2 Sheets—Sheet 1.

J. W. RICKER.

Washing-Machines.

No. 200,220. Patented Feb. 12, 1878.

Fig. 1.

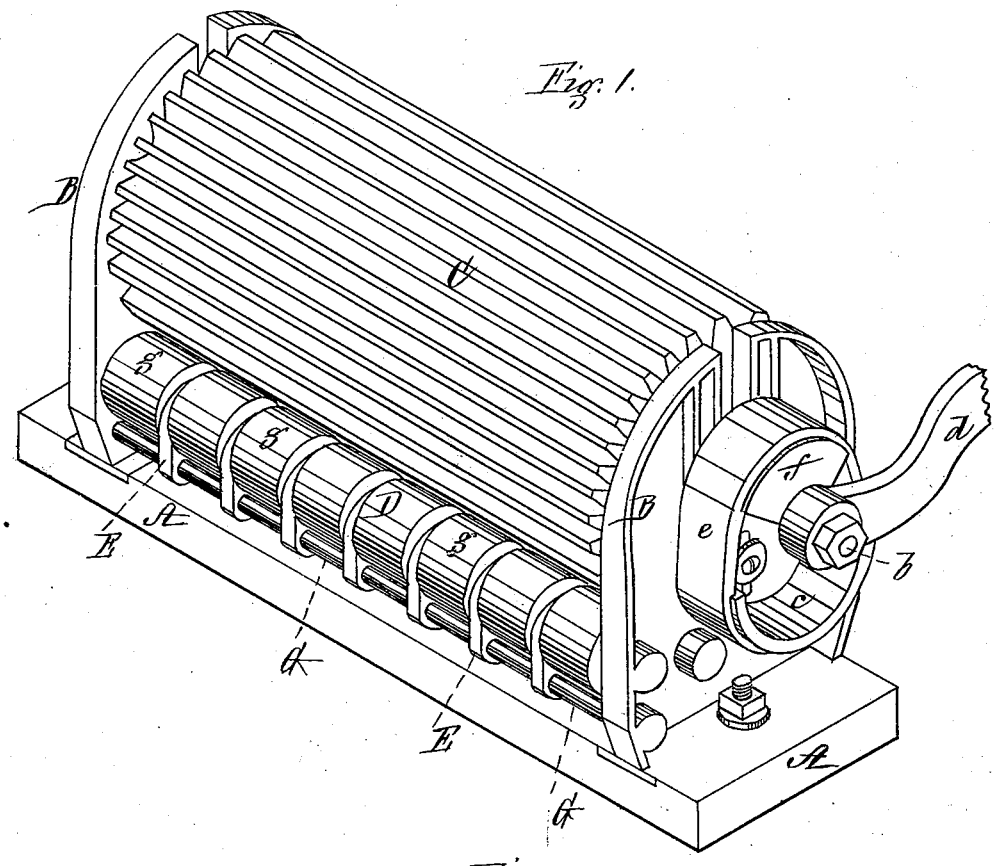
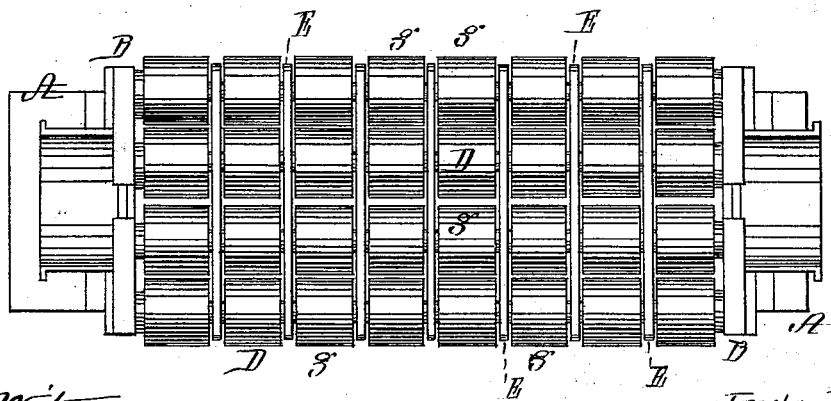


Fig. 2.



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2 Sheets—Sheet 2.

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Fig. 3.

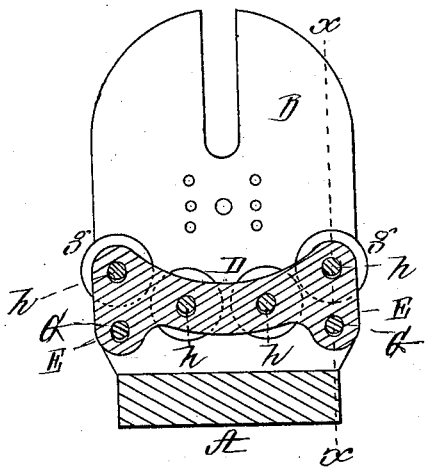
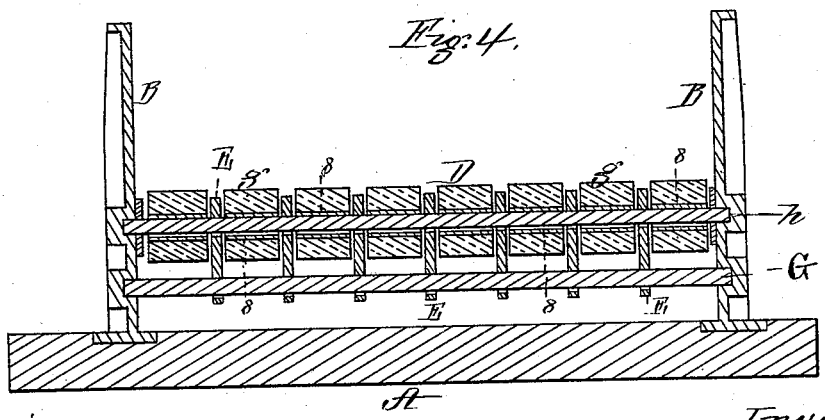


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN W. RICKER, OF CHELSEA, MASSACHUSETTS.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **200,220**, dated February 12, 1878; application filed July 26, 1877.

To all whom it may concern:

Be it known that I, JOHN W. RICKER, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Washing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of my improved washing-machine. Fig. 2 is a plan of the same, the main roller being removed to show the bed beneath. Fig. 3 is a transverse section through the same. Fig. 4 is a longitudinal section on the line *x x* of Fig. 3.

In washing-machines in which a series of long rolls of small diameter are arranged beneath the main fluted roller the clothes are liable to be drawn down between and around the lower rolls, which obstructs the machine, and necessitates its being taken apart to free the clothes.

My present invention has for its object to avoid this difficulty; and consists in the combination, with the main fluted roller, of a bed composed of a series of short independent rolls arranged in parallel rows or lines upon supporting-rods extending longitudinally beneath the main roller, the rods being connected by a series of bridge-pieces or division-plates, which extend transversely across the machine, and serve to separate the contiguous rolls, these bridge-pieces also serving to prevent the clothes from being drawn down between or around the lower rolls, as heretofore.

My invention also consists in the combination, with a roller-bed constructed as above described, of two or more spring stiffening-rods, extending longitudinally between the end pieces of the machine and passing through the bridge-pieces, whereby the rods upon which the short rolls rotate are re-enforced or stiffened, and thus prevented from becoming set if bent down to an unusual extent by the passage of a thick mass of clothes through the machine.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A represents the base of the machine, from which rise two metallic standards or end pieces, B B, which are provided with vertical slots for the reception of the horizontal shaft *b* of the main roller C, which is fluted in the ordinary manner, and is rotated by means of the handle *d*, the roller being kept down in place by elastic bands *e* at the ends of the machine, each band passing over a movable piece, *f*, bearing on the shaft *b*, and a stationary projection, *c*, secured to the adjacent standard B.

The above details of construction, however, form no part of my present invention, and will not, therefore, be more particularly described.

Immediately beneath the main roller C is placed a curved bed, D, composed of a series of short rubber rolls, *g*, of small diameter, which are supported by and are free to rotate upon metallic spring-rods *h*, the ends of which rest in suitable recesses in the standards B, each of the rolls *g* being provided with a metallic bushing, 8, as seen in Fig. 4, to render it durable and facilitate its rotation upon its supporting-rod *h*.

The rods *h* are parallel to each other and to the axis of the main roller C, and are so arranged that the curvature of the bed D will correspond to that of the exterior surface of the fluted roller C, which is kept down upon the bed by the action of the rubber bands *e*, which yield to allow of the passage of the clothes or other articles to be washed between the roller C and the roller-bed D thereunder; and by the employment of a series of short rolls supported upon spring-rods, as above described, a yielding bed is afforded which greatly facilitates the entrance of the clothes into the machine.

I prefer to make the rolls *g* of vulcanized rubber; but they may be formed of other suitable material, if desired.

The rods *h* are connected together by a series of metallic bridge-pieces, E, through which they pass, as seen in Fig. 3. These bridge-pieces extend transversely across the machine, and serve as division-plates to separate the contiguous rolls *g* of each row. These bridge-pieces or division-plates E, being arranged at short distances apart along the entire length of the bed D, effectually prevent the clothes

from being drawn down between or around the lower rolls, while, as the upper edges of the division-plates do not extend up as high as the upper surface of the rolls, the spaces between the contiguous ends of the latter form transverse furrows or grooves, into which the clothes are pressed by the fluted roller C above, and they are thus guided straight through the machine, and the liability of their working from one end of the main roll to the other (as often occurs in machines provided with long smooth rolls when not exactly level) is entirely avoided.

On each side of the machine is a metallic spring-rod, G, the ends of which enter suitable recesses in the standards B, by which they are supported. These rods G extend longitudinally beneath the rolls *g*, and pass through all of the bridge-pieces E, thus serving to stiffen and re-enforce the rods *h*, on which the rolls *g* revolve, and prevent them from becoming set if bent down to an excessive degree by the passage of a thick mass of clothes through the machine.

The rods G also serve as guards to prevent the clothes from being drawn down under the rolls from the outside; and, furthermore, by the employment of these stiffening-rods G, the necessity is avoided of making the rods *h* of as large diameter as would otherwise be necessary, and which would be objectionable, as it would increase the friction, and necessarily reduce the diameter of the rubber rolls, which would render the bed D less elastic.

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

1. In combination with the main fluted roll C, the bed D, composed of a series of short independent rolls, *g*, supported on parallel rods *h*, connected by bridge-pieces or division-plates E, which extend transversely across the machine, and separate the contiguous rolls, substantially as and for the purpose described.

2. The combination of the re-enforcing-rods G with the rods *h*, rolls *g*, and bridge-pieces E, substantially as and for the purpose set forth.

Witness my hand this 14th day of June, A. D. 1877.

JOHN W. RICKER.

In presence of—
P. E. TESCHEMACHER,
N. W. STEARNS.