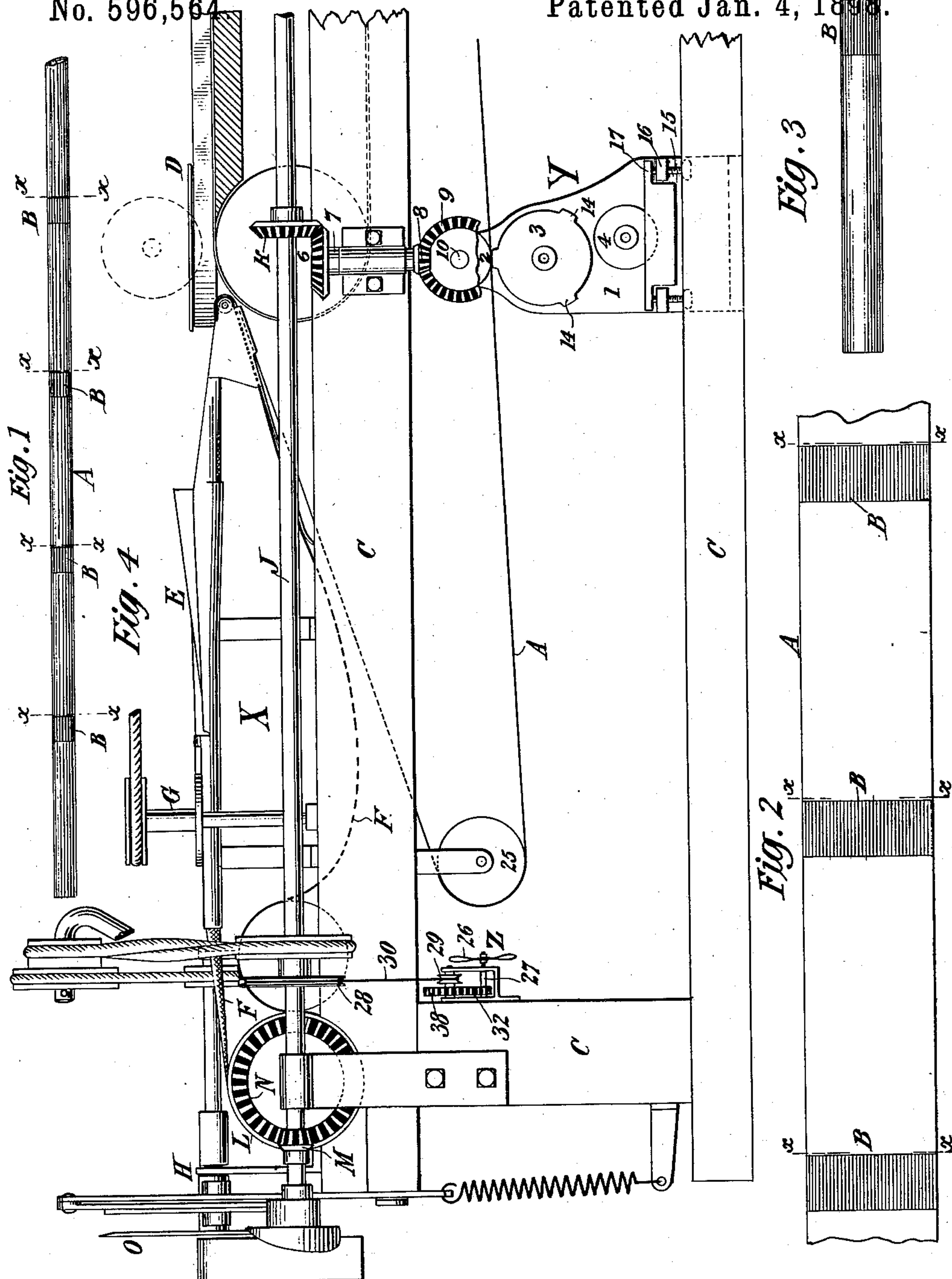


2 Sheets—Sheet 1.

MECHANISM FOR PROVIDING ONE END OF WRAPPERS FOR CIGARETTES  
WITH COATING MATERIAL FOR MOUTHPIECES.

No. 596,564

Patented Jan. 4, 1898.



Witnesses:  
Raphaël Ketter  
James M. Catlow.

Inventor  
Theodore E. Allen  
by Robt. H. Duncan, Atty.

(No Model.)

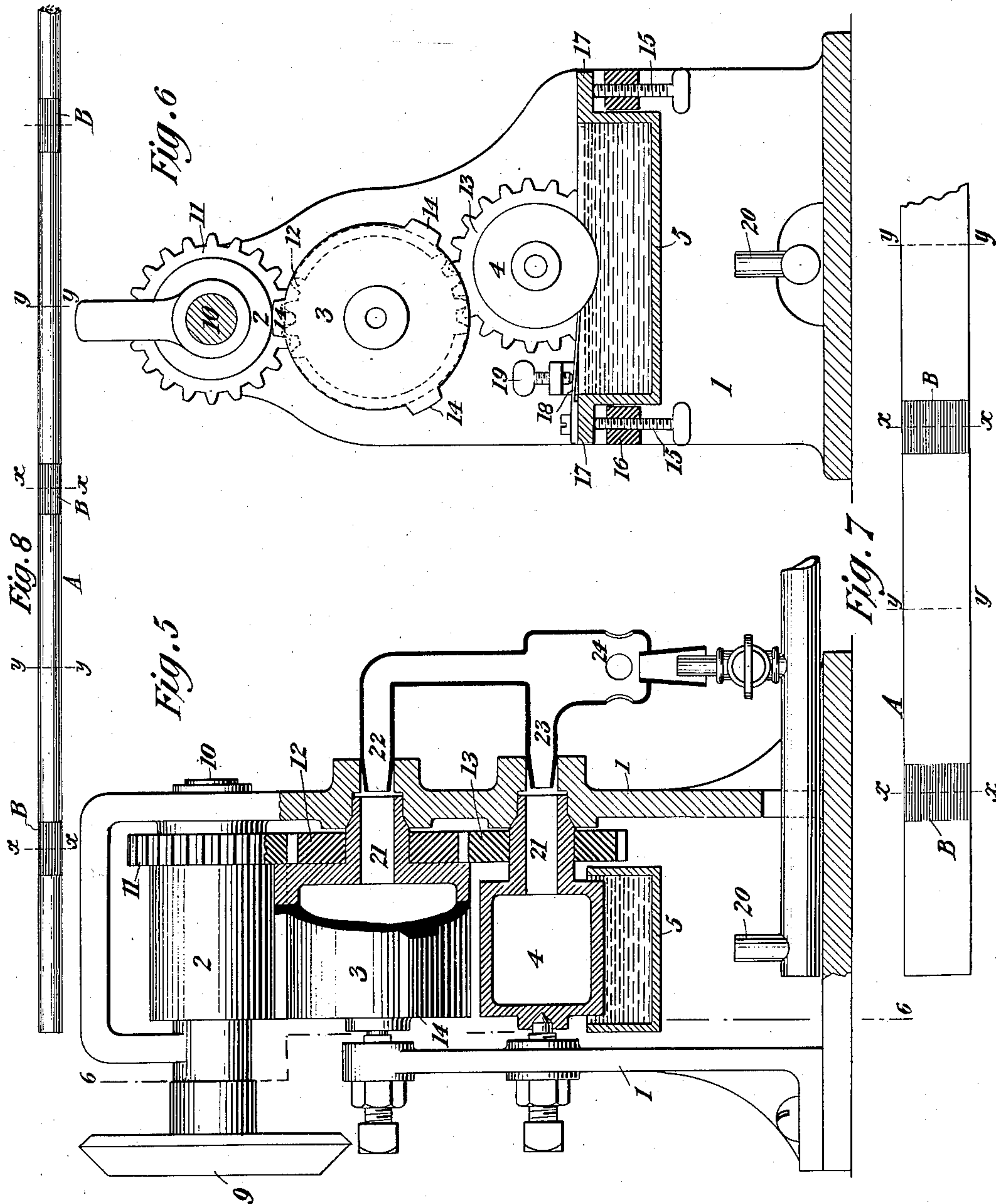
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T. E. ALLEN.

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Witnesses:  
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# UNITED STATES PATENT OFFICE.

THEODORE E. ALLEN, OF NEW YORK, N. Y.

MECHANISM FOR PROVIDING ONE END OF WRAPPERS FOR CIGARETTES WITH COATING MATERIAL FOR MOUTHPIECES.

SPECIFICATION forming part of Letters Patent No. 596,564, dated January 4, 1898.

Application filed April 15, 1897. Serial No. 632,198. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE E. ALLEN, a citizen of the United States, residing in the city, county, and State of New York, have  
5 invented a certain new and useful Improvement in Mechanism for Providing One End of the Wrappers of Cigarettes with a Coating Material for Mouthpieces, of which the following is a specification, reference being had to  
10 the drawings accompanying and forming a part of the same.

The present invention relates to cigarettes, each comprising a tobacco filler inclosed in a paper wrapper and having one end of the  
15 wrapper coated or covered with moisture-resisting or waterproofing material to serve as a mouthpiece; and the invention consists in an improvement in mechanism or devices for accomplishing this result.

20 Heretofore it has been customary, in order to protect the end of the cigarette from the effects of the moisture of the mouth of the smoker, which quickly permeates the thin paper wrapper and soaks into the filler, thus interfering with the smoking and flavor of the  
25 cigarette, to provide short mouthpieces made in separate pieces and slipped over the ends of the cigarettes. These mouthpieces are generally made by forming paper blanks into funnel shape and coating them with melted paraffin or similar material, and although they are effective for the purpose intended they add materially to the expense of the cigarettes. It has also been the practice to some extent when  
35 the cigarettes are made by the individual process—that is, by wrapping short tobacco fillers of the length of the completed cigarettes in short paper blanks of substantially the same length as the fillers—to apply by any  
40 suitable means a coating of melted paraffin or other moisture-resisting material to one end of the wrapper-blank and after the coating has dried or hardened to apply such wrapper to the filler to form the completed cigarette. A cigarette made in this way will be  
45 provided with a substitute for a mouthpiece which is integral with the cigarette and will protect to a large extent the mouth end of the cigarette from moisture as it is smoked.

50 When cigarettes are made individually, as before described, it is easy to apply the de-

sired coating to one end of each wrapper-blank before such blank is wrapped around the filler and thus produce the desired result; but when the cigarettes are made by the continuous process—that is, by wrapping and  
55 securing a long or continuous strip of paper around a long or continuous filler or rod of tobacco and then severing the long cigarette thus produced into short marketable lengths—it has been considered impracticable, although very desirable, to provide that each severed cigarette shall have one end of its wrapper suitably coated to protect it from  
60 moisture. This result is especially important in view of the fact that a large volume of cigarettes are made by the continuous process and that their wrapper ends cannot be thus coated after the cigarettes have been severed from the long cigarette without considerable  
65 expense and the liability that the coating material will be brought in contact with the filler of the cigarette.

It is the object of my invention to accomplish this result in an efficient and economical  
75 manner by forming a long or continuous cigarette comprising a long or continuous filler or rod of tobacco inclosed in a long paper wrapper and providing such cigarette with a series of sections or rings of moisture-resisting material (hereinafter for convenience  
80 called “coating material”) extending around the cigarette and at equal distances apart, and then severing the long cigarette into short or merchantable cigarettes at such points of its  
85 length that each severed cigarette will carry at one of its ends a section or ring of coating material to serve as a mouthpiece.

My invention is illustrated in the accompanying drawings, in which—  
90

Figure 1 is a view of a long cigarette provided with rings or sections of coating material. Fig. 2 is a section of a wrapper-strip provided with sections of coating material. Fig. 3 is a short or marketable cigarette having one of its ends provided with a ring or  
95 section of coating material. Fig. 4 is a side elevation of a machine for making cigarettes by the continuous process and a mechanism for applying coating material in sections to a long wrapper-strip and mechanism for cooling the same. Fig. 5 is an end view of mech-  
100



anism for applying coating material to a wrapper-strip, certain parts being broken away and other parts being shown in section. Fig. 6 is a sectional view along the line 6-6 of Fig. 5, looking toward the right hand. Fig. 7 is a section of wrapper-strip provided with sections of coated material of greater width and greater distance apart than those of Fig. 2, and Fig. 8 is a view of a long cigarette provided with rings or sections of coating material of greater width and at greater distances apart than the cigarette shown in Fig. 1.

Referring to the drawings as illustrating my method, A of Fig. 1 represents a long cigarette provided with sections or rings B of coating material, which extend around the exterior of the cigarette. These rings are formed by applying to the paper wrapper a thin layer or coating of any suitable material which will readily dry or harden and will prevent the moisture of the mouth of the smoker from penetrating through the thin paper of the wrapper. Melted paraffin, stearin, or any other material not injurious or disagreeable to the smoker and which can be easily applied and will quickly dry or harden to form a thin even coating upon the wrapper-strip may be employed.

The width of the sections or rings B when they are arranged as shown in Figs. 1 and 2 is preferably about one-half of an inch, and the distance between them, including the width of one of the sections or rings, is equal to the length of the merchantable cigarettes to be produced. Instead of arranging or disposing the sections or rings B as shown in Figs. 1 and 2 they may be arranged as shown in Figs. 7 and 8, where they are about one inch in width and their distances apart, including the width of one of the sections, is double that of the length of the short or merchantable cigarettes. When the long cigarette is formed and provided with rings of coating material, as shown in Fig. 1, it is divided into short or marketable cigarettes by cutting or severing it along or near the line of union of the rings B with the uncoated portions of the cigarette, so that each severed cigarette will have one end of its wrapper protected by the coating material. In case the rings B are disposed as shown in Fig. 8 the long cigarette is divided or severed along the lines  $x x$ , which pass through the rings B and also midway between the rings B, as along the lines  $y y$ , as indicated in Fig. 8, thus effecting that the contiguous ends of two short cigarettes are provided with a coated section or ring. The division of the long cigarettes into short or marketable lengths may be accomplished by any cutting devices adapted for this purpose.

Referring now to the drawings as illustrating a preferred form of mechanism embodying my invention, Fig. 4 shows a machine, as X, for making a long or continuous cigarette by wrapping and securing a long strip of paper around a long filler or rod of tobacco, and

a mechanism, as Y, for applying coating material in sections to the long wrapper-strip, and mechanism for dividing or severing the long cigarette into short merchantable lengths along or near the union of the sections or rings of coating material with the body or uncoated portion of the cigarette, these mechanisms being so arranged in relation to each other that they will operate together to produce the desired results.

The main operative parts of the cigarette-machine X, as shown in the drawings, are suitably mounted on a frame C, and consist of filler-forming devices D, devices E for wrapping the paper strip around the filler-rod, devices for advancing the paper strip and filler-rod, as belt F, devices, as G, for securing the wrapper-strip around the filler-rod, and devices, as H, for dividing or severing the long or continuous cigarette into short or marketable lengths.

It is not considered necessary to describe in detail the special construction and operation of the parts and devices above referred to, as they may be in all essential particulars substantially the same as those described in United States Letters Patent No. 247,795, dated October 4, 1881, to which reference is here made, or they may be of other and different construction, provided they operate to deliver a long or continuous filler or rod of tobacco upon a long or continuous strip of paper and advance the wrapper and filler through the machine, meanwhile wrapping or folding the paper strip around the filler and securing its opposite edges into a permanent seam, and thereby forming a long or continuous cigarette, which is then cut into short merchantable cigarettes of equal lengths.

A mechanism for applying the coating material to a long wrapper-strip, as A, in sections at desired distances from each other and a device for cooling such material after it has been applied and before the strip is brought in contact with the filler-rod are shown in Figs. 4, 5, and 6 of the drawings, in which 1 is a frame conveniently secured to the base of frame C of the cigarette-machine X, in which are rotatively journaled rollers 2, 3, and 4, the latter being arranged so that its periphery will rotate in a reservoir or receptacle 5, which contains the coating material to be applied to form the sections B upon the wrapper-strip A. The rollers 2, 3, and 4 are preferably driven by suitable connection with the main shaft J of the cigarette-machine, as by beveled gears K and 6, the latter being fixed to the upper end of vertical shaft 7, whose opposite end carries gear 8, which meshes with gear-wheel 9 on shaft 10 of roller 2, which roller is preferably loosely mounted on its shaft. Roller 3 is driven by gear-wheel 11 on shaft 10 meshing with gear-wheel 12 on shaft of roller 3, and roller 4 is driven by gear-wheel 12 meshing with gear-wheel 13 on shaft of roller 4. The length of rollers 2, 3, and 4 is preferably equal to or a



little greater than the width of the paper strip A, and the roller 3 is provided with one or more ribs 14, extending along the length of its peripheral surface and parallel with its axis, and this roller is arranged relatively to the rollers 2 and 4 so that as the roller 3 rotates the ribs 14 will come into contact with the surfaces of the rollers 2 and 4. The reservoir 5 may be of any material and shape adapted to receive and hold the coating material in proper relation to roller 4 and is preferably made vertically adjustable by any suitable devices, as by screw-bolts 15, extending through brackets 16 and taking against the flanges 17, formed on the side of the reservoir. (A scraper or doctor 18 for the purpose of removing any excess of coating material from the surface of roller 4 is conveniently secured to the edge of the reservoir 5 and made adjustable to the surface of the roller by a set-screw, as 19.)

The coating material—as paraffin, stearin, or any other suitable substance adapted for the purpose indicated—may be melted in the reservoir 5 or kept in the desired state of fluidity by any suitably-applied heat, as by a jet or flame of lighted gas from a burner 20, located beneath the reservoir, and the rollers 3 and 4 may be heated to maintain the coating material in a fluid or melted condition as it is conveyed from the reservoir to the paper strip by a current or currents of heated air applied to the interiors of these rollers. A convenient construction and arrangement for this purpose is to make the rollers 3 and 4 hollow or provide them with cavities and to form channels 21, leading through one end of their shafts and connected with the ends of pipes 22 and 23, which lead from a Bunsen burner 24 or other device for heating the air. The rollers may be of any suitable material—as rubber, brass, or other metal which will take the melted material from the reservoir 5 and properly convey and apply it to the paper strip as it is advanced between the rollers 2 and 3.

The arrangement of the ribs 14 on the roller 3 is such that they will take the coating material from the surface of the roller 4 and apply it to the paper strip in sections B of the desired width and at equal distances apart, as shown in Figs. 1 and 2, the distance of the sections B from each other, including the width of one of the sections, being equal to the length of each of the cigarettes when they are severed from the long cigarette.

The devices for advancing the paper strip through the mechanism which applies the coating material are arranged to operate in proper relation to or in unison with the devices which advance the strip and filler through the wrapping devices and deliver the long cigarette to the cutting-off devices. In the construction shown in the drawings the device which performs these functions is the endless belt F, which passes through the

wrapping devices and by its constant movement draws the strip between the rollers 2 and 3 at the same rate of speed at which it advances the strip and filler through the wrapping devices and delivers the completed long cigarette to the cutting-off devices. The belt F is operated by passing over the pulley L, which is driven from the main shaft J through the beveled gear M, meshing with beveled gear N, the latter being fixed to the pulley-shaft. As the cutter-blade O is arranged to come into contact with the long cigarette and sever therefrom a single short cigarette at each complete rotation of the main shaft J, the gear M should be so related to the gear-wheel N on the pulley-shaft that at each rotation of the shaft J the desired length for each short cigarette will be advanced past the cutter-blade O, while the paper strip will be drawn or advanced through the mechanism which applies the coating material an equal distance at each revolution of the main shaft. In the drawings the roller 3 is shown as geared to the main shaft J, so that it will make one-third of a rotation while the main shaft makes a complete rotation, and the ribs 14 are at such distance apart on the circumference of the roller 3 that they will apply a section of coating material to the paper strip as often as a cigarette is presented to the cutter to be severed. It is necessary to so adjust the cutter-blade O that it will sever the long cigarette at or close to the line of union of the sections or rings B with the body or uncoated part of the cigarette, the severing cut being preferably along the lines *xx*, as seen in Fig. 1. It is desirable that the cut should be through the uncoated portion of the cigarette, but as near as practicable to the coated sections or rings, so that, on the one hand, little or none of the coating material will be on the lighting end of the cigarette and, on the other hand, only a small section or line of the uncoated wrapper will be on the extreme mouth end thereof.

To obviate the liability of the lighting ends of the cigarettes carrying any of the coating material, a different disposition or arrangement of the sections or rings B is easily made. Instead of applying the sections at a distance apart substantially equal to the length of the desired cigarette, as shown in Fig. 2, they may be double such distance apart, as shown in Fig. 7, and in this case they are preferably about double in width, so that when the long cigarette is presented to the cutter-blade to be severed it will be in the condition shown in Fig. 8 and the cutter will be adjusted or set to cut along the lines *xx* and *yy*, as shown in Fig. 8. In this case a single cut will form the mouth ends of two cigarettes, while the next cut will form the lighting ends of two cigarettes, or vice versa. The only change required in the mechanism to accomplish this result is to increase the width of the ribs 14 on roller 3 and arrange them at



double circumferential distance from each other.

To facilitate the hardening or drying of the coating material after it has been applied to the wrapper-strip, so that it will not adhere to or soil the belt F or other parts of the cigarette-machine, a blast or current of air may be directed upon the strip at any convenient point of its advance. A mechanism for effecting this result is designated by Z in Fig. 4 and is located to deliver a blast of air against the strip as it passes over a pulley 25, the length of the pulley being preferably equal to or greater than the width of the strip. The coated sections B as the strip passes over the pulley will be brought directly in front of the blast and the strip will be so held in position at this point that the blast will be uniformly delivered across its entire width. The mechanism Z may be of any construction adapted to create and deliver the desired blast of air upon the strip. As shown in the drawings, it consists of a rotating fan 26, mounted on shaft 27, which is driven from main shaft J of the cigarette-machine through pulleys 28 and 29, connected by belt 30, and gears 31 and 32.

The expression "long or continuous cigarette" as herein used is applied to a cigarette whose length is equal to or greater than the combined lengths of several cigarettes as they are generally sold to consumers in the market.

The operation of the mechanism hereinbefore described, and shown in the drawings, is briefly as follows: The long paper strip A is drawn, under proper tension, from a reel or other convenient supply, and is properly threaded through the mechanism, passing between the rollers 2 and 3, over the pulley 25, and through the wrapping devices E, above and in contact with the endless belt F, by which the strip is continuously advanced. As the strip passes between the rollers 2 and 3 the sections B, of coated material, are applied at equal and desired distances apart by the pressing contact of the ribs 14 of the roller 3, this pressure being resisted by the frictionally-driven roller 2, and the ribs taking the coating material from the surface of roller 4, which dips into the reservoir 5. The applied coating material is dried or cooled during the passage of the strip from the rollers 2 and 3 to the point of its contact with the endless belt F, and this drying or cooling may be hastened, if desired, by the impact of a blast of air upon the strip as it passes in its course. When the strip reaches the wrapping devices, the filler-rod, formed by any suitable mechanism, is delivered upon the strip, which is wrapped around the rod, as the two are advanced through the wrapping devices, the wrapper being secured in place by the devices G, thus forming a long or continuous cigarette provided with a series of sections or rings B of coating material

extending around its exterior, as shown in Figs. 1 and 8. The long cigarette is then advanced to the cutting-off blade O, which is set or arranged to operate in unison with the mechanism which applies the coating material to the strip to sever the long cigarette into short or marketable lengths in the manner before described, so that each severed cigarette will carry upon one of its ends a section or ring of coated material to serve as a mouthpiece.

In the construction of the mechanism shown in the drawings the operations are preferably continuous, the strip A being continuously advanced and supplied with sections of coating material, the filler-rod being continuously delivered upon the strip, and the strip being continuously and progressively wrapped around the filler-rod to form a long or continuous cigarette, the continuity of the operations being limited only by the length of the cigarette or filler-rod or the action of the machine.

It is not intended to limit this invention to any special form or construction of devices or mechanisms for applying the coating material or for forming and delivering the filler-rod to the wrapper-strip, or wrapping and securing the same around the rod, or for dividing the long cigarette thus formed into short or marketable lengths, since it is evident that many forms of mechanisms or devices may be employed for these purposes without departing from the principle of the invention.

What is claimed as new is—

1. The combination substantially as set forth, in a mechanism for making cigarettes with moisture-protected ends, of devices for applying a series of sections of coating material to a long wrapper-strip, devices for delivering a long filler or rod of tobacco to the strip, devices for wrapping and securing the strip around the filler-rod to form a long cigarette with a series of surrounding rings of coating material, and devices for severing the long cigarette into short marketable cigarettes, whereby each severed cigarette is provided with a ring of coating material at one of its ends.

2. The combination substantially as set forth, in a mechanism for making cigarettes with moisture-protected ends, of devices for applying a series of sections of coating material to a long wrapper-strip, devices for wrapping the strip around a long filler-rod, and means for cooling or drying the applied coating material located between the devices for applying the same and the wrapping devices.

3. The combination substantially as set forth, in a mechanism for making cigarettes with moisture-protected ends, of devices for applying a series of sections of coating material to a long wrapper-strip, devices for wrapping the strip around a long filler-rod, and an air-blast mechanism for cooling or drying the



applied coating material located between the devices for applying the same and the wrapping devices.

4. The combination substantially as set forth, in a mechanism for making cigarettes with moisture-protected ends, of devices for applying a series of sections of coating material to a long wrapper-strip, devices for wrapping the strip around a long filler-rod, an air-blast mechanism and a retaining-surface for the wrapper-strip, as pulley 25, located between the devices for applying the coating material and the wrapping devices.

5. The combination substantially as set forth, in a machine for making cigarettes

with moisture-protected ends, of devices for forming a long cigarette and providing it with surrounding rings of coating material at equal distances apart, devices for severing the long cigarette into short or marketable cigarettes, devices for advancing the long cigarette to the severing devices and means for relatively adjusting and operating the advancing and severing devices, whereby each severed cigarette is provided with a ring of coating material at one of its ends.

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