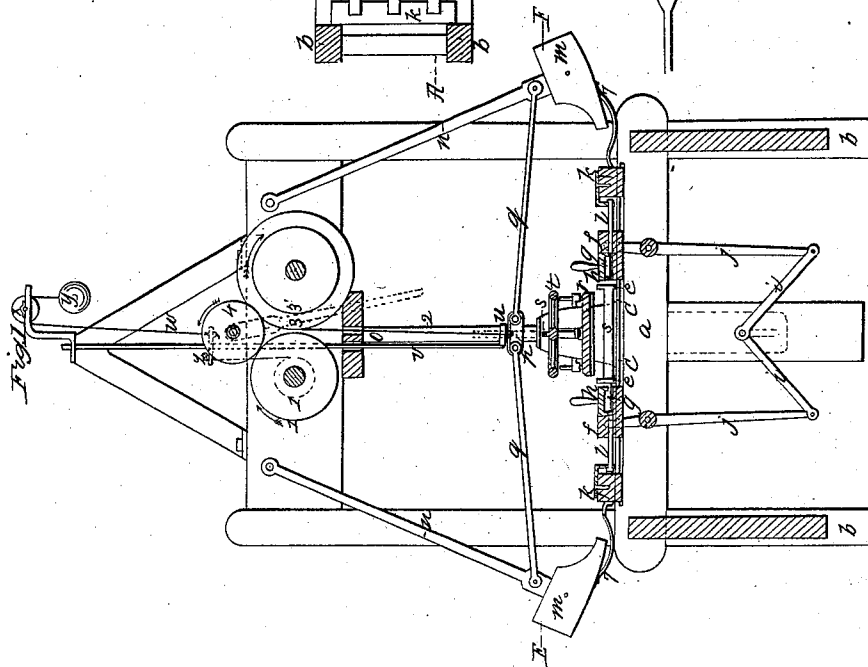
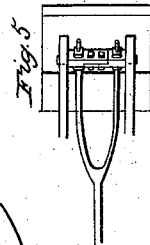
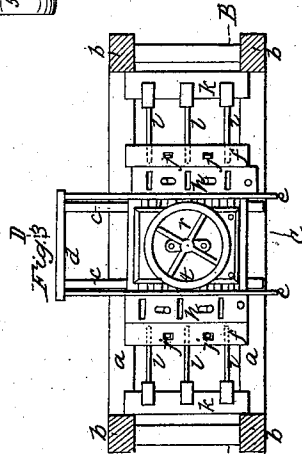
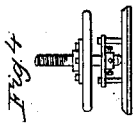


N^o 10,292.



UNITED STATES PATENT OFFICE.

JAMES B. HOLMES, OF CINCINNATI, OHIO.

MACHINE FOR NAILING WASHBOARDS.

Specification of Letters Patent No. 10,392, dated January 3, 1854.

To all whom it may concern:

Be it known that I, JAMES B. HOLMES, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and Improved Machine for Making Washboards; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawings, making part of this specification.

The principal object of my invention is the nailing and clamping together the sides zinc face and body board of a wash board, by the instrumentality of a percussive force, in preference to mere pressure, as being more rapid and easy, and driving the nails more certainly into the wood, and with less danger of splitting or slanting out, and my various improvements herein set forth either have direct reference or are accessory to this object. The greater liability of the nails to split or slant out, when merely pushed into the wood by pressure is well known by those engaged in the manufacture, and may be explained by the fact that the more instantaneously any substance is penetrated by another body the cleaner and more direct is the perforation. An instance of this is seen in the clean round hole sometimes left by a bullet in a pane of glass, which is shattered less in proportion to the swiftness of the missile. This liability to shatter will be very much increased where the substance subjected to the perforation is (like wood) of a fibrous and occasionally, of a cross grained texture. Some years' experience in the manufacture of many thousands of washboards, and my observations in the matter induce the belief that the proportion of those spoiled in nailing by pressure is at least five to one of those spoiled by nailing on my plan.

In the accompanying drawings Figure 1 is a longitudinal section through A, B. Fig. 2 is a transverse section through C, D. Fig. 3 is a horizontal section through E F. Fig. 4 is a detached view of the clamp. Fig. 5 is a detached view of the hammer head.

(a) are two timbers, constituting a bench or table, on which the several parts of the board are placed for joining together. This bench is elevated to a convenient position for manipulation, by means of the posts (b). Two iron bars (c) extending across the bench support the body board a slight distance above the upper surface of the bench. These bars terminate at their rear extremities in a cross strip (d) which forms a stop

against which rest the lower ends of the feet or sides (e) of the washboard.

(f) are two sliding jaws, which being caused to approach each other by means of the treadle and lever movement (h i j) cause the edges of the zinc to penetrate the sides just sufficient for holding them to their places until and during the finishing operation of the hammers. These jaws are provided with pockets (g) into which nails can be inserted through apertures in the top of the jaws. A sliding lid (h) pierced with corresponding apertures affords facility for the insertion of the nails, and then being pushed back, holes them to their proper position, and thus insures their passing straight into the wood.

(k) are the "following jaws" provided each with three rods (l) which I call the "drivers." These rods are headed, so as to enable them to be bridled to the following jaws, and thus of necessity to move to and fro with them, and their points play in sockets in the backs of the sliding jaws (f), these sockets being placed in continuation of the nail pockets, so that the rods (l) on being driven forward will strike the heads of the nails.

(m) are a pair of heavy hammers suspended by their helvies (n) to the top of the frames.

(o) is a rod or bar extending vertically downward from the top of the frame. This bar forms the guide for a sliding block (p) which is connected by rods (q) with the hammers.

It is evident that when the block (p) is pushed to the top of the guide rod, the toggle formed by the said block and the rods (q) will be folded sufficiently to permit the hammers to assume a nearly vertical position, and if this be suddenly effected, the result will be that the hammers will strike the backs of the driving followers, and the drivers being thereby projected forward in their sockets, will drive the nails before them into the wood, and finally the driving jaws coming in contact with the jaws (f) before spoken of, the force of the blow will be communicated through them to the sides of the wash board, and the previously sharpened edge of the zinc will be thereby caused to penetrate forcibly into the sides, and the zinc, the body board, and the sides will thus be firmly and permanently united as in one piece. In order to hold the body

board securely to its place while being thus operated upon, I have provided a clamp (*r*) which depends from the screw (*s*) occupying a threaded aperture within the bar (*o*). By turning the handle (*t*) of this screw, the clamp can be firmly pressed against the body board.

The hammers are alternately elevated and depressed by the following arrangement of mechanism: Immediately above the sliding block is a follower (*u*) capable of sliding up and down along the rod, and thus either allowing the block to ascend or pushing it downward before it along the rod. To this follower is attached a rod (*v*). A cord (*w*) attached to this rod, and carried over a roller (*x*) terminates in a weight (*y*) which gives the rod an upward tendency when not otherwise actuated. Another cord (*z*) attached to the same rod, is wound around a pulley (see dotted lines 1). Another cord (2) is carried up from the sliding block (*p*) and attached to the large pulley (3). Both of these pulleys (1 and 3) have on their shafts other pulleys (1' and 3'), in contact with each of which a friction driving pulley (4) is alternately brought, and this friction pulley, always revolving in the direction of the arrow, will when brought by the handle (4') in contact with the pulley (3') cause the rod and follower to urge the block down the bar, and thus to elevate the hammers, and on the reversion of the handle, the pulley (1') becoming engaged with the friction pulley, the sliding block is caught rapidly upward, and the hammers descend for another blow. Motion is communicated to the friction pulley by means of a band around the pulley (5) on the same shaft. By placing

the handle (4') in a middle position, the hammers will be left to rest in a pendant position. The treadle is maintained in its upper position by a weighted cord (6).

The hammers and the driving jaws are connected together by straps (7) so that the elevation of the hammers shall draw back the said jaws preparatory for another advance of the drivers.

The arrangement here set forth is that which after various trials and experiments I have found to answer best, and which works to entire satisfaction; but the same object may be more or less perfectly accomplished by various devices of a similar character. For instance, the blow may be effected by a pair of heavy weights, which being drawn up inclined planes, are allowed to descend thereon by their gravity; or a pair of heavy wedges descending behind the jaws may force them to converge. The weights in the former case and the jaws in the latter might be furnished with rollers in order to ease their retraction.

Having thus described the nature, construction and operation of my invention, what I claim therein as new and desire to secure by Letters Patent is—

The use or application substantially as set forth, of a percussive force, actuated by "power", to nail and clamp together the parts of a washboard, in the manner substantially as set forth.

In testimony whereof, I hereunto set my hand before two subscribing witnesses.

J. B. HOLMES.

Attest:

GEO. H. KNIGHT,
E. H. PUGH.