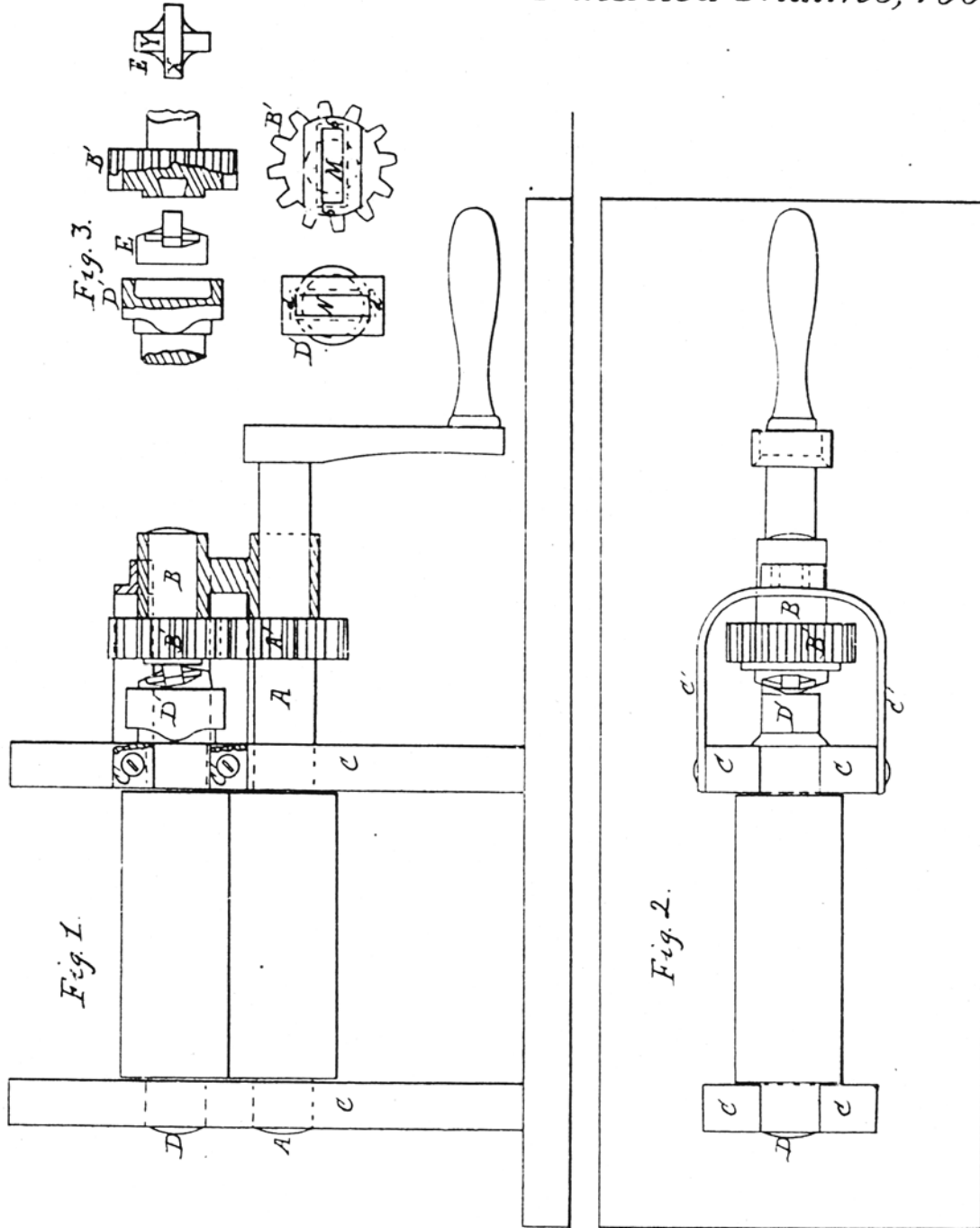


*D. Lyman,*  
*Clothes Wringer,*

*No 63,272*

*Patented Mar. 26, 1867.*



*Witnesses.*  
*L. L. Frabonny.*  
*W. C. Day*

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*D. Lyman*

# United States Patent Office.

DAVID LYMAN, OF MIDDLEFIELD, CONNECTICUT.

Letters Patent No. 63,272, dated March 26, 1867.

## IMPROVED CLOTHES WRINGER.

The Schedule referred to in these Letters Patent and making part of the same.

### 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.

My invention relates to means for allowing the rolls to increase and diminish their distance apart.

I will first describe what I consider the best means of carrying out my invention, and will afterwards designate the point which I believe to be new. The accompanying drawings form a part of this specification.

Figure 1 is a side elevation of the parts in section.

Figure 2 is a plan view.

Figure 3 represents some of the details detached.

Similar letters of reference indicate like parts in all of the figures. Tints are employed to aid in distinguishing parts, and do not indicate material. The material of all the novel parts may be malleable cast iron, galvanized, or may be brass, iron japanned, or any other materials possessing sufficient strength.

A is the shaft of the lower roll; A1 a spur-gear wheel thereon. B1 is a corresponding gear-wheel, mounted on the short shaft B. This shaft B is supported in the frame C, which embraces both it and the shaft A in the manner represented, and is rigidly supported by arms C1, which extend therefrom to the main framing of the machine, and are solidly bolted thereon. On the inner face of the wheel B1 is a groove, extending diametrically nearly across. The ends of this groove M are closed by a bar, which may be formed of the same metal, or of a separate piece bolted on, as indicated by *b*. D is the shaft of the upper roll. Its outer end carries a wheel, D1, on the outer face of which is a groove, N, similar to the groove M before described, and extending diametrically nearly across in the same manner. This groove N stands always at right angles to the groove M when the machine is in operation, as will be presently described. The ends of this groove N are closed by the bars *d*. E is an intermediate piece of metal, having wings on its opposite sides, at right angles to each other, as indicated by X and Y. These wings are of a corresponding thickness with the grooves M and N, before described, but are a little shorter. The metal is thickened at the junction of these wings with the main body of the piece E, to give proper strength.

Any of the ordinary provisions for holding down the upper roll, and allowing it to yield upward by the yielding of springs or the like, may be applied in connection with my invention. I have not deemed it necessary to represent any of these ordinary devices. The same may be said of the several means now in competition with each other for attaching the machine to a tub or other vessel, to facilitate the use of the machine.

In the operation of my invention the shaft D is liable to sink a little below or to rise considerably above the line of the short shaft B. In every case the piece E, with its wings X and Y, is subjected to a motion other than the simple rotary motion. The wheel B1 rotates without any other motion. The wheel D1 correspondingly rotates, and without any other motion, excepting as the material between the rolls shall vary so as to cause this wheel to rise and sink. But when the shafts B and D are to any extent out of line with each other, whether the lines of their axes stand exactly parallel or oblique in their direction, the piece E, with its wings, rolls in such relation with the grooves M and N, before described, that the rotary motion is transmitted smoothly and continuously from the wheel B1 to the wheel D1, and without involving the evils which have attended the use of previously tested devices of a somewhat analogous character.

There have been many efforts to transmit motion from one shaft to another when the shafts are out of line; and one has been patented by me which works on a principle involved in this invention. But all of the previous devices have been objectionable, either because they were liable to become misplaced, or because the bearing surfaces were necessarily so small, in consequence of their defective construction and arrangement, as to rapidly wear out and to work irregularly. The strain on the bearing surfaces of the intermediate piece is very considerable; and the abrasion of these surfaces, and of the surfaces with which they come in contact, is very rapid when the bearing surfaces are very small. The previous inventions in this line would not admit of the wide extent of bearing surface without deranging and disturbing the uniformity of the rotation. My present invention allows the bearing surface to be extended along the whole length of each of the wings M and N. The bars *b* and *d* prevent the intermediate piece E from ever dropping out of place, either after the parts are

applied together, or in the act of applying them, or of adjusting and repairing the machine. They also prevent the piece E from sliding its wings X and Y in the grooves M and N, in which they are fitted, excepting to draw them partially out at each side, and again thrust them in at each revolution. Each wing, X or Y, as it works in its groove M or N, communicates motion on the principle known as a universal joint; but it is a peculiarly formed joint, and much cheaper than any form of a universal joint before known to me. The peculiar form and arrangement of the parts allow the joint to be strongly made, within a smaller compass than usual, and at a cost which, when the parts are carefully moulded in metal chills, so as to require no finishing, (the bars *b* and *d* being cast in place,) is very trifling. I propose to cast the wheel B1 and the short shaft B in one piece. The frame C, by embracing both the shafts B and A in the manner represented, holds the gear-wheels mounted thereon in the proper relations, so that the teeth of the wheels are properly in gear independent of the connections C1, which extend to the framing. Such connections are liable to spring, and if the bearing for each shaft is separately supported, the labor of adjusting their position is very considerable, and the chance of their becoming subsequently deranged by the warping or springing of the parts, especially when the machine is being severely strained, is very great. My framing C, by embracing both in one rigid piece, the holes in which may be drilled by gauges, so as to be at exactly the desired distance apart, insures that the gearing shall be always perfectly matched together. The arms C1 have simply to resist the side strain due to the transmission of the power from one shaft to the other.

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

1. I claim, in clothes wringers, the within-described construction and arrangement of the grooves M N, and intermediate piece E X Y, combined and arranged relatively to the shafts B A and D, so as to communicate the motion and withstand the wear, substantially in the manner and for the purpose herein set forth.

2. I claim the piece C C1, constructed and arranged as represented, to hold both the shafts A and B, so as to transmit the motion, as represented, and to maintain the shafts at a uniform distance apart, however much the other parts may move relatively thereto, substantially in the manner and for the purpose herein specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

DAVID LYMAN.

Witnesses:

D. L. FREEBORN,  
W. C. DEY.