March 26, 1935. F. MÜLLER 1,995,622

MACHINE FOR INCORPORATING ASH RETAINING ELEMENTS IN CIGARS AND CIGARETTES

Filed Aug. 22, 1933

Fig. 1.



Fig. 2.

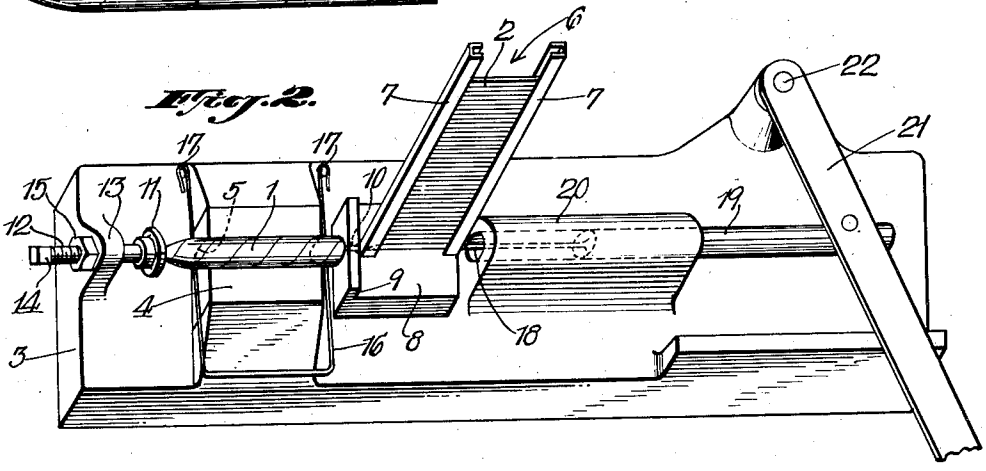
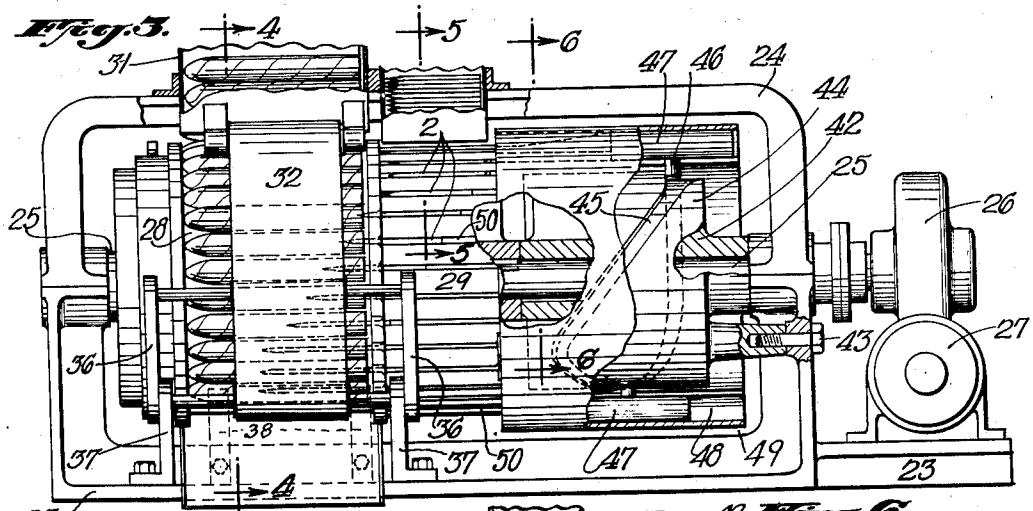


Fig. 3.



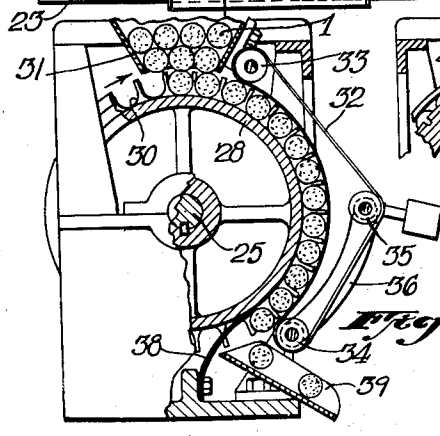


Fig. 4.

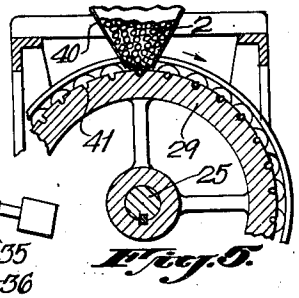


Fig. 5.

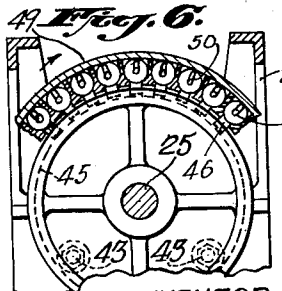


Fig. 6.

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MACHINE FOR INCORPORATING ASH-RETAINING ELEMENTS IN CIGARS AND CIGARETTES

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13 Claims. (Cl. 131—5)

This invention relates to a novel and improved mechanism for inserting within cigars, cigarettes and the like, elements which, when so inserted, will retain the ash formed during the smoking of the cigar or the like. The invention is applicable to either cigars or cigarettes, but since one definition of a cigarette is "a small cigar" the term "cigar" will be used for the sake of convenience in the remainder of the specification and in the claims. It is to be understood, however, that by that term I do not intend to exclude the use of my invention in connection with cigarettes.

As a cigar is smoked the ash formed by that act is usually knocked off or may fall from its own weight, as, of course, is well known. Some attempts have been made to prevent the falling of the ash as by running a wire through the cigar, but so far as I am aware, no successful mechanism for doing this has ever been devised prior to my invention.

In the accompanying drawing I have illustrated machines which can readily insert ash-retaining elements in cigars at a high rate of speed, and therefore at a minimum cost, and it is to those machines that this application relates. In the drawing I have shown selected embodiments of the invention, and referring thereto

Fig. 1 is a longitudinal view of a cigar made according to my invention.

Fig. 2 is a perspective view of a hand operated machine embodying my invention.

Fig. 3 is a vertical elevation of a power operated machine embodying my invention.

Fig. 4 is a section on the line 4—4 of Fig. 3, part of the mechanism being shown in elevation.

Fig. 5 is a partial section taken on the line 5—5 of Fig. 3.

Fig. 6 is a fragmentary section taken on the line 6—6 of Fig. 3.

Referring first to Fig. 1, I have shown therein a cigar 1 which may be made in the usual form taken by a cigar or cigarette, and which needs no further description. Inserted within the cigar is an ash-retaining non-tobacco element 2 which may be a metallic wire or may be made of any other suitable substance. It is within the contemplation of this invention that it may be used in connection with some element more frangible or more easily burned or carbonized than is a metallic wire. In other words, the invention here claimed is not dependent upon the material of which the ash-retaining element is made.

The element may be inserted within the cigar either when the cigar has been completely finished or during the manufacture thereof, although for the sake of convenience of illustration I have shown the invention as embodied in machines adapted to insert the element lengthwise into the cigar after the cigar has reached its final form.

Referring now to Fig. 2, showing the hand-operated embodiment of the invention, the machine comprises a base 3 upon which is disposed an anvil 4 adapted to support one of the cigars 1, the anvil being provided with a suitable recess 5 for that purpose.

Mounted adjacent to the anvil is a reservoir indicated generally by the numeral 6 and comprising two vertical guides 7, between which are received a plurality of the elements 2 here shown as in the form of short lengths of wire. These lengths of wire may be conveniently pointed at one end as best shown at 2' in Fig. 1 to aid insertion in the tobacco of which the cigar is formed, although whether or not this pointed construction is used is a matter of design.

The weight of the elements 2 tends to move them downwardly in the guides 7 until the bottommost element rests upon a feed block 8 having at one side thereof a vertical wall 9 with an aperture 10 therethrough in line with the bottom element 2 in the guides. This aperture 10 is disposed substantially in line with the center of a cigar 1 which is disposed upon the anvil, and the wall 9 is so arranged that one end of the cigar may rest thereagainst, whereas the other end of the same cigar may rest against the head 11 of a stem 12 threaded into a lug 13 on the base. This stem may be turned by engagement of a suitable tool with the squared end 14 of the stem and may be held in position by a lock nut 15. Likewise if desired the feed block 8 with or without the reservoir thereon may be made adjustable towards and from the anvil, although such construction is not shown herein.

In operation a cigar is placed upon the anvil as shown and above an ejector 16 pivoted upon the base at 17. Then the bottommost element 2 in the guides 7 is ejected by means of an ejector 18 disposed in line with the bottommost element in the reservoir and shown as being formed on the end of a plunger 19 sliding in a guide 20 on the base 3 and operated by a handle 21 pivoted to the base as at 22. For example, an operator may place a cigar 1 in position with his left hand, operate the handle 21 with his right hand to force the ejector 18 to the left and thus eject the bottommost element 2 from the guides. The ejector will pass through the guides forming the reservoir and is of such length as to reach the end

of the cigar on the anvil and follow the element which it, by its movement, forces into the cigar. The handle may be then moved towards the right and the cigar removed from the anvil, if necessary using the ejector 16 for that purpose. The result is a very rapid operation which can be done efficiently by hand.

Referring now to Figs. 3, 4, 5 and 6, I have shown therein a motor-driven machine comprising a base 23 having a frame 24 thereon, in which is rotatably mounted a shaft 25 driven by suitable gearing in the gear box 26 and which in turn is operated from the motor 27 mounted on the base.

Secured on the shaft 25 are two drums 28 and 29, these drums being concentric with each other and of approximately the same diameter. The drum 28 forms a conveyor for the cigars to be treated whereas the drum 29 forms a feeder for the ash-retaining elements which are to be inserted into the cigars.

The conveyor drum 28 has on its surface a plurality of pockets 30 of a size to receive the cigars which are being treated and in this connection it will, of course, be understood that various sizes of pockets will be used for corresponding sizes of cigars. It will also be understood that if desired the conveyor may be incorporated as part of the apparatus for forming a cigar or cigarette so that the ash-retaining element may be inserted therein before the cigar is completely formed.

Disposed above the conveyor I have shown a reservoir in the form of a hopper 31 adapted to contain a supply of the cigars 1 and the bottom of this hopper is closely adjacent to pockets 30 as will be seen. The shaft 25 rotates in the direction indicated by the arrows in Figs. 4, 5 and 6, and it will be seen that the cigars deposited in the pockets 30 will be retained in the pockets by means of a belt 32 running over rollers 33 and 34 and tensioned by a roller 35 mounted on arms 36 pivotally mounted on brackets 37. The cigars will be discharged from the pockets by means of ejectors here shown as strippers 38 adapted to force the cigars out of the pockets into a chute 39, and received in grooves in the drum 28.

The ash-retaining elements 2 are disposed in a reservoir here shown as a hopper 40 disposed above the drum 29 and it will be seen that the elements may be discharged into pockets 41 formed on the surface of the drum 29, these pockets being disposed at substantially the centers of the pockets 30 so that cigars in the pockets 30 will have their centers disposed substantially in line with the centers of the pockets 41.

Since the drums 28 and 29 are mounted upon the same shaft and since the pockets 30 and 41 are substantially co-axial with each other, it will be seen that the pockets will move at the same speed and their co-axial relationship will be maintained during that movement.

As the shaft rotates not only will the cigars be deposited in the pockets 30 from their reservoir, but likewise the ash-retaining elements will be deposited in the pockets 41. I provide means for forcing ash-retaining elements longitudinally of the shaft 25 and into the cigar in the pockets 30, this movement being completed before the cigars are deposited in the chute 39. This means will now be described.

Surrounding the shaft 25 is a cam 42 secured to the frame 24 as by screws 43, whereby the cam is held stationary as the shaft rotates. This cam is in the form of a drum 44 having a groove 45 therein, in which ride pins 46 upon plungers 47, these plungers being slidable in a direction parallel to the shaft 25 and received in guides 48 in a tubular extension 49 of the drum 29. In other words, the two drums 28 and 29 and the extension 49 all rotate in unison, being made either of one piece or separate pieces fastened together to achieve this result.

Each plunger 47 has a reduced extension 50 which is adapted to slide in one of the pockets 41 of the drum 29 and thereby eject an element 2 therefrom and force that element into a cigar 1 on the conveyor drum 28. The plunger is, of course, actuated in both directions both into and out of a pocket 41 by means of the engagement of the pin 46 thereon with the walls of the cam groove 45. The plungers are forced to the extreme left of Fig. 3 just before the cigars are dropped into the chute 39, and then are retracted slightly so that the extensions 50 are safely withdrawn from any contact with the cigars so as not to prevent their free travel into the chute. During the remainder of the rotation of the shaft the cam groove 45 will move the same plunger back to the extreme right to some such position as indicated at the top of Fig. 3 where it is ready to push another element 2 along one of the pockets 41.

From the above it will be seen that I have devised mechanisms which are extremely simple and efficient and which can be used for the purpose described at high rates of speed either for hand operation or motor operation. The ash-retaining elements can thus be incorporated in the cigars at such a small cost as to make the operation a feasible one, which it has not been up to now.

While I have shown selected embodiments of the invention it is, of course, to be understood that my invention is not limited by those embodiments, as various changes therein may be made without departing from my invention, which is defined by the scope of the appended claims.

I claim:

1. In combination, a support for a cigar, a reservoir for ash-retaining elements adjacent to said support, means for feeding elements from said reservoir, and means for inserting an element thus fed from the reservoir into a cigar on said support.

2. In combination, a support for a cigar, a reservoir for ash-retaining elements adjacent to said support, means holding said elements in the reservoir in substantial alignment with a cigar on said support, means for feeding elements from said reservoir, and means for inserting an element thus fed from the reservoir into a cigar on said support.

3. In combination, a support for a cigar, a reservoir for ash-retaining elements adjacent to said support, means for feeding elements from said reservoir, and means for inserting an element thus fed from the reservoir into a cigar on said support, and comprising a plunger movable substantially in line with said cigar, and means for reciprocating said plunger.

4. In combination, a support for a cigar, a reservoir for ash retaining elements adjacent to said support, and a common means operable to eject an element from said reservoir and to insert it into a cigar on said support.

5. In combination, a conveyor having thereon pockets in which cigars may be received, a feeder for ash-retaining elements adapted to be in-

serted in said cigars and having pockets for said elements in substantial alignment with the pockets on said conveyor, means for moving said conveyor and feeder together with said pockets in alignment, means for supplying cigars to said conveyor pockets, means for supplying ash retaining elements to said feeder pockets, and means for forcing elements from said feeder pockets into the cigars in said conveyor pockets.

6. In combination, a conveyor having thereon means to receive cigars, a reservoir for ash-retaining elements adapted to be received within said cigars, and means for receiving ash-retaining elements from said reservoir and for placing them within said cigars during movement of said conveyor with cigars thereon.

7. In combination, a conveyor having thereon means to receive cigars, a reservoir for ash-retaining elements adapted to be received within said cigars, means for receiving ash-retaining elements from said reservoir and for placing them within said cigars during movement of said conveyor with cigars thereon, and means for removing from the conveyor the cigars having the ash-retaining elements therein.

8. In combination, a conveyor having thereon pockets in which cigars may be received, a feeder for ash-retaining elements adapted to be inserted in said cigars and having pockets for said elements in substantial alignment with the pockets on said conveyor, means for moving said conveyor and feeder together with said pockets in alignment, means for supplying cigars to said conveyor pockets, means for supplying ash-retaining elements to said feeder pockets, an ejector associated with each pocket in said feeder and reciprocable therein, and means for reciprocating said ejectors to force the elements therein into the cigars in said conveyor pockets, and then to withdraw to permit discharge of the cigars from the conveyor.

9. In combination, a conveyor having thereon pockets in which cigars may be received, a feeder for ash-retaining elements adapted to be inserted in said cigars and having pockets for said elements in substantial alignment with the pockets on said conveyor, means for moving said conveyor and feeder together with said pockets in alignment, means for supplying cigars to said conveyor pockets, means for supplying ash-retaining elements to said feeder pockets, reciprocable ejectors associated with the pockets in said feeder and movable with the feeder, and a stationary cam coacting with said ejectors and adapted to reciprocate said ejectors to force said elements from the pockets in the feeder into cigars in the conveyor pockets.

10. In combination, two co-axially mounted drums forming respectively a conveyor and a feeder, means forming pockets in said conveyor drum to receive cigars, a reservoir adapted to discharge cigars into said conveyor pockets, pockets on said feeder drum adapted to receive ash retaining elements, a reservoir adapted to discharge elements into said feeder pockets, the pockets on the two drums having their centers substantially in alignment, means for rotating said drums in unison, and means acting during said rotation to force said ash retaining elements out of their pockets and into cigars contained in the pockets on the other drum.

11. In combination, two co-axially mounted drums forming respectively a conveyor and a feeder, means forming pockets in said conveyor drum to receive cigars, a reservoir adapted to discharge cigars into said conveyor pockets, pockets on said feeder drum adapted to receive ash retaining elements, a reservoir adapted to discharge elements into said feeder pockets, the pockets on the two drums having their centers substantially in alignment, means for rotating said drums in unison, reciprocating ejectors mounted in alignment with said feeder pockets, means supporting said ejectors to rotate with said drums and a stationary cam acting during said rotation to reciprocate said ejectors and thereby to force elements from the feeder pockets into the conveyor pockets and into cigars in said conveyor pockets.

12. In combination, a reservoir for cigars, a reservoir for ash-retaining elements, means for discharging said cigars and elements from said reservoirs, into alignment with each other, and means for inserting said elements into said cigars.

13. In a machine for incorporating an ash-retaining element in a cigar, means for feeding said elements, and means for surrounding said elements with the tobacco of a cigar.

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