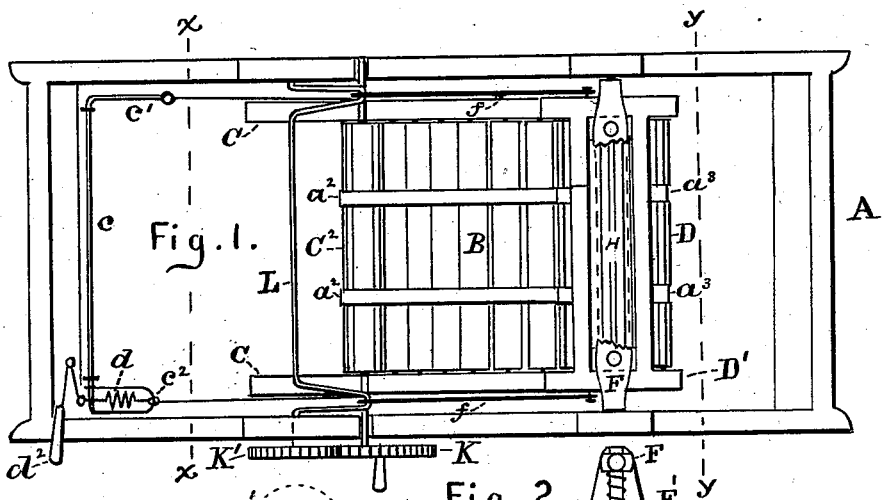
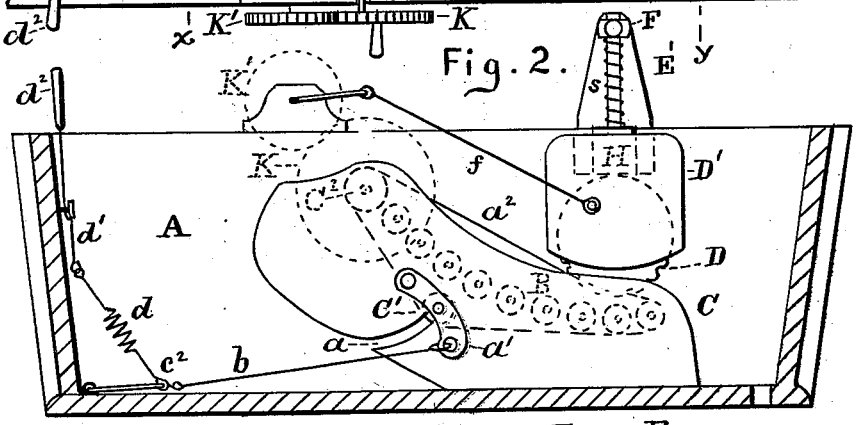
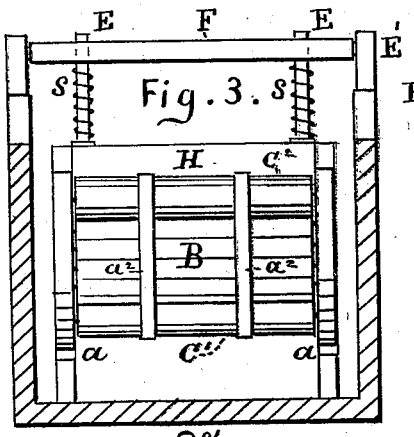
G. BUMGARDNER.

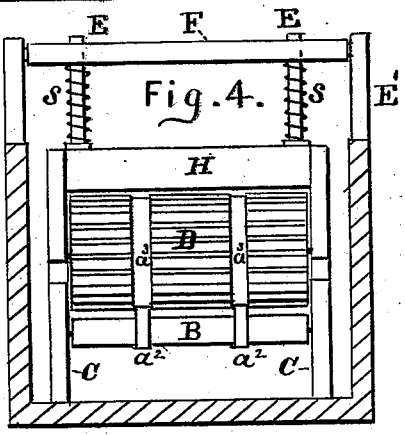
WASHING-MACHINE.

No. 184,697. Patented Nov. 28, 1876.









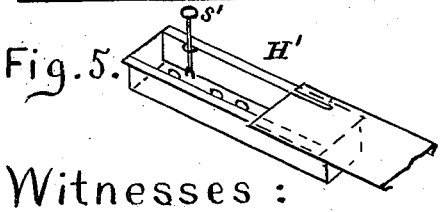
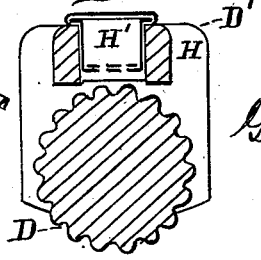


Fig. 6.



Witnesses :

N. A. Daniels

S. L. Willard

Inventor :

George Bumgardner

by M. Burris

Attorney.

UNITED STATES PATENT OFFICE.

GEORGE BUMGARDNER, OF OSCEOLA, IOWA.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **184,697**, dated November 28, 1876; application filed October 19, 1876.

To all whom it may concern:

Be it known that I, GEORGE BUMGARDNER, of Osceola, in the county of Clarke and State of Iowa, 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 thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a plan view. Fig. 2 is a side elevation, with side of the tank removed. Figs. 3 and 4 are transverse sections, respectively, on lines *x* and *y* of Fig. 1, looking toward the center of the machine. Fig. 5 is a perspective view of the soft-soap box detached. Fig. 6 is a transverse section of the soap-boxes and fluted drum.

My invention relates to a washing-machine having a series of rollers, provided with cords or bands, extending around the rollers, adjusted in position to be traversed by a fluted roller, D, having its bearings in an oscillating frame, and a presser-roller for tightening the bands which convey the clothes through the machine, and self-soaping devices, all constructed and operated as hereinafter described.

A is the water-tank. B represents the small rollers, having their bearings in the plates C, fastened in the tank, as shown in the drawings. These rollers are adjusted in position, as shown, to be traversed by a roller, D, having its bearings in an oscillating frame, so that all parts of the rollers will receive equal pressure from the roller D. C^1 is a presser-roller, provided with journals extending through curved slots *a* in the plates C, and having their bearings in the arms a^1, pivoted to the plates. Rods *b* are attached at one end to the lower ends of the pivoted arms, and the other ends of these rods are attached to the crank ends c^1 c^2 of the rod *c*, adjusted to oscillate in staples driven into the bottom of the tank. The lower end of a coil-spring wire, *d*, is attached to the crank end c^2 of rod *c*, and the upper end of the coil-spring wire is attached to the crank-arm d^1 of the bell-crank lever d^2. D is a fluted roller, having its bearings in a frame, D′, and provided with notches a^3, extending around the roller D, to receive the cords or bands a^2 extending around the rollers. The frame D′ is provided with arms E, extending through holes in a beam or roller, F, having its bearings in standards E′, fastened to the sides of the tank. The arms E are provided with spiral springs *s*, to bear the roller D downward upon the rollers. H represents a soap-box, made in the top of the frame D′, to receive and hold a bar of hard soap in position to bear upon the surface of the roller D. H′ is a soft-soap box, made to fit in the box H, and provided with a perforated bottom, to allow the soft soap to pass through to the roller D, and having a slide-bottom above the perforated bottom, operated by a lever, *s*′, the upper part of which extends through a slot in the lid of the box to regulate the quantity of the soap upon the clothes, or to stop it off entirely, when required. When hard soap is used, the box H′ is removed. By means of these devices the soap is automatically conveyed to the clothes by the roller D in the washing process. K is a drive cog-wheel, mounted on the extended end of a shaft, C^2, forming the upper roller of the series B. K′ is a pinion, adjusted to gear with wheel K, and mounted on the end of a shaft, L, having its bearings on the top of the sides of the tank, and provided with double cranks, to which are attached the pitman-rods *f f*. The inner ends of these rods are provided with loops, forming eyes to receive pins on the ends of the oscillating frame.

The tank being supplied with water sufficient to cover the lower rollers, and the soap-box supplied with soap, one end of the garment to be washed is placed on the cords over the upper rollers, and the cords being tightened by moving the lever d^2 to the left, bearing downward the presser-roller C^1 upon the cords under the rollers, the drive-wheel is turned toward the roller D by means of the crank *h*, moving the cords around the rollers, carrying the clothes downward, and oscillating the frame D′, causing the roller D to traverse back and forth over the clothes, and by means of the spiral springs pressing with equal force on all parts of the clothes over the rollers.

By reversing the motion of the drive-wheel

the direction of the motion of the bands will be reversed, and the garment will be moved upward, and thus may be passed back and forth through the machine as often as required to thoroughly cleanse it; and by reversing the position of the lever d^2 the presser-roller will be raised, and the bands, being thus slackened, will cease to move, and thus the dirtier parts of the garment may be kept under the roller D till thoroughly cleansed.

In the operation of washing, the lower part of the roller D, when at its lowest point, dips in the water, and as it moves upward carries with it sufficient water to keep all parts of the garment thoroughly saturated.

It is evident that the machine may be operated by means of a treadle or other power, as well as by the mechanism shown and described.

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

1. In combination with a fluted roller, D, having its bearings in an oscillating frame, D′, the series of rollers B, provided with cords or bands a^2, extending around the rollers, and adjusted to be traversed by the roller D, and to receive from it equal pressure at all parts of the upper surface of the rollers, substantially as and for the purposes described.

2. The presser-roller C′, in combination with rollers B and bands or cords a^2, operated by mechanism substantially as and for the purposes described.

3. The automatic soaping devices, consisting of the soap-boxes H H′ in the top of the frame D′, in combination with the roller D, substantially as described.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

GEORGE BUMGARDNER.

Witnesses:
A. S. JOHNSON,
J. O. GRANT.