



C. PALATINI.  
CIGARETTE-MACHINE.

No. 190,613.

Patented May 8, 1877.

Fig. 4.

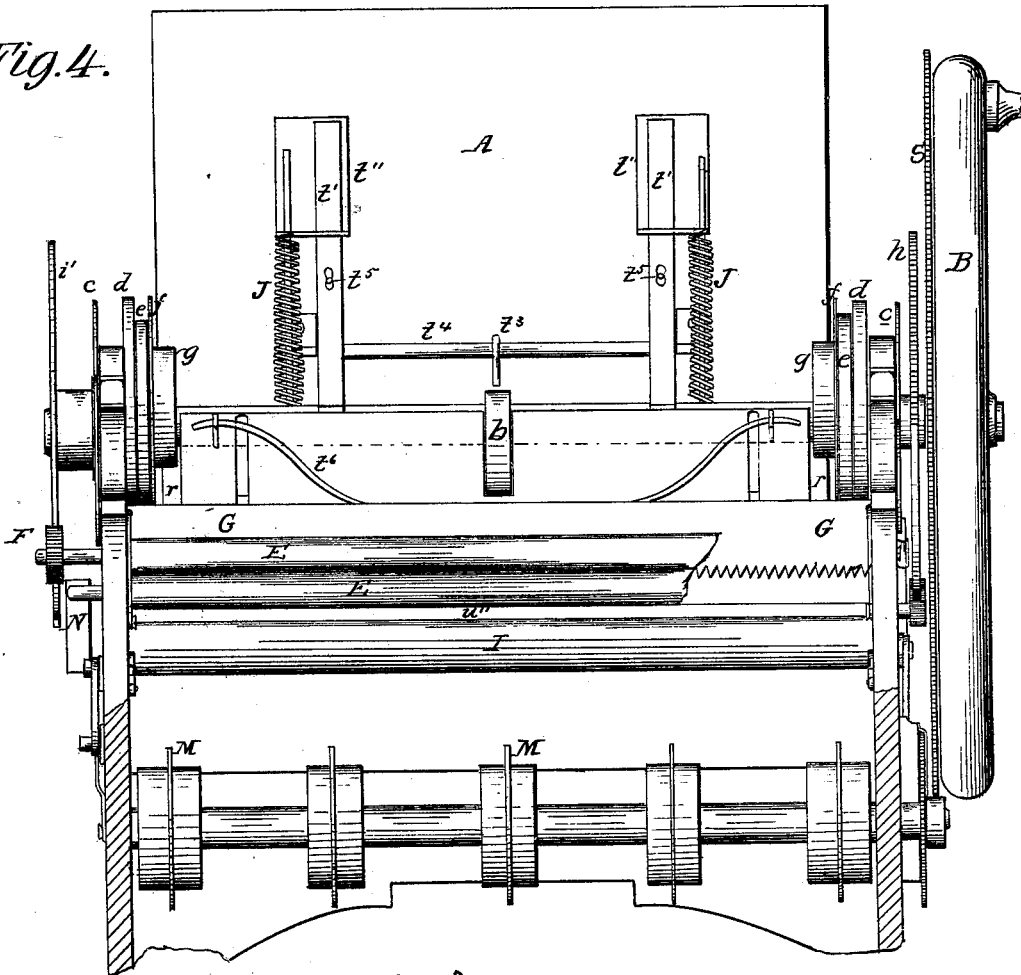
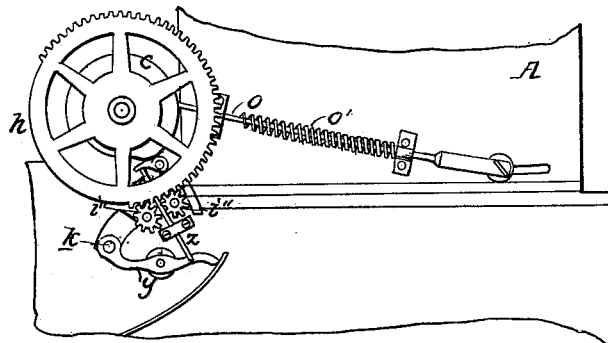


Fig. 5.



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*Charles E. Foster*

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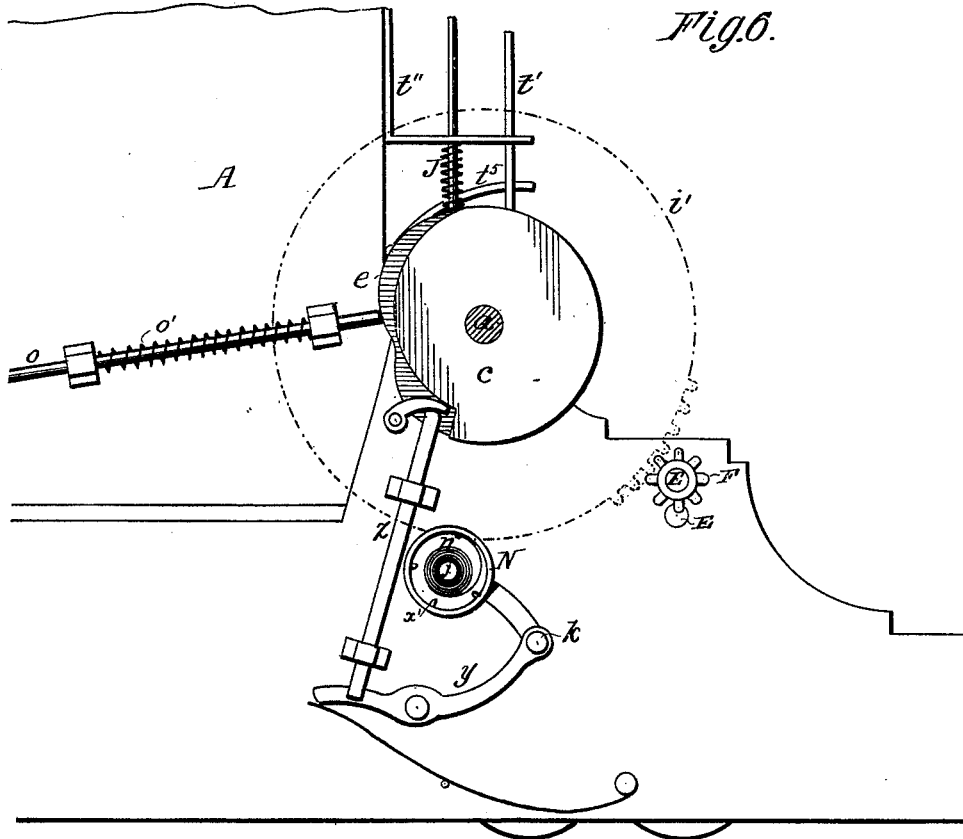
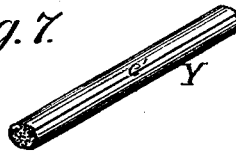


Fig. 6.

Fig. 7.



Attest:

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 by his attorney  
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# UNITED STATES PATENT OFFICE.

CONSTANTINO PALATINI, OF NEW YORK, N. Y.

## IMPROVEMENT IN CIGARETTE-MACHINES.

Specification forming part of Letters Patent No. 190,613, dated May 8, 1877; application filed March 23, 1877.

*To all whom it may concern:*

Be it known that I, CONSTANTINO PALATINI, of the city, county, and State of New York, have invented an Improved Cigarette-Machine, of which the following is the specification:

The object of my invention is a machine whereby cigarettes uniform in size and quality, and with fillings and wrappers of any desired material, may be quickly and cheaply manufactured.

My invention further consists in an improved cigarette.

In the drawing, Figure 1 is a sectional elevation of sufficient of my machine to show its construction; Figs. 2 and 3, views showing parts of the machine in different positions; Fig. 4, a front elevation, partly in section; Fig. 5, a side view, reduced size; Fig. 6, a side view of the opposite side of the machine, and Fig. 7 a perspective view of the improved cigarette.

The essential features of my invention are a reservoir, A, having a discharge-tube, A<sup>1</sup>, with a yielding gate, *v*, at the bottom; a knife, *r*, which moves across the tube A<sup>1</sup>; an apron, *m*, wound on two rollers, *j l*; means for distending the apron; and appliances for forming a pocket in the apron and emptying the discharge-tube.

In the present instance, the apron is distended by bars *x k k'*, the bar *k* moving in a curved path below a double plunger; *t u*, the longer blade *u* of which reciprocates opposite the closed end of the tube A<sup>1</sup>, while the shorter blade enters a slot, *u'*, in the top of said tube.

Before specifying the means for actuating these devices I will describe their operation in the formation of cigarettes.

The tobacco, which may be finely divided or in strips, is placed in the reservoir A, which has a bottom, A<sup>2</sup>, inclined toward the tube A<sup>1</sup>, and beneath this bottom slides a plunger, *p*, which, as it moves forward, forces a quantity of the tobacco into the tube A<sup>1</sup>, when a portion nearest the end, sufficient to form the filling for a cigarette, is divided from the remainder by the descent of the knife *r*.

The double plunger now descends, the blade

*t* forcing downward the detached filling, the gate *v* yielding to the pressure, and the blade *u* forcing down the apron between the bars *k x*, forming a pocket which receives the filling, Fig. 2.

The bar *k* then moves to the position shown in Fig. 3, and the rollers *j l* turn in the direction of the arrows, winding the apron from one to the other and condensing the filling.

If the cigarette is to have a covering of tobacco-leaf, the edge of the latter is introduced between the bars *k x*, and is carried round the filling by the apron, forming a long tube of tobacco-leaf filled with tobacco, which tube is divided into cigarettes by the knives M, upon which it is thrown by moving the bar *k* to its first position.

When it is desired to use paper wrappers I employ a second series of devices, namely: a shaft, C, supporting a continuous roll, D, of paper, feed-rolls E E, between which the paper is passed below a plate, D', a paste-reservoir, I, provided with a brush or carrier, I', and a knife, G, which enters a slot in the plate D'.

The paper is fed intermittently by the rolls E E until its free end is between the bars *x k*, when the paste-carrier I' moves upward and deposits a line of paste on the under side, while the knife G descends and cuts the paper near the rollers E, leaving the outer strip free to be caught by the moving apron and wrapped round the tobacco forming the roll, which is divided by the knives M, as before described.

A shaft, *i*, carrying small disks, is arranged adjacent to the bar *k*, to prevent the pasted portion of the paper from coming into contact with the apron, and a wood bar, *u''*, is arranged beneath the lower roller E to keep it from sagging.

Different means may be employed for imparting the above-described movements to the devices. I will now describe those which I have found in practice to be suitable.

*a* is the driving-shaft, arranged in front of the reservoir, carrying at one end a segmental-toothed wheel, *h*, at the opposite end a segmental-toothed wheel, *i'*, in the center a cam,

*b*, and at each side of the machine five cams, *c d e f g*.

The teeth of the segment *h* engage with pinions *i''* on the ends of the rollers *j l*, and impart to the latter the movement necessary to roll up the apron, condense the tobacco, and apply the wrapper. The reverse movement is effected by a spring, *n*, contained in a box, *N*, and secured to the roller *j*, the spring being wound up when the segment *h* turns the rollers, and reversing the movement of the rollers when the teeth of the segment pass from gear with the pinions *i''*.

The movement of the bar *k* to and from the bar *x* is effected by the cams *c*, each of which bears against a guided rod, *z*, resting on one arm of a spring-lever, *y*, the opposite arm of which supports the bar *k*, Figs. 5 and 6.

The double plunger *t u* is connected to guide-bars *t'*, which slide in brackets *t''* in front of the reservoir, and is depressed by the cam *b*, which bears on the arm *t<sup>3</sup>* of a rock-shaft, *t<sup>4</sup>*, provided with arms *t<sup>5</sup>*, extending through the guide-rods *t'*. Springs *t<sup>6</sup>* serve to elevate the plunger.

The knife *r*, guided by the brackets *t' t''*, is raised by springs *J*, coiled round the guide-rods, and is depressed by the cams *g*, which bear on the top edge at opposite ends.

Guided slide-bars *o*, connected to pins projecting from the sides of the plunger *p*, bear against the edges of the cams *e*, Figs. 5 and 6, which throw the plunger back, springs *o'*, coiled round the bars *o*, imparting the forward movement.

The intermittent movements of the feed-rollers are derived from the segment *i'*, which gears with a pinion, *F*, at the end of the upper roller.

The downward motion of the knife *G*, which is guided in slots in the side frames, is imparted by the cams *f*, which bear upon the upper edge of the knife, springs *G'* raising the same.

The paste-carrier *I'* is secured to the ends of slides *w<sup>1</sup>*, which are elevated by the springs *x*, and depressed by the cams *d* bearing on levers *w<sup>2</sup>* resting on the slides.

The shafts of the disk-cutters *M M* are geared together, and derive their motion from a toothed wheel, *S*, arranged on the shaft *a*, adjacent to the driving-wheel *B*.

It will be apparent that by the movements and mechanism above described I am enabled to rapidly produce cigarettes with paper or leaf wrappers of uniform size and weight, closely and securely wrapped, and with fine-cut or strip filling, and that the mechanism is simple in construction, not likely to get out of order, and easily operated.

The rollers *E* are covered, if necessary, with gutta-percha or its equivalent. The end plate of the tube *A'*, or a plate in the latter, may be adjustable by means of a screw, *g*, to make fillings of different sizes, and the box *N* may

have pins *x'* to adjust the end of the spring *n* to tighten or relax the same, so as to condense the filling to any extent desired, to regulate the size or density of the same.

As before stated, the above-described machine may be used to apply wrappers of tobacco-leaf to the filling of fine-cut tobacco, in which case the cigarette *Y* (shown in Fig. 7) is produced. The article thus made differs from cigarettes having leaf wrappers heretofore made, first, in the position of the seam *e'*, which is longitudinal, the wrapper being made of an oblong piece rolled, instead of a long strip twisted spirally; second, in having a filling of fine-cut tobacco.

When the cover is applied spirally, the seam winds round the cigarette, and is therefore much longer, and requires more gum, which detracts from the quality of the article. The long strip required must be cut across the veins of the leaf, which impair both the appearance and the quality, while the expense is greatly increased.

A rectangular piece such as I employ may be cut between the veins, and is better and cheaper, while the seam *e'* is shorter, and carries less gum.

Further, when the cover is wound spirally the filling must be in strips, permitting inferior tobacco to be used, as the spiral wrapper cannot be applied to a fine-cut filling, while the oblong wrapper used in connection with the devices above described may be applied round the finest tobacco that is made, insuring a most superior article.

It will be perceived that the article of manufacture herein claimed has no relation to paper or husk wrappers, nor to leaf wrappers, otherwise than in the form particularly specified.

I claim—

1. A cigarette-machine provided with a reservoir, *A*, an outlet-tube, *A'*, permanently closed at the end, packing-plunger *p*, sliding to and from said end, knife *r*, and gate *v* at the bottom of the tube, near the closed end, substantially as set forth.

2. The combination, with the apron *m*, rolls *j l*, bars *k k' x'*, of the plungers *u t*, the tube *A'*, closed at the end, and its gate *v*, all as set forth.

3. The combination of the apron *m*, its rollers and bars, feed-rolls *E E*, knife *G*, paste-reservoir *I*, and reciprocating paste-carrier *I'*, as specified, all arranged and operating as and for the purpose described.

4. The arrangement, in respect to the feed-rollers *E E*, apron *m*, the plungers *t u*, and knives *r G*, of a single shaft, *a*, carrying cams operating directly on said plungers and knives, as set forth.

5. The combination of the shaft *i*, provided with disks, apron *m*, the rollers and bars, and paper feeding, cutting, and fastening devices, operating as specified.

6. The combination of the rollers *j l*, apron *m*, stationary bar *x*, reciprocating bar *k*, the segments *h*, adapted to pinions on one of the rollers, and the coiled spring *n*, attached to the journal of the other rollers, all constructed, arranged, and operating as set forth.

7. As a new article of manufacture, a cigarette consisting of a filling of fine-cut tobacco and a wrapper made from an oblong section of tobacco, cut from the leaf between the

veins, rolled round the filling, and gummed at the edge, forming a longitudinal seam, *e'*, as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CONSTANTINO PALATINI.

Witnesses:

CHARLES E. FOSTER,  
JOSÉ M. MACIAS.