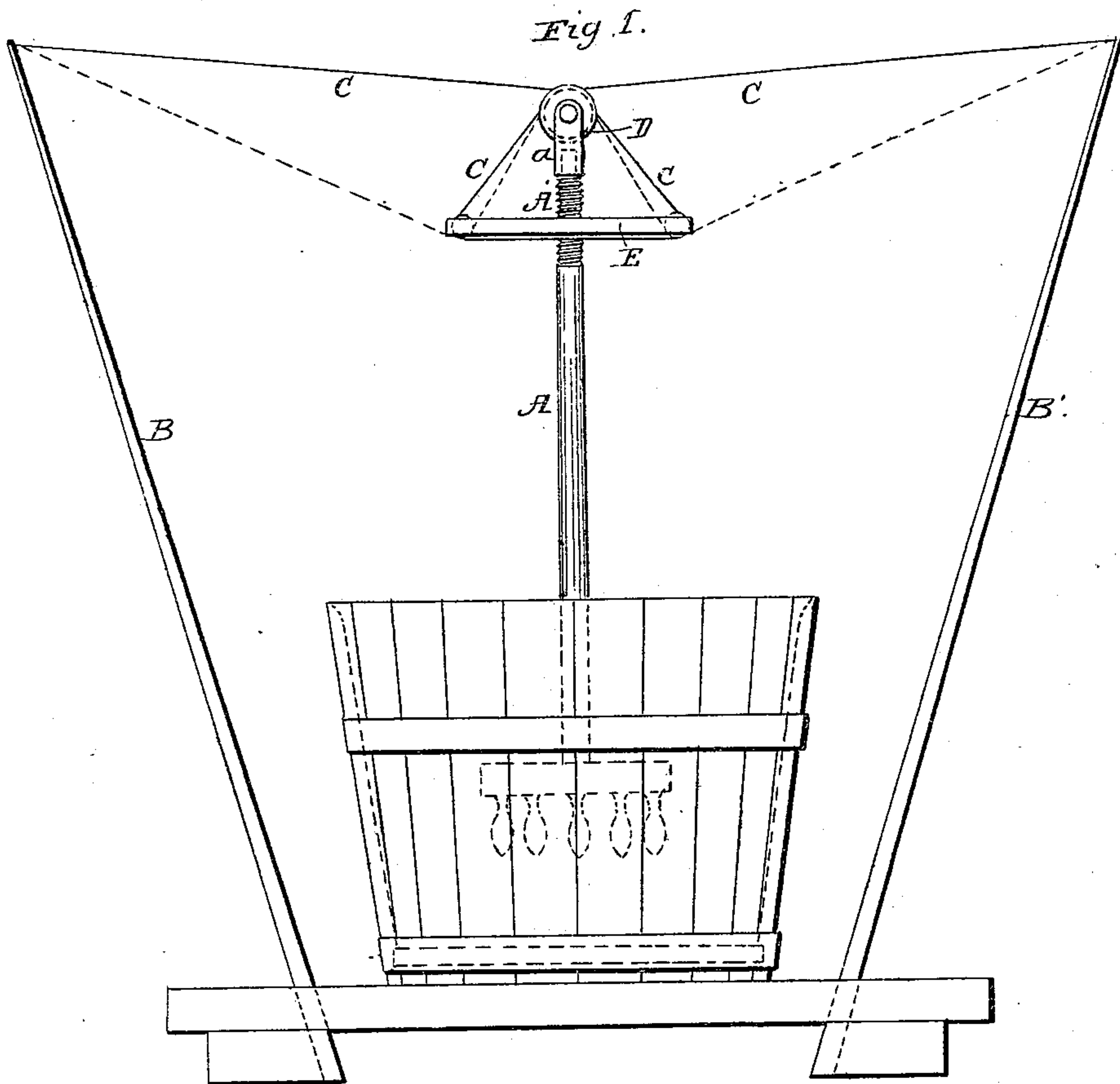


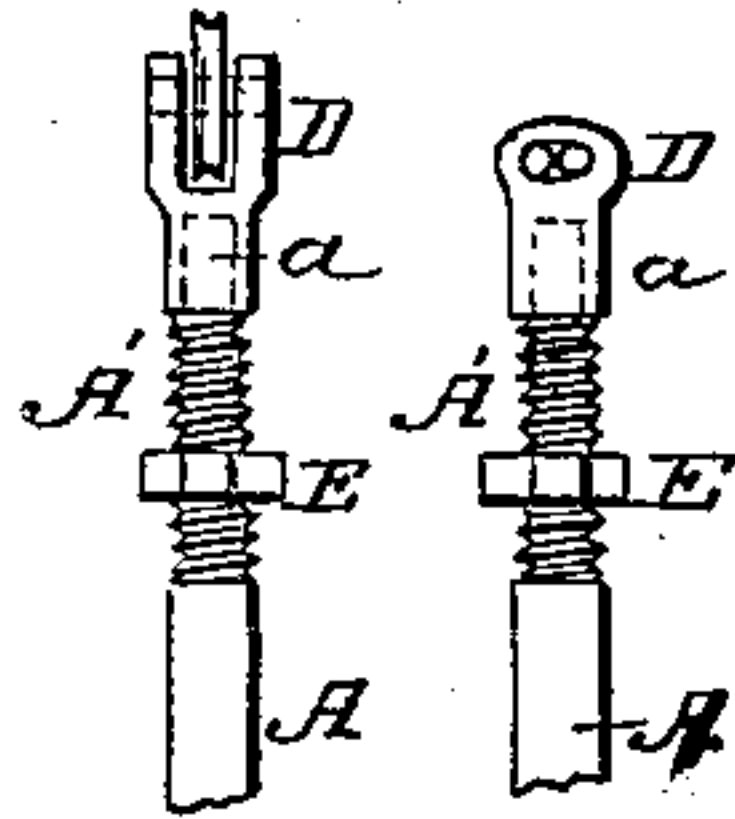
E. DICKERMAN.  
Washing Machine.

No. 42,723.

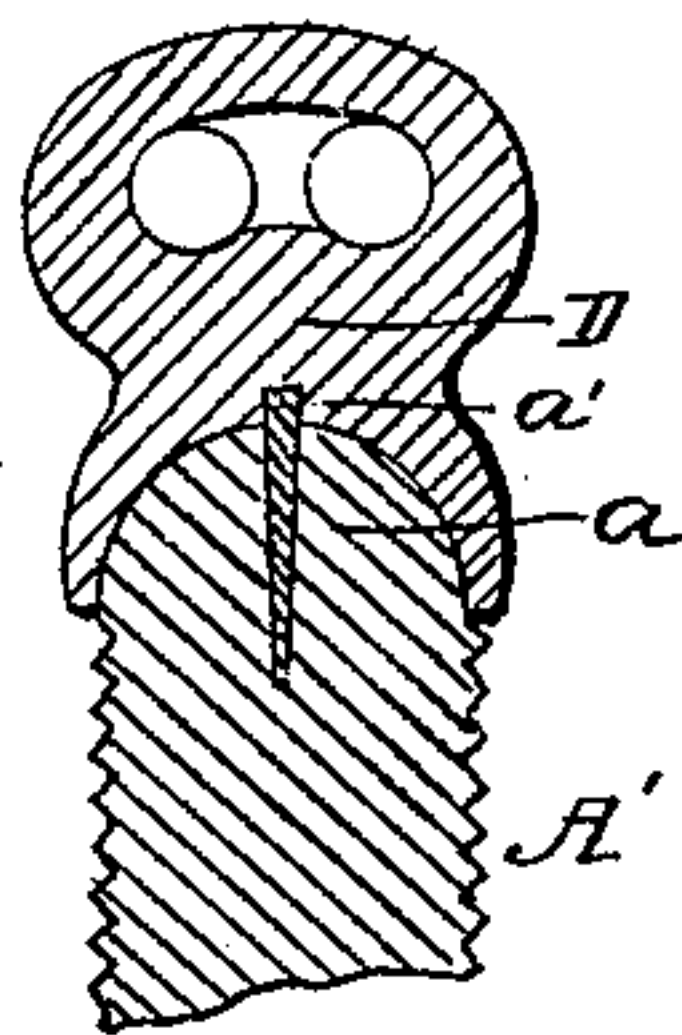
Patented May 10, 1864.



*Fig. 2. Fig. 3.*



*Fig. 4.*



Witnesses:

*George P. Gauster*  
*D. W. Peterson*

Inventor:

*E. Dickerman*  
*per J. D. Peterson Attorney*

# UNITED STATES PATENT OFFICE.

ELLIOT DICKERMAN, OF MIDDLEFIELD, CONNECTICUT, ASSIGNOR TO  
METROPOLITAN WASHING MACHINE COMPANY, OF SAME PLACE.

## IMPROVED WASHING-MACHINE.

Specification forming part of Letters Patent No. 42,723, dated May 10, 1864.

*To all whom it may concern:*

Be it known that I, ELLIOT DICKERMAN, of Middlefield, in the county of Middlesex, State of Connecticut, have invented a new and useful Improvement in Washing-Machines.

My invention consists in certain means of adjusting the length of the cord which sustains the pounding device.

I do hereby declare that the following is a full and exact description of my said invention, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 is a side view, the black dotted lines indicating one arrangement of the cord and the red lines indicating another arrangement of the cord. Fig. 2 represents some of the same parts, seen at right angles to that in Fig. 1. Fig. 3 represents a simpler construction of the top piece. Fig. 4 represents still another modification of the parts. It is a central vertical section through the upper part of the plunger-staff and through the top piece which is mounted thereon. This figure is drawn on a much larger scale than the others.

Similar letters of reference indicate like parts in all the drawings.

This washing-machine operates on the clothes in the tub by striking them in a vertical or nearly vertical direction, and the striker or pounder is supported or partially supported by the aid of two springs and a cord stretched between them in the manner indicated. It follows from this arrangement that the support derived from this means may be increased or diminished by lengthening and shortening the cord. Thus, if the cord is slackened the pounder will naturally tend to oscillate at a low position in the tub, never rising very high; but while the springs and all the other parts remain the same, if the cord is greatly shortened, the pounder will be drawn up and sustained at a higher level. In this latter condition the force of the hands being applied to operate it as before, it will operate higher and will produce no effect on the clothes in the bottom of the tub unless it is subjected to a very great amount of motion. An extreme tightness or extreme looseness of the cord is, for various reasons, objectionable, and it is necessary to the success of such machine that

some means be provided for tightening and loosening the cord at will.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation by the aid of the drawings and of the letters of reference marked thereon.

A is the pounder-staff. B and B' are the springs, and C is the cord. On the upper end of A is turned a head or bearing, *a*, adapted to enter the top piece D, and to revolve freely in the latter. Immediately below *a* a screw-thread, A', is cut on the staff A, extending downward a considerable distance as represented. Before the top piece, D, is applied the cross-piece E is slipped on over *a*, and by turning round upon A is caused to traverse several inches down on the thread A'. The top piece, D, is afterward slipped on over the head *a*, and the cord C is then rove through the parts in the manner indicated by the black dotted line in Fig. 1, or in the manner indicated by the red line as may be desired. I prefer the arrangement indicated by the red line, and will describe it first. Suppose the cord C to be tied fast to the upper end of the spring B. The opposite end of the cord is now passed over the pulley or through the hole in the top piece, D, and is thence passed down around the pulley or through a hole in one end of the cross-piece E. From thence it is stretched along under the cross-piece E, passing close to one side of the standard A, and is passed up around the pulley, or through a plain hole in the opposite end of the cross-piece E. From thence it is stretched up over the pulley or through a hole in the top piece, D, and from there stretched to the top of the spring B', and tied fast. It will be observed that in both ends of the cross-piece E, and also in the top piece, D, a simple hole will answer the purposes of my invention; but I prefer to employ a hole smoothly countersunk or worked out in a funnel shape on each side, so as to accommodate the cord C very easily, and allow it to render or slip through, if required. A still further refinement may be practiced by introducing pulleys, as represented in Figs. 1 and 2; but I do not find this generally necessary.

The other mode of arranging the cord C in my invention is very clearly shown by the



dotted black lines. Starting as before from the top of the spring B, the cord is passed under one end of the cross-piece E, and up through the hole at that point, thence through the hole or over the pulley in the top piece, D, thence down through the hole in the opposite end of the cross piece E, and from thence to the top of the spring B'. With either of these arrangements of the cord C the operation of tightening the cord consists in turning the staff A around in one direction, and the operation of slackening the cord C is performed by turning the staff A around in the opposite direction. The top piece, D, and the cross-piece E are both so held by the cord C that they are not allowed to turn with the staff A. Turning the latter in such direction as to screw it up through the cross-piece E tightens the cord C and supports the pounder at a higher elevation than before. Turning the staff A in the contrary direction slackens the cord C. It does this by allowing some of the cord which was before taken up by the device and compelled to stand in the space between the cross-piece E and the top piece, D, to be released from that position, and allowed to perform its proper function of supporting the weight by stretching toward the springs.

The turning of the plunger-staff A may be effected either by grasping it firmly with one or both hands, or by taking hold of the edge of the plunger or pounder at its base. The latter will give the firmest hold, and allow the operation to be performed with great ease. The adjustment may be effected as delicately as desired by turning the parts in either direction until a satisfactory position of the

pounder is obtained. The operation of screwing up may be facilitated somewhat by partially or entirely supporting the weight of the plunger and staff while turning it. The staff is not liable to turn of itself when the machine is being operated, because the tension of the cord C, stretching between the cross-piece E and the top piece, D, maintains a constant friction on the screw-thread A, which resists any tendency to motion.

Fig. 4 shows the form of socket which I have adopted with success and prefer to any other. The head *a* is turned in a hemispherical form, and a short piece of stout wire, *a'*, is driven in the line of the axis, and allowed to project about one-eighth ( $\frac{1}{8}$ ) of an inch at the top. The diameter of the staff A is about one inch and one-eighth ( $1\frac{1}{8}$ ) inch. The socket in the top piece, D, is correspondingly formed, and the parts are applied together as indicated. I find this form of connection may be very cheaply made, and it operates very satisfactorily.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

In combination with the operative parts of a washing-machine, the plunger-staff A, top piece, D, and adjustable piece E, so arranged and applied as to shorten the cord C by the lowering of the adjustable piece E, and to lengthen it by elevating it relatively to the top piece, D, as herein specified.

ELLIOT DICKERMAN.

Witnesses:

LYMAN A. MILLS,  
WM. W. BAILEY.