

N<sup>o</sup> 50,482.

*Patented Oct. 17, 1865.*



Witnesses; O  
 Thomas L. Stetson

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# UNITED STATES PATENT OFFICE.

DAVID LYMAN, OF MIDDLEFIELD, CONNECTICUT.

## IMPROVED CLOTHES-WRINGER.

Specification forming part of Letters Patent No. 50,482, dated October 17, 1865.

*To all whom it may concern:*

Be it known that I, DAVID LYMAN, of Middlefield, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Clothes - Wringers; and I do hereby declare that the following is a full and exact description thereof.

The accompanying drawings form a part of this specification.

Figure 1 is an edge view, and Fig. 2 a side view, of the wringer complete.

Similar letters of reference indicate like parts in the drawings.

My invention relates to means for communicating the motion of one roll to the other roll, so as to insure their turning properly, and avoid a risk that one may stop while the other continues its revolution. Gearing has been applied for this purpose, but there are difficulties attending its use which are avoided by the present invention.

To enable others skilled in the art to make and use my invention, I will proceed to describe it by the aid of the drawings and of the letters of reference marked thereon.

A is the framing, provided with the usual attachments for securing it to the tub, and for providing a proper elastic and adjustable pressure to hold the rolls properly together and at the same time allow their separating to such extent as may be necessary to accommodate the masses of clothes drawn through between them.

B is the lower roll, and C the upper roll. Each roll is composed of vulcanized india-rubber firmly secured by well-known means upon a shaft of iron or other metal properly protected from oxidation. The shaft of the lower roll is marked *b*; that of the upper roll is marked *c*. A crank is provided to give motion to the lower roll.

A pitch-wheel, *B'*, is firmly fixed on the shaft *b*, and a similar pitch-wheel, *C'*, is fixed on the shaft *c*. A pitch-chain, *D*, is passed between and through the wheels *B'* and *C'*, and bends around a portion of the circumference of the lower pitch-wheel, *B'*, and also of the upper pitch-wheel, *C'*. It also passes around an additional pitch-wheel, *E*, which is carried on the shaft *e* mounted in the same framing *A*. The spurs *b'* in the pitch-wheel *B'*, and the spurs *c'* in the pitch-wheel *C'*, lock into the pitch-chain

*D*, and it follows, from the construction and arrangement of the parts, that the lower shaft *b* cannot be turned without compelling corresponding revolutions of the shaft *c* in the opposite direction, thus insuring that the surfaces of the rolls *B* and *C*, at the points where they are presented to each other, shall move together. When the crank is turned in the proper direction for wringing clothes, as indicated by the arrows, the strain on the pitch-chain *D* is all confined to the small portion which is in contact with the wheels *B'* *C'*, and that stretch tangentially between them. The other portions of the pitch-chain *D* will be comparatively free from strain, and will run idly up and pass around the wheel *E*.

I prefer to extend the shaft *e* through the slot *a* in the framing *A* and prolong it across the frame, holding it in a bearing, *a'*, at the opposite side of the machine, as indicated. This bearing *a'* should be made a little loose, or slightly conical, as indicated, to allow a considerable vertical motion of the wheel *E* by the traversing of the shaft *e* up and down in the slot *a*, as may be required by the varying wear of the pitch-chain *D*, or of the boxes in which the lower shaft, *b*, is supported, or by the changes of position of the upper shaft, *c*, as it rises and sinks in the act of wringing large masses of clothing. I mount a spring, *F*, under the box in which the shaft *e* is carried in the slot *a*, which spring urges the shaft *e*, and consequently the wheel *E*, constantly upward, so as to keep the pitch-chain *D* always reasonably tight, and consequently in proper contact with the pitch-wheels *B'* and *C'*.

In case the shaft *b* is turned by the crank in the opposite direction for any considerable length of time, or under circumstances where the motions of the rolls *B* and *C* are resisted, so as to induce a tendency to slip relatively to each other, the strain on the pitch-chain *D* is transmitted through that portion which passes up over the wheel *E*, and there is consequently a strong downward pull on the latter. To avoid a too great slackening of the pitch-chain from the yielding of the spring *F* under such circumstances, I allow but a moderate amount of traverse to the wheel *E*, supporting it rigidly so soon as it has moved downward a very little below its ordinary position.



I provide the pitch-wheels B' and C' with rims or flanges, as represented, and provide corresponding rims on the idle-wheel E. Spurs may be employed in the wheel E, or they may be dispensed with at pleasure.

The wheel E may be mounted on a fixed bearing, or on a bearing which is made adjustable by a screw or otherwise, instead of being controlled by a spring.

I do not confine myself to the use of a pitch-chain composed of plates and rivets, as represented. I can use in the place thereof ordinary chain of various kinds by properly adapting the pitch-wheels B' and C' to take a proper hold thereon; or I can use a band of leather, rubber belting, or other flexible material, punctured with holes or notched on the edges, or otherwise adapted to receive projections or spurs on the wheels B' C'; or I can use a band with some effect, without locking upon any spurs, by simply causing it to hug on smooth wheels B' C', and be pinched in grooves therein.

It will be seen that the upper roll, C, may rise to any reasonable height without breaking or seriously disturbing the connection of the pitch-

wheels B' C' with the pitch-chain D. As the latter is arranged there will be no considerable tightening or slackening with a motion of a half-inch or more in the upper shaft, *c*, and the pitch-chain will afford a perfectly reliable connection under all circumstances. It will also be seen that the slack of the chain D will be always taken care of by the wheel E, and that in case of an extraordinary pull on the usually slack part the wheel E will be firmly supported by the bottom of the slot *a*, which forms a stop for the purpose.

Having now fully described my invention, what I claim as new therein and desire to secure by Letters Patent, is as follows:

The spring F, slot *a*, and stop *a'*, adapted to control the position of the shaft *e* and wheel E, when arranged relatively to the chain D and rolls B and C of a clothes-wringer, substantially as and for the purpose herein set forth.

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