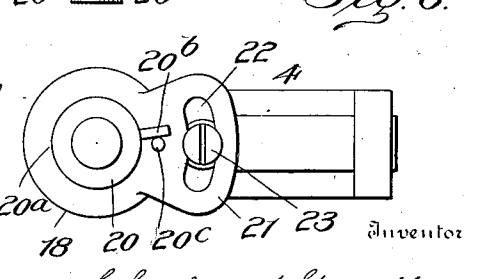
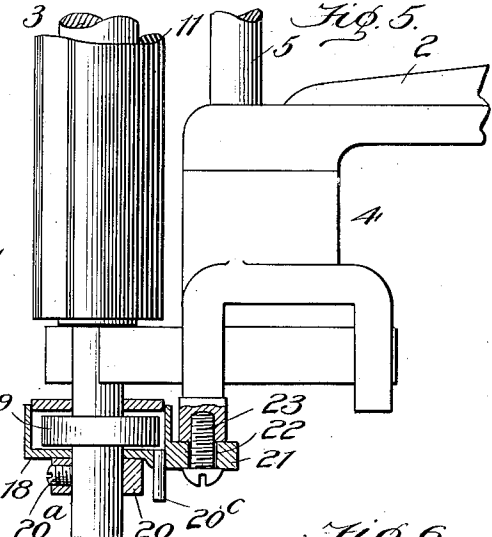
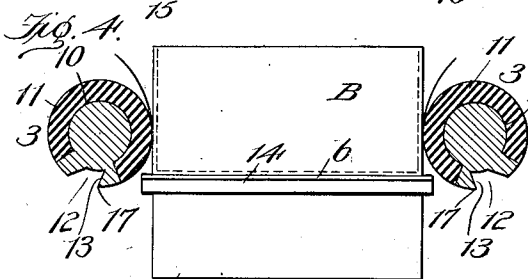
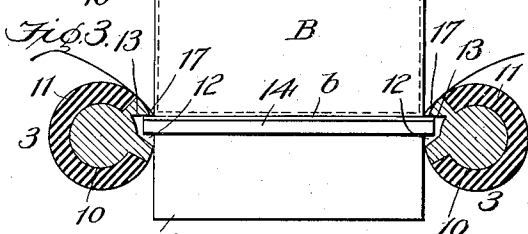
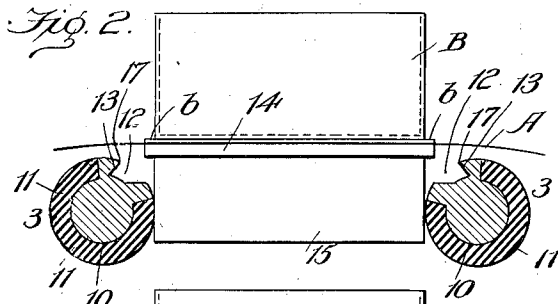
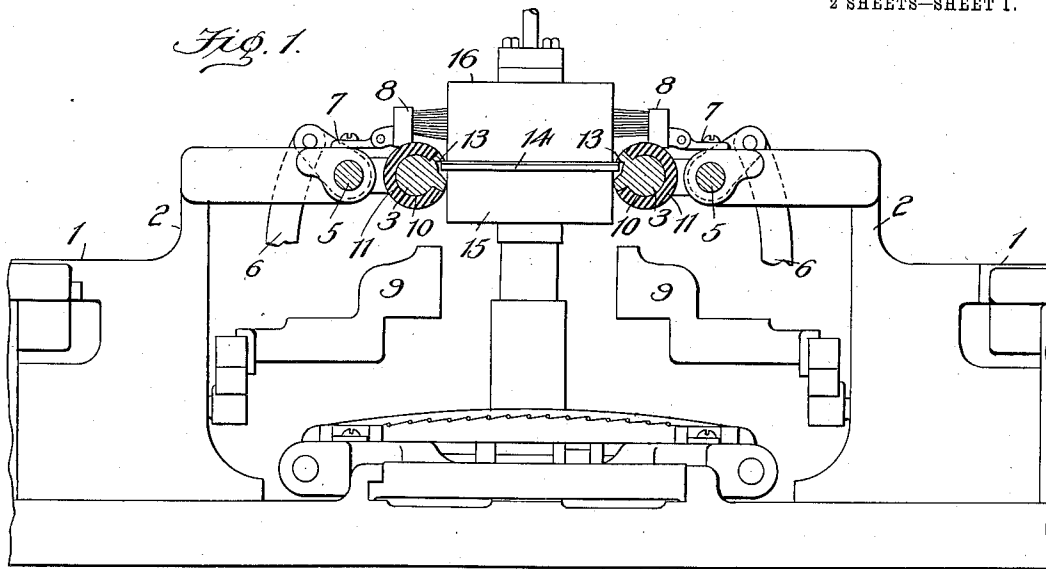


No. 828,471.

PATENTED AUG. 14, 1906.

C. A. GARRETT.
BOX COVERING MACHINE.
APPLICATION FILED APR. 12, 1905.

2 SHEETS—SHEET 1.



Witnesses 15

Edwin L. Bradford
Gertrude M. Stucker

Charles A. Garrett

By J. Lawville Meyers.

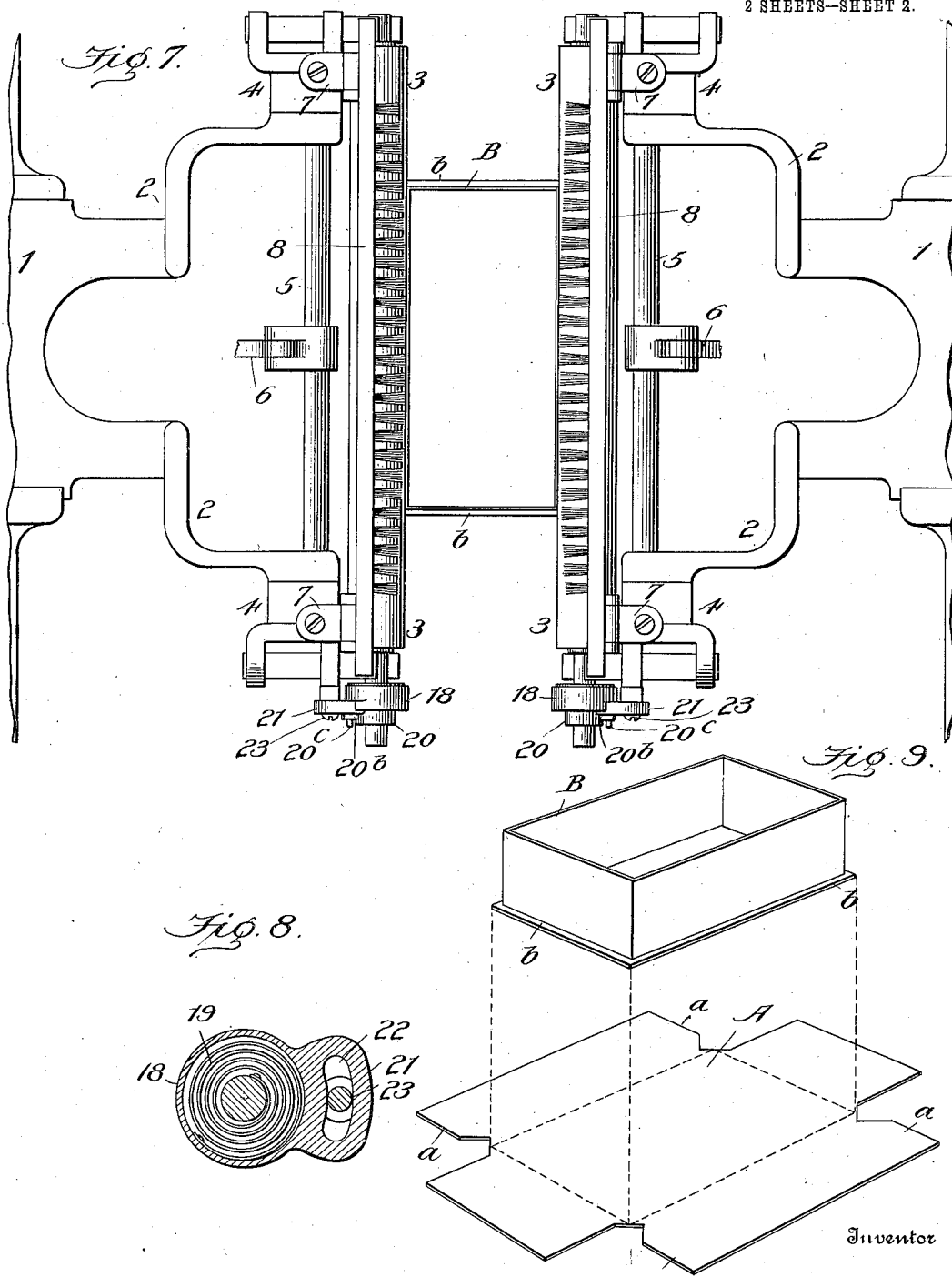
Attorney

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2 SHEETS—SHEET 2.



Witnesses
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A CORPORATION OF NEW JERSEY.

BOX-COVERING MACHINE.

No. 828,471.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed April 12, 1905. Serial No. 255,152.

To all whom it may concern:

Be it known that I, CHARLES A. GARRETT, a citizen of the United States, residing at Philadelphia, State of Pennsylvania, have invented new and useful Improvements in Box-Covering Machines, of which the following is a specification.

This invention relates to box-covering machines of the type shown and described in prior Letters Patent, No. 691,329, dated January 14, 1902, and has for its object to provide certain improvements in machines of this class in order to adapt the same for use in covering a special type of box. As the present invention relates mainly to improvements in said patented machine and is intended primarily for use with such machine, I have deemed it necessary to show only such improvements and their cooperative parts; but for the sake of clearness I will describe in a general way the operation of the machine and then give a detailed description of the improvements sought to be covered and protected herein.

According to my invention paper boxes are covered with a single blank comprising a body portion having integral side and end flaps. The blank is first coated on one face with glue, and the bottom of the box is then centered on the glued side of the body portion of said blank, which causes the latter to adhere thereto, this operation in the present instance being carried out by hand. The box with its blank attached to the bottom thereof is then placed upon a two-part separable form-block carried by a reciprocating plunger, which latter is caused to move up and down between covering devices that act to fold flaps of the covering-blank up against the sides and ends of the box and firmly affix them thereto and then tuck the ends of the flaps over the edges of and down into the box. These several steps or operations are carried out in substantially the order named, and the finished box is finally ejected from the machine.

My present improvement is designed for the purpose of adapting the above machine for use in covering what is known as the "extension-edge" box—that is, a box having the bottom projecting beyond the sides a short distance, approximately even with the outside of the box-cover. This, to the best of my present

knowledge and belief, has heretofore been done by hand only. By the use of my improvements, however, such boxes may be covered by prior patented machines of the type referred to in as expeditious and perfect a manner as is the ordinary box. This end I attain in a simple and convenient manner and without change in the fixed structure of the prior machines by the substitution of one interchangeable part for another, thus adapting the same machine for use in covering two distinct types of boxes.

In the present instance I have shown and described only one specific form of means for carrying out the objects and purposes of the invention; but I do not wish to be understood as limiting myself to this particular means, as it will be obvious that modifications thereof within the scope of the appended claims will readily suggest themselves without departing from the broad spirit of the invention.

Briefly and generically stated, the invention comprises means for applying covering material to the walls of a box having an extension edge, means operating in advance of the first-named means to turn the covering material over and down upon the extension edge, and means to operate said first and last named means in sequence.

In the specific form of means herein shown for carrying out the objects of the invention I provide a different form of covering element or roller for the sides and ends of the box, the said element or roller being provided with a recess to receive the extension edge of the box. This recess may be of any preferred form suited to the purposes at hand. I have found, however, that a marked improvement in the covering operation is attained by making this recess of a certain form with relation to the extension edge of the box, as will be more clearly set forth hereinafter.

A further object of my invention is to provide means whereby the recess is returned to a proper position with relation to the plunger at the end of the covering operation and whereby the recess may be adjusted in proper relation to said plunger.

The invention has for its further objects to provide certain other novel features, all of which will be more clearly defined in the fol-

lowing detailed description and then pointed out in the appended claims.

In the accompanying drawings, which form a part hereof and in which like reference characters designate like parts, Figure 1 is a broken vertical section of a portion of a machine embodying my invention sufficient to show the construction of the same. Figs. 2, 3, and 4 show diagrammatically the different stages in the operation of covering a box by my improved machine. Fig. 5 is a broken plan view, partly in section, of one of the covering-rollers. Fig. 6 is an end view of one of the rollers, showing the means for adjusting the same. Fig. 7 is a plan view of the covering-rollers in position with respect to the plunger. Fig. 8 is a vertical section through the bearing of the covering-roller, showing the method of returning the same to position after each covering operation; and Fig. 9 is a perspective view of an extension-edge box and the blank for covering the same.

In the class of machines to which this invention applies, the mechanism for affixing the cover to the different side and end walls of the box are substantially duplicates, and as this invention relates more particularly to such mechanism only one set of the said mechanism is shown, and the description in referring to said set will be equally applicable to all of the sets.

Referring more particularly to the drawings, the numeral 1 designates a slide secured to the top of the machine in any suitable manner. This plate is substantially similar to the ones shown and described in the former patent referred to and are preferably four in number, one for each side of the box to be covered. Two arms 2, forming a yoke, extend forward and laterally upward from the top of the slides and support the covering mechanism.

A covering element 3, comprising a roller in the present instance, is mounted in tilting or pivoted bearings 4, so as to be moved into and out of the path of movement of the box by a spring-actuated rock-shaft 5 and a link 6, and pivotally attached to a plate 7, fixed to the yoke, is a brush 8, all as more clearly described in the aforesaid patent. Below the rollers 3 are the end tuck-in wings 9, and in a yet lower plane are located the end-covering elements, which are substantially duplicates of the side-covering elements, comprising brushes and rollers.

15 designates the platen, which supports and moves with the box to be covered and whose horizontal section is of substantially the same size as that of the form-block 16.

All of the above mechanism is particularly described in the aforesaid patent, to which reference is made.

My specific improvement relates to the construction and mounting of the rollers for affixing the covering-blank to the sides and

ends of the box and to the mechanism for actuating the same, and attention is called to Figs. 2, 3, 4, 5, 6, and 8, in which the reference-numeral 3 designates the roller in its entirety, 10 a cut-away portion of the same, and 11 a sleeve of yielding material, as rubber, filling the cut-away portion. The platen 15 is provided at its upper end with an extension 14 of the same area as the bottom of the box to be covered. The uncut-away segment of the roller is provided with a longitudinal groove or recess of approximately the depth of the edge extension of the box and of a width at the bottom equal to the thickness of the box extension plus the thickness of the platen extension. The bottom of the recess is formed on the arc of a circle having the same center as the roller, and the upper or operative side of the recess is undercut, as shown at 13, at such an angle that when the bottom of the platen extension is in the horizontal plane through the center of the roller the side 13 presses on and is parallel with the upper surface of the box extension. The opposite wall 13^a of the recess may be termed the "platen-engaging" wall, and this wall flares outwardly away from the undercut wall 13, as shown, so as to present a face that may be readily engaged by the platen extension 14 as it descends. The point or edge 17 of the recess fits snugly in the corner of the extension and box side. The rollers 3 are mounted in bearings 4 in the yoke, and a casing 18 is provided on one end of the shaft outside the bearing, containing a spiral spring 19, one end of which is attached to the shaft and the other end to the casing. The spiral spring 19 is for the purpose of returning the roller 3 to its original position after each covering operation, and to insure its stopping in the correct position the following mechanism is made use of: A sleeve or collar 20 is rigidly attached to the shaft by a screw 20^a, and said collar is provided with a tail 20^b, bearing against a pin 20^c on the casing 18. The position of the pin 20^c, and consequently that of the recess, may be varied by the following mechanism: The casing 18 is provided with a prolongation 21, having thereon a curvilinear slot 22, within which is a screw-threaded bolt 23, screwed into a part of the bearing. By loosening the screw 23 the casing 18 may be turned and the position of the pin 20^c varied.

In Fig. 9 is shown the covering-blank A and the box B, to which it is to be affixed. In the operation of the machine the box B is placed upon the blank A and both placed on the form-block 16. The latter moves down and meets the platen 15, and together they descend past the brushes 8, which initially applies the covering to the box sides. The platen extension 14 engages the lower side of the recess, and the further descent of the plunger and platen tends to rotate the roller 3 on its axis. This rotation brings the upper

face of the recess 17 against the covering-paper on the outer upper corner of the box extension *b*, and by the continued rotation of the roller the blank is folded smoothly down upon said extension and into the corner between the extension and box side. Further rotation of the roller brings the circular face against the side of the box, and the covering-paper is rolled up smoothly against the side of the box. After the box passes the roller the spring 19 returns the roller to its original position. Further descent of the box brings it to the edge-turn-in fingers or wings, which turn in the stay-flaps *a*, and the operation is completed by the covering-roller 10, similar in all respects to those above mentioned.

The operation of turning down the edges into the box may be done by hand or by the mechanism described in Patent No. 691,329 before mentioned.

It will be understood that there are as many rollers 3 as there are sides of the box to be covered.

It will be understood from the foregoing that the covering-rollers are removably mounted in their bearings, so that when it is desired to equip a machine such as shown and described in the hereinbefore-mentioned patent it is only necessary to remove the ordinary form of covering-roller and substitute therefor the rollers forming the subject-matter of this application.

As before stated, I do not wish to be understood as limiting myself to the particular form of mechanism herein shown and described, for, so far as I am aware, I am the first to provide mechanism for doing extension-edge work and reserve to myself the right to all modifications of the invention falling within the scope of the following claims.

Having now fully described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a box-covering machine, means for applying a covering to the side walls of a box having extension edges, comprising a roller provided with a recess, the operative face of which is undercut.

2. In a box-covering machine, means for applying a covering to the side walls of a box having extension edges, comprising a roller provided with a recess having one undercut wall.

3. In a box-covering machine, means for applying a covering to the side walls of a box having extension edges, comprising a roller provided with a recess, and means for varying the normal position of the recess relatively to a vertical plane passed through the axis of rotation of the roller.

4. In a box-covering machine, means for applying a covering to the side walls of a box having extension edges, comprising a roller provided with a recess, means to restrain the

movement of said roller in one direction, and means to vary the position of said restraining means.

5. In a box-covering machine, means for applying a covering to the side walls of a box having extension edges, comprising a roller provided with a recess, adjustable means to restrain the rotation of the roller in one direction, and yielding means to restrain the rotation in the other direction.

6. In a machine for covering extension-edge boxes, means for applying a covering-blank to the walls of the box, and means moving in advance of the cover-applying means to turn the covering-blank over and down upon the extension edges, means to actuate the turning means, and means to adjust the relation of the turning means with respect to its actuating means.

7. In a machine for covering extension-edge boxes, means for applying the covering-blank to the side and end walls of the box, comprising rollers, each having a concave and a convex surface, and means for varying the angular position of the said concave relatively to a vertical plane passed through the axis of rotation of the rollers.

8. In a machine for covering extension-edge boxes, means for applying the covering-blank to the side and end walls of the box, comprising a roller having a concave and a convex surface, adjustable means to restrain the rotation of the roller in one direction and yielding means to restrain the rotation in the other direction.

9. In a machine for covering extension-edge boxes, means for applying the covering-blank to a box-wall, comprising a cylindrical roller having a segment thereof cut away, and means for varying the angular position of the said cut-away portion relatively to a vertical plane passed through the axis of rotation of the roller.

10. In a machine for covering extension-edge boxes, means for applying the covering-blank to a box-wall comprising a roller having a longitudinal peripheral groove, one of the longitudinal walls of the groove being undercut and the other flaring outwardly with respect to the undercut wall.

11. In a machine for covering extension-edge boxes, means for applying the covering-blank to a box-wall, comprising a roller having a longitudinal peripheral groove, a fixed casing at one end of the roller, and a coiled spring within the casing, one end of the spring being secured to the roller and the other end to the casing.

12. In a machine for covering extension-edge boxes, means for applying the covering-blank to a box-wall, comprising an element provided with means for turning the blank over an extension edge of the box, a fixed casing at one end of said element and a coiled spring within the casing, one end of the

spring being secured to the covering element and the other end to the casing.

13. In a machine for covering extension-edge boxes, means for applying the covering-blank to a box-wall, comprising a rotatable element having means associated therewith for turning the blank over an extension edge of the box, a circumferentially-adjustable casing at one end of the said rotatable element, and a coiled spring within the casing, one end of said spring being secured to the rotatable element and the other end to the casing.

14. In a machine for covering extension-edge boxes, an element for applying a cover-

ing-blank to the walls of a box, having a part to turn the covering-blank over and down upon the extension edges, means to actuate said element, and means to adjust the position of said covering-turning part with respect to its actuating means.

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

CHARLES A. GARRETT.

Witnesses:

PHILIP S. SMITH,
W. H. RICE.