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CIGAR-FINISHING DEVICE.

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To all whom it may concern:

Be it known that I, RUPERT E. RUNDELL, a citizen of the United States, residing at Rockville Center, county of Nassau, and State of New York, have invented a new and useful Improvement in Cigar-Finishing Devices, of which the following is a specification.

This invention relates to an improvement in cigar finishing devices.

After a wrapper has been applied to a bunch in certain cigar making machines heretofore in commercial use, the head of the cigar is knurled to cause the flag of the wrapper to lie smoothly thereon, and the tuck end of the cigar is trimmed to give the finished product the desired length. Then, the cigar, otherwise finished, is rerolled to evenly distribute the filler within the wrapper if it has become displaced during the sequence of operations to which the bunch is subjected before it becomes a cigar. It has been found in practice that in making cigars of certain shapes, the rerolling of the cigar tends to loosen the flag of the wrapper on the cigar head where it had previously been smoothed down by the usual knurling operation. When this occurs, the cigars are set to one side, and at the end of the day's run, the defectively wrapped cigars are reknurled to again smooth down the flag of the wrapper on the head. In order to do this, however, it has heretofore been necessary to run the entire cigar making machine idly so that its knurling mechanism could be used.

The main object of the present invention is the production of a cigar finishing device wherein rerolled cigars are automatically transferred to a knurling mechanism operating to smooth down the flag of the wrapper, as the last operation performed on the cigar. Another object is the production of a device of this kind which includes a secondary knurler that is operative without operation of the entire cigar making machine. With these and other objects not specifically mentioned in view, the invention consists in certain constructions and combinations which will be hereinafter fully described and then specifically set forth in the claims hereunto appended.

It may be here remarked that although the function of the knurling mechanism or knurler hereinbefore referred to is "to

smooth down the flag of the wrapper, as the last operation on the cigar," the mechanics and machine operators in the industry refuse to designate it as an ironing or smoothing device. They invariably refer to it as a knurler. The term to which they are accustomed is therefore used herein.

In the accompanying drawings which form a part of this specification and in which like characters of reference indicate the same or like parts, Fig. 1 is a plan view of a device constructed in accordance with the invention, certain parts being omitted because well known; and Fig. 2 is an end elevation of the structure shown in Fig. 1.

In carrying the invention into effect, there is provided rerolling means for rerolling a wrapped cigar, and mechanism automatically receiving a cigar from this rerolling means and acting to knurl its head as the last operation to be performed on the cigar, so that nothing will disturb the flag of the wrapper as it becomes set in place on the cigar head. In the best constructions, there is also provided a selective drive for operating said mechanism with or without operation of the rerolling means, so that the two may be run together during a day's run, and the knurling mechanism may be run alone if necessary to reknurl defectively wrapped cigars. This means and mechanism may be widely varied in construction within the scope of the claims, for the particular device selected to illustrate the invention is but one of many possible concrete embodiments of the same. The invention, therefore, is not to be restricted to the precise details of the structure shown and described.

Referring to the drawings, 3 indicates a reroller, of well known construction and operation, which is adapted to reroll a wrapped cigar. This reroller is given an oscillating movement as usual by means of a pinion 4 fast on its shaft 5 (not shown in Fig. 1), the pinion being rocked by a rack 6 having a reciprocating movement derived from one of the cams (not shown) of the cigar making machine in connection with which the device is used. The reroller shaft 5 is journaled in bearings 7-7 formed on a bracket 8 rising from the bed 9 of the cigar machine proper. Coacting with the reroller 3 is a rerolling apron 10 constructed and operating in the usual manner. The wrapped

cigars are automatically delivered to the re-rolling mechanism at 11 and rolled to a position within the range of action of means for holding the cigar while its head is being knurled. This holding means, as shown, includes two clamps 12 and 13, and the rerolling means rolls the cigar between these clamps. The lower clamp 12 is supported by a bar 14 which in turn is supported by a bracket 15. The upper clamp 13 is supported by a rockshaft 16 which in turn is supported by bearings 17 formed in a bracket 18 which is integral with the bracket 15 and supported by a bar 19 which also supports the rerolling apron 10. The bar 19 is supported by a small bracket 20 rising from the bed 9 before referred to.

The rockshaft 16 carries at one of its ends a short arm 21 having a cam surface 22 on its under side. This cam surface is engaged by a cam bowl 23 mounted on the upper end of a lever 24 fulcrumed at 25 to a small bracket 26 which is supported by the bed 9. Pivoted to this lever at 27 is one end of a connecting rod 28, the other end of the rod being pivotally connected to a cam lever 29 actuated by one of the cams (not shown) of the cigar machine proper. The arm 21 carries a stud to which one end of a tension spring 30 is connected, the other end of said spring being connected with a stud carried by the bracket 18. This spring acts to close the clamps or holding means on a cigar delivered thereto by the rerolling means, when the lever 24 moves to the left from the position in which it is shown in Fig. 2. The holding means is therefore spring-actuated and cam-controlled.

The holding means or clamps form a part of mechanism which also includes a knurler for smoothing the flag of the wrapper down on the head of the cigar held in the clamps. And there is further provided means for producing relative movements of the cigar and knurler whereby they are engaged and disengaged alternately. As shown, the cigar is held stationary, and the knurler is moved toward and away from the head of the cigar. This is accomplished by means of the lever 24 which carries a second roller 31 tracking in an annular groove in a collar 32 fast on the spindle of a knurler 33 the axis of which is coincident with the axis of a cigar held in the clamps 12 and 13. The knurler is moved in toward the head of a cigar as the clamps close on said cigar. When rotating in contact with the head of the cigar, it smooths the flag of the wrapper down on the head. Then the knurler retreats and the clamps open up to permit the removal of the finished cigar therefrom, no later operation being performed.

As shown, the knurling mechanism is provided with two knurlers the axes of which lie at right angles to each other, the knurler

33 being a primary knurler used in connection with the reroller during a day's run and automatically coming into operation when the reroller delivers a cigar to the clamps 12 and 13. The other is a secondary knurler marked 34 which is used in reknurling defectively wrapped cigars which may have accumulated during a day's run, or a shorter period. Associated with this secondary knurler is a cigar rest 35 upon which the machine operative places the defective cigar and gently pushes its head into the rotating secondary knurler 34 wherein the flag of the wrapper will be smoothed down on the head of the cigar.

To avoid the necessity heretofore existing for operating the entire cigar making machine while defectively wrapped cigars are being reknurled, there is provided a selective drive for operating said mechanism with or without operation of the rerolling means, the latter being driven from the main power shaft of the cigar machine proper. To this end, the spindles of the knurlers 33 and 34 are intergeared in a well known manner in a gear box 36 and derive their motion from a shaft 37 projecting from said box. Upon this shaft is a loose pulley 38 rotated by a belt 39 deriving its motion from the main power shaft of the cigar machine proper. Beyond the pulley 38 and splined to the shaft 37 is a clutch 40 which may be engaged either with the loose pulley 38 and so cause the knurling mechanism to operate with the rerolling means, or which may be engaged with a clutch member 41 on the armature of an electric motor 42 and so cause the knurling mechanism to operate independent of the rerolling means. The clutch 40 is shifted on the shaft 37 by means of a shifting lever 43 of well known construction and operation.

By operating on the wrapped cigars in the new way described, the device avoids the tendency of the flag of the wrapper to work loose on the cigar head, and thereby materially reduces the percentage of defectively wrapped cigars produced during a day's run of the machine. And by means of the selective drive whereby the reknurling may be done without idle operation of the entire cigar machine, wear and tear on the latter is also reduced.

What is claimed is:

1. A cigar finishing device comprising rerolling means, and mechanism receiving a cigar therefrom and acting to knurl its head.

2. A cigar finishing device comprising rerolling means, and mechanism receiving a cigar therefrom and acting to knurl its head, said mechanism including means for holding said cigar while its head is being knurled.

3. A cigar finishing device comprising rerolling means, and mechanism receiving a

+ cigar therefrom and acting to knurl its head, said mechanism including spring-actuated and cam-controlled clamps for holding said cigar while its head is being knurled.

5 4. A cigar finishing device comprising re-rolling means, and mechanism receiving a cigar therefrom and acting to knurl its head, said mechanism including a knurler and means for producing relative movements of
10 said cigar and said knurler whereby they are alternately engaged and disengaged.

5. A cigar finishing device comprising re-rolling means, and mechanism receiving a cigar therefrom and acting to knurl its head, said mechanism including a knurler and 15 cam-actuated means for moving said knurler toward and away from the head of the cigar.

In testimony whereof, I have signed my name to this specification.

RUPERT E. RUNDELL.