No. 738,528. PATENTED SEPT. 8, 1903.

W. G. COWELL.

ROLLS FOR CUTTING PAPER BOX BLANKS.

APPLICATION FILED MAY 15, 1902.

NO MODEL.

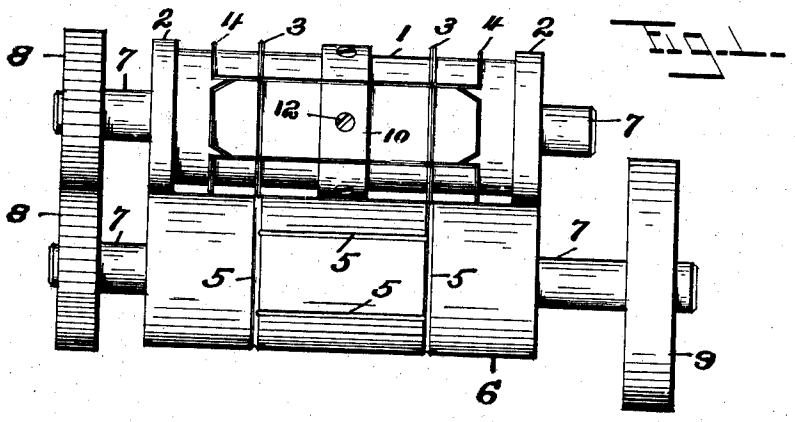


Fig. 1.

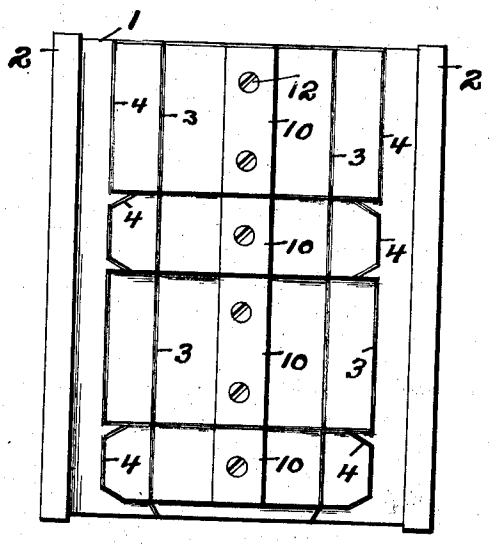


Fig. 2.

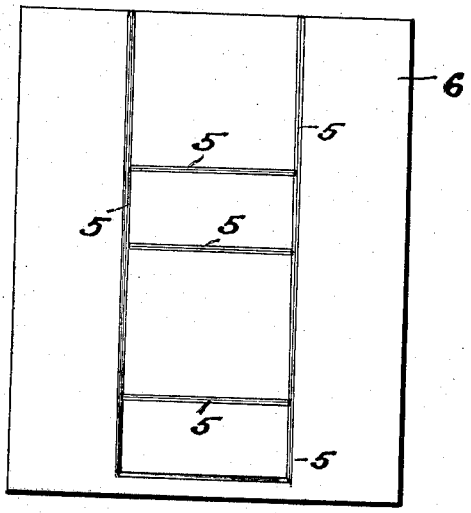


Fig. 3.

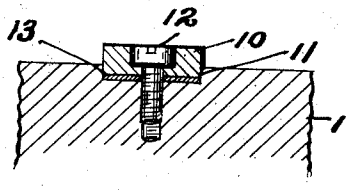


Fig. 4.

Witnesses.

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No. 738,528. Patented September 8, 1903.

UNITED STATES PATENT OFFICE.

WILLIAM G. COWELL, OF NEW HAVEN, CONNECTICUT.

ROLLS FOR CUTTING PAPER-BOX BLANKS.

SPECIFICATION forming part of Letters Patent No. 738,528, dated September 8, 1903.

Application filed May 15, 1902. Serial No. 107,455. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. COWELL, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Rolls for Cutting Paper-Box Blanks, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in rolls for cutting paper-box blanks, and has for its object, among other things, the construction of a pair of rolls of equal diameter, one of said rolls having bearing-collars at either end and cutting and scoring knives connected therewith and the other having recesses in the periphery thereof to register with the said scoring-knives, means for positively connecting said rolls together whereby they will positively rotate in register with each other, and friction means connected with one of said rolls for drawing the paper through between said rolls.

To these and other ends my invention consists in the rolls for cutting paper-box blanks having certain details of construction and combination of parts, as will be hereinafter described, and more particularly pointed out in the claims.

Referring to the drawings, in which like numerals designate like parts in the several figures, Figure 1 is a front elevation of the rolls complete. Fig. 2 is a plan view of the development of the upper roll. Fig. 3 is a plan view of the development of the lower roll, and Fig. 4 is a fragmentary sectional view of the upper roll and feeding-pad.

In carrying out my invention I provide two rolls, and for convenience in describing them in this specification I shall designate one as the "upper" roll and the other as the "lower" roll, although the relative location of the rolls is immaterial.

The upper roll 1 is provided with a collar 2 at either end thereof, and between the collars 2 are the scoring-knives 3 and cutting-knives 4. These knives, so far as my invention is concerned, can be secured to the roll in any of the numerous ways common to the art, and I have therefore omitted the details thereof in this specification.

The lower roll 6 is of the same diameter as the collars 2 and is provided with a plurality of grooves or depressions 5, which register with the scoring-knives 3 upon the upper roll 1. As the paper is fed through between the rolls the box-blank is scored between the said scoring-knives 3 and depressions 5 and cut by the cutting-knives 4, which just touch the periphery of the lower roll. Both rolls are journaled at 7 in suitable housings (not shown) and connected with each other by the gears 8 8 and are driven, preferably, by means of the pulley 9, fastened to one of said rolls. Any other convenient means of driving the rolls is permissible within my invention.

By use of the collars 2 upon the upper roll undue wear of the cutting-knives 4, which are in contact with the periphery of the lower roll, is prevented. To insure a positive uniform feed of the blanks through the rolls, I provide a feed-pad upon the upper roll 1, which may be integral therewith, but is preferably constructed of a plurality of sections 10, which are circular in form and are held within a groove 11 in the periphery of the roll by means of screws 12. These sections 10 are securely fastened within the grooves 11 with a sufficient amount of packing 13 thereunder to bring the periphery of said sections sufficiently close to the periphery of the lower roll 6 to pinch the paper slightly therebetween, the pinch being just sufficient to grip the paper and not to crush it. This grip can be varied indefinitely in accordance with the thickness of the paper or the pressure required by varying the thickness of the packing 13. The feed-pad can be made of a single circular band, if desired, or in a plurality of sections, as shown herein, it being necessary, however, in a roll having axial knives to make it in sections to permit of the axial knives to pass therebetween.

There are minor changes and alterations that can be made within my invention, and I would therefore have it understood that I do not limit myself to the exact construction herein shown and described, but claim all that falls fairly within the spirit and scope of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. A pair of rolls for cutting paper-box

blanks, one of said rolls having a collar upon either end thereof, and scoring and cutting knives fixed in the periphery of said rolls and an unyielding feed-pad of slightly less diameter than said collars, the other of said rolls having grooves in the periphery thereof to register with the said scoring-knives; and means for positively connecting and operating said rolls in unison, substantially as shown and described.

2. A pair of rolls for cutting paper-box blanks, one of said rolls having a collar upon either end thereof, and scoring and cutting knives fixed in the periphery of said roll, the other of said rolls having grooves in the periphery thereof to register with the said scoring-knives; and a radially-adjustable feed-pad separably secured to one of said rolls, substantially as shown and described.

3. A pair of rolls for cutting paper-box blanks, comprising a roll 1 having collars 2 upon either end thereof, and scoring-knives 3 and cutting-knives 4 fixed thereto; and a roll 6 of the same diameter as the collars 2 having grooves 5 therein registering with the said scoring-knives 3; a feed-pad composed of one or more segmental sections 10 radially adjustable in a peripheral groove 11 in one of said rolls; and means for positively connecting and operating said rolls in unison, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM G. COWELL.

Witnesses:
GEORGE E. HALL,
J. PETER DEJON.