

(No Model.)

2 Sheets—Sheet 1.

C. R. MARTIN.
CIGARETTE MACHINE.

No. 581,077.

Patented Apr. 20, 1897.

Fig. 1.

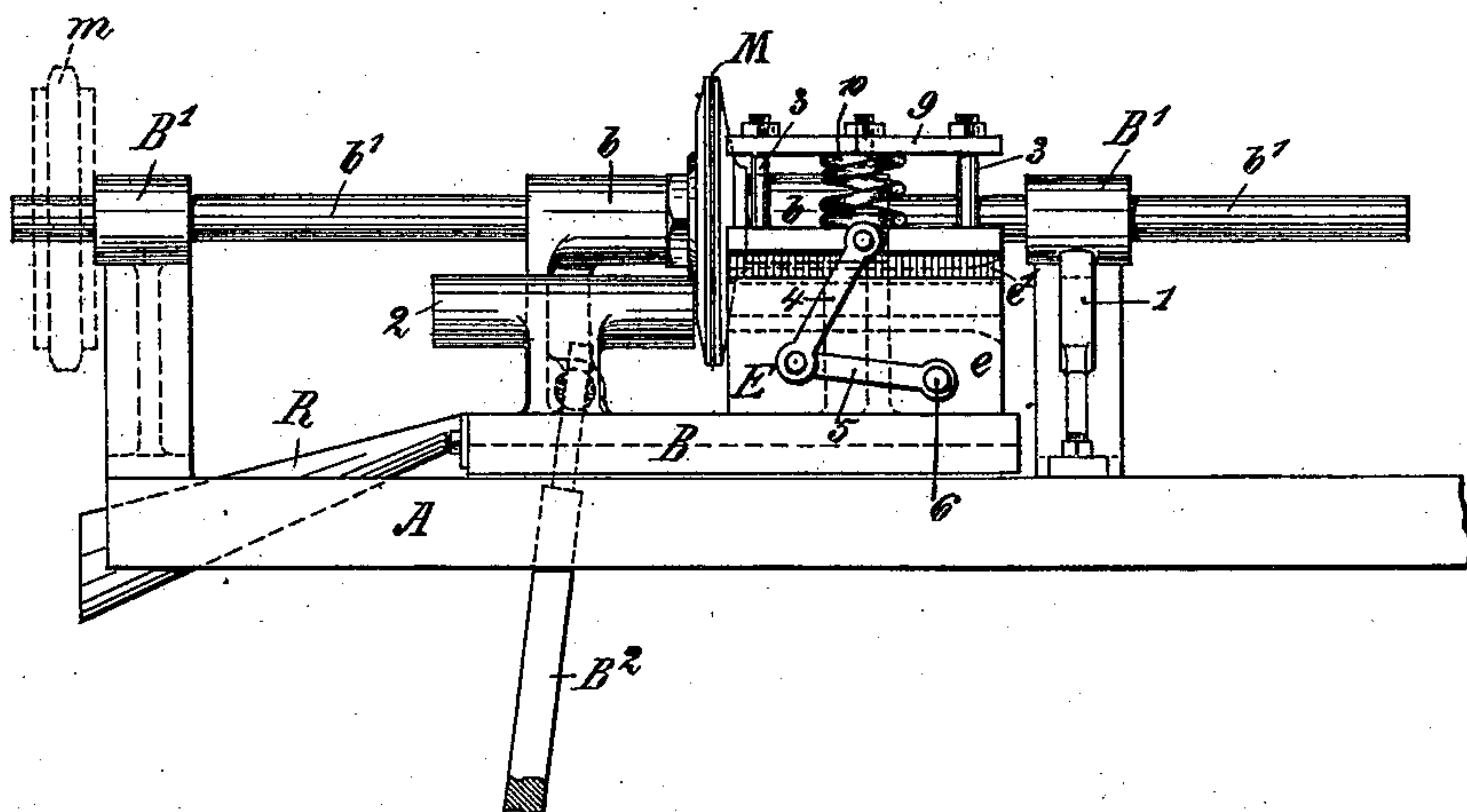
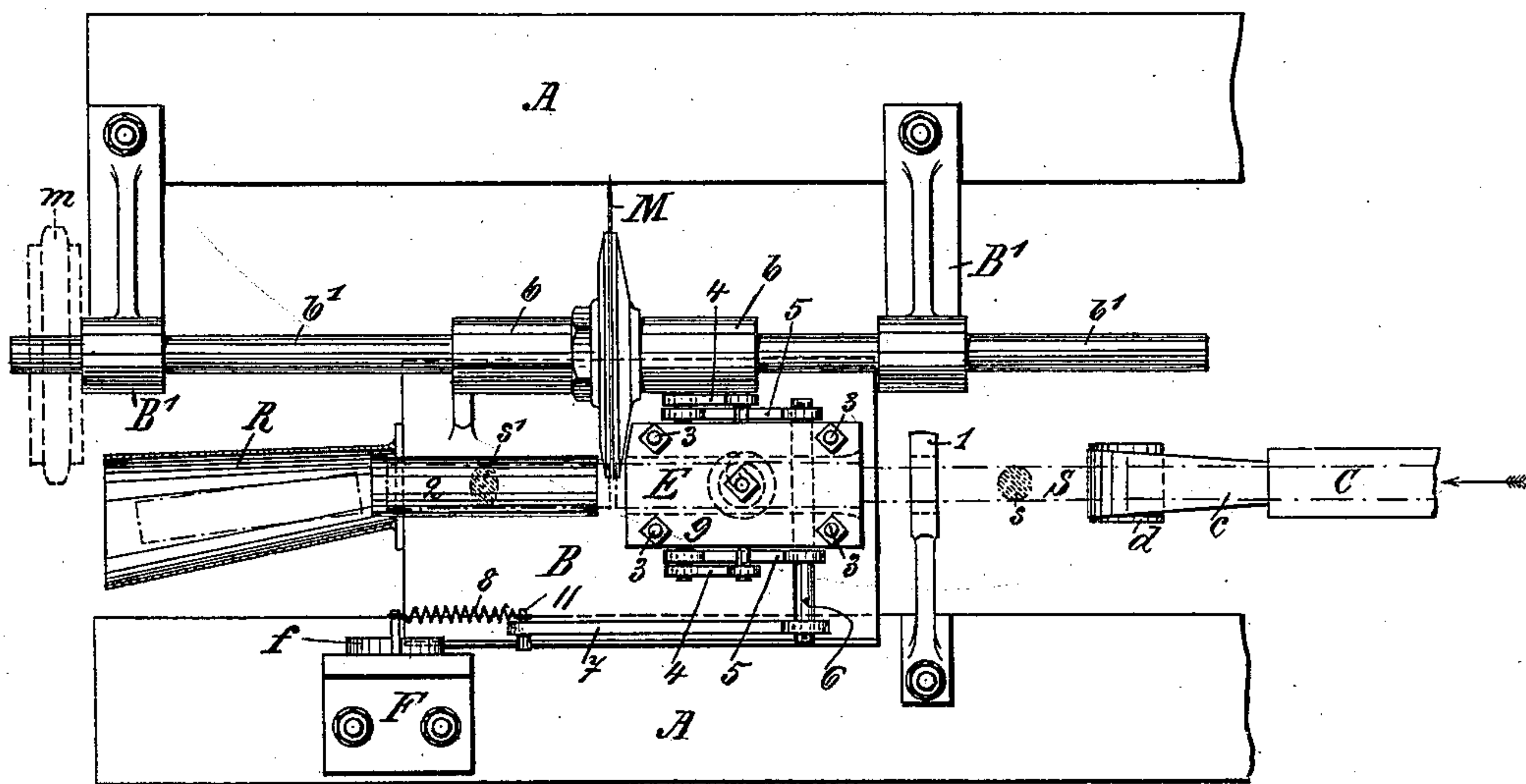


Fig. 2.



Witnesses:

Chas. Hoff
Aug. Dummer

Inventor:

Carl R. Martin,
by *Church & Church*
his Attys

(No Model.)

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Fig. 3.

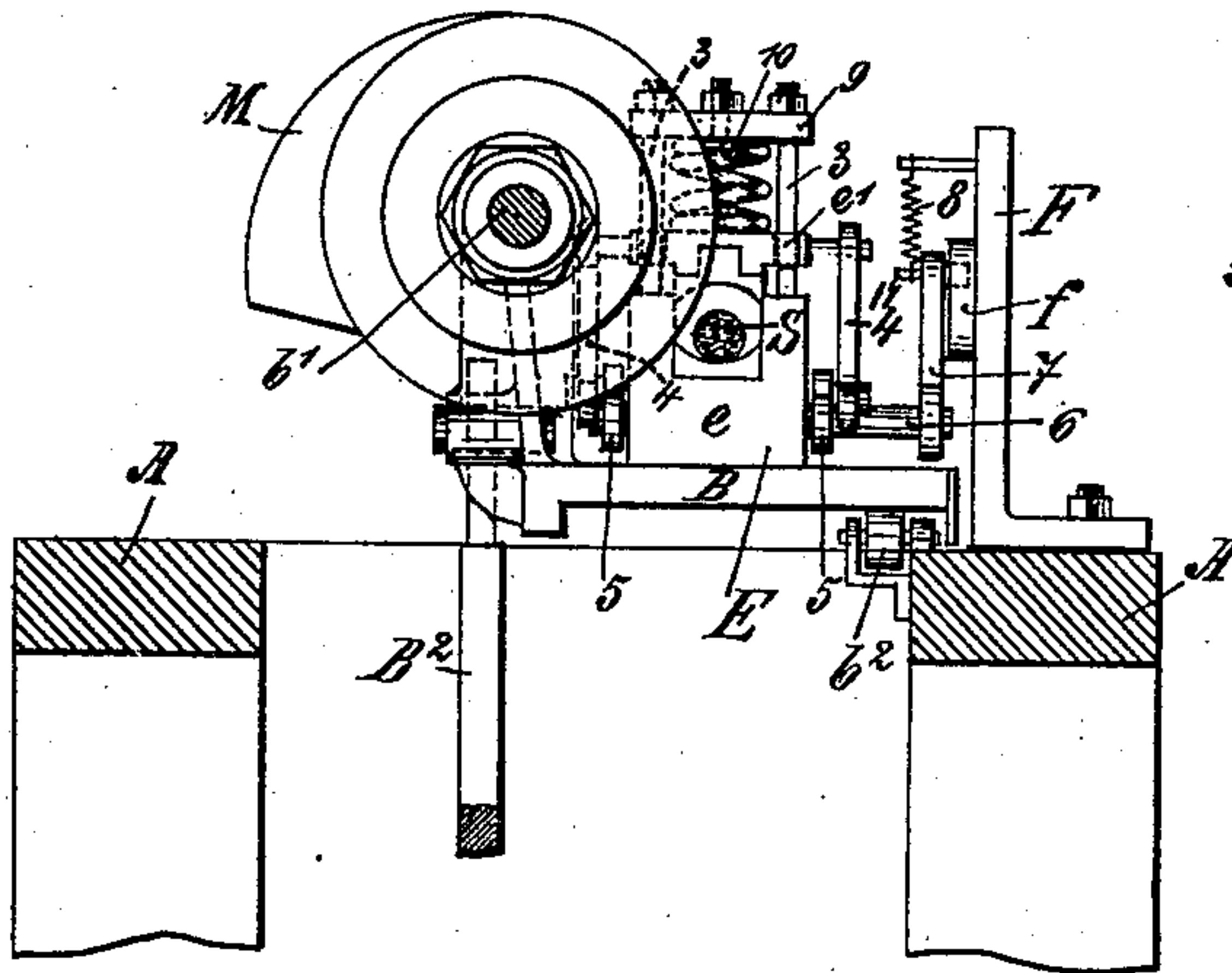


Fig. 4.

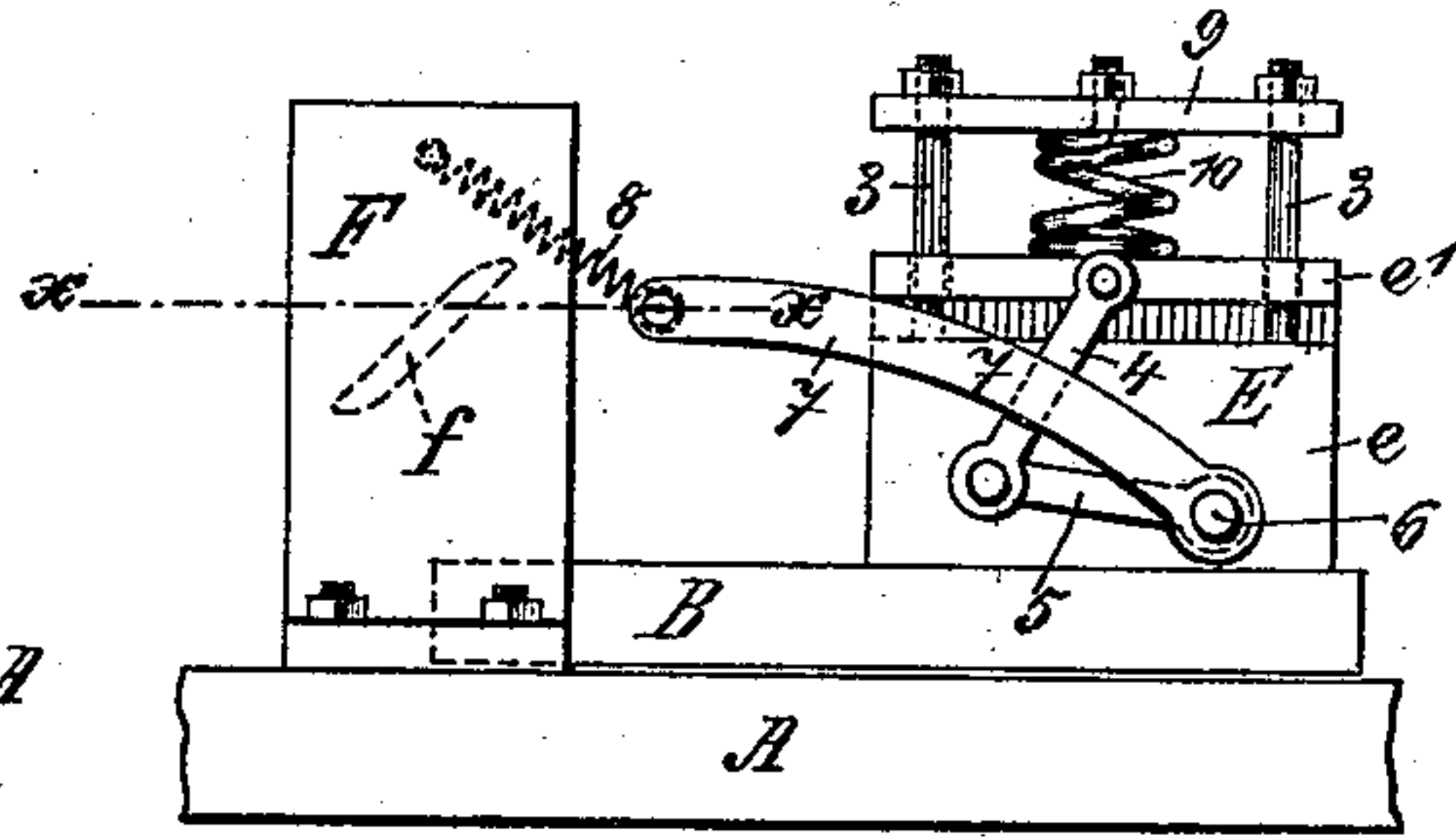


Fig. 6.

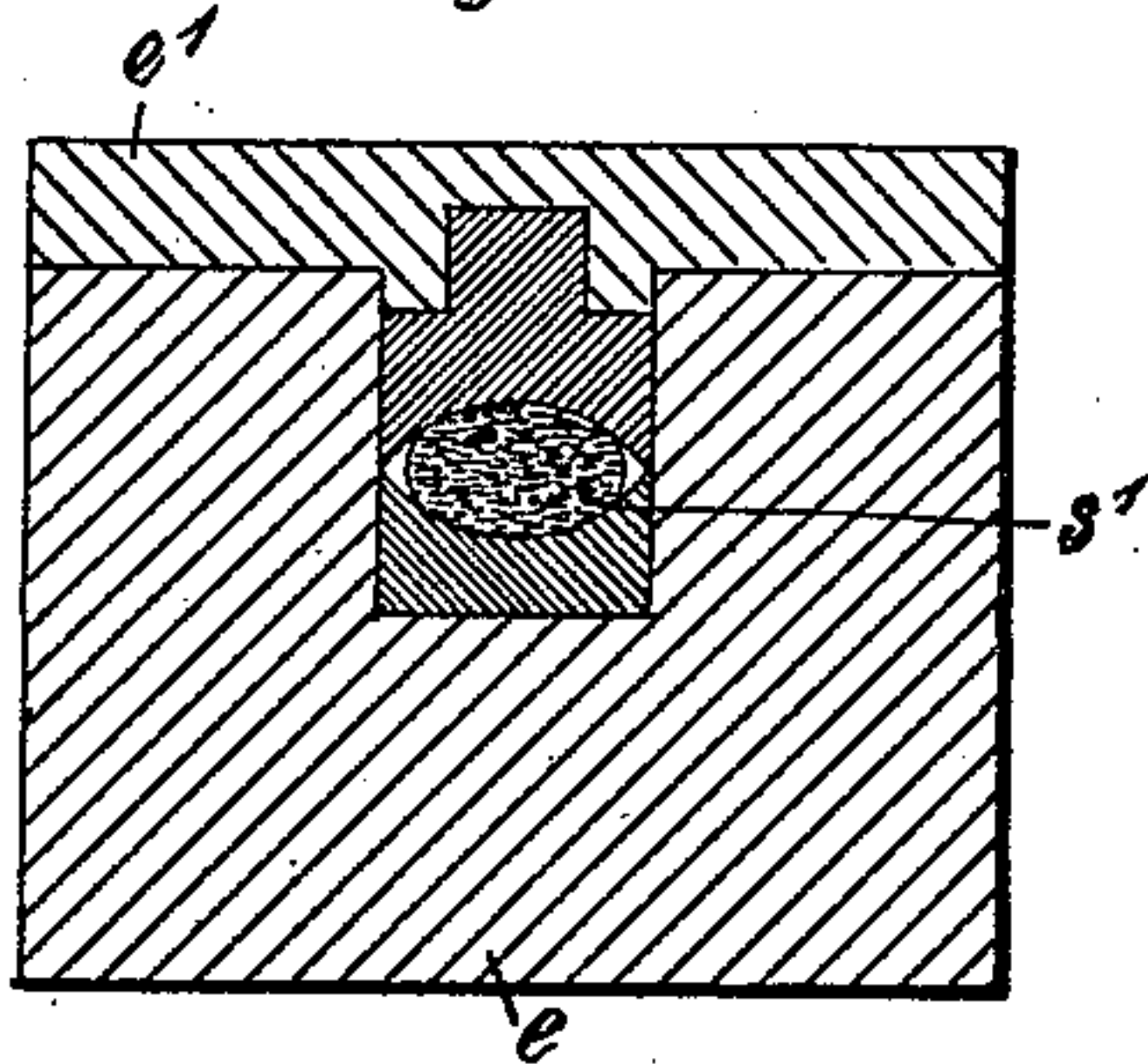
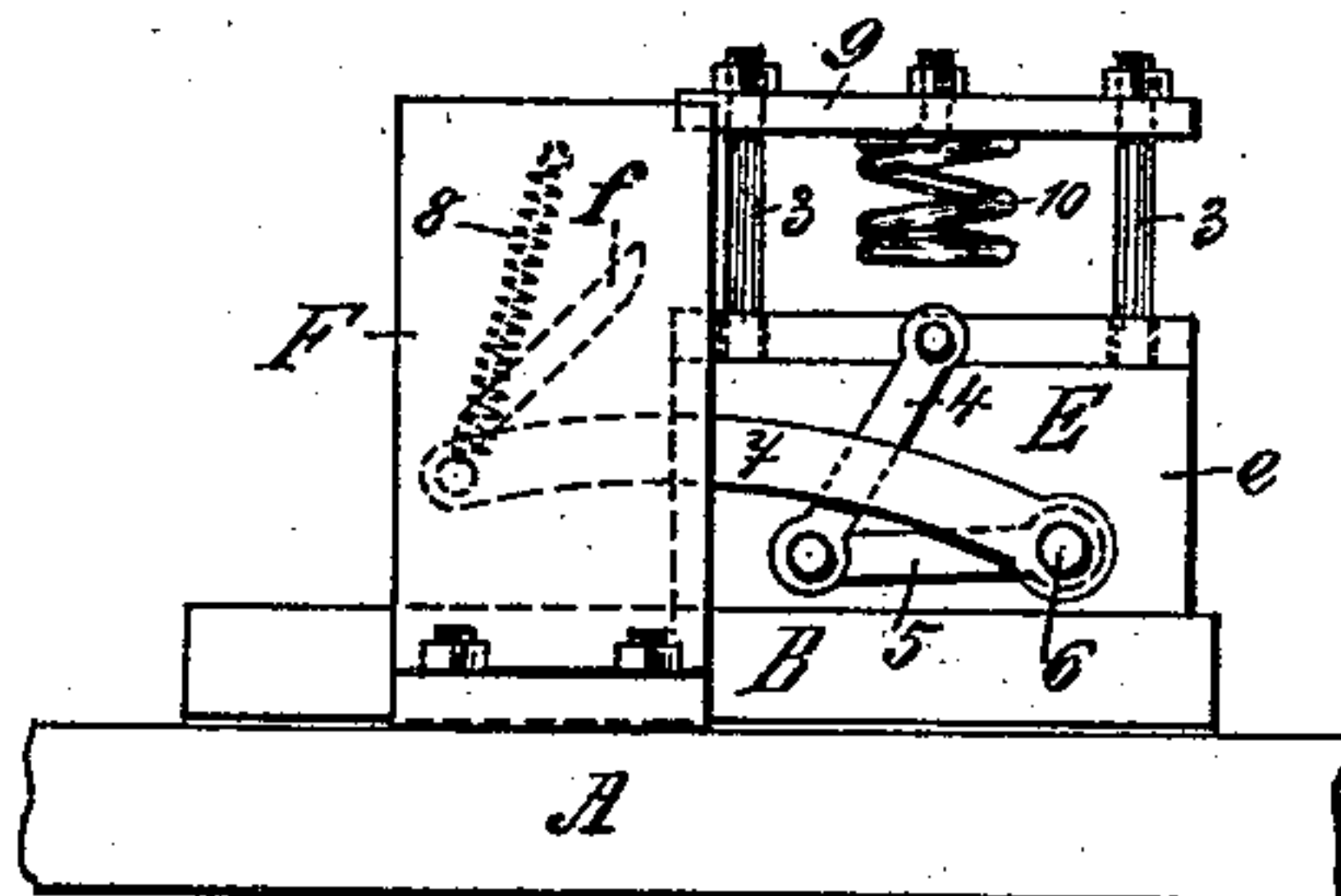


Fig. 5.



Witnesses:

Wm. Hoff
Chas. Sumner

Inventor:

Carl R. Martin,
by *Chas. & Chas.*
his Atty.

UNITED STATES PATENT OFFICE.

CARL RICHARD MARTIN, OF DRESDEN, GERMANY, ASSIGNOR TO HEINRICH FÜRCHTEGOTT WOLF, OF SAME PLACE.

CIGARETTE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 581,077, dated April 20, 1897.

Application filed April 22, 1896. Serial No. 588,635. (No model.)

To all whom it may concern:

Be it known that I, CARL RICHARD MARTIN, mechanician, a subject of the King of Saxony, residing at Dresden, Kingdom of Saxony, German Empire, have invented certain new and useful Improvements in or Relating to Cigarette-Machines, of which the following is a specification.

Since flat cigarettes have been introduced—that is to say, cigarettes of elliptical or approximately elliptical cross-section—the demand for them has been always on the increase.

The present invention has for its object to provide a machine for producing such cigarette which shall be simple and inexpensive; and it consists in certain novel details of construction and combination of parts, all as will now be described, and pointed out particularly in the appended claims.

The present invention is carried out upon the following principle: Shortly before reaching the place where each cigarette is cut off from the continuous cigarette-rod the part of the rod immediately behind the knife (*i. e.*, the part which is to be separated by the cut next following upon one which is assumed as in course of occurrence) is pressed flat by a press consisting of an upper and lower die. As the rod is constantly moving, the press is mounted on a reciprocating part of the machine, (the knife-slide,) which carries also the knife, so that the press, like the knife, advances to meet the rod, catches it, and compresses it.

In the accompanying drawings, Figure 1 is a side elevation, and Fig. 2 a plan view, of the end of the frame-cheeks A of a cigarette-machine with the knife-slide B. Fig. 3 is a front view of the knife-slide and its appurtenances, the cheeks of the frame being in section. Figs. 4 and 5 are views similar to Fig. 1 with certain parts omitted for the sake of clearness and other parts added, and Fig. 6 is a vertical transverse section of the press on a larger scale than that to which the other figures are drawn. In Figs. 1, 3, and 4 the upper die *e'* of the press E is raised. In Fig. 5, which otherwise agrees with the first four figures, the upper die is, on the contrary, shown lowered, and the same is the case in Fig. 6.

C, Fig. 2, is the end part of the shaping-tube for forming the cigarette-rod.

c is the endless band coming out from the tube C and guided downward by the pulley *d*. The cigarette-rod runs in the direction of the arrow in Fig. 2.

E is the press hereinbefore referred to, *e'* being the upper and *e* the lower die thereof. The cigarette-rod S, Fig. 3, formed in the tube C, with the aid of the endless band *c*, together with the paper covering, is, as hitherto, cylindrical. (See the circular cross-section *s* in Fig. 3.)

The knife-slide B is arranged at one side on the knife-shaft *b'* by means of arms *b*, attached to the slide. The knife-shaft reciprocates in standards B', secured to the cheeks A of the main frame. The bottom plate of the knife-slide at the side opposite to that which is arranged as aforesaid is supported by the roller *b''*, carried in bearings on the main frame. (See Fig. 3.) The reciprocating motion of the knife-slide is imparted to it by the lever B², which is actuated by a cam. (Not shown in the drawings.) The curved knife-disk M, which is fixed to the shaft *b'* between the arms *b*, is rotated by a chain-pulley *m*, (shown by dotted lines in Figs. 1 and 2,) or may be rotated by any other gear.

Directly behind the knife-disk M is placed the press E, as shown, through which the cigarette-rod S, guided by a fixed eye 1, Figs. 1 and 2, must pass in order to pass through a tube 2 after having passed by the knife. The press E comprises a fixed lower die *e* and the vertically-reciprocating upper die *e'*. The cross-section of the channel of the press (see Fig. 6) is formed by two arcs of a circle, so that the dies *e e'* compress the cylindrical rod S, Fig. 3, in such a way that an elliptical section *s'*, Figs. 2 and 6, results. The upper die *e'* is guided in its vertical movement by bolts 3, secured in the lower die *e*, and to its opposite sides are pivoted links 4, which connect the upper die with the lever-arms 5. These latter are mounted on a pin 6, which is supported in the lower die *e* and carries the lever-arm 7. The free end of the arm 7 carries a laterally-projecting pin 11 and is suspended by the spring 8, which is secured to the arm F, fixed

on the frame. On the inner side of the arm F there is an inclined cam-bar *f*, which acts as a cam on the pin 11 of the lever 7. A plate 9 is carried on the upper ends of the bolts 3, and below it is a spring 10, which is stronger than the spring 8 and just so long that with the parts in the position shown in Figs. 1, 3, and 4 it forms an elastic abutment for the upper die whenever the latter is lifted by the spring 8 and lever 7, as shown in the said figures, but when the parts are in the position shown in Fig. 5 has no influence whatever on the upper die. As long, therefore, as the cam-bar *f* does not act the upper die remains in the upper or raised position in which it is shown in Fig. 4 and the pin 11 on the lever 7 reciprocates along the line *xx* of the same figure.

From the position in which the slide B is shown in Fig. 4 it moves back—that is to say, in a direction opposite to that in which the cigarette-rod advances. The latter passes through the eye 1 into the press E, and then the return movement of the slide B commences with the velocity of the cigarette-rod and in the same direction. Next the pin 11 on the lever 7 runs against the cam-bar *f*, by which it is pressed down, and then the press is closed, the several parts of the mechanism taking the position in which they are shown in Fig. 5. Just before that position is reached the cutting edge of the knife M approaches the flattened rod and the cutting takes place, the closed press holding the rod so that a clean cut is effected. Meanwhile the pin 11 on the lever 7 has passed the lower edge of the cam-bar *f*. Then the spring 8 begins to act and lifts the upper die *e'* till it touches the spring 10 and the pin 11 on the lever 7 again is in the line *xx*. As soon as in the return of the slide the pin 11 comes against the back of the cam-bar *f* the upper die is raised higher up, the spring 10 being compressed till the upper edge of the cam-bar *f* releases the pin, when the spring 10 again brings about the original position of the parts, as shown in Fig. 4. The arrangement of springs partly working against each other has the object of permitting the pin 11 during its advance to pass under the cam and to pass over the bar *f* in the return stroke. This is necessary, as the cam is shorter than the path of the slide, for the press is not to be closed at the beginning of

the described operation and is to be opened immediately after the end of the operation in order to receive the rod, which has meanwhile advanced. The same object can of course be achieved by other means.

I claim—

1. In a cigarette-machine, the combination with the longitudinally-moving knife for severing the rod, of a longitudinally-reciprocating press operatively connected with the knife for pressing the cigarette into elliptical form, before being severed from the cigarette-rod; substantially as described.

2. In a cigarette-making machine, the combination with the main frame A, of a reciprocating knife-slide, a reciprocating press operatively connected with the knife-slide and furnished with channeled dies for pressing the cigarette into elliptical form, a lever operatively connected with one of the press-dies, and a cam-bar *f* secured to a stationary part of the machine; substantially as set forth.

3. In a cigarette-making machine, the combination with the main frame A, of a reciprocating knife-slide, a reciprocating press operatively connected with the knife-slide and furnished with channeled dies for pressing the cigarette into elliptical form, one placed above another, guides 3 for the upper die carried by the lower one, a spring 10 supported above the upper die by the guides 3, a lever 7 operatively connected with the upper press-die, an inclined cam-bar *f* and its support F, secured to a stationary part of the machine, and a spring 8 connecting the end of the lever 7 with the support F; substantially as set forth.

4. In a cigarette-making machine, the combination with a reciprocating knife-slide, of a reciprocating press operatively connected with the knife-slide and having press-dies so grooved on their opposing faces, as to form a channel of approximately elliptical cross-section between them and means for operating one of the dies.

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

CARL RICHARD MARTIN.

Witnesses:

OTTO WOLFF,
HUGO GUMMER.