

(No Model.)

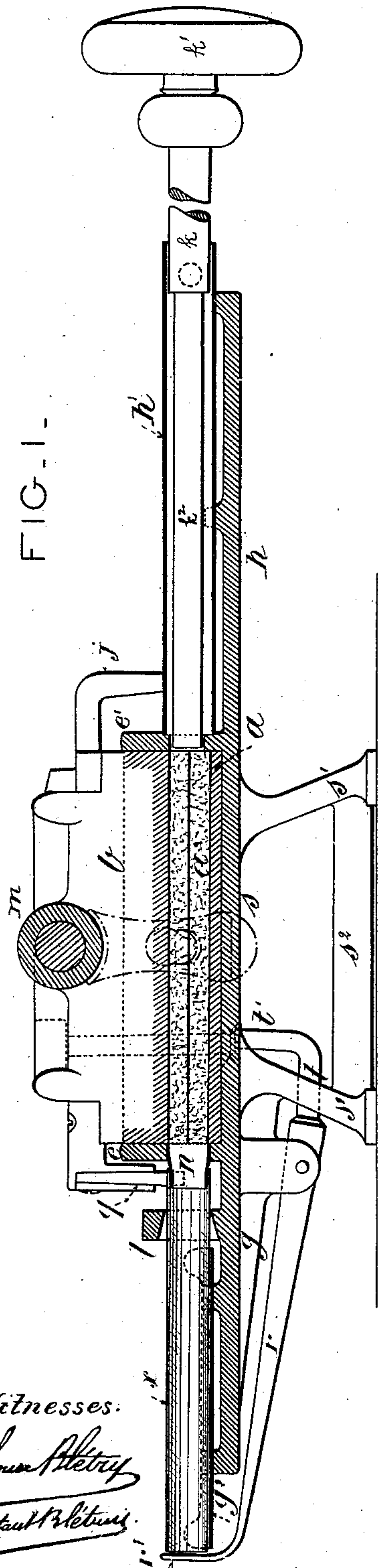
2 Sheets—Sheet 1.

A. E. DECOUFLÉ.  
CIGARETTE MACHINE.

No. 345,415.

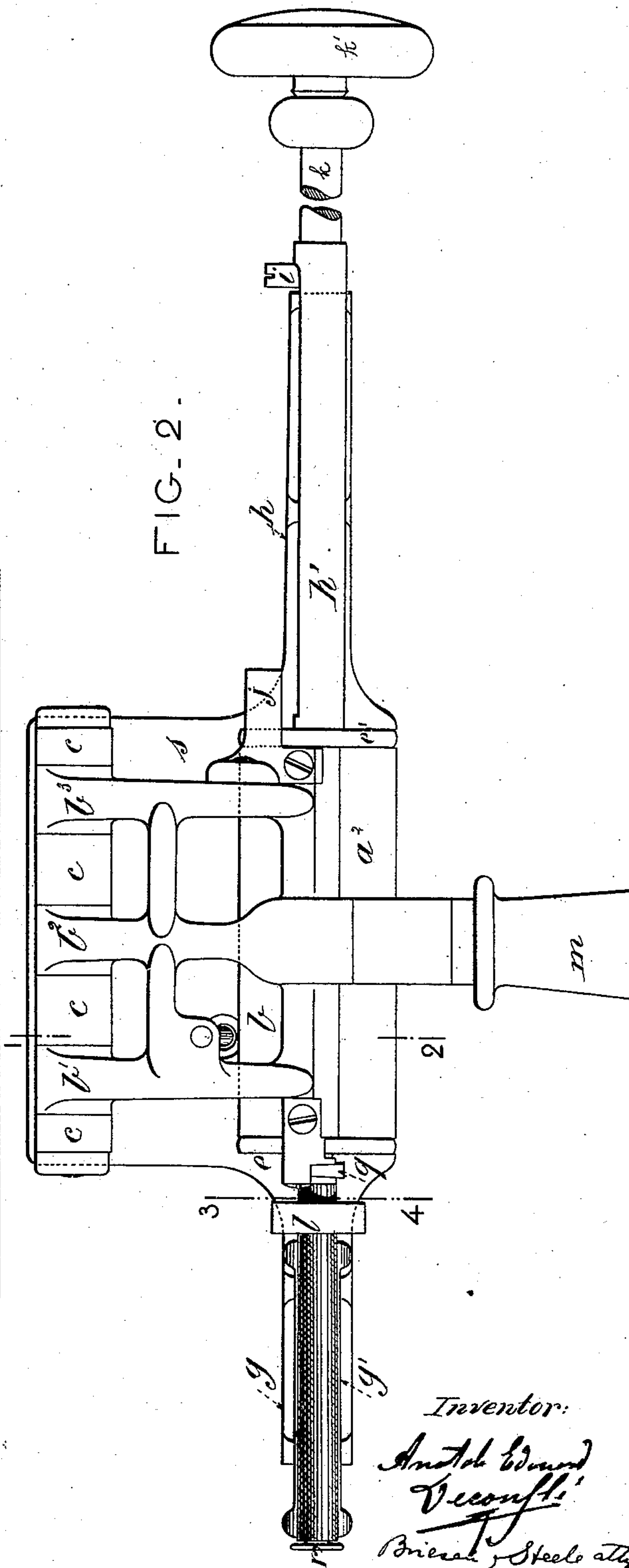
Patented July 13, 1886.

FIG. 1.



Witnesses:  
*Alphonse Métray*  
*Constant Métray*

FIG. 2.



Inventor:  
*Amédée Édouard Decouflé*  
Brière & Steele attys

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2 Sheets—Sheet 2.

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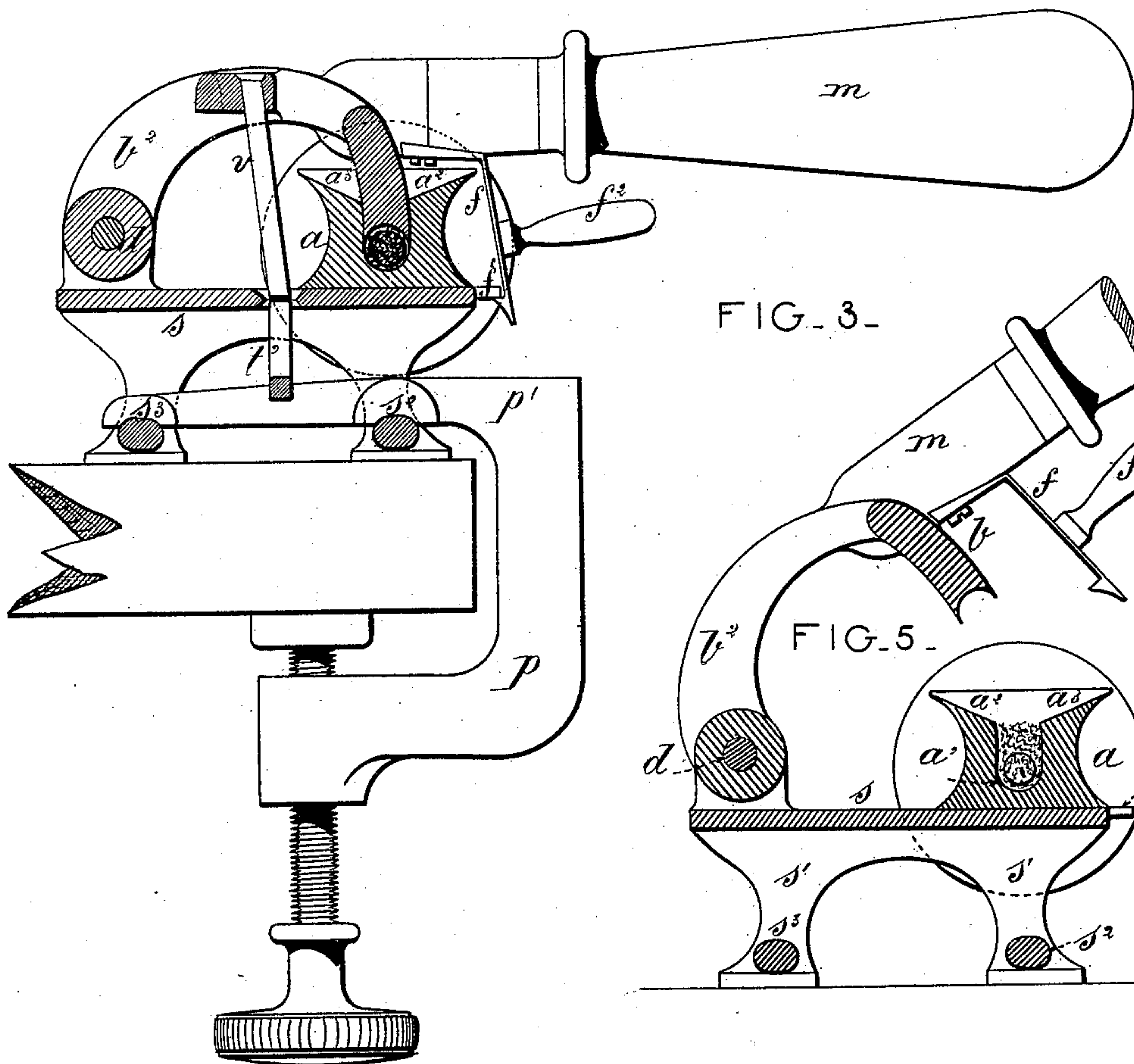


FIG. 3.

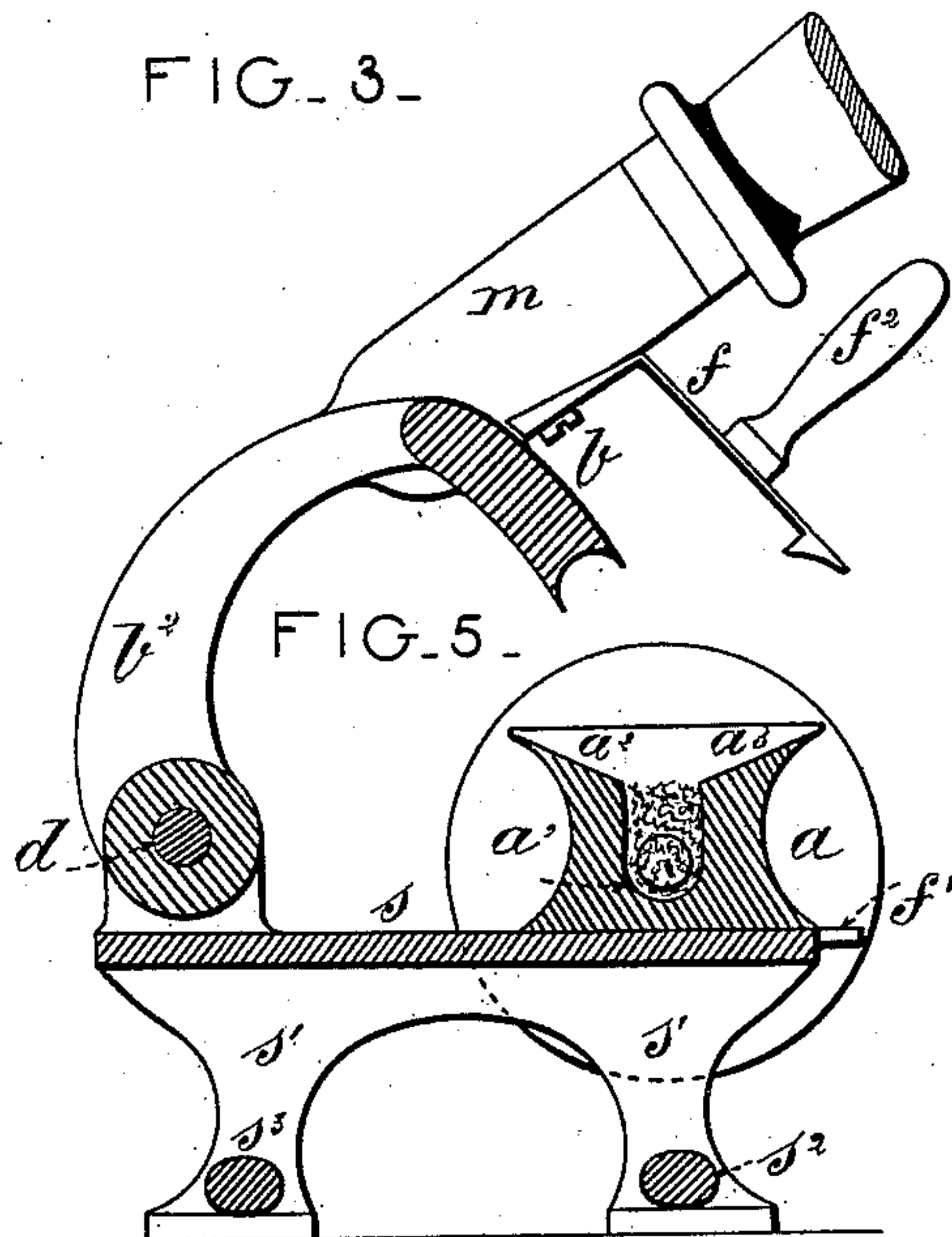
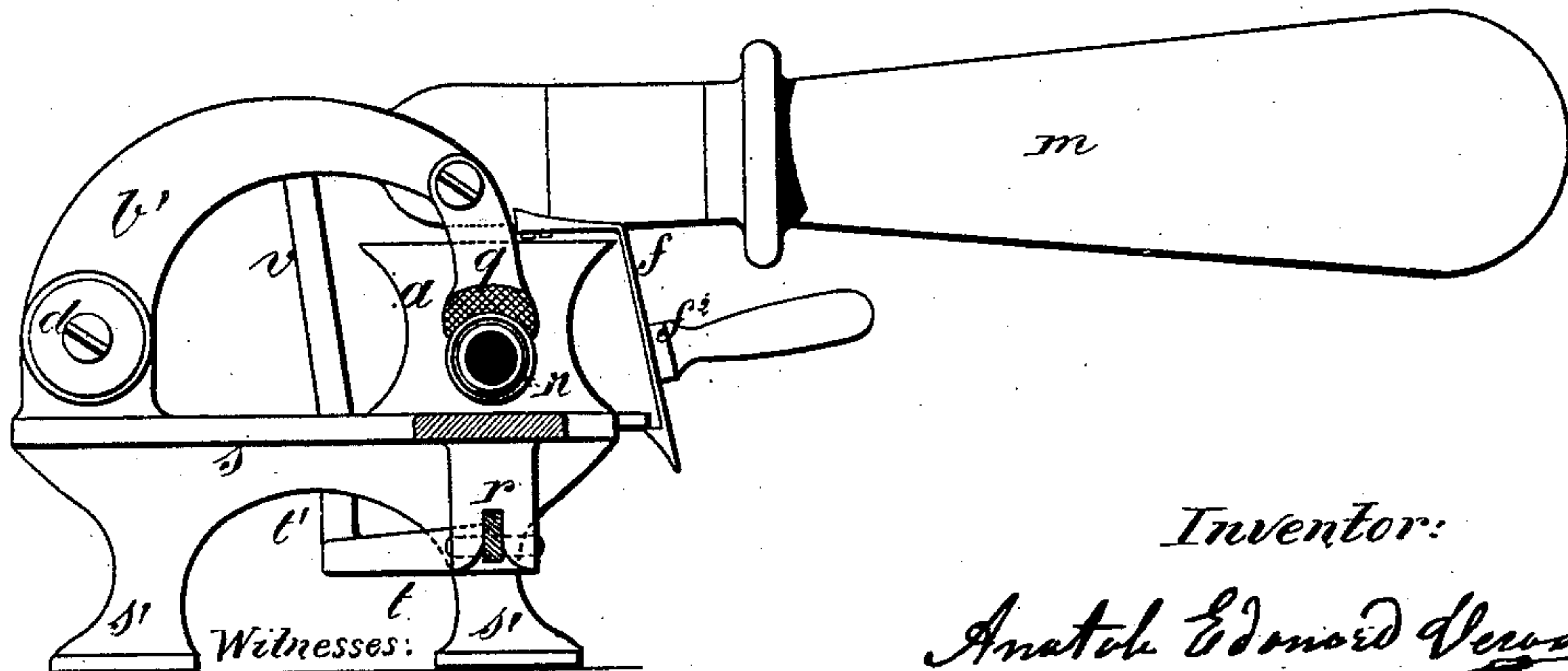


FIG. 5.

FIG. 4.



Witnesses:  
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*Constant Hébert*

Inventor:  
*Anatole Edmond Decoufle*  
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*attys*



# UNITED STATES PATENT OFFICE.

ANATOLE EDOUARD DECOUFLÉ, OF PARIS, FRANCE.

## CIGARETTE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 345,415, dated July 13, 1886.

Application filed May 1, 1886. Serial No. 200,843. (No model.) Patented in France January 7, 1886, No. 173,403.

*To all whom it may concern:*

Be it known that I, ANATOLE EDOUARD DECOUFLÉ, of Paris, in the Republic of France, have invented an Improvement in Cigarette-Machines, (for which I have obtained Letters Patent of France for fifteen years, dated January 7, 1886, No. 173,403;) and I do hereby declare that the following is a full and exact description thereof, reference being made to the accompanying drawings.

The machine forming the subject of this invention is intended more especially for the manufacture of cigarettes by hand with paper tubes formed and cut to lengths by known means.

In the drawings hereto annexed, Figure 1 is a vertical section taken through the longitudinal axis of the mold, the cigarette-machine being represented as closed at the moment of filling the paper tube with compressed tobacco; Fig. 2, a plan of the cigarette-machine; Fig. 3, a vertical section on line 1 2 of Fig. 2; Fig. 4, a vertical section on line 3 4 of Fig. 2; Fig. 5, a vertical section on line 5 6 of Fig. 2, the cigarette-machine being supposed to be open for the reception of the tobacco.

The mold  $a$  is formed in a block of gun-metal or other suitable material. It is hollowed out lengthwise into a trough, the bottom  $a'$  of which is curved to a diameter equal to that of the bunch of tobacco it is intended to introduce into the paper tube. This trough is terminated at the top by two inclined planes,  $a^2 a^3$ , which facilitate the entrance of the tobacco, which is distributed by hand for each cigarette.

The mold  $a$  is carried by a support,  $s$ , which has formed on it two flanges,  $e e'$ , forming with the inclined faces  $a^2 a^3$  a frame round the entrance of the mold. The support  $s$  is cast with four feet,  $s'$ , connected together, two and two, by means of cross-bars  $s^2 s^3$ , which may be utilized for securing the cigarette-machine to a table or bench by means of a clamp,  $p$ , Fig. 3, the upper branch,  $p'$ , of which is formed with two transverse notches corresponding to the cross-bars  $s^2 s^3$ .

On the support  $s$ , and parallel to the mold  $a$ , but behind it, are placed four lugs,  $c$ , to which are hinged three arms,  $b' b^2 b^3$ , cast with the compression-piece  $b$ . A handle,  $m$ , forms

a prolongation of the middle arm,  $b^2$ , and constitutes, with the other arms, a kind of hinge-jointed lever on the axis  $d$ . This lever is in one piece with the compressor  $b$ . The compressor  $b$ , intended to compress the tobacco distributed and spread by hand in the mold  $a$ , is of the same length as the mold. Its acting surface is concave and formed to a curve, the radius of which is equal to that of the bunch of tobacco. This acting surface fits exactly into the mold, so that it compresses below it every particle of tobacco it meets.

When the compressor  $b$  is in the mold, it is held firmly in place by a spring-catch,  $f$ , which hooks under a projection,  $f'$ , on the support  $s$ . The spring of the catch  $f$  carries the finger-piece  $f^2$ . The support  $s$  is also cast with two front bearing-pieces,  $g$  and  $h$ , which both form prolongations of the mold  $a$ , and are intended for the following purposes: The left-hand bearing-piece,  $g$ , carries a trough,  $g'$ , in which is placed the paper tube, previously made and cut to length. The right-hand bearing-piece,  $h$ , carries a tube,  $h'$ , in which the ramming-spindle  $k$  works. The trough  $g'$ , the mold  $a$ , and the tube  $h'$  are all three exactly in line, the axis of curvature of the bottom  $a'$  of the mold, also corresponding to that of the tube  $h'$  and of the trough  $g'$ . The ramming-spindle  $k$  forms a piston in its sheath  $h'$ , and is furnished at its outer end with a handle,  $k'$ . The diameter of the part  $k^2$  which enters the mold is smaller than the other part, and also smaller than that of the bunch of tobacco to be rammed or driven into the paper tube. A projection,  $i$ , screwed into the spindle, slides in a longitudinal groove or slot in the tube  $h'$ , and comes against a stop,  $j$ , on the compressor  $b$ , which limits the travel of the spindle  $k$ . This limit corresponds to the complete entrance of the bunch of tobacco into the paper tube.

Between the end of the trough  $g'$  and the flange  $e$  of the mold  $a$  is placed the guide  $l$ , having a funnel-shaped hole corresponding to the axis of the mold to receive and guide the front end of the paper tube,  $x$ . The mold is continued in the direction of this guide by the funnel  $n$ , on which the end of the paper tube is placed. This tube is held during the filling operation by means of an elastic presser,  $q$ , con-



connected with the compressor *b* and pressing on the end of the tube when the compressor is pressed down.

The paper tube, *x*, placed in the trough *g'*, with its end passing through the false funnel *l*, is pushed by hand onto the funnel, *n*, but the tobacco is prevented from coming out of this tube by the following arrangement: Beneath the bearing-piece *g* is placed a rocking lever, *r*, the outer arm of which is bent upward at *r'*, and the other arm, *t*, of which is bent at right angles at *t'* and enters a hole in the support *s*. The lever of the compressor *b* is furnished with an arm, *v*, which also enters the same hole in the support. When the compressor *b* is out of the mold, the lever *r* falls by its own weight, and its bent end *r'* is completely separated from the trough *g'*; but when the compressor is introduced into the mold *a* the arm *v* presses upon the arm *t'* of lever *r*, and thereby raises the end *r'*, which then closes the tube, *x*.

The cigarette-machine is fixed, as before explained, on a table by means of the screw-clamp *p*, Fig. 3. The mold is opened by first unhooking the catch *f* by pressing upward the finger-piece *f'*, while the handle *m* is raised by hand. The handle being thrown backward and the piston *k'* being drawn quite out of the mold, the tobacco is spread and distributed in the mold *a*, the paper tube *x* is placed in the trough *g'*, care being taken to push it onto the funnel *n*. The handle *m* is then lowered, whereby the compressor *b* is introduced into the mold, and the tobacco is compressed to the required extent. On lowering the lever *m* the compressor is locked in place by the catch *f* hooking over the projection *f'* of the support *s*. The right hand is thereby left free to act on the ramming-spindle *k*. The lowering of the compressor *b* produces simultaneously with the compression of the tobacco the raising of the end *r'* of the lever *r*, which closes or obturates the end of the paper tube *x*. It then remains only to push the handle *k'* from right to left, in order to ram or force the bunch of tobacco from the mold *a* into the paper tube *x*. The ramming-spindle *k* is then drawn outward, the catch *f* is unhooked, the compressor *b* is raised, and the lever *r*, with its curved end *r'*, falls and allows the filled cigarette to be removed, and a fresh empty tube to be put in its place.

I claim—

1. The combination of the mold *a*, having perforated end plates, *e e'*, and flaring mouth *a' a''*, with the hinged compressor *b*, for pressing and forming the bunch of tobacco, and a reciprocating plunger *k'*, as specified.

2. The combination of the mold *a*, having perforated end plates, *e e'*, with the hinged compressor *b*, carrying the locking instrument *f*, for keeping the mold closed, and the reciprocating plunger *k'*, as specified.

3. The combination of the mold *a*, having open ends, with the hinged compressor *b*, fitting the open top of said mold, the locking instrument *f*, for holding down the compressor, the extension-trough *g'*, in line with said mold, the lever *r t*, adapted to bear against the outer end of said trough, and the arm *v* of the compressor *b*, adapted to move said lever *r t*, and a reciprocating plunger, *k'*, all arranged substantially as herein shown and described.

4. The combination of the mold *a*, having open ends, with the trough *g'*, aligned with one end of the mold, the tube *h'*, aligned with the other end of the mold, the hinged compressor *b*, the locking instrument *f*, for holding down the compressor, the lever *r*, for bearing against the outer end of the trough *g'*, and with the plunger *k'*, for forcing the bunch of tobacco compressed between the bottom *a'* of the mold and the compressor *b* into the paper tube *x*, that is held in the trough *g'*, substantially as herein shown and described.

5. The combination of the funnel *n* and false funnel *l* with the open-ended mold *a*, and the trough *g'*, which is aligned with said mold and with the compressor *b*, adapted to enter the open top of said mold, and the elastic presser *q*, connected to and moving with the compressor-plunger *k'*, substantially as and for the purpose herein shown and described.

6. The combination of the mold *a*, having open ends and open top, with the compressor *b*, the lever *r t*, extension tube *h'*, and trough *g'* on the mold, the presser *q*, and arm *v* on the compressor, and with the catch *f* and plunger *k'*, all arranged for operation substantially as herein shown and described.

ANATOLE EDOUARD DECOUPLÉ.

Witnesses:

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