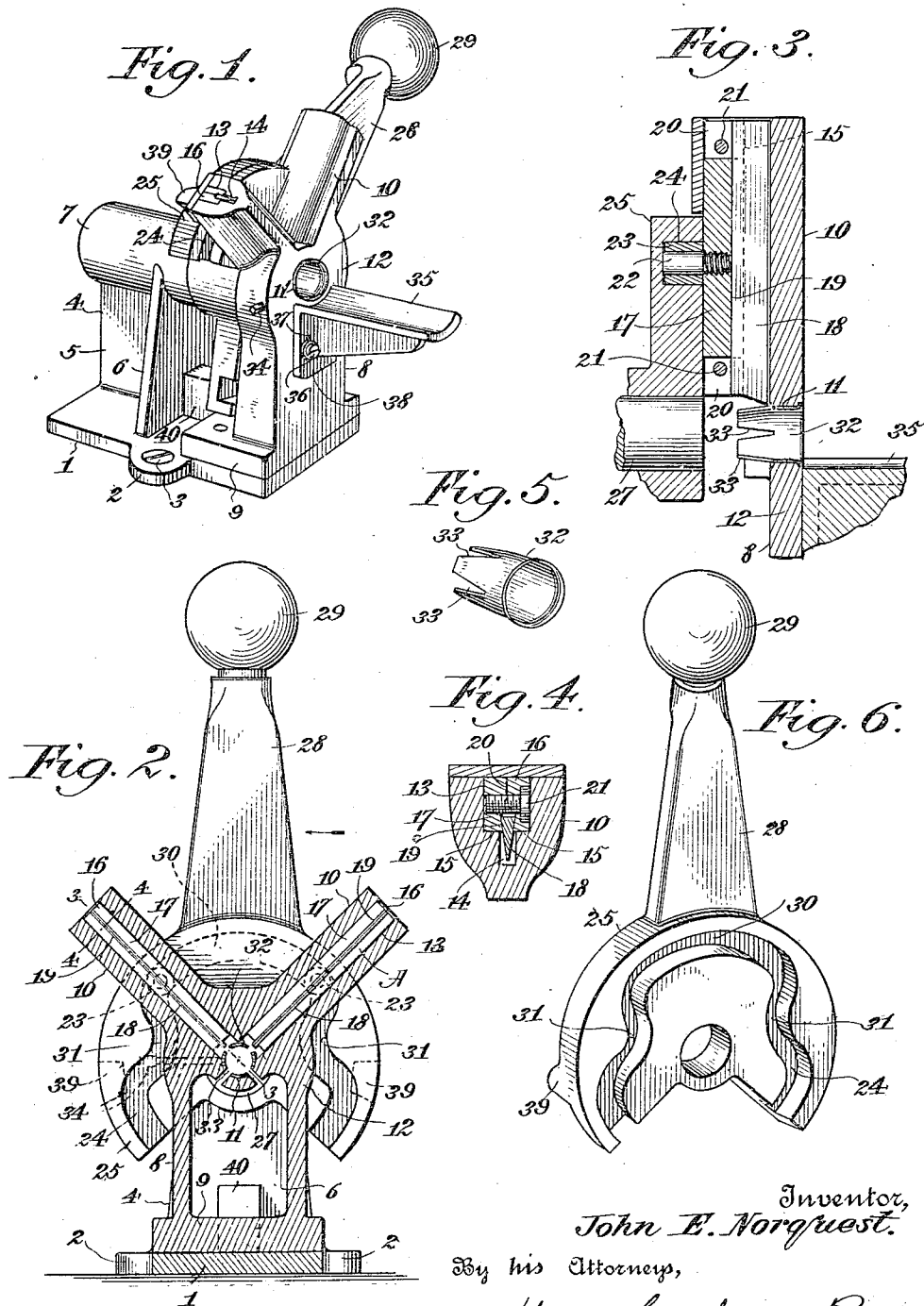


J. E. NORQUEST.
CIGAR SLITTING MACHINE.
APPLICATION FILED DEC. 1, 1916.

1,245,012.

Patented Oct. 30, 1917.



Inventor,
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By his Attorney,
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UNITED STATES PATENT OFFICE.

JOHN EMIL NORQUEST, OF RICHMOND, VIRGINIA, ASSIGNOR TO P. LORILLARD COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CIGAR-SLITTING MACHINE.

1,245,012.

Specification of Letters Patent.

Patented Oct. 30, 1917.

Application filed December 1, 1916. Serial No. 134,311.

To all whom it may concern:

Be it known that I, JOHN EMIL NORQUEST, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Cigar-Slitting Machines, of which the following is a specification.

This invention relates to a machine for slitting the ends of cigar bunches preparatory to the application of wrappers. As is well known to those engaged in the manufacture of cigars, it very frequently happens that the bunches, during the formation of the rounded or mouth ends, will be compressed or compacted to such an extent as to interfere with the free drawing qualities of the cigars when being smoked. In order to remedy such faulty compression or packing of the rounded ends of cigars, it is the common practice for the cigar-makers or operators to bite off the tips of the bunches after they have been rolled and before the wrapper has been applied, and this procedure is naturally exceedingly slow, tedious and unsanitary in addition to rendering it practically impossible to make all of the cigars of a lot uniform as to the mouth ends thereof.

In order to obviate these objections and to insure free drawing and wholesome cigars of uniform shape and size, especially as to the rounded or mouth ends thereof, I provide a manually operated machine through the agency of which the cigar bunches may be slitted expeditiously and in a sanitary manner preparatory to the placing thereon of the outer wrappers, thereby not only avoiding the breaking of the bunch but obtaining the production of free-drawing, wholesome and uniform cigars.

Another object of the invention is the production of a manually operable machine of this character wherein a plurality of knives are reciprocated angularly relative to each other thereby enabling the bunch ends to be slitted at different points to positively insure that the completed cigars will draw freely while being smoked.

Furthermore, I propose to provide a machine of this character having an adjustable support upon which the bunches are placed for the guidance of the ends thereof into a suitable thimble detachably held in

bunch-receiving position, the compound slitting of the bunches being accomplished by reciprocatory knives which are actuated successively through suitable mechanism provided for this purpose.

With the above recited objects and others of a similar nature in view my invention consists in the construction, combination and arrangement of parts set forth in and falling within the scope of the appended claims.

In the drawing:

Figure 1 is a perspective view of the machine.

Fig. 2 is a vertical transverse sectional view taken through the knife guides and showing the actuating lever in one of its neutral positions.

Fig. 3 is a sectional view taken on the line 3—3 in Fig. 2.

Fig. 4 is a detail sectional view taken on the line 4—4 in Fig. 2.

Fig. 5 is a detached perspective view of the thimble.

Fig. 6 is a similar view of the actuating rocking lever and its associated grooved cam.

Referring now to the drawing in detail, the numeral 1 designates a base having apertured lugs 2 for the reception of fastening elements such as screws 3 for the attachment of said base 1. Mounted upon the base 1, and formed integral therewith is a standard 4, consisting of right angularly disposed members 5 and 6, which support a horizontally disposed bearing 7.

The numeral 8 designates a standard having a horizontally disposed flange 9, which rests upon the base 1, and receives fastening elements such as screws or the like, which pass through the base 1, thereby rendering the standard 8 detachable. The standard 8 has formed integrally therewith divergent guides 10, which extend radially from the axial center of a preferably circular opening 11, horizontally disposed in the vertical portion 12 of the standard 8. The guides 10 are each provided with a guideway 13, and a supplemental way 14, which communicates with the guideway 13 throughout its length. The supplemental way 14 is of smaller dimensions cross sectionally than the guide 13, hence shoulders 15 are produced as clearly shown in Fig. 4, of the drawing.

The divergent guides 10 are disposed at a right angle.

Mounted for reciprocation in the guides 10 are knives 16, each consisting of a stock 17 and a blade 18, said blade being detachably secured or clamped to the stock 17. The detachable securing of the blade is preferably accomplished by providing the stock in one face thereof with a longitudinal groove 19 and by bifurcating said stock at the ends thereof, as at 20 as shown in Fig. 3. The blade 18 is positioned in the groove 19 after which clamping elements in the nature of screws 21, are made to bring the opposed portions of the stock 17 produced by the bifurcations at the ends thereof, together to securely clamp the blade 18 thereto. The stocks 17 are movable in the guide-ways 13, in the guides 10, and the blades 18 move in the supplemental ways 14, as will be understood. The shoulders 15 permit of the proper operation of the knives.

As stated, it is my intention to move each knife up and down before it is succeeded by a similar movement of the other knife which respectively remains inactive during such movement of the first mentioned knife. This is preferably accomplished by providing each knife stock 17 with a stud 22 having freely rotatable thereon an anti-friction roller 23, both of which extend into a groove 24 of a cam 25. The cam 25 has formed integral therewith or secured thereto in any suitable manner a stub rocker shaft 27 mounted in the bearing 7 for a rocking movement. Extending radially from the cam 25 is a lever 28 having a manipulating knob 29 at the free end thereof whereby movement may be imparted to the grooved cam 25. The groove 24 is of a circuitous form. It is concentric to the axis of the shaft 27 for a portion of its length, as at 30, and it has reversely curved portions 31—31 which are eccentric to the axis of the shaft 27. The reversely curved eccentric portions 31—31 of the grooves are so spaced relatively to each other that the knives 16 work in timed accord for the successive reciprocations thereof.

Positioned in the opening 11 is a thimble 32. The said thimble is adapted to receive the end of the cigar bunch preparatory to the slitting thereof, and as will be seen by reference to Fig. 5, the wall of the thimble is provided with a plurality of V-shaped notches 33, in the present instance four in number. These notches permit the passage of the blades 18, and each of these blades, as will be understood by reference to Fig. 4, is also approximately V-shaped in cross section, thus conforming to the shape of the notches of the thimble through which it passes, and as will be readily understood by reference to Fig. 2, the knives co-act of course with the walls of the V-shaped

notches 33 of the thimbles on the principle of a cutting die, to cut small V-shaped sections or pieces from the tip or end of the bunch, thus forming the slits herein mentioned. At this point I might state that, as will be readily appreciated, the V-shaped slits will extend in spaced relation longitudinally in the tip end of the bunches with the apex of each slit pointing inward of the body of the bunch, and the knives will also of course cut through the tip of the bunch transversely of the latter so that the small triangular sections are thus removed from the tip, and consequently when the wrapper is to be applied to the bunch to complete the cigar or cheroot the four separated sections of the bunch tip formed in the cutting operation may be drawn or pressed together, forming a reduced, uniformly tapered and rounded end for the cigar. Thus, in addition to imparting the desired taper to the end of the cigar, the latter will draw freely when smoked as the cutting of the V-shaped notches or slits and the removal of the small portions of the bunch material incident to such cutting will obviate any compacted or compressed condition which may have existed when the bunch was originally rolled. Thimbles of various sizes and shapes may be used according to the size and shape of cigar bunch that is to be slitted and to achieve this feature of the machine I intend to temporarily hold the desired thimble in the opening 11 in its proper relation with respect to the knives by a set screw 34. It will therefore be manifest that the thimbles may be used as desired and as the occasion demands. It also allows such thimble to be arranged in axial alinement with the shaft 27 of the cam 25 for the proper slitting of the "bunch". The numeral 35 designates a "rest" upon which the bunches are initially placed for the guidance of the closely packed ends of such bunches into the thimble 32. The rest 35 is adjustably attached to the vertical portion 12, of the standard 8, by means of screws 36, or the like, which pass through slots 37 in the vertical portion 38 of the rest, and take into the standard 8. This makes it possible to arrange the rest 35 with respect to the thimble 32 in the best manner for the successful guidance of the "bunches" into the thimble.

In reference to Fig. 2 of the drawing it will be seen that the lever 27 has been moved to a position about midway of its distance of travel, and should the lever be moved farther in the direction of the "arrow" the knife marked by the letter A will be caused to reciprocate while the other knife remains inactive since the anti-friction roller on the said other knife extends into the concentric portion 30 of the groove 24, as will be understood. The movement of the cam 35 in

either direction is limited by lugs 39 on said cam which come into contact with the stop 40 on the base 1. It will be noted that one complete movement of the cam will reciprocate both knives in succession in order to accomplish the double or intersecting slitting of the end of the bunch, in other words, a single throw or movement of the lever 28 in one direction is all that is necessary to actuate both the knives up and down and in succession to cut the end of the bunch with longitudinally extending intersecting slits passing transversely therethrough.

While I have herein shown and described a preferred embodiment of my invention, I wish it to be understood that I do not confine myself to all the precise details of construction herein set forth by way of illustration, as modification and variation may be made without departing from the spirit of the invention or exceeding the scope of the appended claims.

What I claim is:

1. In a machine of the class described, the combination with means for holding a cigar bunch, of cutting mechanism operable to cut a plurality of slits longitudinally in one end of the bunch and transversely therethrough, thus cutting out some of the material of the bunch end whereby the remaining portions of such end may be brought together to form a rounded, tapered, reduced tip, and means for manually operating the cutting mechanism.

2. In a machine of the class described, the combination with means for holding a cigar bunch, of cutting mechanism operable to cut a plurality of intersecting slits longitudinally in the bunch end and transversely therethrough thus cutting out some of the material of the bunch end whereby the remaining spaced portions of such end may be brought together to form a rounded, tapered, reduced tip, and means for manually operating the cutting mechanism.

3. In a machine of the class described, the combination of means for holding a cigar bunch, a plurality of cutters operable to cut a plurality of slits longitudinally in the bunch end and transversely therethrough, thus cutting out some of the material of the bunch end whereby the remaining spaced portions of such end may be brought together to form a rounded, reduced tip, and manually operable means for actuating the cutters successively while said operating means is moving in one direction.

4. In a machine of the class described, the combination with means for supporting a cigar bunch to be slit, of a plurality of knives arranged at relatively different angles and manually operable means for actuating said knives successively to cut a plurality of V-shaped slits in the bunch end, thus cutting out some of the material of the

bunch end whereby the remaining spaced portions of such end may be brought together to form a rounded, tapered tip.

5. In a machine of the class described, the combination with a thimble having a plurality of spaced notches cut therein, and a support for the thimble, of a plurality of cutters V-shaped in cross section arranged adjacent the thimble, and manually operable means adapted to be actuated to operate the knives successively and to cut V-shaped slits in the end of a bunch inserted in the thimble, the material of the bunch removed by the cutter permitting the remaining portions of the bunch ends to be brought together to form a rounded, tapered tip.

6. In a machine of the class described, the combination with a support, of a thimble carried thereby and adapted to receive the end of a bunch, said thimble having a plurality of spaced notches formed therein in alining pairs, a pair of knives arranged at relatively different angles and adapted to reciprocate through alining notches of the thimble to slit the tip end of a bunch inserted within the thimble, and manually operable means for actuating the knives.

7. A machine of the class described including a standard, means on said standard for the guidance of cigar bunches, means for receiving and permitting the slitting of the ends of said cigar bunches, guides supported by said standard, knives movable in said guides, and reversely movable means for reciprocating the knives in succession when moving in either direction, to slit the ends of said cigar bunches.

8. In a machine of the class described including a standard, means on said standard for the guidance of cigar bunches, means for receiving and permitting the slitting of the ends of said cigar bunches, guides supported by said standard, knives movable in said guides, movable means for reciprocating the knives in succession when moving in either direction to slit the ends of said cigar bunches, and means for limiting the movement of the knife reciprocating means in either direction.

9. A machine of the class described, comprising a base, a standard having a bearing on said base, a second standard on said base and having an opening therein, divergent knife guides having ways therein, a thimble in said opening having its walls provided with notches, the ways in said knife guides and the notches in said thimble being in communication, a grooved cam having a stub shaft, the latter being journaled in the bearing of the first mentioned standard, said shaft and grooved cam being reversely movable, a knife movable in the ways of each of said divergent knife guides, a roller carried by each knife and extending into the groove of said cam, and a rest

arranged in juxtaposition to said thimble, as and for the purpose specified.

10. A machine of the class described, comprising a base, a standard having a bearing
5 on said base, a second standard on said base and having an opening therein, divergent knife guides having ways therein, a thimble in said opening having its walls provided with notches, the ways in said knife guides
10 and the notches in said thimble being in communication, a grooved cam having a stub shaft, the latter being journaled in the bearing of the first mentioned standard, said shaft and grooved cam being reversely movable, means for limiting the movement of
15 the shaft and cam in either of its directions of movement, a knife movable in the ways of each of said divergent knife guides, an anti-friction roller carried by each knife
20 and extending into the groove of said cam, and a rest supported by said second mentioned standard in juxtaposition to said thimble, as and for the purpose specified.

11. A machine of the class described, comprising a base, a standard having a bearing
25 thereon, a second standard on said base and having an opening therein, divergent knife guides, each having a guideway and a com-

municating supplemental way therein, a thimble in the opening and detachably held
30 therein, and having its walls provided with notches, the supplemental way of each knife-guide being in alinement with certain of the notches in said thimble, knives each consisting of a stock and a blade, an anti-fric-
35 tion roller carried by the stock, the stock being movable in the guideway of said knife-guide, and the blade being movable in the supplemental way thereof, a reversely movable grooved cam, the groove in said cam
40 being adapted to receive the anti-friction rollers to cause the knives to reciprocate successively upon the movement of said cam in either of its directions of movement,
45 means for limiting the movement of the cam in either direction, and a rest supported by the second mentioned standard and adapted to initially receive the cigar bunches for the guidance of its ends into said thimble
50 to be slitted.

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

JOHN EMIL NORQUEST.

Witnesses:

J. N. DART,

E. E. RAMSEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."