June 25, 1929. M. ALLAND 1,718,677

CIGARETTE MAKING MACHINE

Filed March 6, 1926 2 Sheets-Sheet 1

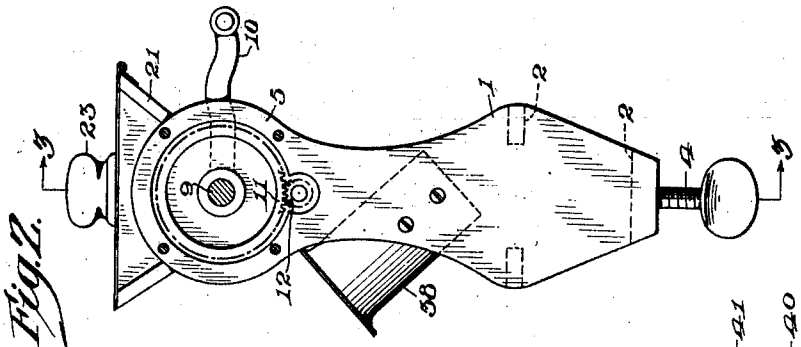


Fig. 2.

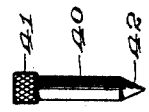


Fig. 7.

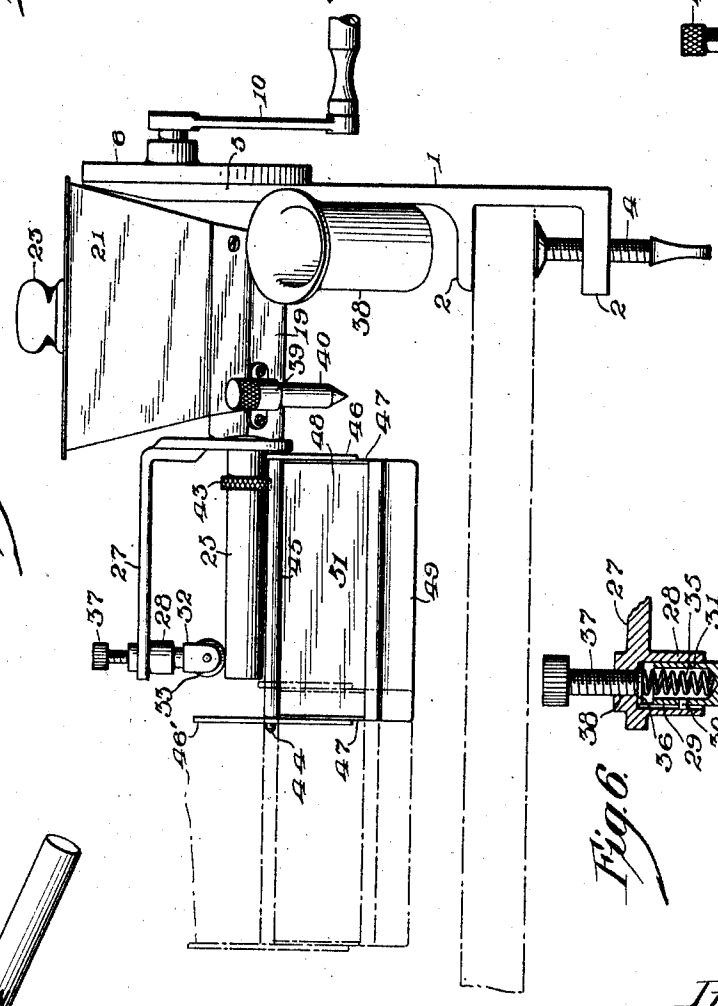


Fig. 1.

Fig. 6.

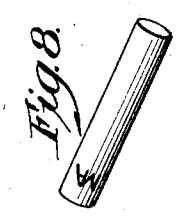


Fig. 8.

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CIGARETTE MAKING MACHINE

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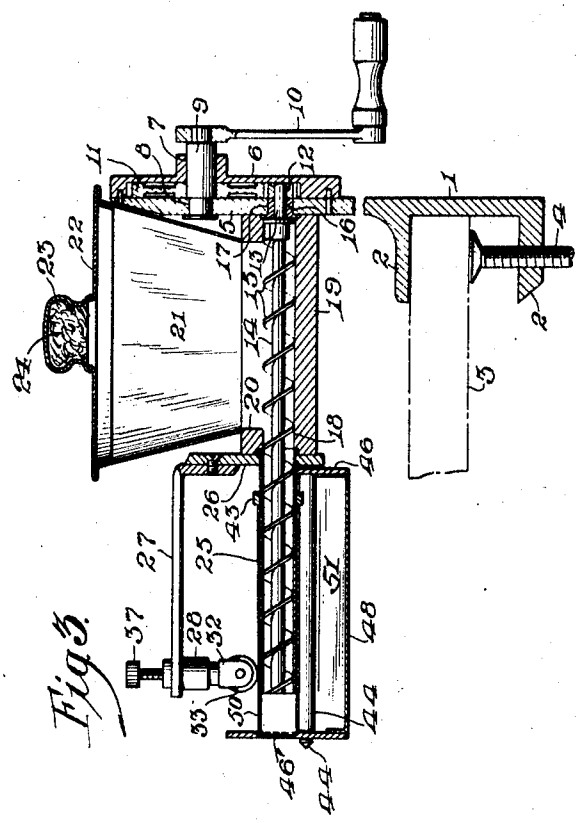


Fig. 3.

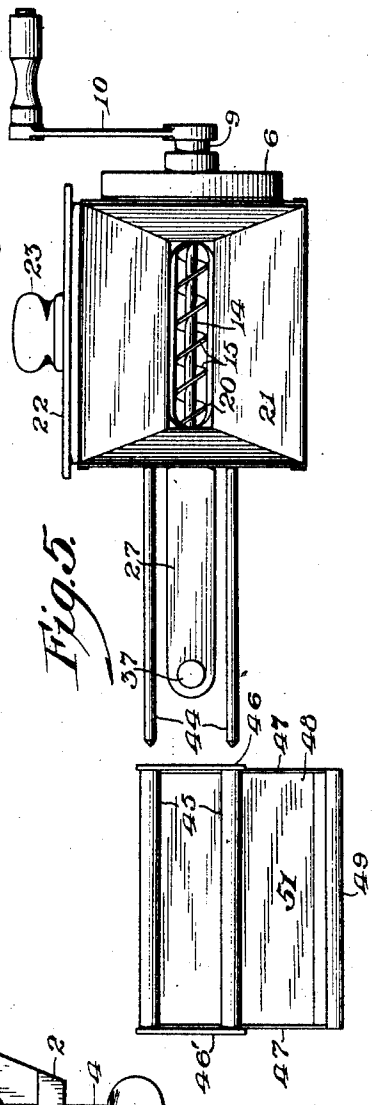


Fig. 5.

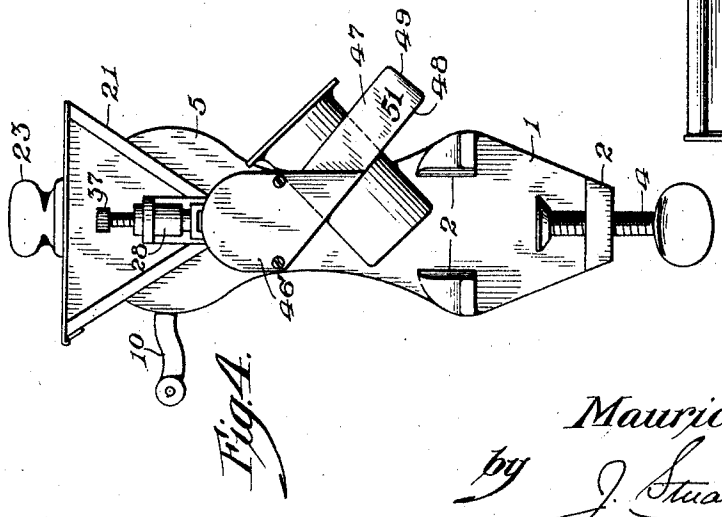


Fig. 4.

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Patented June 25, 1929. 1,718,677

UNITED STATES PATENT OFFICE.

MAURICE ALLAND, OF ATLANTIC CITY, NEW JERSEY.

CIGARETTE-MAKING MACHINE.

Application filed March 6, 1926. Serial No. 92,739.

The object of the invention is to provide improvements in machines or mechanisms for the manufacture of cigarettes, and particularly in a type which is adapted for use by individuals in their homes, offices and the like.

Another object is to provide a device of this character which is attractive in appearance, is easily operated even by those unskilled in mechanical devices, and which is designed to afford a means of entertainment at social gatherings.

A further object is to provide in such a device a hopper for loose tobacco, a cylindrical member adapted to slidably carry an empty cigarette shell or tube, means operative to grind and convey the tobacco from the hopper, through said cylindrical member, and into a tube carried thereby.

Still another object is to provide means to prevent the tobacco from passing freely through and from the empty tube at the start, said means comprising a unitary projection on a tray which is arranged to catch the finished cigarette when it finally drops from the cylindrical support, said tray being slidably mounted upon suitable rails or rods and being moved upon said rods or the like, by the cigarette during the process of formation.

And a still further object is to provide means to retard the freedom with which the cigarette slides upon the cylinder during its formation, and means to adjust the pressure exerted by said first means upon the cigarette, as well as separate means to adjust the effectual length of said cylindrical supporting means.

With these and other objects in mind, the present invention comprises further details of construction and operation fully brought out in the following description, when read in conjunction with the accompanying drawings, in which Fig. 1 is a side elevation of the device; Fig. 2 is a right end elevation of the same, with the gear casing removed; Fig. 3 is a vertical, longitudinal section on the line 3—3 of Fig. 2; Fig. 4 is a left end elevation of the device as viewed in Fig. 1; Fig. 5 is a top plan view of the same; Fig. 6 is an enlarged vertical, diametrical section of the adjustable tensioning means; Fig. 7 is a side elevation of a style provided for the purpose of opening the collapsed empty tubes in order that they may be placed upon the cylindrical support and filling member; and Fig. 8 is a perspective view of a completed cigarette comprising a tube, bearing a monogram if desired, and containing a tobacco or other filler.

Referring to the drawings, a bracket 1 is provided with a plurality of vertically spaced arms 2, and is adapted to be removably secured to a table, or any other suitable support 3, by means of a thumb-actuated clamping screw 4, extending through one of said arms. The upper portion 5 of said bracket has removably secured to it a gear casing 6, the latter being provided with a bushing having a bore 7 in alignment with an aperture 8 in said casing, while a shaft 9 is journaled through said bore and aperture is rotated by means of a crank 10, and fixedly carries a gear 11 within said casing.

A pinion 12, also within said casing, meshes with the gear 11, and is fixed upon one end 13 of a shaft 14, which latter is provided through substantially its entire length with a spiral flange 15 forming a screw, and passes through a bearing 16, which separates said shaft from direct contact with the sides 17, of an aperture in the upper portion 5 of the bracket member. Thus, rotation of the crank 10 operates to revolve the shaft 14, but preferably at a greater speed than that at which said crank is turned, due to the ratio between the sizes of said gear and pinion.

The shaft 14 extends through a bore 18 in a member 19, which is also secured to the bracket 1, while said last-named bore communicates upwardly through an aperture 20 with the interior of a hopper 21, secured to the member 19 and provided with a hinged cover 22, having a hollow knob handle 23, in which is preferably positioned moist cotton 24, or other means for maintaining a certain degree of humidity in the interior of said hopper. Then, to the opposite end of the member 19 and in alignment with its bore 18 is secured in any suitable manner a cylindrical member 25, through and to the outer free end of which extends the spirally flanged shaft 14.

To that portion of the member 19 opposite to the supporting bracket 1 is secured a plate 26, to which is secured in turn an L-shaped bracket 27, one arm of which extends substantially parallel with the upper surface of the cylinder 25, and is provided at its outer end portion with a depending hollow casing 28, having a key-way 29 upon its inner surface, in which reciprocates a key 30 carried by the upwardly extending hollow portion 31 of a bi-

furcated member 32, in which is rotatably mounted a roller 33, operative to bear against the upper surface of an empty paper cigarette tube 34 surrounding said cylinder. Within the member 31 is positioned a coil spring 35, topped by a disc 36, against the upper surface of which latter presses the lower inner end of a pressure regulating screw 37, which passes through and in threaded engagement with the walls of a tapped aperture 38 in the bracket 27.

To the lower exterior portion of the member 19, or in any other suitable position, there are secured, first, a cup-shaped member 38, for holding a plurality of empty, flattened, or collapsed cigarette tubes, or "papers", one of which is shown in Fig. 8, bearing any desired monogram, crest, or other desired identifying emblem, and, secondly, a hollow U-shaped bracket 39, in which is loosely supported a style 40, such as is shown in detail in Fig. 7, and which is provided upon one end with a manually engageable knob or handle 41 and upon its opposte end is tapered at 42 to provide a point, which is adapted to be inserted in the empty collapsed tubes, for the purpose of opening them sufficiently to permit them to be slipped over the cylinder 25, a circular collar 43, slidably adjustable upon and frictionally engaging the outer surface of said cylinder, being operative to arrest the movement of the tube when a predetermined portion of its outer free end has reached the corresponding end of the said cylinder, as shown in Fig. 6.

Below said cylinder and also secured to the outer surface of the plate 26 is a pair of spaced parallel rods or rails 44, upon which are slidably positioned a corresponding number of tubes 45, connected together at their ends by plates 46, 46′. The outer of these plates 46′ extends upwardly above the level of the cylinder 25 and serves to butt against the otherwise open end of a cigarette tube which latter protrudes freely beyond the end of said cylinder, for the purpose of preventing the first tobacco to enter the tube from falling loosely therefrom. From both of said last-named plates there extend downwardly the side walls 47 of a tray, which hangs suspended in a general diagonal direction forwardly and downwardly, as shown in Fig. 4, and is provided with a bottom wall 48, which merges downwardly into a front wall 49.

In the operation of the device, loose tobacco is placed in the hopper 21 and the crank 10 is turned, in order to rotate the screw shaft 14 and thereby grind or pulverize the tobacco adjacent to the entrance to the cylinder 25, and to force the tobacco through said cylinder and outwardly into the empty free end of a cigarette tube 50 positioned thereon. As the tobacco unable to fall from said tube, due to the presence of the tray wall 47, fills said tube, and the screw continues to force more tobacco through the cylinder, the tube is forced outwardly along said cylinder, and moves the tray with it, until the entire length of the tube has been filled, after which it drops as a completed cigarette into the tray 51. In order to vary the tightness with which the tobacco is packed within the cigarette when completed, the screw 37 is rotated in such manner as to vary the tension upon the spring 35, a greater tension causing the roller 33 to bind the empty portion of a tube more firmly and therefore with greater friction against the surface of the supporting cylinder, with the result that it requires that more tobacco be forced into the tube and with greater compactness in order to cause the filled end of the tube to be forced off and away from said cylinder, and the remaining portion of said tube following and being filled in turn.

Having thus described my invention, what I claim and desire to protect by Letters Patent of the United States is:—

1. The combination of a cylinder, adapted to be surrounded by one end portion of an empty cigarette tube, leaving the other end extending freely therefrom, means movable within said cylinder to fill the free end of the tube with tobacco until a binding of the tobacco within the free end causes the tube to be forced entirely from said cylinder, and adjustable means to vary the resistance offered to the movement of the tube upon said cylinder.

2. The combination of a cylinder, adapted to be surrounded by an end portion of an empty cigarette tube, leaving the other end of the tube extending freely therefrom, means movable within said cylinder to fill the free end of the tube with tobacco until a binding of the tobacco within the free end causes successive tobacco entering the tube to force the same entirely from said cylinder, means movable by, and constantly closing the free end of, said tube during the process of filling, to prevent the passage of tobacco freely through and its escape from said tube before it binds therein, and an adjustable roller pressing a longitudinal portion of said tube against said cylinder, to vary the resistance offered to the movement of the tube upon the cylinder, and consequently the density of the tobacco within the finished cigarette.

3. The combination of a hopper, a cylindrical member connected with said hopper and adapted to support a portion of an empty cigarette tube, rotary conveying means operative to force tobacco from said hopper through said cylinder and into the tube, means to vary the resistance with which the tube passes along and from said cylinder during the process of being filled, and means adapted to be moved by and in accordance with the free end of the tube, to keep said free end closed until the making of the cigarette is completed.

4. A cigarette making device, comprising the combination of a hopper, a cylindrical member connected with said hopper and adapted to support a portion of an empty cigarette tube, rotary conveying means operative to force tobacco from said hopper through said cylinder and into the tube, means to vary the resistance with which the tube passes along and from said cylinder during the process of being filled and a tray movable with respect to said cylinder and provided with a portion in axial alignment with said cylinder and normally forming a closure for the free end of the tube, said tray being moved by and in accordance with the tube while being filled and being adapted to receive the completed cigarette as the latter drops from the filling cylinder.

In testimony whereof I hereby affix my signature.

MAURICE ALLAND.