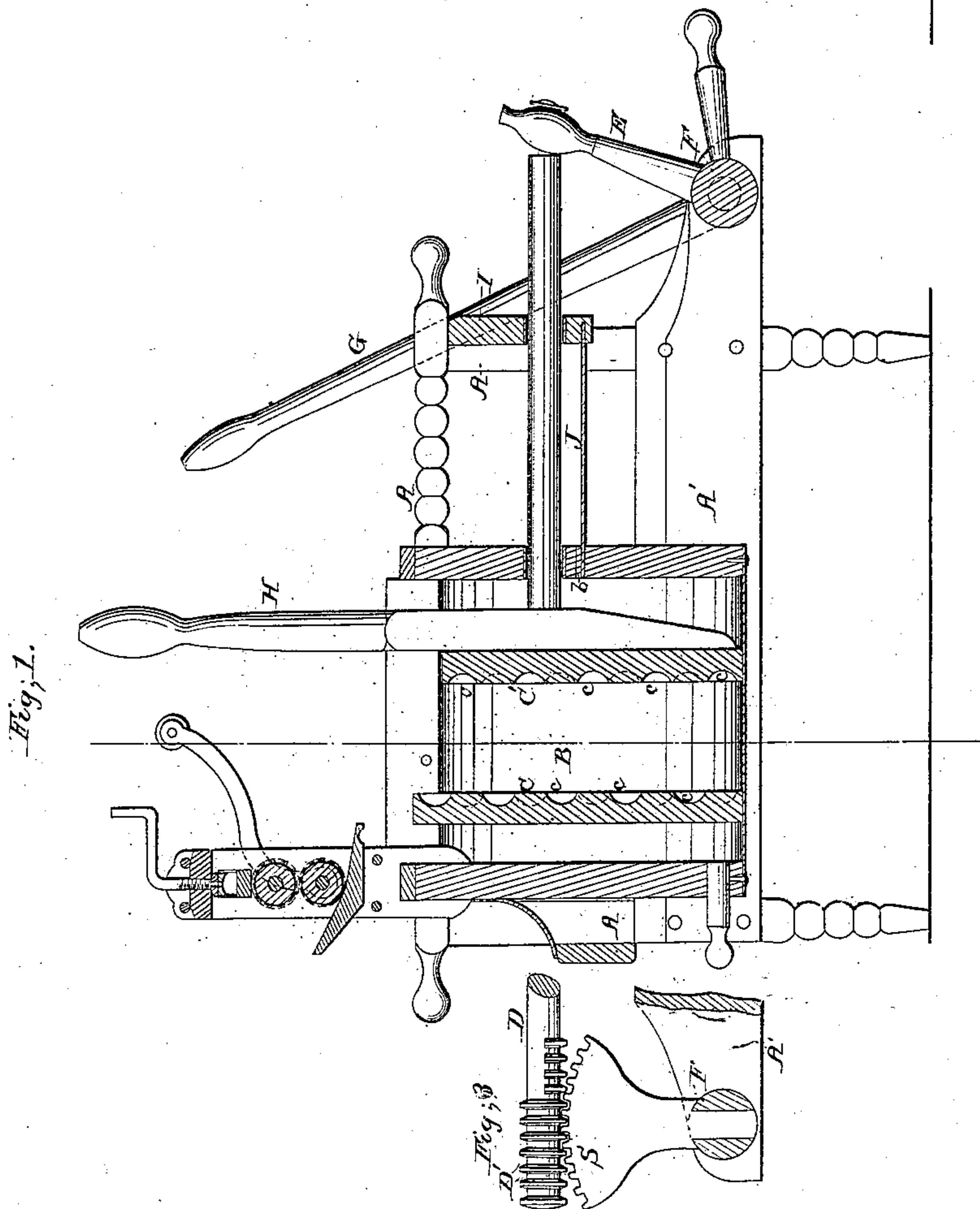
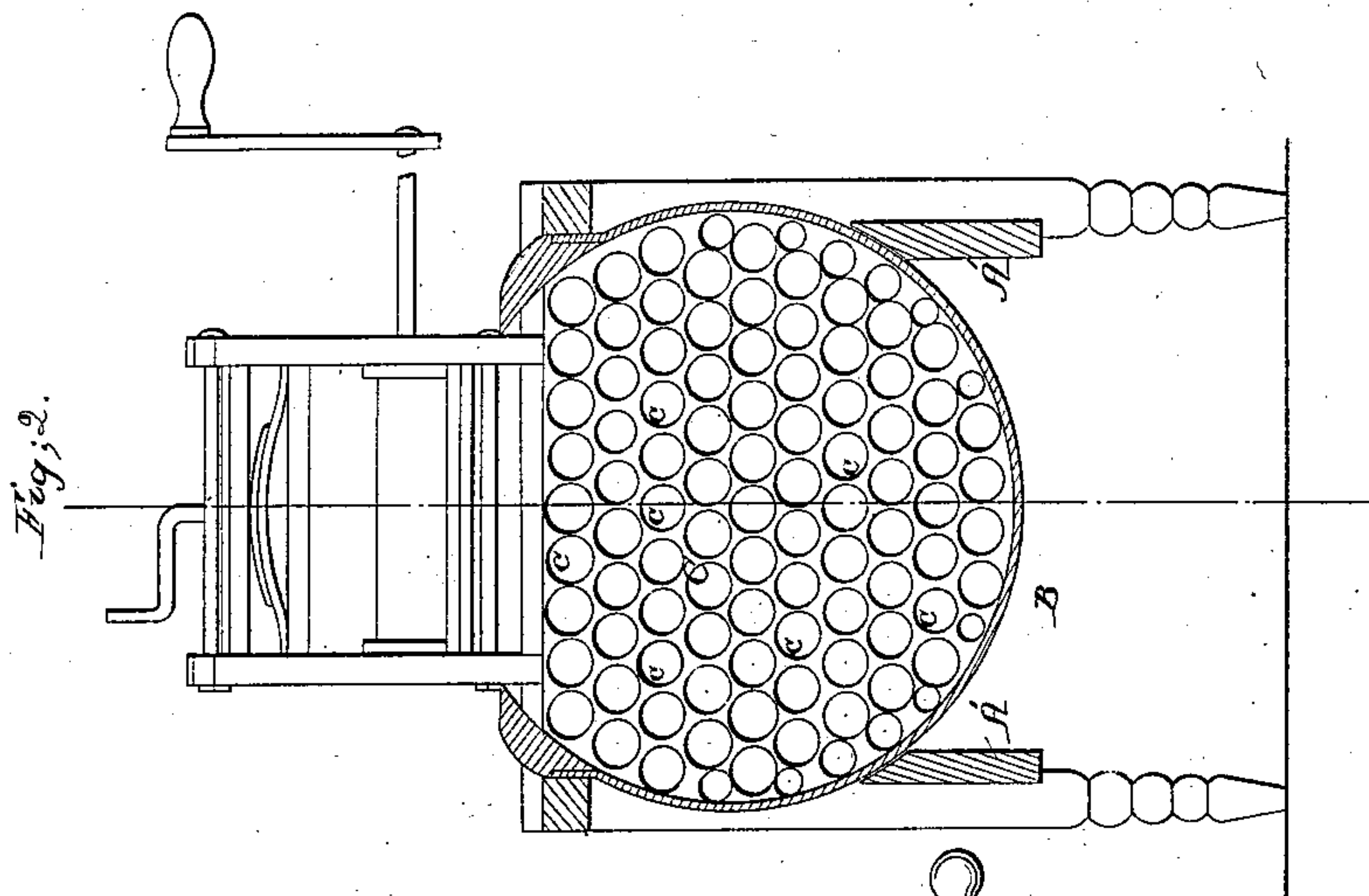


J. E. North,

Washing Machine,

N^o 11,716.

Patented Feb. 23, 1864.



UNITED STATES PATENT OFFICE.

J. E. NORTH, OF CANDOR, NEW YORK.

IMPROVED WASHING-MACHINE.

Specification forming part of Letters Patent No. 41,716, dated February 23, 1864.

To all whom it may concern:

Be it known that I, J. E. NORTH, of Candor, in the county of Tioga and State of New York, have invented a new and Improved Washing-Machine; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a vertical longitudinal section of my improved washing-machine, taken in the line *x x*, Fig. 2. Fig. 2 is a vertical transverse section of the same in the line *y y*, Fig. 1. Fig. 3 represents a modification in the feeding apparatus, to be hereinafter described.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to produce a washing-machine which will more thoroughly cleanse the clothes submitted to its operation, and which may be operated with less expenditure of strength. Another object is to prevent the overflow or escape of water.

The invention consists, first, in an improved construction of rubbers employed in connection with a system of levers and shafts arranged in the manner to be described; second, in the use of a trough, applied as hereinafter described, for returning any water which may escape.

In order that others skilled in the art to which my invention appertains may be enabled to fully understand and use the same, I will proceed to describe its construction and operation.

In the accompanying drawings, A A represent a frame, in which a tub, B, of nearly semi-cylindrical form may be mounted, said tub resting upon supports A'.

C represents a rubber rigidly secured within the tub B, and C' an adjustable or movable rubber. The surfaces of these rubbers, between which the clothes are to be placed, are studded with circular cavities *c*, designed to render the action of the rubbers upon the clothes more effectual, as will be hereinafter explained.

D represents a rod or shaft, connected at one end to the sliding rubber C' and jointed at its opposite end to a short arm, E, which is moved in a vertical plane by a roller or shaft, F, in order to advance or retract the

rubber C', either to permit the insertion of clothes between the rubbers, and then tightly compress them or allow the operator to regulate the relative positions of the rubbers in such manner as will enable him to most effectually and expeditiously execute the work.

G represents a hand-lever, by which the roller F may be turned with facility, and this lever G occupies a position in convenient proximity with a handle or lever, H, affixed to the rubber C', so that the operator is enabled to rotate the rubber C' with one of his hands and vary the position thereof with the other.

As shown in Fig. 3, the arm D, instead of being jointed to the arm E, may have formed upon its end a rack, D', so that said arm may be moved by means of a toothed segment, S, rigidly secured upon the shaft F. This arrangement adapts the rod D to be advanced or retracted in a more direct line. The rod D has its bearings in one end of the tub B and in the transverse piece I, and is of course adapted to work with freedom therein. As the employment of stuffing-boxes to prevent the escape of water, where the rod D has its bearings, would, besides adding to the cost of the machine, increase in a greater or less degree the friction thereof, and consequently render greater strength requisite to operate the machine. I have altogether dispensed with said stuffing-boxes and employ instead thereof, and with much greater advantage, a semi-cylindrical trough, J, which is placed between the tub B and cross-piece L, parallel with and directly beneath the rod D. This trough J communicates with the interior of the tub through an aperture, *b*, which is located at or near the bottom of said trough, whereby any water which may pass out at the bearing in the tub through which the rod D works will be returned to the interior of the tub, and the locality of the aperture *b* prevents the water from rising to such height at which it might escape through the bearing in the cross-piece I.

P may represent a weight-supporter.

K K' represent the rollers of a wringing apparatus, which may be used in connection with the washing-machine. The boxes of the roller K are adapted to slide vertically in slots formed in the frame L, so as to permit

a variable pressure to be exerted upon the clothes by the rollers, which pressure may be regulated by a crank-screw, M, acting upon a semi-elliptic spring, N, which in turn acts upon a cross-bar, O, upon the boxes of the upper roller.

Q is a handle for rotating the roller.

Operation: Clothes being placed between the rubbers C C', the latter may be moved toward the rubber C by means of the lever G until the clothes are compressed as tightly as desirable, and while they are held in this condition a reciprocating rotary motion is imparted to the rubber C' by the handle or lever H. A partial vacuum being formed within the cavities c, the clothes are caused to cling to the surfaces of the rubbers, so that by the reciprocation of the rubbers C' portions of the clothes will be rubbed against other parts thereof, and thus the clothes are not subjected to friction with or against the rubbers themselves, which friction has hitherto, and with more or less injury to the clothes, attended the use of rubbers having corrugated or fluted surfaces.

The use of the lever G in the described connection with the rubber C' adapts the machine to be readily operated by a small boy or girl, inasmuch as the operator may thereby vary the power required to rotate the rubber C'

and cause the same to conform to the strength that he or she may possess.

By the use of the trough J and aperture b the escape of water is effectually prevented and the rod D adapted to be moved forth and back with perfect freedom.

This machine is most thorough and expeditious in its operation, is devoid of complication, may be constructed at little cost, and will prove a very useful and economical article in any household.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In combination with the tub B, the rubbers C C', provided with cavities c, operating in the manner described, and employed in connection with the rod D, roller F, and levers G H, substantially as and for the purposes specified.

2. The trough J, employed in combination with the shaft D and aperture b, in the manner and for the purposes described.

3. The combination, with the shaft F and rod D, of the segment S, and rack D', as and for the purpose specified.

J. E. NORTH.

Witnesses:

CHARLES D. SMITH,
OCTAVIUS KNIGHT.