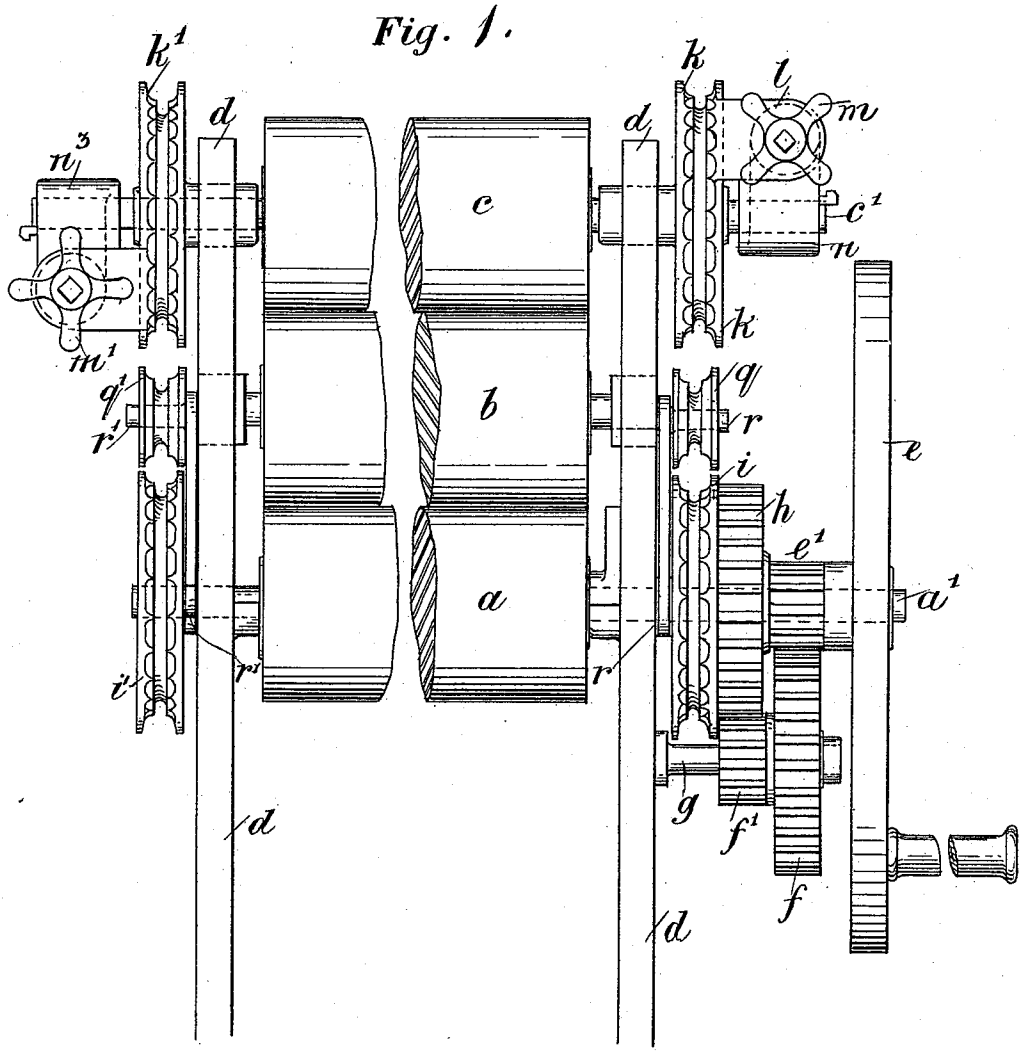
(No Model.) 2 Sheets—Sheet 1.

# W. DORE & J. P. TAPLEY.

## WRINGING AND MANGLING MACHINE.

No. 486,222. Patented Nov. 15, 1892.

*Fig. 1.*




Witnesses:
E. B. Bolton
E. K. Stuntevant

Inventors:
William Dore
John Pitt Tapley
By Richardson & Co.
their Attorneys.

(No Model.) 2 Sheets—Sheet 2.

# W. DORE & J. P. TAPLEY.

## WRINGING AND MANGLING MACHINE.

No. 486,222. Patented Nov. 15, 1892.

*Fig. 2.*

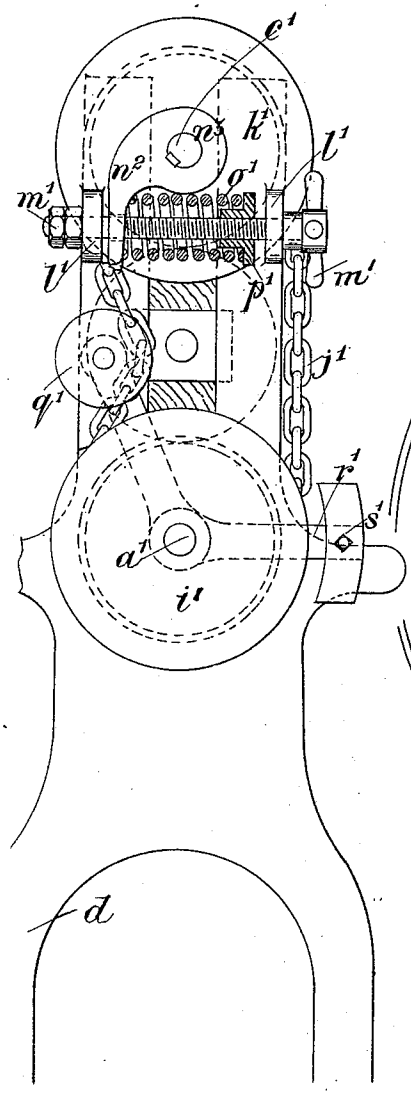
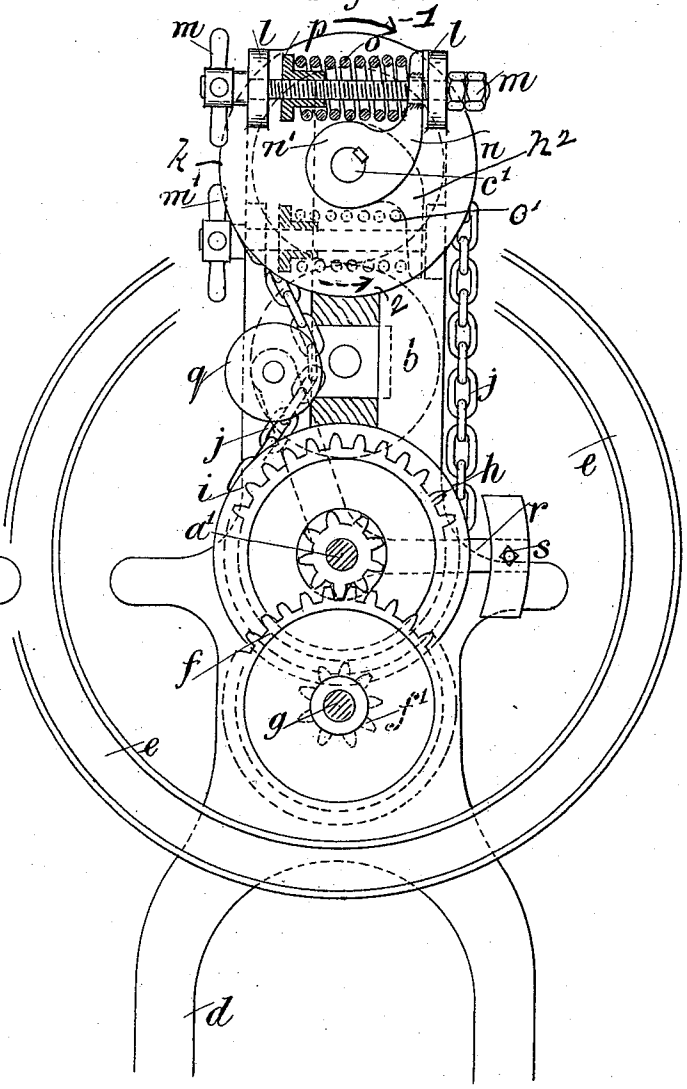



*Fig. 3.*




Witnesses:
E. B. Bolton
E. W. Sturtevant

Inventors:
William Dore
John Pitt Tapley
By Richards & Co
their Attorneys.

# UNITED STATES PATENT OFFICE.

WILLIAM DORE AND JOHN PITT TAPLEY, OF MANCHESTER, ENGLAND, ASSIGNORS OF ONE-THIRD TO JOHN HARRY PARR, OF SAME PLACE.

## WRINGING AND MANGLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 486,222, dated November 15, 1892.

Application filed August 15, 1892. Serial No. 443,148. (No model.) Patented in England March 17, 1892, No. 5,295.

*To all whom it may concern:*

Be it known that we, WILLIAM DORE, residing at Beswick, Manchester, in the county of Lancaster, and JOHN PITT TAPLEY, residing at Salford, Manchester aforesaid, England, both subjects of the Queen of Great Britain, have invented certain new and useful Improvements in Wringing and Mangling Machines, (for which we have obtained Letters Patent in Great Britain, No. 5,295, bearing date March 17, 1892,) of which the following is a specification.

In carrying our improvements into effect we propose to employ three rollers, and we fix preferably upon the axis of the bottom roller two chain-wheels, one near each end, from which chains pass to a pair of chain-wheels loose upon the axis of the top roller. On the side of each top chain-wheel we form two lugs, through which passes a screw, which also passes freely through an arm, the boss of which is fixed upon the axis of the top roller. On this screw is a coiled spring, which is compressed between the aforesaid arm and a cap upon the screw. By turning the screws the position of the caps can be adjusted and the springs be more or less compressed, and in order that our invention may be fully understood and readily carried into effect we will describe the same.

Referring to the letters marked thereon, Figure 1 is a broken front elevation; and Figs. 2 and 3 are end elevations, partly sections, of our improved wringing and mangling machine.

In the views the three rollers which we employ are designated *a b c*, respectively, and are supported in the machine-frame *d*, the two upper rollers *b c* being free to move vertically but not endwise in bearings. On the axis *a'* of the bottom roller *a* is mounted loosely a hand-wheel *e* in the case of small or domestic machines; but for large machines a pair of fast and loose pulleys, friction-gearing, or other suitable means for receiving and transmitting motive power may be employed. Formed with or secured to the hand-wheel *e* is a pinion *e'*, gearing with a spur-wheel *f*, which is formed with or has secured to it a pinion *f'*, both being mounted on a stud *g*, secured to the frame *d*. The pinion *f'* gears with a spur-wheel *h*, fixed on the axis *a'* of the bottom roller *a*, and combined with the spur-wheel *h*, or separately fixed upon the axis *a'*, is a chain-wheel *i*, which drives by a chain *j* a second chain-wheel *k*, mounted loosely upon the axis *c'* of the top roller *c*.

Upon the side face of the chain-wheel *k* are formed two ears or lugs *l*, through which passes freely a thumb-screw *m*, which also passes freely through an arm *n*, the boss *n'* of which is keyed upon the axis *c'*. On the thumb screw *m* is coiled a spring *o*, which is compressed between the arm *n* and a cap or collar *p*, which is threaded on the screw *m* and is made with a flat-sided head, or is kept from turning in any other convenient manner, so that by turning the thumb-screw *m* the position of the cap *p* can be adjusted and the tension of the spring *o* regulated as required. The chain *j* (which for the sake of clearness is not shown in Fig. 1) passes over the chain-wheels *i* and *k* and is guided tightly in gear by a tension-roller *q*, mounted on an elbow-lever *r*, fulcrumed on the axis *a'* and having at the other end a weight *s*.

The above-specified arrangement of chains and chain-wheels is duplicated upon the other end of the rollers by the chain-wheel *i'*, chain *j'*, chain-wheel *k'*, ears or lugs *l'*, thumb-screw *m'*, arm $n^2$, boss $n^3$, spring *o'*, cap or collar *p'*, tension-roller *q'*, lever *r'*, and weight *s'*, all of which are mounted, arranged, and operate in the manner described with reference to the parts bearing corresponding letters at the other end of the rollers. The weighted levers on the opposite sides of the machine are reversely arranged, so that while the front part of the chain on one side is borne upon by the tension-roller *q* the rear part of the opposite chain is borne upon by its tension-roller *q'*.

In operation when clothes or fabrics are inserted between the top roller *c* and intermediate roller *b* and the axis *a'* is turned, either by the ordinary handle or by power, as the case may be, in order to rotate the rollers, the chains *j j'* drive the top roller *c* through the springs *o o'* and arms *n* $n^2$ and the said springs yield and the tension-rollers *q q'* move outward sufficiently to permit the roller *c* to rise in

its slotted bearings of the frame and the clothes or fabrics to pass freely and easily between the rollers *b c*, but at the same time a heavy although continuous pressure is put upon them.

Fig 3. shows clearly that the rotary yielding effect of the roller will be secured through the spring O and arm *n* when the chain-wheel is rotated in the direction of the arrow 1. It will be further seen from the dotted lines in this figure, representing the spring O′, arm $n^2$, and attached parts at the other end of the roller, that said parts are oppositely arranged to those shown at the rear end of the roller, Fig. 3, and above referred to. This opposite arrangement is also plainly indicated in Fig. 1—that is to say, the spring O′ and arm $n^2$ are arranged to secure the yielding effect when the roller is rotated in the direction of the arrow 2, which, it will be seen, is in the opposite direction to that indicated by the arrow 1. In this way the yielding action will be secured, no matter which way the machine is operated. By this arrangement when the tension of the spring *o* is adjusted to withstand a certain resistance reacting through the arm *n* from the roller the parts are set for a certain thickness of goods. Upon the passage of a thicker portion of the goods the first effect will be the momentary cessation in the rotary movement of the roller due to the yielding of the spring *o* under the additional resistance, and the roller will continue to exert its pressure upon the thicker part of the goods until the roller lifts sufficiently to allow the said thicker portion to pass. By the above arrangement we not only provide a roller which yields vertically, but which yields as to its rotary movement, it being understood that the driving means operates continuously without regard to the rotary yielding action of the roller.

We claim—

1. In combination, the frame, the upper roller, the lower roller, the said upper roller being arranged in bearings to have vertical yielding movement, the driving means for said roller, consisting of the chain extending from the lower to the upper roller and capable of yielding vertically as the upper roller moves up and down, means for applying a tension to the said chain, the upper chain-wheel loose on the shaft of the upper roller, and a yielding connection between said chain-wheel and shaft, substantially as described.

2. In combination, the framework, the roller *b*, the vertically-movable roller *c*, the chain-wheel loose on the shaft thereof, the chain for driving the said chain-wheel, the yielding connection between the chain-wheel and the roller-shaft, including the arm *n*, the spring, and the adjusting-screw, and the weighted lever carrying a roller to press on the chain, substantially as described.

3. In combination, the framework, the roller *b*, the vertically-movable roller *c*, the means for rotating it, and the yielding connection between the driving means and the roller-shaft, including the arm *n*, the spring pressing thereon, the wheel carrying the spring, and adjusting means therefor, substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

WILLIAM DORE.
JOHN PITT TAPLEY.

Witnesses:
S. W. GILLETT,
HERBERT R. ABBEY.