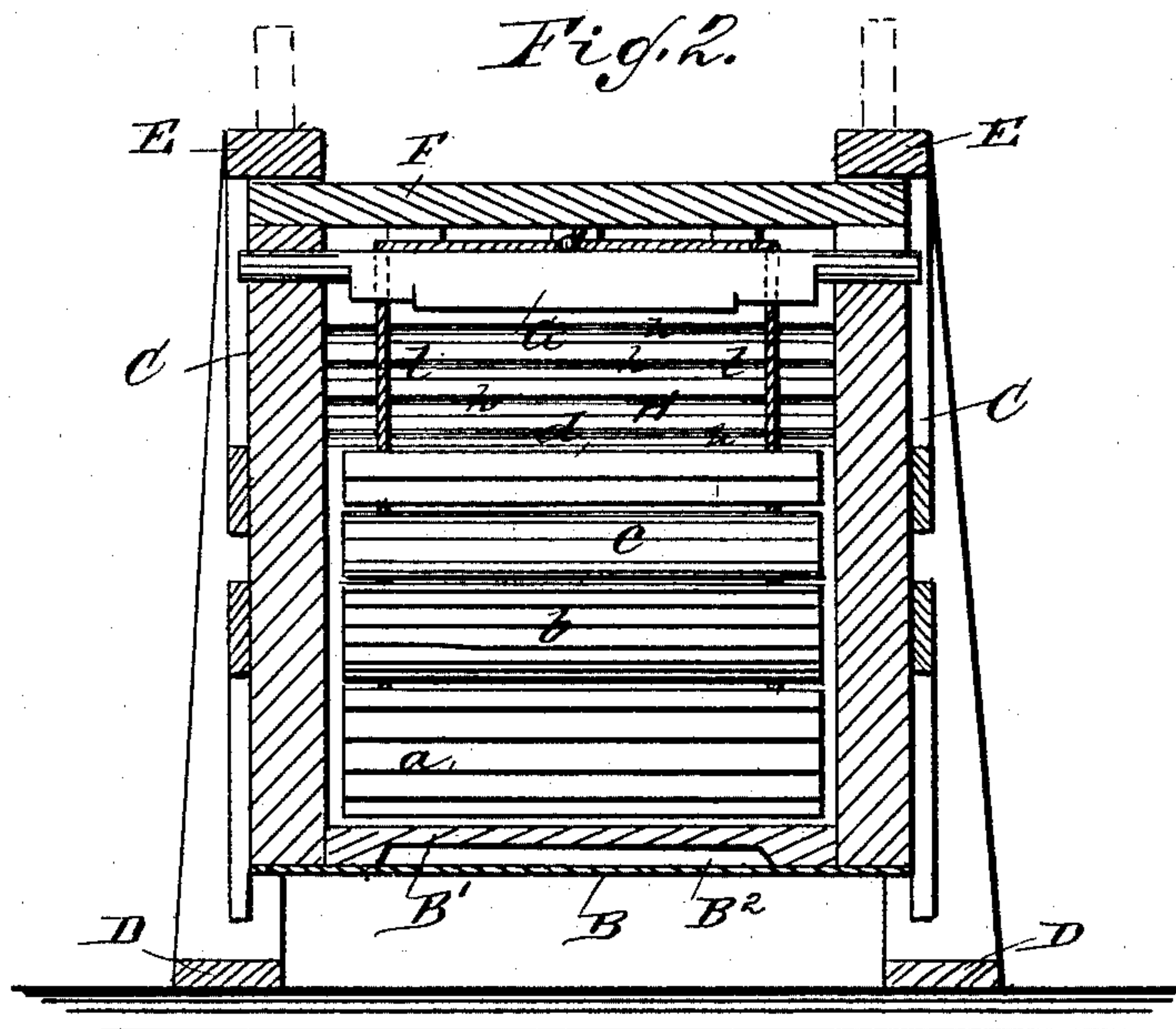
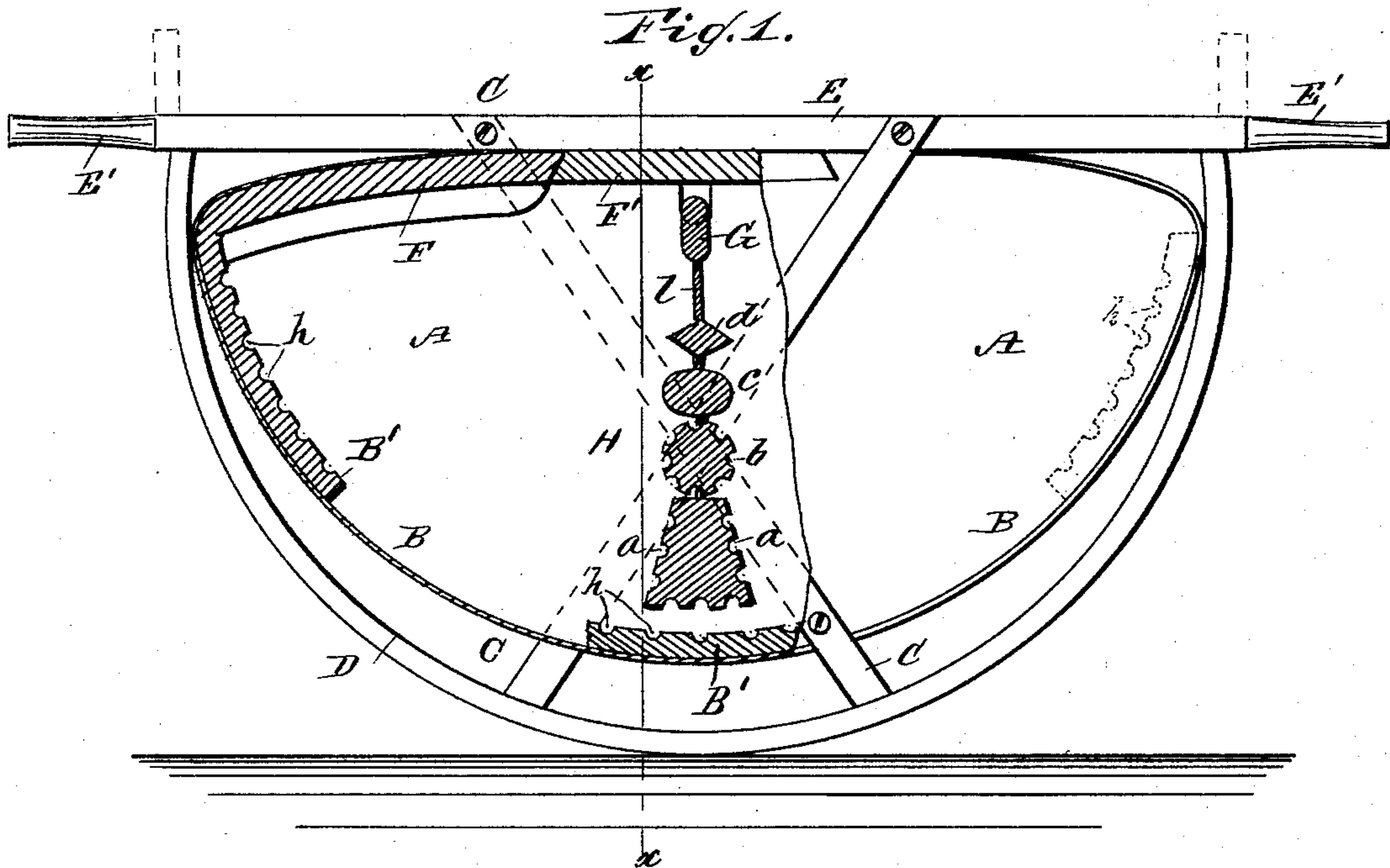


(Model.)

M. L. GROVER.  
WASHING MACHINE.

No. 327,159.

Patented Sept. 29, 1885.



WITNESSES:

*Theo. G. Heston*  
*C. Sedgwick*

INVENTOR:

*M. L. Grover*  
BY *Munn & Co*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

MORGAN L. GROVER, OF LAVALLE, WISCONSIN.

## WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 327,159, dated September 29, 1885.

Application filed October 2, 1884. (Model.)

*To all whom it may concern:*

Be it known that I, MORGAN L. GROVER, of Lavalle, in the county of Sauk and State of Wisconsin, have invented a new and Improved Washing-Machine, of which the following is a full, clear, and exact description.

This invention relates to certain new and useful improvements in that class of washing-machines in which a rocking clothes box or tub is provided and the clothes are washed and cleaned by rocking the said tub, all as hereinafter fully described, and pointed out in the claims.

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

Figure 1 is a longitudinal elevation of my improved washing-machine, parts being broken out and parts in section; and Fig. 2 is a cross sectional elevation of the same on the line *x x*, Fig. 1.

A box or tub, A, having segmental sides, has a curved bottom, B.

The box A is held to crossed braces C, uniting semicircular or like rockers D, with top bars, E, uniting the ends of the rockers, and provided with upwardly or horizontally projecting handles E', either straight or curved. The box or tub A is thus held between two rocking frames, with which the said tub or box can be rocked.

The top F of the box A is provided with a tight-fitting cover, F', and directly below the cover a transverse shaft, G, is journaled in the box, from which a swinging beater extending across box A is suspended.

The beater is formed of a bottom bar, *a*, having the cross-section of a truncated cone, a cylindrical bar, *b*, above the bar *a*, an oval bar, *c*, above the bar *b*, and a diamond-shaped bar, *d*, at the top of the bars, decreasing in thickness, size, and cross-section from the bot-

tom to the top. They are suspended by a rope or cord, *l*, from the shaft G.

In place of the bars described, bars of any other desired cross-section may be used.

Transverse boards B', having grooves *h*, are secured on the inner surface of the bottom B at the middle and ends. The bottom bars of the beater H are grooved longitudinally on all sides.

Spaces B<sup>2</sup> are formed between the under sides of the boards B' and the inner surface of the bottom, through which spaces the water passes, thus causing an under current, which keeps the clothes loosened and throws them against the grooves at the end of the box.

The clothes are placed in the box or tub A with a sufficient quantity of hot soap-suds, the cover F' is closed tightly, and the box A is rocked. The clothes are thrown from one end of the same to the other, and are beaten by the swinging beater H.

The clothes are cleaned very rapidly, and comparatively little power is required for operating the machine.

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

1. In a washing-machine, the combination, with the box or tub A, of the rockers D, the top bars, E, and the braces C, uniting the top bars and rockers, and to which braces the box A is secured, substantially as herein shown and described.

2. In a washing-machine, the combination, with the box or tub A, of the transverse grooved boards B', secured on the inner surface of the bottom, the swinging flexible beater H, and rockers secured to the tub or box, substantially as herein shown and described.

MORGAN L. GROVER.

Witnesses:

JOHN H. WHITE,  
IRA MCWILLIAMS.