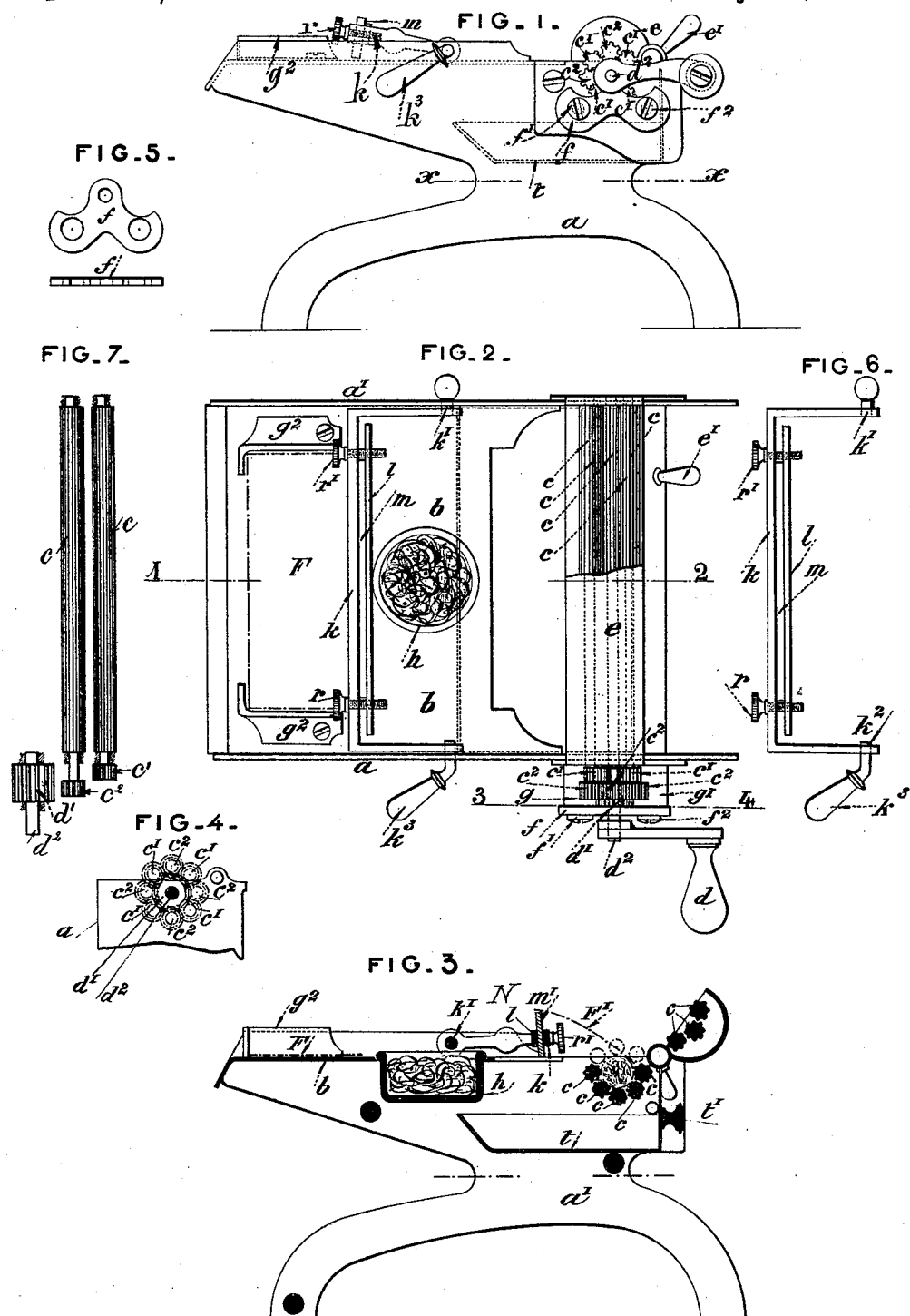


(No Model.)

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

No. 520,530.

Patented May 29, 1894.



Witnesses.
Parks R. McBride.
Charles D. Davis

Inventor
Henry F. M. Lemaire
By Wm. H. Babcock
Attorney

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, 1893, 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, 1893, 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 55 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 60 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 65 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 70 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 75 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 80 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 85 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. 90

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. 95

The table b is furnished in front with two guides g^2 g^2 , between which are heaped the 100

5 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*
 10 containing a damp sponge. Along the trans-
 verse diameter of the vessel *h*, or thereabout,
 the table *b* is provided with two openings in
 which turn the shafts *k'* *k''* of a wrapper car-
 15 rier N which also serves as a glue holder and
 is composed of a rectangular plate, block or
 20 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* es-
 pecially manufactured for this purpose.

15 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
 20 said glue will be deposited upon the upper-
 most wrapper which adheres to the glue stick
 and enables the wrapper carrier to carry with
 it, when raised, the said wrapper.

25 As hereinafter stated the wrapper carrier
 carrying the wrapper is inverted rearwardly
 and holds this wrapper between the front roll-
 30 ers *c* of the frame and of the cover *e* (Fig. 3).
 The shaft *k''* is furnished with a knob *k'''* by
 means of which the wrapper carrier N is op-
 erated.

35 Between the sides *a a'* forming the sup-
 ports of the apparatus I have fitted a drawer
t which is capable of being withdrawn back-
 ward behind the apparatus by pulling the
 40 button *t'* with which it is provided. This
 drawer is placed beneath the rollers *c* form-
 ing the bed in which the cigarette is made, in
 order to receive the small quantities of to-
 bacco let fall by the said rollers.

45 The machine is operated as follows: The
 sponge is withdrawn from its vessel *h*, im-
 mersed 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
 50 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 han-
 55 dle *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
 60 *m'* (Fig. 3) and the knob *k'''* 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 cylin-
 der. The cover is now closed again and the
 crank handle *d* is turned round several times,

this final operation having provided the to-
 bacco cylinder with a wrapper which has like-
 wise been glued. The cigarette has now been
 65 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
 70 one after another, by causing the sponge to
 move simultaneously with the wrapper car-
 rier. This motion could be transmitted to
 the sponge by intermediate mechanism con-
 nected with the wrapper carrier. I may also
 75 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
 80 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 in-
 ternal parts or pieces in a similar manner
 as carried out by cigarette making machines
 85 operated by power.

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

1. In a cigarette machine, a series of eight
 rollers forming a nearly cylindrical section,
 90 a part of them being secured to a fixed sup-
 port and the remainder to a support hinged
 above them, in combination with a table ar-
 ranged in proximity to the said rollers, a
 wrapper carrier and glue holder consisting of
 95 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
 100 the pile of wrappers on the said table and
 turned over in the other direction to present
 a glued wrapper to the said rollers substan-
 tially as set forth.

2. In a cigarette machine, the combination
 105 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
 110 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
 115 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,
 EUGENE WATTIN.