(No Model.) 2 Sheets—Sheet 1.

F. C. SMALSTIG.

CIGAR BUNCHING MACHINE.

No. 347,257. Patented Aug. 10, 1886.

Fig. 1.

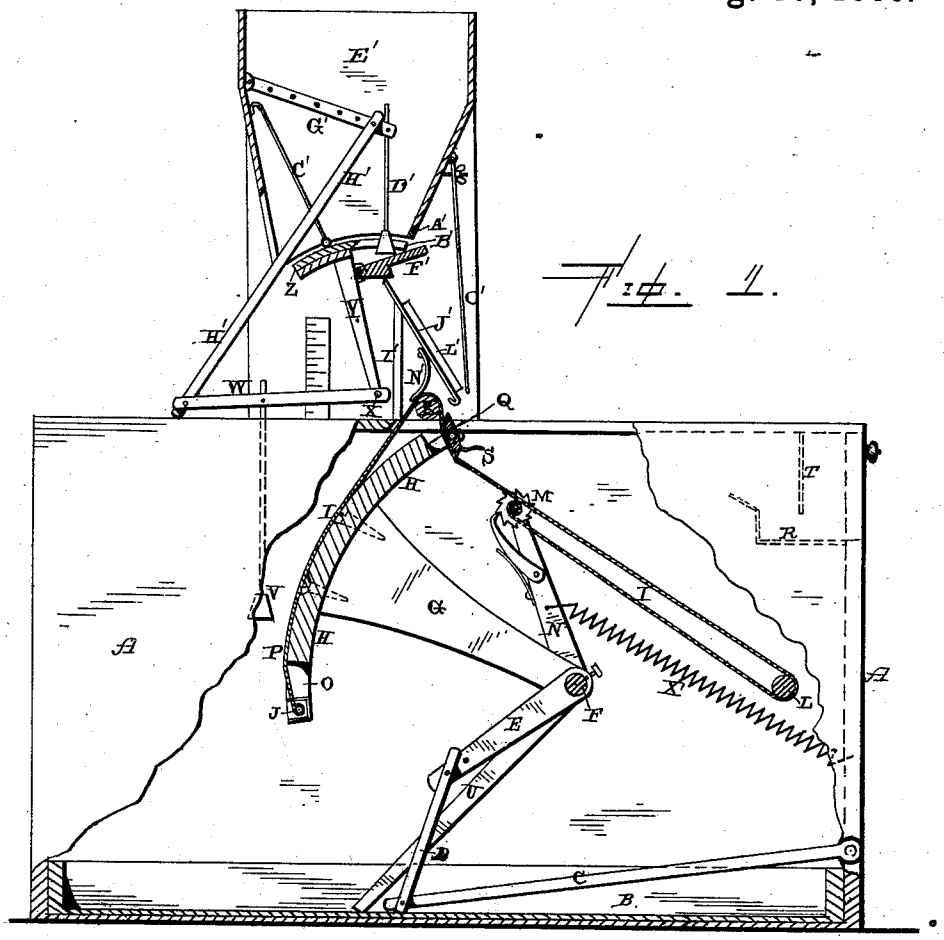
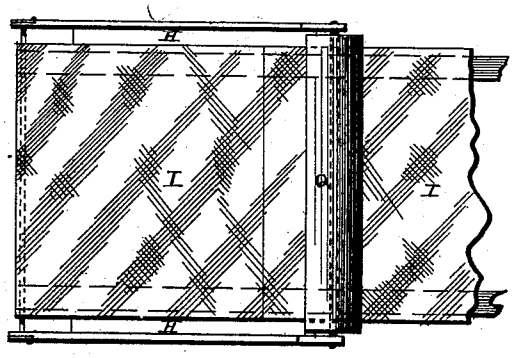


Fig. 7.



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(No Model.) 2 Sheets—Sheet 2.

F. C. SMALSTIG.

CIGAR BUNCHING MACHINE.

No. 347,257. Patented Aug. 10, 1886.

Fig. 2.

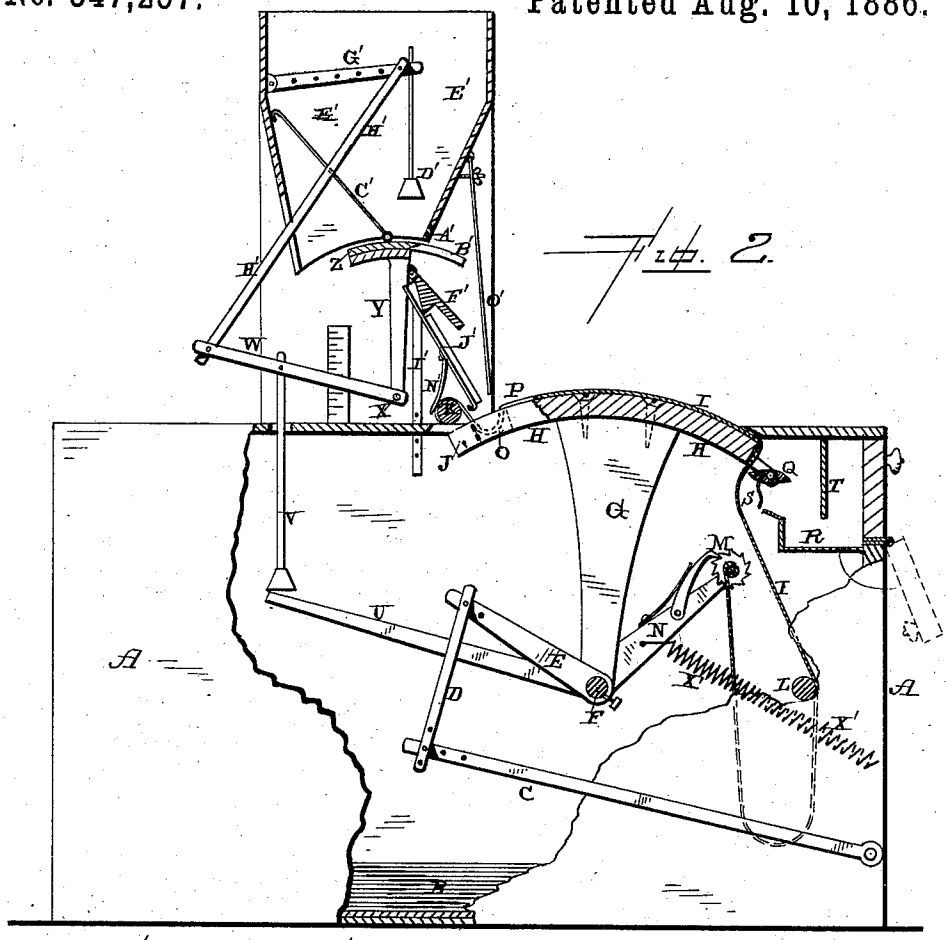


Fig. 3.

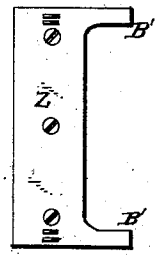


Fig. 4.

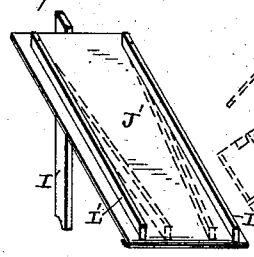


Fig. 5.

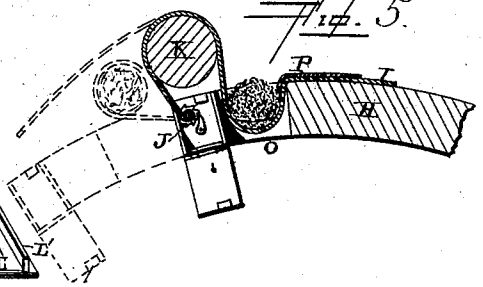
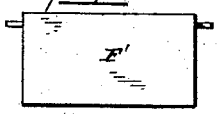


Fig. 6.



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UNITED STATES PATENT OFFICE.

FREDRICK C. SMALSTIG, OF ALLEGHENY CITY, PENNSYLVANIA.

CIGAR-BUNCHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 347,257, dated August 10, 1886.

Application filed December 19, 1885. Serial No. 186,185. (No model.)

To all whom it may concern:

Be it known that I, FREDRICK C. SMALSTIG, of Allegheny City, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Cigar-Bunching Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in cigar-bunching machines; and it consists in, first, the combination of the movable head, a mechanism for moving it, the apron connected to said head at one end and wrapped around a roller carried by a lever at the other end, and a formation and guide rollers, over which the apron passes; second, the combination of the movable head, a mechanism for moving it, a lever, a treadle connected to the lever, a lever for operating the rammer which is placed in the hopper, and the knife which is placed under the hopper, the knife and the ejector being connected together, so as to move simultaneously; third, the combination of the head, the apron connected thereto, the formation-roller, a discharger pivoted to the head for receiving and discharging the bunch, and a projection connected to the discharger for striking against the receptacle into which the bunch is discharged; fourth, the combination, with the hopper provided with a shear, of the knife provided with prongs, the rammer, a mechanism for operating the rammer and knife, and a movable bottom for catching the tobacco as it falls from the hopper; fifth, the combination of the hopper, provided with a shear at its lower edge, the pivoted standard carrying the knife at its upper end, the three levers connected together, the lever connected to the operating-shaft, the hanger connected to the lever, the head, a mechanism for moving it, the rammer placed in the hopper, and the false back attached to the knife; sixth, the combination of the hopper, a rammer placed therein, the knife which moves back and forth under the hopper, a mechanism for operating both the knife and rammer at the same time, and a false back connected at its lower end to the knife and operated thereby; seventh, the combination of the hopper, the pivoted standard carrying the knife, the bottom pivoted to the standard, and the guide; eighth, the combination, with the hopper, of the pivoted standard carrying the knife, the bottom pivoted to the standard, and the guide provided with the pivoted guiding-strips; ninth, the combination of the head, a mechanism for moving it, the apron connected thereto, the formation-roller, and the elastic finger for pressing the apron against the roller; tenth, the combination of the hopper, the pivoted knife, the ejector, and a mechanism for moving both the ejector and the knife, the bottom pivoted to the lever which carries the knife, the guide, and the fender.

Figure 1 is a vertical section of a machine which embodies my invention complete, showing the different parts in one position. Fig. 2 is a similar view, showing the different parts in another position. Figs. 3, 4, 5, 6, and 7 are detail views.

A represents a suitable inclosing-frame, which is closed upon all sides, so as to exclude any dust or dirt from any of the moving parts. In the lower part of this frame is placed a drawer, B, which covers the whole bottom of the frame, so as to catch all of the tobacco which may accidentally be spilled during the operation of the machine or the filling of the hopper.

Pivoted at one end of the frame is the treadle C, which is connected by means of the rod D with the operating-lever E. This lever E is secured to the rocking operating-shaft F by means of a set-screw, so that it can be adjusted into any desired position, according to the amount of movement it is desired to impart to the different parts of the machine when the treadle C is depressed. Also secured to this shaft F is the standard G, upon which the curved movable head is secured, and which head is returned to its normal position, after having been moved into the position shown in Fig. 1, by means of the spring X', which may be attached either to the upright G or to the take-up lever N, which is connected thereto. This head H is made curved on its upper side, as shown, and over the top of which passes the apron I. One end of this apron is fastened to one end of the head, where it is attached to an adjustable drum, which is to be

kept under lock and key, so that only the superintendent can change the amount of slack which is to be given to the apron I. From this drum J the apron passes over a stationary roller, K, which serves to guide the apron, and then over the top of the movable head H, down under a second stationary guiding-roller, L, and thence to an adjusting device, M, by means of which the slack of the apron can be controlled. This adjusting device M is placed on an arm, N, which is also secured to the shaft F, and which always moves with the shaft and head when the treadle C is operated.

Through the head H, at its front end, is made an opening, O, in which the slack of the apron automatically drops as the head returns to position, as shown in Fig. 2, and thus automatically receives the tobacco as it drops from the hopper to form the bunch, without any care or trouble on the part of the operator to form this pocket by hand. The friction of the apron against the head and the stationary roller K causes all of that slack which was wrapped around the bunch to automatically drop into the opening O, and thus form a pocket for the tobacco which is to form the bunch. This automatic operation of forming the pocket leaves nothing whatever for the operator to do but to lay the binder upon the apron I at the point P on the head H, and then to press the treadle C, so as to move the head H into the position shown in Fig. 1. As the head H is moved forward under the roller K, the binder is wrapped around the tobacco which was dropped in the pocket, and the bunch is then compressed against the front side of the roller K, as shown in Fig. 5.

Pivoted to the rear end of the head H is the automatic carrier and discharger Q, which, as the head is moved forward, catches the bunch which has been formed, and when the head is returned to position carries the bunch with it, and automatically discharges it into the receptacle R, made to receive it, in the frame A. This carrier and discharger Q will be operated automatically by the apron I alone; but in order to prevent any possibility of the carrier and discharger not acting to discharge the bunch at the proper time, the arm S is fastened to the receiver so as to strike against the front edge of the receptacle R, and thus insure perfect working at every movement of the head.

Secured to the under side of the frame A is a hanger, T, against which the bunch is thrown, so as to drop back into the receptacle without any danger of the bunch being thrown upon the floor in case the door of the receptacle should be left open. Also connected to the shaft F is an arm or lever, U, which as it rises upward is made to strike against the hanger V, which is secured to the lever W, which is fulcrumed upon the shaft or pivot at X. To the inner end of the lever W is secured the lever Y, which has secured to its upper end the knife Z, which acts both to cut away any of the tobacco which may be sticking through the hopper and to form a cut-off for the tobacco which is being forced out to form the bunch.

Secured to the bottom of the hopper, and acting in conjunction with the knife Z, is the shear A'. Between the shear A' and the movable knife Z all protruding pieces of tobacco are cut away. The movable knife Z is provided with the prongs or projections B', which serve as guides to prevent the sharp edge of the knife coming in contact with the stationary shear A'. Pivoted to the top of this movable knife Z is a false back, C', which moves with the knife Z, for the purpose of keeping the tobacco in the hopper E' stirred up and forcing it forward in the hopper and to the pivoted drop-bottom F', which is connected to the upright Y, which carries the knife Z. The ramming-bar D' is suspended from the lever G', which is pivoted inside of the hopper E', and which lever G' is operated by the rod H', which is connected to the outer end of the operating-lever W. Through this lever G' are made a series of holes, so as to regulate the point at which the rod H' shall be connected thereto, and thus determine the amount of movement that shall be given the ramming bar D'.

Secured to the top of the frame A is a support, I', to the upper end of which is secured the guide-board J', upon which the tobacco as it drops from the movable head F' falls and is guided directly into the pocket formed in the apron. The upper edge of this guide J' extends upward just under the pivot of the board F', so that when the lever Y is moved back the under side of the board F' will strike against the upper edge of this guide J', and thus be forced upward into the position shown in Fig. 1. While the board F' is in its raised position it catches all of the tobacco that is forced from the hopper E' by the ramming-bar D', and holds it until the knife Z is moved forward into position under the hopper, and acts as a cut-off when the tobacco upon the board F' is dropped into the pocket below. Upon the top of this guide J' are pivoted movable guiding-strips L', which are pivoted at their upper ends only, and which serve to direct the tobacco into any desired portion of the pocket. These guides are adjusted by hand at their lower ends, and remain in whatever position they are adjusted by frictional contact with the guide J'. Upon the under side of this guide J' is secured a suitable friction-finger, N', which bears against the top of the apron, where it passes over the stationary roller K, and thus prevents the slack of the apron from passing over the roller, but causes all slack in the apron to drop into the opening O in the head H, and thus forms the pocket to receive the bunch.

In order to prevent the tobacco from being scattered over the apron as it is discharged from the hopper E', a dash, O', is secured to the hopper, as shown, and which extends

down near the top of the apron, as shown. All of the tobacco which strikes the inner side of this dash O′ is guided directly into the pocket and thus all waste prevented.

I am aware that a curved oscillating forming-plate, with a forming-roll past which the forming-plate vibrates, a slack belt extending over the surface of the same and over the roll, so as to form a bight or loop for receiving the tobacco between them, an ejector which vibrates with the oscillating plate, and mechanism for moving the ejector, are old, and this I disclaim. My invention differs from this in having the discharger or ejector pivoted upon the end of the table or forming-plate, and in operating the ejector by the apron and the arm connected to the ejector, instead of having to employ a separate mechanism for moving the ejector.

Having thus described my invention, I claim—

1. The combination of the movable head, a mechanism for moving it, the apron connected to said head at one end, and wrapped around the roller M, carried by the lever N at the other, formation-roller K, and the guide-roller L, substantially as shown.

2. The combination of the movable head, a mechanism for moving it, the lever E, the treadle, the lever U, the rammer placed in the hopper, the knife placed under the hopper, and a mechanism for operating both the rammer and the knife simultaneously each time the lever U and head are moved, substantially as described.

3. The combination of the head, the apron connected thereto, the formation-roller, the discharger Q, pivoted to one end of the head for receiving and discharging the bunch, and a projection connected to the discharger Q, for striking against the receptacle R, into which the bunch is discharged, substantially as specified.

4. The combination, with the hopper provided with the shear A′, of the knife Z, provided with the prongs B′, the rammer, a mechanism for operating the rammer and knife, and a movable bottom for catching the tobacco as it falls from the hopper, substantially as shown.

5. The combination of the hopper, provided with the shear at its lower edge, the pivoted standard Y, carrying the knife Z at its upper end, the levers W G′ H′, connected together, the lever U, secured to the operating-shaft, the hanger V, connected to the lever W, the head H, a mechanism for moving it, the rammer D′, placed in the hopper, and the false back C′, attached to the knife Z, substantially as described.

6. The combination of the hopper, a rammer placed therein, the knife which moves back and forth under the hopper, a mechanism for operating both the knife and rammer at the same time, and the false back C′, connected at its lower end to the knife and operated thereby, substantially as set forth.

7. The combination of the hopper, the pivoted standard Y, carrying the knife, the bottom F′, pivoted to the standard, and the guide J′, substantially as specified.

8. The combination, with the hopper, of the pivoted standard Y, carrying the knife, the bottom F′, pivoted to the standard, and the guide J′, provided with the pivoted guiding-strips, substantially as shown.

9. The combination of the head, a mechanism for moving it, the apron connected thereto, the formation-roller K, and the elastic finger N′, for pressing the apron against the roller for the purpose of causing the slack of the apron to form the pocket, substantially as described.

10. The combination of the hopper, the pivoted knife, the ejector, and a mechanism for moving both the ejector and the knife, the bottom F′, pivoted to the lever which carries the knife, the guide J′, and fender O′, substantially as set forth.

11. The combination of the movable head, a mechanism for moving it, the apron, the formation-roller K, guide-roller L, the take-up levers N, carrying a roller, M, and the operating-lever E, all secured to the same pivotal rod F, the levers E N being made adjustable in relation to the head, substantially as described.

12. The combination of the hopper, the pivoted knife which moves back under it, the bottom F′, the rammer, a mechanism for operating it, the guide J′, and the fender O′, substantially as set forth.

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

FREDRICK C. SMALSTIG.

Witnesses:

A. S. PATTISON,

F. A. LEHMANN.