March 8, 1938. G. ANDERSON 2,110,190

CIGAR WRAPPER CUTTING MECHANISM

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Fig. 1.

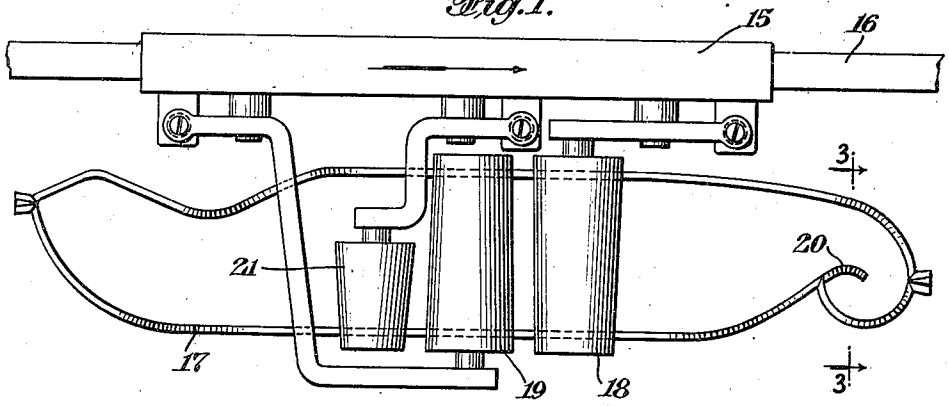


Fig. 2.

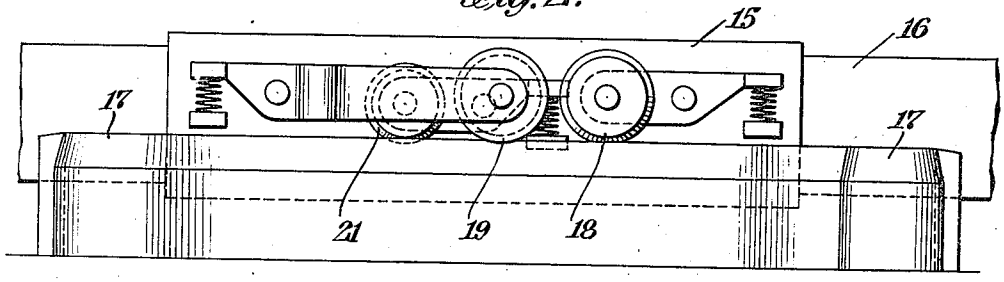


Fig. 3.

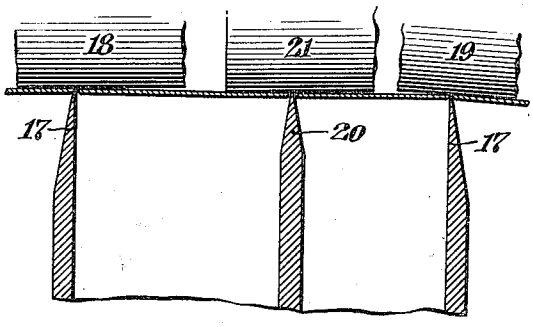


Fig. 13.

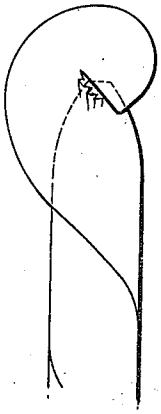
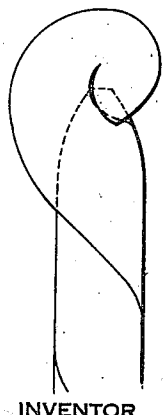


Fig. 14.



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Fig. 4.

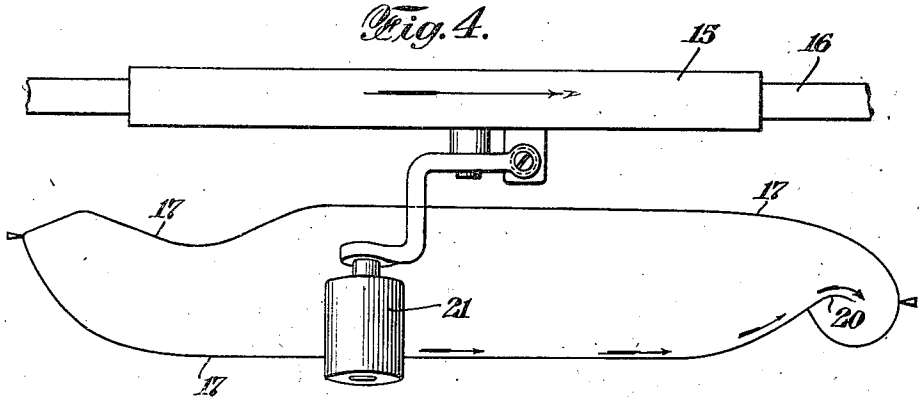


Fig. 5.

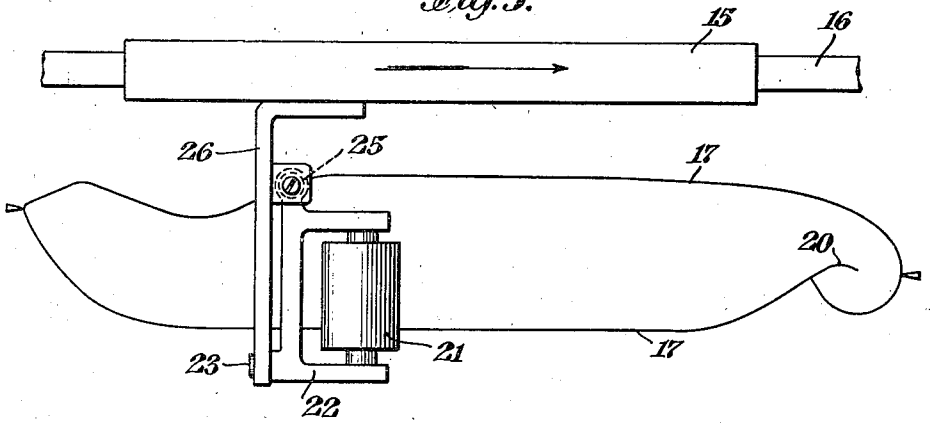


Fig. 6.

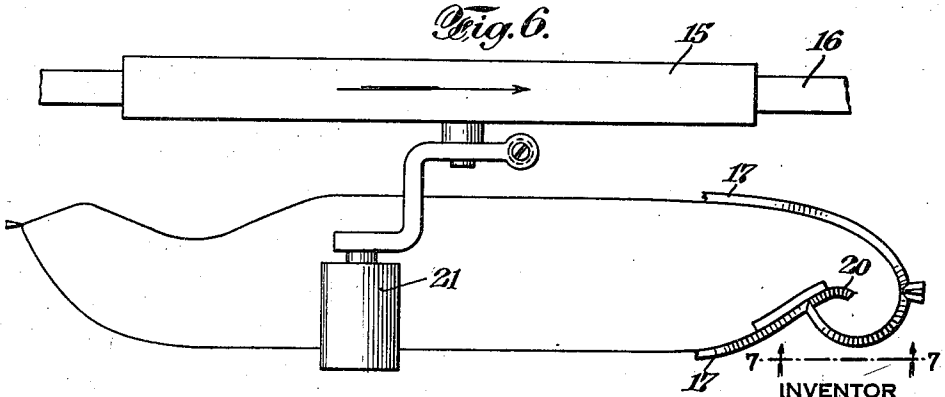
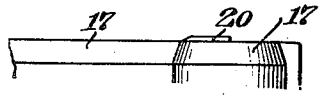


Fig. 7.



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CIGAR WRAPPER CUTTING MECHANISM

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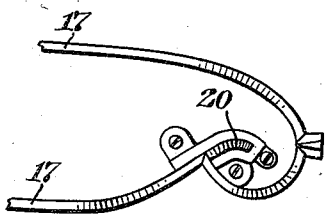


Fig. 8.

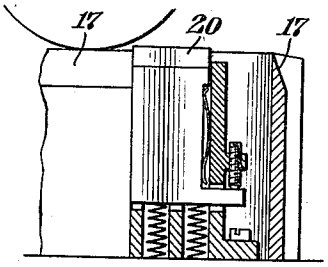


Fig. 9.

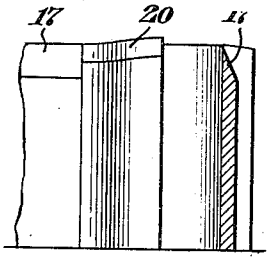


Fig. 10.

Fig. 11.

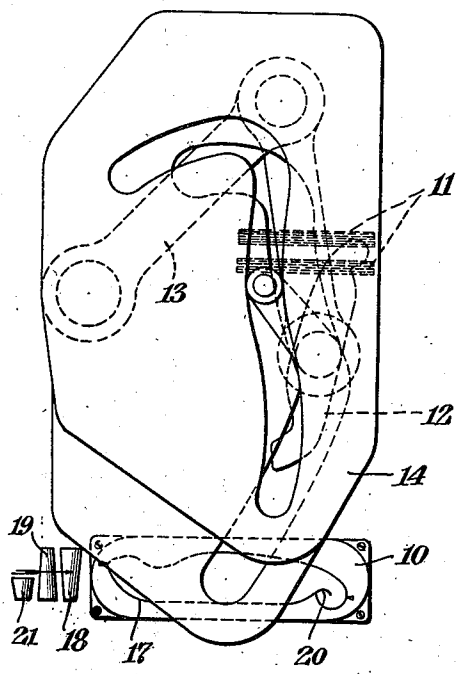
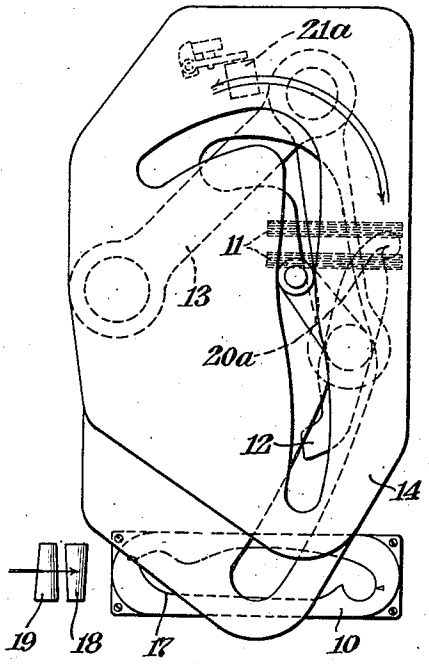


Fig. 12.



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UNITED STATES PATENT OFFICE

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CIGAR WRAPPER CUTTING MECHANISM

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Application October 19, 1935, Serial No. 45,721

14 Claims. (Cl. 131—39)

This invention relates to cigar wrapper cutting mechanism.

In cigar making machines now in use, the wrapper is cut from a tobacco leaf and delivered to wrapping mechanism which applies the wrapper to a cigar bunch. During the application of the wrapper to the cigar bunch, the flag of the wrapper is nicked to permit the same to be shaped around the cigar head. Heretofore, this nick has been a straight cut and the means for making the cut have not been of such nature as to locate the cut always in the same position in the wrapper. As a result, it has been impossible uniformly to apply the flag smoothly to the cigar head.

This invention has for an object to provide means for cutting a curved nick in the wrapper flag prior to delivery of the wrapper to the wrapper mechanism of such nature that the nick is always made in the same position on the wrapper.

Other objects, novel features and advantages of this invention will become apparent from the following specification and accompanying drawings, wherein:

Fig. 1 is a plan view of wrapper cutting mechanism embodying the invention;

Fig. 2 is a side elevation of said mechanism;

Fig. 3 is an enlarged fragmentary section on the line 3—3 of Fig. 1;

Figs. 4, 5 and 6 are views of modified forms of the invention;

Fig. 7 is a section on the line 7—7 of Fig. 6;

Fig. 8 is a fragmentary plan view of a further modification;

Figs. 9 and 10 are sectional views of still further modifications;

Fig. 11 is a fragmentary plan view of a cigar making machine illustrating the wrapper cutting means and wrapper applying means and transfer means;

Fig. 12 is view similar to Fig. 11, but illustrating a further modification of the flag cutting means;

Fig. 13 illustrates the flag as cut according to previous practice, and

Fig. 14 illustrates the flag as cut according to the present invention.

Referring first to Fig. 11, 10 indicates the wrapper cutter, 11 indicates the mechanism for applying the wrapper to a cigar bunch and 12 indicates the carrier by which the wrapper is transferred from the wrapper cutter to the wrapper roller. The supporting arm for the wrapper carrier is designated 13 while the carrier cam is designated 14. The three units just referred to are merely illustrative and the invention is not limited to machines having units of the precise structure and arrangement shown.

Referring now to Figs. 1 to 3 inclusive, 15 is a head slidably mounted on a rail 16 and means (not shown) are provided for reciprocating the same. A wrapper cutting die 17 of standard structure is arranged adjacent the path of movement of the head 15 which is equipped with rollers 18 and 19 cooperative with the die in the usual manner to cut out a wrapper. An additional die 20 is arranged within the periphery of the die 17 and is at the same level as the die 17. A roller 21 is supported from the slide 15 for cooperation with the die 20 to nick the flag, the die 20 being shaped to produce a curved cut which will insure smooth application of the flag to the cigar head. The die 20 is in fixed position with respect to the die 17 and therefore the flag cut always bears a given relation to the wrapper. The cutting edge of the die 20 is a continuation of the curve tangent to the junction of the cutting edge for the wrapper flag and the wrapper proper so that when the wrapper is laid on the bunch the underlying wrapper conforms with the shape of the head of the bunch.

The rollers 18, 19 and 21 are supported for yielding vertical movement and each of the rollers is frusto-conical. The arrangement is such that the roller 18 contacts only with the half of the die 17 adjacent the slide 15 while the roller 19 contacts only with the remaining half of the die 17 and neither of them contacts with the die 20. The arrangement of the roller 21 is such that it does not contact with the die 17 but does contact with the die 20. With this arrangement, there is insured accurate cutting of the wrapper without double contact of parts of the die 17 by the rollers. The purpose of having the rollers frusto-conical shaped is to insure good contact along one edge of the die to effect a clean cut.

In the modification shown in Fig. 4, the roller 21 is cylindrical but is so supported that its contact surface is oblique to the plane of the dies 17 and 20 so that when it does contact the die 20, it will have the same effect as if it were frusto-conical. Also, the angular relation of the roller 21 is such that it clears the die 17 and engages only the die 20. The bracket which supports the roller 21 is yieldably supported to permit vertical movement of the roller 21.

In the modification disclosed in Fig. 5, the roller 21 is cylindrical and is supported in a yoke 22 which is pivoted at 23 to the outer end of the bracket 24 rigidly supported by the slide 15.

The inner end of the yoke 21 is pressed downwardly resiliently by the spring 25 (shown in dotted lines) which permits limited wobbling movement of the roller 21, thereby insuring proper cutting contact with the die 20.

In the modification disclosed in Figs. 6 and 7, the die 20 is arranged with its upper edge slightly above the plane of the die 17. The roller 21 is cylindrical and has its axis horizontal. The bracket supporting the cylinder is mounted on the slide 15 in such a way as to permit limited vertical movement of the roller, its downward movement being limited so that it just clears or rests lightly on the die 17. Thus, when it passes over the die 20, it is brought into cutting contact therewith to form the flag nick. Likewise, with this arrangement of die 20, the roller 21 may be dispensed with if desired and the taper on the roller 18 so made that the surface of this roller will come into cutting contact with the die 20.

In the modification disclosed in Figs. 8 and 9, the die 20 is supported for yielding vertical movement with its top edge projecting slightly above the level of the die 17. With this arrangement, the roller 21 may be rigidly supported as the die 20 will yield to avoid harmful contact between the roller and the die. In the modification shown in Fig. 10, the top edge of the die 20 is properly shaped to co-operate with the roller 19 to cut the flag nick, thus obviating the requirement of an additional roller 21 for that purpose.

Referring now to Fig. 12, the wrapper carrier 12 is provided with a die 20*a* against which the wrapper rests while the carrier is transferring the wrapper from the cutter to the wrapper rolling mechanism. At some point in the path traversed by the carrier in delivering the wrapper, there is provided a roller 21*a* with which the die 20*a* comes into cutting contact so that the flag cut is introduced into the wrapper before delivery thereof to the wrapper roller mechanism. In this modification, the rollers 18 and 19 cooperate with the die 17 in the same manner as previously described to cut the wrapper from a tobacco leaf.

Referring now to Figs. 13 and 14, Fig. 13 illustrates the hitherto customary flag cut which it will be noted is straight while Fig. 14 illustrates the flag cut according to the present invention, which it will be noted is curved.

As illustrated in Fig. 13, a wrapper having its flag cut according to previous practice results in wrinkles when wrapped around the cigar head and the location of the flag cut is not uniform. When a cigar wrapper is cut according to the present invention, the wrapper fits smoothly around the head and the flag cut is always located in the same position in the wrapper cut.

I claim:

1. In a cigar-making machine, a wrapper and flag cutter, wrapping mechanism, means for delivering a wrapper from said cutter to said mechanism, and a flag nicker operative before the wrapper is delivered to said wrapping mechanism.

2. In a cigar-making machine, a wrapper and flag cutter, wrapping mechanism, means for delivering a wrapper from said cutter to said mechanism, a flag nicker comprising relatively movable die and pressure members, and means for subjecting the flag of the wrapper to the action of said members prior to delivery of the wrapper to the wrapping mechanism.

3. In a cigar wrapper and flag cutter, a main die of the same configuration as the desired wrapper and flag, an additional die within the periphery of the main die, and rollers movable over said dies to cut out the desired wrapper and flag, and nick said flag.

4. In a cigar wrapper and flag cutter, a main die of the same configuration as the desired wrapper and flag, an additional die within the periphery of the main die, rollers movable over said main die to cut out a wrapper and flag, and an additional roller movable over said additional die to nick said flag.

5. In a cigar wrapper cutter, a main die of the same configuration as the desired wrapper, tapered rollers movable over said die to cut out the desired wrapper, and an additional die within the periphery of the main die, said additional die being at a higher level than the main die and cooperating with one of said rollers to nick the flag of the wrapper.

6. In a cigar-making machine, a wrapper and flag cutter, wrapper mechanism, means for delivering a wrapper and flag from said cutter to said wrapping mechanism, a die on said delivery means engageable with a wrapper and flag carried thereby, and means cooperative with said die to nick said flag prior to delivery of the wrapper to the wrapping mechanism.

7. In a cigar-making machine, a wrapper and flag cutter, wrapping mechanism, means for delivering a wrapper and flag from said cutter to said mechanism, a flag nicker comprising a die, a roller cooperative, therewith, and means for effecting relative movement of said die and roller in contact prior to delivery of the wrapper and flag to the wrapping mechanism.

8. In a cigar wrapper and flag cutter, a main die of the same configuration as the desired wrapper and flag, an additional die within the periphery of the main die, rollers movable over said main die to cut out a wrapper and flag, and an additional roller movable over said additional die to nick said flag, said main and additional dies having cutting edges lying in a common horizontal plane and said rollers having their die contacting surfaces oblique to said plane.

9. In a cigar wrapper cutter, a main die of the same configuration as the desired wrapper, an additional die within the periphery of the main die, rollers movable over said main die to cut out a wrapper, and an additional roller movable over said additional die to nick the flag of said wrapper, said main and additional dies having cutting edges lying in a common horizontal plane, said first rollers being tapered and having horizontal axes and said additional roller being cylindrical and having its axis oblique to said horizontal plane.

10. In a cigar-making machine, a wrapper and flag cutter, wrapper mechanism, means for delivering a wrapper and flag from said cutter to said wrapping mechanism, a die on said delivery means engageable with a wrapper and flag carried thereby, and a roller engageable with said die to nick said flag prior to delivery of the wrapper to the wrapping mechanism.

11. In a cigar wrapper cutter, a main die of the same configuration as the desired wrapper, an additional die member within the periphery of the main die, said additional die being at a higher level than the main die, rollers movable over said main die to cut out a wrapper, and an additional roller member movable over said additional die member to nick the flag of said wrapper, one of said last-named members being yieldably mounted.

12. In a cigar wrapper cutter, a main die of the same configuration as the desired wrapper, tapered rollers movable over said die to cut out the desired wrapper, and an arcuate additional die within the periphery of the main die, said additional die being at a higher level than the main die to cooperate with one of said rollers to nick the flag of the wrapper.

13. In a cigar wrapper cutter, a main die of the same configuration as the desired wrapper, rollers movable over said die to cut out the desired wrapper, an additional die within the periphery of the main die, and means cooperative therewith for cutting out the wrapper and nicking the flag thereof.

14. In a cigar making machine, a wrapper and flag cutter, wrapping mechanism, means for delivering a wrapper from said cutter to said mechanism, and a flag nicker associated with said cutter and operative before the wrapper is removed from said cutter.

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