B. L. DENNISON.

Machine for Making Cushions for Finger-Ring Boxes.

No. 161,493. Patented March 30, 1875.

Fig. 1.

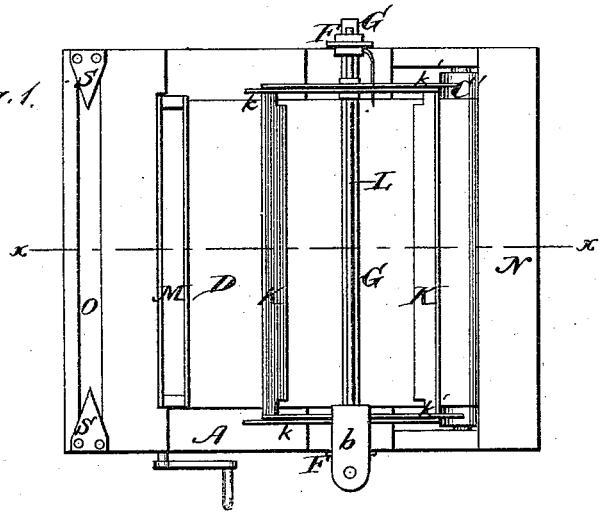


Fig. 2.

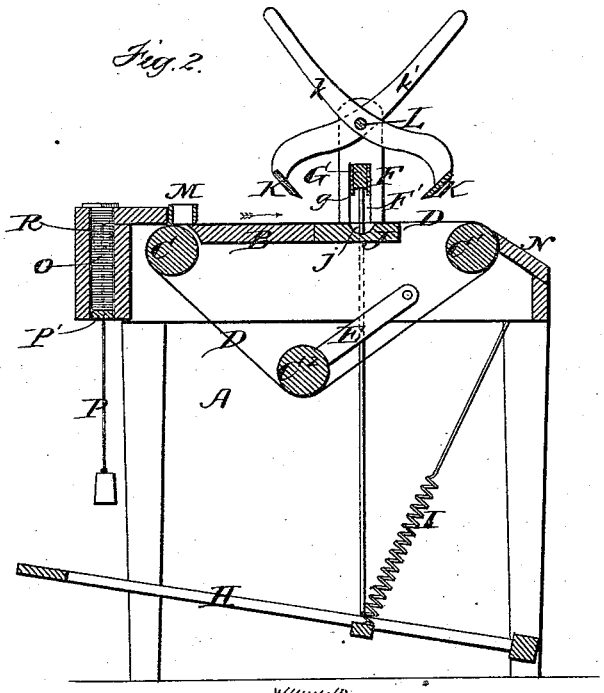


Fig. 3.

Fig. 4.

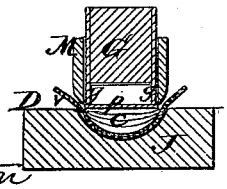


Fig. 5.

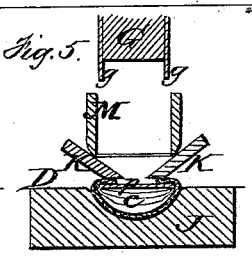
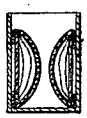


Fig. 6.

Fig. 7.



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UNITED STATES PATENT OFFICE.

BENJAMIN L. DENNISON, OF BRUNSWICK, MAINE.

IMPROVEMENT IN MACHINES FOR MAKING CUSHIONS FOR FINGER-RING BOXES.

Specification forming part of Letters Patent No. **161,493**, dated March 30, 1875; application filed February 19, 1875.

To all whom it may concern:

Be it known that I, BENJAMIN L. DENNISON, of Brunswick, in the county of Cumberland and State of Maine, have invented certain Improvements in Machines for Making Cushions for Finger-Ring Boxes, of which the following is a specification:

In the accompanying drawings forming part of this specification, Figure 1 is a top-plan view of my improved machine; Fig. 2, a section through line *x x*, Fig. 1; Figs. 3, 4, and 5, detail views, showing the positions of certain parts during different stages of the operation; and Figs. 6 and 7, sectional views, showing the completed cushion as it leaves the machine, and as applied in pairs to a ring-box.

My invention relates to the manufacture of the cushions which are inserted in pairs in finger-ring boxes, for the purpose of supporting a ring edgewise between them. These cushions are usually composed of three parts—viz., a backing of pasteboard, a facing or covering of velvet, and a filling of cotton or other soft material interposed between the covering and backing, and confined by folding the edges of the covering over the back of the backing, said edges having been secured heretofore by stitching them together by hand. The other parts of the operation of making these cushions, as well as the stitching, have also been performed by hand heretofore, and, as a consequence, their production has been slow, and more expensive than is desirable, considering the large number of cushioned boxes used by the jewelry trade.

My invention has for its object to provide for public use a simple and effective machine adapted to rapidly make the cushions of ring-boxes from the elements before alluded to, in lengths suitable to be cut up into sections, each section constituting a cushion, with the overlapping edges of the facing or covering glued to the backing instead of being confined by stitching, as heretofore.

To this end my invention consists, as a whole, in the improved machine for producing the desired result, and, in detail, in the arrangement and combination of parts; and the improved article of manufacture, viz., a cushion for ring-boxes, having the edges of its facing or covering confined or attached to the back of the backing by glue or other adhesive material, all of which I will now proceed to describe, and point out in my claims.

In the drawings, A represents a suitable supporting-frame, having a substantially horizontal surface or table, B. C C^1 are parallel rollers extending across the frame A, each being journaled near the end of said frame, with its upper portion about flush with the upper surface of the table B. D is an endless apron or carrier, which passes over the rollers C C^1 and platform B, and under a third roller, C^2, which is journaled in hinged arms E under the table B, the weight of the roller resting on the apron, and keeping it under the proper degree of tension. The apron D is of considerable width, as shown in Fig. 1, its width being preferably nearly equal to the length of the rollers C C^1. F F are vertical standards rising from opposite sides of the frame A, the apron D passing between them. The standards F have central vertical slots F′, which act as guides for the ends of a transverse horizontal bar, G, which slides up and down in said slots, its ends being connected by any suitable means with a treadle, H, by means of which it is depressed, a suitable spring, I, or its equivalent, being provided to raise the bar G, when the pressure on the treadle is released. The lower edge of the bar G is preferably provided with downwardly-projecting metallic lugs or flanges *g g*. J is a removable transverse block or plate, extending across the table B between the standards F. The block J is provided with a concave groove, *j*, extending its entire length, immediately under the sliding bar G, so that, as the latter descends, it will operate in connection with the groove, as will be hereinafter described. K K are transverse parallel swinging jaws, each attached to the ends of two pivoted levers, *k k k′ k′*, said levers being pivoted to a common fulcrum, L, which is preferably composed of a transverse rod extending from one standard, F, to the other, in the same vertical plane as the bar G and groove *j*. The jaws K are set at opposite angles on the ends of the levers *k*, and are beveled at their front or lower edges. When not in operation they are held apart, as shown in Figs. 1 and 2, by a pivoted block, *b*, interposed between the

upper ends of the intersecting levers *k k'*; but when this block is removed the jaws fall, and their beveled edges come together over the groove *j*, as shown in Fig. 5. M is a removable bottomless holder, composed of two parallel strips of sufficient length to extend across the apron D, said strips being connected at their ends and resting edgewise on the apron, between the rollers C C^1, in a position parallel with them.

The operation is as follows: A strip, *v*, of velvet or other material suitable for the facing or covering of the cushion, of the desired length and width, is laid upon the horizontal portion of the apron D, near the roller C, and parallel therewith, a suitable guide being employed for determining its proper position. The bottomless holder M is then placed upon the strip, as shown in Fig. 3, and in the holder is placed a strip, *c*, of cotton or other soft material of suitable thickness, its width and length being such as to correspond with that of the holder M, which is narrower than the covering-strip *v*, the edges of the latter projecting on each side of the holder, as shown.

A strip of pasteboard, *p*, or other stiff material, coated with glue or other adhesive substance on its upper side, is then laid in the holder M on the filling *c*, the backing being of the same length and width as the filling. The roller C is then rotated by a crank on one of its ends in the necessary direction to carry the apron D in the direction of the arrow, Fig. 2, the holder M, with its contents and the covering-strip *v*, being thus advanced until they are directly over the groove *j* and under the bar G. The motion of the apron D is then arrested, and the treadle H is depressed, forcing the bar G, with its flanges *g g*, down into the holder M, and pressing the backing *p*, filling *c*, and covering *v*, together with that portion of the apron on which the holder rests, downward into the groove *j*, the filling and backing being thus expelled from the holder, and the edges of the covering being caused to project diagonally upward, as shown in Fig. 4. The jaws K are next brought together, as shown in Fig. 5, their beveled lower edges catching the projecting edges of the covering *v*, and commencing to fold them over the edges of the backing *p* of the cushion. The treadle H and bar G are released and raised by their spring at this point, and the jaws are brought still nearer each other, completing the folding of the edges of the covering, and pressing said edges upon the adhesive surface of the backing. The holder M, which is displaced by the jaws, as shown in Fig. 5, may then be returned to its former position and prepared for a fresh operation, the jaws K being allowed meanwhile to remain on the cushion long enough to insure the necessary adhesion of the turned edges of the cover to the backing.

When the holder is prepared for a repetition of the above-described operation the jaws are raised and the apron set in motion, carrying the holder toward its stopping-point, and at the same time carrying the cushion just completed to an inclined board, N, at the rear end of the frame, from whence it rolls into a suitable receptacle.

It will be seen from the foregoing that a cushion of any desired length within the compass of the machine may be made, this length being usually cut up into sections for use, each section being a complete cushion, as shown in Fig. 6, and ready for insertion into a box, as shown in Fig. 7. The concave form of the groove *j* molds the outer surface of the cushion, and gives it the necessary convexity, and as this shape is produced by the strong pressure of the bar G and retained by the adhesion of the edges of the covering to the backing, the cushion has a permanent shape, which it is not liable to lose. The flanges *g* of the pressure-bar G projecting below the latter, their narrow edges are the only parts that come in contact with the glued surface of the backing *p*; consequently they do not interfere materially with the fresh adhesive material. I prefer to employ a transverse receptacle, O, at the front end of the frame A, for the purpose of holding a quantity of the backing-strips *p*. This receptacle has a bottom, P', adapted to slide vertically, and connected to weighted cords P, passing over pulleys R in the ends of the receptacle. By this means the strips are fed upward as fast as they are used, and the upper surface of each may be coated with glue before it is taken from the receptacle. S S are points projecting inward from each end of the receptacle, and bearing upon the ends of the uppermost strip therein, to prevent the strips from being forced entirely out by the weighted bottom. The lengths thus produced can be sold to box-makers as they come from the machine, or cut up into sections, and as an article of manufacture the cushion is an improvement over that made by hand, as it is produced and completed under pressure, and consequently has a uniform and permanent shape.

I am enabled to effect a saving of material by my improved machine over the ordinary hand method, for the reasons, first, that the edges of the covering are not required to overlap the backing as far to be glued as to be sewed, and, secondly, that the filling material cannot be formed into as perfect a convexity by hand; consequently, to have the requisite thickness in the center, more filling material must be employed, while in my cushion the tightness with which the covering is drawn over the filling, as well as the molding it receives, tends to give the filling the greatest thickness at the center, where it belongs. Moreover, I have found, by experience, that the manipulation to which the cotton is subjected in hand manufacture tends to destroy its elasticity, and thus impair its usefulness.

I do not desire to limit myself to the employment of the apron or carrier, in combination with the other parts, as the operation of making the cushion can be performed without

it; or any suitable carrying device may be substituted for the apron shown.

I claim as my invention—

1. An endless apron or carrier, D, in combination with the removable bottomless holder M, grooved bed-piece or mold J, and suitable compressing and folding devices, substantially as described, whereby the filling of a cushion is molded and compressed between its backing and covering, and the edges of the covering folded over the adhesive back of the backing, substantially as described, for the purpose specified.

2. A vertically-sliding pressure-bar, G, in combination with a grooved bed-plate, J, a removable holder, M, and a pair of swinging jaws, K, substantially as and for the purpose specified.

3. The jaws K, having the intersecting pivoted arms *k k'*, in combination with the groove *j* and holder M, substantially as described.

4. The receptacle O, having the sliding weighted bottom P′ and stops S S, in combination with the holder M and apron D, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BENJAMIN L. DENNISON.

Witnesses:

C. F. BROWN,

A. E. DENISON.