

**G. G. CURTISS.**  
**Washing-Machines.**

No. 143,749.

Patented Oct. 21, 1873.

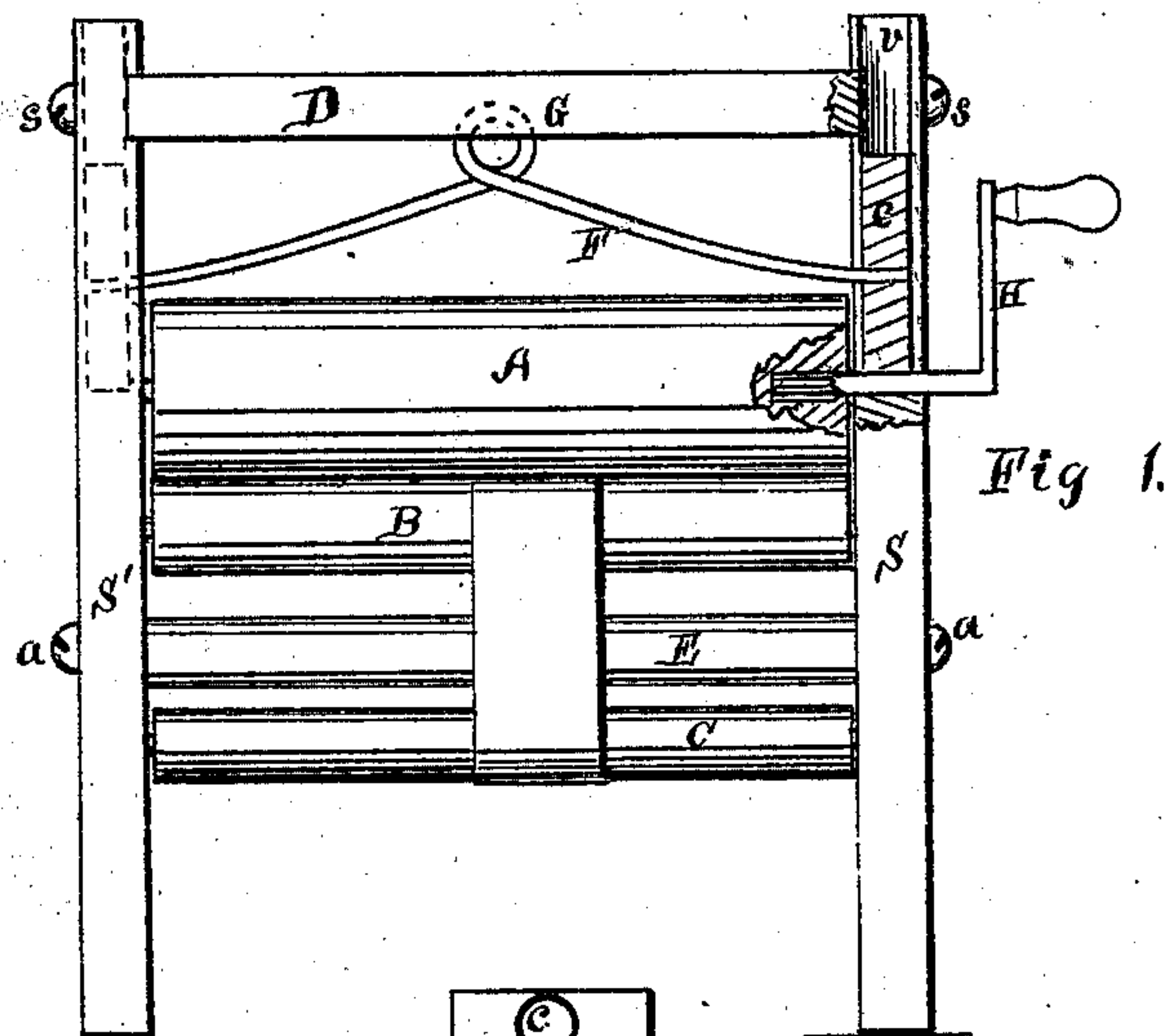


Fig 1.

Fig 2.

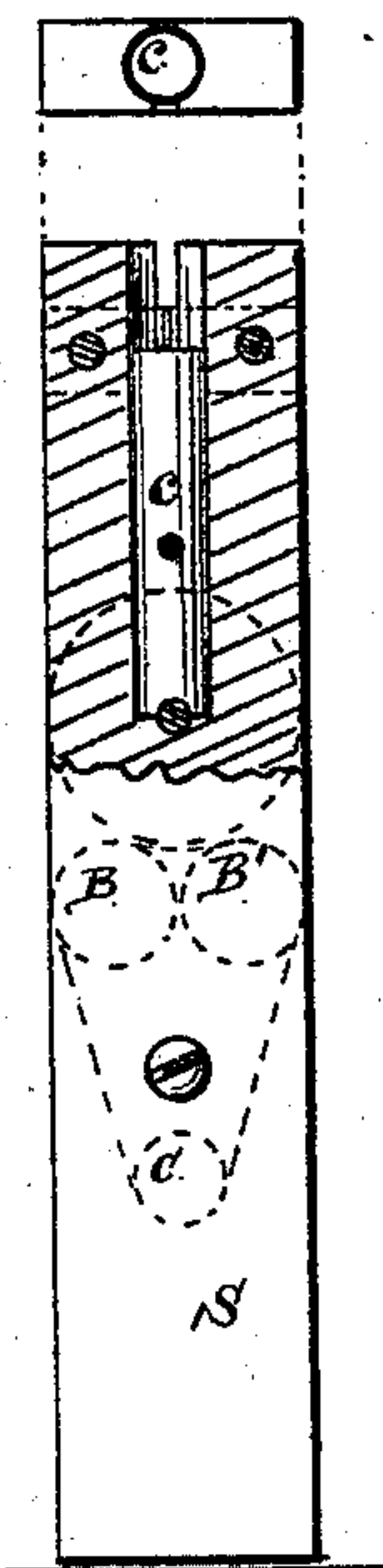


Fig 3.

Witnesses.

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **143,749**, dated October 21, 1873; application filed March 17, 1873.

*To all whom it may concern:*

Be it known that I, GEORGE G. CURTISS, of Rochester, in the county of Monroe and State of New York, have invented certain Improvements in Washing-Machines, of which the following is a specification:

This invention consists essentially in the employment of a peculiarly-constructed equalizing-spring for the feed-roller, and in the application of a simple and cheap follower-box therefor; also, in a peculiar method of applying the crank to the roller in a cheap and effective manner.

In the drawings, Figure 1 is a sectional front elevation of my invention. Fig. 2 is a sectional side elevation of the same, and showing a top view of the standard S. Fig. 3 is an enlarged transverse section of the inner end of the crank-shaft.

A represents the feed-roller; B and B', the upper belt-rollers; C, the lower belt-roller; S and S', the standards in which the rollers are hung. The bar D is secured to the upper ends of the standards, as shown, by screws *s*, or otherwise. Their lower ends are held by the rod E and screws *a*. The spring F may be made of small steel rod, and it is provided with one or more coils in the center, as shown at G, which is placed in a cavity or recess formed in the lower side of the bar D for this purpose, and, the ends being inserted in holes bored in the follower-boxes *c*, the spring is thereby securely held in position. It may be protected from corrosion by galvanizing or otherwise. The follower-boxes *c* consist of cylindrical sec-

tions of any desired length, and are made to fit loosely in holes bored vertically in the upper end of the standards, as far down, at least, as to the axial line of the feed-roller. The latter may be fluted or plain, as may be desired. I use a small round rod for the crank H, and the end to be inserted into the roller A I propose to corrugate or flute by swaging, as shown in cross-section in Fig. 3, for three inches, more or less, in length, and, after boring a small hole in the end of the roller, such swaged end of the crank is driven in as far as may be necessary. It is believed that by means of this peculiar shape of the crank-rod the roller is much less liable to split in consequence of the constant torsional strain in either direction imparted to it by the crank than when the crank is simply flattened, as commonly practiced in cheap machines of this class. In this latter case the strain all falls upon two lines within the roller, while with my improved construction, which is also very cheap, it is distributed upon four lines or sections of the roller.

What I claim as my invention is—

The automatically-acting equalizing-spring F, when composed of wire, and so made and applied as to be retained in position with relation to the roller B, cross-bar D, and follower-boxes *c*, without screws, bolts, or other similar appliances, in the manner and for the purposes set forth.

GEO. G. CURTISS.

Witnesses:

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