March 6, 1934. W. A. NORRIS 1,949,654

CIGARETTE MAKING MACHINE

Filed March 27, 1933

FIG. 1

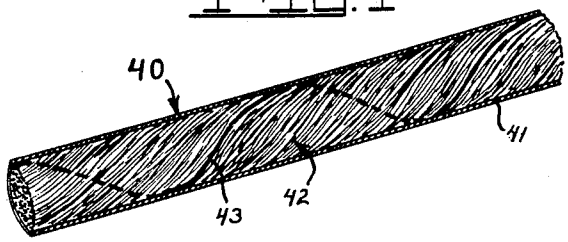


FIG. 2

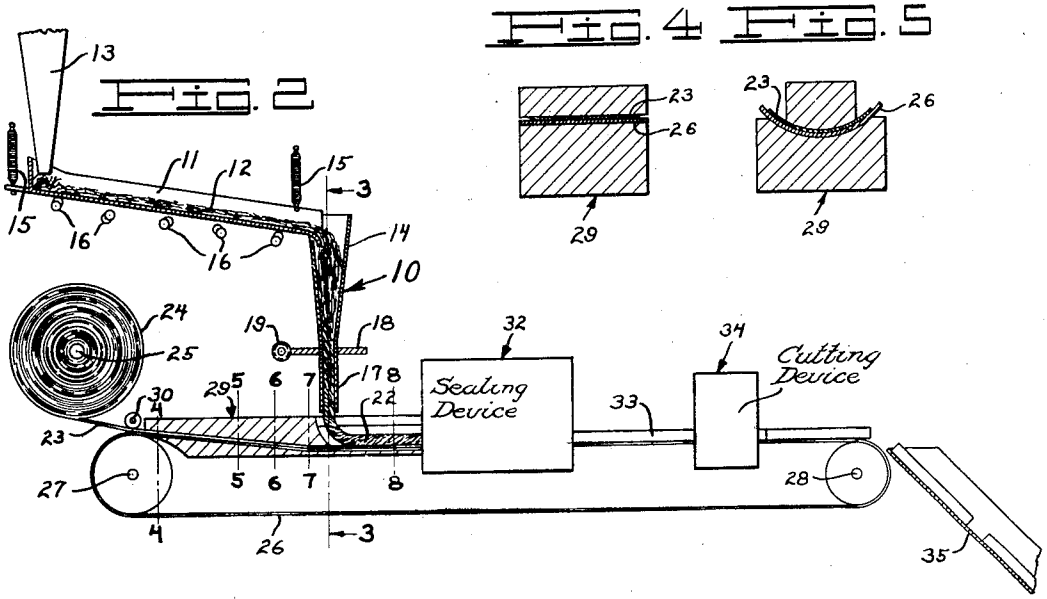


FIG. 4

FIG. 5

FIG. 3

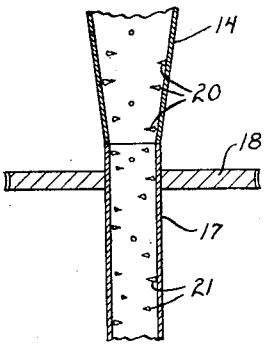


FIG. 6

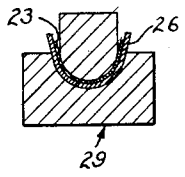


FIG. 7

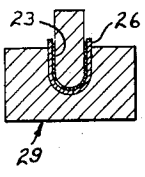
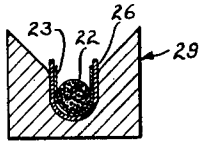


FIG. 8



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CIGARETTE MAKING MACHINE

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Application March 27, 1933, Serial No. 663,019

5 Claims. (Cl. 131—43)

This invention relates to improvements in cigarette making machines.

The general object of the invention is to provide a machine for twisting strands of tobacco and covering the strand with a wrapper to form a cigarette.

An additional object of the invention is to provide a cigarette making machine wherein means is provided for first forming a strand of tobacco and for thereafter twisting the strand after which the strand may be placed in a wrapper.

Another object of the invention is to provide a cigarette making machine including a stranding means, and twisting means for twisting the strand together with means for thereafter wrapping the stranded and twisted tobacco.

Other objects of the invention will be apparent from the following description taken in connection with the accompanying drawing wherein:

Fig. 1 is a perspective view of a cigarette made by my machine and showing a portion of the wrapping removed;

Fig. 2 is a diagrammatic view showing my machine for making my improved cigarettes;

Fig. 3 is an enlarged fragmentary section taken on line 3—3 of Fig. 2;

Fig. 4 is an enlarged section taken on line 4—4 of Fig. 2;

Fig. 5 is an enlarged section taken on line 5—5 of Fig. 2;

Fig. 6 is an enlarged section taken on line 6—6 of Fig. 2;

Fig. 7 is an enlarged section taken on line 7—7 of Fig. 2; and,

Fig. 8 is an enlarged section taken on line 8—8 of Fig. 2.

In the accompanying drawing, I have indicated a machine embodying the features of my invention generally at 10. As shown the machine includes a tray 11 from which tobacco 12 is fed from a suitable hopper 13. The tray is inclined downwardly towards a vertical receptacle 14 which is funnel shaped. The tray 11 is resiliently supported by springs 15 and is adapted to be vibrated by a plurality of cam members 16 which may be rotated in any suitable manner to cause the fibers of the tobacco to become disposed longitudinally into the tray and to feed into the funnel member 14 in longitudinal alignment.

From the funnel member 14 the more or less aligned tobacco passes into a twisting tube 17 which may be rotated by a worm gear 18 from a worm pinion 19. Adjacent the lower end thereof the funnel member 14 includes a plurality of inwardly directed prongs 20 and the twisting tube 17 includes similar prongs 21. The prongs 20 in the funnel member 14 restricts rotation and alignment of the tobacco as it passes downwardly thereon while the prongs 21 in the twisting tube 17 engages the strands of tobacco and twist them about the axis of the tube thereby forming the tobacco into a spiral twisted column 22 which emerges from the tube 17 into a U-shaped channel of paper 23.

The channel of paper 23 is drawn from a roll 24 which is rotatable on a shaft 25 and which passes onto a continuously moving belt 26. The belt 26 is mounted on suitable shafts 27 and 28 and the belt conveys the paper through a forming machine 29. A guide roller 30 is disposed on top of the paper as shown at the left of Fig. 2. As the paper advances it is gradually shaped from a flat strip as shown in Fig. 4 to a U-shaped strip as shown in Fig. 7.

After the paper emerges from the forming machine 29 the twisted tobacco strand or member 22 is laid in the paper trough and the belt 26 carries the paper 23 and the tobacco rope 22 through a closing and seaming device indicated generally at 32 which may be of any desired construction and wherein the paper is closed around the twisted tobacco column and sealed.

As a result the tobacco emerges from the closing and sealing device 32 completely encased in a paper tube as indicated at 33. The belt 26 then conveys the member 33 through a cutting device 34 which may be of any desired construction and wherein the member 33 is cut into cigarette lengths after which the belt 26 then expels the finished cigarette into a chute 35.

In Fig. 1 I have shown a cigarette as made with my improved machine. As shown this cigarette which is indicated generally at 40 is similar in general outer appearance to the standard type of cigarette and includes a tubular casing or wrapper 41 preferably of paper and having the filler 42 therein. This filler as previously described is made of tobacco with the strands twisted in spiral or curved formation as indicated by the strands shown in heavy line at 43 in Fig. 1. By making the filler in spiral or curved formation as shown the sum of the lengths of the strands of tobacco is greater than if the filler was formed of straight laid strands while at the same time the number of strands is less.

The tobacco being laid in twists causes the burning particles to advance in a circular course. This causes the aromas of the various blends of tobacco to become better mixed thus resulting in a better flavored smoke. The smoke in my ciga-

rette travels a circular course, it has a longer distance to go and thus has more time to cool off. Also, as the burning moves longitudinally and circumferentially there is a longer interval of burning and consequently each cigarette lasts longer than the ordinary cigarette but at the same time no more tobacco is employed in making the cigarette. Furthermore, since the tobacco is laid in twists it makes a stronger and more rigid cigarette because the twist causes the strands of tobacco to contact one another and thus increases the strength and also causes a more even burning.

With the tobacco laid in a twist the very fine particles which break off from the strands are held by the twist and are not drawn into the mouth. With my cigarette, due to the strength given the cigarette by twisting, a lighter weight cigarette paper may be used which is advantageous because it requires that less paper be burned.

From the foregoing description it will be apparent that I have provided a novel cigarette making machine which is simple in construction and highly efficient in use.

Having thus described my invention, I claim:

1. In a cigarette making machine, a tray disposed to receive tobacco, means to align the fibers of the tobacco in the tray, means disposed to receive the aligned fibers from said tray, means to twist the fibers and means to secure a wrapper about the twisted aligned fibers.

2. In a tobacco travelling machine, a hopper having a discharge aperture, a tray disposed to receive tobacco from said discharge apertures, means to shake said tray to align the fibers of tobacco therein, a stranding tube disposed to receive the aligned fibers from said tray and means to rotate said tube to twist the fibers therein.

3. In a cigarette making machine, a hopper having a discharge aperture, a tray disposed to receive tobacco from said discharge aperture, means to shake said tray to align the fibers of tobacco therein, a stranding tube disposed to receive the aligned fibers from said tray, means to rotate said stranding tube to twist the fibers therein and means to secure a wrapper about the twisted aligned fibers.

4. In a cigarette making machine, means to align fibers of the tobacco, means disposed to receive the aligned fibers, means to twist the aligned fibers into a strand and means to wrap said strand in paper.

5. In an apparatus of the class described, means to support a wrapper, means to feed tobacco into said wrapper, said feeding means including means to align the fibers of tobacco into substantially parallel relationship to one another, said feeding means also including means to twist the parallel fibers into a spiral strand, means to seal the wrapper about the strand of tobacco, and means to cut said wrapped strand into suitable lengths.

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