

(No Model.)

2 Sheets—Sheet 1.

J. H. ABRAHAM & E. K. MARTIN.

CIGAR BUNCHING MACHINE.

No. 419,983.

Patented Jan. 21, 1890.

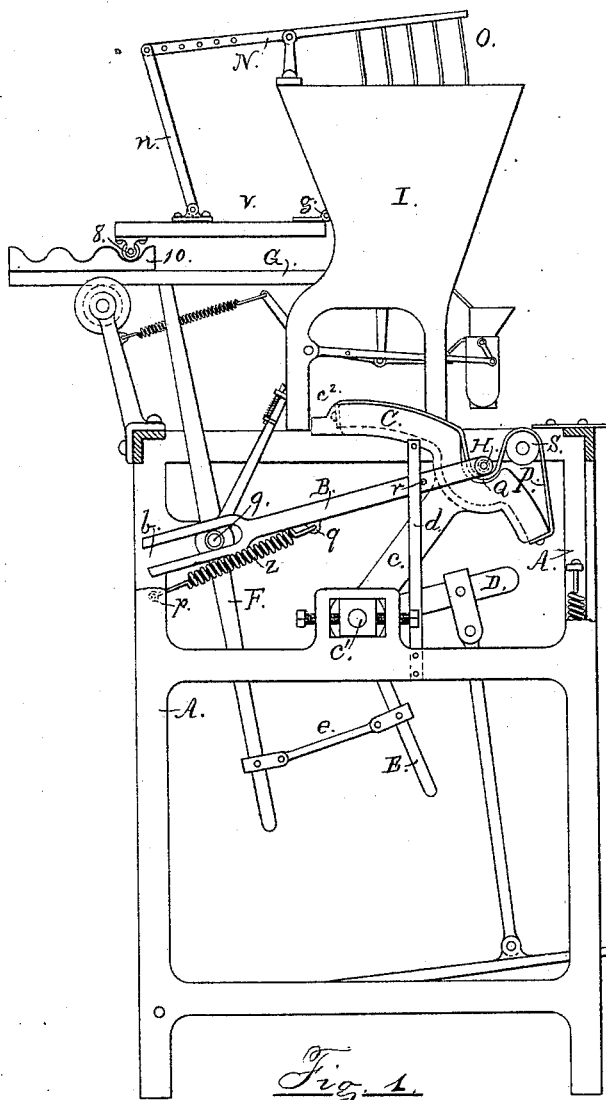


Fig. 1.

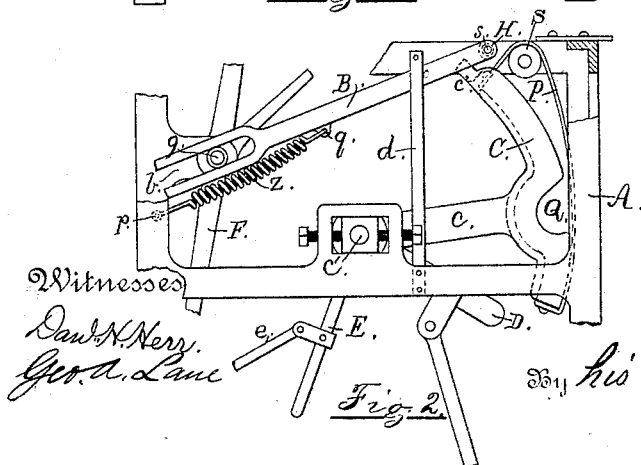


Fig. 2.

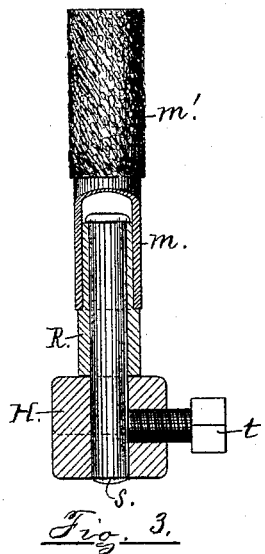


Fig. 3.

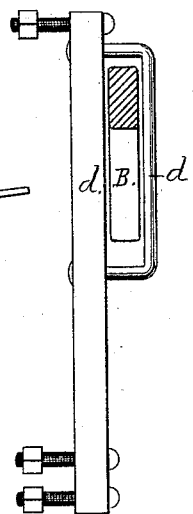


Fig. 4.

Witnesses

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(No Model.)

2 Sheets—Sheet 2.

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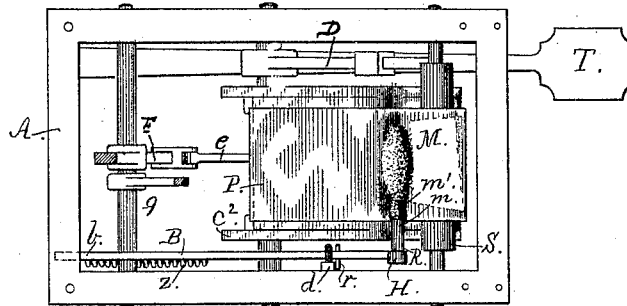


Fig. 5.

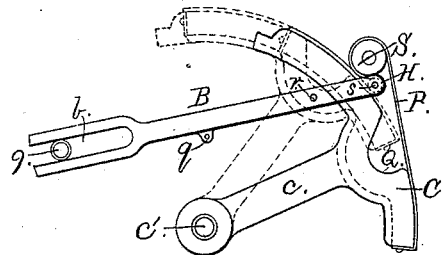


Fig. 6.

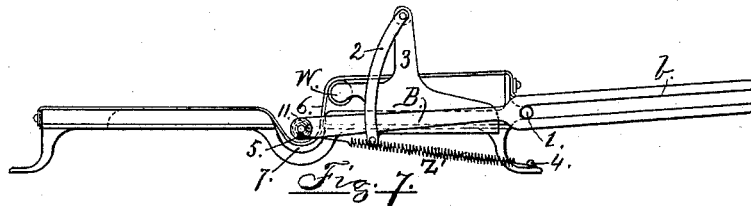


Fig. 7.

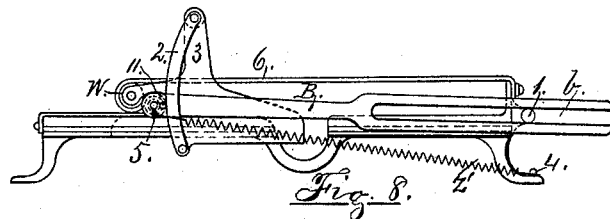


Fig. 8.

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UNITED STATES PATENT OFFICE.

JOHN H. ABRAHAM AND EDWIN K. MARTIN, OF LANCASTER, PENNSYLVANIA,
ASSIGNORS TO THE CONESTOGA CIGAR MACHINE COMPANY, OF SAME
PLACE.

CIGAR-BUNCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 419,983, dated January 21, 1890.

Application filed May 5, 1888. Serial No. 272,975. (No model.)

To all whom it may concern:

Be it known that we, JOHN H. ABRAHAM and EDWIN K. MARTIN, citizens of the United States, residing in Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain Improvements in Cigar-Bunching Machines, of which the following is a specification.

This invention relates to improvements on the cigar-bunching machine for which we have been granted Letters Patent No. 394,901, dated December 18, 1888.

The present invention relates more particularly to improvements in devices for preventing the filling material from working into the cigar as it is rolled in the binder and to means for actuating a plunger for forcing the tobacco through an opening in the bottom of the hopper containing the same.

This invention consists in the combination, with the recessed table and bunching-apron, of a roller and a device whereby the same is held in an end of the bight in the apron while the cigar is being rolled therein, and means for retracting the roller to its original position after the cigar is rolled.

This invention consists, also, in the combination, with the bunching-apron and a roller, of a flexible cap drawn partially over the roller and lapping the apron sufficiently to be enveloped by the binder as the filling material is rolled therein, and a woolly covering for the cap, which prevents the filling from working out of the end of the cigar between the binder and the body of the cap.

This invention consists, finally, in the combination, with the hopper, of a pronged plunger working therein, a link connecting the same with a vibrating plate hinged to the back of the hopper at one end and supported by a roller at the other, the said roller resting on a fluted plate resting on the plunger, so that the movement of the plunger may impart motion to the vibrating plate and through it to the plunger.

In the drawings, Figure 1 is a side elevation of our bunching-machine with the upper part of the frame cut away, showing the stopper resting in the recess. Fig. 2 is a side eleva-

tion of the sliding arm and table in the position occupied by both after the rolling of the scrap in the binder has been completed. Fig. 3 shows an enlarged view of the stopper and cap, partly in section. Fig. 4 is an enlarged front view of the sliding arm-guide, with the arm in section. Fig. 5 is a plan view of the table in position to receive the scrap in the pocket, the stopper resting in the bottom thereof. Fig. 6 is a side elevation of the table and stopper, showing the position of the latter as the bunch is being rolled. Fig. 7 illustrates the application of the invention to a flat table, the stopper resting in the recess; and Fig. 8, a like view showing the position occupied by the stopper as the scraps are being rolled in the binder.

In the drawings, A represents the frame of the machine; C, a reciprocating table; Q, a recess therein; P, the bunching-apron, with which the pocket is formed in the recess and in which the bunch is rolled.

c is one of the arms supporting the table C on the rock-shaft c', and D an arm connected with the treadle T, by which the machine is operated.

F is a lever connected with the rock-shaft by the link e and arm E, and which actuates the plunger G.

B is a sliding arm, the bifurcated end b of which engages the shaft 9. Its other end projects through the guide-rods d d to a point opposite the recess Q, the table being in the position shown in Fig. 1. This end is provided with a head H, that supports the spindle s of the stopper R. The spindle is adjustable in the head H transversely of the table, and is held in place by the set-screw t. Z is a spring fastened to a pin p, placed in the frame A below the shaft 9, and is connected with the underside of the sliding arm at q. This spring acts to draw the arm back and keeps it in engagement with the shaft 9. A pin r on the side of the arm engages with one of the guides d as it is retracted and prevents it from being drawn too far back.

In the position of the table C shown in Fig. 1 the stopper rests on one side of the belt in the recess Q transversely of the table.

The body of the stopper is formed of any rigid substance, and has a tubular cap *m* of rubber or other flexible material drawn partially over the end. A portion of the cap *m* extends beyond the end of the body of the stopper, and this part has a covering *m'* of any kind of loose woolly fabric, as shown in Fig. 3. As the stopper is held in the bight while the scraps are being rolled in the binder, as shown in Fig. 6, or when it is being drawn into position to be engaged in the bight, it rotates about its spindle *s*.

The stopper and other parts of the machine are so adjusted that when the scraps are emptied into the pocket they fall upon the belt inside of the end of the stopper, as shown in Fig. 5. As the binder is wrapped about the scraps by the forward rotation of the table, the stopper is held in the bight with the cigar, being kept in position under the roller *s* by the action of the spring *Z*. The cap *m* of the stopper laps the bunching-apron *P* sufficiently to be enveloped by the binder *M* as the wrapping of that end of the cigar is completed. As the cap is tubular, it yields sufficiently to enable the binder to be wrapped as tightly about the scraps as is necessary. By thus wrapping the cap in one end of the binder the scraps are kept back toward the body of the cigar, leaving the tuck empty when the cigar is off of the cap of the stopper. Although this cap is hollow, yet its bore is so small that it is found in practice that the scraps do not pack into it, but that it serves to effectually stop their being worked beyond the inner end thereof, the woolly covering *m'* preventing any escape of the scraps through the wrinkles produced by the compression of the cap. As the cigar is delivered at the end of the table, the stopper is caught by a prolongation *c'* of a side rib of the table-frame and the cigar pulled off of the end of the cap. The upper edge of the prolongation *c'* of the rib of the table is cut away to form a depression therein to permit the stopper to drop somewhat and pass beneath the roller *S* with the cigar as it is delivered from the bight in the apron in which it was rolled. The contact of the pin *r* with one of the guide-rods *d* prevents the stopper from being pulled beyond the end *c'* of the rib of the table. As the table returns to its original position it passes backward under the roller *S* and again receives the stopper on its top on the bunching-apron. The motion of the table continuing, it passes under the stopper, which rests upon it, until the limit of its backward movement is reached. As the movement of the table ends, the recess *Q* is brought beneath the roller, which is drawn into it by the weight of the arm *B* and the action of the spring *Z*, forming a pocket in the belt at the same time.

In cigars in which scrap-fillers are used it is found of great advantage to taper the tuck as well as the head, to prevent the filling material from dropping out and becoming displaced in being handled or carried in the

pockets of consumers. The taper of the ends of the cigar is formed by hand when the wrapper is put on the bound bunch, and as in the rolling of the fillers in the binder the latter is wrapped about the former from the head toward the tuck of the cigar, the filling material works toward that end. This renders it extremely difficult to taper the tuck without compressing the fillers so tightly in it as to interfere with or prevent the draft through the cigar. The employment of our stopper leaves so much of the binder of the tuck as enveloped it empty, so that the workmen in wrapping the cigar can readily form the taper of that end of the cigar with the binder and wrapper without compressing or in any manner interfering with the filling material. If desirable, one of these stoppers can be used upon each of the two sides of the table; but it is hardly necessary, as the fillers draw toward the end of the cigar toward which the binder is wrapped.

The application of the stopper to a flat table is shown in Figs. 7 and 8. There the relative position of the table and arm carrying the roller is simply given as an example of the way in which it can be made. There is no mechanism illustrated for moving the bunching-roller *W*, as it varies in different machines. In this case the bifurcated end *b* of the sliding arm engages a stud 1 on the frame. This stud also does the work of the pin *r*, as explained in the description of the rotating table. The arm projects forward through the guides 2, secured to the side of the frame 3, to which the bunching-roller *W* is attached. The retracting-spring *Z* is secured to the pin 4 on the frame and a lug 5 on the under side of the arm *B*. Here, before wrapping the binder about the fillers, the rolling-stopper rests on the bunching-apron 6 in the pocket formed in the recess in the table, as shown in Fig. 7, and then passes over the table with the bunch as it is being wrapped in the binder. After the bunch is delivered from the end of the table the stopper is retracted by the spring *Z* as the frame 3 is drawn back to the position shown in Fig. 7. As the frame is moved forward, one of the guides 2 engages a pin 11, projecting from the side of the arm *B*, and carries the stopper along with it.

In this machine the lever *N*, to one end of which the pronged plunger is attached, is connected by the link *n* to a vibrating plate *V*, hinged to the back of the hopper *I* at *g*. Under the vibrating end of the plate *V* there is a roller 8 attached. This roller rests upon a fluted plate 10, fastened on the top of the plunger *G*. As the plunger moves back and forth, the passage of the roller over the fluted surface 10 gives motion to the pronged plunger on the end of the lever *N*. By this arrangement each movement of the plunger *G* causes a number of vibrations of the lever *N*, greatly increasing the rapidity of the movement of the pronged plunger *O*. These movements of

the plunger O, although not as extended as those described in the patented machine before referred to, are yet more effective, as keeping the tobacco in the hopper in a state of greater agitation and applying the force to drive it down through the bottom more continuously.

No claim is made in this application to any process carried into effect by the mechanism here shown and described, for this has been made the subject of a separate application filed November 12, 1889, and bearing Serial No. 330,062.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a cigar-bunching machine, the combination, with the recessed table and the bunching-apron, of the stopper attached to a bar B, a support upon which the bar slides, and a retracting-spring Z, substantially as and for the purpose specified.

2. In a cigar-bunching machine, the combination, with the bunching-apron, of a stopper held in the bight formed in said apron while the cigar is being rolled therein, and provided with a flexible cap *m*, extending beyond the end thereof, substantially as and for the purpose specified.

3. In a cigar-bunching machine, the combination, with the bunching-apron, of a stopper having a flexible cap *m* projecting beyond the end thereof and covered with a woolly wrap, substantially as and for the purpose specified.

4. In a cigar-bunching machine, the combination, with the plunger G, the hopper I, the pronged plunger, and the lever N, of a plate hinged to the back of the hopper and provided with a roller beneath its vibrating end, a link connecting said plate and the lever N, and a fluted plate 10, secured to the top of the plunger G, substantially as and for the purpose specified.

5. In a cigar-bunching machine, the combination, with the hopper and a plunger operating therein, of a vibrating plate V, having a roller beneath the vibrating end thereof, connections between said plate and plunger, whereby the latter is operated, a fluted plate, upon which the roller of the plate V rests, and mechanism for reciprocating said fluted plate, for the purpose specified.

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Witnesses:

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