The present invention relates to a cigarette making machine and more particularly to a cigarette making machine of the portable or domestic type.

In a known type of manually operated cigarette making machine, the tobacco is compacted into a tobacco receiving chamber by means of a movable compacting member and the tobacco is then ejected into a cigarette paper tube by means of a plunger forcing the tobacco out of the restricted aperture defined by said chamber and said member, the latter being stationary during the tobacco ejection.

A disadvantage of such an arrangement lies in the fact that during ejection of the tobacco, a substantial friction is caused between the latter and the stationary walls of the chamber and the working face of the tobacco compacting member; therefore, a substantial force has to be exerted on the plunger.

Accordingly, the general object of the present invention is the provision of a cigarette making machine of the character described, in which the tobacco compacting member is movable along with the compacted tobacco in the direction of discharge of said tobacco whereby friction exerted during the tobacco ejection is substantially decreased.

Another important object of the present invention is the provision of a tobacco cigarette making machine of the character described in which the tobacco compacting member serves also as a tobacco ejecting means.

Yet another important object of the present invention is the provision of a cigarette making machine of the character described in which the tobacco ejecting member is mounted on the tobacco compacting member and actuated thereby.

Still another important object of the present invention is the provision of a cigarette making machine of the rotary type which occupies a minimum of space, is of strong construction and will give efficient and prolonged service.

The foregoing and other important objects of the present invention will become more apparent during the following disclosure and by referring to the drawings in which:

Figure 1 is a perspective view of the cigarette making machine according to the invention;

Figure 2 is a cross-sectional elevation of the same along line 2—2 of Figure 3;

Figure 3 is a plan section taken along line 3—3 of Figure 2;

Figure 4 is a plan section along line 4—4 of Figure 2;

Figure 5 is a plan section along line 5—5 of Figure 2; and

Figures 6 and 7 are plan sections similar to that of Figure 5, showing different stages of operation of the machine.

Referring now more particularly to the drawings in which like reference characters indicate like elements throughout, the machine according to the invention, comprises a circular base 1 having an aperture 2 in the top wall 1' thereof and mounting a substantially circular casing 3 provided with an elongated slot 4 in the top, flat wall 5 thereof and with an elongated slot 6 in the bottom flat wall 7 of said casing.

The slots 4 and 6 register with each other for receiving a vertical shaft 8 extending through the casing 3.

The top wall 1 is provided with a tobacco filling aperture 9 registering with the interior chamber of the casing 3.

The interior side face of the casing 3 forms a groove 10 of semi-circular cross section as shown in Figure 2, and the said side face is longitudinally curved to form two opposed semi-circular portions 11 and 12 joined by straight portions 13 and 14 as shown in Figure 4.

A disc 15 is keyed on the shaft 8 and extends within the interior chamber of the casing 3. Said disc 15 is provided with a concave groove 16 at the periphery thereof which cooperates with the semi-circular groove 10 of the casing 3 to form a space of circular cross-section as shown at the left hand side of Figure 2, and the disc 15 is displaced to the left end of the slots 4 and 6 as shown in Figure 4.

A tobacco ejecting plunger 18 is pivotally secured at 19 to the peripheral portion of the disc 15 in order to eject the tobacco through the nipple 20 secured to a recessed side wall 3' of the casing 3 and in tangential alignment with the inside face of the circular wall portion 9 of said casing 3. The nipple 20 has a recess at its inner end for receiving bent portion 17 of the plunger 18.

A cam plate 21 is secured to the shaft 8 in sliding contact with the underface of the shaft wall 7 of the casing 3. Said cam plate 21 is provided with an elongated cam slot 22 receiving a roller 23 rotatively mounted on a pivot shaft 24 secured to the bottom wall of the casing 3. The slot 22 has a portion 25 converging towards the shaft 8 at one end and merging with a substantially annular slot portion 26 at the other end.

Thus it will be understood that the roller 23, secured to the end of the shaft 8, is rotated in an anti-clockwise direction from the starting position of the cam 21 shown in Figure 5, the roller 23, engaging the slot portion 25, will cause displacement of the shaft 8 from the right hand side of the slots 4 and 6 to the left hand side thereof, to the position shown in Figure 3, whereby the disc 15 will close the tobacco filling aperture 9 and compact the tobacco within the grooves 10 and 11 instead of the plunger 18. Upon further anti-clockwise rotation of the knob 27, the shaft 8 will keep rotating in the left hand side ends of the slots 4 and 6, while the roller 23 is engaging the circular portion 26 of the slot 22, whereby the plunger 18 will eject the compacted tobacco through the nipple 20 into a cigarette tube. During the last mentioned rotational movement of the disc 15, there will be no friction between the tobacco and said disc, because said tobacco moves in unison with said disc. Friction will occur only along the stationary wall portion 11 of the casing 3.

The cigarette tube is held on the nipple 20 by means of a cigarette retaining arm 28 mounting a gripping member 29 adapted to contact said nipple 20 and pivoted on the base 1 by means of a pivot 30 engaging through the top thereof. A lever 31 extends within the base 1 and is secured to the pivot 30 and urged by means of a spring 32 to maintain the arm 28 in a cigarette tube retaining position. The coil spring 32 is attached to the lever 31 at one end and to the base 1 at the other end.

When the machine, according to the invention, is in starting position as shown in Figure 5, a pin 32 projecting downwardly from and secured to the cam member 21, abuts a side extension 33 of the lever 31 in order to maintain the arm 28 in cigarette tube releasing position.

In all the intermediate positions of the machine, such as the one shown in Figure 6, the pin 32' disengages the side extension 33 and the cigarette tube retaining arm 28 is urged into retaining position by the coil spring 32. At the end of the rotational movement of the cam plate 21, a second pin 34, projecting downwardly from and secured to the cam member 21, comes into contact with the outer end of the lever 31 to again release the cigarette tube retaining arm 28 as shown in Figure 7, whereby the completed cigarette, shown at C in Figure 1, is ejected from the nipple 20.

The machine may be dismounted by unscrewing the nut 35 at the threaded lower end of the shaft 8.

While a preferred embodiment of the present invention has been illustrated and described it is understood that various modifications may be resorted to without departing from the spirit and scope of the appended claims.
What I claim is:
1. A cigarette making machine comprising a casing defining a chamber having a longitudinally curved wall, a nipple projecting outwardly from said casing and in communication with said chamber, said nipple being tangent with said curved wall, a tobacco compacting member mounted within said chamber and having an accurate peripheral edge adapted to cooperate with said longitudinally curved wall, and a plunger pivoted on the periphery of said tobacco compacting member, the latter being mounted for rotation and for displacement towards and away from said longitudinally curved wall whereby the tobacco is compacted between said member and said curved wall during approaching movement of said member towards the latter and is ejected through said nipple during rotational movement of said tobacco compacting member relatively to and adjacent said curved wall.

2. A cigarette making machine as claimed in claim 1, including a shaft extending through the said casing and on which said tobacco compacting member is secured, a cam secured to said shaft, and a projecting part on said casing engaging said cam whereby rotation of said cam from an initial to a final position will cause displacement of said member from a position away from said curved wall to a position near the same.

3. A cigarette making machine as claimed in claim 2, including a cigarette tube retaining arm having a gripping portion, a spring urged to contact said nipple, and an abutment on said cam member adapted to rotate said arm into the position when the arm is in the initial position.

4. A cigarette making machine comprising a base, a casing mounted on said base having flat top and bottom walls provided with registering elongated slots, said casing having an interior side groove longitudinally curved in the form of an arc of a circle and having a semi-circular cross-section a shaft extending through said slots, a disc secured to said shaft and disposed within said casing, said disc having a peripheral semi-circular groove adapted to cooperate with the inner groove of said casing in order to form a curved channel of circular cross-section when a portion of the periphery of said disc is adjacent to said side groove of said casing, a plunger pivoted to the periphery of said disc having a portion thereof of circular cross-section adapted to sweep through a portion of said channel upon rotation of said shaft and said disc, a cam member secured to said shaft underneat said casing, a projection on said casing engaging a cam slot made in said cam member, whereby rotation of said shaft will cause said disc to move towards said longitudinally curved groove to compact the tobacco within said curved space and then to displace said tobacco along with said disc under the sweeping action of said plunger, and a cigarette tube holding nipple secured to said casing and communicating with the interior thereof, the outer portion of said nipple being in substantially tangential alignment with said curved groove of said casing thereby to discharge the tobacco ejected by said plunger.

5. A cigarette making machine as claimed in claim 4 further including a cigarette tube retaining arm pivoted on said base adjacent said nipple to take a position adapted to contact said nipple to hold a cigarette tube thereon and a second position having a guide for release said cigarette tube, a lever secured to the pivot of said arm, a spring urging said lever to maintain said arm in cigarette tube holding position, a side extension on said lever, a first abutment on said cam to contact said side extension to maintain said arm in cigarette tube releasing position in the initial position of said cam, and a second abutment on said cam to adapt said lever for maintaining said arm in releasing position in the final position of said cam.

6. A cigarette making machine as claimed in claim 5 wherein said casing defines a chamber bounded by two opposed semi-circular side walls connected by straight side wall portions, said shaft being displaceable along the longitudinal axis of said chamber.

7. In a cigarette making machine of the character described, a receiving chamber having a curved wall, a discharge nipple tangent to the wall of said chamber, a tobacco compacting member mounted within said chamber for a first movement toward said chamber wall for compacting the tobacco against said wall, and for a second movement along said wall towards said nipple, a plunger mounted on said member for engaging the compacted tobacco and for ejecting the same through said nipple during the second movement of said member, and means for actuating said member to accomplish said two movements, said on away from said nipple to substantially semi-circular cross section longitudinally curved into an arc of a circle and said member consisting in a disc, said actuating means including a shaft to which said disc is secured and a cam secured to said shaft so arranged that during initial rotation of said shaft said cam will cause displacement of said disc to a position adjacent said wall for said first movement and further rotation of said shaft will cause rotation of said disc relative to said wall while in said position, for said second movement.

8. In a cigarette making machine as claimed in claim 7, wherein the periphery of said disc forms a groove of semi-circular cross-section cooperating with the groove of said wall when said disc is in a position prior to said first movement, to form a space for receiving the compacted tobacco, said plunger sweeping through said space during said second movement of said disc.

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