D. Lyman,

Clothes Wringer,

No. 52,867. Patented Feb. 27, 1866

Fig 2.

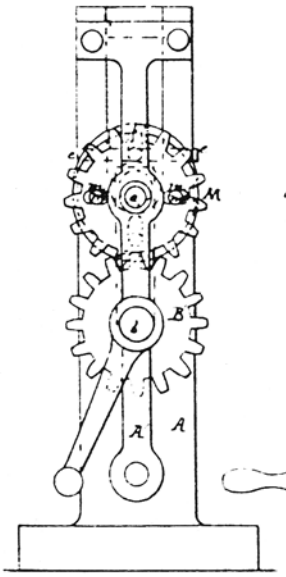


Fig 1

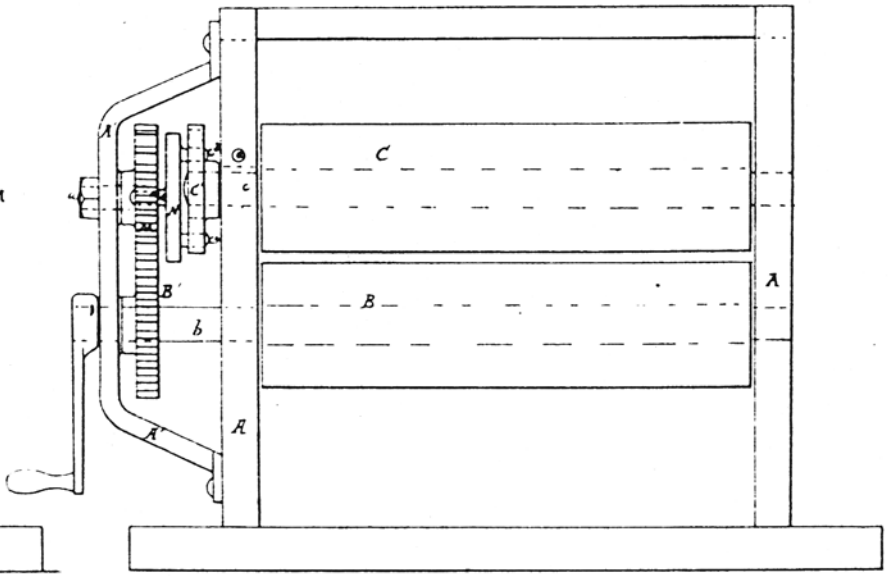


Fig. 3.

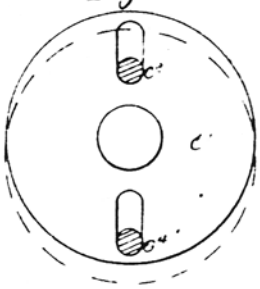


Fig 4.

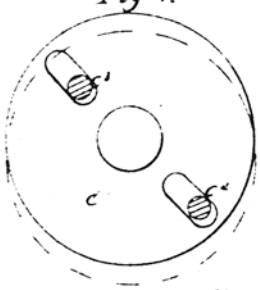


Fig 5

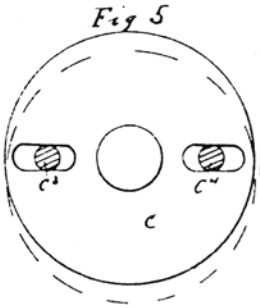


Fig 6.

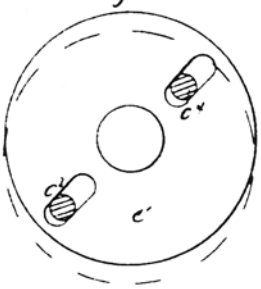
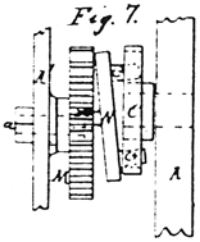


Fig. 7.



Witnesses.

Emil Tyrnauer

D. W. Sutton.

Inventor

David Lyman.

UNITED STATES PATENT OFFICE.

DAVID LYMAN, OF MIDDLEFIELD, CONNECTICUT.

CLOTHES-WRINGER.

Specification forming part of Letters Patent No. **52,867**, dated February 27, 1866.

To all whom it may concern:

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

The object of my invention is to provide for the movement of the axis of one or both of the rolls without necessitating any movement of the axis of the shaft from which the rotary movement is derived and without requiring the increased length which would be necessary with a duplication of ordinary universal joints or any ordinary coupling.

In a clothes-wringing machine any considerable increase of length of the shafts and their attachments is an evil. Assuming that the lower roll is carried in fixed bearings, as usual, my invention involves a necessity for adding only a fraction of an inch to the length in order to allow the upper roll to rise and sink to the fullest degree required in ordinary practice. It does not disturb the position of the gearing through which the shaft receives its rotation, and does not interfere with the free rising of the upper shaft or with its maintaining a position always parallel to the lower shaft.

I will first describe what I consider the best means of carrying out my invention, and will afterward point out the feature which I consider new.

The accompanying drawings form a part of this specification.

Figure 1 is a front elevation, and Fig. 2 is an end elevation. Figs. 3, 4, 5, and 6 are diagrams showing the relation of the parts at different periods in a half-revolution when the upper roll is raised by a thick mass of clothing supposed to be passing between the rolls; and Fig. 7 is a side elevation, showing the degree of inclination which my coupling-piece may assume.

Similar letters of reference indicate like parts in all the figures.

The drawings exhibit the novel parts with so much of the other parts as is necessary to show their relation thereto. Tints are employed to distinguish parts and not to indicate material.

The material of all the novel parts may be malleable cast-iron japanned, tinned, galvanized, or otherwise suitably prepared to guard against oxidation.

A is the fixed framing. B is the lower roll, of rubber, mounted on the shaft *b*. C is the upper roll, mounted on the shaft *c*, which latter shaft is supported so that it is free to rise and sink as required by the exigencies of the work. B′ is a gear-wheel firmly fixed on the shaft *b*. M is a gear-wheel mounted loosely on a fixed pin, *a*, which is supported on the brace A′, which is bolted to the main framing A and forms a portion of the rigid framing of the machine.

The gear-wheel M has two radial slots, *m*, arranged opposite to each other. A correspondingly-slotted wheel, C′, is fixed on the end of the shaft *c*. An intermediate wheel, N, having just sufficient thickness to afford the necessary strength, is provided with two spurs, m' m^2, on one face, which project into the slots in the gear-wheel M, and with similar spurs c^3 c^4 on its opposite face, which project into corresponding slots in the wheel C′. These spurs are arranged in lines at right angles—that is to say, a line drawn through the spurs m' m^2 is at right angles to a line drawn through the spurs c^3 c^4.

When the machine is operated with the shaft *c* exactly in line with the axis of the driving-wheel M my coupling device serves no peculiar function—it simply couples the shafts together so as to impart a rotary motion of the driving-wheel M, to the roller C; but when the shaft of the latter rises my coupling performs the additional function of sliding and tilting relatively to both the wheels M and C′, so as to accommodate itself to the peculiar conditions and to impart a reasonably uniform rotary motion to the wheel C′, and consequently to the upper shaft, *c*, under these novel conditions.

My spurs have sufficient length to allow a very considerable oscillation or inclination of the parts without losing their hold.

I provide a stop, *e*, at the point represented, so as to prevent the shaft *c* from rising too much out of line with the wheel M under any extraordinary circumstances. If the shaft *c* were allowed to rise as much as it might in-

cline to in passing through some unusually bulky mass, the spurs of my coupling or the wheels in which they act might become broken.

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

1. The spurred piece N, in combination with the wheels M and C', or the equivalents thereof, arranged relatively thereto and to the rolls of clothes wringing and washing machines, substantially as herein set forth.

2. The employment of one or more spurs on the opposite faces of the piece N, in combination with the perforations *m* and *c*, and with the working mechanism of clothes wringing and washing machines, substantially in the manner and for the purpose herein set forth.

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

DAVID LYMAN.

Witnesses:

D. W. STETSON,

THOMAS D. STETSON.