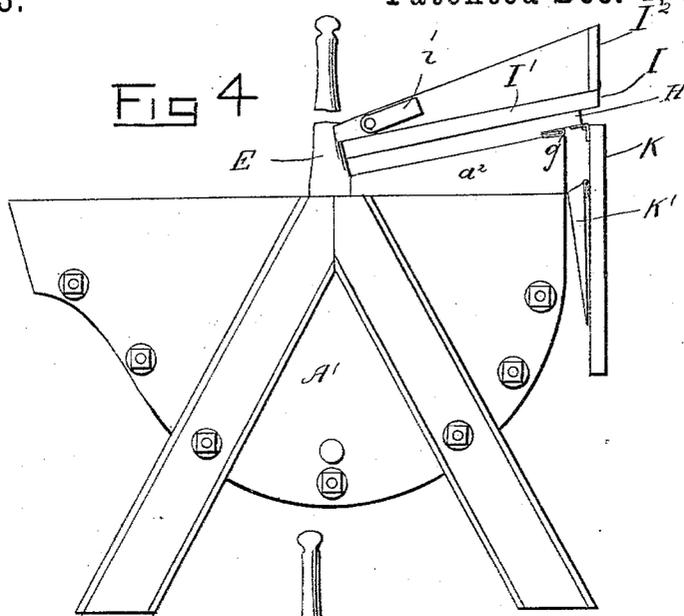
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UNITED STATES PATENT OFFICE.

GEORGE F. HALL AND GEORGE M. LANE, OF ASBURY PARK, NEW JERSEY.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 331,633, dated December 1, 1885.

Application filed September 5, 1884. Serial No. 142,314. (No model.)

To all whom it may concern:

Be it known that we, GEORGE F. HALL and GEORGE M. LANE, citizens of the United States, residing at Asbury Park, in the county of Monmouth and State of New Jersey, have invented certain new and useful Improvements in Washing-Machines; and we do 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 the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to washing-machines, and has for its object a novel construction of the reciprocating rubber, whereby, when in operation, the liability thereof to rise in its bearings from the pressure of clothing is obviated. It also has for its object a novel construction of lid by which it properly serves its purpose as a lid while washing, and may thereafter be adjusted for use as a drip-board or as an ironing-table. It has for further objects other improvements, as will be described.

The invention consists in certain novel constructions and combination of parts, as will be specified and claimed.

In the drawings, Figure 1 is a plan view. Fig. 2 is a vertical section on line *x x*, Fig. 1, and Fig. 3 is a side view of our machine. Fig. 4 is a side view, similar to Fig. 3, with the parts of the lid adjusted into a different position. Fig. 5 is a detail side view of the rubber. Fig. 6 is a detail perspective view showing detached portions of the rubber and handle and illustrating the connection between same. Fig. 7 is a detail of the rubber-supporting rod and the means employed to prevent lateral and rotary movement thereof.

The suds-box A is provided with a corrugated bottom, A', which is curved, as shown, having one side, *a*, flaring outward or increasing in inclination toward its upper end.

The end board, A', of the suds-box is adapted to support a wringer, and is projected outward, as shown, so the wringer may be permanently secured thereto without interfering with the washing apparatus when the latter is being operated.

The side plates or boards of the suds-box

are provided on their inner sides with grooves C, fitted to receive the trunnions of the rubber, which have bearings in the lower ends of said grooves.

We by preference, for the reasons described hereinafter, project one end, *a'*, of the suds-box above the other, and incline the upper edge, *a''*, of the side boards down from said end *a'* to the grooves C, at which point the side boards are cut vertically downward at *a'''*, connecting with the horizontal upper edge, as shown in Fig. 3. The rubber D is provided with lateral trunnions *d*, which journal in the grooves C of the suds-box. On the upper side of said rubber, at one end of same, we secure or form a socket, D', open at the top to receive the foot of the handle E, and preferably slotted at *d'* in its outer side to permit the passage of the plate E', which depends from the outer side of the handle, and is provided in its lower end with a slot, *e*, fitted to rest over the adjacent trunnion *d*, as will be understood from Figs. 5 and 6.

It is obvious that by securing plate E' to the handle above the part of same that fits in socket D' the slot *d'* in the latter could be dispensed with and the plate E' extend down on the outside of the socket; but we prefer the construction as shown and before described. This construction furnishes a convenient means of detachably connecting the handle to the suds-box, and one which forms a secure joint when united, and dispenses with bolts, clamping-screws, &c. The handle, when detached, forms a convenient clothes-stick. The rubbing-surface of the rubber D is formed of two meeting segments, F F, the rubbing-surface at the time of junction of the two segments curving upward, forming a recess, *f*. The segments curve outward and upward from this recess, and are provided with transverse slats or bars F', preferably grooved longitudinally at *f'*, forming two rubbing-ribs on each slat or bar. By this form of rubber we provide two points or surfaces for contact with the clothing, both of which are out of line with the trunnion or bearings. We thus provide a greater amount of rubbing-surface than when the rubbing-face is formed in a continuous curve or arc. The two rubbing-points also have a tendency to draw the clothes toward the bottom or center of the tub, and the transverse

recess or space f serves to loosen the clothing by permitting them to spread or swell after contact with one segment, so that the next contact will turn them, thus presenting new surfaces for each rubbing-contact and effecting a thorough cleansing of the clothing, as will be understood.

We prefer in practice to form the trunnion of the ends of a rod which extends transversely from side to side of the rubber. In order to prevent this rod from rotating and from longitudinal movement, we form in it notches d^2 at the inner end of the trunnion opposite that engaged by the handle-plate, and secure on the side of the rubber a plate, D^2 , provided with a slot, the side edges of which fit into notches d^2 and hold the rod from the movements before described. This construction is illustrated in Fig. 7.

The cover or lid G is made of two sections, H and I . The section H is hinged at g to the suds-box at the upper outer end of inclined extension a' , and may be turned down against the inclined edges, as shown. When resting against the inclined edge of extension a^2 , the inner end of the section H rests close to the end a^3 . The section I is hinged at its inner edge to the inner edge of section H , and it is provided with depending side boards, I' , and end board, I^2 . The edges of boards I' are inclined at about the same angle as edge a^2 , and they are extended beyond the inner side of the section I , so they will project under and support the section H when the lid is adjusted to serve as an ironing-board. By the inclination of the extension a^2 and the side boards of section I the lid is depressed centrally and inclined toward such points, so that any water splashed thereon will flow to the center and pass back into the suds-box through the lever-slot J , which is composed of two slots cut from the inner edges of the sections H and I , and in line with each other. The lever projects upward through this slot during the operation of washing. The lid-sections are lowered to the position shown in Fig. 2, and when the washing is concluded and it is desired to use the lid for an ironing or other table it is raised at its central joint until its sections rest in line with each other, when buttons i , pivoted at one end, preferably to section I , are turned down and rest against the suds-box, supporting the lid in the horizontal position. In this position it will be seen the ends of sides I' of section I project under the section H , so the inner end of the latter is supported by such extension, and the strain is relieved from the hinges.

By the side boards, I' , we form substantially a trough on the under side of section I ,

which when turned over onto section H , as shown in Fig. 4, when the clothing is being wrung out, serves as a convenient drip-board, as will be understood, the inclination of section H being also given to the section I , causing the water to drip back into the box. To this outer end of the section H we hinge the board K , which may be turned down against the suds-box, as shown in Figs. 3 and 4, or up into horizontal plane with the lid when the latter is adjusted for use as a table. The board K is held in this last position by a brace, K' , capable of adjustment between its under side and the side of the suds-box, as will be understood from the drawings.

The board K , it will be seen from Fig. 1, is formed to serve as a skirt and bosom board. When the clothing and rubber are being placed on or removed from the suds-box, the lid may be turned entirely away from over said box, as indicated in dotted lines, Fig. 3.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a washing-machine, a lid made in two sections, H and I , hinged together midway the ends of the suds-box, the section H being hinged to the suds-box and held in an inclined position, and the section I being adjustable onto section H and adapted to serve as a drip-trough, substantially as set forth.

2. The combination of the suds-box provided with inclined extensions a^2 , the lid-section H , hinged at one end to the suds-box at the outer end of the extension a' , the section I , hinged at its inner end to the inner end of section H , and provided with depending sides having inclined edges, and button i , substantially as set forth.

3. The combination of the suds-box, the lid composed of section H , hinged at its outer end to the suds-box, and the section I , hinged at its inner edge to the inner edge of section H , the button i , and the board K , hinged to the outer end of section H and provided with a brace, K' , substantially as set forth.

4. The combination, with the rubber having a socket, D' , and trunnion d , of the handle formed at its end to fit in said mortise and having a depending plate, E' , on its outer side slotted in its extremity at e and fitted over the trunnion, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE F. HALL.
GEORGE M. LANE.

Witnesses:

D. I. COFFIN,
JAMES WILSON.