

G. M. Harris,

Washing Machine,

N^o 43,496.

Patented July 12, 1864.

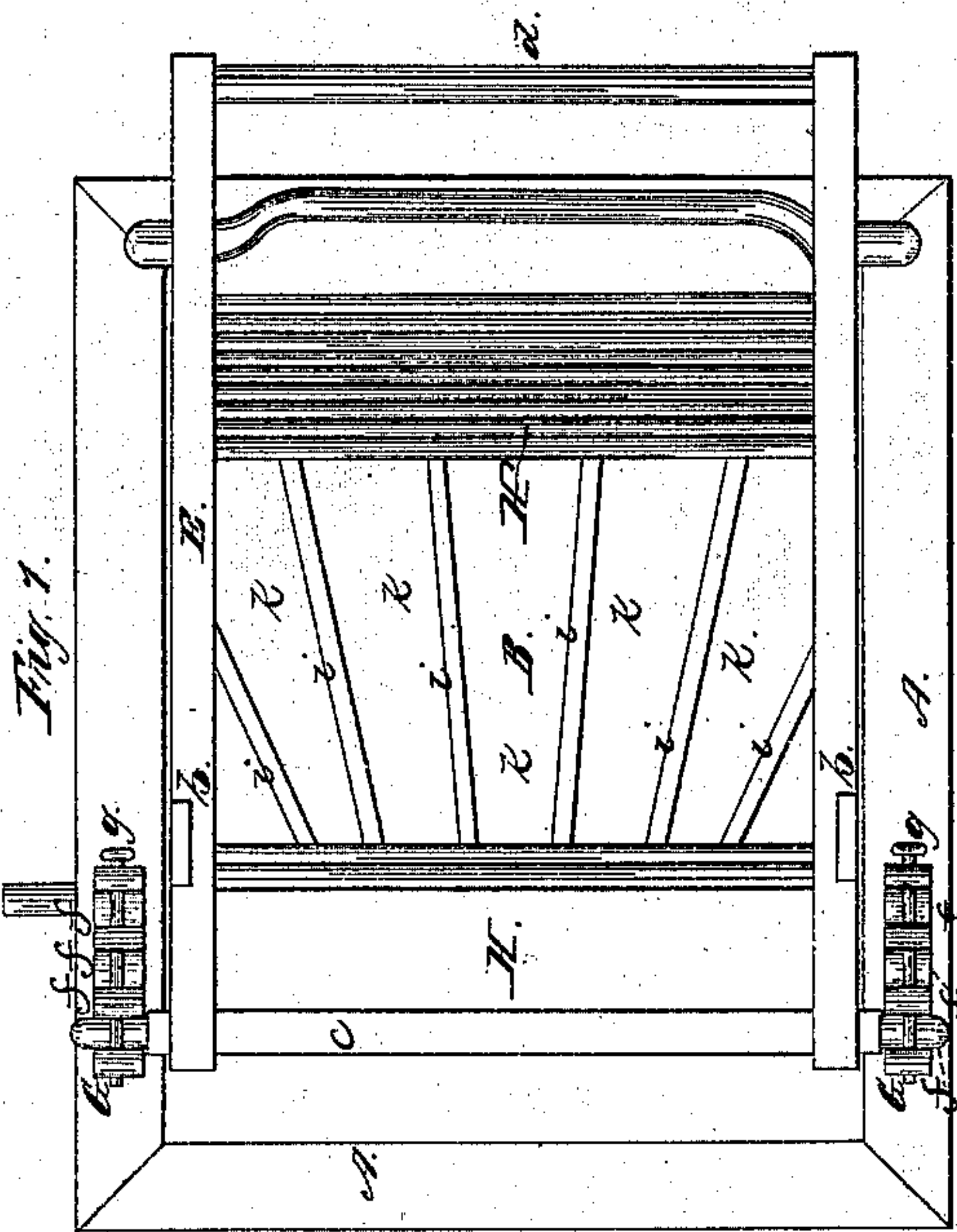
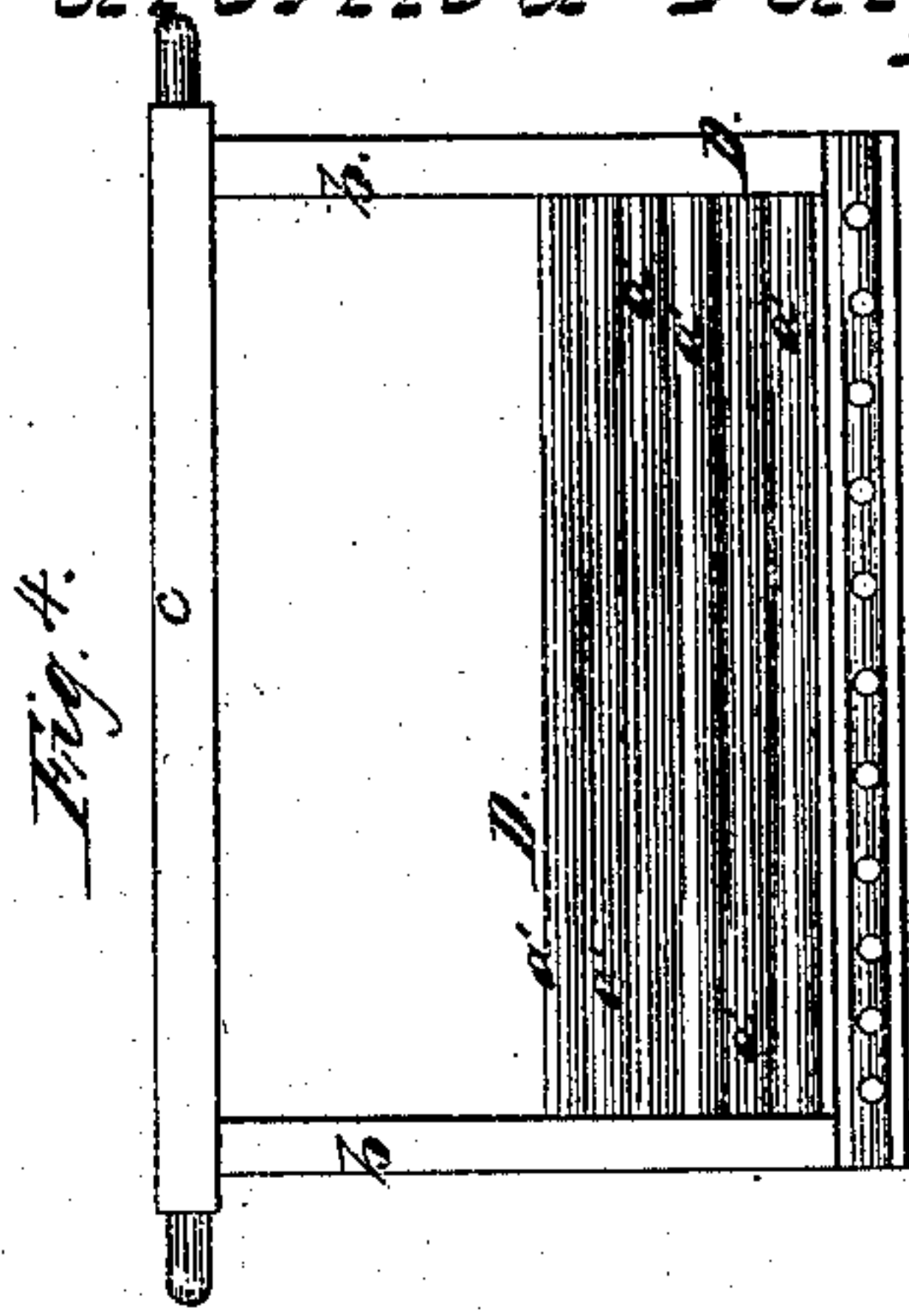
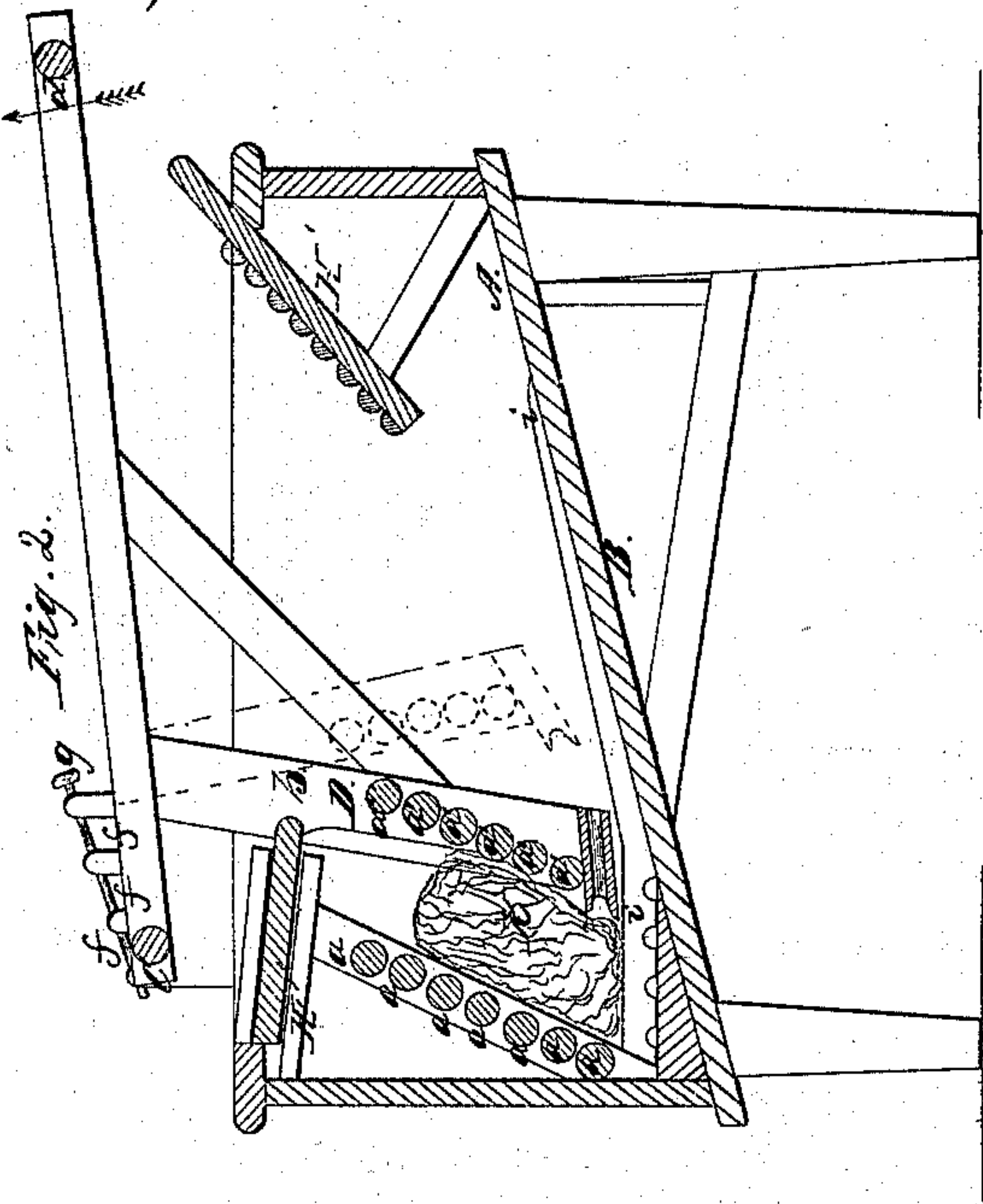
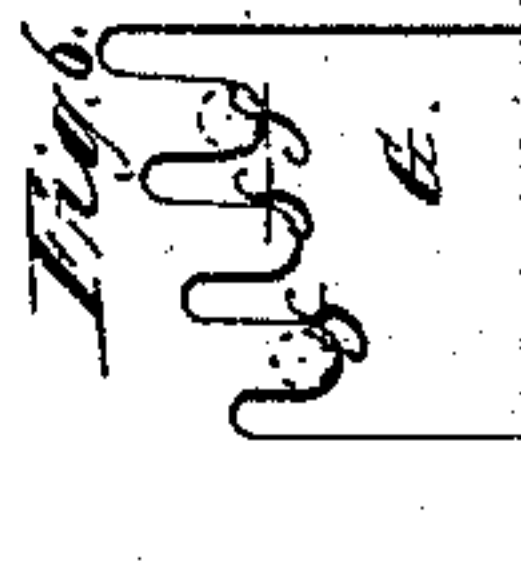
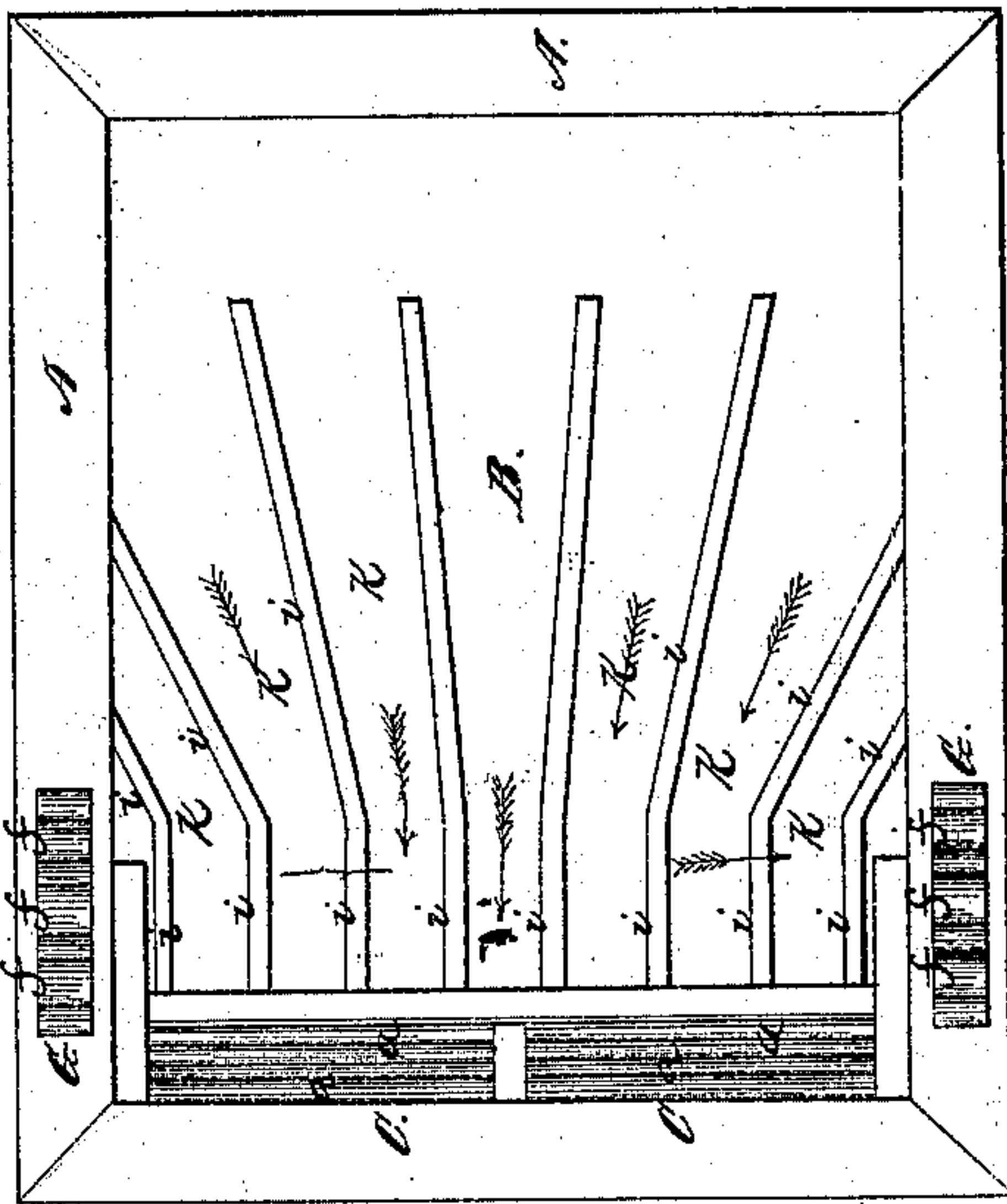


Fig. 3.



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UNITED STATES PATENT OFFICE.

GILES M. HARRIS, OF CONESUS CENTRE, NEW YORK.

IMPROVED WASHING-MACHINE.

Specification forming part of Letters Patent No. 43,496, dated July 12, 1864.

To all whom it may concern:

Be it known that I, GILES M. HARRIS, of Conesus Centre, in the county of Livingston and State of New York, have invented a new and useful Improvement in Washing-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a plan of my improved machine. Fig. 2 is a central longitudinal vertical section. Fig. 3 is a plan of the machine with the rubber removed; Fig. 4, a front elevation of the rubber detached; Fig. 5, a diagram showing a cross-section of the strips in the bottom of the receptacle or box; Fig. 6, a side elevation of one of the bearings in which the journals of the rubber rest.

Like letters of reference indicate corresponding parts in all the figures.

My improved machine is of that class where a reciprocating rubber operated by a suitable lever compresses the clothes between itself and a stationary upright or angular bed in such a manner that the water alternates through the clothes and the clothes receive a revolving motion in a "roll," the whole being arranged and operating substantially as hereinafter set forth.

As represented in the drawings, a suitable box or receptacle, A, is provided, preferably of square or rectangular shape, the bottom B of which is inclined in such a manner that the water will stand deepest at that end where the clothes are situated in washing, as clearly represented in Fig. 2. At this end of the box is situated an upright and preferably somewhat angular bed, C, composed of rounds or slats *a a*, one above another, and extending across from side to side. This bed serves as a base against which the clothes are pressed in washing.

At a suitable position within the box is situated a rubber or presser, D, also composed of rounds or slats *a' a' a'*, secured between arms *b b* on opposite sides of the receptacle, which arms are rigidly fastened at their top, to horizontal levers E, secured in front to an axis, *c*, and connected at their rear by a handle, *d*, by which the rubber or presser is operated. The journals of the axis *c* rest respectively in any of a set of bearings, *f f f*, formed in standards G G, in such a manner that the

said axis may be adjusted forward or backward by changing from one pair of bearings to another, and thus correspondingly adjusting the rubber toward or from the bed C. In order to allow the rubber to vibrate freely over the inclined bottom B of the box, when it is adjusted back, the bearings *f* are arranged on an incline, as clearly represented in Fig. 6. The journals may be retained in place in the bearings by any convenient means, that represented in the drawings being a pin, *g*, which passes through the bearings above the journals.

In the front end of the box, over the bed C, is situated a board, H, whose office is to prevent the water from dashing out. This board may be made removable by sliding in a groove at opposite sides of the box. At the rear or opposite end of the box is situated an inclined hand wash-board H', rigidly fixed in place, whose office is not only similar to the board H in preventing the water from dashing out, but which also serves to wash such portions of clothing and small articles as wristbands, handkerchiefs, &c., as cannot be perfectly cleaned by the rubber.

Longitudinally in the bottom of the box A are situated at suitable distances apart strips *i i i*, of board or equivalent, of proper height, set up edgewise, as represented most clearly in Figs. 2, 3, and 5. The rear portions *i' i'* of these strips, which extend down the angular bottom B, are inclined inward from the outside toward the center, for a purpose presently to be described.

The action of the machine is obvious. The clothing K is placed in the deepest angle of the box on top the strips *i i*, and between the bed C and the rubber D, which latter is worked forward and back, thereby alternately compressing and releasing the clothes, and giving them a revolving motion in a roll.

Among the advantages of this arrangement are the following:

First. The bed and the rubber, being formed with rounds or slats *a a a' a'*, have a degree of elasticity or spring that cannot be attained when the same are made of rigid plank or board, as in ordinary devices of the same class. This elasticity or spring allows the rounds or slats to adjust themselves to any greater degree of thickness of any portion of the roll of clothing that is being washed.

Second. The bearings *ff* enable me to adjust the rubber D forward or backward toward or from the bed C in a moment's time, thereby adapting the machine to the washing of a large or small quantity of clothes at a time. For instance, in washing small and light clothes, when the quantity is limited, the journals are fitted in the first pair of bearings *f*; but in washing very heavy and bulky materials, such as coverlets, they are adjusted farther back, so as to give greater space. The incline of the bearings *ff* enables the bottom of the rubber to pass over the angular bed at the same relative distance from it, so that the working of the same will be regular and uniform at all times. This arrangement of the bearings is of the greatest importance, for it adapts the machine to light or heavy work. I am not aware that such an arrangement has ever before been employed.

Third. By the employment of the strips *ii* in the bottom of the box, I secure several useful effects—first, they raise and support the roll of clothing K above the bottom B in such a manner that an open space, *k*, is left beneath for the deposit of such dirt and sediment as are washed out. Were the clothes to come in direct contact with the bottom B, the dirt would be constantly remixing with the clothing again; and, second, the strips have a tendency to keep the water in its place in the forward movement of the rubber, or to prevent it from being forced out laterally as the rubber closes on the clothes. It is apparent that in the quick forward movement of the rubber, forcing the water in advance, the tendency will be for the latter to rush endwise, as indicated by the red arrows, Fig. 3. The strips prevent this at the bottom, and the friction also retards it at the top. Besides this the rear angular ends, *i' i'*, have a tendency to guide the water in toward the center, as indicated

by black arrows, thus giving a preponderance in the middle to compensate for the escape at the ends, as before described. When the clothes are inserted or removed, the rubber may be turned over back entirely out of the box. The hand wash-board is a great convenience, not only preventing the water from dashing over, but also serving the same purpose that an ordinary wash-board does. The inclined bottom B enables the clothes to be drawn back at any time free of water, to examine as to the progress of cleaning.

I do not claim, broadly, giving a rolling motion to the clothing and an alternate pressure by means of a rubber, as I am aware that the same has been before employed; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The bearings *ff*, in combination with the rubber D and bed C, so arranged that the said rubber may be adjusted nearer to or farther from said bed, substantially as herein set forth.

2. The strips *ii*, in combination with the bottom B, rubber D, and bed C, and arranged in such a manner as to support the clothes that are being washed above the bottom of the receptacle, to keep them free from dirt, and so as to direct the water to the center of the clothes, substantially as herein set forth.

3. The bearings *ff*, strips *ii*, rubber and bed D C, inclined bottom B, and boards H H', the whole arranged, combined, and operating substantially as herein specified.

In witness thereof I have hereunto signed my name in the presence of two subscribing witnesses.

GILES M. HARRIS.

Witnesses:

JOSEPH J. HARVEY,
SYLVESTER SPENCER.