

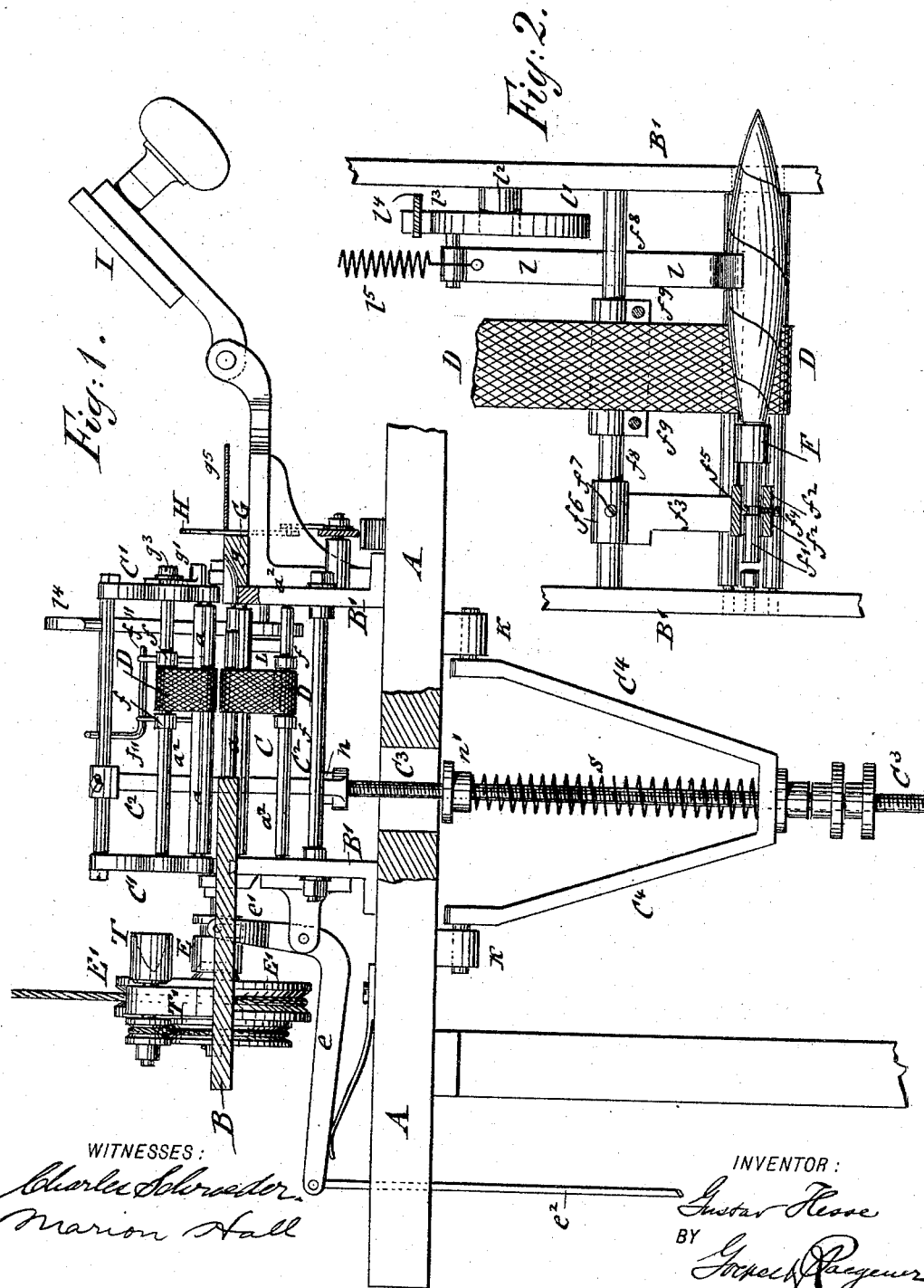
(No Model.)

3 Sheets—Sheet 1.

G. HESSE.
CIGAR WRAPPING MACHINE.

No. 492,203.

Patented Feb. 21, 1893.



WITNESSES:

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Fig: 3.

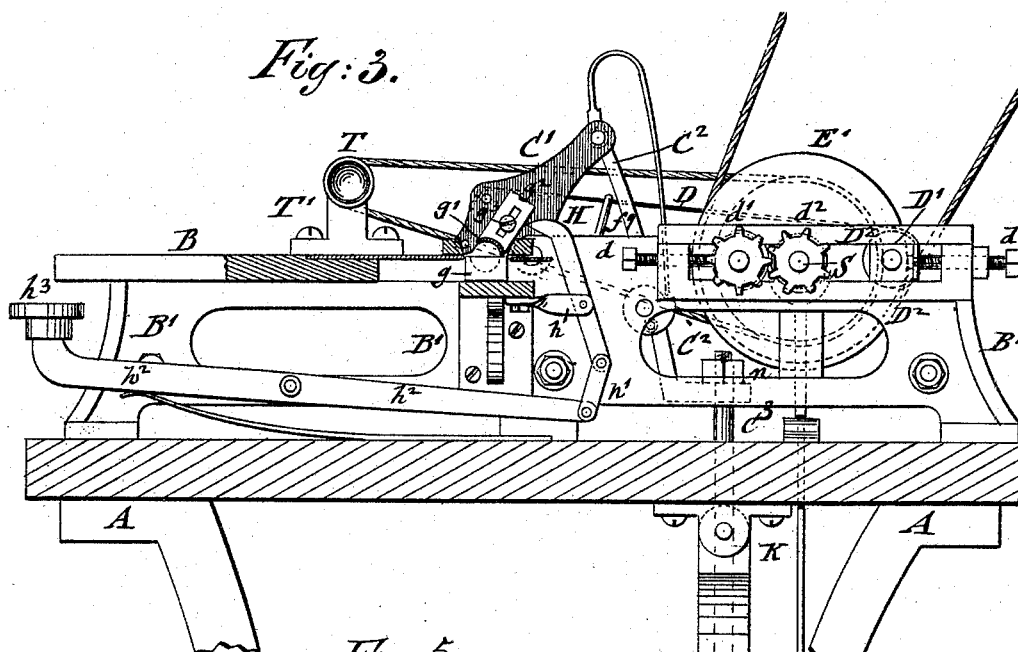


Fig: 5.

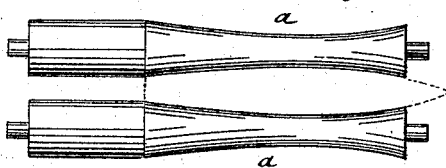


Fig: 4.

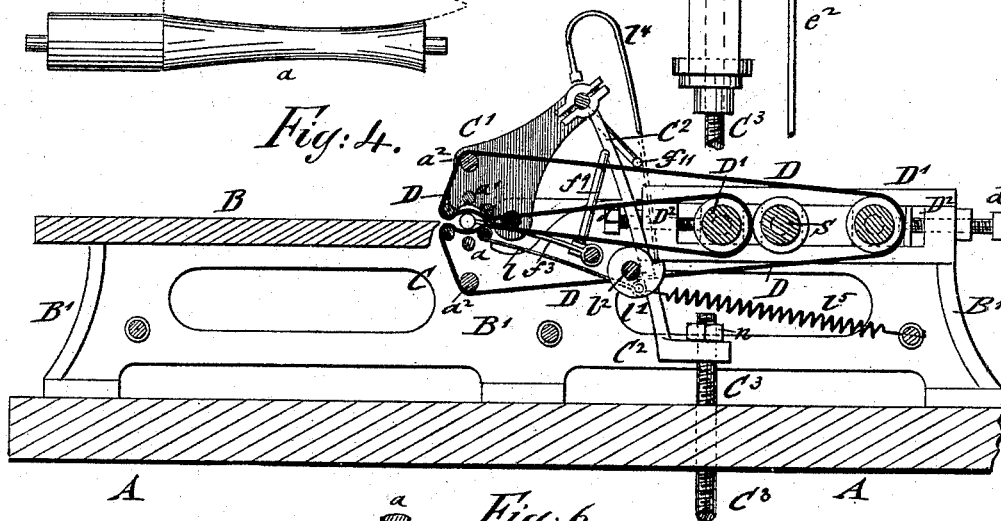
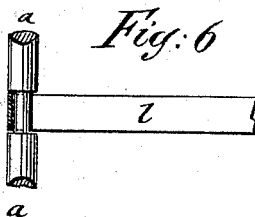


Fig: 6

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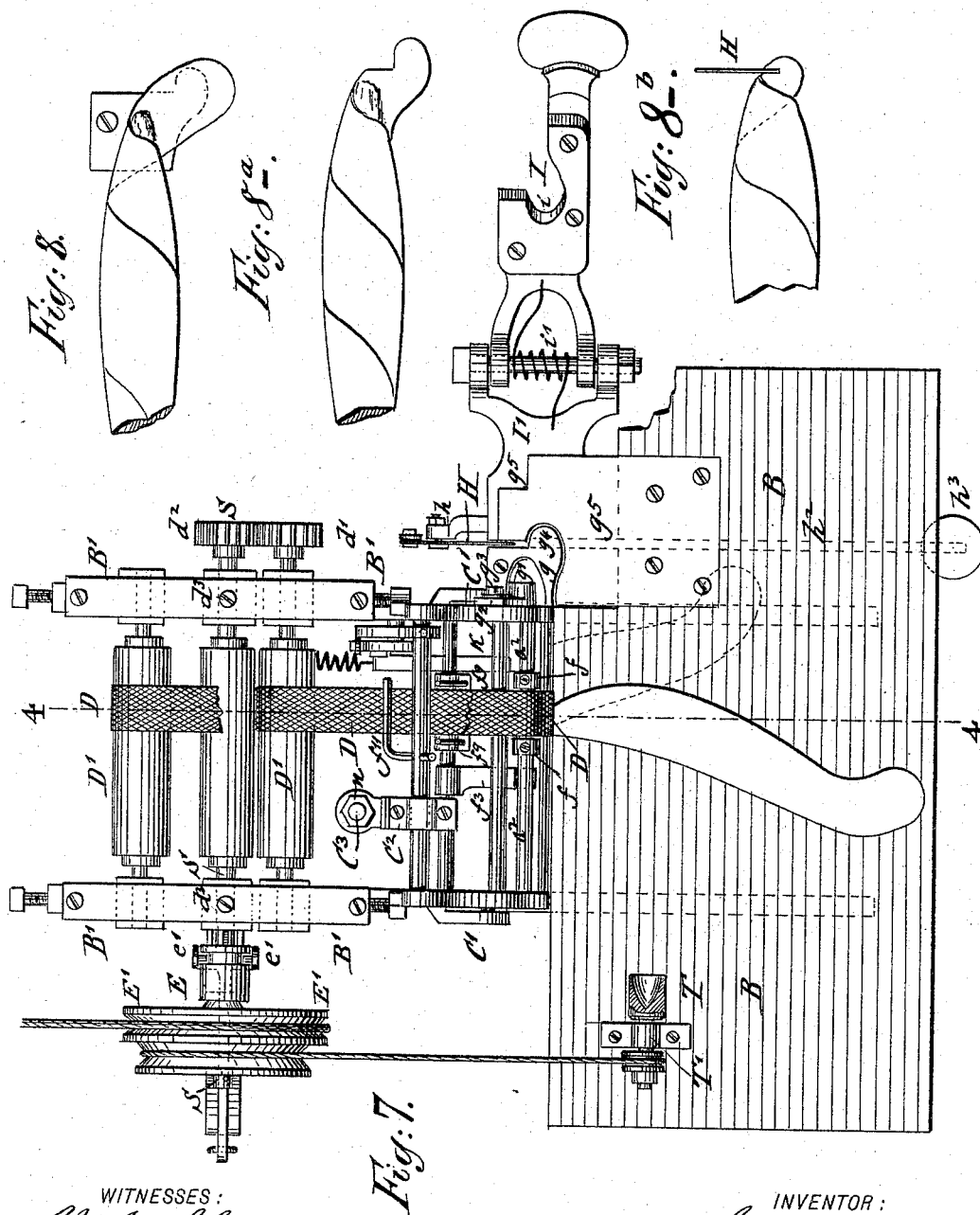
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3 Sheets—Sheet 3.

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CIGAR WRAPPING MACHINE.

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WITNESSES :

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UNITED STATES PATENT OFFICE.

GUSTAV HESSE, OF LONG ISLAND CITY, NEW YORK.

CIGAR-WRAPPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 492,203, dated February 21, 1893.

Application filed March 4, 1892. Serial No. 423,724. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV HESSE, a citizen of the United States, and a resident of Long Island City, in the county of Kings and State of New York, have invented certain new and useful Improvements in Cigar-Wrapping Machines, of which the following is a specification.

This invention has reference to certain improvements in that class of machines by which wrappers are placed around cigar-bunches as they are successively fed into the machine, said wrappers being rolled around the bunch in a uniform and reliable manner and the tip finished in a superior manner, ready for the action of the polishing thimble: and the invention consists, first, of the combination, with a stationary bunch-holder and an oscillating bunch-holder, both provided with guide-rollers, of an endless apron that is passed over said bunch-holders and adjusted by suitable tension-rollers at the inner and outer ends, and of an ejecting-device by which the cigar, after being wrapped, is automatically ejected from the space between the bunch-holders.

The invention consists, secondly, of the combination, with a stationary bunch-holder and an oscillating bunch-holder both having guide-rollers, of an endless apron guided on the guide-rollers of the bunch-holders and on adjustable tension-rollers, a fixed mandrel at one side of the endless apron, and a stationary tip-forming block at the other side of said apron, said block being formed of a lower stationary part and an upper concave adjustable part.

The invention consists, thirdly, of the combination with the tip-forming device provided with a slitted extension-plate, of an oscillating blade for slitting the projecting end of the wrapper and a hinged and spring-actuated cutter by which the exact shape required for the tip is imparted to the same.

The invention consists, lastly, of certain details of construction and combination of parts, as will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents an end-elevation, partly in section, of my improved cigar-bunch wrapping machine: Fig. 2 is a detail horizontal section, drawn on a larger scale, showing the arrange-

ment of the stationary mandrel and of the ejecting-device: Fig. 3 is a side elevation, partly in section of my improved machine: Fig. 4 is a vertical longitudinal section of the same on line 4 4, Fig. 7: Fig. 5 is a detail side-view of a pair of rollers of the bunch-holder: Fig. 6 is a detail sectional top-view of the ejecting-device by which the cigar is removed from the space between the bunch-holders after the wrapper is placed around the same: Fig. 7 is a plan-view of the machine, showing parts broken away and other parts in section: and Figs. 8, 8^a and 8^b show the tip end of the wrapper and the mode of shaping it around the tip of the bunch.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the supporting-frame of my improved cigar-bunch wrapping machine, B a horizontal table which is supported above the top-plate of the supporting-frame and C C' the bunch-holders of which the lower one is supported stationary on the upright side-standards B' of the table B, in such a manner, that the front guide-roller of the same is on a level with the table B. The upper bunch-holder C' is pivoted to the supporting side-standards B' and connected at its upper end with a pivot-rod C², the lower end of which is attached by a screw-nut *n* to the upper threaded end of a connecting rod C³. The connecting-rod C³ is guided in the lower part of an oscillating hanger C⁴ and acted upon by a helical spring S which is interposed between a nut *n'* on the rod and the lower part of the hanger, said hanger being pivoted to the keeper at the underside of the top-plate of the frame A, as shown in Fig. 4, the connecting-rod being applied in the usual manner at its lower end to a treadle (not shown in the drawings), by which the upper bunch-holder is lifted away from the lower bunch-holder on depressing the treadle, or returned by the actuating-spring of the connecting-rod C³ into its former position, when the treadle is released.

Each bunch-holder C or C' is formed of a number of bunch-holding rollers *a a'*, of which those of the lower bunch-holder turn in bearings of the supporting standards B', while those of the upper bunch-holder C' turn in bearings of the side-plates of the same. The

shape of the bunch-holding rollers $a a'$ corresponds to the general shape of the bunches to be wrapped by the machine, as shown in Fig. 5.

5 Besides the bunch-holding rollers $a a'$, guide-rollers a^2 are arranged sidewise of said rollers, over which an endless apron D is guided, to which the required degree of tension is imparted by means of adjustable tension-rollers D' , of which one is arranged in
10 the inner bight of the endless apron D, after the same has been passed between the bunch-holding rollers $a a'$ of the bunch-holders, and the other in the outer bight of the apron, as
15 shown clearly in Fig. 4. The tension-rollers D' are supported in bearings that are guided in ways D^2 of the side-standards B' , said bearings being adjusted by means of set-screws d , so that the proper tension is readily imparted
20 to the endless apron D.

Rotary motion is imparted to the tension-roller D' located in the interior bight of the apron D by a gear-wheel d' which meshes with a gear-wheel d^2 at the end of a driving-shaft S that turns in bearings secured to the
25 ways D^2 by set-screws d^3 , said shaft receiving rotary-motion by a suitable belt and pulley-transmission that is actuated by a foot-operated treadle or by power-driven counter-shaft
30 or by other means. The driving-shaft S is provided with a clutch E by which it is connected with the hub of the loose driving-pulley E' , the clutch E being operated by means of a fulcrumed and spring-actuated
35 lever e , the forked upper end e' of which engages by pins an annular groove of the clutch E, while the outer spring-actuated end of the lever e is connected by a pivot-rod e^2 with a suitable treadle, so that on depressing or releasing the latter, the clutch E is moved into
40 mesh with or withdrawn from the pulley E' , so as to produce the starting or stopping of the machine. By the rotary motion transmitted to the inner tension-roller D' motion
45 is imparted to the endless apron D around the bunch-holding rollers $a a'$, guide-roller a^2 and outer extension-roller D' .

The guide-rollers a^2 are provided with fixed collars f , between which the apron D is
50 guided, said collars serving to retain the apron in proper position relatively to a stationary mandrel F which is located at one side of the apron D, as shown in Fig. 2 and in line with the axis of the bunch, while a stationary tip-forming device G is located at the opposite
55 side of the apron, as shown clearly in Fig. 1. The shank f' of the mandrel F is supported in a sleeve f^2 at the end of an arm f^3 , the mandrel being permitted to turn on its axis
60 in the sleeve f^2 , but prevented from shifting in longitudinal direction by means of a set-screw f^4 , which engages an annular groove f^5 , on the shank of the mandrel. The arm f^3 is applied by a sleeve f^6 and set-screw f^7 to a
65 fixed transverse rod f^8 which is supported by the side-standards B' . By adjusting the sleeve f^6 on the fixed rod f^8 the mandrel F

can be adjusted relatively to the apron, according to the size of the bunch to be wrapped. The guide-collars $f f'$ of the apron are also
70 made adjustable on their rollers a' , so as to permit the adjustment of the apron to the position required by the different sizes of bunches. The inner portion or bight of the endless apron D is guided between fingers f^9
75 f^9 which are attached to projecting lugs of a sleeve f^{10} located on the transverse rod f^8 , as shown clearly in Fig. 2, said rods serving to guide the inner bight of the apron, so as to permit the shifting of the apron, according
80 to the size of the bunch to be wrapped. A bent arm f^{11} is applied to the transverse pivot-rod by which the upper bunch-holder C' is connected to the rod C^2 , said arm extending across the upper part of the apron D, so
85 as to preserve the tension of the same when the upper bunch-holder is moved into a raised position by the connecting-rod C^3 and its actuating treadle.

The tip-forming device is composed of two
90 parts, a lower concave section or block g and an upper concave section g' , the slotted shank g^2 of which is adjusted by means of a set-screw g^3 on the side-plate of the upper bunch-holder C' , said upper section g' being arranged nearer
95 to or farther away from the lower tip-forming block g , according as a blunt or pointed head is to be formed. The lower tip-forming section or block g is provided with a straight cut-off portion near the end of its depression
100 or cavity, said straight portion being at right-angles to the axis of the block, and with a semi-circular portion g^4 which extends by an inwardly drawn curve toward the side of the block g , as shown clearly in Fig. 7. Around
105 the lower tip-forming block g extends a horizontal bracket-plate g^5 which is attached to the table B, while its outer yielding end extends around the tip-forming block g , so as to form a slit between it and the block. The
110 straight portion of the slit serves for permitting the entrance of an oscillating cutting-knife H which is fulcrumed to a fixed supporting lug h and connected at its lower end by a link h' with the fulcrumed lever h^2 that
115 is provided at its front-end with a knob h^3 that is depressed by a finger, so that the blade H is quickly moved forward, so as to make a shortslit into the projecting tip-forming end in the wrapper, as shown in Fig. 8^a. A trim-
120 ming-knife I which is pivoted to a bracket I' , attached to one of the side-standards B' , immediately below the tip-forming block g , as shown in Figs. 1 and 7, is then brought down on the yielding bracket-plate g^5 by a quick
125 blow of the hand on its knob. The trimming-knife I is provided with a recess i having a sharpened edge that corresponds exactly to the projecting-portion g^4 of the lower tip-forming block g , so that the trimming-knife
130 I trims the tip-end of the wrapper to the shape shown in Fig. 8^a in connection with the projecting portion g^4 and the yielding plate g^5 . A helical spring i' is placed on the pivot of

the trimming-knife I, one end being applied to the bracket and the other end to the shank of the knife, so that the latter is lifted up immediately after it has been lowered by a blow.

5 The trimming-knife I is made interchangeable, also the projecting portion g^4 of the tip-forming block g , so that these parts can be detached and exchanged, so as to be adapted for any required shape of tip. As

10 the tip-end of the wrapper is drawn in and wrapped around the tip of the bunch, a small rounded off portion of the wrapper is left near the tip of the bunch, as shown in Fig. 8^b. This rounded off tip-end of the

15 wrapper is next slitted by again actuating the cutting-blade H, as shown in Fig. 8^b, after which the cigar is finished by applying paste to the extreme end of the wrapper, the latter being pressed by the fingers around the tip

20 of the bunch. The cigar is then removed from the bunch holder and the tip of the cigar is then inserted into a quickly rotating thimble T, the shank of which turns in suitable bearings of a standard T' that is attached to the lefthand side of the table B,

25 said thimble being rotated by a belt and pulley transmission from the driving-shaft S, as shown clearly in Figs. 1 and 7. Whenever it is desired to remove the cigar from the space

30 formed between the bunch-holding rollers a a' , the upper bunch-holder C' is raised by lowering the actuating-treadle of the same. Simultaneously with raising the upper bunch-holder C', the tension-arm f^{11} is pressed on

35 the upper part of the endless apron D, so as to take up the slack of the same. At the same time an ejecting-device L is operated by which the cigar is pushed out onto the table B. The ejecting-device L is composed of an

40 ejecting-arm l which is curved at its outer end and fitted into an annular recess of one of the bunch-holding rollers a of the lower bunch-holder C. The rear end of the arm l is pivoted to an eccentric cam l' that turns

45 loosely on the end of a short shaft l^2 of the side-standard B', as shown clearly in Fig. 2, said cam being provided with an offset l^3 that is engaged by the lower end of a curved and downwardly-extending arm l^4 , the upper end

50 of which is attached to the uppermost rod of the upper bunch-holder C', as shown clearly in Figs. 1, 3 and 4. A helical spring l^5 is applied to the rear-end of the ejecting arm l and to the rear-part of the side-standard B', so

55 that the eccentric l' and the ejecting-arm l are returned into their normal position as soon as the upper bunch-holder is returned again into its forward position on the release of the actuating treadle of the same. The

60 raising of the upper bunch-holder C' actuates by the curved arm l^4 the eccentric cam l' , so as to turn it on its axis and produces thereby the forward motion of the ejector, whereby the cigar is pushed from the space between

65 the bunch-holders C C' on the table B. As long as the treadle of the bunch-holder is de-

pressed, the ejecting-device is also held in its forward position, the spring l^5 being in tension, but as soon as the treadle is released and the upper bunch-holder returned into its downward position, the eccentric l' and the ejecting-arm l are returned into their former positions by the action of the spring and retained in this position until they are actuated again for ejecting the next cigar.

75 My improved cigar bunch-wrapping machine is operated, as follows: The bunch is taken from the mold and inserted into the space formed between the apron and the bunch-holders C C', for which purpose the upper bunch-holder C' is raised for a moment. The wrapper is next placed on the table B and its pointed butt-covering end inserted between the apron at the butt-end of the bunch. Motion is next imparted to the apron by moving the clutch into mesh with the transmitting pulley, so that the bunch is quickly rotated by the action of the apron and the wrapper quickly drawn in and wrapped around the bunch in connection with the pressure

90 of the bunch-holding rollers, as indicated in dotted lines in Fig. 7, which shows an intermediate position of the wrapper. When the wrapper is wound around the bunch nearly up to the tip, the projecting end of the same overlaps the lower head-forming block and is then provided with the first slit by the action of the oscillating-cutter H. For this purpose the machine is stopped for a moment. The

95 trimming-knife I is then brought over so as to trip the tip-end of the wrapper, after which the machine is started again, so that the trimmed end of the wrapper is drawn in still more until only the small semicircular end of the tip-end projects sidewise of the tip of the bunch. This is again slitted by the action of the oscillating-knife H. The slitted and unwrapped tip-end of the wrapper is then supplied with paste and carefully pasted around the tip of the cigar by pressing the finger on the tip end while rotating the cigar by the

105 apron. The upper bunch-holder C' is next raised and the cigar ejected from the space between the bunch-holders by the action of the ejecting-device. The tip is then polished by means of the thimble T. The next bunch is then inserted into the space between the bunch-holders and the same operation repeated.

120 For working off lefthand wrappers, a second machine is used, in which the position of the mandrel, tip-forming blocks, thimble, &c. is reversed, that is to say, arranged at the opposite side of the axis of the machine, as both right and lefthand wrappers cannot be

125 wrapped around the bunches by the same machine.

When cheroots are to be wrapped by the machine, a tip-forming block that corresponds to the shape of the tip-end of the cheroot is used and after the wrapping of the bunch, the projecting end of the wrapper is trimmed off

130

by the knife H. The trimming-knife I is not called into action, and remains in the position shown in the drawings.

The advantages of my improved machine for wrapping cigar-bunches are, first, the quick, reliable and uniform rolling of the wrapper around the body of the bunch, and secondly, the finish that is given to the tip of the same by the gradual shaping of the tip-end of the wrapper by the slitting and trimming-knives, whereby a close imitation of a handmade tip is produced, while the extra time required for shaping the tip-end of the wrapper is compensated to some extent by the quick action of the ejecting-device, by which the space between the bunch-holders is cleared so as to receive the next bunch.

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

1. The combination, with a tip-forming device, formed of a lower stationary section and an upper adjustable section, of an oscillating slitting-blade arranged at right-angles to the axis of the tip-forming device, a yielding plate extending around the lower tip forming block and a pivoted and spring-actuated trimming-knife which corresponds to the shape of the stationary tip-forming section, so as to produce the required shape of the tip-end of the wrapper, substantially as set forth.

2. The combination of the lower head-forming block, having a straight outer edge at right-angles to its axis and a semi-circular extension, a yielding bracket-plate extending around the lower tip-forming block a pivoted and spring actuated trimming knife which corresponds to the shape of the stationary tip forming section, and an oscillating-blade for slitting the tip-end of the wrapper, substantially as set forth.

3. The combination, of the lower tip-form-

ing block having a straight outer edge at right-angles to the axis of the same and a semi-circular extension, a yielding bracket-plate extending around the lower tip-forming block, a pivoted and spring-actuated trimming-knife, which trimming-knife is adapted to remove the surplus stock from the tip-end of the wrapper preparatory to wrapping the tip-end of the bunch, and an oscillating blade for slitting the top of the wrapper, substantially as set forth.

4. The combination, with a lower stationary bunch-holder and an upper oscillating bunch-holder, said holders having bunch-holding rollers and guide-rollers, of an endless apron passing between the bunch-holders and over said rollers, driving and tension-rollers for said apron, and a bunch-ejecting device operated by the oscillating bunch-holder, substantially as set forth.

5. The combination, with a lower stationary bunch-holder, an upper oscillating bunch-holder, said bunch-holders having bunch-holding rollers and guide-rollers, and an ejecting-device composed of an arm having a bent outer end and arranged in an annular recess of one of the bunch-holding rollers, an eccentric cam to which the rear-end of the arm is pivoted, a curved arm attached to a transverse rod of the oscillating bunch-holder, the lower end of said arm engaging a shoulder or projection on said cam and a spring attached to the ejecting arm and a fixed point of the supporting-frame, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

GUSTAV HESSE.

Witnesses:

PAUL GOEPEL,
CHARLES SCHROEDER.