

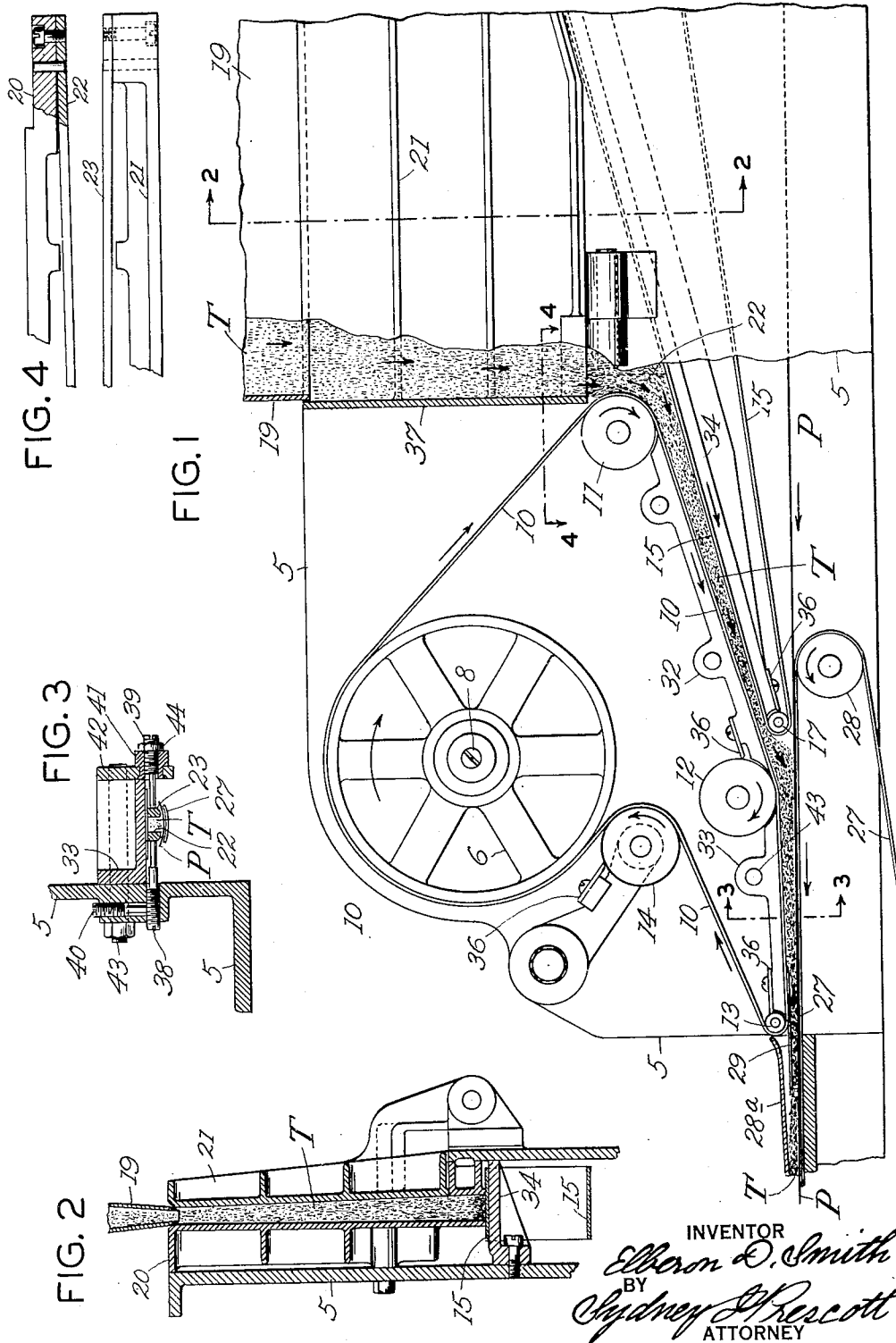
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CIGARETTE MACHINE FEEDING AND COMPRESSING MECHANISM

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CIGARETTE MACHINE FEEDING AND
COMPRESSING MECHANISMElberon D. Smith, Brooklyn, N. Y., assignor to
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This invention relates to tobacco feeds for continuous rod cigarette machines, its main object being to improve the operation of the compressing device shown in my prior Patent No. 1,892,257, granted December 27, 1932.

In that device the tobacco is fed into the compressing chute by both belts forming that chute, so that jamming or choking of tobacco is liable to occur at the mouth of the same at high speeds. To prevent this in the present invention, the entire shower of tobacco from the feed chute is intercepted by the forwarding belt, the compressor belt merely serving to compress the tobacco thereon; and a vertical partition is arranged in the feed chute so as to keep the showered tobacco off the compressor belt, and thus to feed tobacco into the compressor chute by the forwarding belt only. Furthermore in the improved device the side guides of the delivery end of the compressing chute are made readily adjustable so that the width of the charge entering under the rod-former tongue can be varied during operation to suit the speed of the machine and the width of the wrapper strip.

In carrying the invention into effect there is provided a cigarette machine feed chute adapted to confine the tobacco falling therethrough in a shower, means for continuously forwarding a cigarette paper strip, a traveling endless forwarding belt having an inclined upper run extending underneath and beyond said chute to angularly intercept the shower of tobacco and deliver a stream of tobacco to the paper strip at an angle thereto, and an endless compressor belt beyond said chute having a lower run coacting with the upper run of said forwarding belt to compress the tobacco thereon and operating to further compress the tobacco on the paper strip. In the best constructions contemplated there is provided spaced upright walls extending underneath the chute on either side of the forwarding belt and flared toward their lower edges to prevent choking of the tobacco forwarded therebetween by the forwarding belt and there is also provided adjustable side guides for confining the tobacco between the opposed runs of the forwarding and compressor belts. These various means and parts 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 specific construction shown and described.

In the accompanying drawing which forms a part of this specification and in which like char-

acters of reference indicate the same or like parts: Fig. 1 is a side elevation of the improved tobacco feed compressor with the front wall partly broken away;

Fig. 2 is a sectional end elevation of the same on line 2-2 of Fig. 1;

Fig. 3 is a sectional end elevation on line 3-3 of Fig. 1; and

Fig. 4 is a detail view of the mounting of the side guides of the compressor chute.

The construction of the forwarding and compressor belts of the improved device is substantially the same as that disclosed in my prior patent referred to above, but the compressor belt is arranged beyond the feed chute 19 so that it will merely compress the streams of tobacco advanced thereunder on the portion of the inclined upper run of the forwarding belt 27 projecting beyond the feed chute 19 and further compress the tobacco stream on the cigarette paper strip P advanced by the rod forming tape 27 which travels through the rod-former, not shown, in which the edges of the paper strip are pasted and overlapped to form the cigarette rod.

The entire shower of tobacco T falling through the feed chute 19 is angularly intercepted by the inclined upper run of the belt 15. Accordingly, with the present arrangement the compressor belt does not intercept any portion of the shower of tobacco nor does it deliver tobacco to the stream of tobacco collected on the forwarding belt as in the construction of my patent referred to above. With the present arrangement of the compressor belt there are no oppositely moving tobacco streams which tend to choke at the meeting point of the streams when the machine is operated at high speeds. The latter disadvantage has been found to be inherent in the prior construction of my above mentioned patent in which the oppositely moving tobacco streams on the forwarding and compressor belts meet at the mouth of the compressor chute, which is formed by the adjacent portions of the upper run of the forwarding belt and the lower run of the compressor belt between the rear wall 20 and front wall 21.

A vertical partition 37 on one end of the rear wall 20 is so placed as to prevent the tobacco T supplied by the feed chute 19 from falling on belt 10 as it drops onto the belt 15 between the walls 20 and 21. Thus, the tobacco is fed along the belt 15 into the compressing chute formed by the upper run of belt 15 and the lower run of belt 10, and jamming of tobacco at the mouth of the chute, is thereby avoided. The walls 20 and 21

are flared toward their lower edges so that the distance between the walls is somewhat greater at the bottom than at the top in order to prevent choking of the tobacco between the walls 20 and 21 as the belt 15 carries the tobacco therebetween. See Fig. 2.

Referring to Fig. 1, the frame 5 is supported on the bed (not shown) of the cigarette machine and carries a pulley 6 mounted on shaft 8 which drives the compressor belt 10 over the guide rollers 11, 12, and 13 and the belt tightener 14 supported on frame 5. The frame 5 also carries a pulley (not shown) driving the forwarding belt 15 over the roller 17. The lower run of the belt 15 is supported between the rollers 11 and 12 by the channel 32, and between the rollers 12 and 13 by the channel 36, both channels being attached to frame 5. A plate 34 also secured to the frame 5 supports the upper run of the belt 15.

The rod-forming tape 27 running over roller 28 is driven by a tape wheel (not shown), and forwards the cigarette paper strip P under the lower run of the belt 10 to receive the stream of tobacco T from the lower end of the compressor chute and forward it under the rod-former tongue 28a and through the rod-former (not shown). The belts 10 and 15 and the tape 27 are driven at a predetermined speed so that the compressed tobacco stream T and the paper strip P have the same speed when coming together and when entering the tongue 28a of the rod-former.

The tobacco stream T is confined between the opposed runs of the belts 10 and 15 and between the paper strip P on the tape 27 and the belt 10 by side guides 22 and 23, Fig. 3, fixed at their upper ends near roller 11, as shown in Fig. 4, so as to be sprung inwardly by the adjusting screws 38 and 39 arranged to bear against them to regulate the cross-sectional area of the tobacco stream T while the same is being forwarded. The rear screw 38 turns in frame 5 and is held in its adjusted position by a set screw 40. The forward screw 39 turns in a bushing 41 inserted into a side plate 42 secured to the channel 33 by means of a bolt 43 and is held in position by a check nut 44. The side pressure of the stream of tobacco T in the compressing chute holds the side guides against the adjusting screws.

In order to press the tobacco stream on the cigarette paper strip to prevent any tobacco from following the belt 10 when it leaves the tobacco stream at roller 13a thin guide plate 29 extending into tongue 28a is fastened to wall 22. Furthermore, the tongue 28a engages the portion of belt 10 running over roller 13 to scrape off any tobacco which may adhere to the belt.

What is claimed is:

1. The combination with a cigarette machine feed chute adapted to confine the tobacco falling therethrough in a shower, of means for continuously forwarding a cigarette paper strip, a traveling endless forwarding belt having an inclined upper run extending underneath and beyond said chute to angularly intercept the shower of tobacco and deliver a stream of tobacco to the paper strip at an acute angle thereto, and a traveling endless compressor belt beyond said chute having a lower run coacting with the upper run of said forwarding belt to compress the tobacco thereon and operating to further compress the tobacco on the cigarette paper strip.

2. The combination with a cigarette machine feed chute adapted to confine the tobacco falling therethrough in a shower, of means for continu-

ously forwarding a cigarette paper strip, a traveling endless belt having an inclined upper run extending underneath and beyond said chute to angularly intercept the shower of tobacco and deliver a stream of tobacco to the paper strip at an acute angle thereto, and a traveling endless compressor belt beyond said chute having a lower run coacting with the upper run of said forwarding belt to compress the tobacco thereon.

3. The combination with a cigarette machine feed chute adapted to confine the tobacco falling therethrough in a shower, of means for continuously forwarding a cigarette paper strip, spaced upright walls extending underneath said chute, a forwarding belt beneath said walls and having an inclined upper run extending underneath and beyond said chute to angularly intercept the shower of tobacco and deliver a stream of tobacco to the paper strip at an acute angle thereto, and a traveling endless compressor belt disposed beyond said chute with its lower run coacting with the upper run of the forwarding belt to compress the tobacco thereon and operating to further compress the tobacco on the cigarette paper strip.

4. The combination with a cigarette machine feed chute adapted to confine the tobacco falling therethrough in a shower, of means for continuously forwarding a cigarette paper strip, spaced upright walls extending underneath said chute, a forwarding belt beneath said walls and having an inclined upper run extending underneath and beyond said chute to angularly intercept the shower of tobacco and deliver a stream of tobacco to the paper strip at an acute angle thereto, and a traveling endless compressor belt disposed beyond said chute with its lower run coacting with the upper run of the forwarding belt to compress the tobacco thereon and operating to further compress the tobacco on the cigarette paper strip, said walls being flared toward their lower edges to prevent choking of the tobacco forwarded therebetween by the forwarding belt.

5. The combination with a cigarette machine feed chute adapted to confine the tobacco falling therethrough in a shower, of means for continuously forwarding a cigarette paper strip, a traveling endless forwarding belt having an inclined upper run extending underneath and beyond said chute to angularly intercept the shower of tobacco and deliver a stream of tobacco to the paper strip at an acute angle thereto, a traveling endless compressor belt, said compressor belt having a lower run coacting with the upper run of the forwarding belt to compress the stream of tobacco thereon and operating to further compress the tobacco on the cigarette paper strip, movable side guides for confining the stream of tobacco between the opposed runs of the forwarding and compressor belts and between the paper strip and the overlying run of the compressor belt, and adjusting screws engaging said guides, whereby the cross-section of the tobacco stream may be regulated while the same is being forwarded.

6. The combination with a cigarette machine feed chute adapted to confine the tobacco falling therethrough in a shower, of means for continuously forwarding a cigarette paper strip, spaced upright walls extending underneath said chute, a forwarding belt beneath said walls and having an inclined upper run extending underneath and beyond said chute to angularly intercept the shower of tobacco and deliver a stream of tobacco to the paper strip at an acute angle thereto, a traveling endless compressor belt disposed beyond

said chute with its lower run coacting with the upper run of the forwarding belt to compress the tobacco thereon and operating to further compress the tobacco on the cigarette paper strip, and a vertical partition between said walls arranged to keep the showered tobacco off the compressor belt.

7. The combination with a cigarette machine feed chute adapted to confine the tobacco falling therethrough in a shower, of means for continuously forwarding a cigarette paper strip, spaced upright walls extending underneath said chute, a forwarding belt beneath said walls and having an inclined upper run extending underneath said chute to angularly intercept the shower of tobacco and deliver a stream of tobacco to the paper strip at an acute angle thereto, said walls being

flared toward their lower edges to prevent choking of the tobacco forwarded therebetween by the forwarding belt.

8. The combination with a traveling endless forwarding belt having an upper run adapted to forward a stream of tobacco, of a traveling endless compressor belt having a lower run coacting with the upper run of said forwarding belt to compress the stream of tobacco thereon, side guides fixed at one end only and arranged to confine the stream of tobacco between the opposed runs of the forwarding and compressor belts, and adjusting screws engaging said guides, whereby the cross-section of the tobacco stream may be regulated while it is being forwarded.

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