A. BURBANK.

Improvement in Wringing-Machines.

No. 132,628. Patented Oct. 29, 1872.

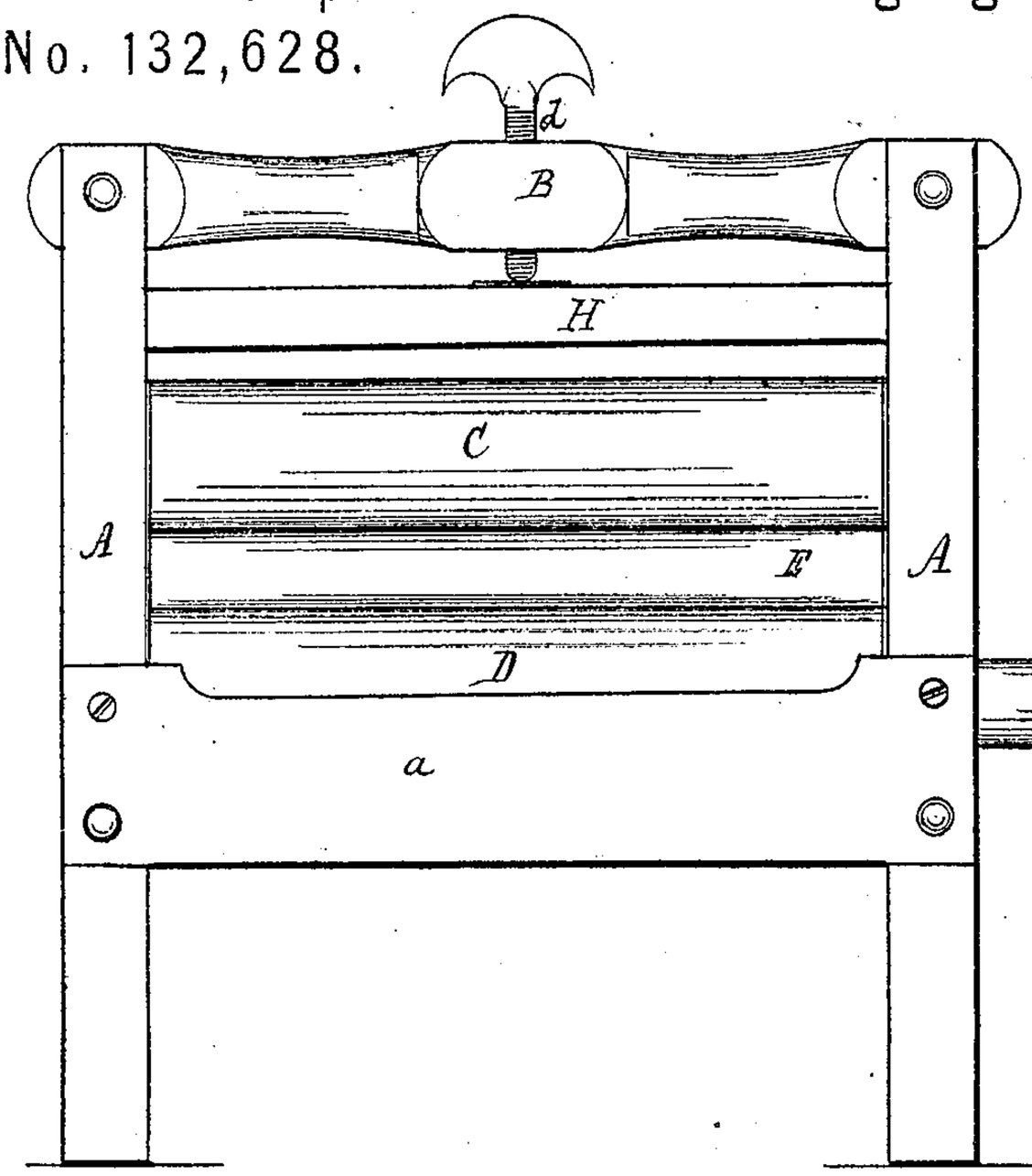

Fig. 1.

Fig. 2.

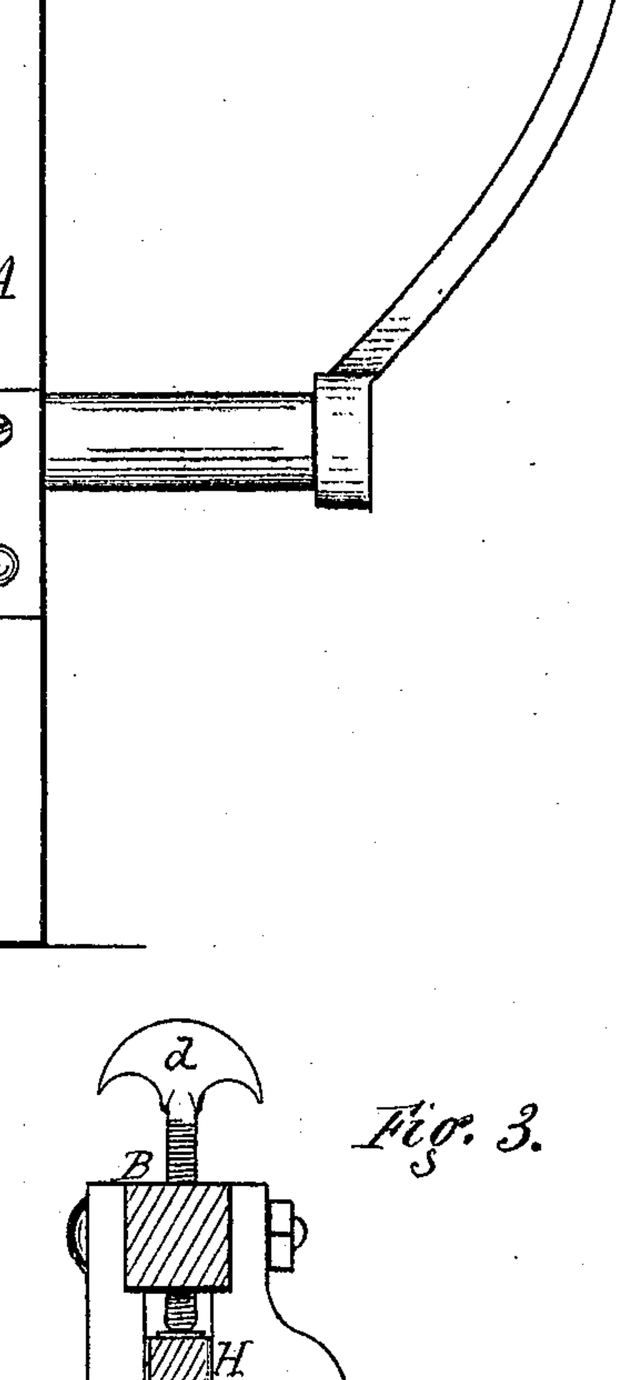

Fig. 3.

Witnesses.

Archie Baine

C. Henry Roberts

Inventor:

Abner Burbank

per R. F. Osgood,

atty.

UNITED STATES PATENT OFFICE.

ABNER BURBANK, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO PHILIP W. DATER, OF SAME PLACE.

IMPROVEMENT IN WRINGING-MACHINES.

Specification forming part of Letters Patent No. **132,628**, dated October 29, 1872.

To all whom it may concern:

Be it known that I, ABNER BURBANK, of the city of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Wringing-Machines, of which the following is a specification:

My invention consists in combining with a set of wooden rollers, having a rubber roller between them, an arrangement of parts whereby the wooden rollers may be separated with facility for the insertion or removal of the rubber one. It also consists in the special arrangement of the wooden rollers with respect to the rubber one, whereby all gearing is dispensed with and the best effect of the compressing action is attained.

In the drawing, Figure 1 is a front elevation; Fig. 2, an end elevation; and Fig. 3, a cross-section.

A A represent the two end standards of the frame, united at the top by a fixed cross-bar, B, and at the sides by slats *a a*. Between these standards are mounted the three wooden rollers C C D and the intermediate rubber roller E. The upper rollers C C are at some distance apart horizontally, so that the rubber roller will bear in the space between them. The lower roller D is preferably made of larger size than the others, and is operated by a crank, as shown. The wooden rollers all have journals turned on them, which rest in sockets of the end standards; and that on one end of the bottom roller is extended for the attachment of the crank. The rubber roller has no journals or bearings, but simply rests in the space between the upper and lower rollers, and is held in place by them, being inclosed on three sides. It has no shaft running through it, but it may be made either solid or hollow, preferably the latter, as it gives a greater degree of elasticity with a less weight of rubber. No gearing or cog-wheels whatever are used, but the motion is transmitted from one roller to another by friction simply. One of the wooden rollers—preferably one of the upper ones—is made to be retracted or drawn back to allow the rubber roller to be inserted or removed by means of the following arrangement: In the upper ends of the standards A A are made vertical slots *b b* of sufficient depth to carry the journals of the roller down to place. Above the journals bearing-blocks *c c* are inserted in the slots. On top these bearing-blocks rests a cross-bar, H, which extends from end to end, being pressed to place by a set-screw, *d*, which thus forms a central fulcrum. This cross-bar is not a spring, and has no elasticity, but is a stiff bar, and is used only for pressing down upon the roller. The desired elasticity is furnished by the rubber roller alone, which is sufficient in itself, since its whole thickness is elastic, and it is not impeded by a shaft, as in most other wringers. Whenever the rubber roller is to be inserted or removed the cross-bar is simply raised or retracted by loosening the set-screw, when the rubber roller is passed bodily in or out of the inclosed space between the wooden rollers.

The first feature of my invention consists in combining this arrangement of the retracting cross-bar and the set-screw with the wooden rollers having the loose rubber roller between them, the object being simply to give passage to the rubber roller in or out. I am aware that in wringing-machines having two rubber rollers a somewhat similar arrangement of a spring cross-bar and a central set-screw has been used. Such is not the equivalent of my invention, for in that case the combination is not the same and the object is different, being simply to give a greater degree of elasticity or yieldingness and allow a greater thickness of cloth to enter at one end than the other. I desire to claim it only in combination with the triplicate set of wooden rollers with the rubber roller inclosed; and for the purpose of allowing the rubber roller to be inserted or taken out the bar and set-screw furnish no spring whatever. They, however, serve to give additional pressure to the rollers when required. This arrangement is essential in a wringer of this kind, for in some instances, where great power is applied, the interior roller might be driven from place, and it would be exceedingly difficult to reinsert it without a retraction of one of the wooden rollers. The combination and the result attained are therefore very different from the old style.

The second feature of my invention consists in the special arrangement of the wooden rollers with relation to the rubber one, and the

avoidance of gearing or cog-wheels. The upper rollers, by being separated some distance apart, as shown, allow the expansion of the rubber into the space between them under pressure below, so that while the greatest elasticity is produced the rubber becomes so wedged in place that it cannot be readily forced out. These two rollers also balance the resistance, which could not be if they were made of small size or located near together. It also enables the lower roller to be made of comparatively large size, so that the clothes, in passing through, are subject to great pressure with rapid passage. By the use of these large rollers I am also enabled to dispense with gearing outside, which is not only objectionable in itself, but cannot be used where one roller is made to retract, as before described, for the insertion or removal of the rubber roller.

I am aware that an inclosed rubber roller has before been used in connection with iron rods or shafts; but in such case the shafts have been fixed in place and are connected by gearing without. Such is not the equivalent of my invention.

This machine has been found as effective in use as the ordinary wringers having two rubber rollers, while its cost is fully one-third less, and it is much stronger and more substantial. By it I avoid all the twist and strain that comes on rubber rollers, as the rubber roller in this case is acted upon simply by compression and has a resistance on three opposing sides. It is apparent that iron or other hard rollers may be employed in place of the wooden ones.

I do not claim, broadly, a cross-bar with a central screw for bearing down upon the rollers; nor do I claim the employment in a wringing-machine of a single rubber roller; but

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

1. The cross-bar H and its adjusting-screw *d*, when said cross-bar is made stiff and inelastic, and is employed in combination with the three wooden rollers C C D and the inclosed rubber roller E in such a manner that it allows the space between the upper and lower wooden rollers to be opened for the purpose of the insertion or removal of the rubber roller, as herein shown and described.

2. The triplicate solid rollers C C D, made and arranged as set forth, and inclosing the rubber roller E in the manner herein shown and described, for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ABNER BURBANK.

Witnesses:
R. F. OSGOOD,
ARCHIE BAINE.