

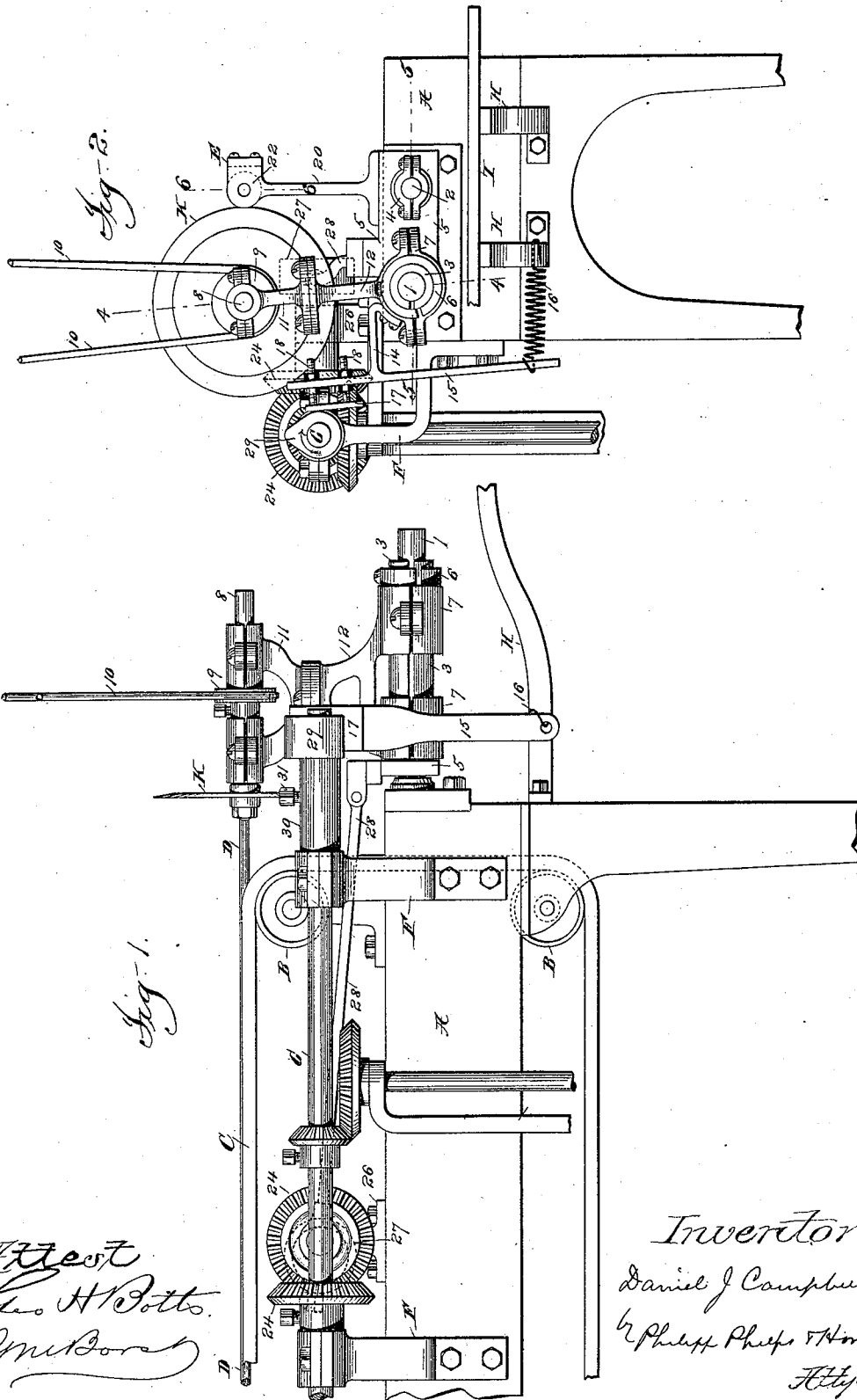
(No Model.)

2 Sheets—Sheet. 1.

D. J. CAMPBELL.
CIGARETTE CUTTING MACHINE.

No. 561,964.

Patented June 16, 1896.



Inventor:

Daniel J. Campbell
by Phelix Phelps & Henry
H. Phelps

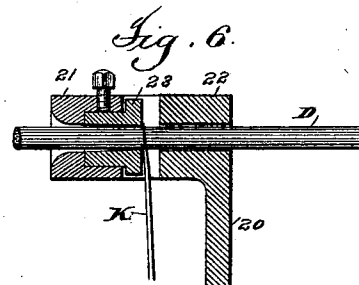
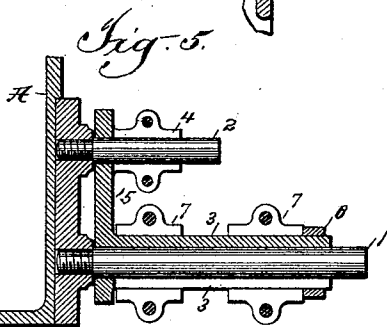
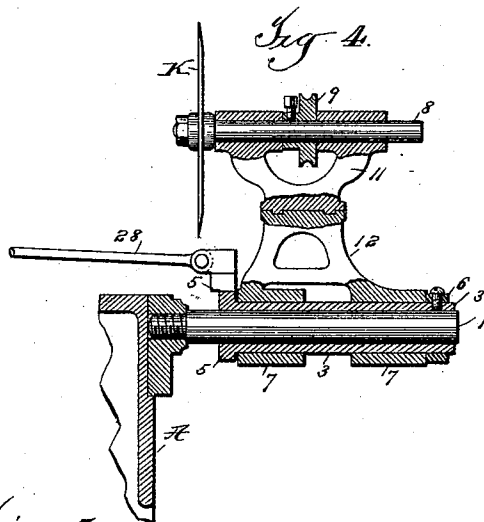
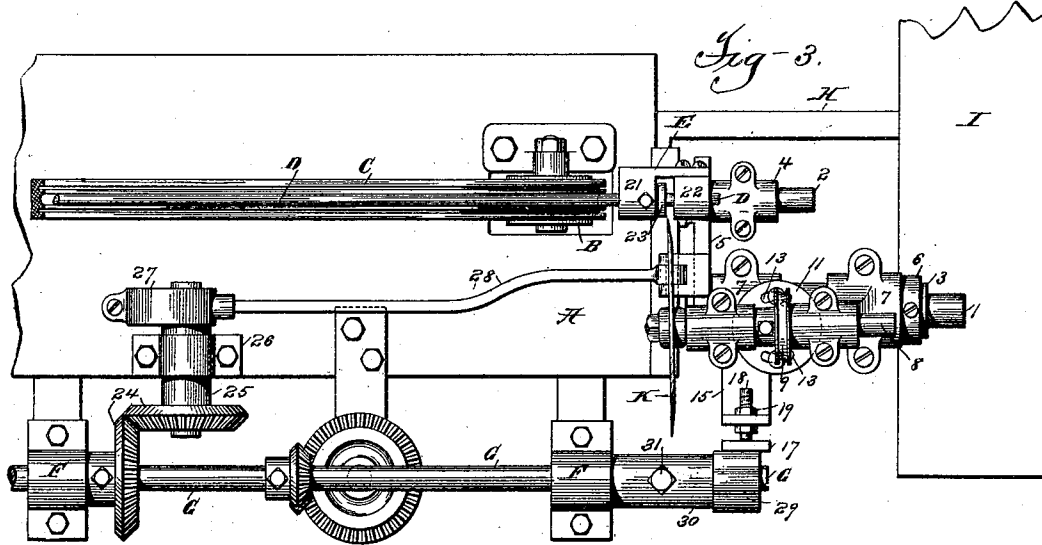
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2 Sheets—Sheet 2.

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Attest.
Geo. H. Bolls.
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UNITED STATES PATENT OFFICE.

DANIEL J. CAMPBELL, OF NEW YORK, N. Y., ASSIGNOR TO THE AMERICAN TOBACCO COMPANY, OF NEWARK, N. J.

CIGARETTE-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 561,964, dated June 16, 1896.

Application filed June 6, 1890. Serial No. 354,463. (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 Cigarette-Cutting Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to that class of cigarette-machines in which a continuous cigarette-rod is formed, which is then cut into suitable lengths to form the cigarettes.

The object of my invention is to improve the cutting mechanism of this class of machines; and to this end my invention consists in various constructions and combinations of parts, which will be more particularly described in the specification and pointed out in the claims.

In the accompanying drawings, forming a part of this specification, my invention is shown as applied to the well-known Allison cigarette-machine, of substantially the general construction shown in Patents Nos. 406,610 and 406,611.

Referring to said drawings, Figure 1 is a side elevation of the delivery end of the machine, showing my improvements. Fig. 2 is an end view of the same. Fig. 3 is a plan. Fig. 4 is a detail vertical section of the oscillating and sliding frames. Fig. 5 is a detail horizontal section of the sliding frame. Fig. 6 is a detail vertical section of the guide.

A is the bed-plate or frame of the machine, in which are supported the pulleys B, around which passes the endless grooved belt C by which the cigarette-rod D is fed through the guide E, which forms also a support for the cigarette-rod.

Supported upon arms F, extending from the bed-plate A, is the shaft G, by which the cutting mechanism is actuated, and which is operated by connections with any suitable source of power. Arms H, extending from the end of the bed-plate, support the table I, upon which the severed cigarettes are delivered from the guide E through a chute, (not shown,) as is usual in this class of machines.

Referring now to the mechanism in which my invention is embodied, 1 2 are short shafts

extending from and supported in the end of the bed-plate A, on which shafts are loosely mounted sleeves 3 4, forming parts of a sliding frame or carriage 5, by which the cutter and guide are carried, these sleeves being preferably made in two parts, as shown, to permit of adjustment to take up the wear of the parts. Supported upon the sleeve 3, and held thereon by means of removable collars 6 6, are two split collars 7, these collars being free to oscillate upon the sleeve. The cutter K is secured to the short shaft 8, which carries a pulley 9, rotated by a driving-belt 10, connected to any suitable source of power. This short shaft 8 is journaled in the cutter-frame, which is preferably made in two parts 11 12, connected by slot and set-screw connections 13, as shown in Figs. 3 and 4, whereby the cutter-blade may be adjusted at an angle to the cutting-die, as hereinafter described. The lower section 12 of the cutter-frame is provided with the collars 7, previously referred to, by which the cutter-frame and cutter are supported upon the sleeve 3 and free to oscillate thereon.

Secured to the cutter-frame above its axis of oscillation and preferably to one of the collars 7, as shown, is the arm 14, extending from a bar 15, which is operated in one direction by means of a spring 16, secured to the lower end of the bar and to one of the table-supports H. At its upper end the bar 15 is provided with a small plate 17, adjustably secured to the bar by means of screw-bolts and nuts 19, as shown in Figs. 2 and 3. Upon the sliding frame 5 is carried also the standard 20, on which is supported the guide E, previously referred to. This guide E consists, preferably, of the two dies 21 22 upon opposite sides of the plane of movement of the cutter, the die 21 being preferably provided, as shown, with a flaring opening serving as a centering-guide to the cigarette-rod on entering the die. A steel bushing 23 is adjustably secured in the die 21 and serves as a wearing-face for the cutter K.

The cutter K is preferably mounted so that its blade forms a slight angle with the wearing-face of the die, as shown in Figs. 3 and 6, a shearing cut thus being produced, which gives a smooth cut edge to the wrappers. The

cutter also by angular contact with the steel wearing-face is kept properly sharpened, being formed with a thin blade, preferably beveled on the side opposite the die. By the adjustment of the bushing and cutter, as previously described, the pressure between the blade and wearing-face and the angle of the blade may be varied as desired. By the use of a thin cutter-blade of large radius I am able also to obtain the requisite yielding pressure between the die and blade without the use of springs, which have heretofore been employed for this purpose.

For operating the parts thus far described, so as to impart to the cutter K a movement transverse to the cigarette-rod and at the same time to move the cutter and guide longitudinally of and at the same speed as the rod, I provide the following mechanism: The shaft G, by means of beveled gears 24, operates a short shaft 25, journaled in a standard 26 upon the bed-plate A, this shaft 25 having an eccentric connection with a collar 27, carrying pitman 28, which is pivotally connected at its outer end to the carriage 5. The shaft G is provided also with a cam 29, carried by a sleeve 30, adjustably secured upon the shaft by a set-screw 31, as shown in Figs. 1 and 3. This cam engages the plate 17 at each rotation of the shaft G, thereby rocking bar 15 against the tension of spring 16.

The operation of the device is as follows: As the cigarette-rod is fed by the endless band C through the guide E to the length required for a cigarette, cam 29 engages the plate 17 and rocks the bar 15 against the tension of spring 16, thus oscillating the cutter-support and cutter upon the sleeve 3 and carrying the rotating cutter K into contact with and through the cigarette-rod. As the cutter engages the cigarette-rod the carriage 5 is operated by eccentric-collar 27 and pitman 28 to carry the cutter and guide forward with the cigarette-rod and at the same rate of speed, all buckling of the cigarette in cutting thereby being avoided. The cigarette having been severed, the cutter-frame is oscillated by the spring 16 and bar 15 to retract the cutter K from the guide, and the carriage 5 is operated by the eccentric to return the cutter and guide to their normal position longitudinally of the cigarette-rod.

It is evident that the mechanism embodying my invention may be varied and that the invention is not to be limited to the specific devices shown nor to the special form of machine to which the cutter mechanism is ap-

plied, this machine being selected only for the purpose of illustration.

While I prefer to use a rotary cutter, as shown, and have claimed the same in certain combinations, it is to be understood that parts of my invention are not limited to a rotary cutter, but that the claims not limited to a rotary cutter are intended to cover cutters of other classes which may be used, if desired.

What I claim is—

1. The combination with the cutter and pivotally mounted and sliding cutter-frame, of the cam 29 for oscillating said frame in one direction and the spring 16 for returning the frame, and positive driving means for reciprocating the frame in a straight line at right angles to the plane of its oscillation, substantially as described.

2. The combination with the cutter and pivotally-mounted cutter-frame, of bar 15 connected with said frame, adjustable plate 17 carried by said bar, a cam 29 engaging said adjustable plate, and spring 16 for returning the bar and frame, substantially as described.

3. The combination with the guide E having the die 23, of the disk cutter K rotating at an angle to and in contact with the face of said die, substantially as described.

4. The combination with the guide E having the die 23, of the disk cutter K rotating at an angle to and in contact with the face of said die, and means for adjusting the angle at which the cutter engages the die, substantially as described.

5. The combination with the guide E having the die 23, of the disk cutter K rotating in contact with the face of said die, and a cutter-supporting frame adjustable in the arc of a circle at right angles to the plane of rotation of the cutter whereby the angle at which the cutter-blade engages the die may be adjusted, substantially as described.

6. The combination with the sliding guide E having die 23, of the rotary disk cutter K, its shaft 8 and driving-pulley 9, and an oscillating and sliding cutter-frame adjustable in the arc of a circle at right angles to the plane of rotation of the cutter, substantially as described.

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

DANIEL J. CAMPBELL.

Witnesses:

THOS. PHELAN,
M. D. SCHINDLER.