No. 872,925. PATENTED DEC. 3, 1907.

C. A. GARRETT.

COVER APPLYING ELEMENT FOR BOX COVERING MACHINES.

APPLICATION FILED NOV. 1, 1905.

2 SHEETS—SHEET 1.

Fig. 2.

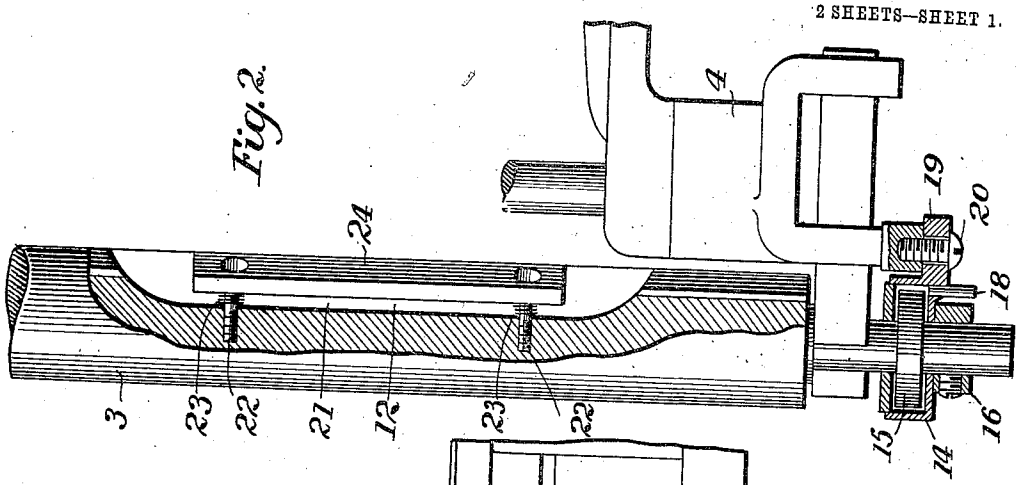
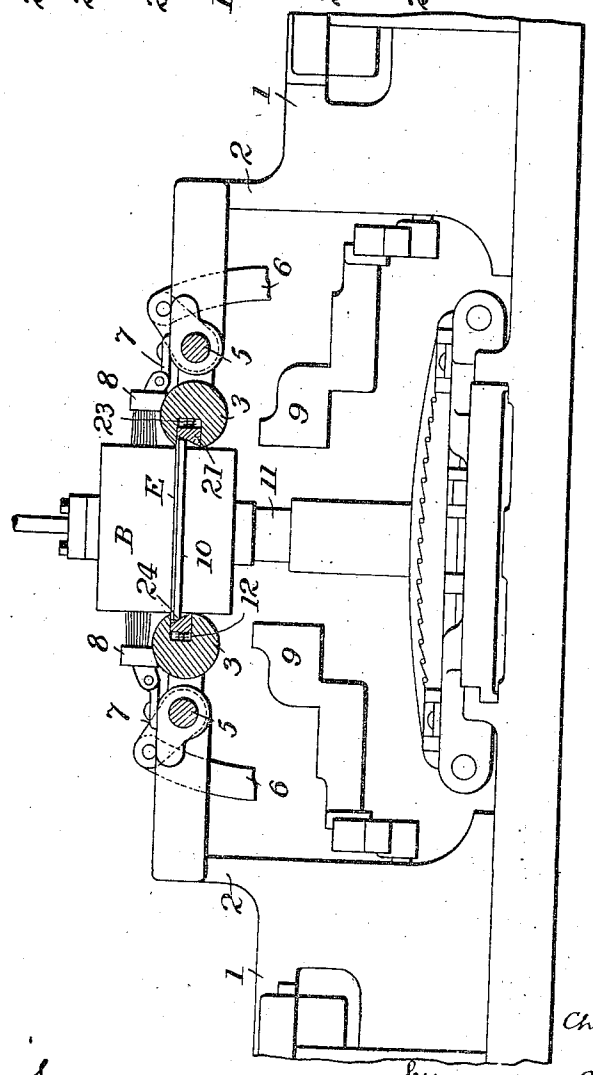


Fig. 1.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

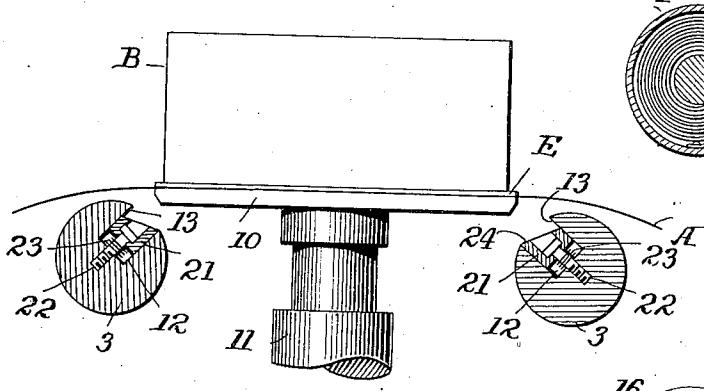


Fig. 6.

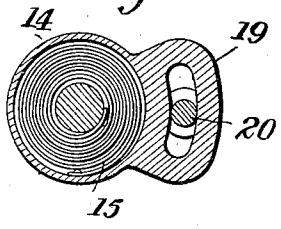


Fig. 7.

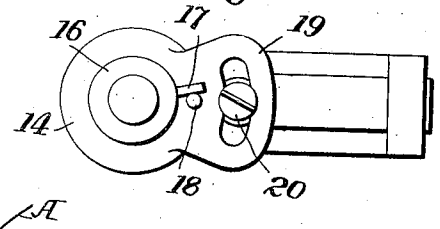


Fig. 4.

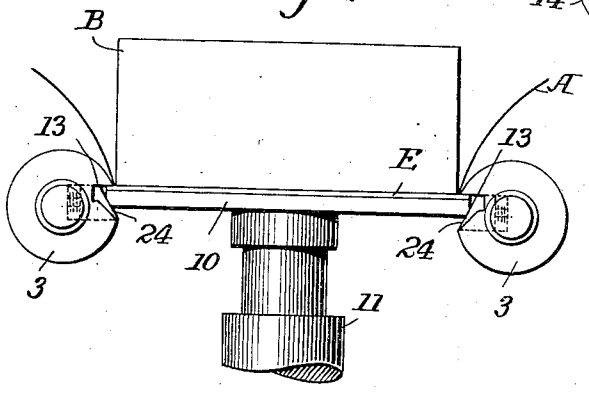


Fig. 8.

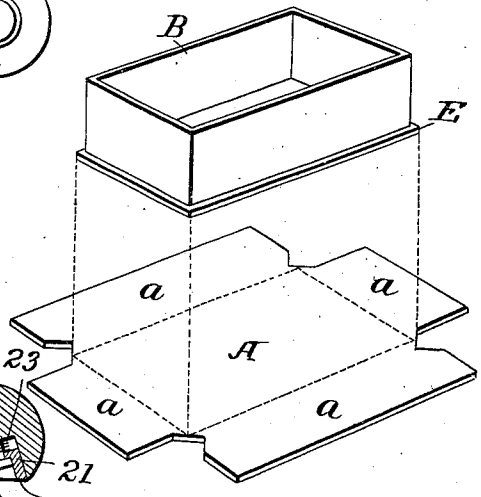
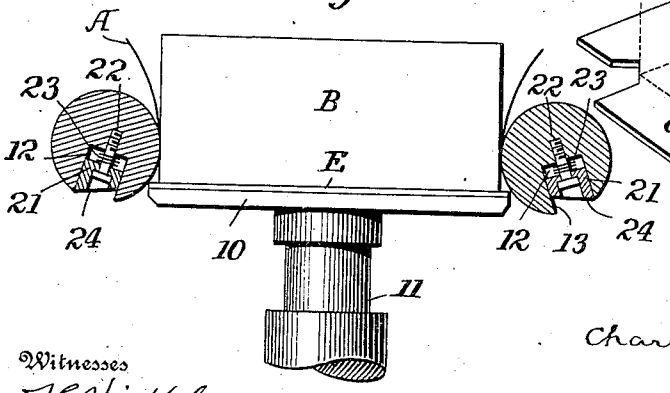


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

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COVER-APPLYING ELEMENT FOR BOX-COVERING MACHINES.

No. 872,925. Specification of Letters Patent. Patented Dec. 3, 1907.

Application filed November 1, 1905. Serial No. 285,485.

To all whom it may concern:

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

This invention relates to improvements in the cover applying elements of box covering machines, particularly intended for use in connection with machines of the general type shown in Letters Patent No. 691,329, dated January 14, 1902, and has to do with cover applying elements adapted to fold the cover about and apply it to the extension edge of an extension-edge box.

The object of the present invention is to provide a means for causing the cover applying element to lay the cover against and apply it to the extension edge with a gentle cushioned, or yielding yet firm pressure, and to avoid possibility of jamming action.

The improvements of this invention are further designed to compensate for any possible fault in the adjustment or register of the cover-applying element with relation to the box support, should such occur in the initial setting of the machine, or, for any reason, during the use thereof.

To the end stated, the invention consists in the features hereinafter described and claimed, reference being had to the accompanying drawings as illustrative of what I regard as the best known embodiment of my invention.

That which is claimed as new is set forth in the clauses of claim appended to the description.

To enable a better understanding of the invention and the purposes thereof, I believe a brief description of the general type of machine for use in which it is more particularly intended will be useful. This general type of machine is shown, as stated, in the Letters Patent No. 691,329; and according thereto, 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 blank, preferably by hand. The box with the cover blank attached to the bottom thereof, is then placed upon a two-part separable form block carried by a reciprocating plunger which is caused to move between covering elements that act to fold the flaps of the cover-blank up against the sides and ends of the box, and firmly affix them thereto, after which tuck the ends of the flaps are turned over the edges of and down into the box.

The covering elements of this invention are so constructed and arranged as to take care of the folding of the cover over and the application thereof to the extension edge of an extension-edge box, such elements being each provided with a recess to accommodate the extension edge of the box, and its support, in the act of folding the cover over the edge and applying the same thereto, and have associated therewith a means for causing the application of the cover to the extension edge with a firm yet gentle cushioned or yielding pressure.

In the accompanying drawings illustrating the invention, in which I have shown so much of the immediately adjacent coöperating parts of the mechanism as will enable a full understanding thereof. Figure 1 is a broken vertical section of a portion of a machine embodying my invention. Fig. 2 is a plan view of a cover-applying element embodying the same, and a portion of the mounting therefor. Figs. 3, 4 and 5 are diagrammatic views illustrating the operation of covering an extension edge box by means of covering elements provided with my invention, said elements being shown in cross-section. Fig. 6 is a vertical section through the bearing of the covering element, showing means for returning the same to initial position after each operation thereof. Fig. 7 is a detail of means for adjusting the cover-applying element with relation to the extension edge of the box. Fig. 8 is a perspective view of an extension edge box and a blank for covering the same.

In the class of machine to which this invention applies, the mechanism for affixing the cover to the side and end walls of the box are substantial duplicates and since the invention relates particularly to the cover applying elements only one set of the mechanism is shown, and the description referring to said set will be equally applicable to all of the sets.

In the drawing the reference numeral 1 designates a slide secured at the top of the machine in any suitable manner, for in-

stance, in a manner similar to that shown and described in the Letters Patent hereinbefore mentioned. A yoke 2 extends forwardly and laterally upward from the top of the slide and constitutes a support for the covering mechanism. A covering element 3, shown as a roller, is mounted in tilting or pivoted bearings 4, so that it may be moved into and out of the path of movement of the box by suitable means, such as a spring actuated rock-shaft 5, and a link 6. To a plate 7 secured to the yoke 2 is a brush 8 for a purpose set forth in said Letters Patent. Below the covering elements 3, are the end tuck-in wings 9, and in a yet lower plane are located elements for covering the ends of the box, which, as stated, are substantial duplicates of the side covering elements. The platen, upon which the box is supported, (and between which box and platen on the one hand, and the covering element on the other, there is relative movement), is designated by the reference numeral 10. In the present invention the platen and the box supported thereby are caused to move between the cover applying elements, the platen being connected with a plunger 11, which may be operated in any suitable manner. The mechanism as thus far described, is more fully illustrated and described in the aforesaid Letters Patent.

To adapt the cover applying elements to apply the cover to an extension-edge box, such as shown in Fig. 8, of the drawing, wherein the letter B designates the box body; E the extension edge thereof; A the cover blank; and *a* the side and end flaps thereof, the covering elements are provided with a longitudinal cavity or recess 12 which is entered by the platen and the extension-edge of the box during the inter-relative movement of the said platen and box and the covering elements in the act of applying the cover to the box. One wall of said cavity or recess constitutes a lip 13 which works over the extension edge of the box, folding the cover thereover and applying it thereto.

It is preferable that the cover applying element shall operate and be actuated in the following manner, that is to say, said elements are mounted in the bearings 4 in the yoke 2, and a casing 14 is provided on one end of the shaft outside of the bearing containing a spiral spring 15, one end of which is attached to the shaft and the other to the casing. Said spring is for the purpose of returning the roller to its original position after each covering operation, and to insure its stop in correct position a sleeve or collar 16 rigidly attached to the shaft and provided with a pin 17 to engage a stop pin 18 arranged in the path of rotation thereof. It is preferable that the position of the stop pin 18 with respect to the stop pin 17 may be varied for the purpose of adjustment to insure an accurate coöperative relation of the cavity or recess 12 to the platen and box-edge when the covering element is returned to initial position for operation, and to secure this adjustment the casing is provided with a slotted extension 19, through which passes a bolt 20 taking into a part of the bearing. By loosening the bolt the casing may be turned to vary the position of the stop pin 18, and the bolt then tightened to maintain that position.

Associated with each of the covering elements is a buffer or yielding element operatively interposed between the cover applying element and the box supporting platen which in the illustrated embodiment of my invention constitutes the means for actuating the cover applying elements. As shown, this buffer is movably arranged in the cavity 12, and consists of a head 21, loosely arranged on stems 22, and springs 23 operating to project said head toward the mouth of the cavity, said springs in the present instance surrounding the stems and bearing at their opposite ends against the cavity bottom and the head. The active face of the buffer is cam or wedge shaped as shown at 24, and normally stands in projected position, as shown in Fig. 3 of the drawing, in the path of movement of the platen.

The initial position of the covering elements is shown in Fig. 3, and said elements are rotated by the engagement of the platen with the buffers 3, in its movement to carry a box to be covered between the cover applying elements. The impact of said platen is received and cushioned by the buffers, which will yield slightly, enabling the rotation of the roller to be commenced easily and without shock or jar. During the continued movement of the platen, the buffers are held thereagainst by means of the springs 23, and said buffers gradually yield to the platen as the latter carries the box between the covering elements, to the end that when the said elements have been rotated to the position shown in Fig. 4 of the drawing, at which time the lips 12 have laid the cover over upon the extension edge of the box, the said lips will by reason of the yielding abutments, afforded by the engagement of the buffers with the platen, be caused to lay the cover upon and apply it to the extension edge of the box with a firm, yet gentle cushioned pressure, the degree of which is dependent upon the strength of the springs that act upon the buffer heads. This mode of operation is of great advantage as it prevents jamming or possible crushing of the extension edge of the box; and, furthermore, the application of the cover to the extension edge with a yielding pressure is of great practical advantage. The buffers, arranged as shown, also compensate for any possible inaccuracy of the coöperative relation or register of the cavi-

ties and lips 12 with the platen and extension edge of the box which may occur during the initial setting of the machine or for any reason during the use thereof, as they will gradually yield to the platen until the lips 12 assume the proper position with relation to the edge of the box to perform their herein above described function.

The rotation of the cover applying elements, as will be obvious, is against the tension of the spring 15, and such rotation is initiated by the action of the platen on said elements through the medium of the buffers associated therewith, and is continued by frictional contact of the covering elements with the sides or ends of the box. After the covering operation has been completed the position assumed by the parts, is illustrated in Fig. 5 of the drawings. The spring 15 acts to return the covering element to initial position for further operation.

When the cover applying element is a roller, as illustrated in the drawing, a set of such rollers may be readily substituted for the cover applying rollers shown in the Letters Patent hereinbefore referred to, to adapt the machine of said patent to cover extension edge boxes.

While I have herein shown and described as the statute requires, the best known embodiment of my invention, I desire it to be understood that said invention is not restricted to the arrangement and details set forth, except in so far as such arrangements and details are set forth in the following clauses of claims, and then only for the purpose of those particular clauses.

So far as I am aware I am the first in a machine adapted to cover extension edge boxes, to provide a means whereby the covering elements are caused to lay the cover upon and apply it to the extension edge of the box with a firm, gentle, cushioned or yielding pressure.

I have herein above set out some of the advantages attained by my invention. It will be understood of course, that I do not limit my invention to this particular statement of advantages, but claim the invention for all the uses to which it is capable, and in respect to all the value resulting from its use.

Having thus described my invention what I claim is:—

1. In a machine for covering extension edge boxes, the combination with a box support, of an element provided with a part to apply the box cover to the extension edge of the box, and means interposed between the support and covering element to cause the latter to apply the cover to the extension edge of the box with a cushioned pressure.

2. In a machine for covering extension edge boxes, the combination with a box support, of a cover applying element provided with a part to apply the cover to the extension edge of the box, and a yielding element interposed between said box support and said cover applying element.

3. In a machine for covering extension edge boxes, the combination with a cover applying element having a part to apply the cover to the extension edge of the box, means for actuating said cover applying element, and means interposed between said actuating means and said element for causing the latter to apply the cover to the extension edge of the box with a cushioned pressure.

4. A cover applying element for covering extension edge boxes, provided with a longitudinal cavity and having a part to apply the cover to the extension edge, and a movable buffer arranged in said cavity.

5. In a machine for covering extension edge boxes, the combination with a cover applying element having a part to apply the cover to the extension edge of the box, and means for actuating said element, of a yielding buffer associated with said element and operatively interposed between said element and said actuating means.

6. In a machine for covering extension edge boxes, the combination with a cover applying roller having a longitudinal cavity to receive the extension edge of the box, and a part to apply the cover to the extension edge, of a buffer located in said cavity for cushioning the action of said part in the act of applying the cover to said edge, and means for actuating said roller.

7. In a machine for covering extension edge boxes, the combination with a cover applying element having a longitudinal part to apply the cover to the extension edge of the box, of a spring-pressed buffer coöperatively associated with said part, and means for actuating said element.

8. In a machine for covering extension edge boxes, the combination with a cover applying element having a longitudinal cavity to receive the extension edge of the box and a part to apply the cover to the extension edge, of a spring-pressed buffer arranged in said cavity, and means for actuating said element.

9. In a machine for covering extension edge boxes, the combination with a cover applying roller having a longitudinal cavity to receive the extension edge of the box and a part to apply the cover to the extension edge, of a spring-pressed buffer arranged in said cavity, and means for actuating said roller.

10. In a machine for covering extension edge boxes, the combination with a cover applying roller provided with a cavity to receive the extension edge of the box, and a part to apply the cover to such extension edge, of a cam-faced yielding buffer arranged in said cavity, and means for engaging said buffer to actuate said cover applying element.

11. In a machine for covering extension edge boxes, the combination with a cover applying roller provided with a cavity to receive the extension edge of the box, and a part to apply the cover to such extension edge, of a cam-faced yielding buffer arranged in said cavity, and a box support to engage said buffer to actuate said cover applying element.

12. A cover applying roller for machines for covering extension edge boxes provided with a longitudinal cavity and having a part to apply the cover to the extension edge, and a buffer coöperatively associated therewith.

13. A cover applying element for covering extension edge boxes, having a part to apply the cover to the extension edge, and a cam-faced buffer coöperatively associated therewith.

14. A cover applying roller for covering extension edge boxes, having a part to apply the cover to the extension edge, and a cam faced spring buffer coöperatively associated therewith.

15. A cover applying element for covering extension edge boxes, provided with a cavity and having a part to apply the cover to the extension edge, and a cam-faced buffer arranged in said cavity.

16. A cover applying roller for covering extension edge boxes, provided with a cavity and having a part to apply the cover to the extension edge and a cam-faced buffer arranged in said cavity.

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

CHARLES A. GARRETT.

Witnesses:
GEO. Z. SUTTON,
W. H. RICE.