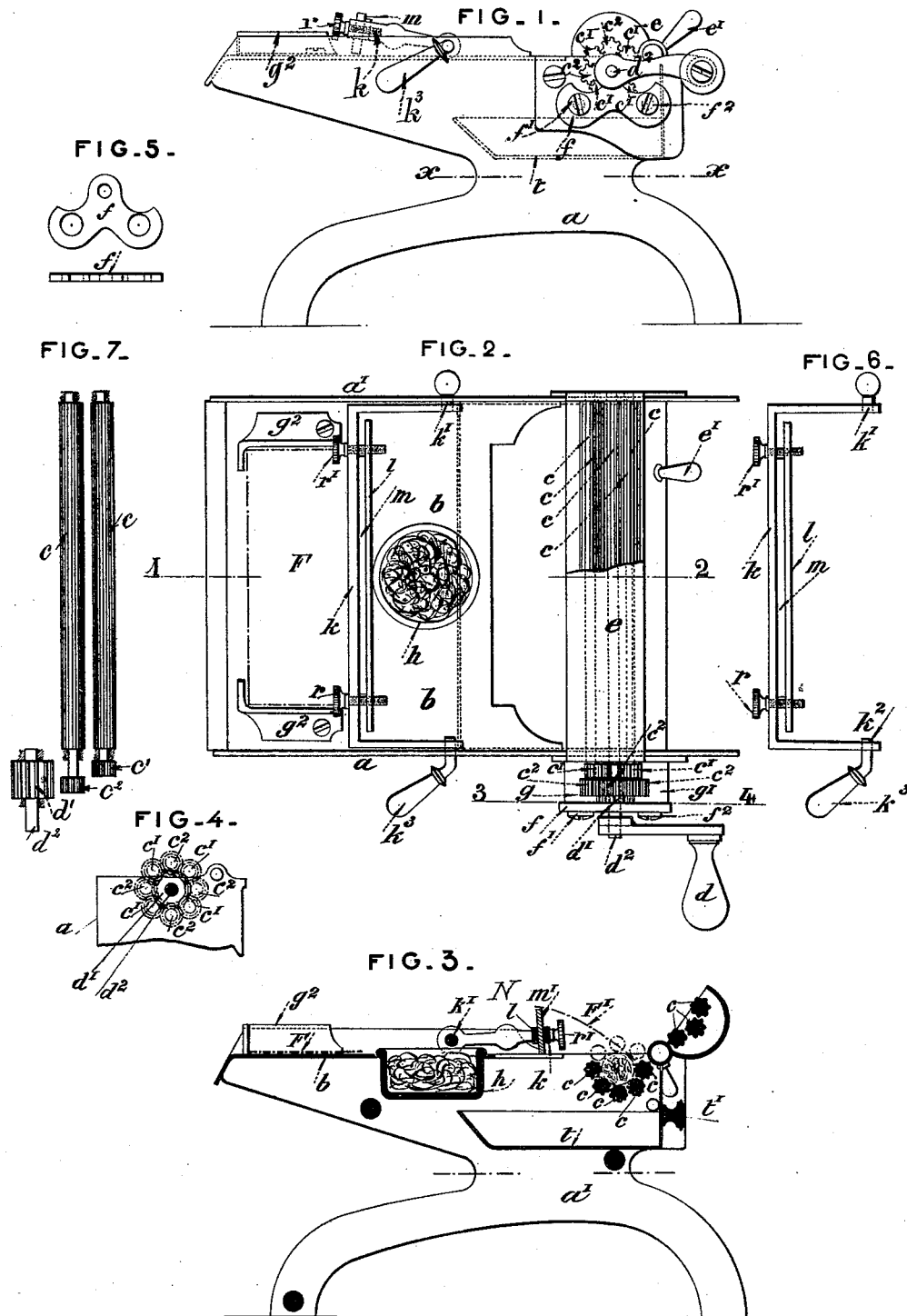


(No Model.)

H. F. M. LEMAIRE. CIGARETTE MAKING MACHINE.

No. 520,530.

Patented May 29, 1894.



Witnesses.
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UNITED STATES PATENT OFFICE.

HENRI FELIX MARIE LEMAIRE, OF PARIS, FRANCE.

CIGARETTE-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 520,530, dated May 29, 1894.

Application filed November 27, 1893. Serial No. 492,089. (No model.) Patented in France February 19, 1883, No. 153,811, and in England January 9, 1889, No. 428.

To all whom it may concern:

Be it known that I, HENRI FELIX MARIE LEMAIRE, manufacturer of machines for making cigarettes, of 150 Rue de Rivoli, Paris, in the Republic of France, have invented a new and Improved Cigarette-Making Machine, (for which I have obtained Letters Patent of France for fifteen years, No. 153,811, dated February 19, 1883, and of Great Britain, No. 428, dated January 9, 1889;) and I do hereby declare that the following is a full and exact description thereof, reference being made to the accompanying drawings.

My invention relates to improvements in cigarette making machines by means of which about two hundred cigarettes per hour may be easily made by hand, all gummed and ready for smoking purposes, the paper sheets forming the wrappers, previously cut up and stored, being picked up one by one and carried to the parts designed to roll the tobacco and wrap the same in one of the wrappers. During the travel of the wrapper carrier from the heap of wrappers to the manufacturing part of the mechanism, each wrapper is provided with gum at one move so that the cigarette can be subsequently rolled and closed by mechanical means at a single operation. In this operation there is combined action between the wrapper, placed between the three upper and the five lower rollers, and the said rollers, and also between the latter and the wrapper carrier, which after having gummed the said wrappers carries them one by one from the heap to the tobacco cylinder which receives the said wrappers on its upper surface.

The accompanying drawings illustrate a simplified specimen of my improved cigarette making machine.

Figure 1 represents a side elevation of the machine. Fig. 2 is a plan of the machine, with the cover and the upper set of rollers partly broken away. Fig. 3 represents a longitudinal vertical section on line 1—2, Fig. 2, with the cover thrown back and the wrapper-carrier in its position delivering a wrapper to the lower set of rollers. Fig. 4 represents a vertical section on line 3—4, Fig. 2, the frame of the machine being broken away. Figs. 5, 6, and 7 are detail views.

In the machine shown in Figs. 1, 2, and 3, the frame consists of two metal plates $a a'$ joined together by means of tie rods, and of a horizontal table b extending as far as eight fluted rollers c designed to form the tobacco cylinders and to wrap the same in a wrapper. These eight rollers enable the operator to produce faultlessly shaped cigarettes, without folds or creases in the wrappers, whatever may be the number of revolutions imparted to the handle and hence to the rollers. The sides $a a'$ of the frame may be articulated on line $x-x$ of Fig. 1 to allow of the machine being folded for quickness and convenience of transit. The eight fluted rollers c are grouped in two series; five being fixed to the sides $a a'$ of the frame, while the other three are secured in a hinged cover. In front the shafts of these rollers are provided externally with toothed pinions (Figs. 2 and 7) meshing with the teeth of a single gear wheel d' (Figs. 2, 4, and 7) mounted upon the shaft d^2 of the crank handle d . This shaft d^2 is carried by the frame a and the piece f (Fig. 5) which is supported by the long screws $f' f^2$ furnished with the sockets $g g'$ (Fig. 2). The roller pinions are arranged evenly in two series, viz: four pinions $c' c' c' c'$ in close proximity to the frame and placed alternately two by two, and four other pinions $c^2 c^2 c^2 c^2$ in close proximity to the anterior face of the support f and mounted upon the shafts of the intermediate rollers arranged between the rollers carrying the pinions $c' c' c' c'$. This peculiar arrangement enables me to use a large number of very small fluted rollers without having to overcome any difficulties in the fixing thereof.

As shown in Fig. 3, the eight rollers form in the center thereof a nearly cylindrical section, the angular parts in the periphery of which are not sufficiently prominent to produce a crease in the wrapper during the motion of the crank handle, after the gumming operation has been performed.

The cover e is provided with a knob e' which is used in the operation for opening the said cover, either for taking the cigarette out, or for presenting the tobacco or the wrapper, as hereinafter described.

The table b is furnished in front with two guides $g^2 g^2$, between which are heaped the

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wrappers F used to wrap the tobacco for making a cigarette. A little in front of this the said table is furnished with an opening in which is inserted a cup-shaped vessel *h* containing a damp sponge. Along the transverse diameter of the vessel *h*, or thereabout, the table *b* is provided with two openings in which turn the shafts *k'* *k*² of a wrapper carrier N which also serves as a glue holder and is composed of a rectangular plate, block or bar *k* and a bar *l*, these parts *k* and *l* being clamped together by screws *r r'* so as to hold between them a stick or bar of glue *m* especially manufactured for this purpose.

In the position of the wrapper carrier N shown in Figs. 1 and 2, the glue bears upon the posterior edge of the wrapper heap, and when its lower edge has been previously moistened with water, a small quantity of the said glue will be deposited upon the uppermost wrapper which adheres to the glue stick and enables the wrapper carrier to carry with it, when raised, the said wrapper.

As hereinafter stated the wrapper carrier carrying the wrapper is inverted rearwardly and holds this wrapper between the front rollers *c* of the frame and of the cover *e* (Fig. 3). The shaft *k*² is furnished with a knob *k*³ by means of which the wrapper carrier N is operated.

Between the sides *a a'* forming the supports of the apparatus I have fitted a drawer *t* which is capable of being withdrawn backward behind the apparatus by pulling the button *t'* with which it is provided. This drawer is placed beneath the rollers *c* forming the bed in which the cigarette is made, in order to receive the small quantities of tobacco let fall by the said rollers.

The machine is operated as follows: The sponge is withdrawn from its vessel *h*, immersed in water and put back again in its place. The cover *e* is now opened in order to lay the tobacco between the fluted frame rollers and spread it as evenly as possible over their whole length, when the cover is closed with the left hand and a few turns are imparted by the right hand to the crank handle *d* for the purpose of forming the tobacco cylinder. A little water is now taken with a finger of the right hand and smeared over the upper edge of the glue stick which is placed at *m'* (Fig. 3) and the knob *k*³ having been grasped by the right hand, the wrapper carrier *k*, *l*, is raised and turned over upon the wrapper heap F (Fig. 1). This motion of the wrapper carrier is subsequently reversed from front to back, and as the cover *e* has been opened before such reversal, the wrapper F' (Fig. 3) is held upon the first lower roller *c* and the tobacco cylinder. The cover is now closed again and the crank handle *d* is turned round several times,

this final operation having provided the tobacco cylinder with a wrapper which has likewise been glued. The cigarette has now been completed and removed from the machine by opening the cover *e*.

I may in some cases automatically moisten the glue during the motion imparted to the wrapper carrier for picking up the wrappers one after another, by causing the sponge to move simultaneously with the wrapper carrier. This motion could be transmitted to the sponge by intermediate mechanism connected with the wrapper carrier. I may also provide the wrapper carrier with pitch or other adhesive substance for picking up the wrappers one by one and causing them to pass above a smearing device which would spread some paste upon the rear end of each wrapper. I may further twist or shape one of the ends of the cigarettes by means of internal parts or pieces in a similar manner as carried out by cigarette making machines operated by power.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a cigarette machine, a series of eight rollers forming a nearly cylindrical section, a part of them being secured to a fixed support and the remainder to a support hinged above them, in combination with a table arranged in proximity to the said rollers, a wrapper carrier and glue holder consisting of two parts clamped together so as to hold a stick of glue between them and supports for the said wrapper carrier and glue holder which permits the latter to be turned over in one direction so as to come into contact with the pile of wrappers on the said table and turned over in the other direction to present a glued wrapper to the said rollers substantially as set forth.

2. In a cigarette machine, the combination of a table and a series of rollers arranged at the end thereof to form a nearly cylindrical section, with a pair of shafts mounted in the said table, a movable plate *k* supported on the said shafts, and a bar *l* clamped to the said piece to hold a stick of glue between them, the said shafts allowing the said piece and bar, constituting the wrapper carrier N, to be turned over in one direction to the pile of wrappers on the table and turned over in the other direction to present a wrapper to the rollers substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

HENRI FELIX MARIE LEMAIRE.

Witnesses:

GEORGES LAURENT,
 EUGÈNE WATTIN.