

W. SHARKIE.
 STOP MOTION DEVICE FOR DOUBLING AND TWISTING FRAMES AND THE LIKE.
 APPLICATION FILED APR. 9, 1912.

1,033,740.

Patented July 23, 1912.

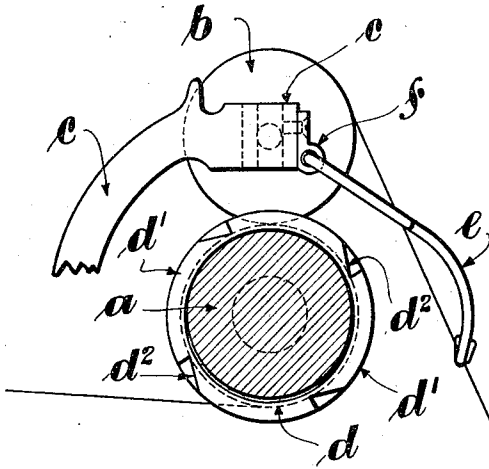


Fig. 1.

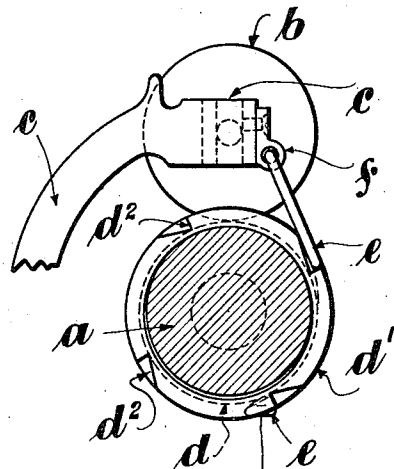


Fig. 3.

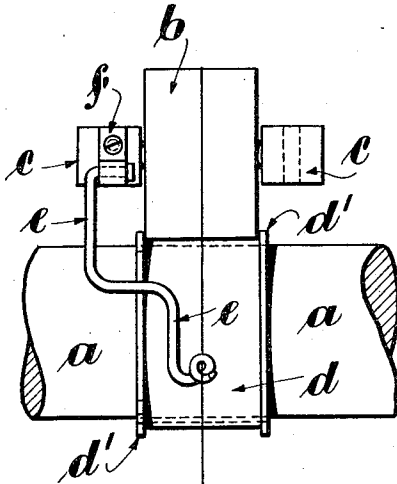


Fig. 2.

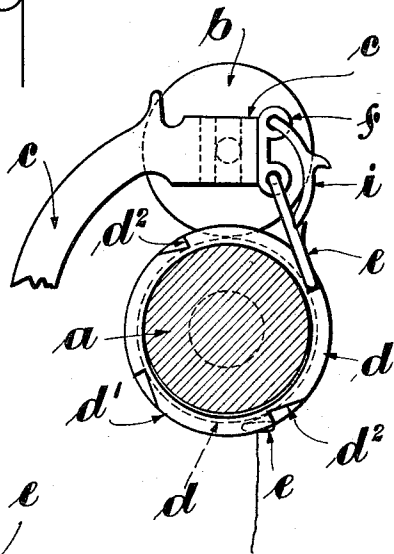


Fig. 4.

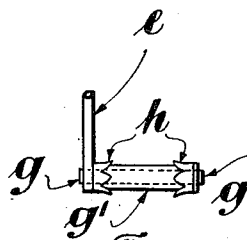


Fig. 5.

Witnesses:-

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By his Attorney:-

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UNITED STATES PATENT OFFICE.

WILLIAM SHARKIE, OF MANCHESTER, ENGLAND.

STOP-MOTION DEVICE FOR DOUBLING AND TWISTING FRAMES AND THE LIKE.

1,033,740.

Specification of Letters Patent.

Patented July 23, 1912.

Application filed April 9, 1912. Serial No. 689,581.

To all whom it may concern:

Be it known that I, WILLIAM SHARKIE, a subject of the King of Great Britain and Ireland, and resident of Manchester, Eng-

land, have invented certain new and useful Improvements in Stop-Motion Devices for Doubling and Twisting Frames and the Like, of which the following is a specification.

This invention refers to new or improved stop motion devices for preventing roller lap or "four folds" in doubling and twisting frames and the like. According to the invention use is made of a loose ring or sleeve slightly larger in diameter than the bottom roller and slightly longer than the top roller. Such sleeve is placed around the bottom roller and immediately below the top roller. At each end the sleeve is formed with a flange and between the flanges lies the top roller which thereby serves to keep the sleeve in position. In one or both of such flanges are notches. Pivoted to the roller bearings is a lever arm and upon such arm is a small projection. At its free end the lever arm is formed with a thread guide, or carries a pin, on which is a small glass tube. This glass tube rests on the thread after passing between the top roller and the sleeve. So long as the thread is intact the projection on the arm is thereby held clear of the notches in the sleeve flange, but as soon as the thread breaks or the tension is relaxed the projection enters one of the notches and stops the further rotation of the sleeve and top roller. In lieu of a projection, the lever arm itself may engage the sleeve notch.

Upon the accompanying drawing, Figure 1 illustrates a side elevation, and Fig. 2 a front elevation of the rollers of a doubling machine with one example of the invention applied thereto. Fig. 3 illustrates an alternative position of the parts shown in Fig. 1. Figs. 4 and 5 illustrate modified details hereinafter described.

As shown *a* is the usual bottom roller, and *b* one of the usual top rollers.

c, c are the bearing arms of the guide bracket by which the top roller is retained in position above the bottom roller.

d is the sleeve constituting a feature of this invention which is slightly larger in diameter than the bottom roller and slightly longer than the top roller. At each end the sleeve is formed with a flange *d'* and in one

(or both) of such flanges are notches *d²* see Fig. 1.

e is the lever arm which is pivotally connected by a small elbow *f* to one of the arms *c* of the guide bracket. This lever arm, at its free end, may either be coiled to form a thread guide, and in such case lie central to the sleeve, see Fig. 2, or it may carry a pin *g* in which case it will lie near to one of the flanges of the sleeve and the pin be fitted with a glass sleeve *g'* see Fig. 5.

In the length of the lever arm may be a projection and such projection will extend from the lever arm toward the flange of the sleeve and be adapted to enter any one of the notches in the flange sleeve when moved toward such notch, or the lever arm itself may be bent to form a shoulder which will lie transversely across the plane of the sleeve flange as shown, and be adapted in like manner to the projection, to enter any one of the notches.

In doubling yarn the threads are passed under the sleeve *d*, between such sleeve and the top roller, over the top roller and down to the spindle in the usual way. The threads also pass through the "eye" or guide at the end of the lever arm, or behind the glass sleeve. While the threads are intact and in tension the lever arm is held clear of the notches in the sleeve flanges, and the sleeve is free to rotate with the bottom roller. Immediately however, the threads break or the tension is relaxed, the lever arm by its own weight and gravity, falls against the sleeve flanges and into one of the notches see Fig. 3, whereupon the motion of the sleeve and top roller is stopped, and the further delivery of yarn prevented. While the sleeve is stopped the bottom roller is free to rotate. The lever arm is preferably curved in order that it shall carry the broken end of the yarn well below the bottom roller.

To prevent what are called "four folds" *i. e.* two sets of two or more threads of neighboring rollers getting entangled the pin on the lever arm, when used, will be provided with two thread cutters *h, h* consisting of small spurs extending outwardly and sharpened on each edge, so that on the threads unduly moving out of their path and getting entangled with the other threads, the spurs cut through the threads and prevent further waste of yarn.

To prevent the lever arm jumping out of

the notch a small latch *i* may be provided, designed, on the lever falling, to engage a notch or spur in or on the lever arm, see Fig. 4, and hold the lever arm down until it, the latch, is raised by hand.

For wet doubling and twisting the sleeve will be of brass or the like, and for dry doubling and twisting the sleeve will be of steel or the like.

It will be understood that the lever arm may vary in its shape and proportions according as the yarn is delivered between the rollers, or over the top roller, or below the bottom roller. It is also to be understood that the speed of the bottom roller is adjusted to allow for the radius of the bottom roller, plus the thickness of the sleeve.

What I claim is:—

1. In stop motion devices for doubling and twisting frames, in combination, with the top and bottom rollers, a bearing bracket supporting said top roller, a sleeve loosely mounted upon said bottom roller, said sleeve being slightly larger in diameter than the bottom roller and slightly longer than the top roller, and being provided with a notched flange at each end, a lever arm pivotally mounted on said bearing bracket, said lever being provided at its

free end with means for guiding the yarn as it passes from the rollers, said lever being also provided with a shoulder portion adapted to engage said notched flanges when released by the breaking of the yarn, substantially as described.

2. In stop motion devices for doubling and twisting frames, in combination with the top and bottom rollers, a bearing bracket supporting said top roller, a sleeve loosely mounted upon said bottom roller, said sleeve being slightly larger in diameter than the bottom roller and slightly longer than the top roller, and being provided with a notched flange at each end, a lever arm pivotally mounted on said bearing bracket, said lever being provided at its free end with means for guiding the yarn as it passes from the rollers, said lever also being provided with a shoulder portion and means for holding said lever in the notches of said sleeve flanges, substantially as described.

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

WILLIAM SHARKIE.

Witnesses:

F. C. PENNINGTON,
FRED. J. MEREDITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."