(No Model.) 2 Sheets—Sheet 1.

O. W. ALLISON.

CIGARETTE CUTTER.

No. 459,115. Patented Sept. 8, 1891.

Fig. 1.

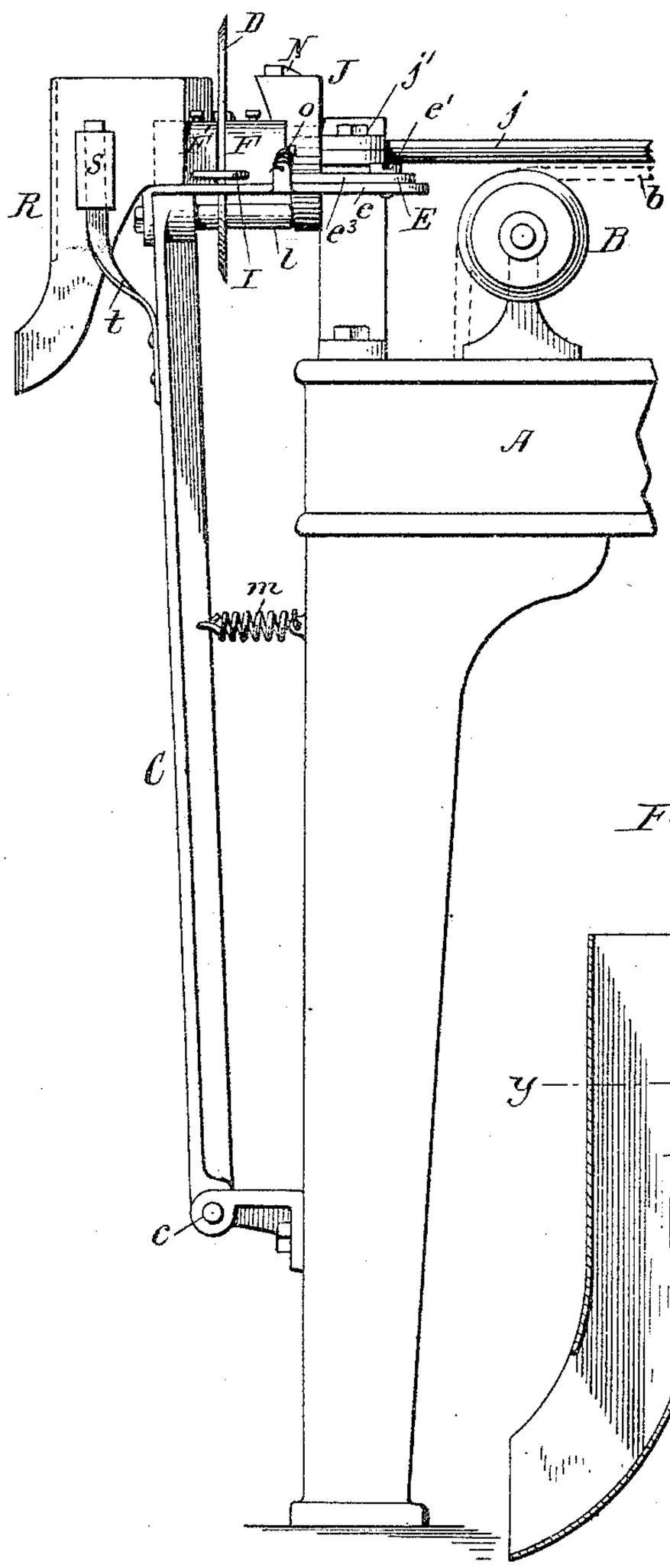


Fig. 2.

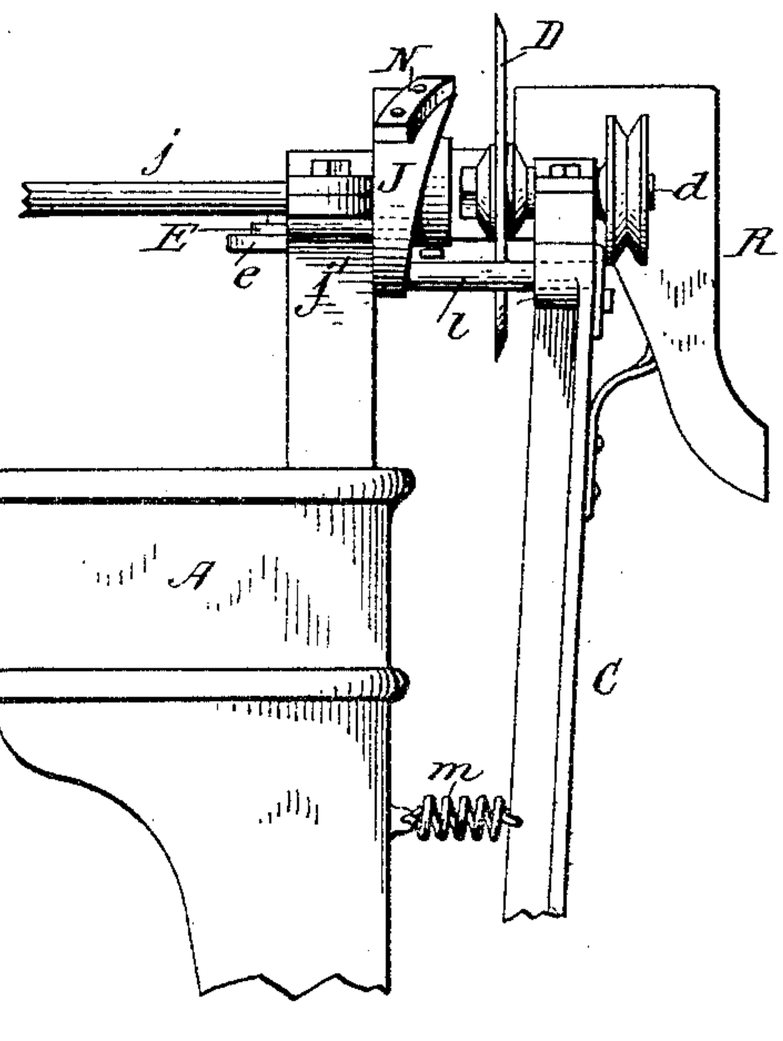
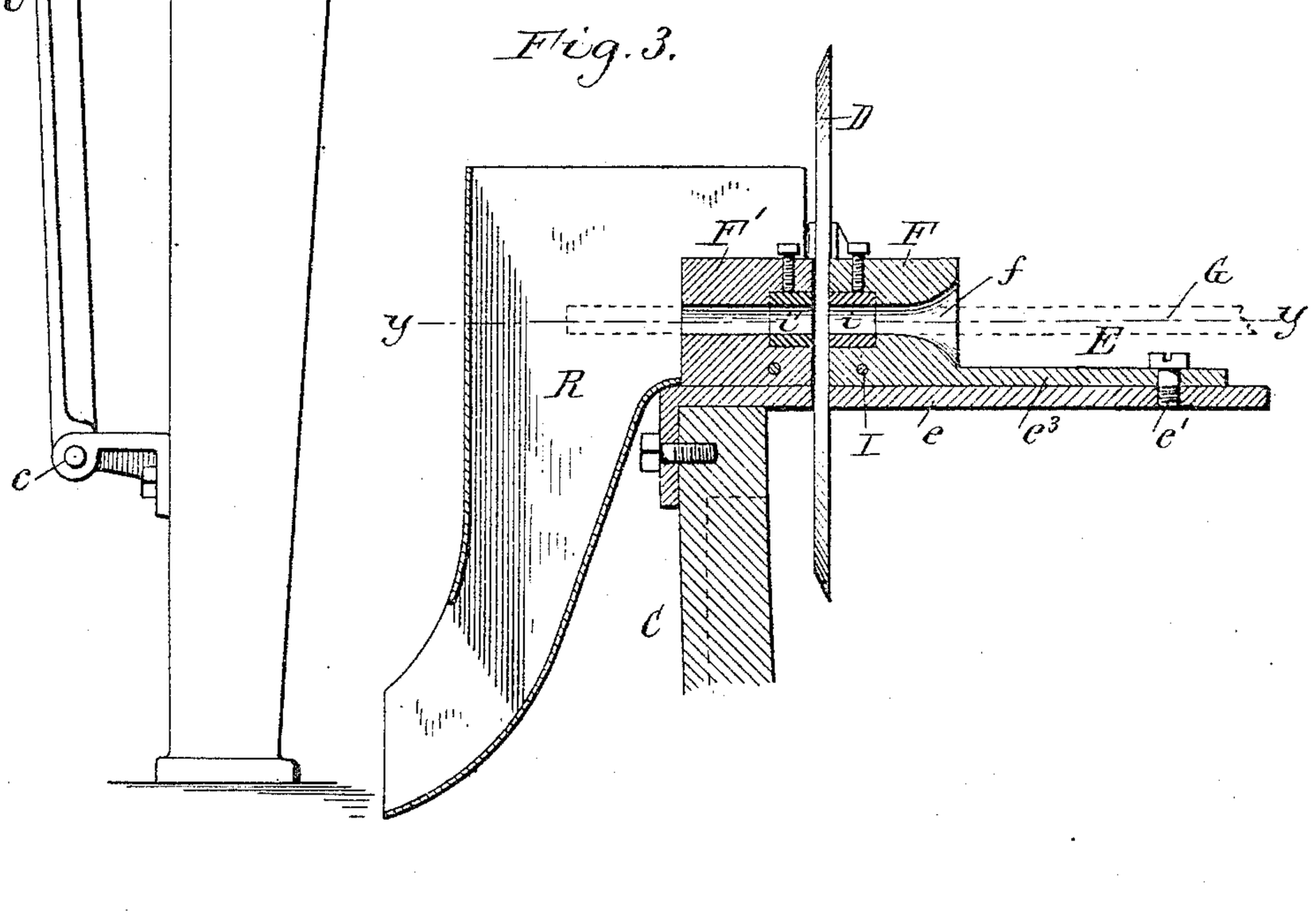


Fig. 3.



Witnesses:
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(No Model.) 2 Sheets—Sheet 2.

O. W. ALLISON.

CIGARETTE CUTTER.

No. 459,115. Patented Sept. 8, 1891.

Fig. 4.

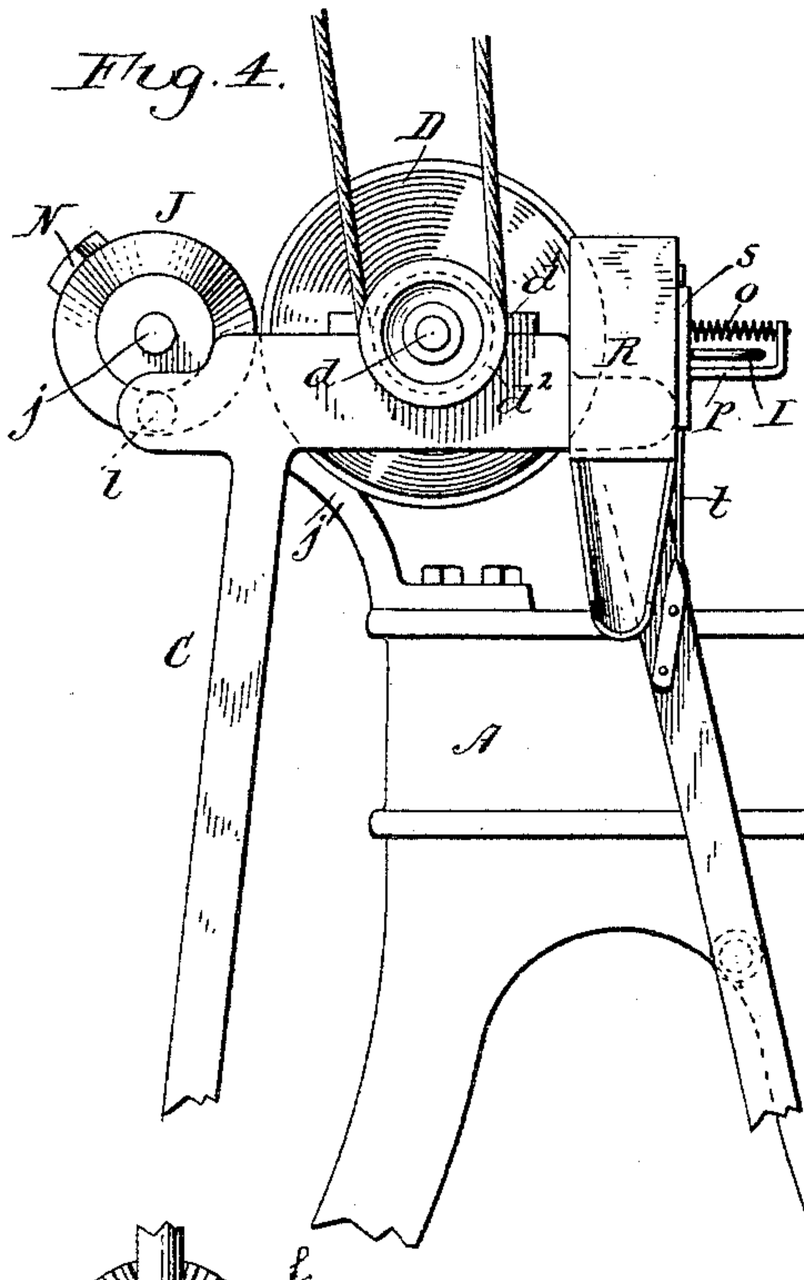


Fig. 5.

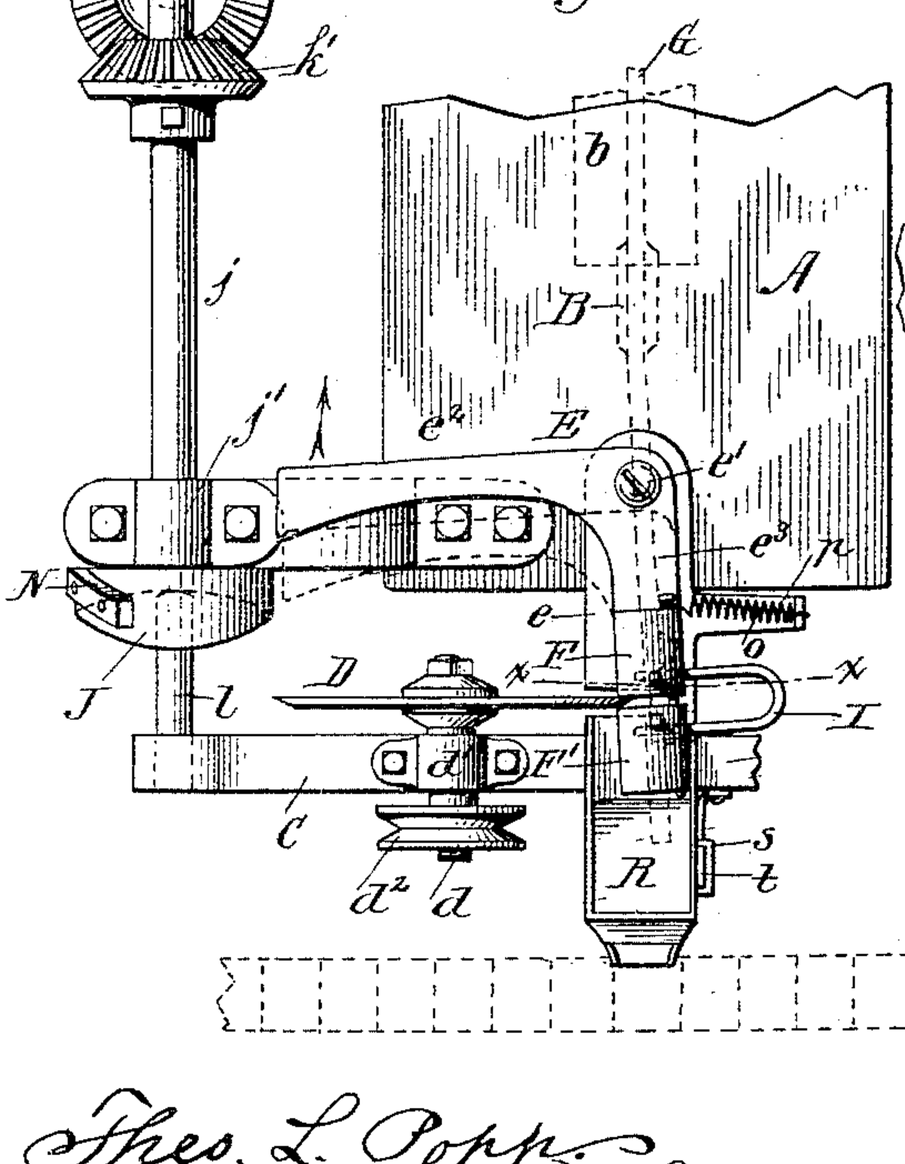


Fig. 6.

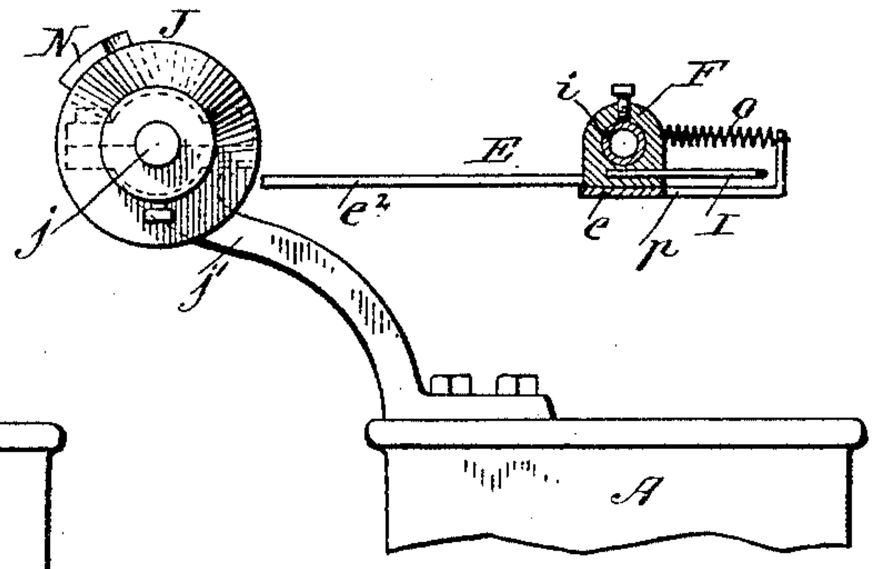


Fig. 7.

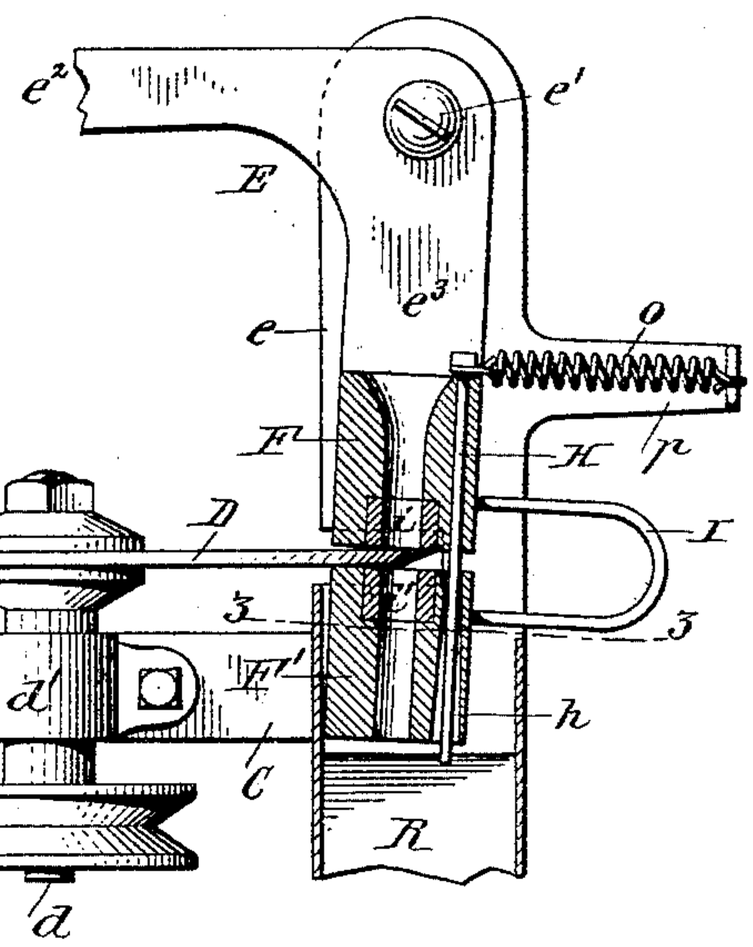
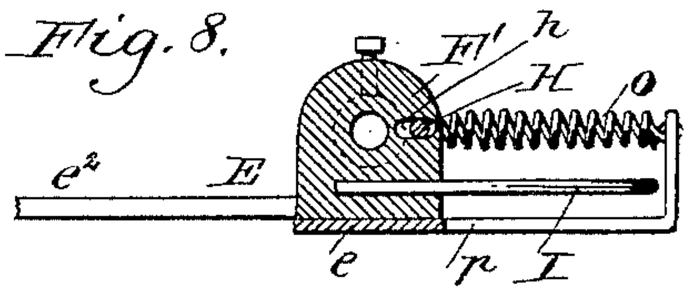


Fig. 8.



Theo. L. Popp
Chas. J. Buchheit } Witnesses.

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UNITED STATES PATENT OFFICE.

OSCAR W. ALLISON, OF ROCHESTER, NEW YORK.

CIGARETTE-CUTTER.

SPECIFICATION forming part of Letters Patent No. 459,115, dated September 8, 1891.

Application filed March 5, 1889. Renewed July 17, 1891. Serial No. 399,801. (No model.)

To all whom it may concern:

Be it known that I, OSCAR W. ALLISON, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented new and useful Improvements in Cigarette-Cutters, of which the following is a specification.

This invention relates to that class of cigarette-machines in which the tobacco is formed into a continuous filler or rod which is delivered upon a continuous band of paper, the latter being pasted along one of its edges and then closed upon the filler, and the continuous cigarette so formed being then cut into suitable lengths.

The object of my invention is to improve the cutting mechanism whereby the endless cigarette is cut into equal lengths; and my invention consists of the improvements which will be hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, consisting of two sheets, Figure 1 is a longitudinal elevation of the cutter mechanism at the rear end of a cigarette-machine. Fig. 2 is a similar view showing the reverse side of the cutter mechanism. Fig. 3 is a longitudinal sectional elevation of the dies through which the tobacco rod passes and the discharge-spout on an enlarged scale. Fig. 4 is an elevation of the rear end of the machine at right angles to Figs. 1 and 2. Fig. 5 is a top plan of the cutter mechanism. Fig. 6 is a vertical sectional elevation in line $x\,x$, Fig. 5. Fig. 7 is a horizontal section in line $y\,y$, Fig. 3. Fig. 8 is a cross-section in line $z\,z$, Fig. 7.

Like letters of reference refer to like parts in the several figures.

A represents the bed of the cigarette-machine, and B a pulley mounted on the bed and supporting the belt b, which feeds the endless cigarette to the cutting mechanism.

C represents the cutter-frame, pivoted at its lower end by transverse pivots to brackets c, secured to the legs of the main frame, so that the cutter-frame oscillates in the longitudinal direction of the machine.

D represents the cutter-disk, which is arranged transversely on the upper part of the cutter-frame and secured to a short longitudinal shaft d, journaled in a bearing d', formed on the cutter-frame. This shaft is provided with a pulley d^2, to which power is transmitted from any suitable source for rotating the cutter-disk.

E represents a horizontal elbow-lever, which is pivoted on a bracket e, secured to the upper part of the cutter-frame and moving therewith. The bracket projects forwardly from the top of the cutter-frame, and the elbow-lever is pivoted to the front end of the bracket by a vertical pivot e', so that the lever can swing horizontally on the bracket. The front arm e^2 of the elbow-lever extends laterally toward the side of the machine, while the rear arm e^3 extends rearwardly over the bracket and terminates in front of the cutter-disk.

The rear arm e^3 of the elbow-lever is provided at its rear end with two carrying-dies or tubular guides F F′, arranged one behind the other, through which the cigarette rod G passes and in which it is supported while being cut into the required length. The front die F is rigidly secured to the arm e^3 of the elbow-lever, and the front portion of its bore is made flaring, as shown at f, to facilitate the introduction of the cigarette rod and also to avoid abrupt bending of the latter as the carrying-dies move toward and from the cutter-disk.

The rear die F′ is connected with the front die F by a longitudinal pin H, which is secured to the latter and projects rearwardly therefrom. This pin passes through a longitudinal opening h in the rear die, which opening is made rearwardly flaring in a horizontal direction only, as represented in Figs. 7 and 8, so that the front end of the rear die is held by the pin in line with the front die, and the rear die is at the same time enabled to adjust itself horizontally to the cutter-disk, which latter enters between the two dies in cutting the cigarette, as represented in Fig. 7.

I represents a bow-spring, which is seated with its ends in sockets formed in the outer sides of the dies F F′. This spring forms a flexible connection between the dies and tends to draw the rear die toward the front die, thereby causing the rear die to bear tightly against the rear side of the cutter-disk. $i\,i'$ represent steel bushings, which are seated in the adjoining ends of the dies in the openings thereof. The bushings are held in place by set-screws and serve as wearing-faces, against

which the cutter-disk bears during the operation of cutting the cigarette rod.

J represents a cam-wheel secured to the rear end of a longitudinal shaft *j*, which is supported at the rear end of the machine in a bearing *j'*, secured to the bed of the machine and is driven by gears *k k'*. The face or rear side of the cam J bears against a pin *l*, formed on the front side of the cutter-frame C, and forces the latter rearwardly, while the reverse or forward movement of the cutter-frame is effected by a spring *m*, secured with its ends, respectively, to the cutter-frame and the legs of the main frame. By this means an oscillating movement is imparted to the cutter-frame C. The cutting-disk and the carrying-dies are attached to the oscillating cutter-frame C and move rearwardly with the same speed with which the cigarette rod issues from the cigarette-forming mechanism, so that the cutter-disk and dies do not change their position longitudinally with reference to the cigarette rod during the operation of cutting. When the cutter-frame C has nearly reached the limit of its rearward movement, the front arm e^2 of the elbow-lever stands directly opposite the cam J, as shown by dotted lines in Fig. 5. In this position an auxiliary cam N, formed on the circumferential face of the cam J, strikes the arm e^2 and forces it forwardly in the direction of the arrow, thereby moving the dies which carry the cigarette rod toward the cutting-disk and causing the latter to cut through the cigarette rod. Before the return movement of the cutter-frame takes place the dies are withdrawn into their normal position by the action of a spring *o*, which is attached with its ends to the pin H, and a laterally-projecting arm *p*, formed with the bracket *e*.

R represents the discharge-spout, which receives the cut cigarettes as they drop from the rear die and delivers the same into a suitable receptacle. The spout R is detachably secured to the cutter-frame C by means of a loop or socket *s*, which engages over an arm *t*, secured to the main frame.

My improved construction of the cutting mechanism prevents injurious buckling of the cigarette rod, and the dies form a reliable support for the cigarette rod on both sides of the cutting-knife, whereby a clean cut of the cigarette is effected and fraying at the end is avoided.

I claim as my invention—

1. In a cigarette-machine, the combination, with a longitudinally-movable and rotary cutter-disk, of a swinging support moving laterally toward and from the cutter-disk and means for moving it longitudinally with the disk, a carrying-die arranged on one side of the cutter-disk and secured rigidly to said support, and a carrying-die arranged on the opposite side of the cutter-disk and flexibly connected with the other die on said support, substantially as set forth.

2. The combination, with the longitudinally-moving cutter-disk, a swinging support, and means for moving it laterally toward and from the cutter-disk and longitudinally with the cutter-disk, of a carrying-die secured rigidly to said support in front of the cutter-disk, a movable carrying-die arranged in rear of the cutter-disk, and a spring whereby the movable die is supported and drawn against the cutter-disk, substantially as set forth.

3. The combination, with the longitudinally-moving cutter-disk and a swinging support moving laterally toward and from the cutter-disk and having also a longitudinal movement with the cutter-disk, of a carrying-die rigidly secured to said support in front of the cutter-disk, a guide-pin secured to the rigid die, a movable carrying-die arranged in rear of the cutter-disk and provided with a laterally-flaring opening through which said guide-pin passes, and a spring connecting the movable die with the rigid die, substantially as set forth.

4. The combination, with the longitudinally-movable cutting-disk, of two laterally and longitudinally movable carrying-dies flexibly connected and arranged, respectively, on the front and rear sides of the cutting-disk, and removable bushings arranged in said dies, substantially as set forth.

5. The combination, with the longitudinally-moving cutter-frame, of the rotary cutter-disk mounted on said frame, a horizontal elbow-lever also mounted on said frame, a carrying-die attached to said elbow-lever in front of the cutter-disk, a second carrying-die flexibly connected to the first-named die and arranged at the rear of the cutting-die, and means for actuating the cutter-frame and the elbow-lever, substantially as set forth.

Witness my hand this 11th day of February, 1889.

OSCAR W. ALLISON.

Witnesses:
Z. L. DAVIS,
JESSIE GRAY.