

No. 638,212.

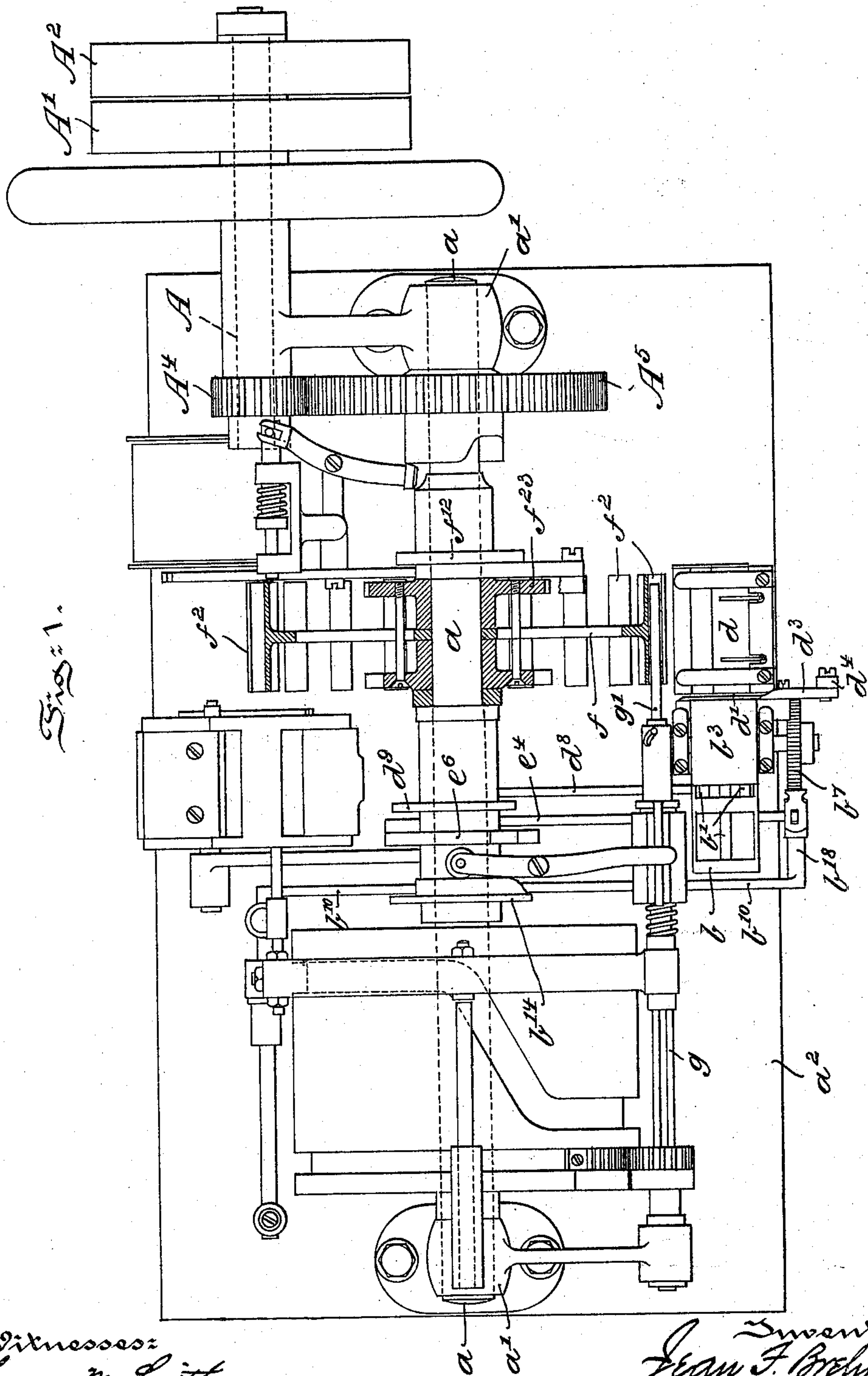
Patented Dec. 5, 1899.

J. F. BREHM.
CIGARETTE MACHINE.

(Application filed July 5, 1898. Renewed Oct. 18, 1899.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses:
Thomas M. Smith.
Richard C. Maxwell.

Inventor:
Jean F. Brehm,
by J. Walter Douglas
Attorney.

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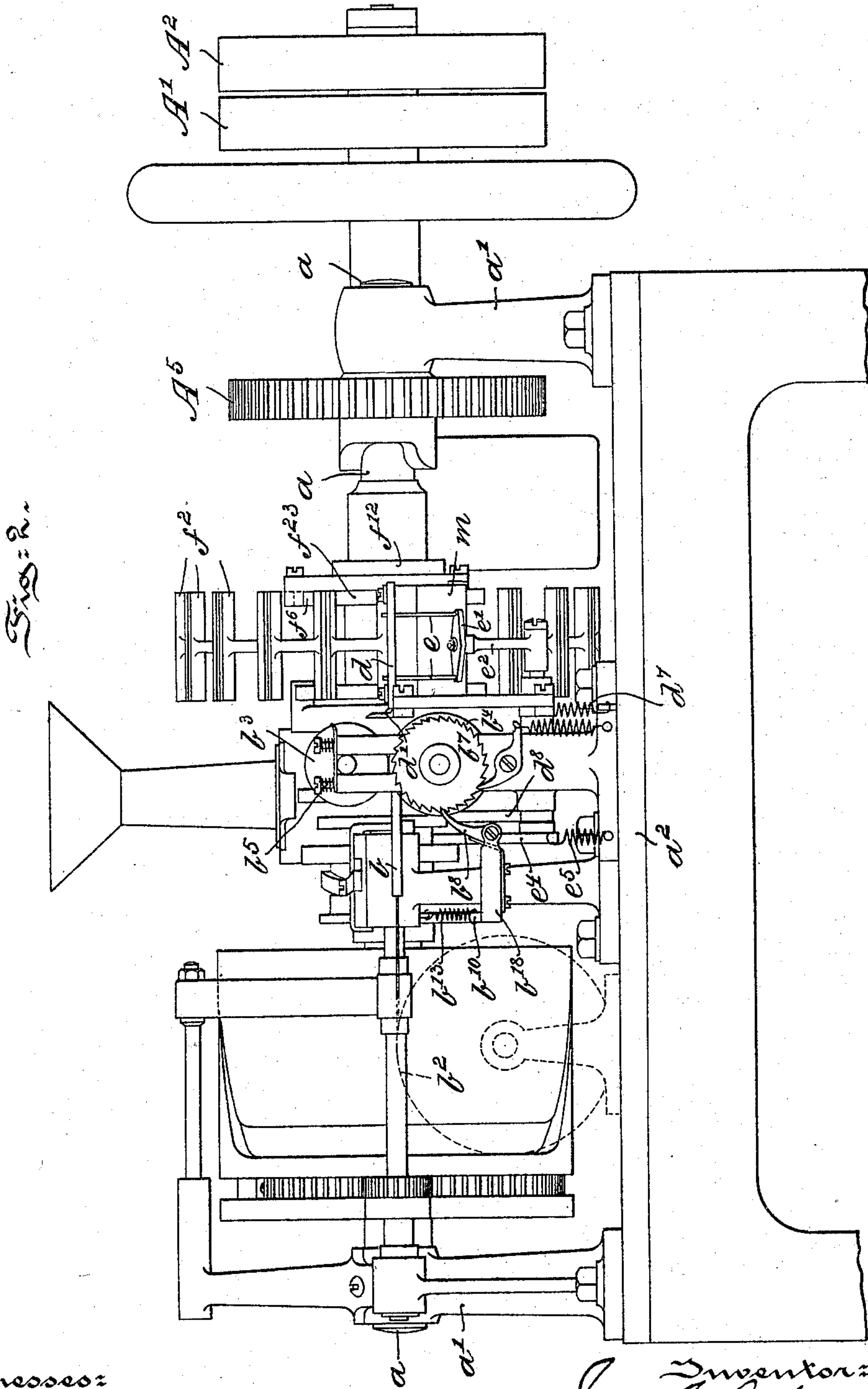
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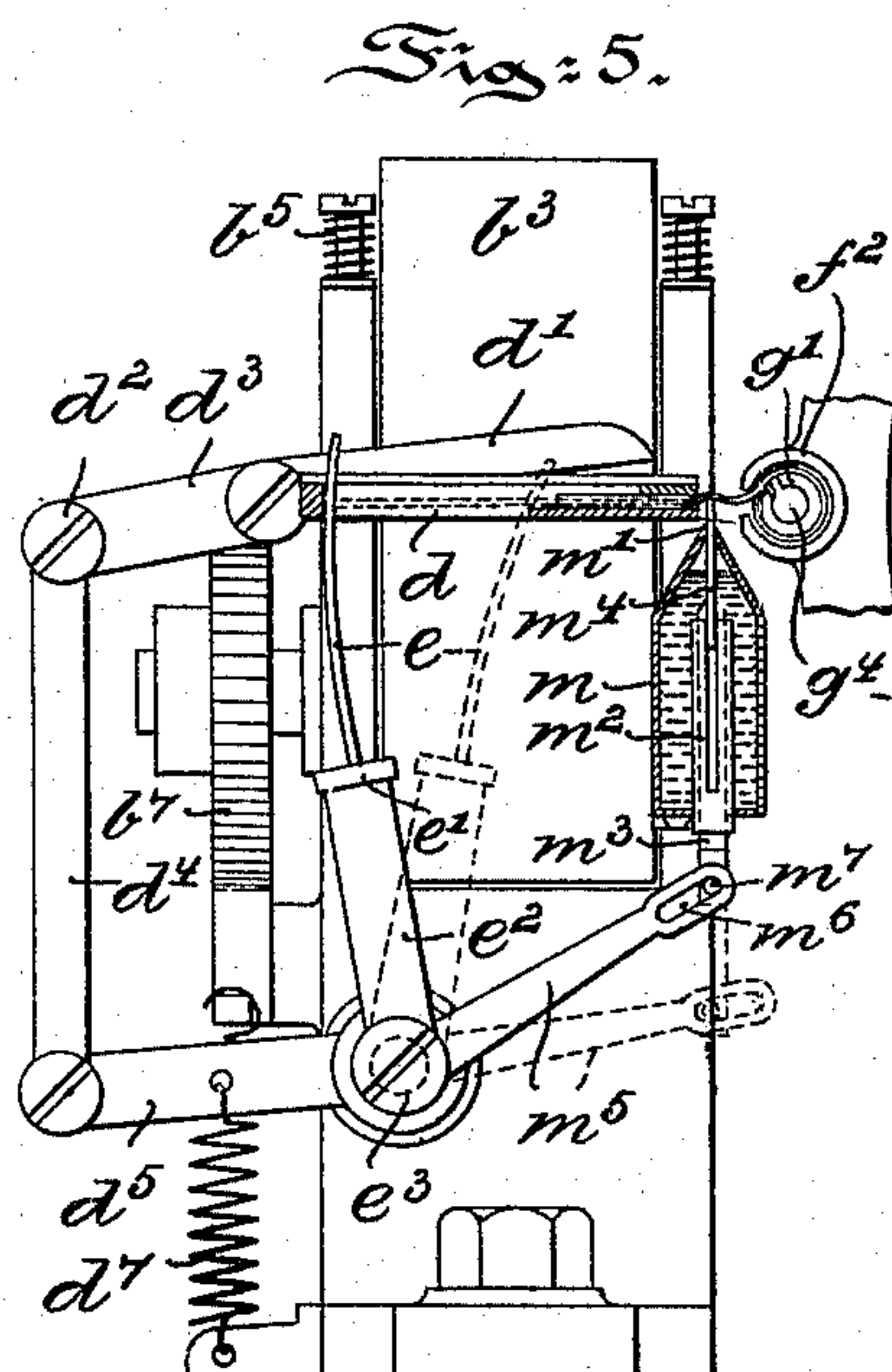
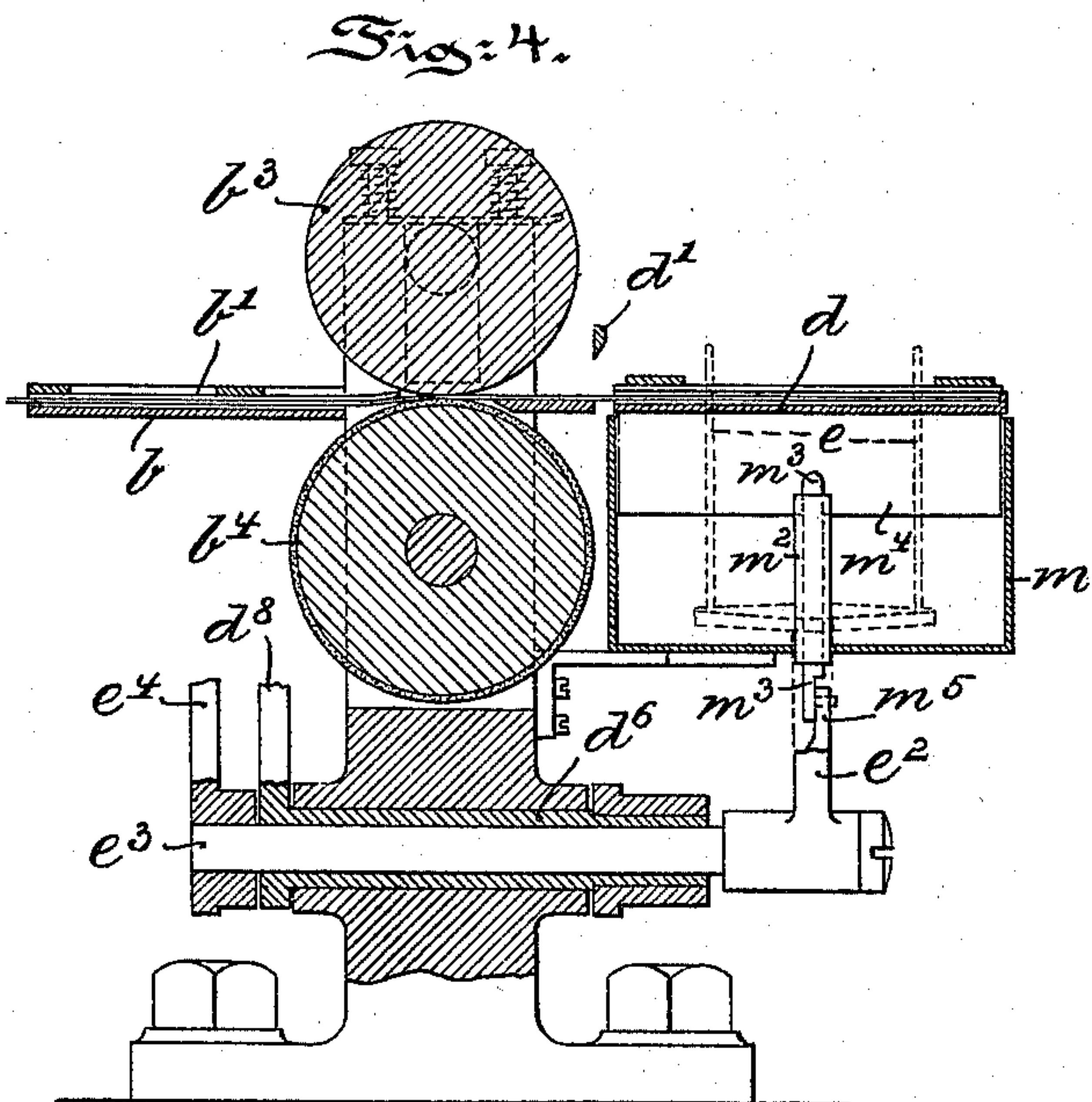
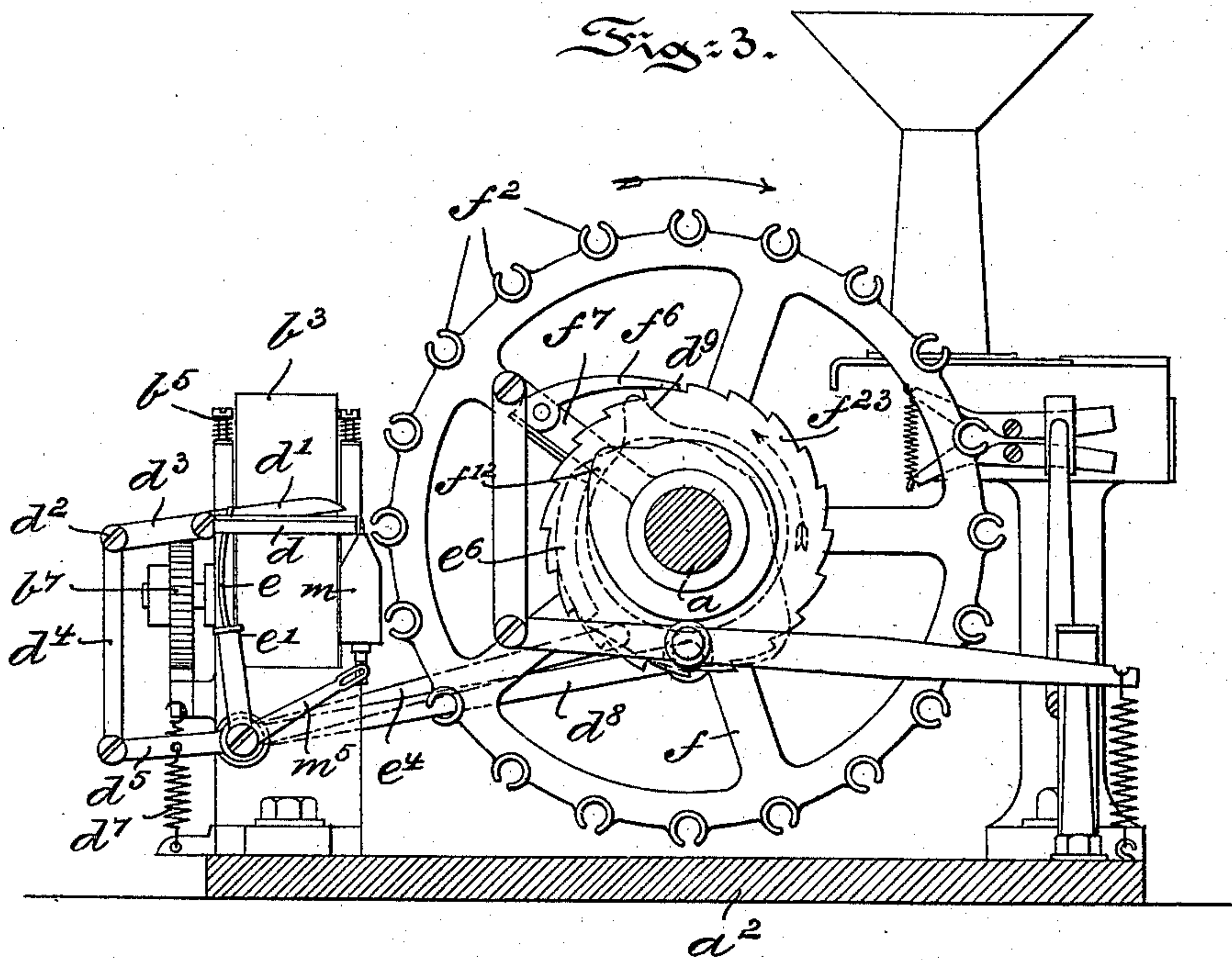
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3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

JEAN F. BREHM, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO GUIDO FERRARI AND RICHARD PLECHNER, OF SAME PLACE.

CIGARETTE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 638,212, dated December 5, 1899.

Application filed July 5, 1898. Renewed October 18, 1899. Serial No. 734,018. (No model.)

To all whom it may concern:

Be it known that I, JEAN F. BREHM, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Cigarette-Machines, of which the following is a specification.

My invention has relation to a cigarette-machine of substantially the character described and illustrated in an application for Letters Patent filed by me under date of June 23, 1898, and Serial No. 684,202, and in such connection it relates particularly to mechanism for pasting the paper tube of the cigarette prior to the filling of the same with tobacco.

The principal object of my invention is to provide in a cigarette-machine, in conjunction with a paper-tube-forming mechanism, a mechanism for pasting the tube during its formation and before filling the same with tobacco.

My invention, stated in general terms, consists of a pasting mechanism for cigarette-tubes constructed and arranged in substantially the manner hereinafter described and claimed.

The nature and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a top or plan view, partly sectioned, of a cigarette-machine provided with a pasting mechanism embodying main features of my invention. Fig. 2 is a side elevational view of the machine. Fig. 3 is a cross-sectional view of the machine, illustrating the paper feeding, cutting, delivering, and pasting mechanisms. Fig. 4 is a longitudinal sectional view, enlarged, taken through the feed-rollers, the platforms, and the pasting mechanism; and Fig. 5 is an enlarged side elevational view of the feed-rollers, knife, and delivery apparatus, with the pasting mechanism illustrated partly in side elevation and partly in section.

Referring to the drawings, the machine is constructed in substantial accordance with

the machine illustrated in my previous application for a patent hereinbefore referred to, and the parts necessary to the present invention may be briefly described as follows:

A main power-shaft *a* is supported by bearings *a'* upon the bed-plate *a''*, and motion is conveyed to said shaft *a* through the counter-shaft *A*, pulleys *A'* and *A''*, and gearing *A'''* and *A''''*. On the power-shaft *a* is located all the cams and similar devices for operating the various mechanisms of the machine. These mechanisms are as follows:

First. The paper-feeding mechanism, comprising a roll or reel *b''*, a platform *b*, having the spring-fingers *b'*, over which platform the paper is fed from the reel *b''* by means of the two rollers *b'''* and *b''''*, one of which, *b'''*, is suspended in spring-bearings *b''''''*, while the other, *b''''*, is operated in one direction by a ratchet *b''''''* and pawl *b''''''''*. The pawl *b''''''''* is carried by an extension *b''''''''''*, formed on the end of a lever *b''''''''''''*, normally elevated by a spring or springs *b''''''''''''''*, and normally depressed by a cam or star wheel *b''''''''''''''''* on the power-shaft *a*.

Second. The paper cutting and delivery mechanism, which comprises a second platform *d*, adjacent to the platform *b*, a knife *d'*, operated as hereinafter described, and feeder-arms *e*, traversing the platform *d* and operated substantially as hereinafter set forth. The knife *d'* is elevated and depressed by mechanism controlled by the shaft *a*, and, acting in conjunction with the adjacent edge of the platform *d*, serves to sever the paper after it has been fed to the platform *d*.

Third. The carrier-wheel *f* and its open molds *f''*, which is provided with a ratchet-wheel *f''''*, adapted to advance the wheel *f* with a step-by-step motion, and is also provided with suitable means for locking the wheel in its successive positions. This carrier-wheel rotates loosely with its ratchet upon the power-shaft *a* and is operated by the said shaft through a suitable cam *f''''''* and spring-controlled arm *f''''''''*, carrying the pawl *f''''''''''*, which engages the ratchet-wheel *f''''*.

Fourth. The tube-forming mechanism, which comprises, in conjunction with the molds of the carrier-wheel *f*, a shaft *g*, to which reciprocating motion toward and away

from the molds f^2 , as well as rotary motion within successive molds, is given, said shaft g carrying the two tube-forming devices, comprising a split sleeve g' and a ribbed rod g^4 , the operation of which sleeve and rod in the formation of the tube is well known in the art and is shown, for instance, in the Letters Patent No. 144,478 to J. de S. Ruisecco, dated November 11, 1873.

In connection with the foregoing mechanisms is provided one adapted to apply paste to the edge of the paper as it is being formed into a tube within an open mold f^2 . This pasting mechanism comprises, essentially, a paste receptacle or trough m , located below the delivery edge of the platform d and having its upper ends converging, as at m' , and terminating at or near the edge of the platform. Within this receptacle or trough m extends a sleeve m^2 , in which is guided a rod m^3 , carrying at its free end a blade m^4 , adapted to be elevated by the rod m^3 through the receptacle or trough and so as to pass between the upper converging edges m' of said trough. The rod m^3 is reciprocated in the sleeve m^2 by means of a rock-arm m^5 , having its free end slotted, as at m^6 , to receive a suitable pin or screw m^7 on the end of the rod m^3 .

Referring now to Figs. 3, 4, and 5, it will be seen that suitable motion to the cutting-knife d' , feeder-arms e of the platform d , and rock-arm m^5 of the rod m^3 , controlling the paste-blade, is imparted in the following preferred manner: The cutting-knife d' is pivoted, as at d^2 , to an extension of the bed-plate a^2 , and its free end d^3 is pivotally connected by a link d^4 with an arm or lever d^5 , carried by a tubular rocking shaft d^6 . The arm or lever d^5 is normally depressed by a spring d^7 , and the tubular shaft d^6 is provided with an arm d^8 , having its free end directly below a single-throw cam d^9 , located on the main shaft a , as clearly illustrated in Fig. 3. The feeder-arms e are carried by a bracket e' , secured to a rocking arm e^2 , carried by a rock-shaft e^3 , located within the tubular rock-shaft d^6 . This shaft e^3 is provided with an arm e^4 , normally elevated by a spring e^5 and adapted to be depressed by a cam e^6 on the main shaft a , as indicated in Fig. 3. To this rock-shaft e^3 is secured the rock-arm m^5 , which operates the rod m^3 , carrying the paste-blade m^4 .

The operation of the mechanisms is so timed by the arrangement of the cams d^9 and e^6 that the cutting-knife d' will first separate

the paper on the platforms d and b into required lengths, and then the feeder-arms e will present each length to the tube-forming devices within an open mold f^2 . When the feeder-arms are shifted forward to deliver the paper to the tube-forming devices, they will occupy the position indicated by the dotted lines in Fig. 5, and in this position the rock-arm m^5 is at its lowest position, lowering the rod m^3 until the paste-blade m^4 is below the converging edges m' of the paste-trough m . When the tube of paper is nearly formed within the open mold f^2 , the feeder-arms e are retracted to the position indicated in full lines in Fig. 5, and the rod m^3 and paste-blade m^4 are elevated so that the said blade m^4 will engage the rear edge of the paper and impart paste to said edge as it is drawn over the blade m^4 into the open mold f^2 . The sides of the blade m^4 in its passage through the converging ends of the trough m are freed from excess of paste, so that only a small quantity on the edge is presented to the paper. The tube when completely formed in the mold f^2 will be securely pasted along the rear edge of the paper.

Having thus described the nature and object of my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a machine of the character described, two platforms over which the paper is adapted to be fed in one direction, a severing device located between the two platforms and adapted to operate transversely thereto, two feeder-arms traversing one of said platforms and adapted to feed the paper after it has been severed in a transverse direction, a mold and tube-forming devices arranged parallel to the platforms and adapted to receive the paper fed by the feeder-arms, a rock-shaft adapted to operate the feeder-arms, a trough or receptacle located below the delivery edge of the platform traversed by the feeder-arms, a pasting-blade adapted to traverse said trough, and means controlled by the rock-shaft for operating said pasting-blade, substantially as and for the purposes described.

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

JEAN F. BREHM.

Witnesses:

J. WALTER DOUGLASS,
THOMAS M. SMITH.