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W. S. LUCKETT.

CIGAR MACHINE.

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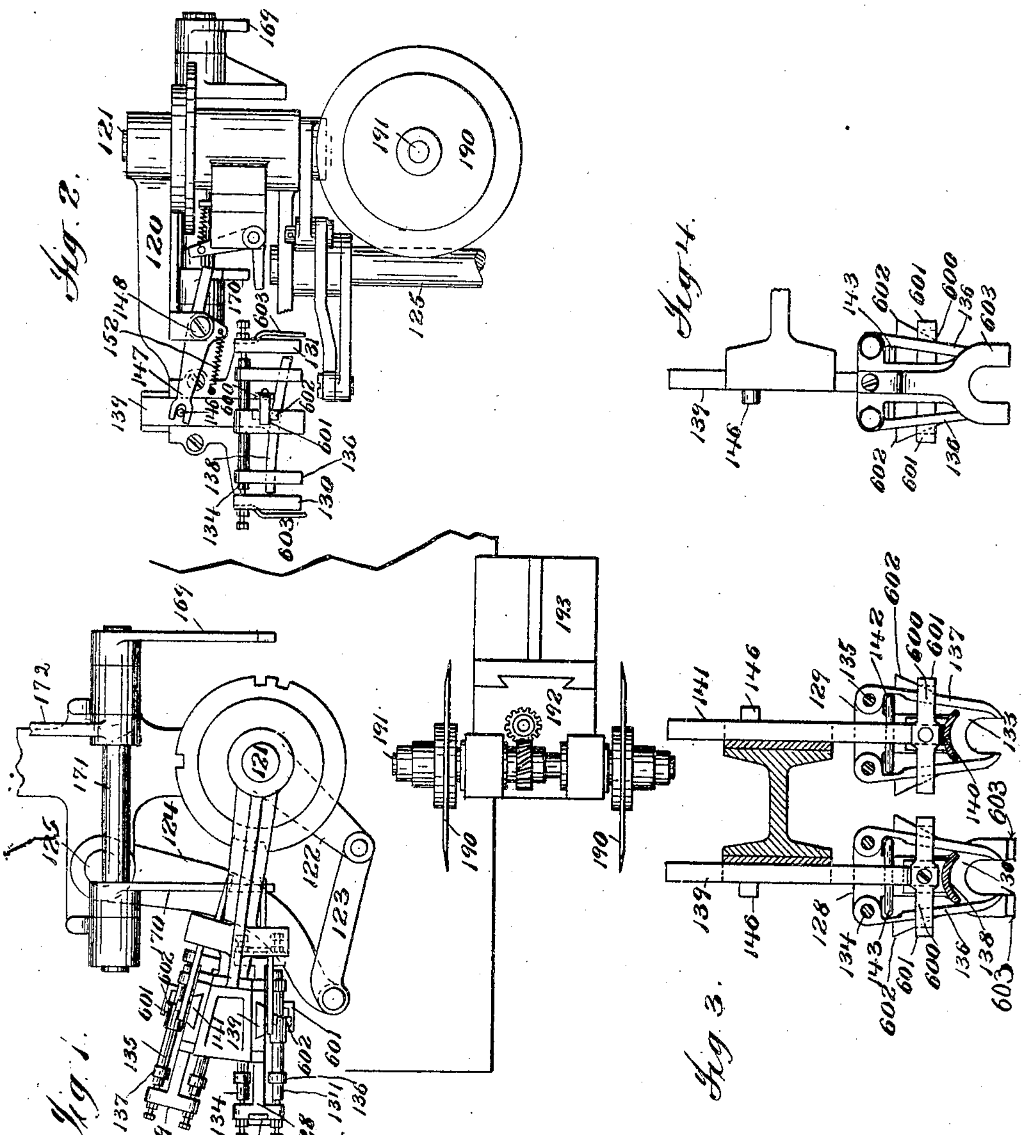

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UNITED STATES PATENT OFFICE.

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CIGAR-MACHINE.

No. 809,384. Specification of Letters Patent. Patented Jan. 9, 1906.

Application filed April 14, 1904. Serial No. 203,196.

To all whom it may concern:

Be it known that I, WILLIAM S. LUCKETT, a citizen of the United States, residing at East Orange, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Cigar-Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to certain improvements in cigar-machines.

In an application for a cigar-machine filed August 27, 1901, by Oluf Tyberg, said application being serially numbered 73,409, there is disclosed a mechanism for transporting bunches or cigars between the bunching mechanism and a forwarding mechanism for cigars and bunches. This transferring mechanism in the specific form shown in that application embodies a duplex carrier, each carrier comprising two sets of retaining-fingers and an ejector mounted between the fingers, one carrier operating to transport bunches from the forwarding mechanism and the other carrier operating to transport cigars to the forwarding mechanism. In the carriers therein shown the retaining-fingers are opened to receive and deliver the cigars or bunches by means operated by the ejector; but the retaining-fingers are closed by means of springs. In practice the use of springs has been found objectionable, among other reasons, because the retaining-fingers are apt to be accidentally opened and deliver the bunches or cigars at wrong times. In the machine shown in said application, furthermore, which machine is intended more particularly for the manufacture of that class of cigars known as "cheroots," the bunch after being wrapped in the wrapping mechanism has its ends trimmed by a cutting mechanism comprising a pair of circular knives so located as to be moved into and out of the path of the movable carrier. In that construction these cutting-knives cooperate with rigid shear-plates mounted on the ends of one of the carriers. It is necessary, however, that the adjustment of the carrier and knives be very fine in order that the knives may in their operation come into close relation with the shear-plates, so as to effect a clean cut.

The present invention has for one of its objects to produce a carrier for transporting cigars or bunches comprising two sets of retainers and a suitable ejector, the retainers after being opened being closed by positive means actuated by the ejector.

A further object of the invention is to produce an improved cutting mechanism for trimming cigars while in a movable carrier, said mechanism including yielding shear-plates mounted on the retainer-carrier.

With these and other objects not specifically referred to in view the invention consists in certain constructions and in certain parts, improvements, and combinations, as will be hereinafter fully described and then specifically pointed out in the claims hereunto appended.

In the accompanying drawings, Figure 1 is a plan view of so much of a carrier mechanism of a cigar-machine and its coöperating parts as is necessary to an understanding of the invention. Fig. 2 is a side elevation of the carrier mechanism. Figs. 3 and 4 are detail views.

Referring to the drawings, the mechanism therein shown, which illustrates a preferred embodiment of the invention, includes a suitable carrier. This carrier may be varied widely as to its specific construction. In the preferred form and as shown, however, there is provided a vertical shaft 121, which is rotated to produce the movement of the carrier. In the construction shown the means for rotating the shaft 121 consists of an arm 122, fast on the shaft, said arm being connected by a link 123 to an arm 124, mounted on a vertical shaft 125. The means for operating this shaft 125 are not necessary to an understanding of this invention and are therefore not specifically described. Reference is made, however, to the application above referred to for a full description of devices suitable for this purpose and a full illustration thereof.

In the embodiment of the invention selected for illustration the carrier is arranged not only to transport the bunch or other material to be wrapped to a wrapping mechanism, but also to remove the wrapped product therefrom. To this end, therefore, the carrier is provided with two sets of retaining devices, which may be of any suitable construction, one set being arranged to transfer the bunch or material to be wrapped to a wrapping mechanism (not shown) and the other to remove the wrapped product therefrom. As shown, the carrier comprises an arm 120, mounted on the

vertical shaft 121, which arm is provided with two castings 128 129, these castings serving to carry the retainers for the bunch or cigar, which retainers may be widely varied in form and construction. As shown, the castings have downwardly-extending projections, the projections on the casting 128 being marked 130 and 131. Only one of the projections on the casting 129 is shown in the views selected to illustrate the invention, this projection being marked 133. These downward projections are formed to provide recesses into which the tuck and tip ends of the cigar or bunch pass. The casting 128 also serves to support a pair of rods 134, and the casting 129 serves to support a similar pair of rods 135. These rods are pivoted in the castings in any suitable manner, as by the cone-pivots shown. The rods 134 serve to support sets of fingers 136, which are arranged between the projections 130 and 131, and similarly the rods 135 serve to support sets of fingers 137. These fingers are shaped as shown—that is to say, they have their lower ends bent inward and toward each other—so as to support the cigar or bunch, as the case may be, and hold it in the concave recesses of the downward extensions before described.

Suitable means are provided for ejecting the bunch or cigar from the retainers. In the construction shown this means comprises an ejector for each set of retainers, one ejector (marked 138) being located between the fingers 136, said ejector being carried on a stem 139, which is slidingly mounted in the carrier-arms. Similarly, an ejector 140 is located between the fingers 137, said ejector being carried on a stem 141, also slidingly mounted in the carrier-arms. In the preferred construction the movement of these ejectors will be utilized to open the retaining-fingers, the means by which this is accomplished being of any suitable construction. As shown, the ejector 140 is provided with a pin 142, which when the ejector is in its upward position rests in recesses in the set of fingers 137. Similarly, the ejector 138 is provided with a pin 143, which when the ejector is in its upward position rests in recesses in the set of fingers 136. These recesses are slightly cam-shaped, as shown. When, therefore, the ejectors are given their downward movement they open the fingers, this opening action taking place before the ejectors reach the cigar or bunch, as the case may be.

According to the present invention the retainers will be closed after a bunch has been inserted therein, and positive means operated by the ejectors will be employed for this purpose. In the preferred construction, furthermore, these means will be of such a character as to positively lock the retainers in their closed position. While the specific means employed may be varied in form in the preferred construction shown, each ejector-stem 139 141 is provided with a cross-bar 600, said cross-bars being secured to the stems by screws or in any other suitable manner. These cross-bars in the preferred form of the construction are provided with angular ends 601, by which the closing movement of the retainers is effected. While these ends might be so shaped as to operate directly on the retainers in the preferred construction, one retaining-finger of each set will be provided with a cam-shaped block 602, against which the angular ends of the operating cross-bars bear.

The means for operating the ejectors may be of any suitable description. As shown, the stem 139 of the ejector 138 is provided with a pin 146, which is engaged by a forked lever 147, pivoted at 148 to the carrier-arm. The stem 141 of the ejector 140 is provided with a similar pin, which is engaged by a similar lever pivoted to the carrier-arm. Each of these levers 147 is or may be held in its upper position by means of a spring, one of these springs 152 only being shown. The operating devices for the levers 147 may be of any desired character. As shown, they are operated by means of lever-arms 169 170, which are operated at proper times in the swinging movement of the carrier-arm and which strike the tails of the levers 147 to force the ejectors downward. These levers 169 170 are carried on a rock-shaft 171, which may be operated by means of an arm 172, which is shown as partly broken away from any moving part of the machine. The specific means for operating this shaft is not necessary for an understanding of this invention and is therefore not described or shown. Reference is made, however, to the application above referred to for a full disclosure of a suitable construction for this purpose.

In the mechanism which forms the subject-matter of the present invention the trimming is effected while the wrapped bunch is in the retainers before described. The mechanism by which this is accomplished may be widely varied in character. In the construction shown, however, there is provided a pair of rotating cutters 190, said cutters being mounted on a shaft 191, which is journaled in a head 192. In the machine illustrated the cutters are mounted so as to be normally out of the path of movement of the retainers and will be moved into said path during the cutting operation. To this end, therefore, the head 192 is movably mounted in ways in a bracket 193, suitably secured to the machine-frame.

The means for operating the cutters and for moving the head to cause them to effect their functions are not necessary to an understanding of the present invention and are not, therefore, described. Reference is made, however, to the application above referred to for a full disclosure of suitable means for this purpose.

As has been heretofore stated, in the prior

constructions these trimming-knives coöperate with cutter-plates rigidly mounted on the casting 128, which is the casting which carries the retainers which transport the finished product. Slight variations in adjustment, however, would disturb the relation between these plates and the cutters, and thus interfere with the cutting. In the present construction the shear-plates, which coöperate with the cutters, are yieldingly mounted. While the construction of these plates may be varied, as shown they consist of spring-plates 603, said plates being recessed, as shown in Figs. 3 and 4, to receive the ends of the cigar. These plates are preferably slightly inclined inward at their lower ends, so as to readily pass between the cutting-wheels 190. These plates, as will be readily understood, will yield to the action of the cutters if there is any slight disturbance of the adjustment and will yet effect a clean cut of the cigar.

It will be understood that changes and variations may be made in the construction by which this invention is carried into effect. The invention is not, therefore, to be limited to the details of construction herein shown and described.

What is claimed is—

1. In a cigar-machine, the combination with a carrier adapted to carry bunches or cigars, said carriers having sets of retainers, of ejectors one for each set, the ejector for each set being located between the retainers of that set, and means for positively swinging the sets of retainers to open and close them.

2. In a cigar-machine, the combination with a carrier having a set of retainers for carrying bunches or cigars, of an ejector located between the retainers, and devices actuated by the ejector for positively opening and closing the retainers.

3. In a cigar-machine, the combination with a carrier adapted to carry bunches or cigars, said carriers having two sets of retainers, of two ejectors, one for each set, the ejector for each set being located between the retainers of that set, and devices operated by the ejectors for positively opening and closing the retainers.

4. In a cigar-machine, the combination with a carrier having two sets of pivoted retaining-fingers for carrying bunches or cigars, two ejectors one for each set of fingers, and means actuated by the ejectors for positively opening and closing the fingers.

5. In a cigar-machine, the combination with a carrier having retainers adapted to carry bunches or cigars, of an ejector located between the retainers, operating means for the ejector, means carried by the ejector and operating on the interior of the retainers to open the same, and means carried by the ejector and operating on the exterior of the retainers to close the same.

6. In a cigar-machine, the combination with a carrier having retainers for carrying bunches or cigars, of an ejector mounted between the retainers, operating means for the ejector, a cross-bar mounted on the ejector and operating on the interior of the retainers to open the same, and a cross-bar mounted on the ejector and operating on the exterior of the retainers to close the same.

7. In a cigar-machine, the combination with a carrier adapted to carry bunches or cigars, said carrier having two sets of retainers, of two ejectors, one for each set, the ejector for each set being mounted between the retainers of that set, and positively-operated means actuated by the ejectors for closing the retainers.

8. In a cigar-machine, the combination with a carrier adapted to carry bunches or cigars, said carrier having a set of retainers, an ejector mounted between the retainers, means for opening the retainers, and a cross-bar carried by the ejector and operating on the exterior of the ejector to close the same.

9. In a cigar-machine, the combination with a carrier adapted to carry bunches or cigars, said carrier having two sets of retainers, two ejectors, one for each set of retainers, the ejector for each set being mounted between the retainers of that set, cross-bars carried by the ejectors and operating on the interior of the retainers, cross-bars carried by the ejectors and operating on the exterior of the retainers, and cam-surfaces on the exterior of the retainers with which said cross-bars coöperate.

10. In a cigar-machine, the combination with a movable bunch-carrier, a cutter in the path of the carrier, and coöperating yielding cutting-plates mounted on the carrier, substantially as described.

11. In a cigar-machine, the combination with a movable bunch-carrier, of a rotating cutter in the path of movement of the carrier, and coöperating yielding cutting-plates mounted on the carrier, substantially as described.

12. In a cigar-machine, the combination with a movable bunch-carrier, of a cutter in the path of movement of the carrier, and recessed spring-plates mounted on each end of the carrier and coöperating with the cutter, substantially as described.

13. In a cigar-machine, the combination with a movable bunch-carrier, of a rotating cutter in the path of movement of the carrier, and recessed spring-plates mounted on each end of the carrier and coöperating with the cutter, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM S. LUCKETT.

Witnesses:
E. W. STUART,
N. H. GLASSFORD.