

S. T. M^c Dougall,

Washing Machine,

N^o 35,770.

Patented July 1, 1862.

Fig. 1.

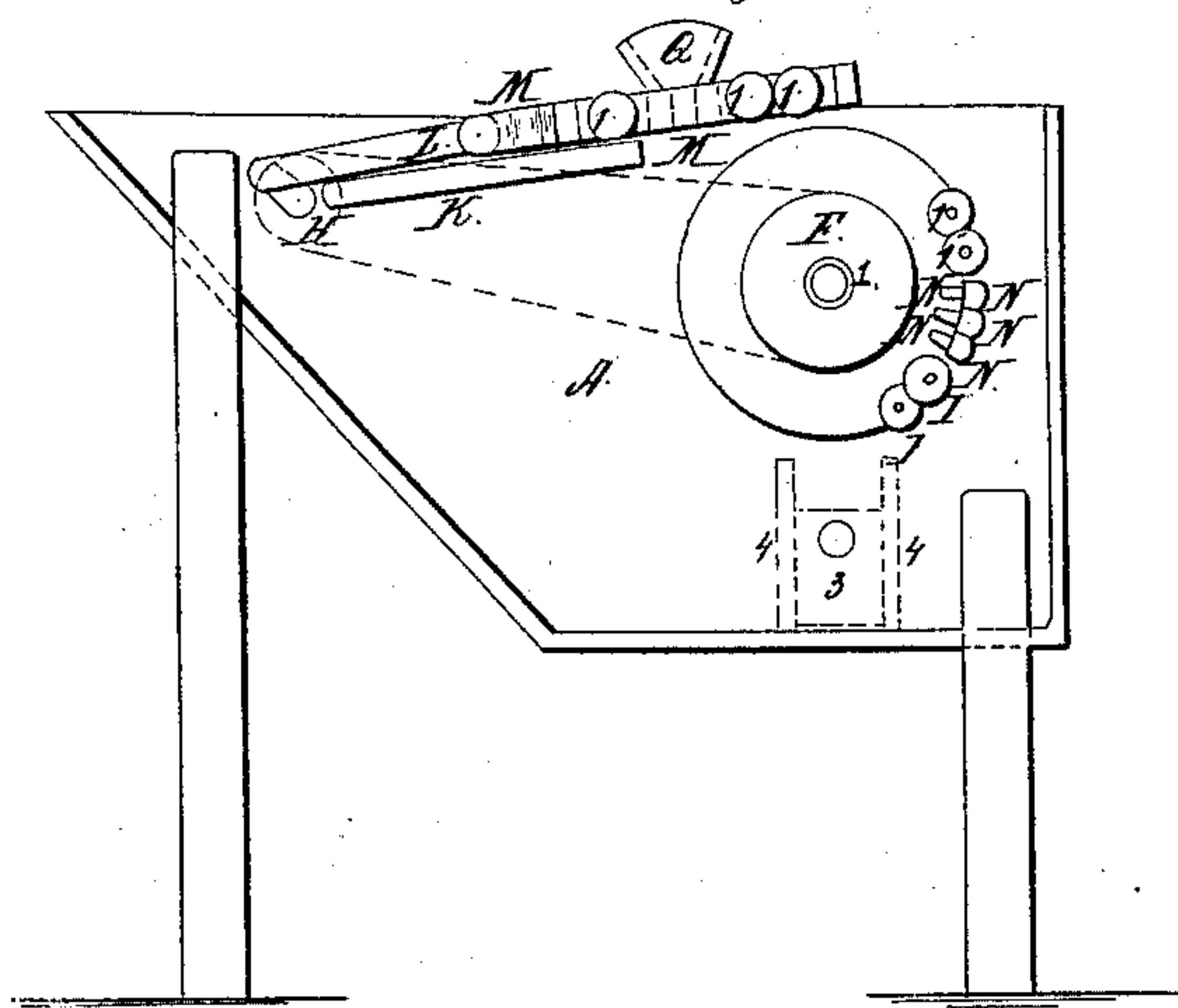


Fig. 2.

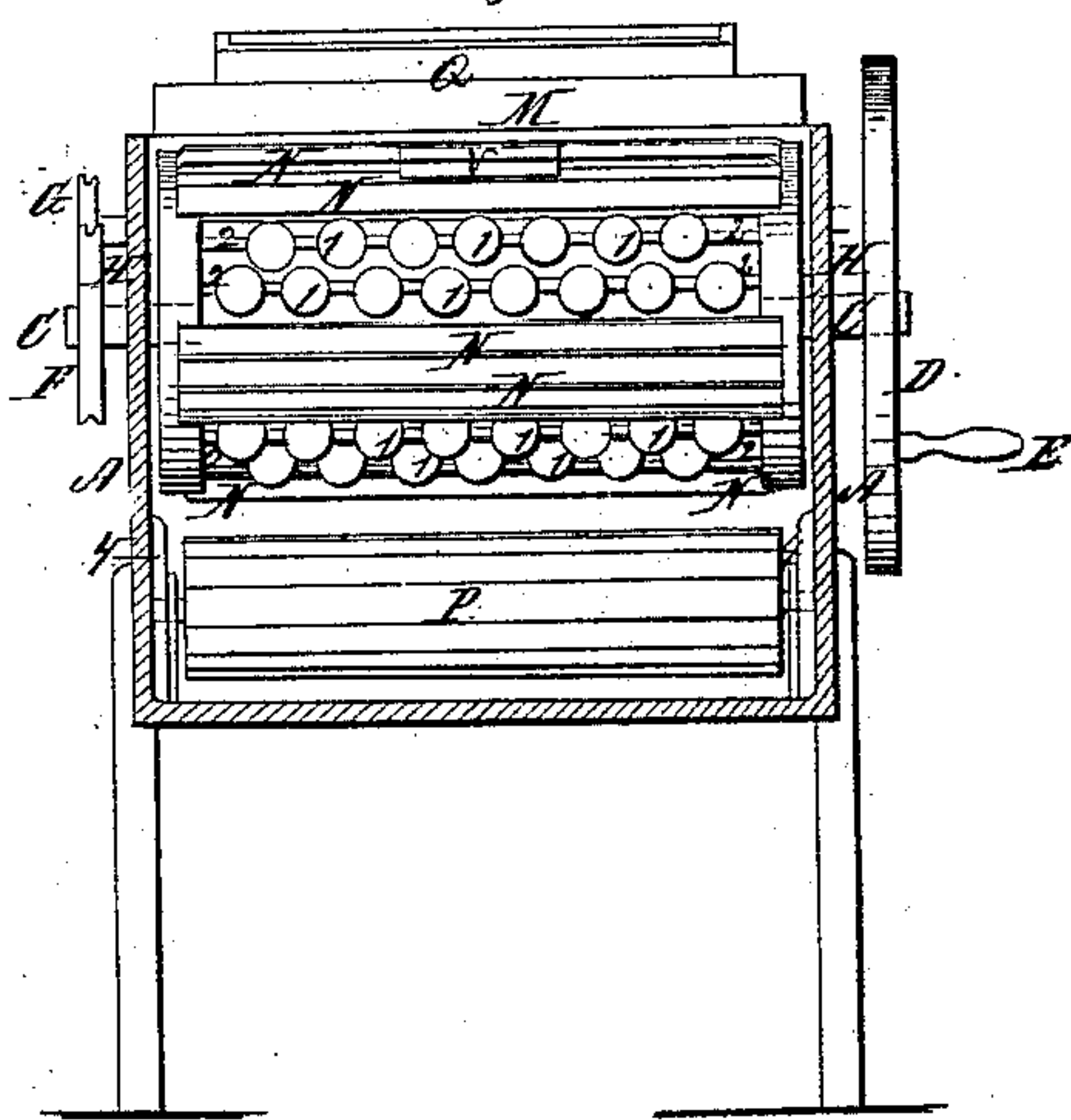


Fig. 4.

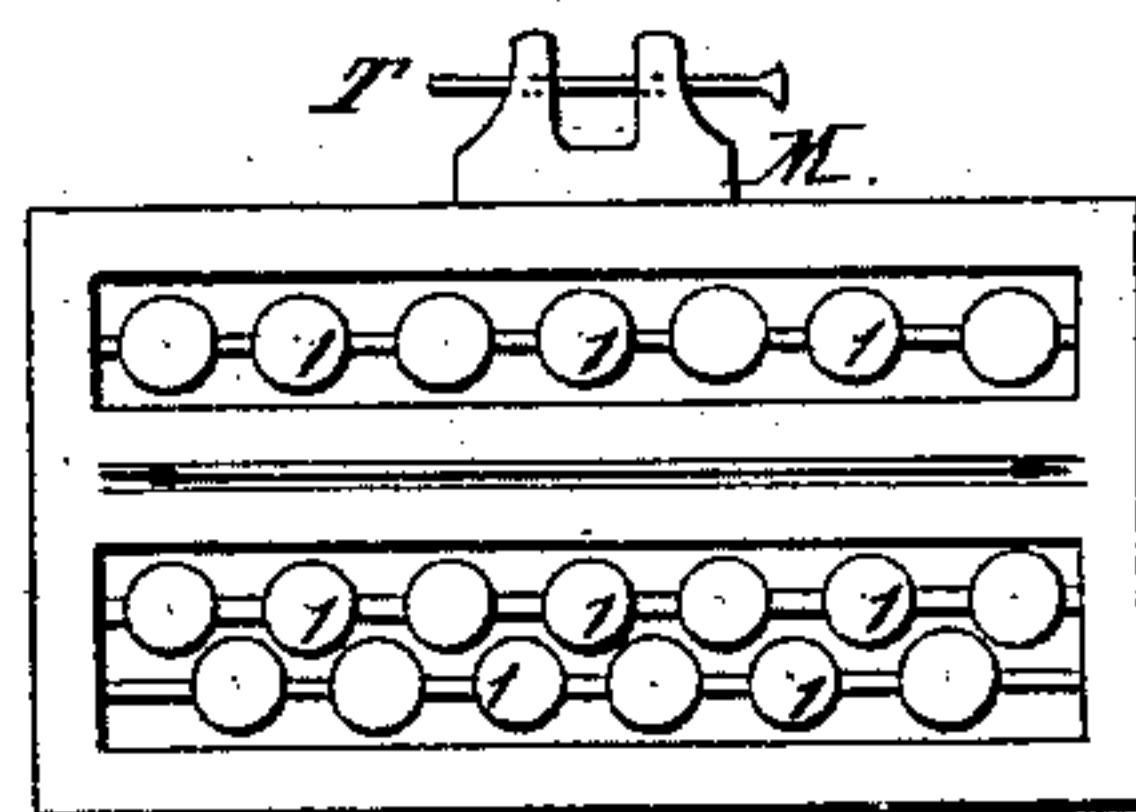
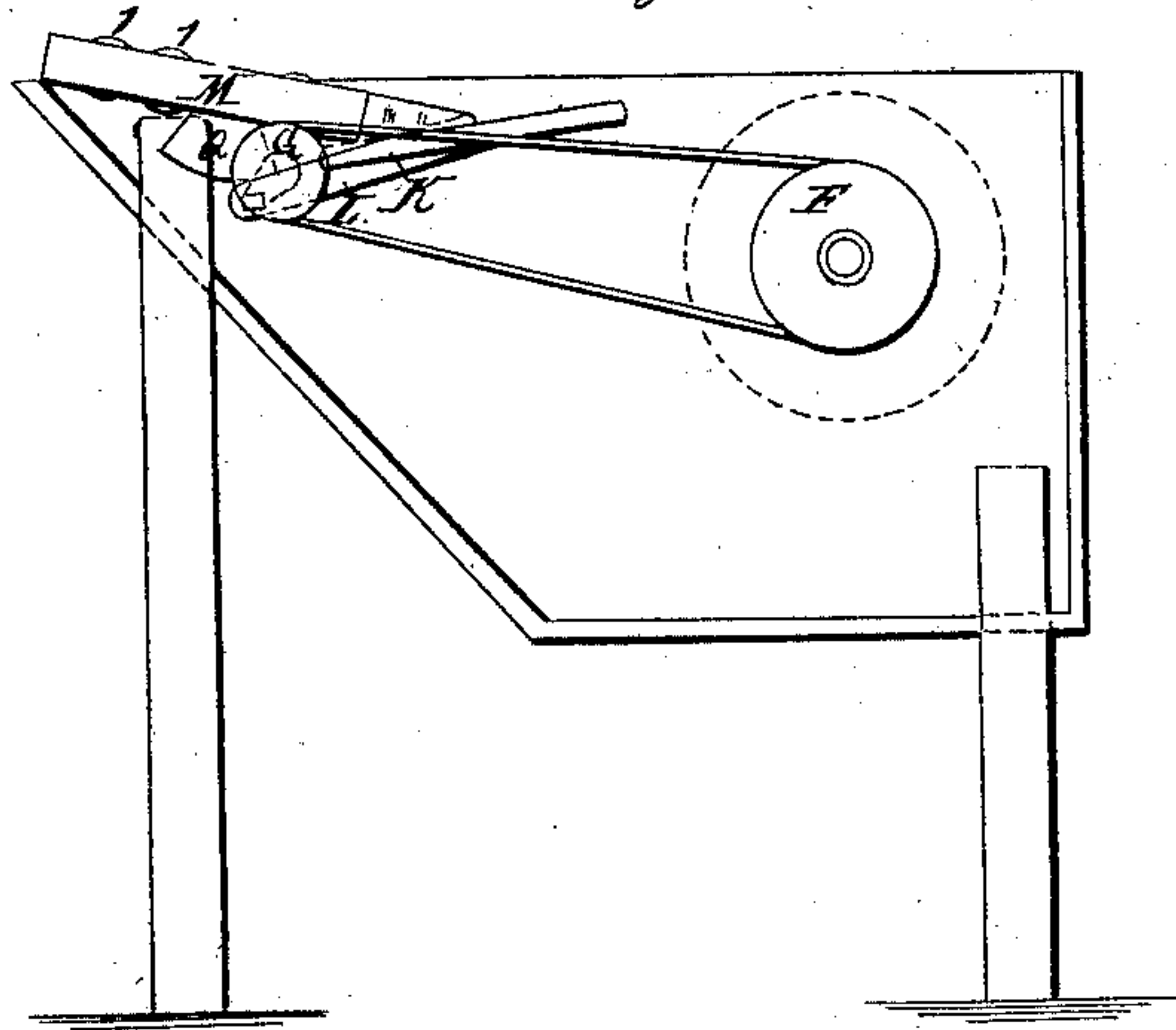


Fig. 3.



Witnesses:

W. M. Sharp
Henry Smith

Inventor:

S. T. M^c Dougall

UNITED STATES PATENT OFFICE.

S. T. McDOUGALL, OF BROOKLYN, NEW YORK.

IMPROVED WASHING-MACHINE.

Specification forming part of Letters Patent No. 35,770, dated July 1, 1862.

To all whom it may concern:

Be it known that I, S. T. McDOUGALL, of the city of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, which form a part of this specification, in which—

Figures 1 and 3 are side elevations of the machine, showing parts of the mechanism in different positions. Fig. 2 is an end view showing the back removed; and Fig. 4 represents part of the machine as seen from the top.

The nature of my invention consists in the employment, first, of a revolving hollow cylinder arranged in a suitable tub receiving the water, and combined in action with a reciprocating frame, both frame and cylinder having properly ribbed or corrugated surfaces to produce friction on the clothes; secondly, in making the surfaces of said cylinder and frame of grooved slats or ribs alternated with series of rolling balls, the latter being arranged as herein set forth; thirdly, in constructing the inside of the cylinder with similar friction-surfaces, in combination with the use and arrangement of a series of balls on the central shaft within said cylinder, as hereinafter described; fourthly, in the combination, with the frame or washboard herein described, of a hopper or feeder for soap or its substitute, substantially as herein set forth and represented.

To enable others to make and use my invention, I will proceed to describe the construction and operation of the same.

I construct a tub, A, of suitable dimensions, usually with one side inclined, as seen in the drawings. I construct a cylinder with corrugations or ribs formed on the periphery thereof. I fix on a shaft, C, and mount said shaft in suitable bearings in the sides of the tub in any convenient manner. On one end of said shaft is a balance-wheel, D, having a handle, E, and on the other end is fixed a band-wheel, F. This wheel is designed to run with a band the pulley G. Said pulley is fixed on a shaft, H, mounted in proper bearings in the sides of the tub, and having a crank, I, formed thereon. The wrist of said crank is grasped by a pitman or link, L, attached to the frame M at M' by

a pin or pivot, J. (See Fig. 4.) The frame M has its under surface ribbed in any usual manner. The construction of said surface that I prefer, however, as well as of the surface of the cylinder, I have represented in Figs. 2 and 4, the former showing the cylinder and the latter exhibiting the frame M as it appears when turned over in the position indicated in Fig. 3 in end view. Referring to Figs. 2 and 4, N N are ribs or slats having grooves formed between them and arranged in series of two or more at intervals.

The spaces between each series of slats are occupied by rows of balls 1, arranged on rods 2 so as to turn freely thereon. When more than one row of balls are used, I arrange them on their respective rods in such a manner that the spaces occurring between those of one row are occupied by those of the adjoining row. The ribs and balls thus arranged form a species of alternately continuous longitudinal and broken lateral corrugations or protuberances. Rubbing-surfaces thus made are believed to be very superior to all others before known.

I also construct the inside of the cylinder with balls, slats, and corrugations, so as to present the same surface as the outside, and arrange a row of balls on the center shaft. In the side or end of the cylinder I construct a suitable opening closed by a removable door, v, (seen in Fig. 2,) for the admission of small pieces within the cylinder, to be washed by the friction of the water and rubbing surfaces during the operation of washing on the outer surface of the cylinder.

The band can be detached from the pulleys F and G, and the washing performed by placing the clothes inside the cylinder and revolving it independent of the frame M.

When pieces of considerable length are to be washed, I sometimes unite the ends temporarily after first passing them around P—a small cylinder placed near the bottom of the tub under the friction-cylinder, and having its shaft hung in bearings in blocks 3, fitted to slide up and down in grooves or ways formed between cleats 4, fixed on the sides of the tub. The weight of the cylinder P, when thus used, serves to hold the articles to be cleansed in a convenient position to be acted on by the upper cylinder and frame M. To wash short articles in the same way I pass two or three

bands around both cylinders and attach the clothes to the tapes.

Q is a hopper permanently fixed to the frame M, and serves to feed soap or other washing or lubricating material to the clothes while in the act of being washed by the joint operation of the frame and the cylinder, such soap being used on the opposite side of the frame or wash-board to that where it is fed in, as will be apparent from the drawings.

In some cases it may be required to rub spots, &c., out of some of the pieces by hand after they have been through the machine. In such cases the frame M can be inverted, as shown in Fig. 3 in end view and in Fig. 4 in top view. When so inverted, it rests at one end on the edge of tub and the other end is supported by guides or ways K, and thus forms a very convenient and efficient wash-board.

If desired, the pin J can be withdrawn and the wash-board thus detached entirely, so as to be used wherever desired.

Having thus described my improvements,

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

1. The revolving cylinder and reciprocating frame, both having ribbed surfaces and arranged and operating in combination, substantially as described.

2. Constructing the surfaces of such cylinder and frame of grooved slats, combined with rows of balls, when the latter are arranged with respect to each other substantially as and for the purposes set forth.

3. Constructing the inside of the cylinder with similar friction-surfaces, in combination with the series of balls or their equivalent on the central shaft, substantially as specified.

4. The hopper as attached to and used in combination with the wash-board or frame M, in the manner and for the purpose set forth.

S. T. McDOUGALL.

Witnesses:

W. W. SHARP,

E. HARRY SMITH.