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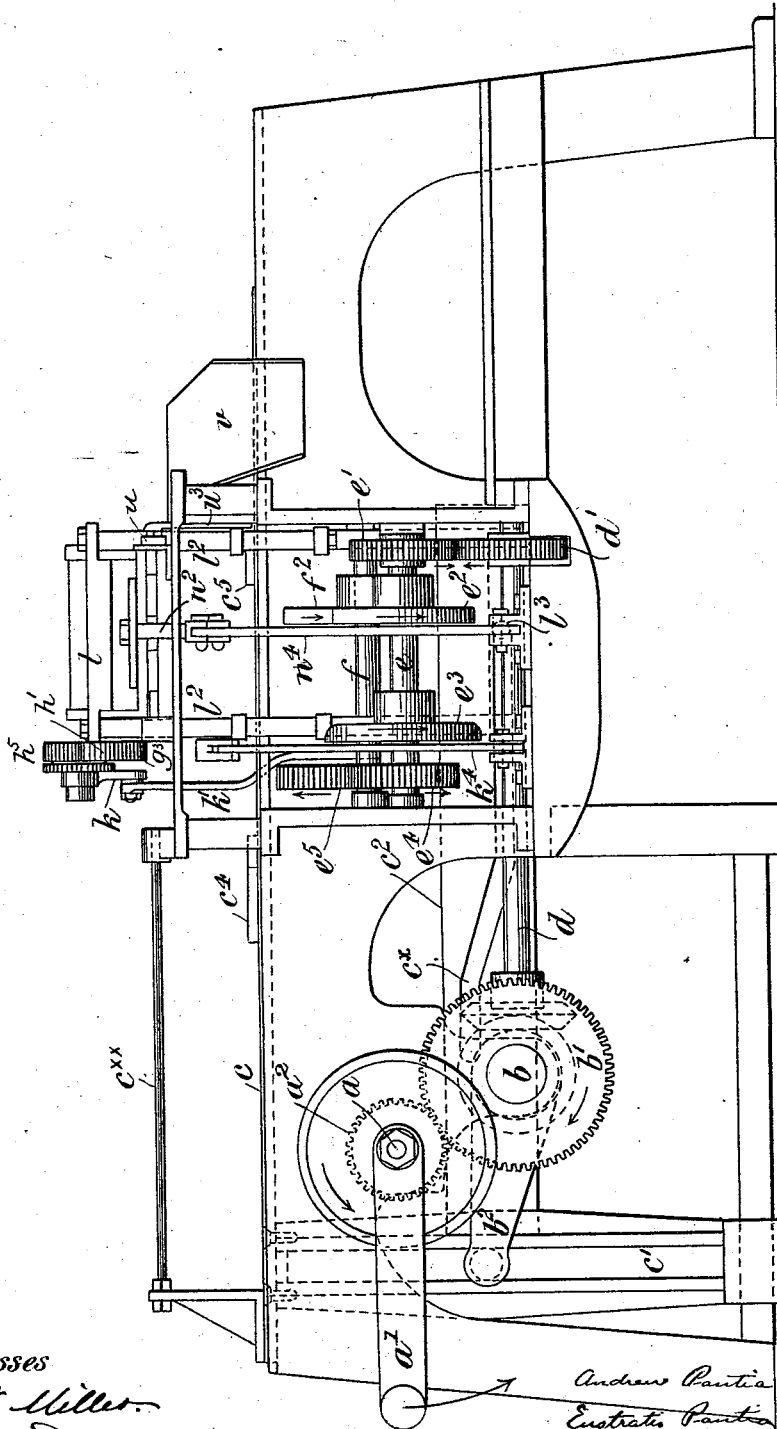
6 Sheets—Sheet 1.

A. P. & E. P. SCARAMANGA.
CIGARETTE MACHINE.

No. 522,620.

Patented July 10, 1894.

Fig. 1.



Witnesses

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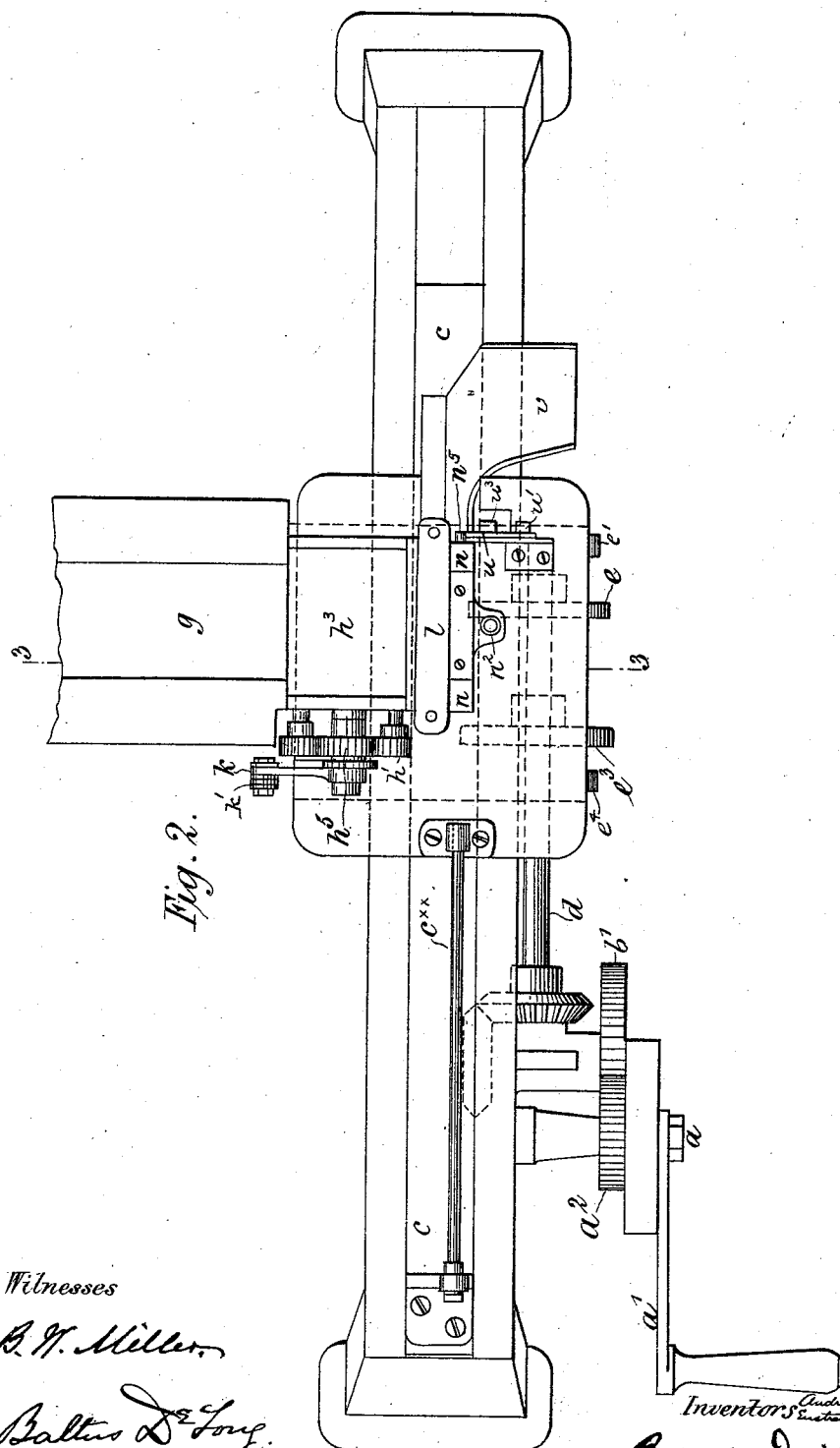
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Fig. 5.

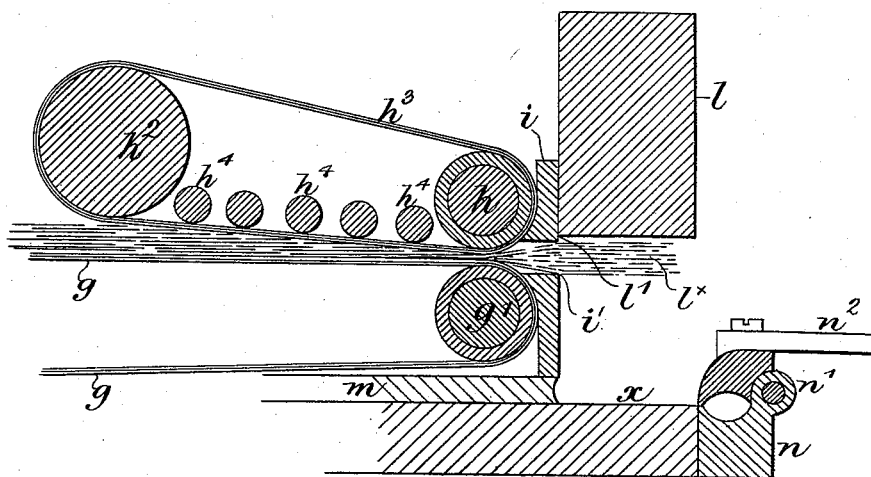


Fig. 6.

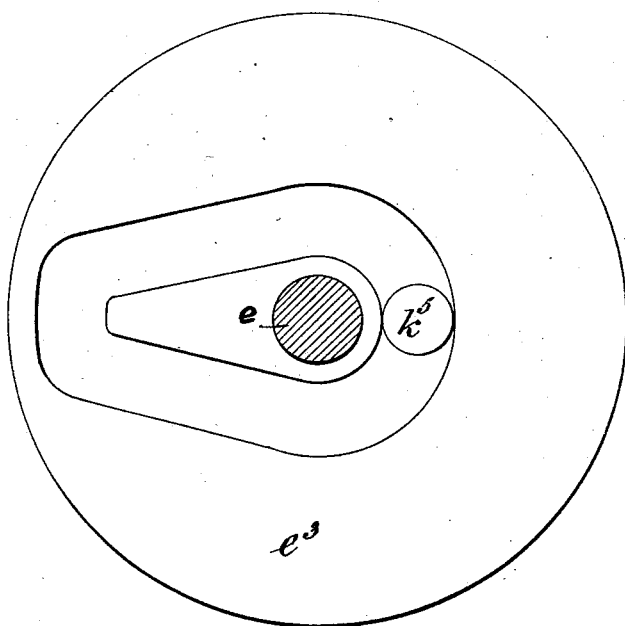
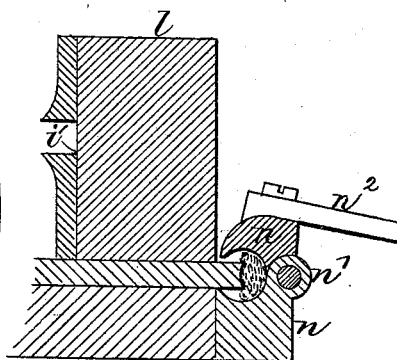


Fig. 7.



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Fig. 9.

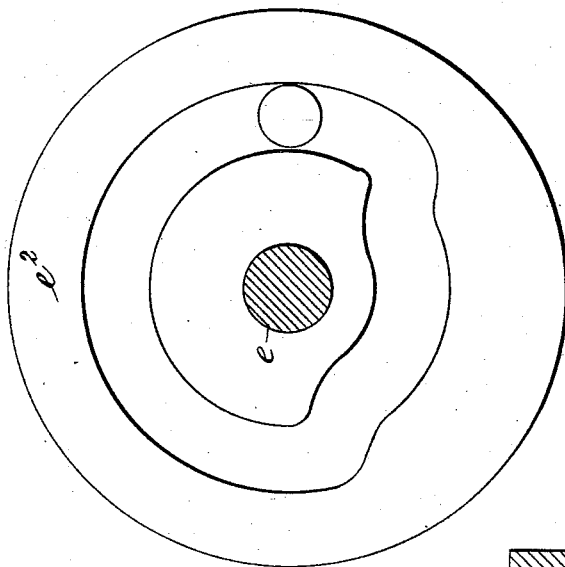


Fig. 12.

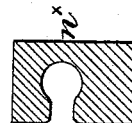


Fig. 11.

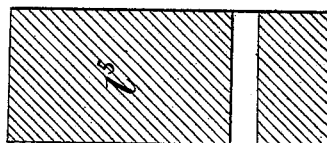


Fig. 8.

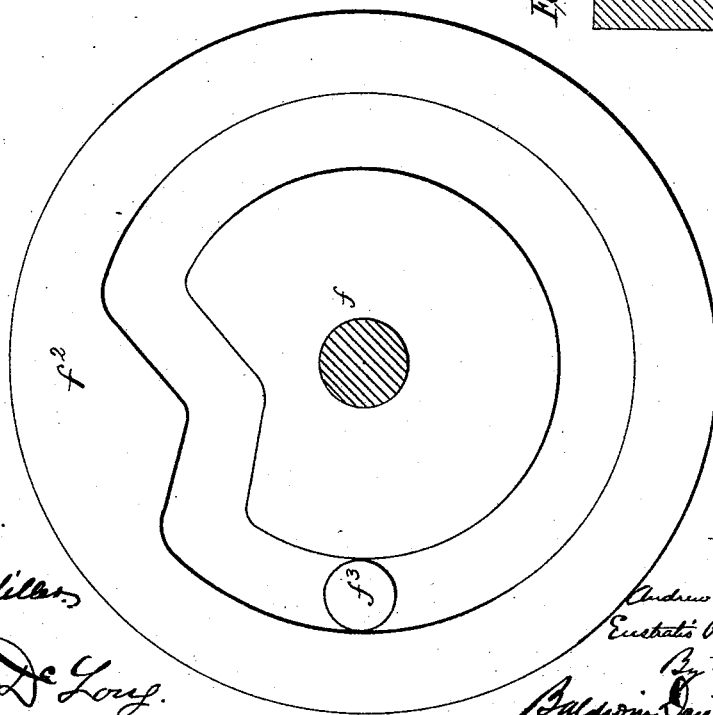
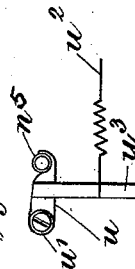


Fig. 10.



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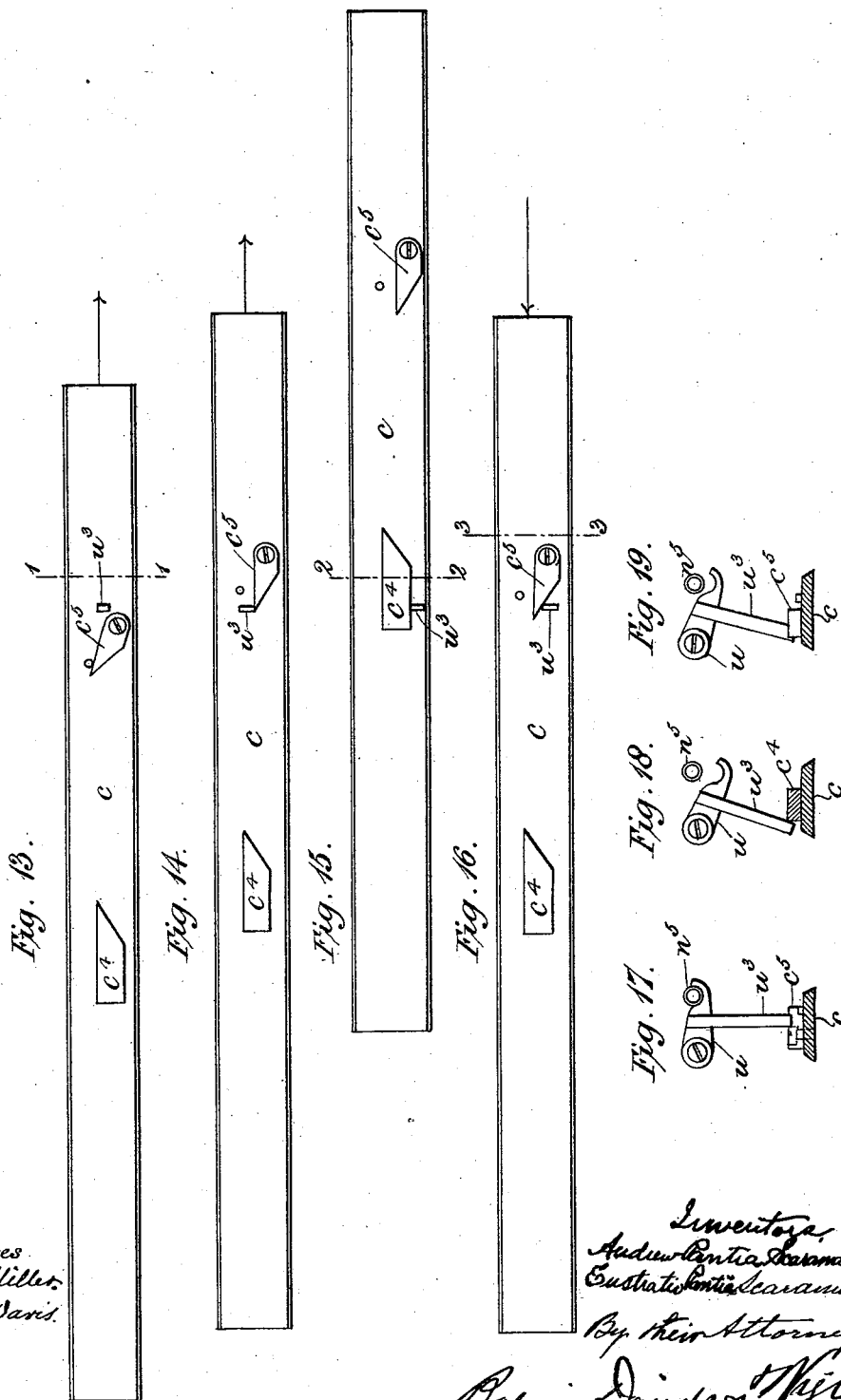
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UNITED STATES PATENT OFFICE.

ANDREW PANTIA SCARAMANGA AND EUSTRATIO PANTIA SCARAMANGA,
OF LONDON, ENGLAND.

CIGARETTE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 522,620, dated July 10, 1894.

Application filed December 13, 1893. Serial No. 493,561. (No model.)

To all whom it may concern:

Be it known that we, ANDREW PANTIA SCARAMANGA and EUSTRATIO PANTIA SCARAMANGA, manufacturers, subjects of the King of Greece, residing at 56 St. Mary Axe, in the city of London, England, have invented certain new and useful Improvements in Cigarette-Machines, of which the following is a specification.

According to our invention, the tobacco is spread upon an endless apron which carries it to the filler-forming mechanism. Cutting apparatus severs from the tobacco presented by the apron, proper quantities to form fillers for the cigarettes. Each filler thus cut off is thrust by a pusher into a mold in which the tobacco is compressed, and is then driven out endwise into a tube of paper placed to receive it.

In order that our invention may be fully understood and readily carried into effect we will proceed to describe the drawings annexed.

Figure 1 is a side elevation of a cigarette machine in accordance with our invention. Fig. 2 is a plan of the same. Fig. 3 is a section on the line 3-3, in Fig. 2. Fig. 4 shows a portion of the gearing of the machine. Figs. 5 to 10 show separately some of the parts of the machine to a larger scale. Figs. 11 and 12 show modifications. Figs. 13 to 19 are views of the slide *c* with the inclines *c*⁴ and *c*⁵ and the latch *u*. Fig. 13 shows the slide *c* in the extreme left-hand position. Fig. 14 shows the slide *c* when it has moved slightly to the right and the arm *w*³ is passing the incline *c*⁴. Fig. 15 shows the slide *c* in the extreme right-hand position, the arm *w*³ is in contact with the incline *c*⁴ and the latch *u* is turned away from the nozzle *n*³. Fig. 16 shows the slide *c* when it has moved again to the left and the arm *w*³ is in contact with the incline *c*⁵ and the latch *u* is turned away from the nozzle *n*⁵. Fig. 17 is a section on the line 1-1, Fig. 13. Fig. 18 is a section on the line 2-2, Fig. 15. Fig. 19 is a section on the line 3-3, Fig. 16.

a is a shaft on which is a crank handle *a*¹ and a spur wheel *a*² engaged with another spur wheel *b*¹ on a shaft *b*. On this shaft is an arm *b*² carrying a crank pin which pro-

jects into the vertical slot *c*¹ in the slide *c*. The slide *c* extends almost the whole length of the machine and it is suitably guided by the framings so that it may travel truly to and fro in a horizontal direction. The shaft *b* by beveled gear drives a longitudinal shaft *d* and this by spur wheels *d*¹ and *e*¹ drives a cam shaft *e*. Upon this shaft are two cams *e*² and *e*³ the duties of which are hereinafter described. The cam shaft *e* is geared by toothed wheels *e*⁴, *e*⁵ and *f*¹ with another cam shaft *f* on which there is a cam *f*².

g is an endless apron on which the tobacco to form the filler of the cigarettes is spread evenly by the attendant; it passes around the rollers *g*¹ and *g*². The roller at the inner end of the apron is driven by being geared by toothed pinions *g*³ *h*¹ with another similar roller *h* immediately over it. Fig. 5 is a full size section of these parts and others in immediate connection therewith. The roller *h* in conjunction with another roller *h*² carries a short endless band *h*³ and between this and the apron *g* the tobacco is carried; it is compressed strongly by the small rollers *h*⁴ *h*⁴ which are in bearings at their ends but are not driven. The rollers *g*¹ and *h* are covered with india rubber, they also forcibly compress the tobacco and eject it intermittently through the mouth *i*.

As seen in Fig. 4 the rollers *h* and *h*² are both geared with an intermediate wheel *h*⁵ and on the same shaft with this there is a ratchet wheel. A lever *k* loose on the same shaft carries a pawl which engages with the teeth of the ratchet and the lever is connected by a link *k*¹ with a bell crank *k*² which by another link *k*³ and a lever *k*⁴ takes motion from the cam *e*³. This cam is shown to a larger scale by Fig. 6 in which figure also the bowl *k*⁵ on which the cam acts and which is carried by the lever *k*⁴ is represented in the position it occupies in the cam groove when the machine is in the phase indicated in Figs. 1, 2 and 3.

l is a block which is represented full size in the sectional views Figs. 5 and 7; it has a cutting edge at *l*¹ and there is also a cutting edge upon the under side of the mouth at *i*¹. When the tobacco has been protruded from the mouth, at the proper time the block *l* de-

scends and it shears off the quantity of tobacco required for a filler; it falls on to the table α . The block descends sufficiently far for its under surface l^x to serve as an upper guide to control the detached portion or filler while it is afterward thrust on into a receiver or mold.

The movement of the block l is caused by the slot c^x in the bar c^2 (Fig. 1) which forms a part of the slide c . The block l is attached at its ends to the two side frames l^2 l^2 which slide vertically in guides and are connected at their lower ends by a cross bar on which is the bowl l^3 entering the groove c^x (Fig. 3). The block l after cutting the tobacco descends to the position shown by Fig. 7 to serve as a guide as already mentioned and as it reaches this position the pusher m advances and thrusts the tobacco into the metal receiver or mold n which is then open. The pusher m takes its movement from a lever m' (Fig. 3) on which is a bowl f^3 engaged in the groove in the cam f^2 which with the bowl is shown fully by Fig. 8. The receiver or mold is in two parts hinged together at n' and upon the upper part is an arm n^2 connected by a link n^3 with the lever n^4 and this is moved to and fro at appropriate times by the cam e^2 . Fig. 9 shows this cam separately and the bowl in its proper position relatively to Figs. 1, 2 and 3.

The operation of the machine is as follows:—The tobacco having been duly spread on the apron g is protruded through the mouth i ; a quantity is then cut off by the block l and falls onto the table α . The block l descends to guide the tobacco and then it is thrust by the pusher m into the receiver or mold n ; it is at the same time strongly compressed. Then the pusher recedes, the receiver or mold closes and the tobacco is again compressed. It is advisable so to form the cam that after closing, the jaw opens again to a small extent to facilitate the passage of the filler from the receiver or mold into the cigarette paper; this reopening of the receiver or mold must not be such as will injure the cigarette paper which as will be presently explained is now upon the nozzle of the mold. While these operations are in progress the paper tube to receive the filler is put onto the nozzle n^5 of the mold. This may be done by hand or by mechanism which forms no part of the present invention.

A little latch u shown separately by Fig. 10 then comes into action; it can turn about the stationary pin u' and the spring u^2 now causes it to close against the paper upon the nozzle n^5 and to hold it so that the paper remains on the nozzle. With the parts in this position, the propelling pin c^{xx} advances and it thrusts the tobacco from the mold or receiver into the paper. The filler passes readily into the paper because of the severe nips which just previously have been given to it, which have compressed it into a small compass, and it is only after a considerable time that the filler

will be found to have expanded again and the cigarette will appear to be properly filled. When the tobacco is already protruded through the paper tube an incline c^4 on the slide c comes against the arm u^3 of the latch u (Fig. 18) and the cigarette is liberated; the propelling pin c^{xx} drives it off the nozzle n^5 and it falls down an incline v into a suitable receiver. The cigarette is afterward finished by trimming off the excess of tobacco from its ends. c^5 is the incline which moves the latch u to allow the nozzle n^5 to receive the paper. Sometimes we make the block l^5 with a passage through it as is shown by Fig. 11 so that the tobacco may be retained in the block until the pusher drives it into the receiver or mold. It is not essential that the receiver or mold should be in two parts opening as described; it may be in one piece but permanently open on one side as shown at n^x in Fig. 12. The pusher enters by this opening, compresses the filler and then retires until its extremity completes the circle of the mold.

What we claim is—

1. In apparatus for making cigarettes, the combination of a fixed cutting edge, a moving cutting block for severing the tobacco and afterward acting as a guide for a pusher, a table onto which the tobacco falls after being severed, a mold and a pusher for thrusting the tobacco into the mold and then compressing it.

2. In apparatus for making cigarettes the combination of a fixed cutting edge, a moving cutting block for severing the tobacco and afterward acting as a guide for a pusher, a table onto which the tobacco falls after being severed, a pusher for thrusting the tobacco into a mold and then compressing it, a mold, a nozzle on the end thereof, and a latch at the end of the nozzle for holding a cigarette paper in position.

3. In apparatus for making cigarettes, the combination of a fixed cutting edge, a moving cutting block for severing the tobacco and afterward acting as a guide for a pusher, a table onto which the tobacco falls after being severed, a pusher for thrusting the tobacco into a mold and then compressing it, a mold made in two parts hinged together, a nozzle on the end thereof, and a latch at the end of the nozzle for holding a cigarette paper in position.

4. In a cigarette machine, the combination of a frame or support, a revolving shaft a mounted therein, a slotted reciprocating slide c , operatively connected with the shaft and moved thereby, the cutting block l , a stud or roller carried by the block and entering a slot in the slide, the propelling pin c^{xx} attached to the slide to reciprocate therewith, cams operatively connected with the shaft a and actuated thereby, a mold which receives a charge of tobacco from the cutting block, a pusher actuated by the cams and operating to force the filler into the mold and rollers h and g' through which the filler passes on its way to the cutting block.

5. In a cigarette machine, the combination of a frame or support, a revolving shaft *a* mounted therein, a slotted reciprocating slide *c* operatively connected with and actuated by
5 the shaft *a*, the cutting block *l*, operatively connected with the slide *c*, the mold *n*, the pusher *m* for forcing tobacco into the mold, means for operating the pusher, the propelling pin *c*^{xx} for forcing tobacco out of the
10 mold, means for actuating the propelling pin,

the nozzle *n*⁵ on the end of the mold, a spring latch *u* for retaining the cigarette paper upon the nozzle and inclines *c*⁴ *c*⁵ on the slide *c* for moving the latch at the appointed times.

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