G. D. BERDAN.

Washing-Machines.

No. 156,121. Patented Oct. 20, 1874.

Fig: 1.

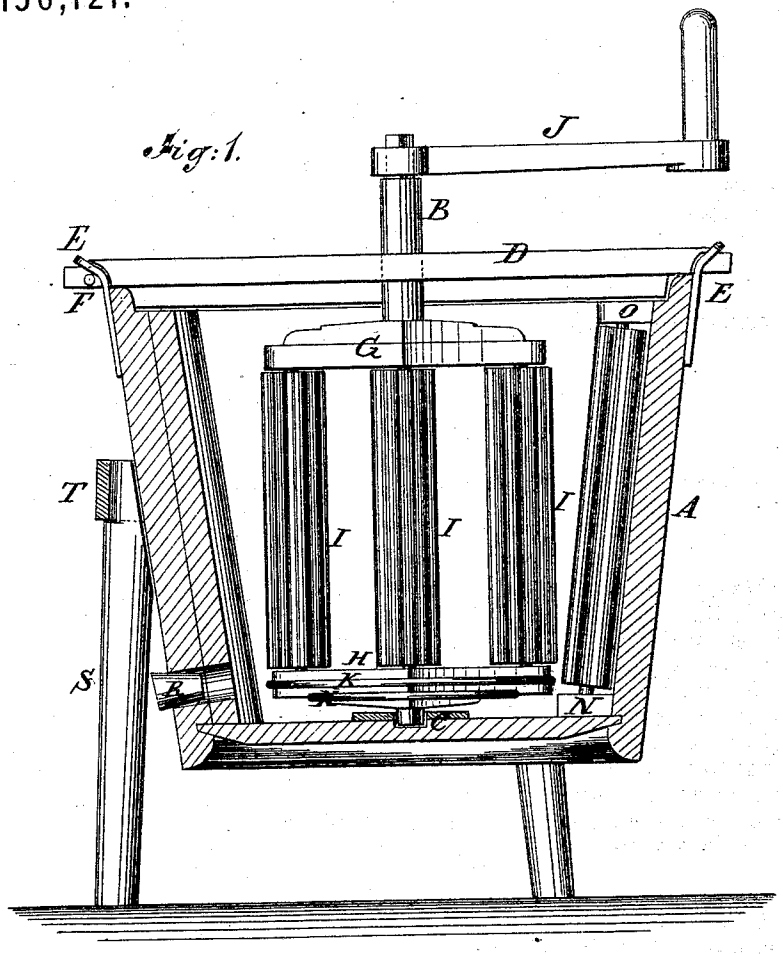
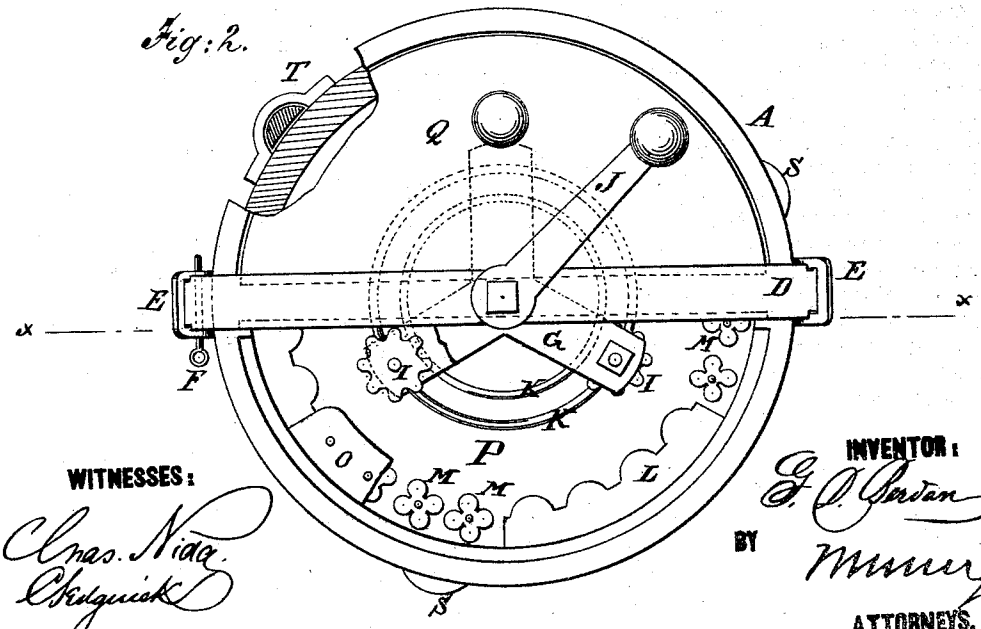


Fig: 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE D. BERDAN, OF SADDLE RIVER, NEW JERSEY.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **156,121**, dated October 20, 1874; application filed June 27, 1874.

To all whom it may concern:

Be it known that I, GEORGE D. BERDAN, of Saddle River, in the county of Bergen and State of New Jersey, have invented a new and useful Improvement in Washing-Machines, of which the following is a specification:

The invention relates to the application of circular guards to the lower head of a vertical revolving rubber having fluted rollers, which act on the clothes placed between them and the corrugated sides of the tub, as hereinafter described.

In the drawing, Figure 1 is a vertical section of Fig. 2 taken on the line *x x*. Fig. 2 is a top view with one of the covers removed.

A is the tub; B, a vertical shaft, revolved by crank J, stepped at C and passing up through the cross-bar D, which is fastened to the rim of the tub by means of the metallic ears E E and pin F. Attached to this shaft (within the tub) are two triangular heads, G and H—one near the bottom and one near the top of the tub. A vertical fluted roller, I, revolves at each angle of the heads. K represents the circular guards or rings, which are of galvanized wire or wood, three (more or less) in number, and placed on the under side of the lower head H, surrounding it, to support the clothes in the space P and prevent them getting beneath the head. The ends and under side of the arms composing the head H are provided with notches or grooves to receive the rings, the latter being sprung into them and held therein by their elasticity or tendency to resume their circular form. They may be readily removed when requisite. These guards thus subserve an important function in the process of rubbing and washing, keeping the clothes away from the pivot of the head H and forcing them out against the sides of the tub, thereby aiding in the attainment of the desired result in the shortest space of time. The tub-lining consists of stationary beaded or corrugated sections L and revolving beaded rollers *m*, the latter supported in segments N and O, and both arranged in alternate groups. Each part of the cover Q semicircular in form. R is a spigot for drawing off the water, and S S represent the legs of the tub, which are slipped into clips T to adapt them for convenient detachment.

Having thus described my invention, what I claim as new is—

The combination, with the lower triangular head H of the revolving rubber, of the wire rings K, differing in size and arranged or held in notches one above the other, as shown and described.

GEORGE D. BERDAN.

Witnesses:

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