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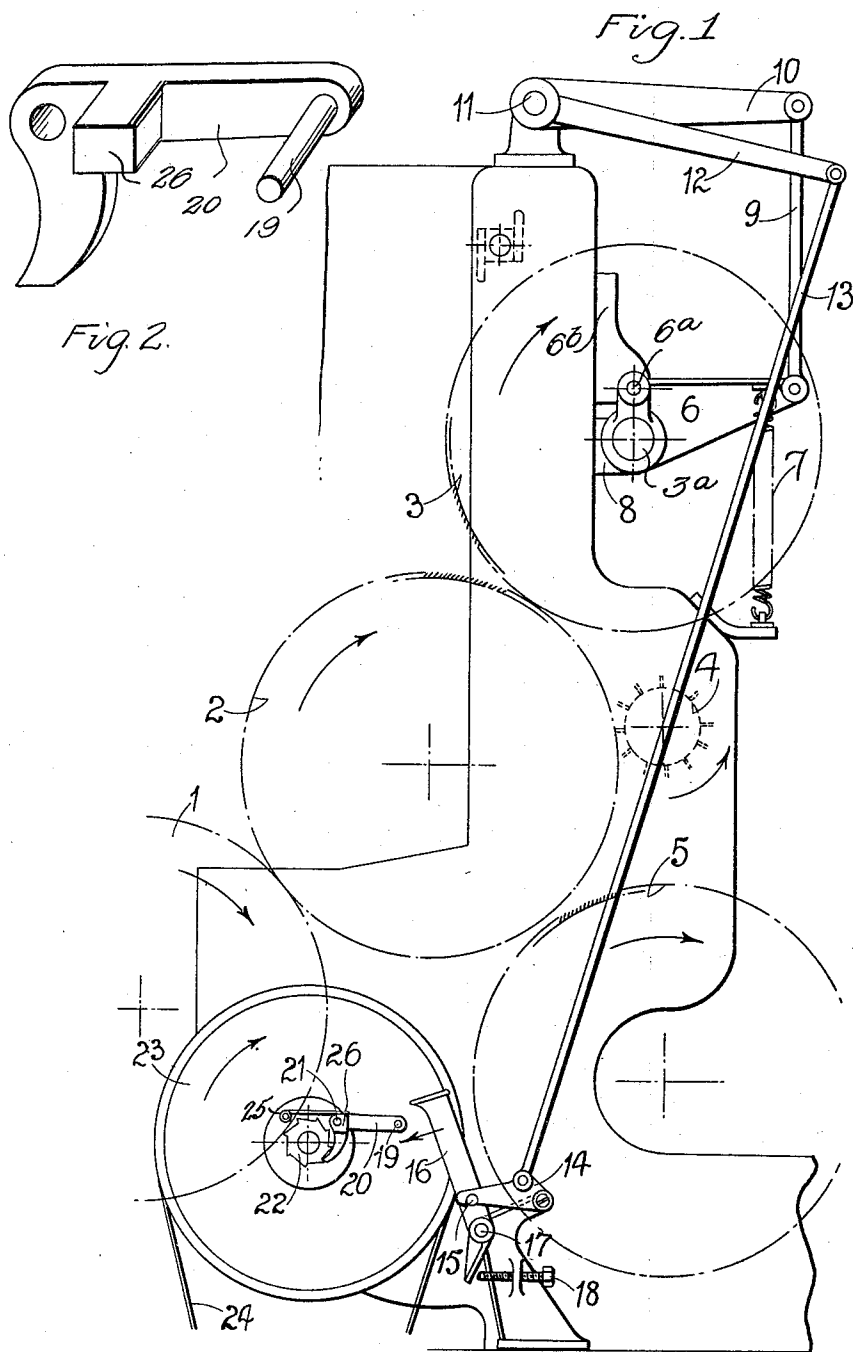
W. E. MOLINS

1,813,811

SAFETY STOP FOR CIGARETTE MACHINES

Filed Jan. 29, 1929

2 Sheets-Sheet 1



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Fig. 3.

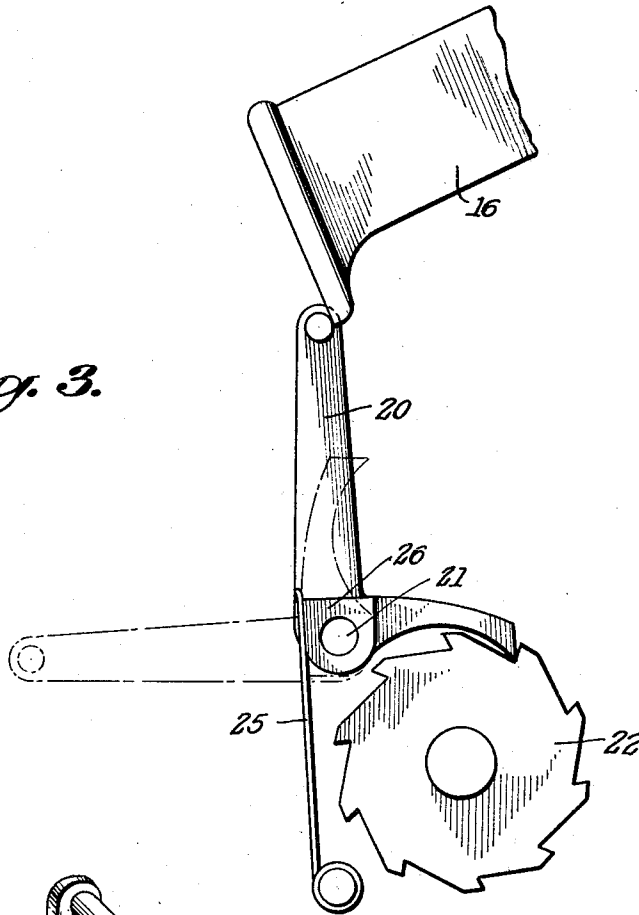
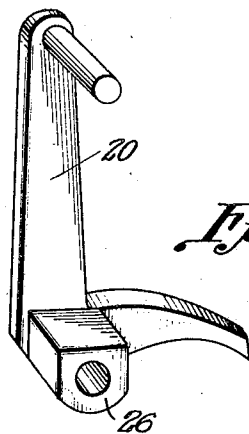


Fig. 4.



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SAFETY STOP FOR CIGARETTE MACHINES

Application filed January 29, 1929, Serial No. 335,817, and in Great Britain February 3, 1928.

This invention relates to cigarette machinery, and more particularly to a tobacco hopper for feeding tobacco to a cigarette making machine.

5 The object of the invention is to provide means which will prevent injury to the machine should any hard foreign substance, for example, a nail, nut or stone be present in the tobacco.

10 The invention comprises a tobacco feeding apparatus for use on a cigarette making machine wherein the brushing roller is rotatably mounted so as to yield relatively to the combing roller for the purpose described.

15 The invention further comprises means actuated by the movement of the above-mentioned roller for stopping the tobacco feed mechanism, or if necessary, declutching the machine from the main drive thereof.

20 The invention will be more particularly described with reference to the accompanying drawings which show diagrammatically a hopper of the kind described in British patent No. 249,575, with the apparatus comprising the subject matter of the present application applied thereto.

In these drawings:

30 Figure 1 is an elevational view of one form of apparatus embodying the principles of the present invention; and

Figure 2 is a perspective view showing the construction of one element of the clutching mechanism.

35 Figure 3 is a fragmentary elevational view of a further portion of the clutching mechanism; and

Figure 4 is a perspective view of the pawl shown in Figure 3.

Referring specifically to the drawings; 40 the tobacco is fed by a feed roller 1 rotating in the direction of the arrow to a carded combing roller 2 which in turn feeds the tobacco upwardly past a carded brushing roller 3.

45 The carded brushing roller 3 rotates in such a manner as to remove the superfluous tobacco from the surface of the roller 2, thus controlling the quantity of tobacco which passes.

50 The tobacco is picked from the surface of

the combing roller 2 by a picker roller 4 and discharged on to the surface of the distributing roller 5, from which it is picked by another picker roller (not shown) and discharged into the filling channel of the cigarette machine. 55

In a hopper constructed according to the present invention the shaft 3a carrying the brushing roller 3 is supported in a pair of links 6 pivoted at 6a in the bracket 6b instead 60 of running in rigid bearings as heretofore. The roller is kept in its working position by means of the springs 7 and stop 8. Whenever a hard foreign body is fed to the brushing roller the same swings outwardly to permit the body to pass freely, and thus prevents injury to the teeth of the carding, or any other part of the machine. 65

The movement of the brushing roller 3 is used to operate clutch mechanism incorporated in the hopper drive so that the passage 70 of the foreign body causes the hopper to come to a standstill.

The mechanism for stopping the hopper drive comprises links 9 connected to the pivoted links 6 at one end and to pivoted levers 10 at the other. The levers 10 are secured to a spindle 11 mounted at the top of the hopper and another lever 12 is connected to one end 80 of the spindle 11 and coupled by a link 13 to a pivoted latch 14.

When the brushing roller 3 swings outwardly the link 13 is pulled upwards and the latch 14 disengages from a pin 15 mounted on the stop arm 16. The arm 16 then rotates 85 by gravity about its pivot 17 until it is arrested by the stop screw 18. The forward end of the stop arm 16 then lies in the path of a pin 19 mounted on one arm of the driving pawl 20, and as soon as the pin 19 contacts 90 with the end of the stop arm, the pawl is turned about its pivot 21 and thrown out of gear with the ratchet wheel 22 which drives the hopper mechanism. In Figure 3 of the drawings the pawl is shown in dotted lines 95 the position which it occupies when disengaged from the ratchet wheel 22 and it will be noted that the pawl is maintained in this position by the spring 25 until reset in engagement with the ratchet wheel 22. 100

The pawl 20 is carried on a wheel 23 which is driven by a belt 24 from the main drive of the cigarette machine. The pawl 20 is retained in either position by means of the spring 25 which engages on the faces of a square projection 26 on the pawl 20.

If desired, the pawl and ratchet mechanism may be incorporated in the main drive of the machine so that the whole cigarette machine is stopped whenever the brushing roller 3 is displaced.

Other means may be used for causing the movement of the brushing roller to stop the machine, without departing from the principle of the invention.

It will be seen therefore that by this invention an efficient safety device is provided for tobacco hoppers for cigarette making machines which will prevent injury to the parts of the machine should a hard substance be fed between the combing and brushing rollers of such machine.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In a tobacco feeding apparatus for use on a cigarette making machine, the combination with a combing roller, of a cooperating brushing roller, and supporting means for said brushing roller yieldably urging the latter into close proximity to the combing roller, whereby a foreign body in the tobacco passing between the combing roller and the brushing roller will cause the latter to move away from the combing roller against the action of said means to prevent damage to the rollers.

2. In a tobacco feeding apparatus for use on a cigarette making machine, the combination with a combing roller, of a cooperating brushing roller, a movable support for said brushing roller, and yieldable means acting on said support to bias the brushing roller to operative position adjacent the combing roller, whereby a foreign body in the tobacco passing between the combing roller and the brushing roller will cause the latter to move away from the combing roller against the action of said means to prevent damage to the rollers.

3. In a tobacco feeding apparatus for use on a cigarette making machine, the combination with a combing roller, of a cooperating brushing roller, supporting means for said brushing roller urging the latter into close proximity to the combing roller, whereby a foreign body in the tobacco passing between the combing roller and the brushing roller will cause the latter to move away from the combing roller against the action of said means to prevent damage to the rollers, and means operable by said supporting means on movement of the brushing roller away from the combing roller to discontinue the machine drive.

4. In a tobacco feeding apparatus for use on a cigarette making machine, the combi-

nation with a pair of rollers rotatable in opposite directions and having their peripheries normally disposed in close proximity to feed tobacco therebetween, of means for supporting one of said rollers for movement away from the other roller whereby a foreign body passing between said rollers will serve to shift the movably supported roller to prevent damage to the rollers.

5. In a tobacco feeding apparatus for use on a cigarette making machine, the combination with a pair of rollers rotatable in opposite directions and having their peripheries normally disposed in close proximity to feed tobacco therebetween, of means for supporting one of said rollers for movement away from the other roller whereby a foreign body passing between said rollers will serve to shift the movably supported roller to prevent damage to the rollers, and means associated with said movable roller and operable on shifting movement thereof to discontinue the machine drive.

6. In a tobacco feeding apparatus for use on a cigarette making machine, the combination with a pair of rollers rotatable in opposite directions and having their peripheries normally disposed in close proximity to feed tobacco therebetween, of means for supporting one of said rollers for movement in substantially the direction of feed of the tobacco and away from the other roller, and yielding means for retaining said movable roller in normal position whereby a foreign body passing between said rollers will serve to shift the movably supported roller to prevent damage to the rollers.

7. In a tobacco feeding apparatus for use on a cigarette making machine, the combination with a pair of rollers rotatable in opposite directions and having their peripheries normally disposed in close proximity to feed tobacco therebetween, of means for supporting one of said rollers for swinging movement away from the other roller in substantially the direction of feed of tobacco, yielding means for retaining said movable roller in normal position whereby a foreign body passing between said rollers will serve to shift the movably supported roller to prevent damage to the rollers, and means operable by movement of said movable roller to discontinue the rotation of said rollers.

In testimony whereof I hereunto affix my signature.

WALTER EVERETT MOLINS.