H. Nash,

Clothes Wringer,

No. 58,669. Patented Oct. 9, 1866.

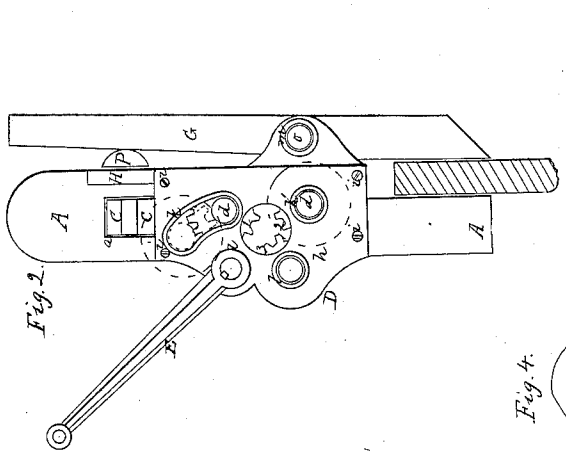

Fig. 2.

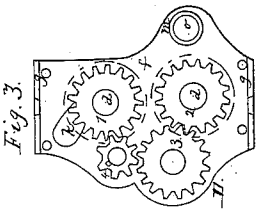

Fig. 3.

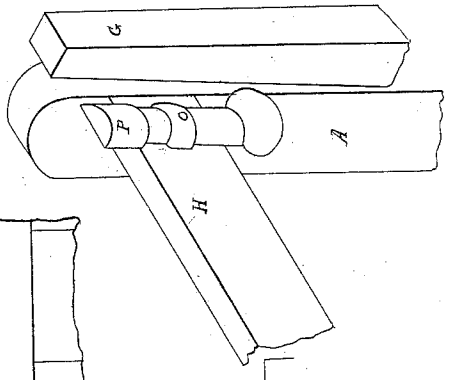

Fig. 4.

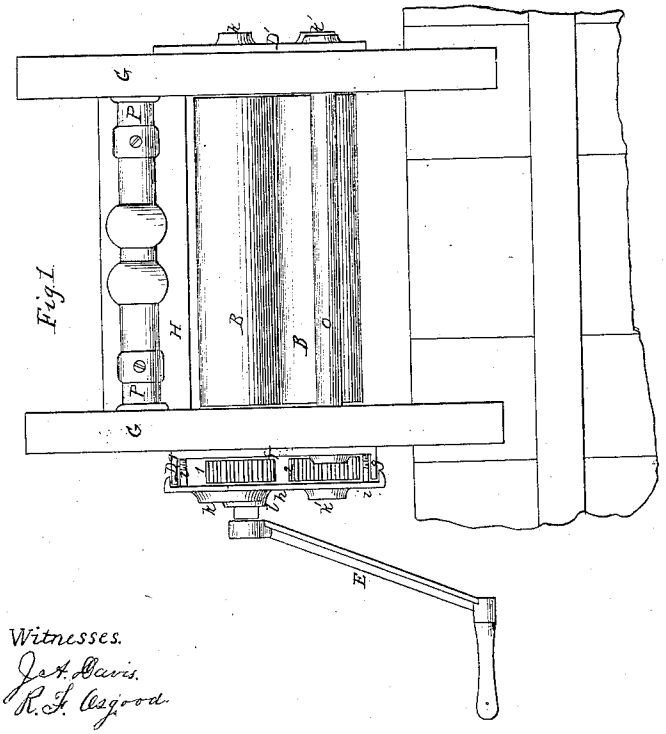

Fig. 1.

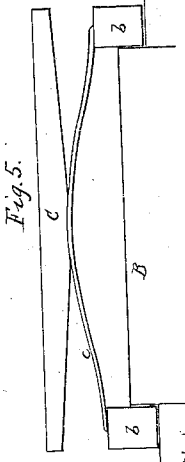

Fig. 5.

Witnesses.
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UNITED STATES PATENT OFFICE.

HIRAM NASH, OF CINCINNATI, OHIO.

IMPROVED CLOTHES-WRINGER.

Specification forming part of Letters Patent No. **58,669**, dated October 9, 1866.

To all whom it may concern:

Be it known that I, HIRAM NASH, of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Clothes-Wringing Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is an elevation of my improved machine applied to a tub or washing-machine; Fig. 2, an end elevation of the same; Fig. 3, a view of the inner plate of the case with the gearing situated inside; Fig. 4, perspective view of one side of the clamping arrangement; Fig. 5, a diagram showing the bar and spring for compressing the rollers.

Like letters of reference indicate corresponding parts in all the figures.

My invention consists, essentially, in a box or case at the crank end of the machine, inclosing an improved arrangement of gearing that insures a more perfect working of the rollers, and in the means of securing the machine to the tub or receptacle.

As represented in the drawings, A A are the standards, and B B the rubber rollers, which do not differ essentially from the corresponding parts of other machines. The standards are provided with vertical slots *a a*, in which rest sliding bearings *b b*, that sustain the journals of the upper rollers. On the bearings *b b* rest the ends of a half-elliptic spring, *c*, secured centrally to a cross-bar, C. This arrangement gives the necessary elasticity to the upper roller. The lower roller is stationary in position.

To the crank end of the machine is secured a metallic case, D, and to the opposite end a simple plate, D′, which simply serves as a bearing for the journals *d d* of the rollers. The case is made of two parts, a plate *f*, having projecting ends *g g*, and a cover, *h*, fitting over it, and secured in place by screws *i i*, or some equivalent means.

Within the case thus formed is situated a set of gears, consisting of two spur-wheels 1 2, secured to the ends *d d* of the rollers, a third wheel, 3, engaging with 2, and a pinion, 4, on the shaft of crank E gearing into both 1 and 3. The wheels 1 2 3 are of equal size, while pinion 4 is but half size of the others.

The case and plate D D′ are each provided with bearings *k k′*, to receive the journals of the rollers, and the former also with bearings *l l*, for the wheel and pinions 3 4. The bearings *k*, for the upper roller, are made of considerable extent, and concentric with the axis of pinion 4, as shown most clearly in Fig. 2. Thus arranged, the gears are held firmly in place in the case D, and can be removed only by design. They are therefore compelled to run true, however great the strain may be.

In ordinary wringing-machines much difficulty is experienced from the end action of the rollers. In my arrangement, by reason of the case D, there can be no difficulty from this source, and no jarring or vibration. By being thus inclosed in the case, as described, the gears are less exposed to water than if open.

Gearing has been before employed in wringers, and in this broad application I do not claim it. In all such machines with which I am acquainted, however, the upper roller cannot be raised without either creating a looseness and irregularity in action, (as when two gears with long teeth intermatch,) or an unequal leverage, (as when a pin projects into a slot of the upper gear.) In my case it matters not what position the rollers assume, the action is always the same and the leverage uniform and equal. There is no more strain when the rollers are separated than when they are in contact.

By making the driving-pinion 4 but half the size of the other gears I am enabled not only to obtain a greater leverage, and consequently greater ease in turning the crank, but with the usual speed of turning I attain a slower motion of the rollers.

In ordinary machines the operator, in feeding the clothes between the rollers and operating the crank at the same time, attains a certain degree of speed of turning, which it is difficult to modify or change. This speed gives too much action to the rollers, and the water is therefore frequently imperfectly expressed, and the clothes are torn or injured.

I am aware of no other arrangement of gearing connected with a wringing-machine in which, with the ordinary speed of the crank, the speed of the rollers can be lessened.

It will be noticed that as the upper roller, B, is raised in the concentric slots *k k* it inclines

back over the body of the tub or receptacle in which are the clothes to be wrung, as indicated by red lines in Fig. 2. In this condition it is in the most convenient position for the entrance of the clothing between the rollers and for the escape of the expressed water. The greater the separation of the rollers the more is their inclination to the receptacle.

I am aware of no machine in which, as the rollers separate, they are made to assume an angular position for the free entrance of the articles to be acted on.

The case and plate D D′ are also provided with bearings *m m* at a suitable position on the outside, to which are jointed, by a rod, *o*, or equivalent, clamps G G, which hold the machine to the side of the tub or receptacle. These clamps are substantially of the form shown, and are tightened by means of buttons or wedges *p p*, pivoted to a cross-piece, H, and turning down between the standards and clamps at the top. This arrangement enables me to tighten the clamps very effectually, and obviates the use of metallic cams, wedges, and screws, as in ordinary devices.

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

1. The combination of the inclosing-case D, made up of the plate *f* and cover *h*, and provided with the concentric bearings *k k*, with the set of gearing 1 2 3 4 arranged as described, the whole used in connection with the rollers B B, substantially in the manner and for the purpose specified.

2. The tightening buttons or wedges *p p*, in combination with the clamps G G and standards A A, arranged and operating as set forth.

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

HIRAM NASH.

Witnesses:
JOHN W. APPLEGATE,
EDWIN C. WEAVER.