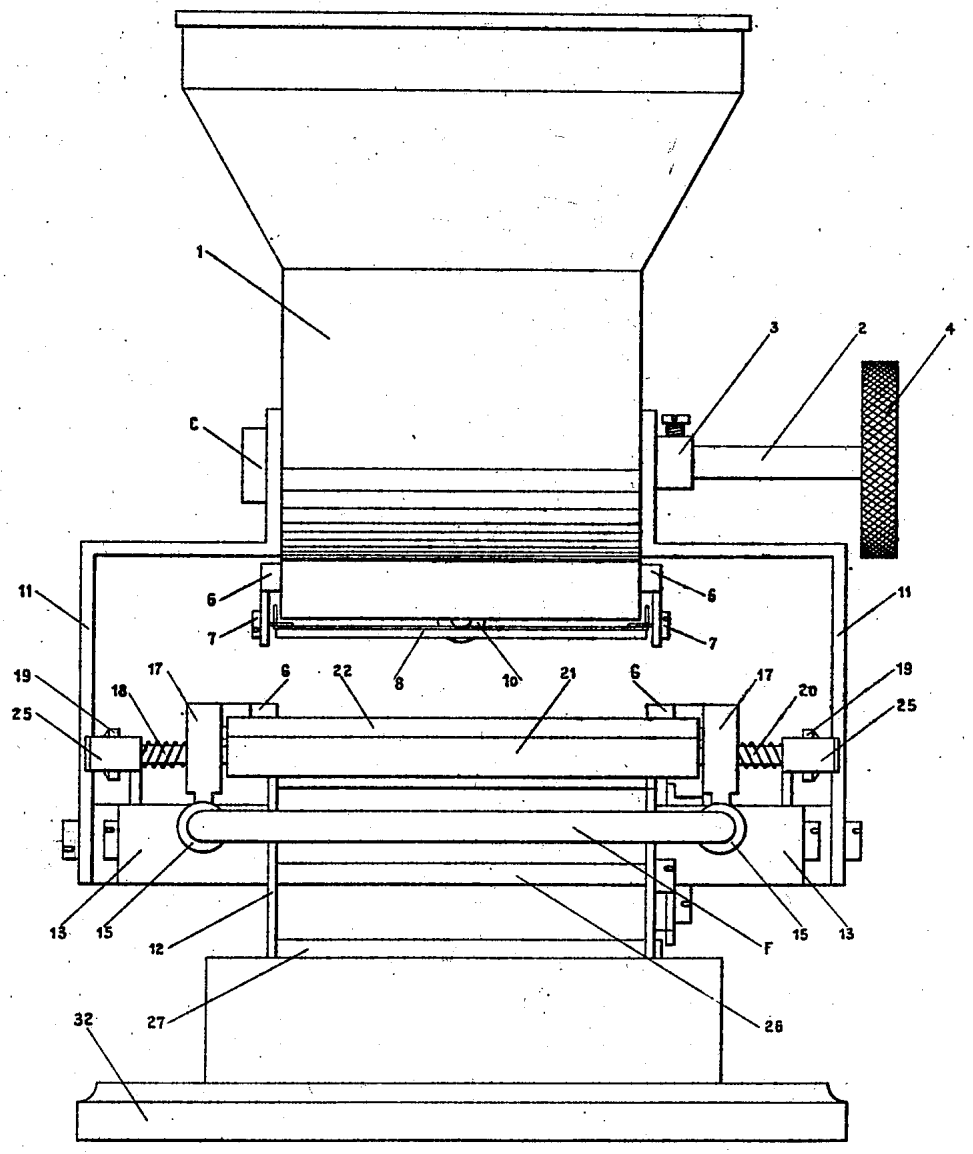
Dec. 19, 1922. 1,439,345.

A. VICTORERO.

MACHINE FOR THE ELABORATION OF CIGARETTES.

FILED SEPT. 5, 1916. 5 SHEETS—SHEET 1.

Fig. 1



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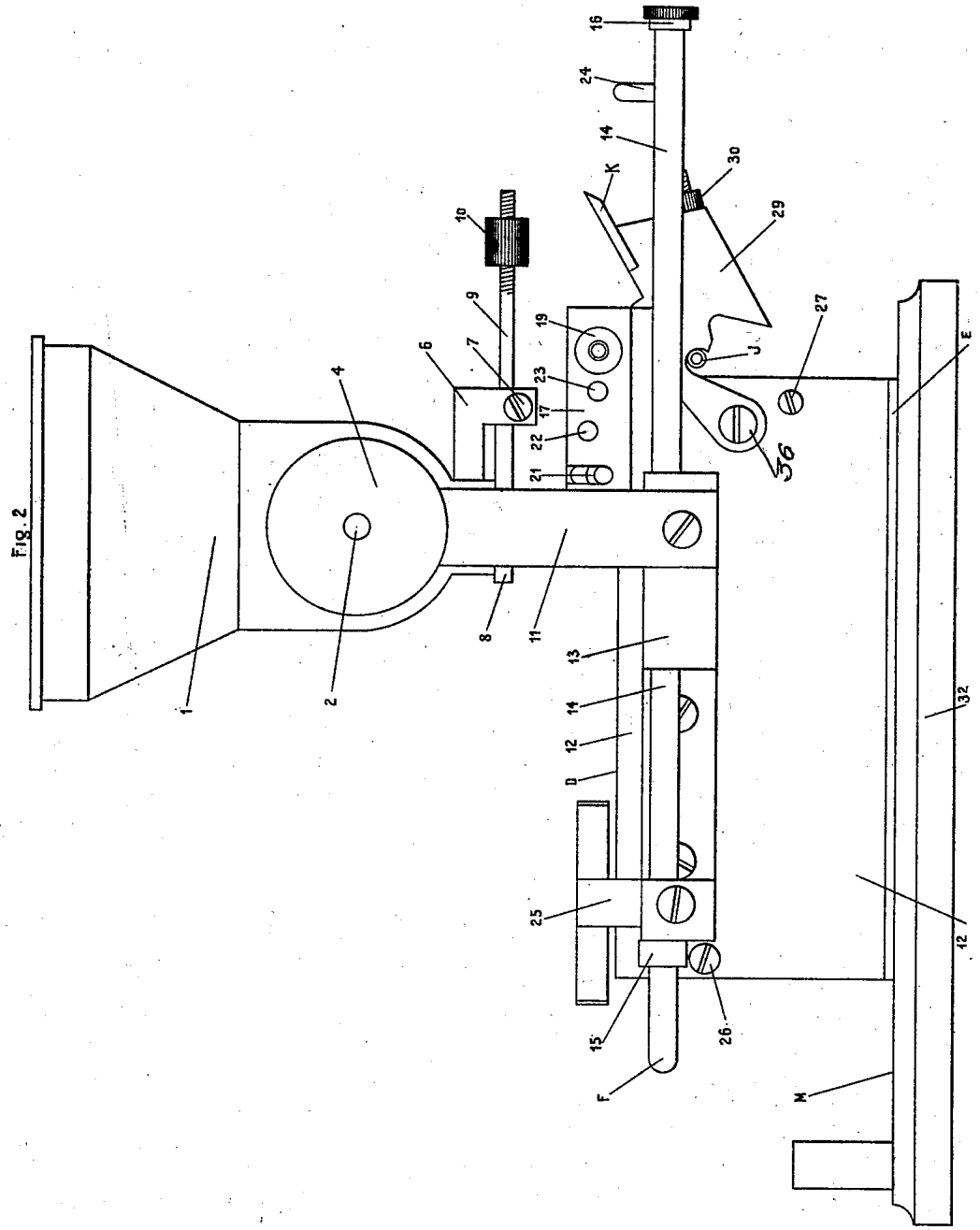

Fig. 2

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5 SHEETS—SHEET 3.

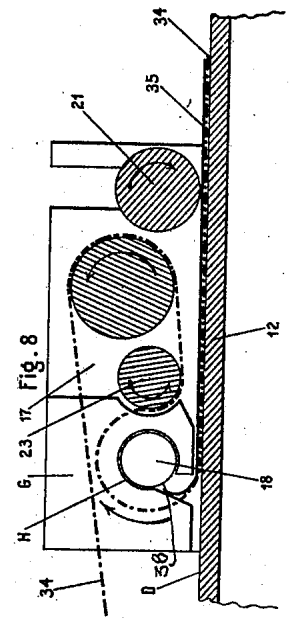

Fig. 8

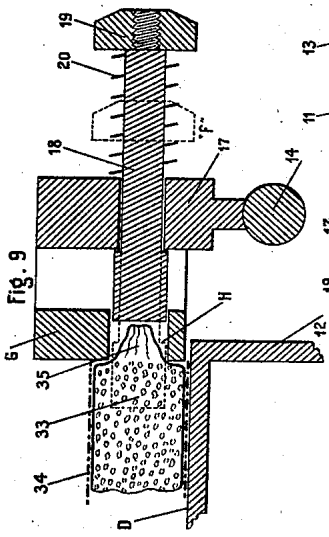

Fig. 9

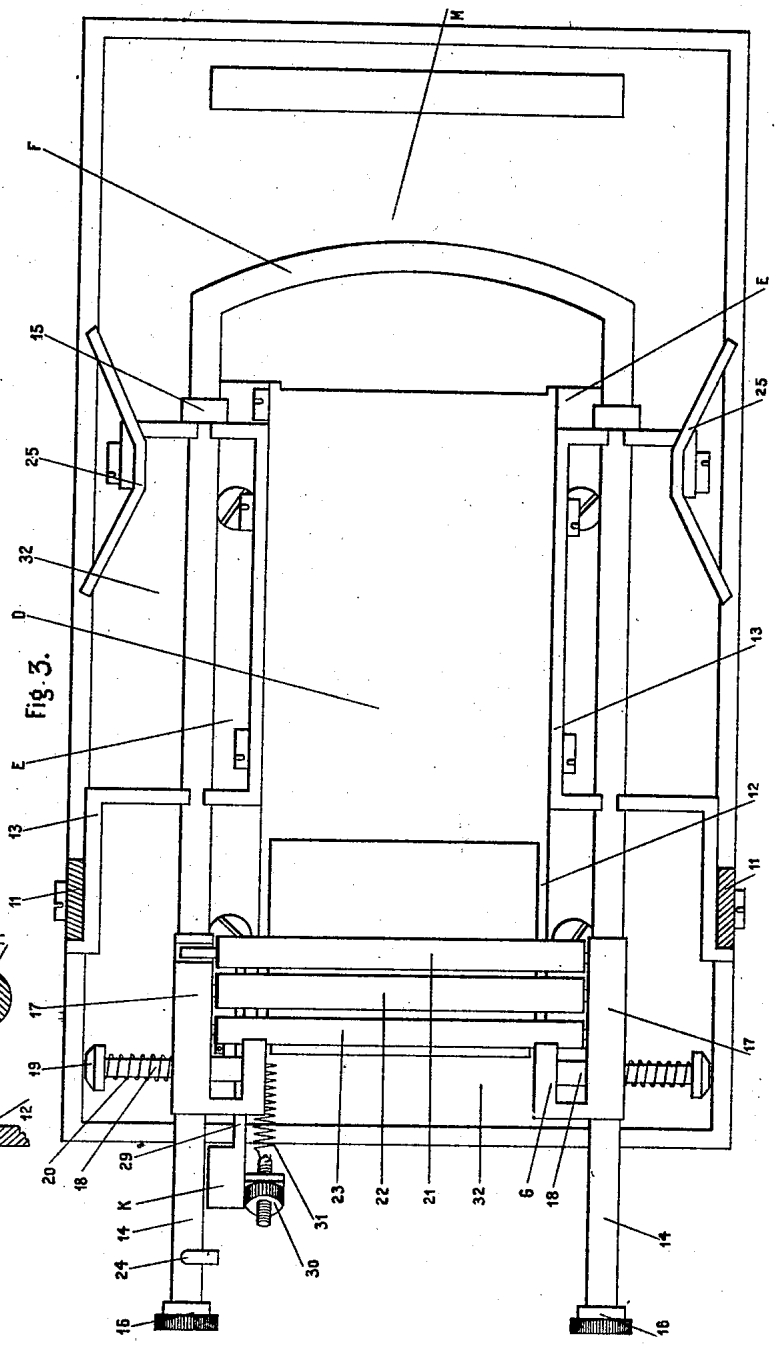

Fig. 3.

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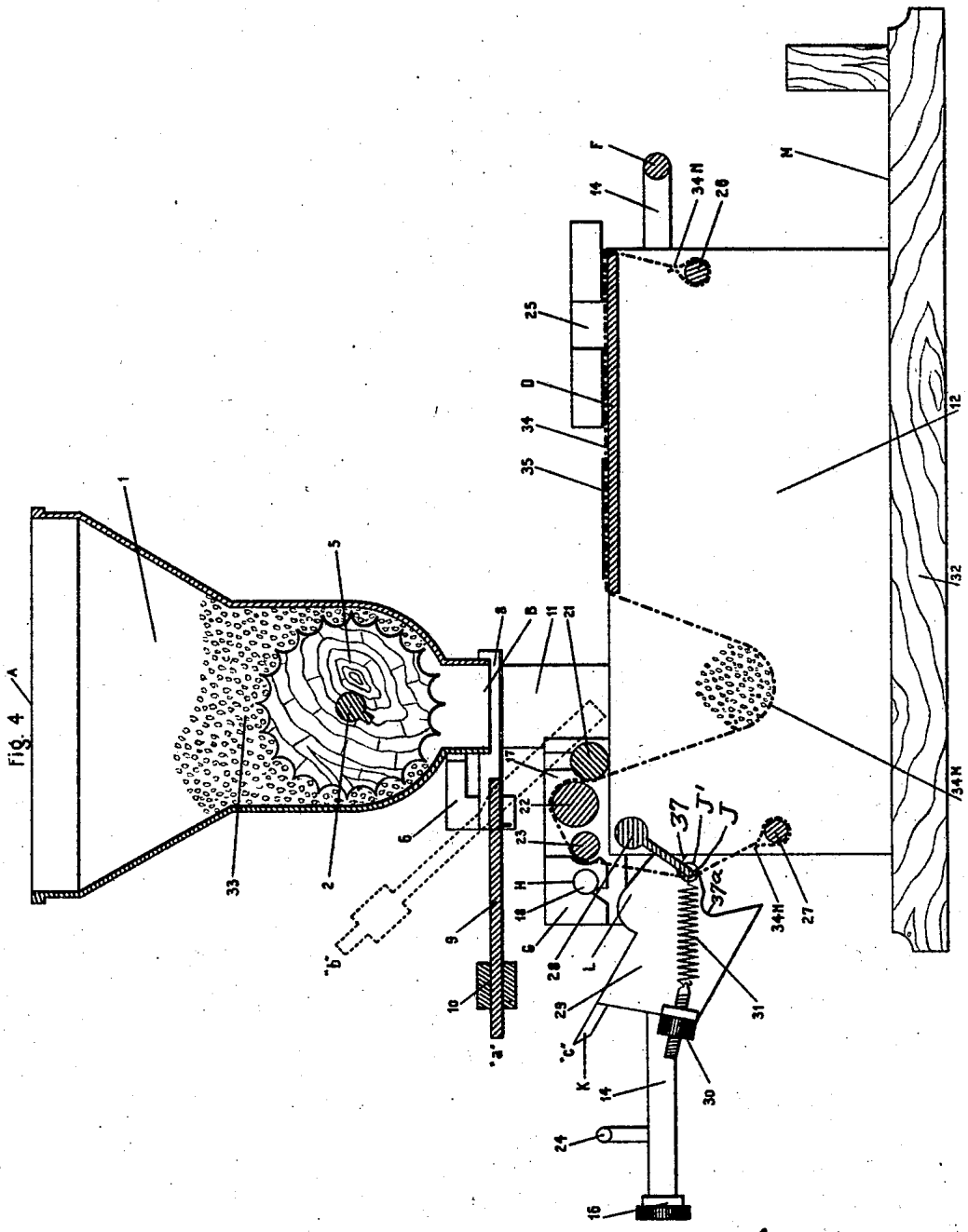

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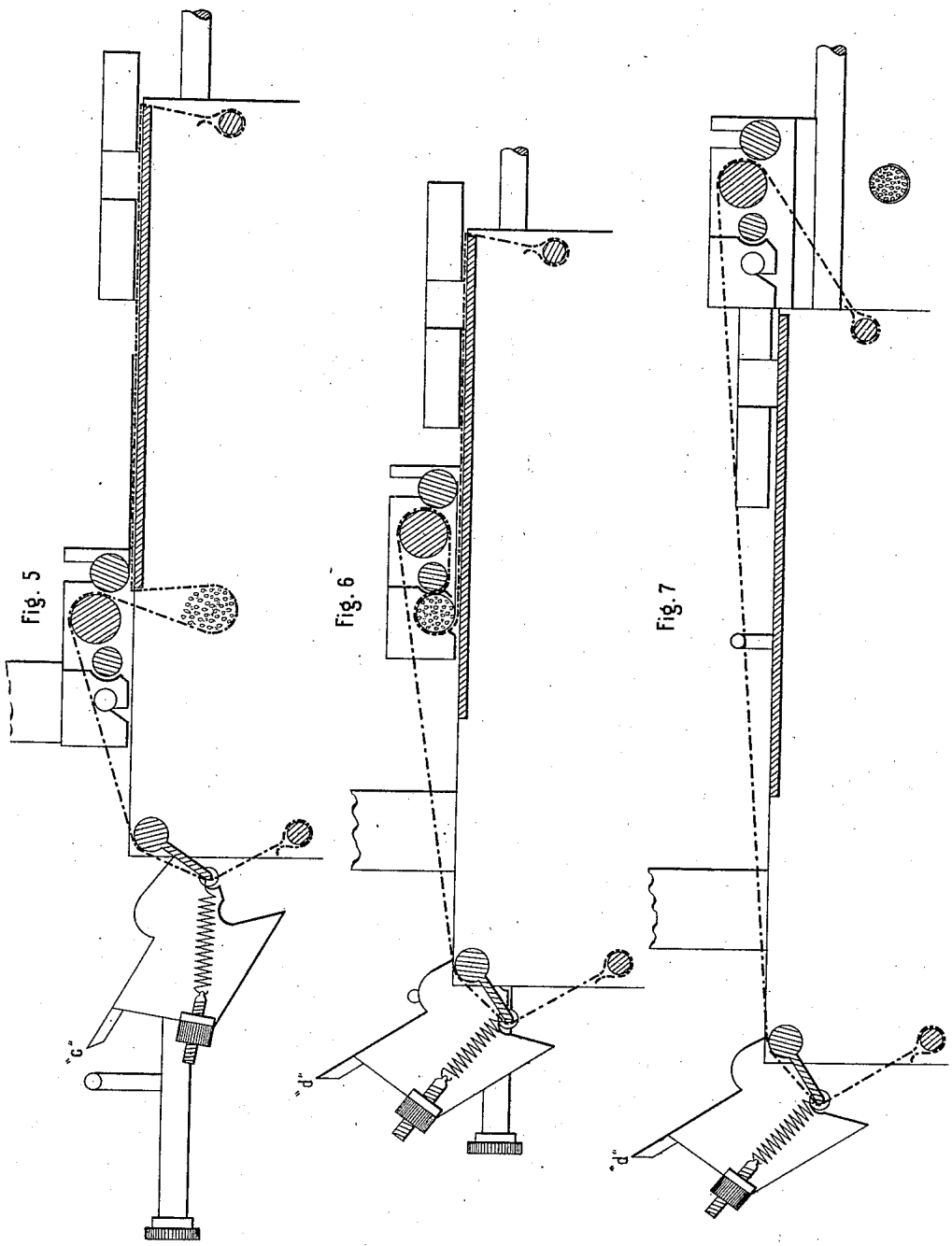
MACHINE FOR THE ELABORATION OF CIGARETTES.

FILED SEPT. 5, 1916. 5 SHEETS—SHEET 5.



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Patented Dec. 19, 1922. 1,439,345

UNITED STATES PATENT OFFICE.

AGUSTIN VICTORERO, OF LASTRES, SPAIN.

MACHINE FOR THE ELABORATION OF CIGARETTES.

Application filed September 5, 1916. Serial No. 118,480½.

To all whom it may concern:

Be it known that I, AGUSTIN VICTORERO, a subject of the King of Spain, residing at Lastres, Province Oviedo, Asturias, Spain, have invented a new and useful Machine for the Elaboration of Cigarettes, for which I have secured a patent in Spain, granted February 3, 1915, and the official diploma for which was issued February 13, 1915, bearing the official number 59,665, and of which the following is a specification.

This invention relates to improvements in machines for the manufacture of cigarettes and has for its object to provide a machine whereby the proper quantity of tobacco for each cigarette is delivered to wrapping mechanism adapted to receive the tobacco and cigarette paper and to deliver the finished cigarette after the wrapping operation.

The invention will be more fully described with reference to the accompanying drawings whereon Figures 1 and 2 are front and side views of the preferred construction of the improved cigarette making machine.

Fig. 3 is a plan view of the machine with the feeding mechanism removed, and Fig. 4 is a longitudinal section of the machine.

Figs. 5, 6 and 7 are diagrammatic views of the wrapping mechanism showing the parts in various stages of the wrapping operation and Fig. 8 is a detail view of the wrapping rollers. Fig. 9 is a sectional view of the mechanism for finishing the ends of the cigarettes.

In Figs. 1, 2 and 3 the wrapping apron, tobacco and cigarette paper are omitted and in Fig. 8 the tobacco is not shown, in order that the mechanism may be more readily understood.

The improved machine comprises a feed hopper 1 open at the top at A for the reception of the tobacco and having a discharge opening B at its lower end. In the hopper 1 is fitted a fluted roller 5 mounted on a shaft 2 which is prevented from axial movement by a head C at one end of the shaft and a collar 3 adjustable on the shaft 2.

The latter is operated by a hand wheel 4 or in any other suitable manner so as to rotate the roller 5 and discharge the tobacco through the opening B.

Below the hopper 1 is mounted a tray or scale pan 8 which is pivoted on pins 7 or the like, the pins 7 being supported in brackets 6 suspended from the hopper. The tray or scale pan 8 has a projecting balance arm 9 provided with an adjustable counterweight 10, whereby the scale pan may be adjusted to rock on the pins 7 when a predetermined quantity of tobacco has been delivered to the scale pan from the hopper 1. When the scale pan 8 automatically falls from the position indicated at *a* to the position shown dotted at *b* in Fig. 4 the tobacco is delivered into a pocket 34^M in an apron 34. It will be noted that the tobacco is discharged from the scale pan during its descent or rocking movement.

The apron 34 is supported on a frame 12 mounted on a base 32 and having a flat surface or table D, the frame 12 being adapted to support the feed hopper 1 by means of side brackets 11 and 13. The apron 34 is preferably of the same width as the inside width of the frame 12 and is folded and sewn at each end to form folds or hems 34^N in which rollers 26 and 27 are inserted, the rollers 26 and 27 being fixed in position in the frame 12. The tension in the apron 34 is regulated by means of an arm J pivoted at one side at 28 in the frame 12 (see Fig. 4) and actuated by trigger mechanism hereinafter described. At one end of the free side of the arm J is a roller J'.

The trigger mechanism comprises two parallel bars 14 adapted to slide through apertures in the side brackets 13 of the frame 12 and connected at the front of the machine by a yoke F which serves as a hand grip. Each bar 14 has two stops 15 and 16 for limiting the movement of the bars, the stops being adapted to abut against the side brackets 13. A carrier 17, which forms the end bearings for rollers 21, 22 and 23, is fixed to each bar 14, the roller 21 being journaled at its ends in vertical slots in the sides of the carrier 17, as shown in Fig. 8, and also in Figs. 5, 6 and 7.

Each of the carriers 17 has an arm G which is provided with an aperture H constituting a guide for one end of a plunger 18 which is slidably mounted in the carrier 17. Each plunger 18 is surrounded by a spring 20 confined between the support 17 and a knob 19 threaded on the piston 18, the latter being adapted to take up the dotted position indicated by *f* in Fig. 8 when the knob 19 engages with an inclined plate or cam 25 carried by the side brackets 13.

One of the parallel bars 14 has a hook or projection 24 adapted to engage beneath a trigger K projecting from a trigger plate 29 and move the latter into the position *d* in Figs. 6 and 7 when the bar 14 is pulled forward, the trigger plate 29 being pivoted to the frame 12 at 36 (see Fig. 2).

On the return movement of the bar 14, the arm G of the carrier 17, which moves with the bar, engages a cam surface L on the trigger plate 29 and returns it to the position marked C in Figs. 4 and 5. The trigger plate 29 carries a screw 30 connected to one end of a spring 31, the other end of which is connected to the arm J to cause the roller J′ of said arm J to engage in one or other of two recesses 37, 37ª, in the trigger plate 29. Primarily the roller J′ is engaged in the recess 37 and the tension of the spring 31 causes the arm J and its roller J′ to hold the trigger plate 29 and the trigger K in the initial position shown in Fig. 4.

In operation, the mechanism is primarily arranged as indicated in Fig. 4 and the tobacco 33 is fed to the hopper 1 after adjusting the counterweight 10 of the scale pan to suit the quantity of tobacco required for each cigarette. The roller 5 is then slowly rotated and tobacco delivered into the scale pan 8 until the latter rocks into the position marked *b* and discharges the tobacco into the pocket 34ᴹ of the apron 34, whereupon the scale pan returns to its normal position marked *a*.

The cigarette paper 35 is laid on the apron 34 on the table D with its gummed edge uppermost and nearest the front of the machine. The cigarette paper is preferably slightly larger than the width of the apron 34 and is conveniently placed thereon in order that it may overlap the apron slightly at each side, the overlap being intended to close the end of the finished cigarette.

The hand grip F is then pulled forward until the parallel bars 14 are arrested by the abutment of the stops 16 against the side brackets 13. As the bars 14 are moved forwardly, the carriers 17 moving therewith carry the rollers 21, 22 and 23 forward, thereby closing the pocket 34ᴹ and rolling up the tobacco therein as in Fig. 5. Whilst the rollers 21, 22 and 23 are advancing towards the table D, the trigger K is lifted by the projection 24 on the bar 14, thereby rocking the arm J and causing said arm to increase the tension on the apron 34, thus gradually compressing the tobacco and as will be apparent from an inspection of Figs 5 and 6. The arm J continues to move under the tension of the spring while the trigger K is being lifted and while said arm and trigger are thus moving the roller J′ leaves the recess 37. Said roller J′ engages in the recess 37ª when the arm J has turned to such an extent as to put the apron 34 under maximum tension and the parts are in the positions shown in Fig. 7. Hence the recesses 37, 37ª, coact with the roller J′ of the arm J to limit the extent of movement of said arm and of the trigger plate and trigger. The tension on the apron 34 may be adjusted by varying the pull of the spring 31 on the arm J by adjustment of the screw 30.

When the rollers 21, 22 and 23 have advanced to such an extent as to bring the tobacco onto the table D, the tension in the apron 34 in contact with the rollers 22 and 23 is such that the latter are rotated in the direction of the arrows in Fig. 8 and the tobacco enclosed by the apron is also rotated or rolled, the rolling action continuing until the cigarette leaves the apron. The roller 21 which also turns in the direction indicated in Fig. 8 serves by its weight to keep the cigarette paper in position on the apron and to facilitate the feed of the paper to the tobacco. The paper wraps round the tobacco as in Fig. 6 and is rolled into a cylindrical form and automatically closed by the adhesion of the gummed edge in the usual manner.

During the wrapping of the cigarette the overlapping edges of the paper are received within the apertures H of the arm G as in Fig. 8 the edges of the paper being guided into the apertures H by slots 38 (see Fig. 8).

After wrapping of the tobacco has been effected, the overlapping edges of the cigarette paper are forced into the ends of the cigarette as shown at *f* in Fig. 9 by the cooperation of the plungers 18 with the inclined plates or cams 25. After passing in front of the cams 25, the plungers 18 return to normal position and the finished cigarette falling from the apron 34 is delivered at the front of the machine into the interior M of the base 32. Thereupon the bars 14 may be returned until arrested in their backward movement by the abutment of the stops 15 against the side brackets 13 as in Fig. 3, when the mechanism will again be in position for the manufacture of the next cigarette, the pocket 34ᴹ being formed in the apron 34 by depressing the latter underneath the feed hopper, 1.

Having now particularly described the nature of my said invention and in what manner the same is to be performed I declare that what I claim is:

1. In a cigarette making machine, a frame having a table, an apron having a portion thereof arranged over the table and having its ends connected to the frame at fixed points, means to put the apron under tension, a carrier movable longitudinally over that portion of the apron on the table and forwardly beyond the front end of the table, rollers mounted in the carrier and over which said apron passes, means to supply

tobacco to a pocket formed by the apron in front of and below the table, and means to operate the apron tensioning means and thereby cause the apron to rotate the first named rollers of the carrier as the carrier moves rearwardly over the table.

2. In a cigarette making machine, a frame having a table, an apron having a portion thereof arranged over the table, and having its ends connected to the frame at fixed points, means to put the apron under tension, a carrier movable longitudinally over that portion of the apron on the table and forwardly beyond the front end of the table, rollers mounted in the carrier and over which said apron passes, a presser roller also mounted in the carrier and arranged in rear of the said rollers, means to supply tobacco to the pocket formed by the apron in front of and below the table, and means to operate the apron tensioning means and thereby cause the apron to rotate the first named rollers of the carrier as the carrier moves rearwardly over the table.

3. A cigarette making machine comprising an apron adapted to receive a cigarette paper and a predetermined quantity of tobacco, rollers cooperating with said apron to roll the tobacco in a pocket formed in the apron and to envelop the tobacco in the cigarette paper, a table beneath a portion of the apron, means for traversing the rollers over the table to roll the tobacco over said table, means for securing the ends of the apron, and means to increase the tension on the apron during the rolling of the tobacco.

4. In a cigarette making machine, a frame having a table, an apron having a portion thereof arranged over the table, and having its ends connected to the frame at fixed points, means to put the apron under tension, a carrier movable longitudinally over that portion of the apron on the table and forwardly beyond the front end of the table, rollers mounted in the carrier and over which said apron passes, means to supply tobacco to the pocket formed by the apron in front of and below the apron, means to operate the apron tensioning means and thereby cause the apron to rotate the rollers of the carrier as the carrier moves rearwardly over the table, plungers carried by the carrier to finish the ends of the cigarettes, and means to operate said plungers at a predetermined point in the movement of the carrier.

5. A cigarette making machine comprising an apron adapted to receive a cigarette paper and a predetermined quantity of tobacco, rollers cooperating with said apron to roll the tobacco in a pocket formed in the apron and to envelop the tobacco in the cigarette paper, a table beneath the apron, means for traversing the rollers over the table to roll the tobacco over said table, means for securing the ends of the apron, means to increase the tension on the apron during the rolling of the tobacco, and means to deliver a predetermined quantity of tobacco to the apron, said means comprising a feed hopper and a counter-balanced pivoted tray beneath the hopper, said tray being so pivoted as to discharge the tobacco during its rocking movement.

In testimony whereof I affix my signature in presence of two witnesses.

AGUSTIN VICTORERO.

Witnesses:
JOSÉ ROEB,
ALFONSO SÓPER.