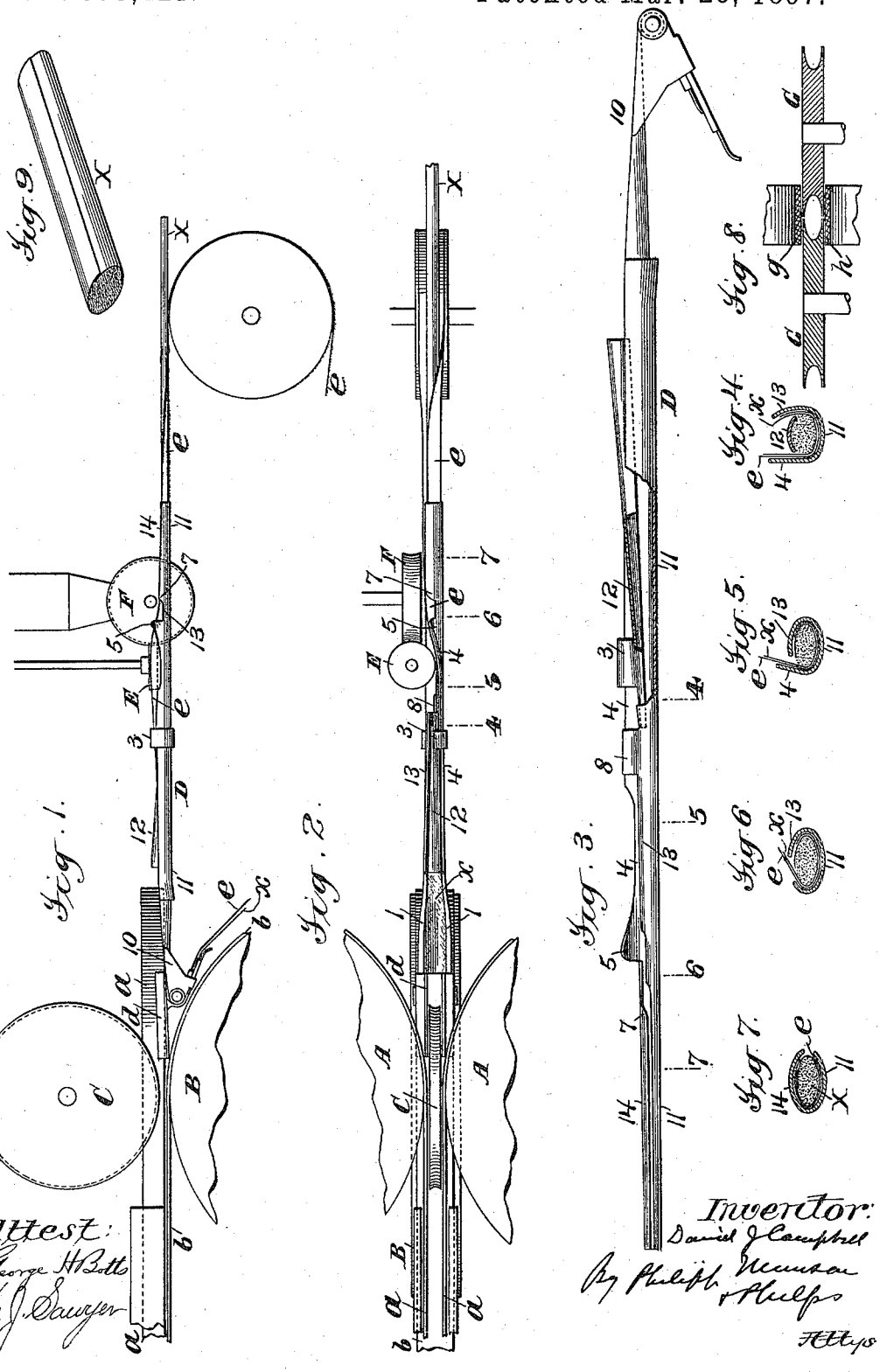
(No Model.)

D. J. CAMPBELL.

CIGARETTE.

No. 579,421. Patented Mar. 23, 1897.



UNITED STATES PATENT OFFICE.

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CIGARETTE.

SPECIFICATION forming part of Letters Patent No. 579,421, dated March 23, 1897.

Application filed March 30, 1896. Serial No. 585,338. (No model.)

To all whom it may concern:

Be it known that I, DANIEL J. CAMPBELL, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Cigarettes, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of the present invention is to provide an improved cigarette of elliptical form in cross-section, which form fits better between the lips and avoids the necessity of moistening and flattening the ends, as in the ordinary cylindrical cigarettes. The hand-made elliptical cigarettes now well known are exceedingly expensive and have, moreover, proved to be defective in some respects, especially in that the filler is liable to be more or less broken in flattening them by hand from the cylindrical to elliptical form, and the tobacco does not fill the paper tube as closely as desired.

The improved cigarette forming the present invention avoids the objections to such hand-made elliptical cigarettes; and it consists of a filler of tobacco inherently densely compressed and solidified and closely fitting the paper tube, within which it is confined. I am enabled to produce such an elliptical cigarette by molding a mass of tobacco directly into a continuous cigarette-filler elliptical in cross-section and of the proper dimensions and then folding or shaping a continuous traveling wrapping-strip into a tube, also elliptical in cross-section and containing the filler, and retaining the wrapper and its contained filler under an unyielding pressure during the operation of wrapping and securing the wrapper-seam, thereby forming a continuous cigarette-rod elliptical in cross-section, which is subsequently divided into proper lengths to form the cigarettes.

My improved elliptical cigarette may be made by apparatus of widely different forms, but for the purpose of illustration I have shown herein, so far as necessary for illustrating the invention, an apparatus for this purpose which I have found simple and efficient, and this apparatus will now be described.

In the drawings, Figure 1 is a diagrammatic elevation of those parts of the apparatus operating directly on the rod and wrapper to form the continuous cigarette-rod. Fig. 2 is a plan view of the same. Fig. 3 is an enlarged side view of the wrapping-tube from the side opposite that shown in Fig. 1 with the tube partly broken away to show the construction. Figs. 4, 5, 6, and 7 are cross-sections on, respectively, the lines 4 5 6 7 of Figs. 2 and 3. Fig. 8 shows one of the many modified forms of apparatus that may be used. Fig. 9 is a perspective view of the cigarette.

The machine illustrated in Figs. 1 to 7 is similar to the well-known Bonsack machine, only those parts being shown that are required for explanation of my apparatus for producing cigarettes embodying the present invention. The construction shown in these figures employs a wrapping-tube by which the tobacco is molded to form a continuous elliptical filler and the wrapper folded about the filler and pasted to form a continuous elliptical cigarette-rod, which is then cut into cigarette lengths by any suitable mechanism, the wrapper and filler being carried through the wrapping-tube by a continuous belt and the tobacco being fed to the wrapping-tube by devices of any suitable form.

In the construction shown the feeding devices for the tobacco consist of two side belts *a*, passing around horizontal wheels A, and bottom belt *b*, passing around vertical wheel B, these wheels being set at the proper distance apart to secure the partial compression and advance of the tobacco, and a grooved vertical wheel C, being mounted above and coacting with the belt *b* and wheel B to press down the top of the tobacco as it is advanced between the wheels A B C and secure its proper feed to the wrapping-tube, this wheel C preferably being grooved, as shown, so as to curve the top of the tobacco to some extent and thus aid in reducing it to elliptical form. These wheels with the belts may all

be driven by any suitable means, such as are well known, and require no illustration. The tobacco is advanced by the wheels and belts above described between guides *d* to the wrapping-tube D, which is supported in any suitable manner just above and in advance of the bottom belt *b*, and through which wrapping-tube runs the continuous belt *e*, carrying the wrapper *x* with the tobacco filler thereon through the tube to form the continuous cigarette X.

The wrapping-tube D is shown as having at its rear end the usual curved support 10, over which the tobacco and wrapper are advanced to the bottom or trough plate 11, and having the usual side guides 1 for the opposite edges of the wrapper. Above the curved trough-plate 11, on which the belt supports and carries the wrapper with the tobacco thereon, is suspended by arms 3, as usual in such constructions, plate 12, narrower than the trough formed by the plate 11, so that the edges of the wrapper and belt may run between the plates 11 12, and this plate 12 is inclined so as to compress the tobacco, and the two plates 11 12 formed so as to mold the tobacco to a filler of substantially elliptical form in cross-section, as shown in Fig. 4, the top plate 12 at this point having a flat curve on its under face, and the bottom of the trough-plate 11 forming a flat curve, as shown in this figure.

From the end of the plate 12 extends the wrapping-chamber, which is formed by the trough-plate 11 and an overhanging flange 13 thereon, the bottom of the chamber being formed with a flat curve, and the flange 13 having its under face similarly curved, so as to hold the filler received from the plate 11 in elliptical form, while at the same time the flange 13 turns down one side of the belt with the wrapper *x*, so as to form an elliptical wrapper-tube inclosing the filler, the other edge of the wrapper and belt lying against the upturned pasting flange or abutment 4 on the opposite side of the tube, as shown in Fig. 5, this upturned edge of the wrapper being supported and held in proper position for pasting by the arm 8, as usual in such constructions, the paste being shown as applied by a horizontally-rotating paste-wheel E, fed by a paste-supply wheel F, fed in any suitable manner, as usual in this class of machines.

Beyond the point at which the paste is applied the belt and the pasted edge of the wrapper are turned in by the curve of the flange 4 and the lapping-point 5 at the end of the flange, as usual in such constructions, and the wrapper closed completely down by the belt passing under the end 7 of a flange 14, extending over the trough-plate from the side of the tube opposite that at which flange 13 was formed, so as to bring the pasted edge of the wrapper down upon the opposite edge just in advance of the point 5, where the flange 13 is cut away to permit it, and thus close and seal the wrapper-tube, the unpasted edge of the wrapper being held in position to form the elliptical wrapper-tube with the elliptical filler therein by the flange 13, as shown in Fig. 6. Beyond this point, at which the wrapper-tube is closed and sealed so as to form the complete continuous elliptical cigarette-rod, the flange 14 extends over the top of the trough-plate, so as to press the belt down and hold the cigarette-rod in form, the flat curve of the bottom plate 11 being continued and the flange 14 having a similar curve on its under side, so as to form an elliptical tube, by which the cigarette-rod is held under pressure in its elliptical shape after the pasting of the wrapper-strip, producing a cigarette-rod of permanent elliptical form with the tobacco tightly fitting the paper tube, which cigarette-rod is then cut into cigarette lengths by any suitable cutting devices, such as are in common use, forming cigarettes, such as shown in Fig. 9.

It will be understood that the cigarette may be made by many other devices than those shown. For instance, if it be desired to mold the filler to elliptical form before it reaches the wrapper and belt suitable devices of many known forms may be used for this purpose, one of which is shown in Fig. 8, in which the tobacco passes either from the belts *a*, *b*, and wheel C, previously described, or from other suitable tobacco-feeding devices between two horizontal wheels G, provided with grooves of such form that the wheels mold the tobacco passing between the wheels to a continuous filler substantially elliptical in cross-section, bottom and top belts *g h* or other suitable devices being used above and below the wheels to complete the molding-chamber and hold the tobacco in place, as usual in such constructions. From such or any similar filler-molding devices the filler may pass to the wrapper-tube shown or to a wrapping-tube or other wrapping device of any suitable form, by which the elliptical filler will be held in form and inclosed in a wrapper to form a continuous elliptical cigarette-rod.

It will be understood that I do not limit myself to the use of any special method of or mechanism for forming my cigarette. The method of and apparatus for forming the cigarette described herein are claimed in another application, Serial No. 585,339, filed March 30, 1896.

What I claim is—

1. As a new article of manufacture, a cigarette consisting of a mass of tobacco inherently densely compressed and solidified forming a filler substantially elliptical in cross-section, confined within and tightly fitting an elliptical paper tube, substantially as described.

2. As a new article of manufacture, a con-

tinuous cigarette-rod consisting of a solidified and condensed mass of tobacco forming a continuous molded filler substantially elliptical in cross-section confined within and tightly fitting a continuous elliptical paper tube, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

DANIEL J. CAMPBELL.

Witnesses:
JOSIAH T. WILCOX,
E. T. SMITH.