

No. 646,515.

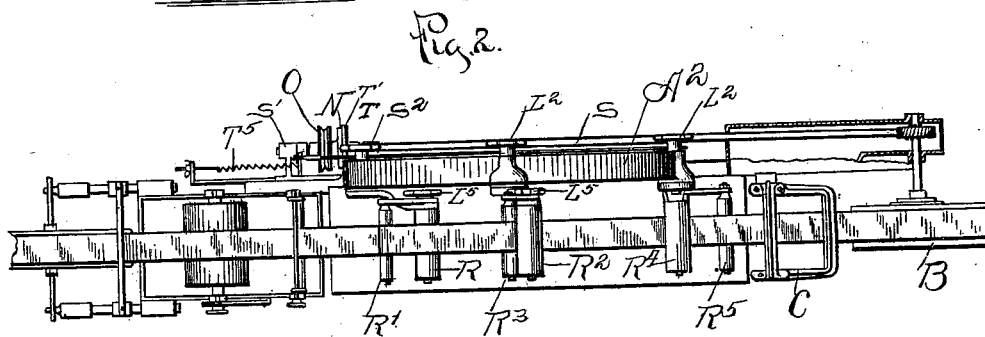
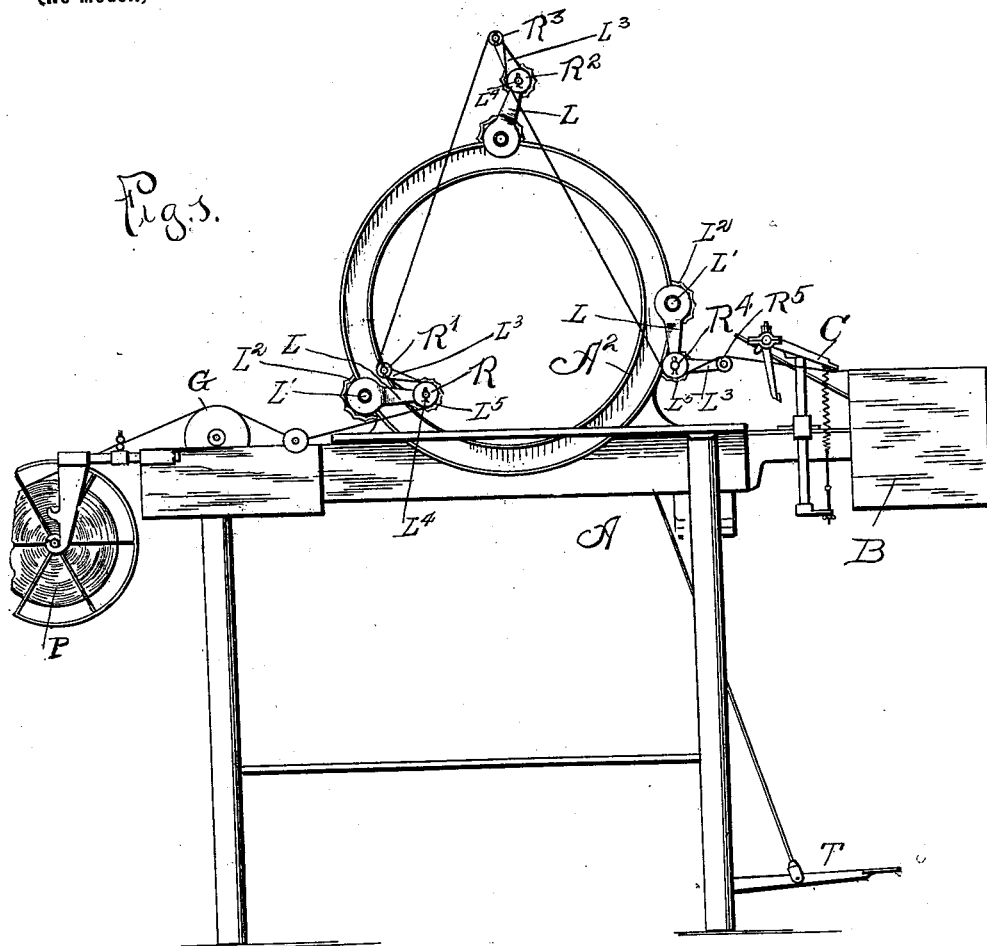
Patented Apr. 3, 1900.

M. F. WILSON.
PAPER BOX COVERING MACHINE.

(Application filed June 8, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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UNITED STATES PATENT OFFICE.

MERRICK F. WILSON, OF CHICAGO, ILLINOIS.

PAPER-BOX-COVERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 646,515, dated April 3, 1900.

Application filed June 8, 1898. Serial No. 682,943. (No model.)

To all whom it may concern:

Be it known that I, MERRICK F. WILSON, a citizen of the United States of America, and a resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Paper-Box-Covering Machines, of which the following is a specification.

In covering boxes with paper the paper must be properly tempered in order to secure good results, and it is desirable to provide for many variable conditions, depending upon the character of the paper, the temperature and humidity of the atmosphere, the rapidity of the operator, the character of the adhesive substance used, the width of the paper, and the size of the boxes to be covered. Different papers behave differently when coated with paste, some tending to curl sidewise into tubular form, while others buckle irregularly. The conditions are further complicated by the fact that since a large box requires more paper to be coated in advance the time elapsing between the coating of the paper and its application to the box necessarily varies materially. It is very desirable that a machine of this class should keep the paper flat whatever the conditions; and to provide a neat and compact machine capable of attaining this end is the object of this invention.

In the accompanying drawings, Figure 1 is a side elevation of my machine. Fig. 2 is a plan view of the same machine. Fig. 3 is a view similar to Fig. 1, but showing the paper trained differently for covering a smaller box. Fig. 4 is a section on the line 4 4, Fig. 3. Fig. 5 is an enlarged sectional view of clutch mechanism, seen also in Fig. 2.

The paper is taken from a roll, carried over a paste-applying roller, and thence over guiding rods or rollers arranged to give the paper a more or less indirect path from the roll to the box to be covered.

In the drawings, A designates the frame of the machine, from which are supported, approximately in the same straight line, the paper-roll P, the paste-applying roller G, cutting-off mechanism C, and a box-form B. Alongside this line and in a vertical plane parallel thereto is an upwardly-projecting portion A² of the frame, and upon this are pivotally supported paper-guiding rollers R R' R² R³ R⁴ R⁵, all of which may be varied in posi-

tion independently or otherwise, but moving, however, always in the same vertical plane and remaining parallel to each other and to their original positions. The rollers R R' R² R⁴ are supported directly by arms L, each of which has one end secured to the frame member A² by a stud L' and a hand-nut L², whereby the arm is clamped in any position to which it may be swung upon the stud as an axis. To the free end of each arm L a second arm is pivoted in like manner by a shouldered stud and hand-nut L⁵. The stud last mentioned extends outward from the arms, which it unites, and upon it is mounted in each case one of the rollers R R' R² R⁴, and at the ends of the secondary arms the rollers R' R³ R⁵ are supported in like manner upon analogous studs, which do not, however, serve as clamps. From the construction it is evident that each of the rollers R R' R² R⁴ may swing in an annular path around the corresponding stud L' and that the other rollers may swing in like manner about the journals L⁴ wherever those journals may be carried by the swinging of the arms L. It is also plain that the paper may be carried over all or a part of these rollers and in various ways and by variations of their relative positions may have its tension varied, if desired, in such manner that it may be unequal at different points. Practically this arrangement makes it possible to prevent the paper from curling or buckling under any of the variable conditions suggested at the outset.

The box-form B is actuated from a shaft S, (see Figs. 2 and 5,) mounted in bearings S' S² on the frame and driven from a pulley O, acting through a clutch T. The pulley is loosely mounted upon the shaft and receives power through a belt or cable. (Not shown.) The clutch consists of a disk O', formed on the hub of the pulley and faced with a suitable friction layer O², and a disk T', rigidly fixed to the shaft S. The loose member of the clutch is forced to engage its companion by means of a loose collar O⁵ upon the shaft S, this collar being engaged by a pivoted lever T³, actuated by a treadle T and cable T⁴ and being instantly restored to position when the treadle ceases to act by spring T⁵. A brake-ring T⁶, acting upon the fast member of the clutch, is connected by links T⁷ to the lever

T³ in such manner that the engagement and release of the clutch cause simultaneous removal and application of the brake. The clutch very nearly fills the normal space between the collar and the fixed shaft-bearing S², and between its hubs and the adjacent bearing and collar bearing-balls are interposed, the usual races S³ T² O³ O⁴ being provided. The motion permitted to the collar is slight, and the balls remain at all times in position for relieving the shaft from end thrust due to application of force by the treadle and at the same time eliminate most of the friction that this thrust would cause at the ends.

It is to be observed that the starting and stopping of the shaft by the mechanism just described are both very nearly instantaneous, and yet the apparatus works smoothly, and hence the operator can do good work, cutting the paper at exactly the proper points and avoiding all waste and delays.

What I claim is—

1. The combination of the paste-applying device with the paper-supporting devices consisting of the primary arm supporting a secondary arm, and each carrying a roll or paper-support and mounted to be adjusted about their pivots, as described.

2. The combination of a paste-applying de-

vice, with paper-supporting devices, composed of several primary supports adjustably fixed to the frame, and each provided with secondary paper-supports, adjustably fixed to the primary members, substantially as shown and described.

3. In a machine of the class described, the combination of the primary arm supporting a paper-support and adjustably fixed to the frame by a stud and hand-nut; with secondary arm supporting a paper-support, and adjustably fixed to the primary arm by a stud and hand-nut, substantially as shown.

4. In a box-covering machine, the combination with a paste-applying device, of a series of paper-guiding supports in position to receive paper coming from said device, and each mounted to move bodily in an annular path about an axis, a second set of analogous supports parallel to those of the first set and arranged to swing in an annular path about them, respectively, and means for independently locking each of the second set at any desired point in its path.

Signed by me at Chicago, Illinois, this 6th day of June, 1898.

MERRICK F. WILSON.

Witnesses:

M. E. LEETE,

W. E. WILLIAMS.