

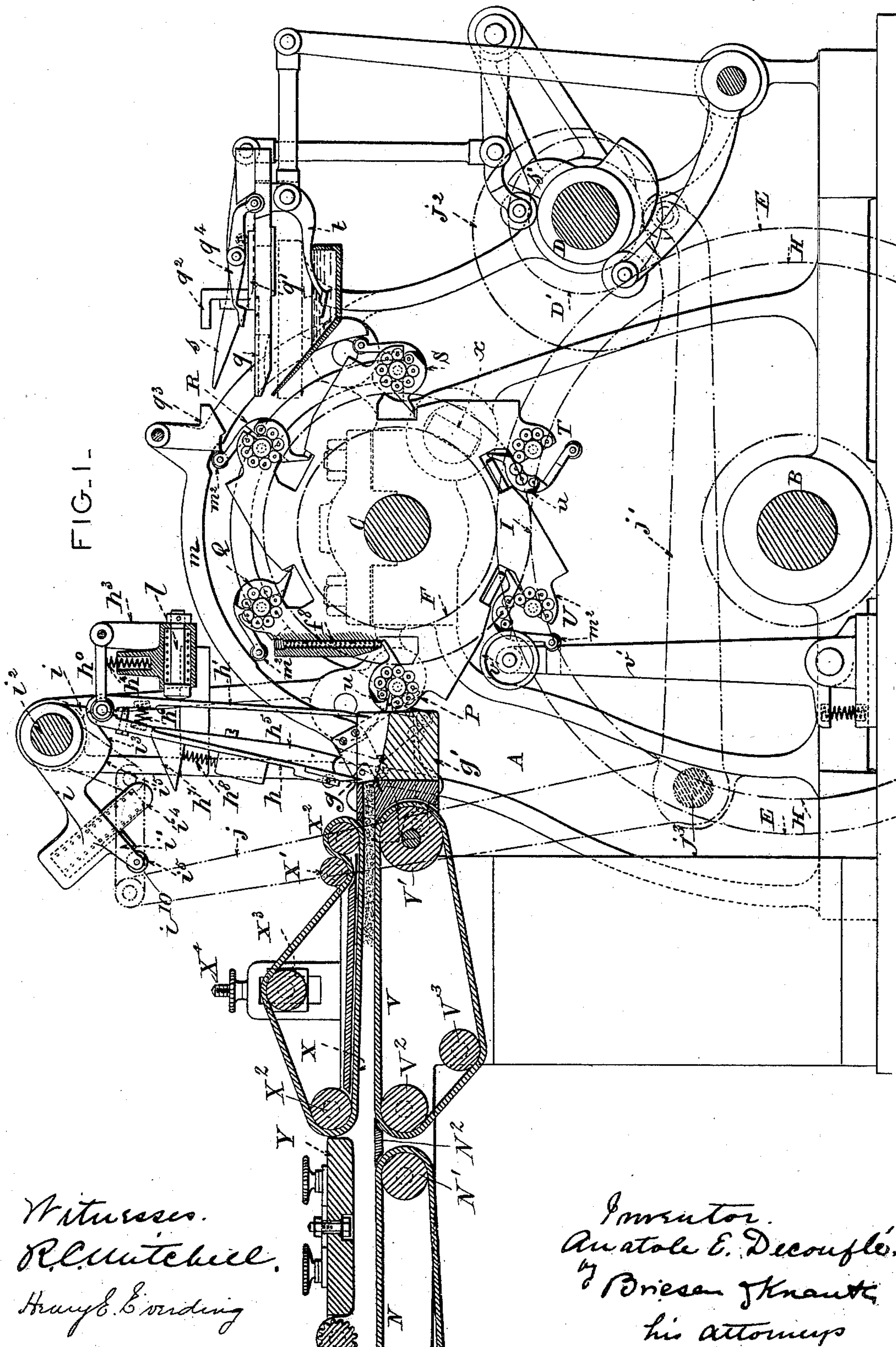
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13 Sheets—Sheet 1.

A. E. DECOUPLÉ.  
CIGARETTE MACHINE.

No. 493,688.

Patented Mar. 21, 1893.



Witnesses.  
R. C. Mitchell.  
Harry B. Ewing

Inventor.  
Anatole E. Decouplé.  
By Briesen & Knaut,  
his attorneys

(No Model.)

13 Sheets—Sheet 2.

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FIG - 1<sup>a</sup> -

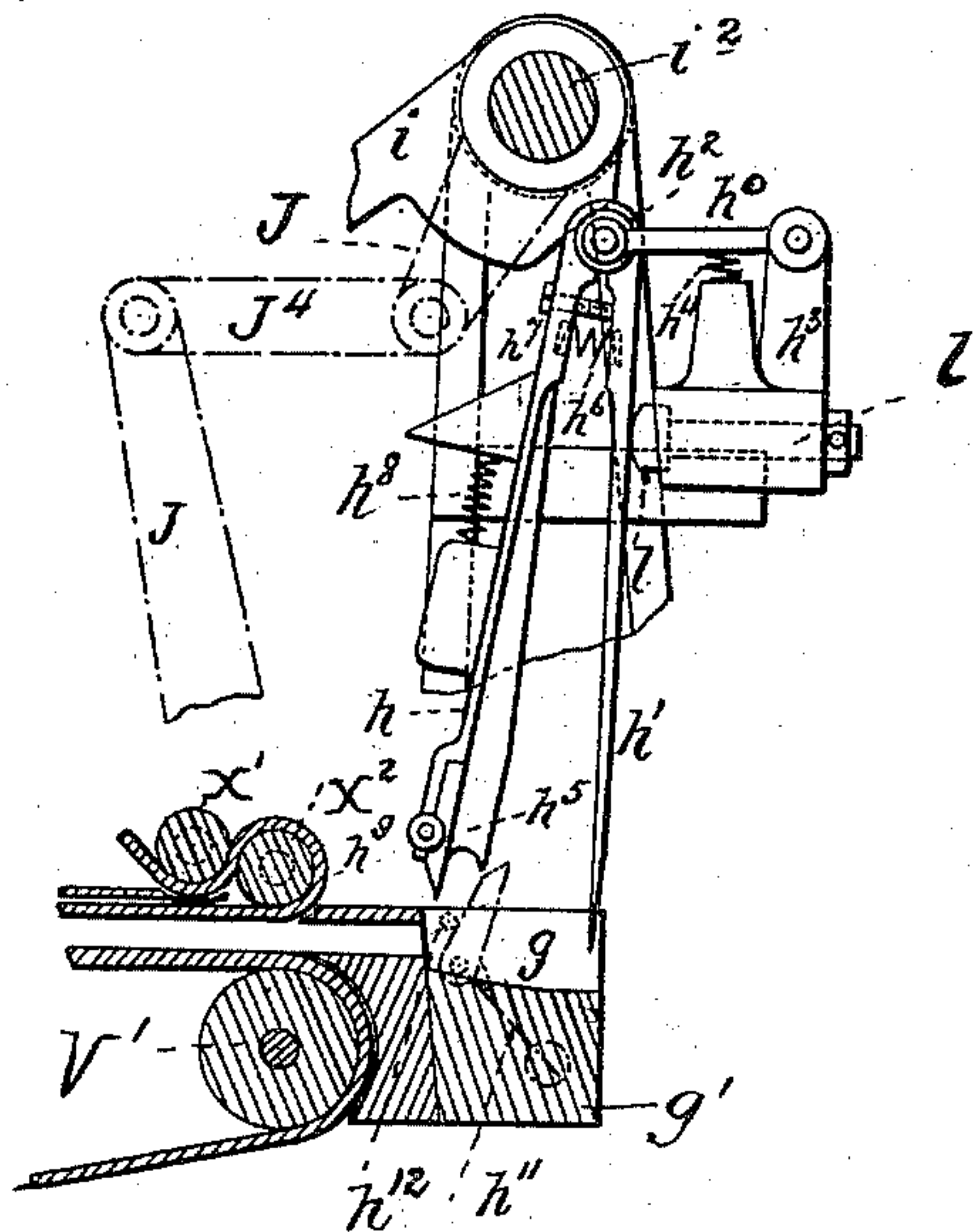
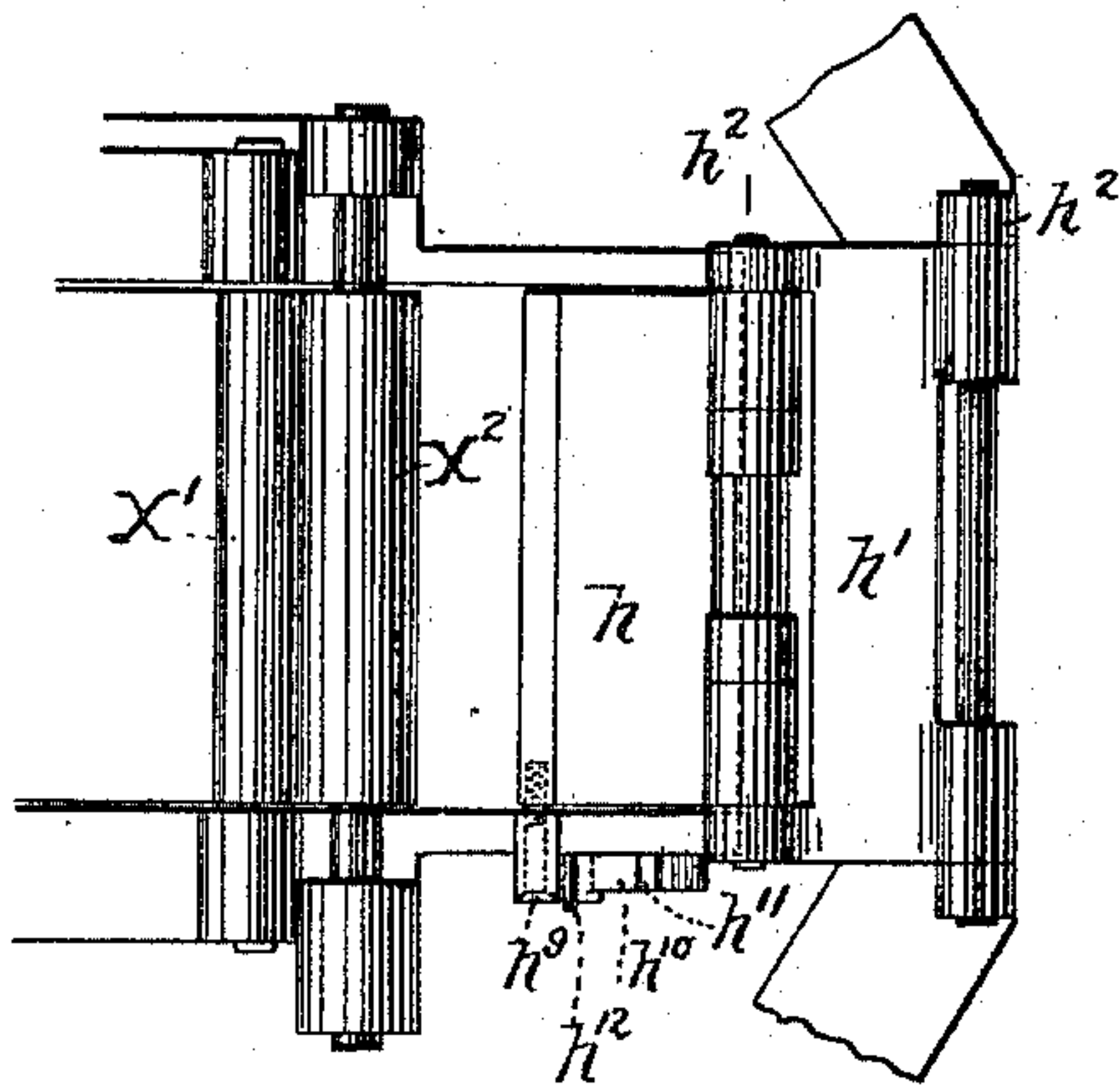


FIG - 1<sup>b</sup> -



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*Hampton Smith*  
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*Aria E. Decoufle*  
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Attorneys:



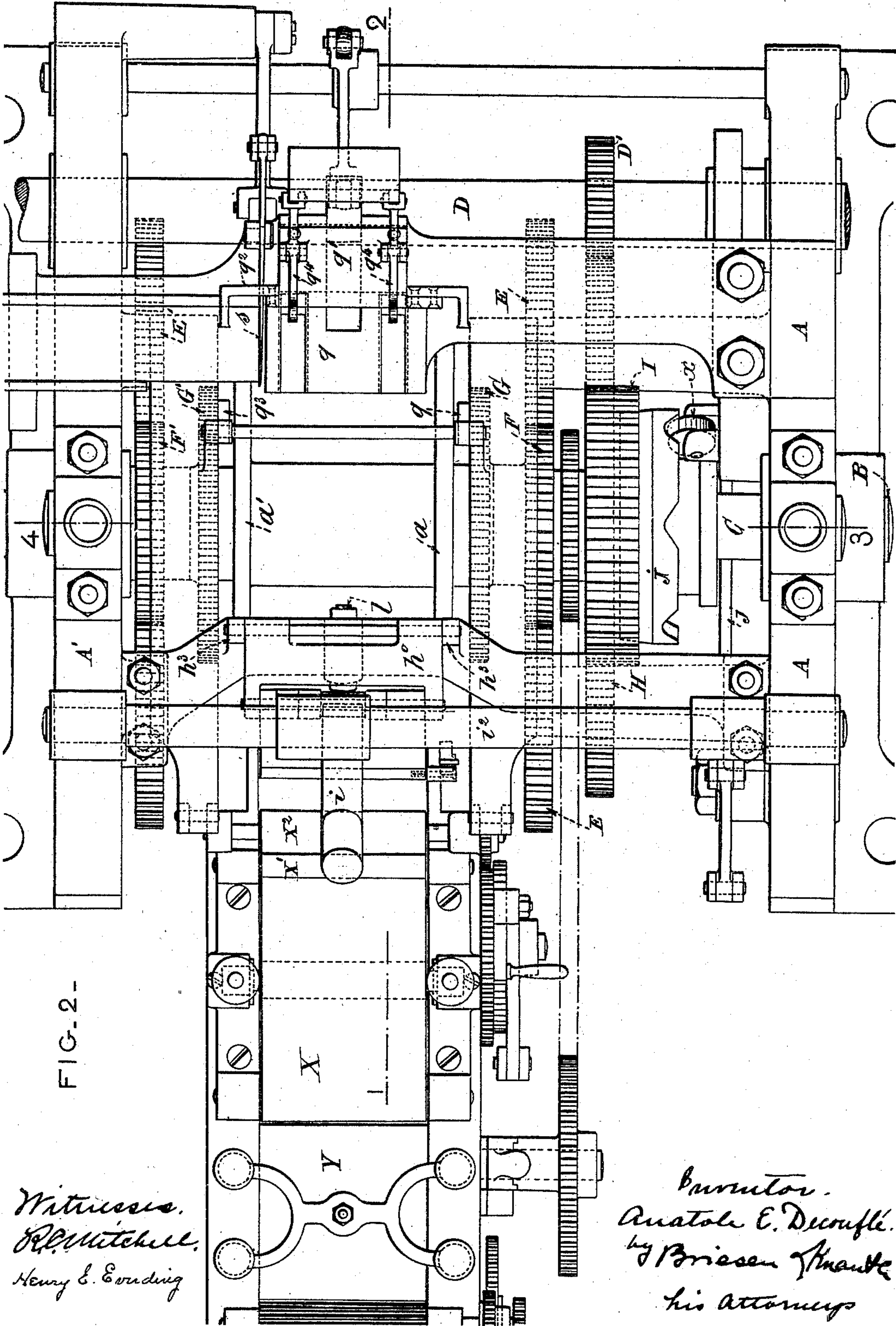
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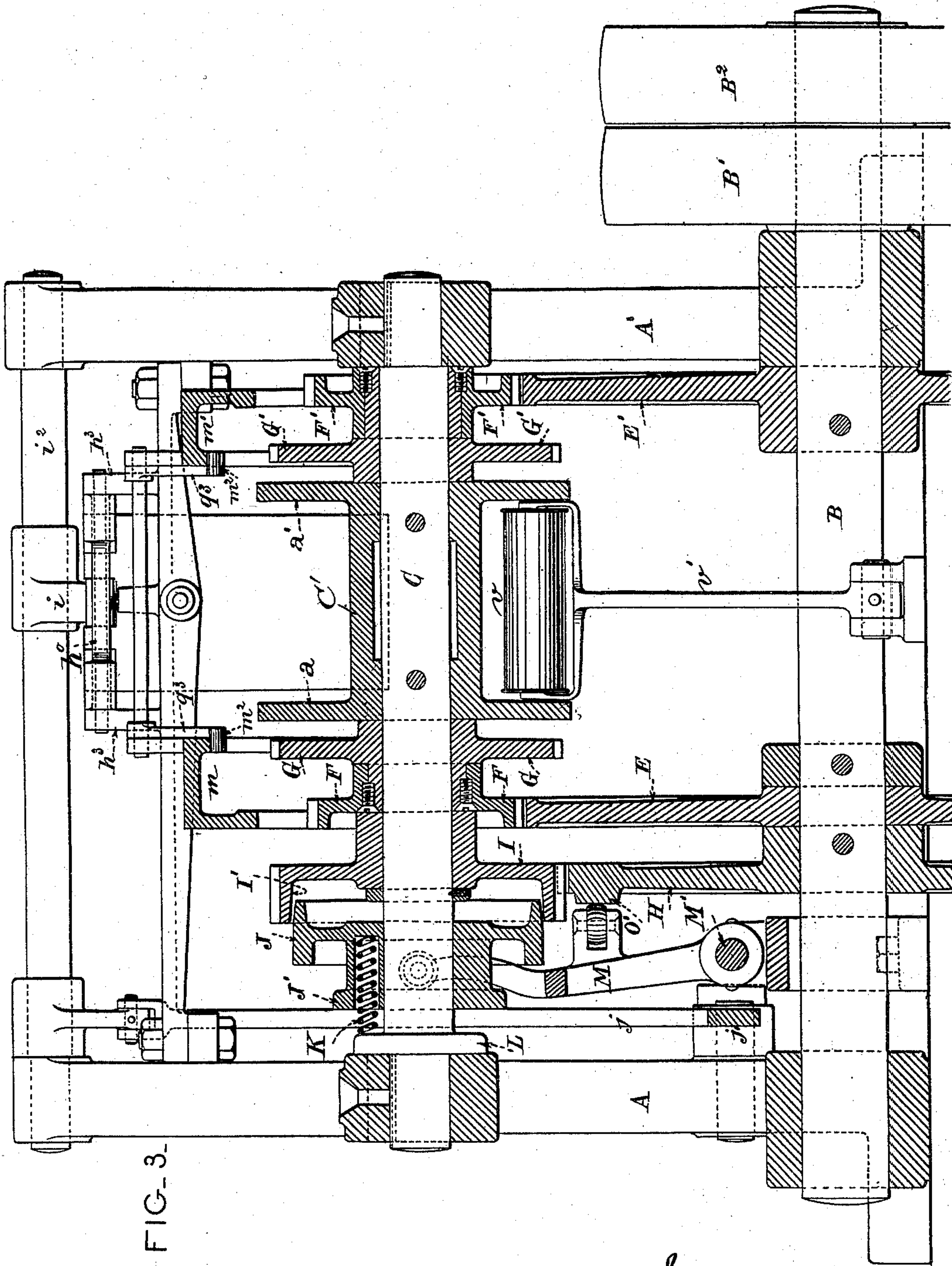
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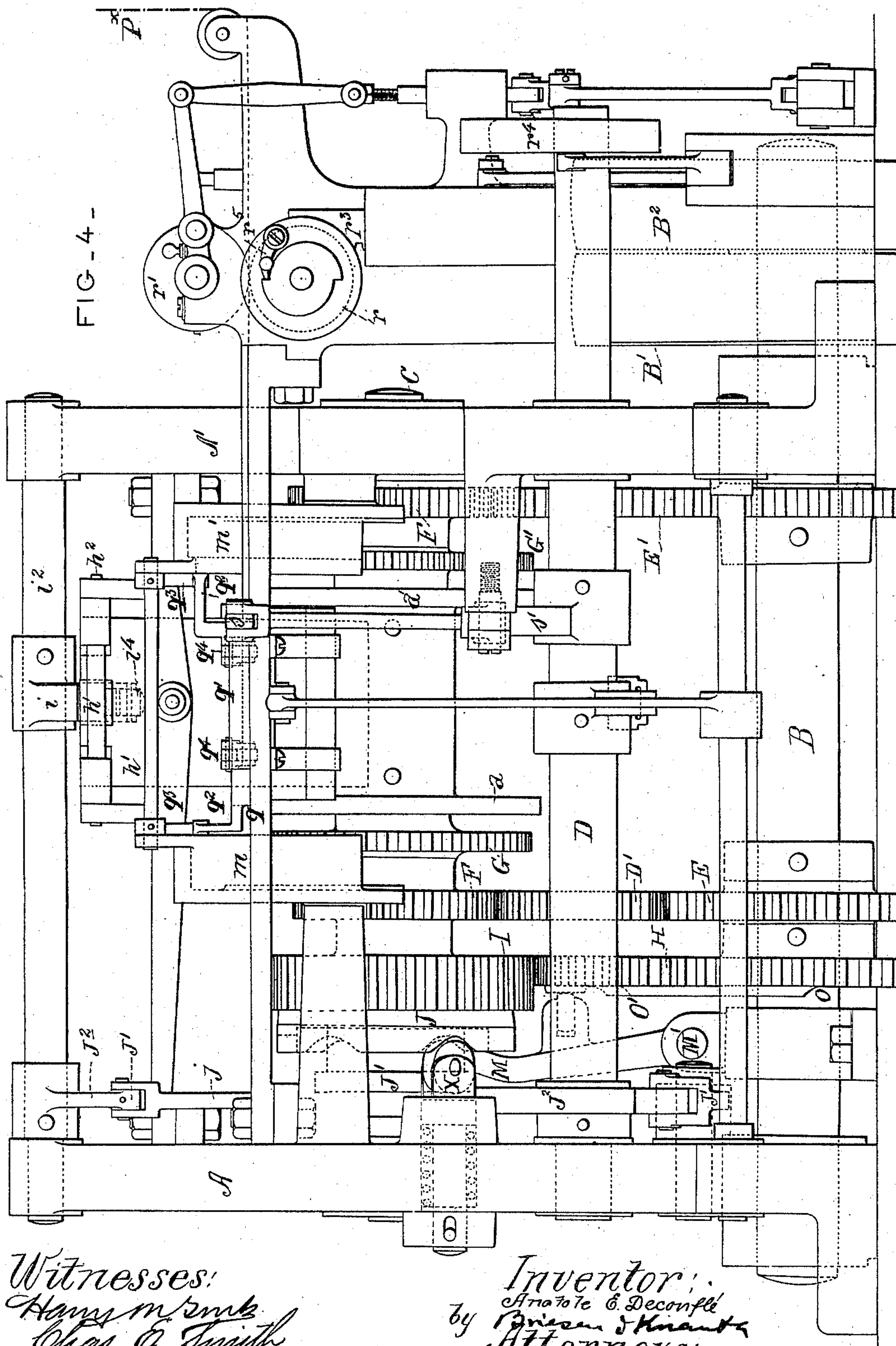
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CIGARETTE MACHINE.

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FIG. 6.

FIG. 5.

FIG. 7.

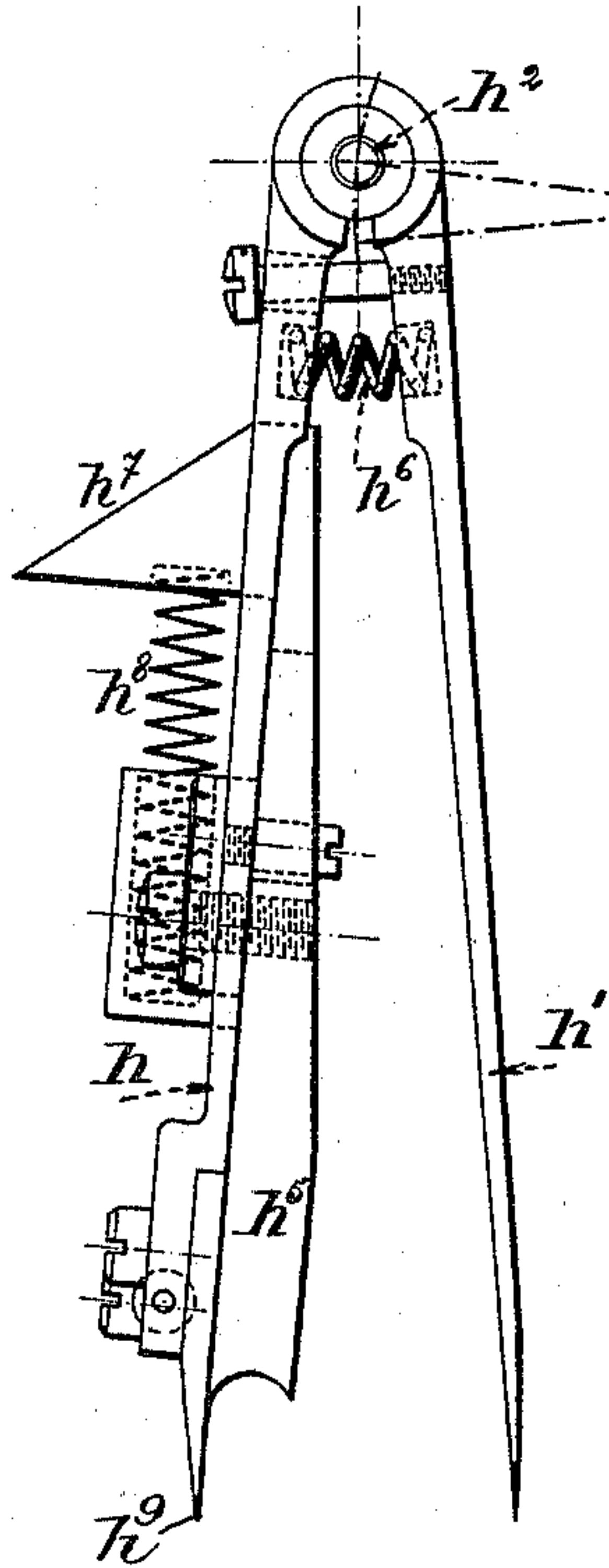


FIG. 9

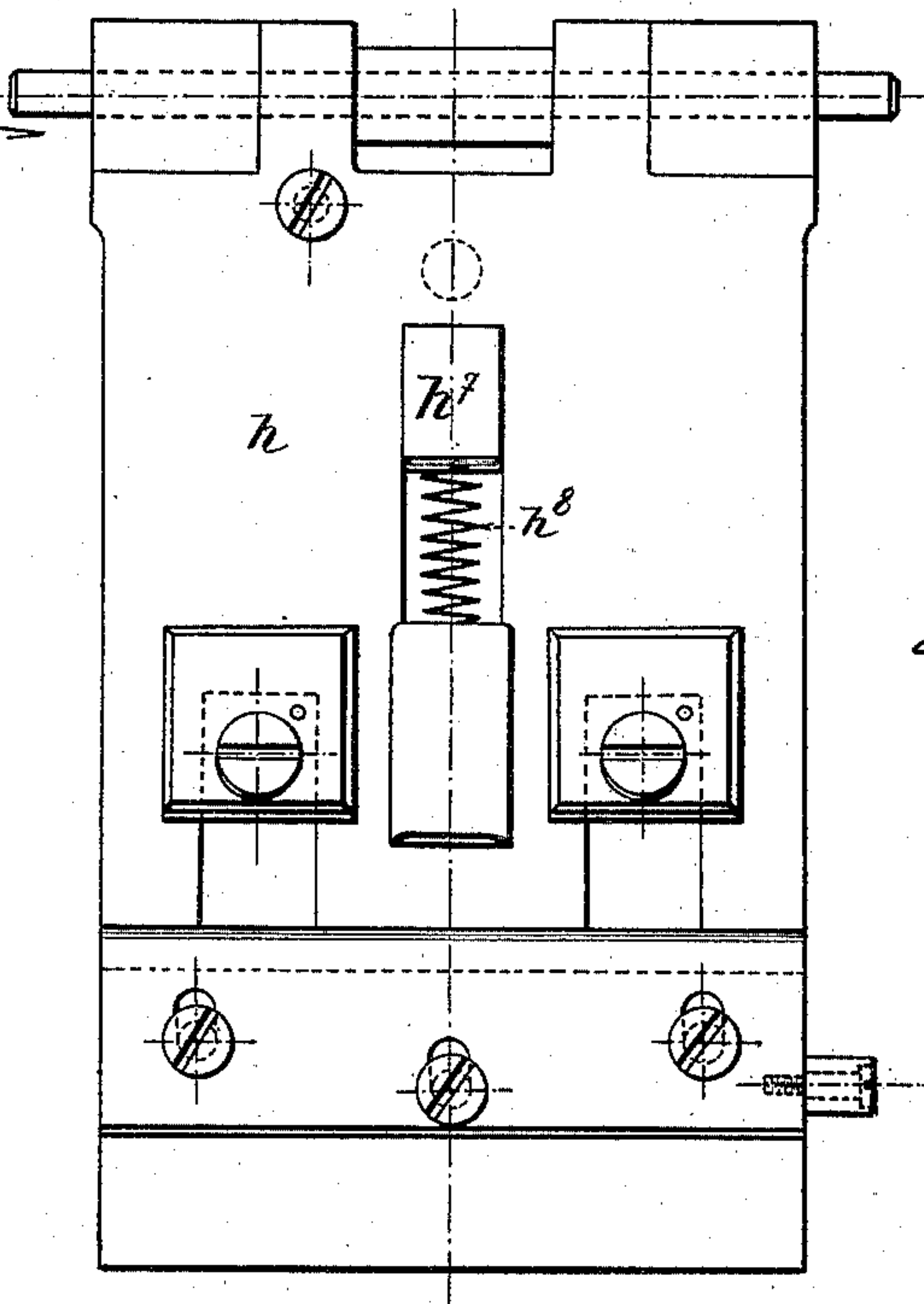


FIG. 8.

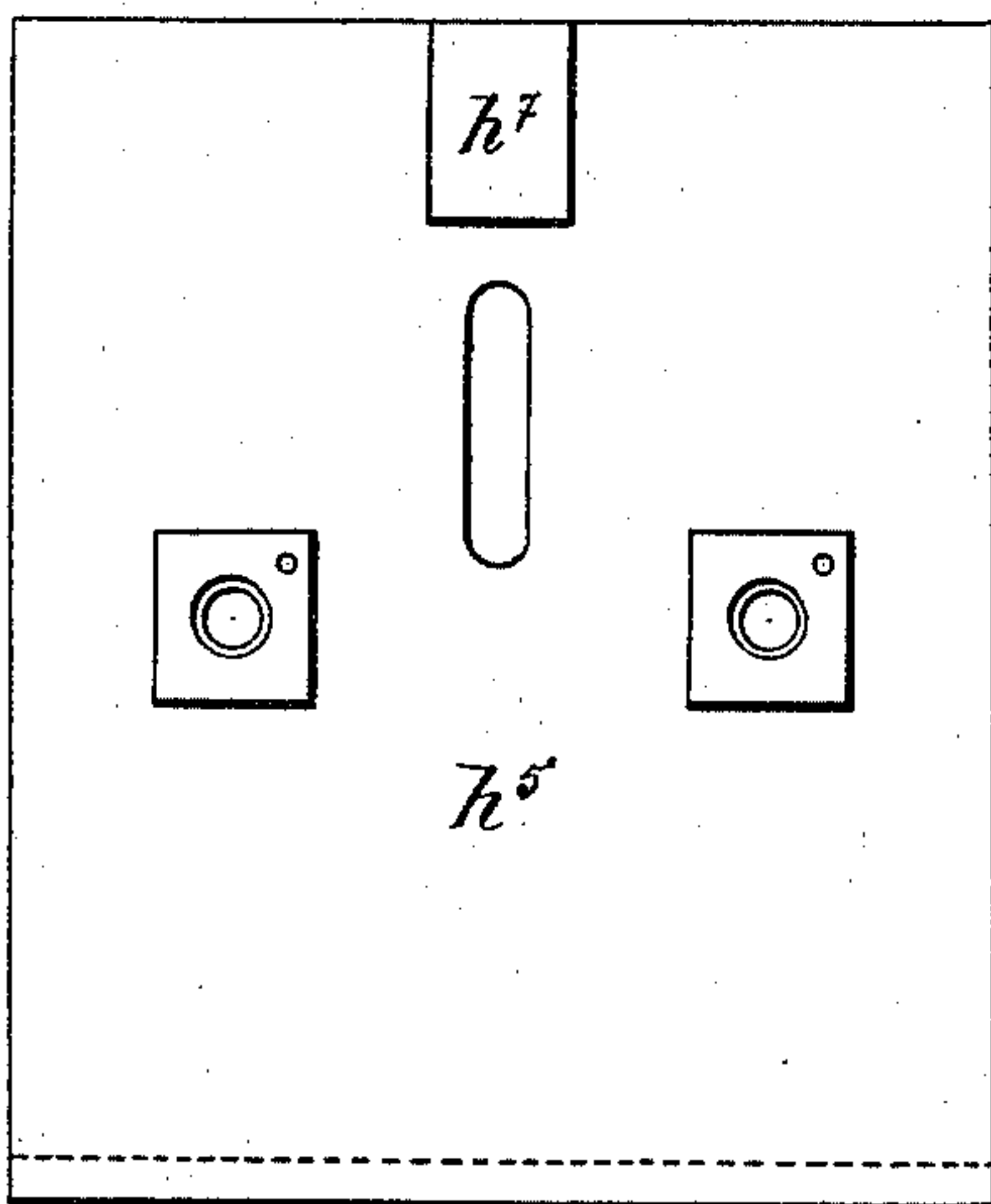
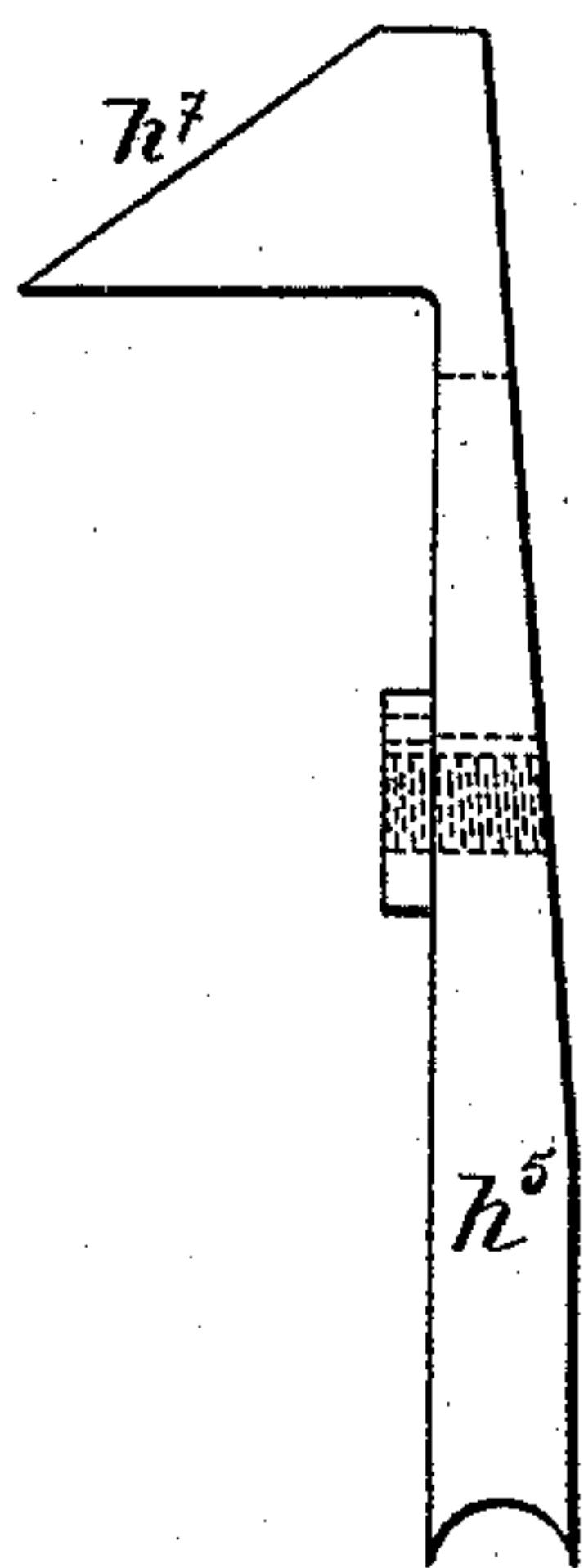
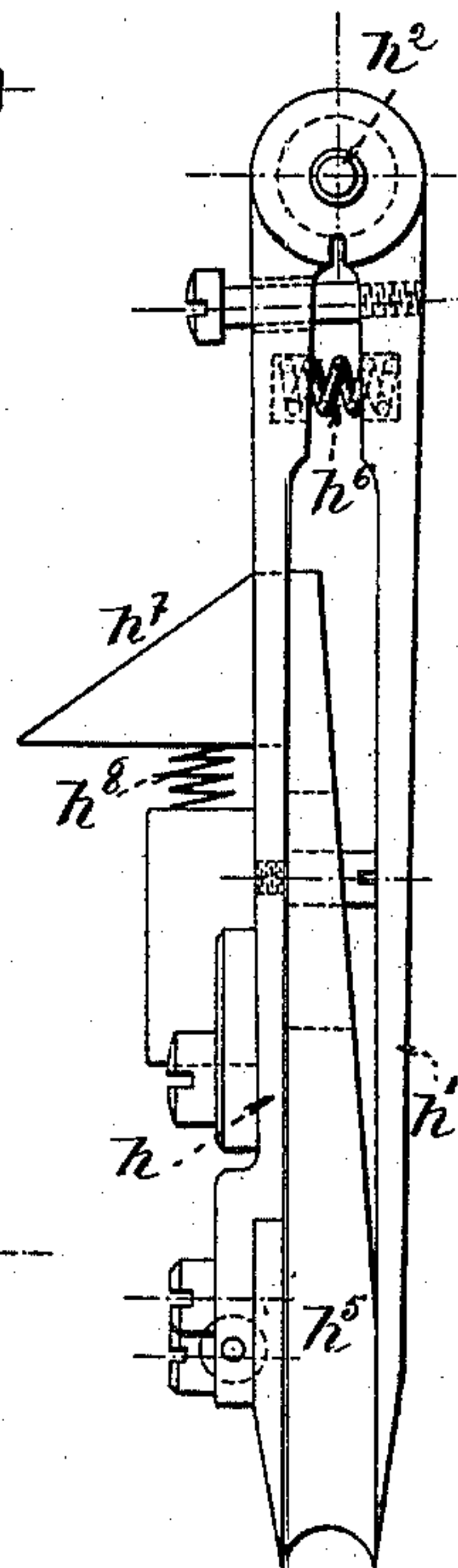
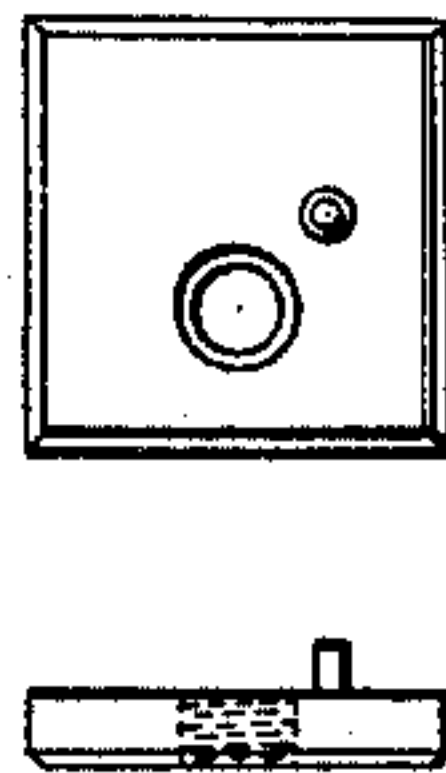


FIG. 10.



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(No Model.)

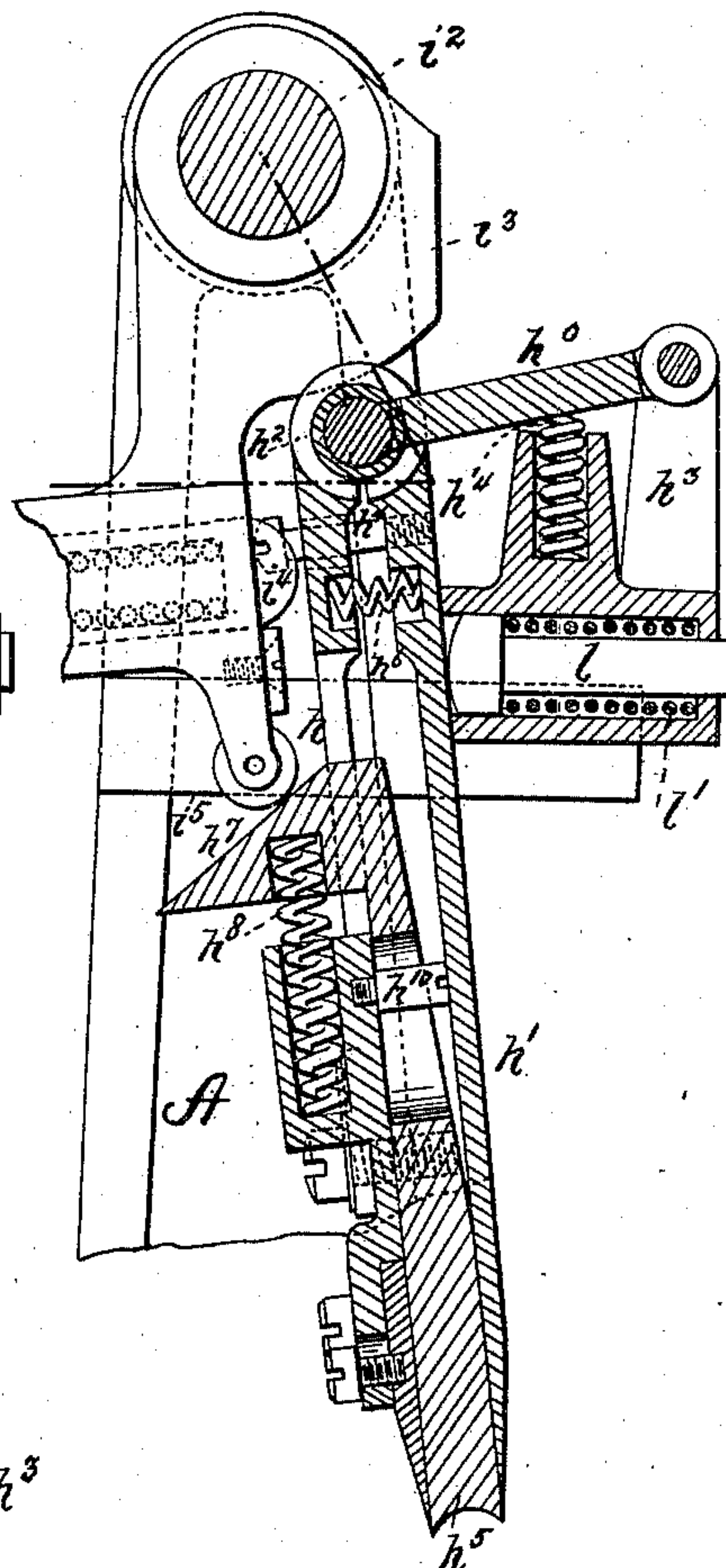
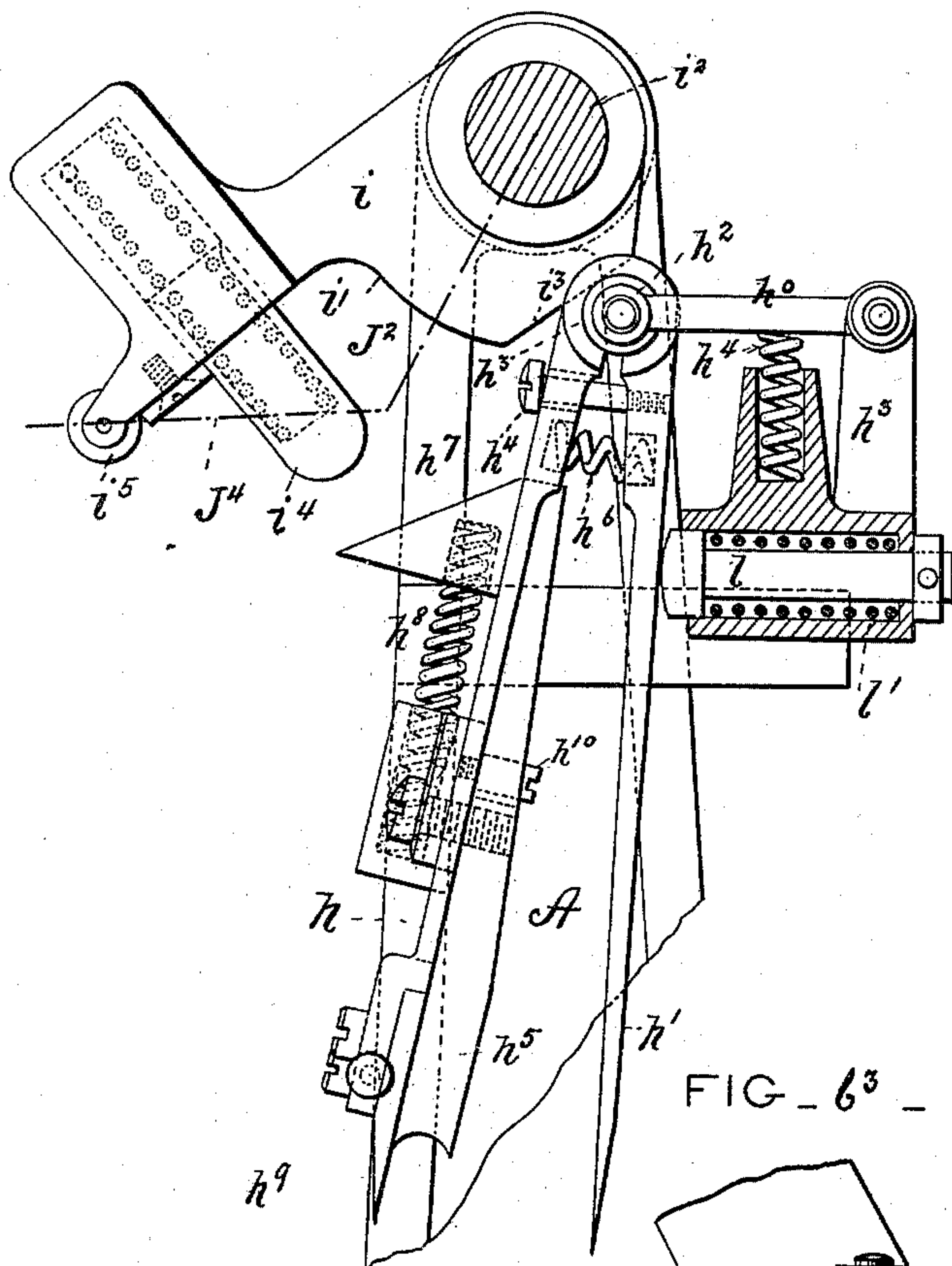
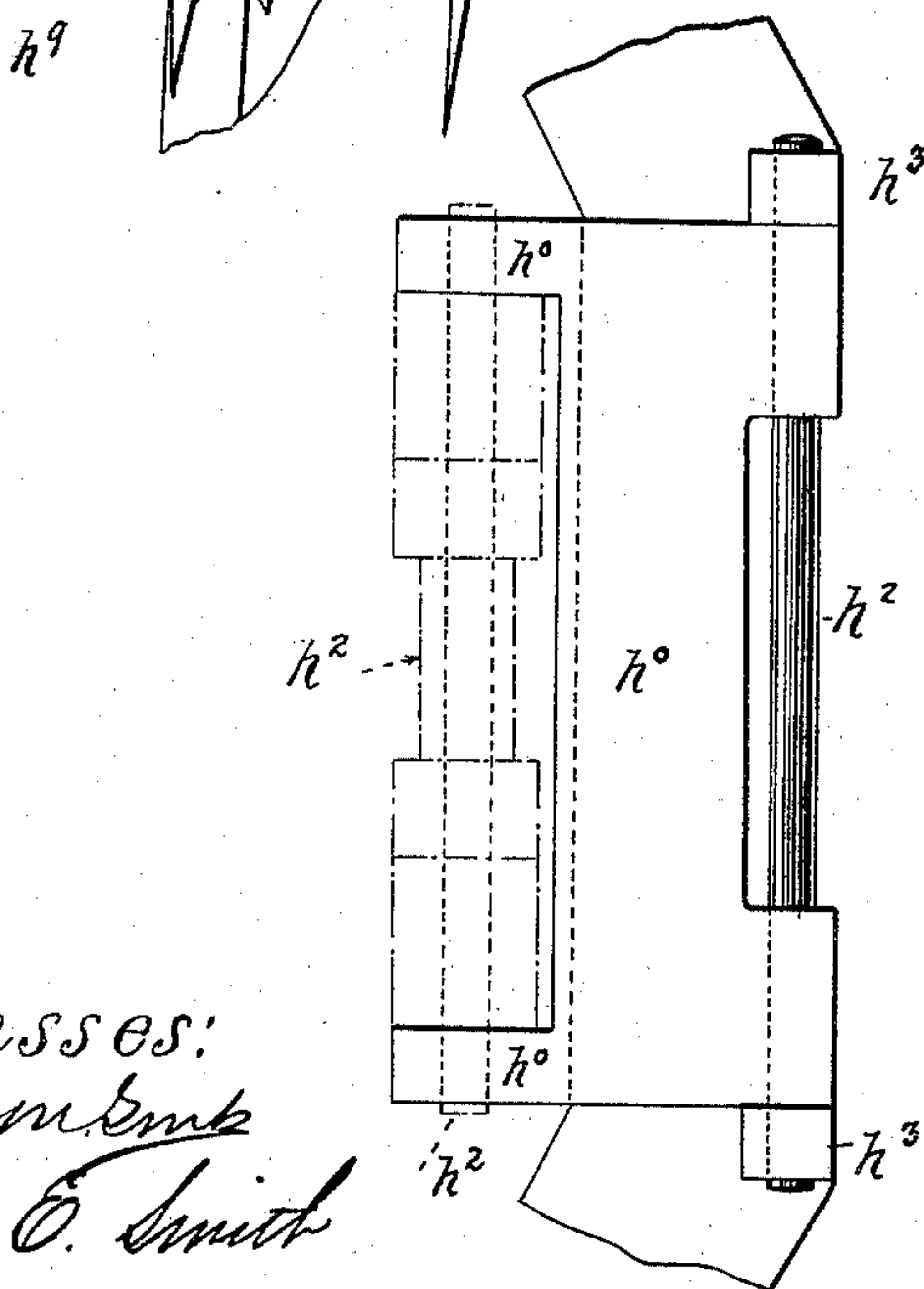
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FIG. 64.

FIG-6<sup>2</sup>FIG - 6<sup>3</sup> -

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(No Model.)

13 Sheets—Sheet 8.

A. E. DECOUFLÉ.  
CIGARETTE MACHINE.

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FIG. 12.

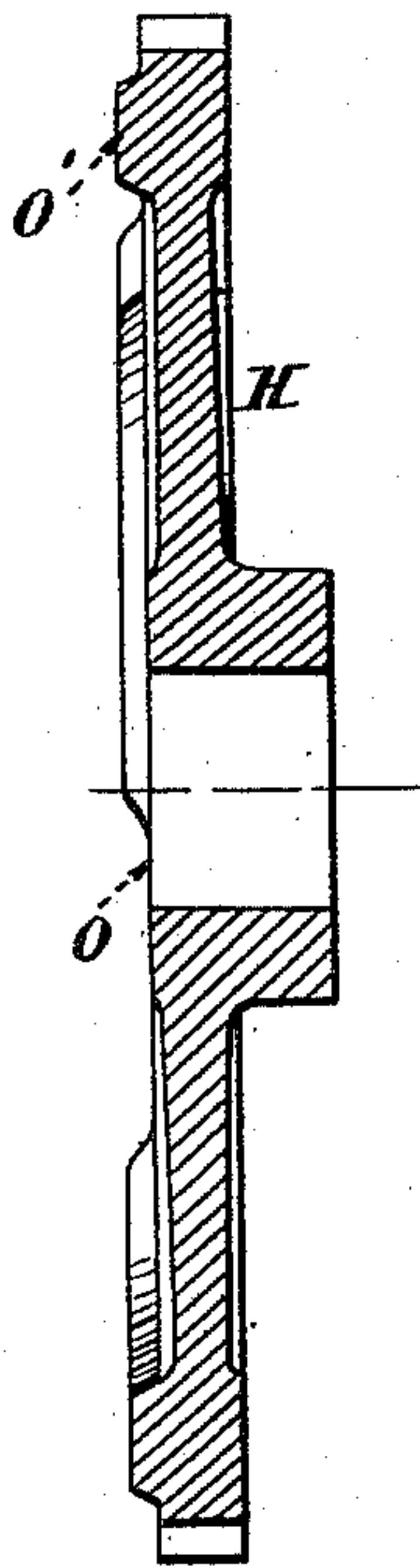


FIG. 11.

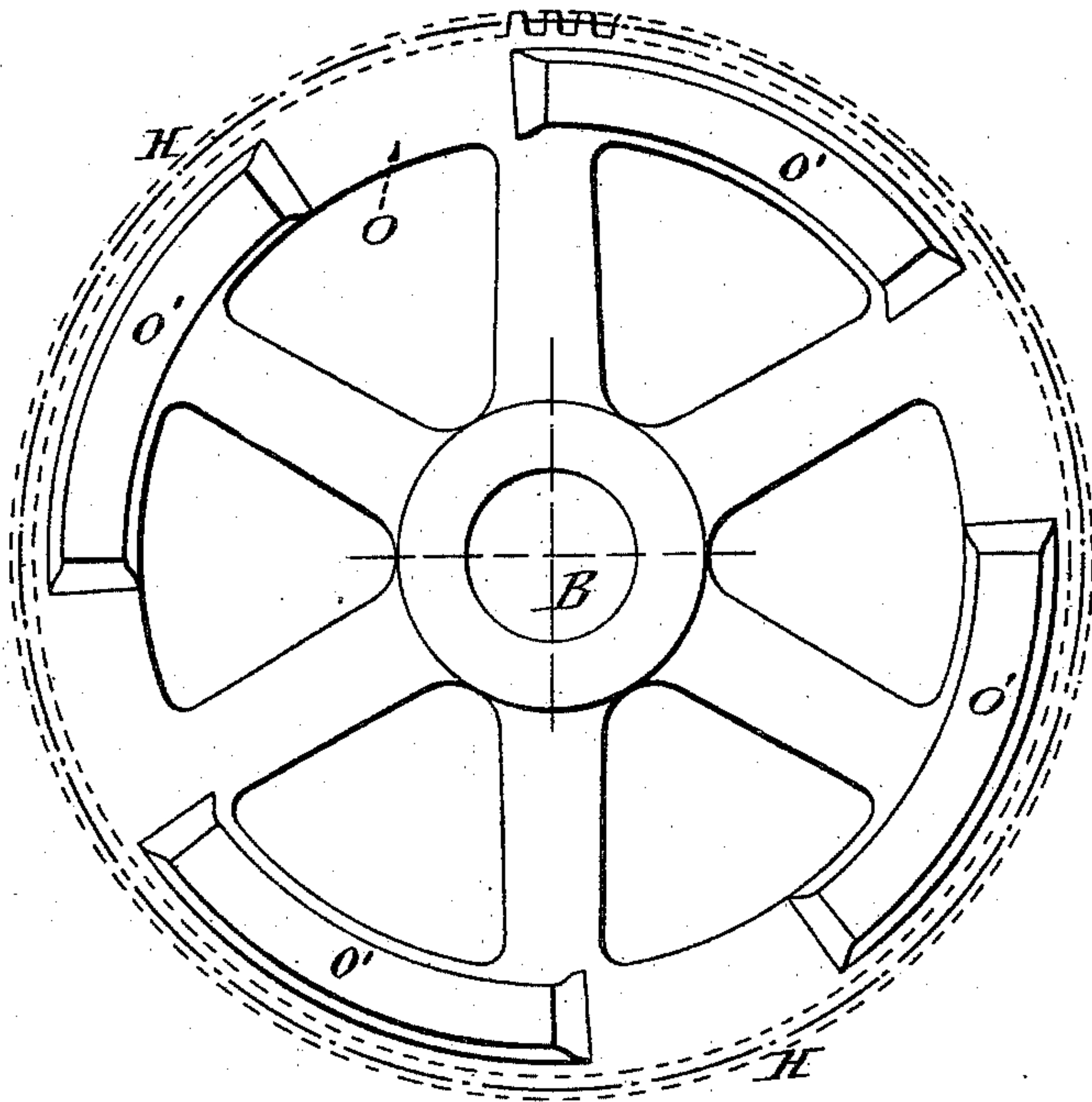


FIG. 14.

FIG. 13.

FIG. 16.

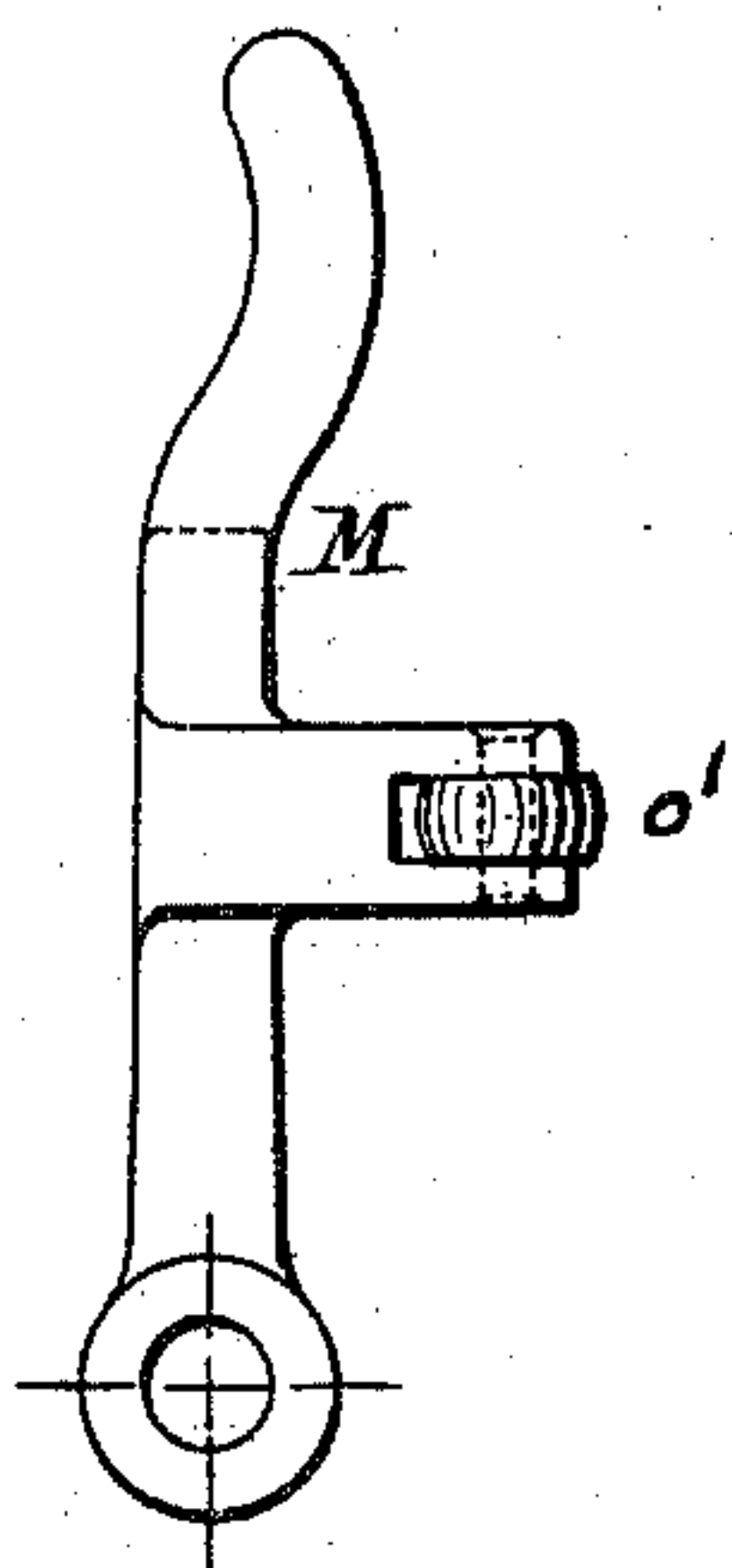
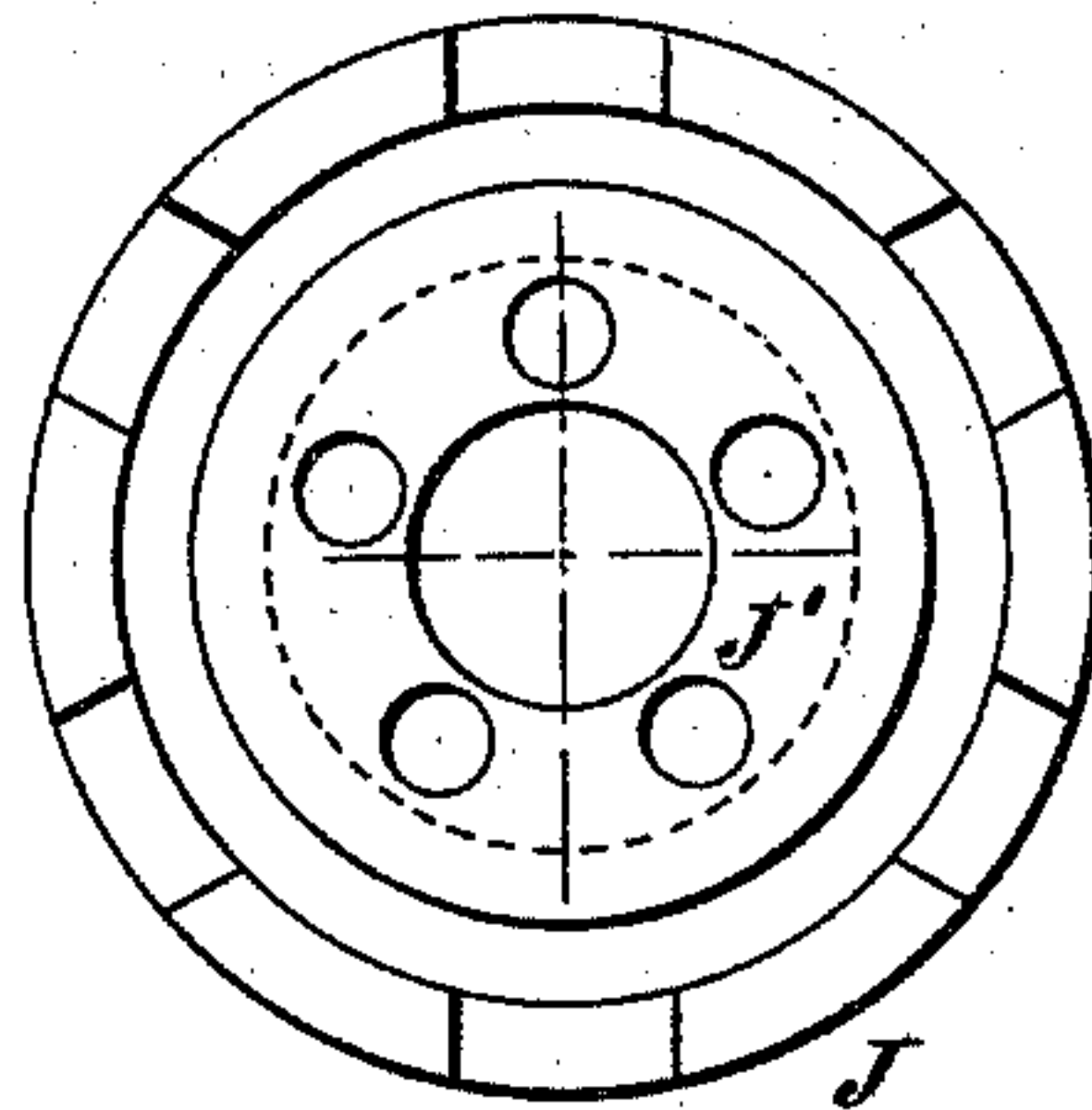
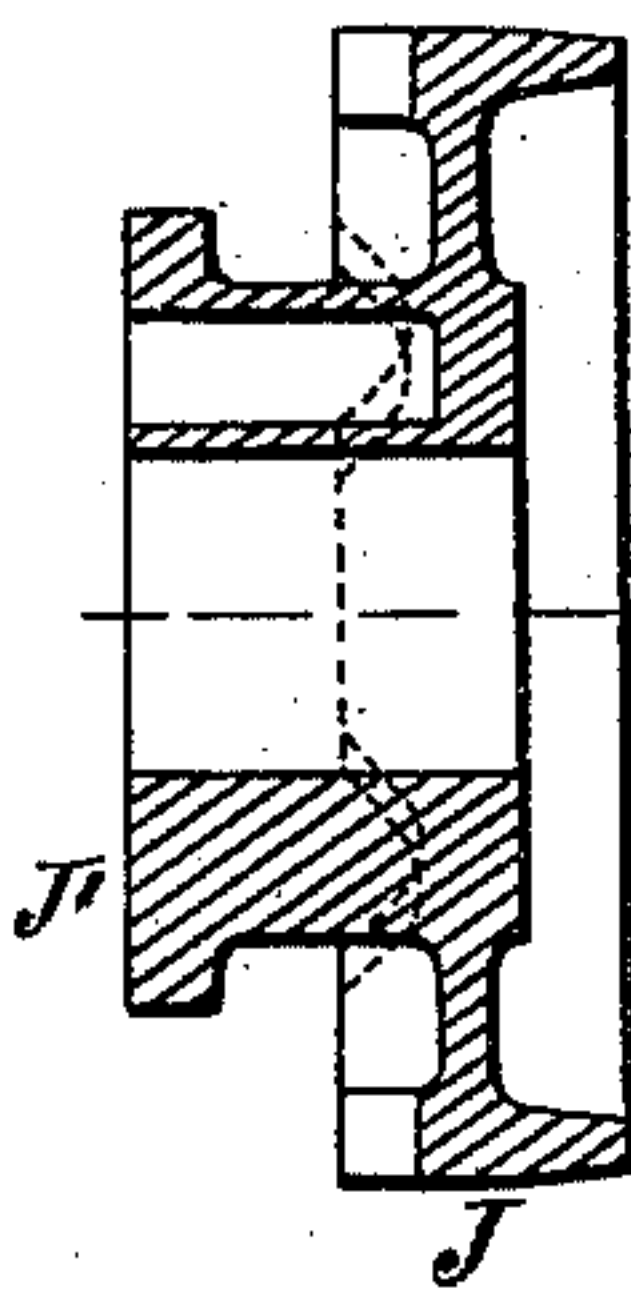
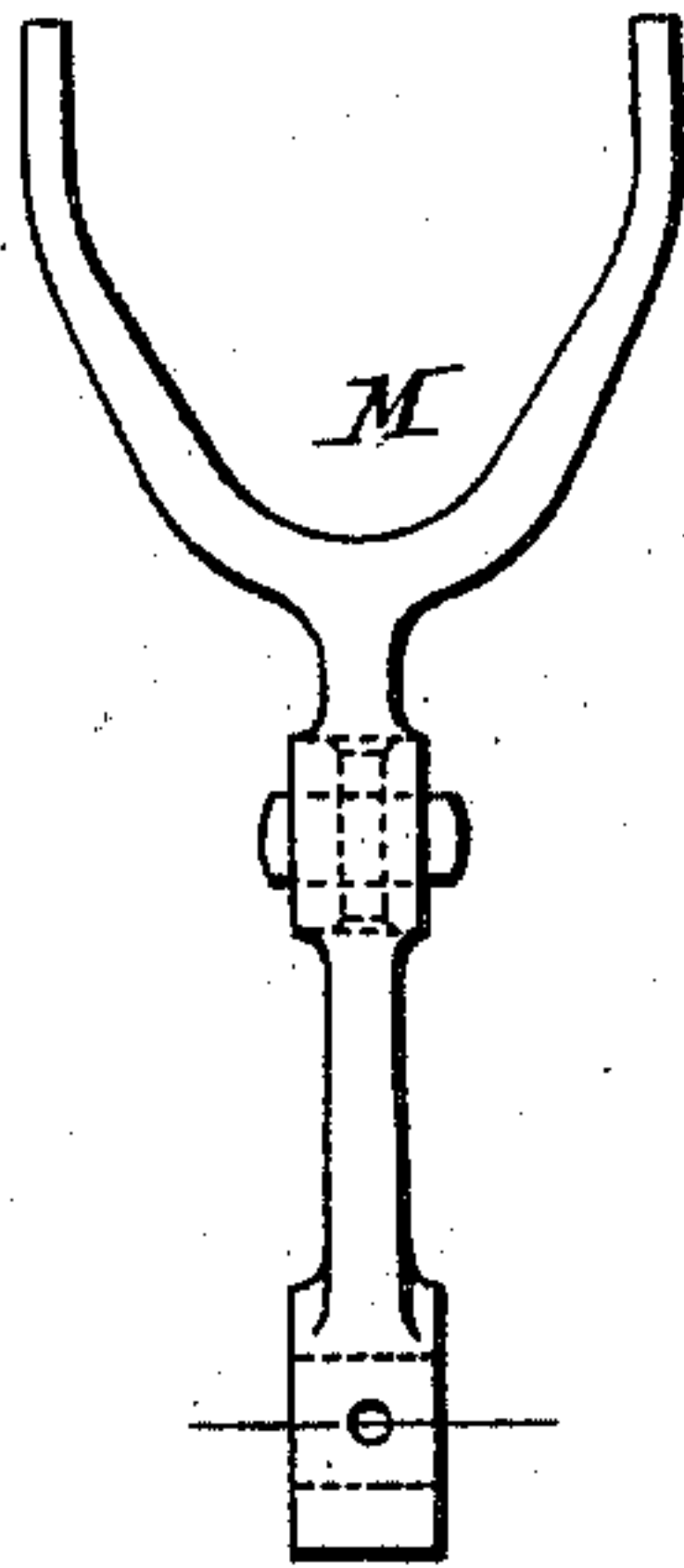


FIG. 15.



Witnesses.  
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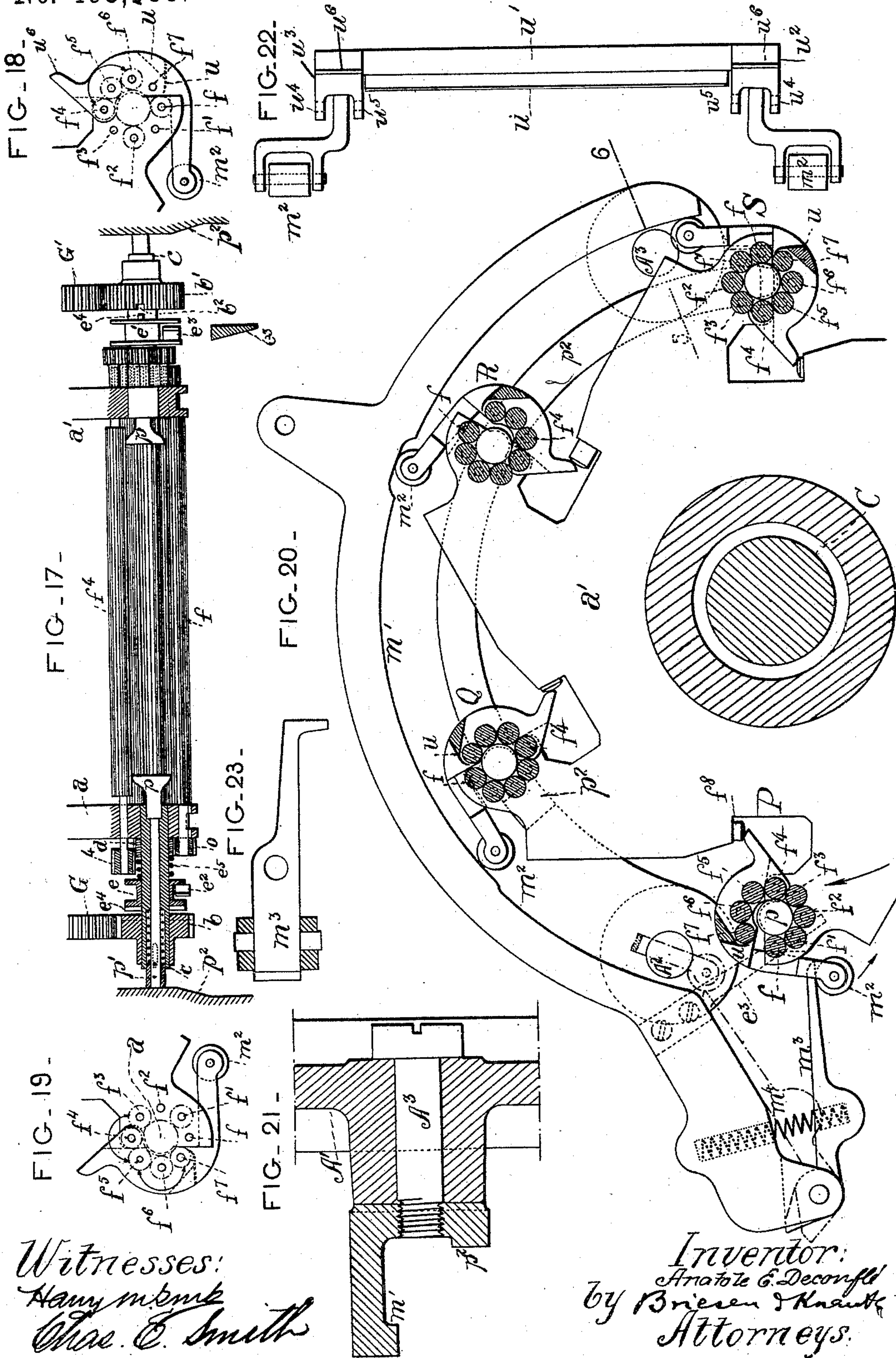
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13 Sheets—Sheet 9.

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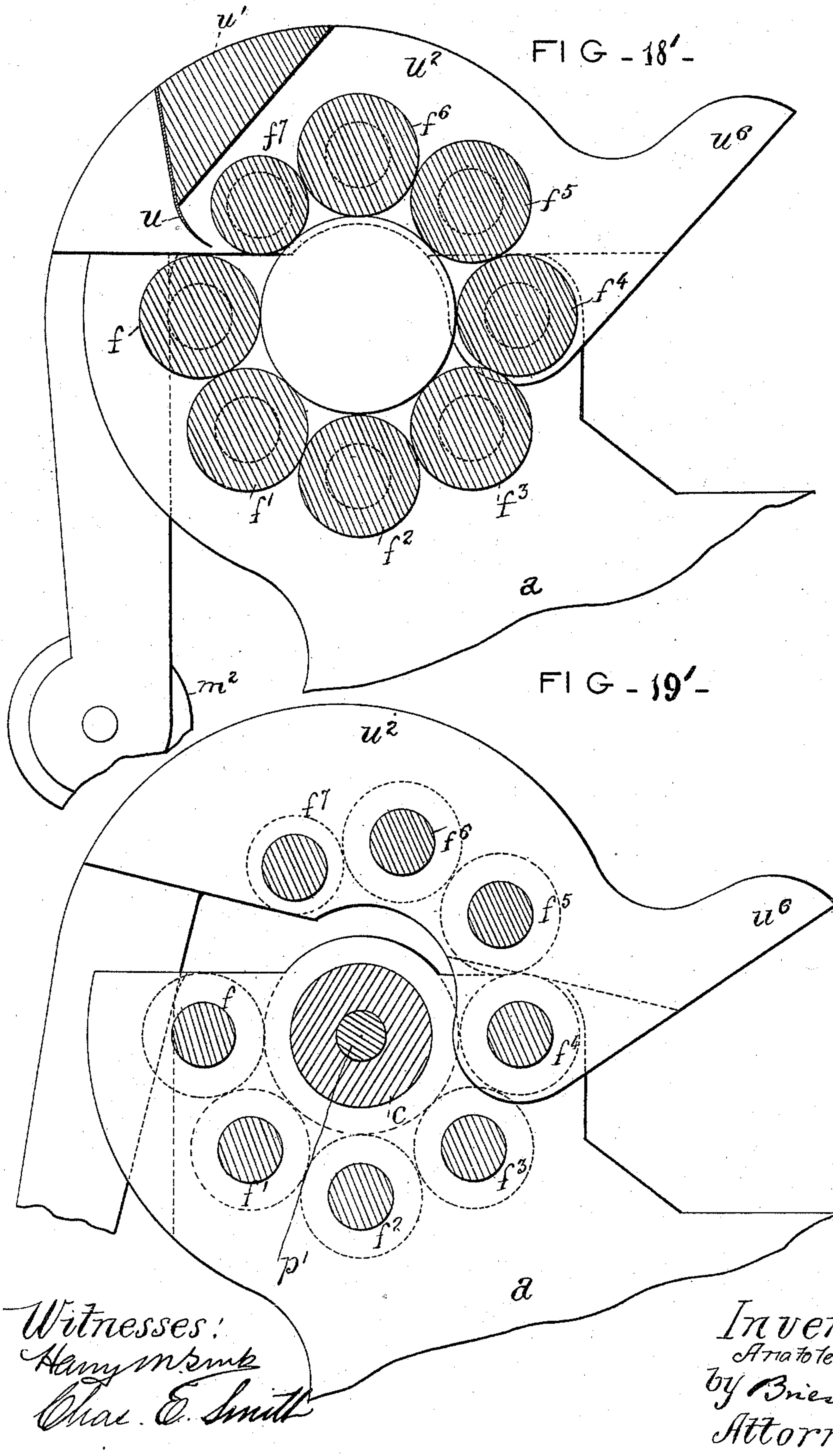
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(No Model.)

13 Sheets—Sheet 11.

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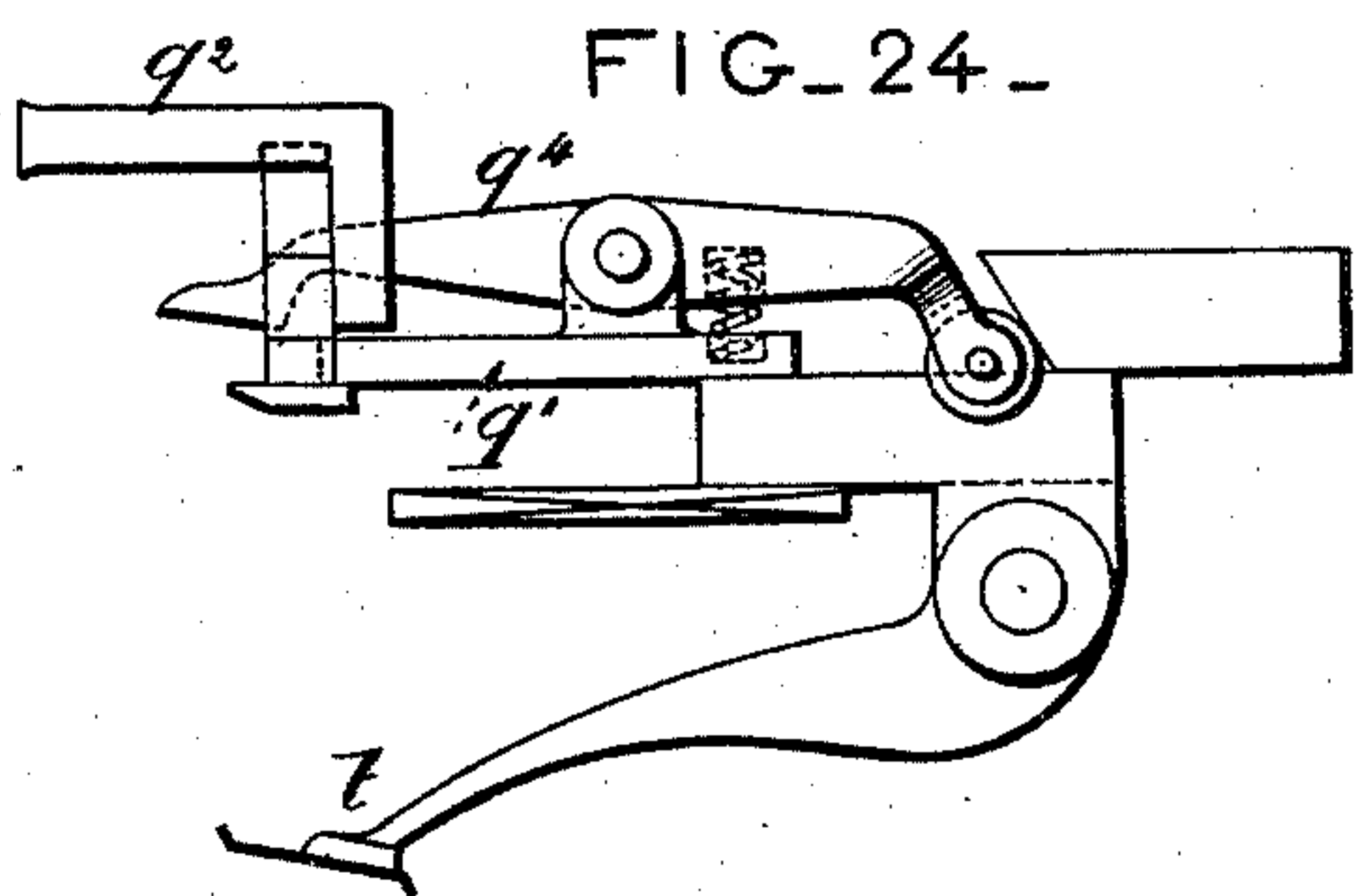


FIG. 24 -

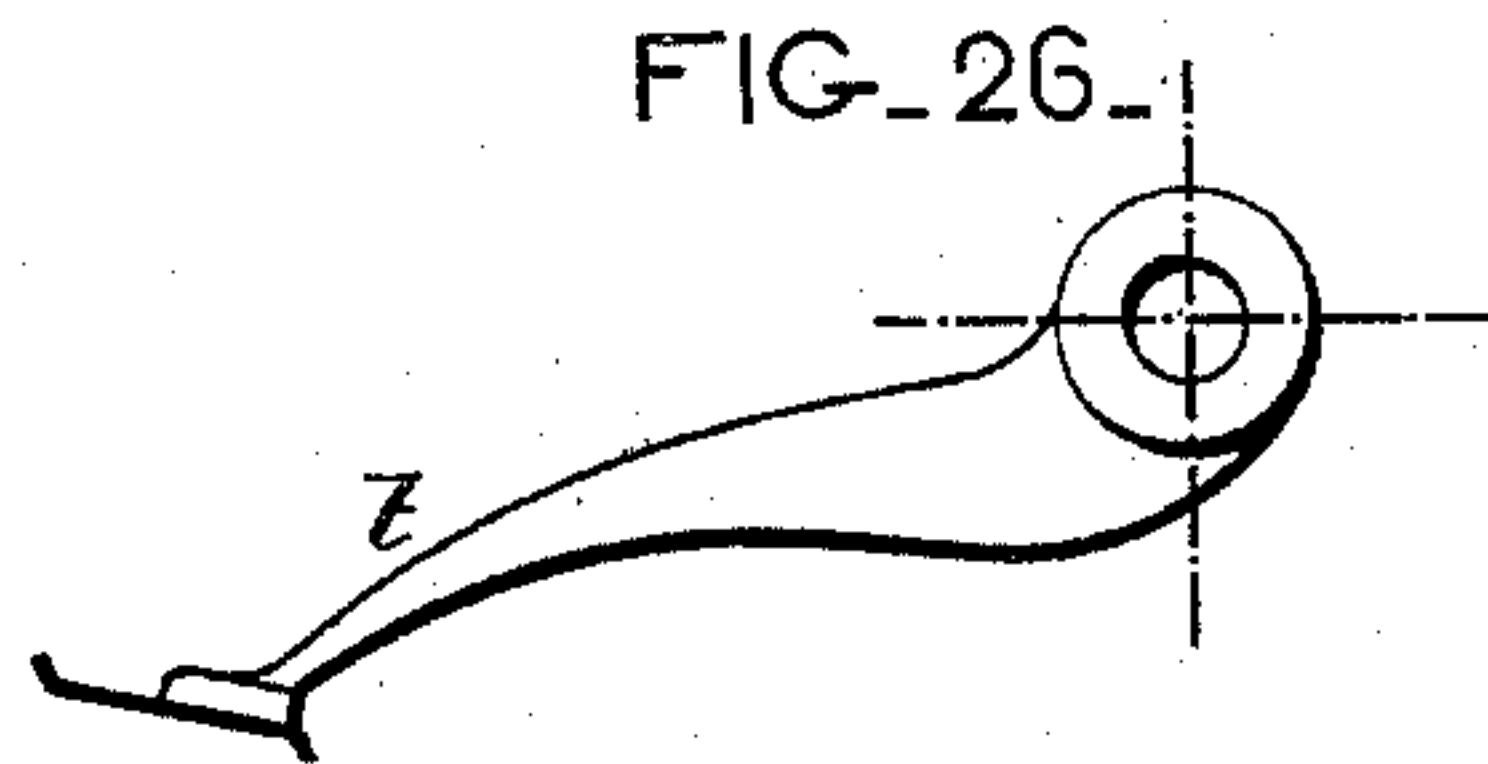


FIG. 26 -

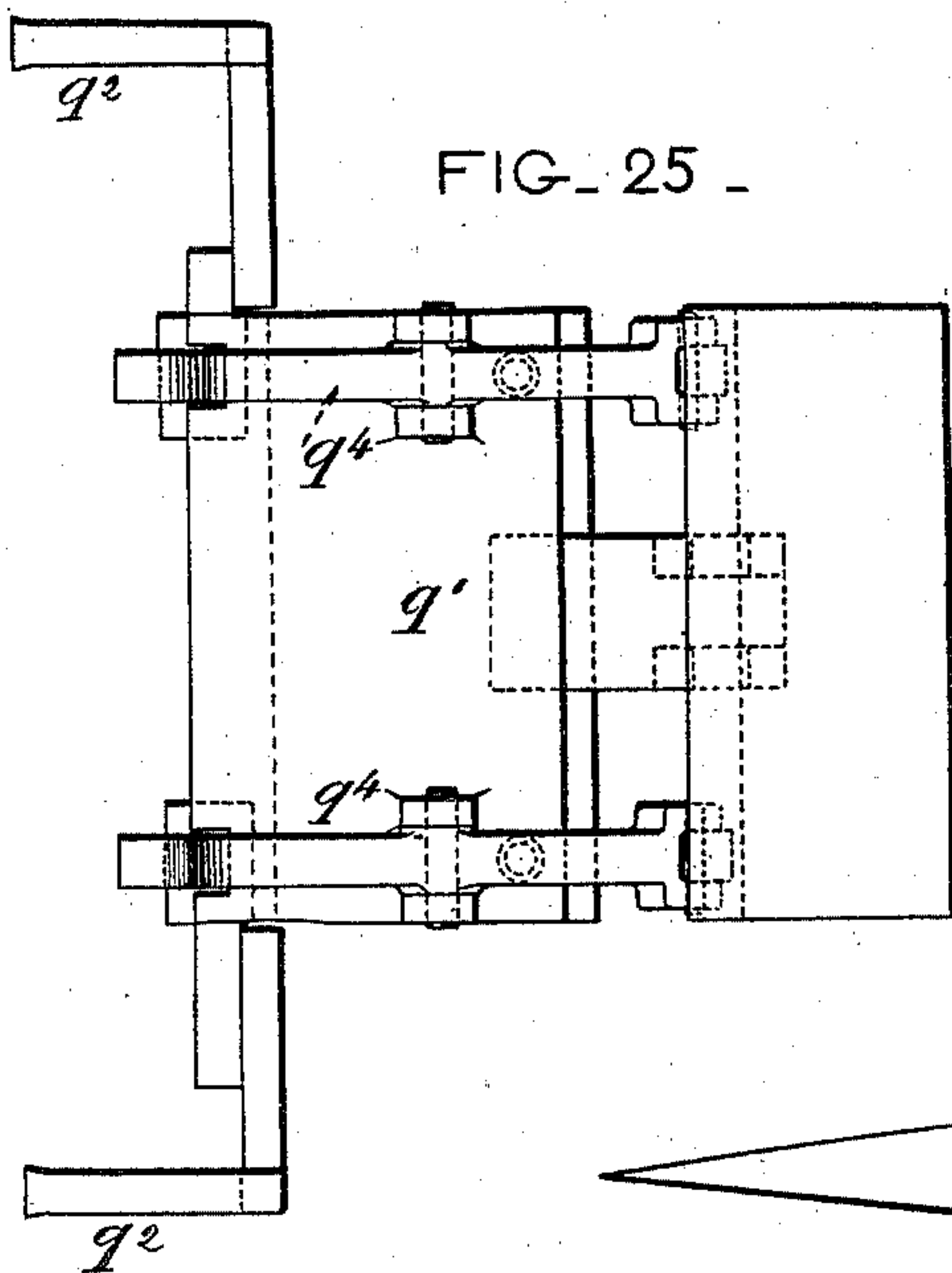


FIG. 25 -

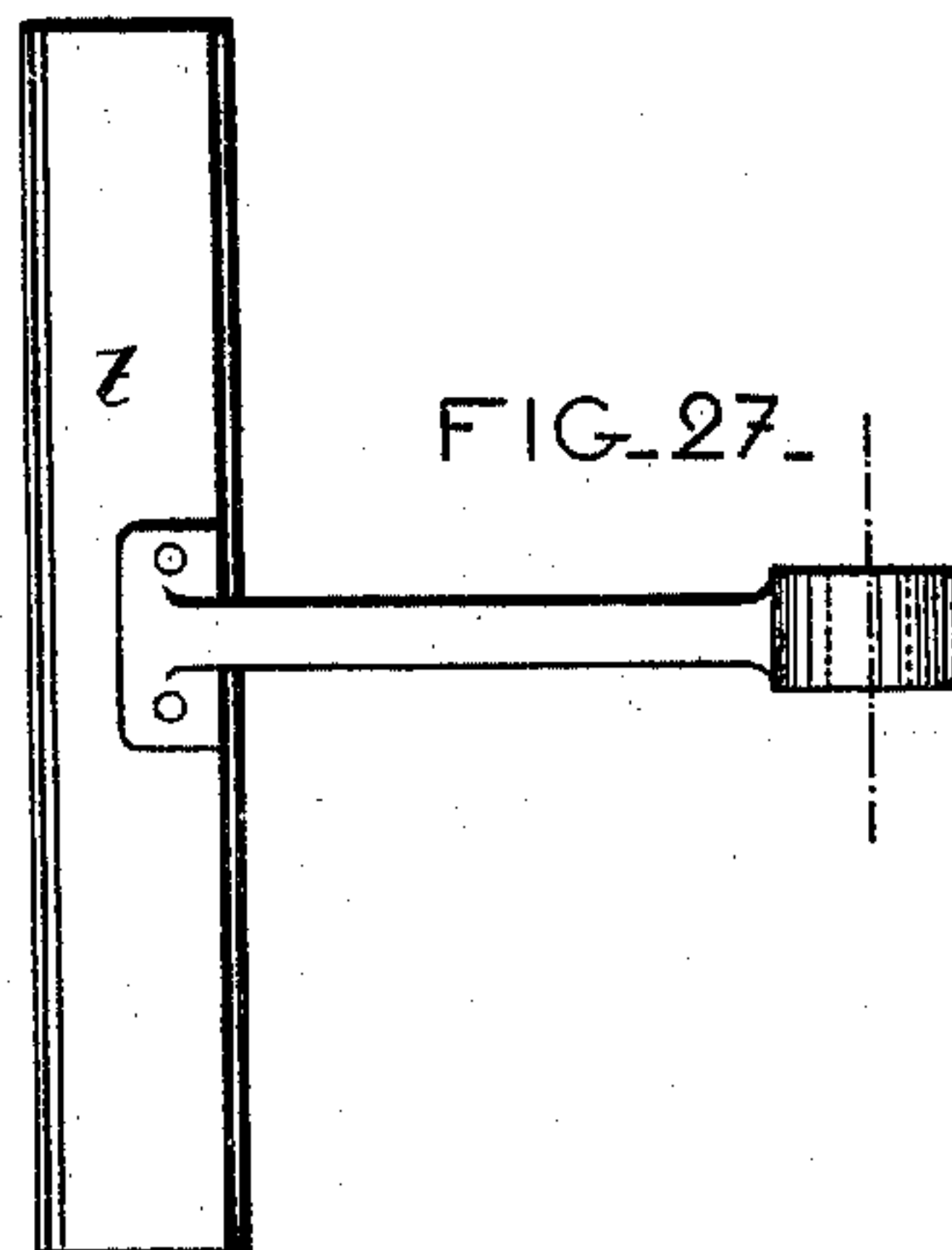


FIG. 27 -

FIG. 30 -

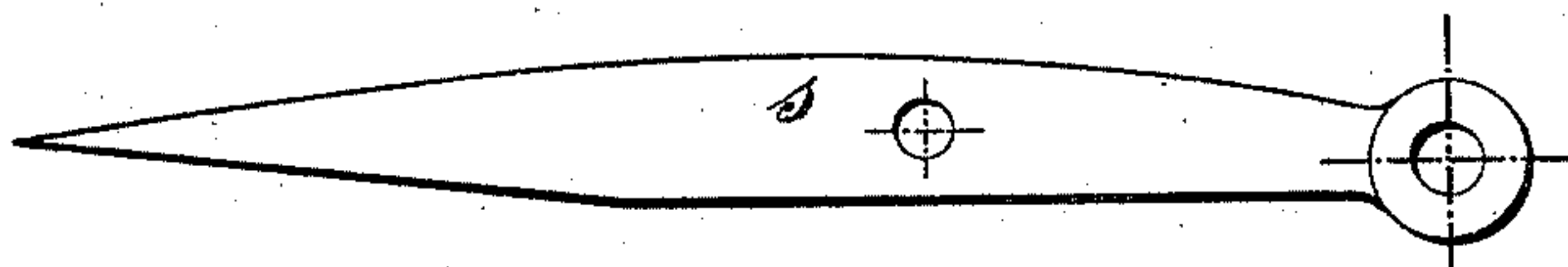


FIG. 31 -

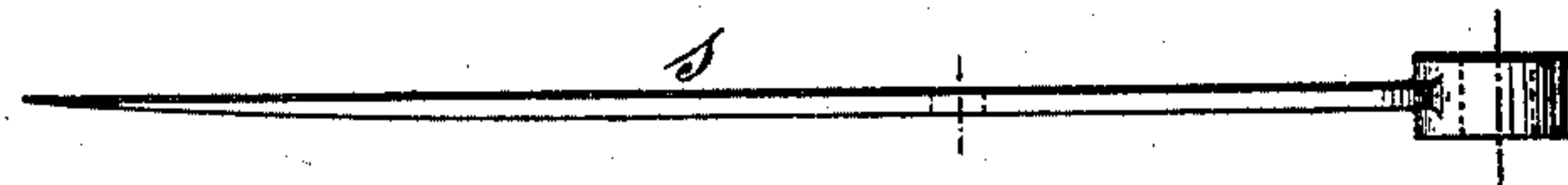


FIG. 29 -

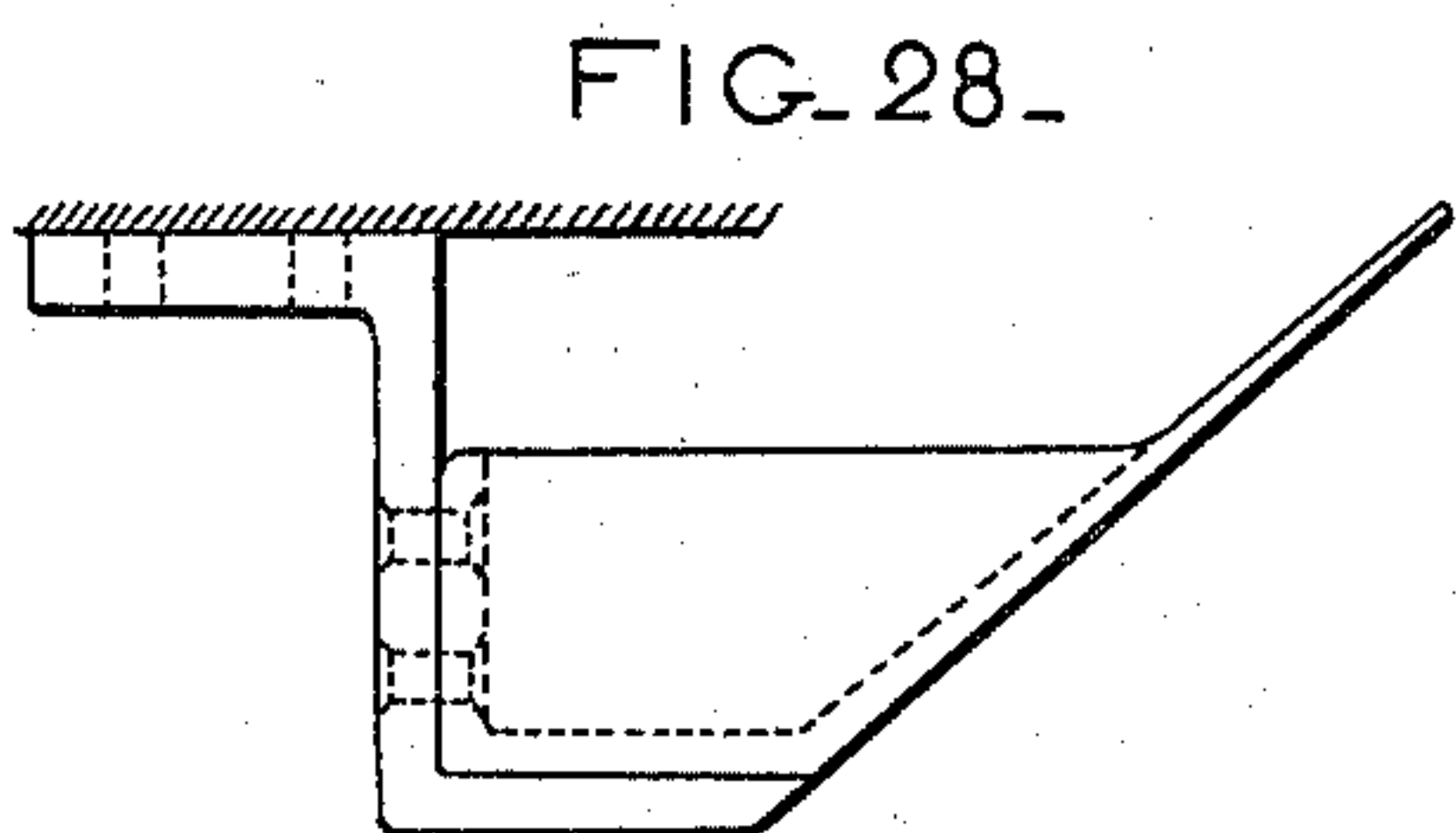
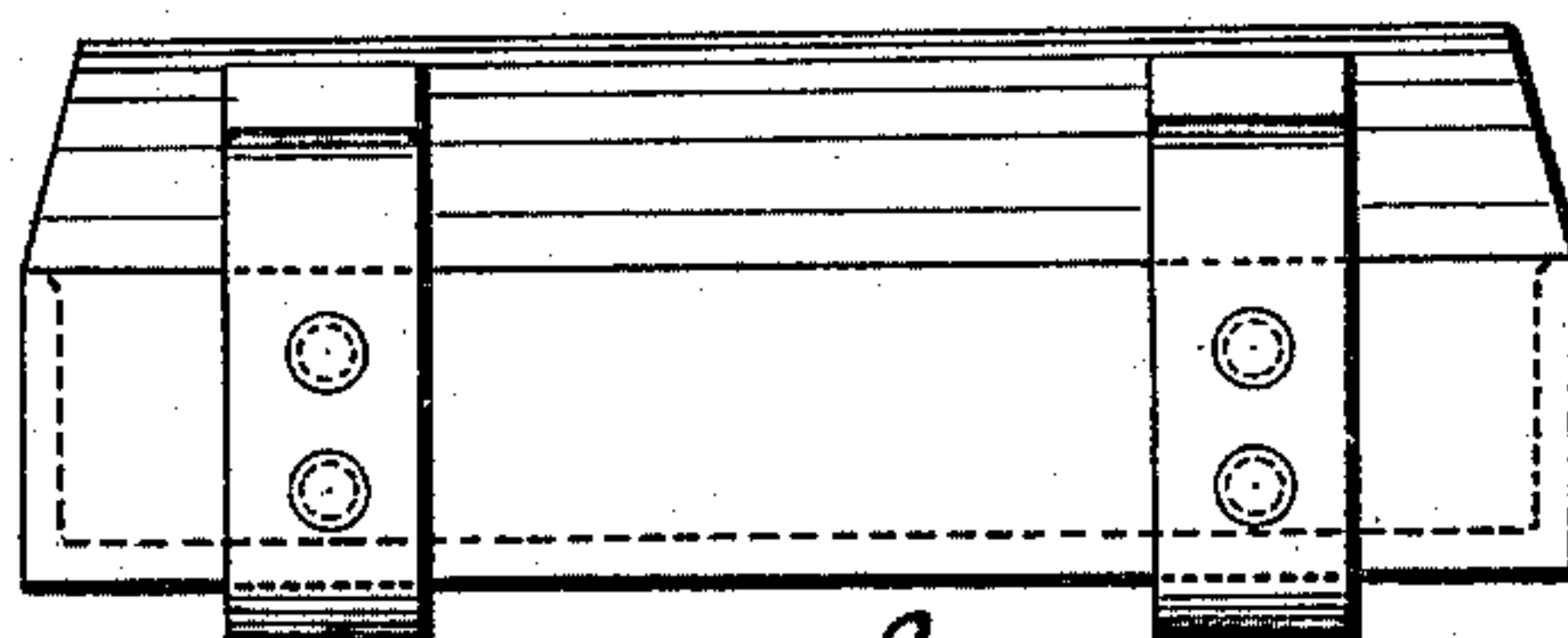


FIG. 28 -



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(No Model.)

13 Sheets—Sheet 12.

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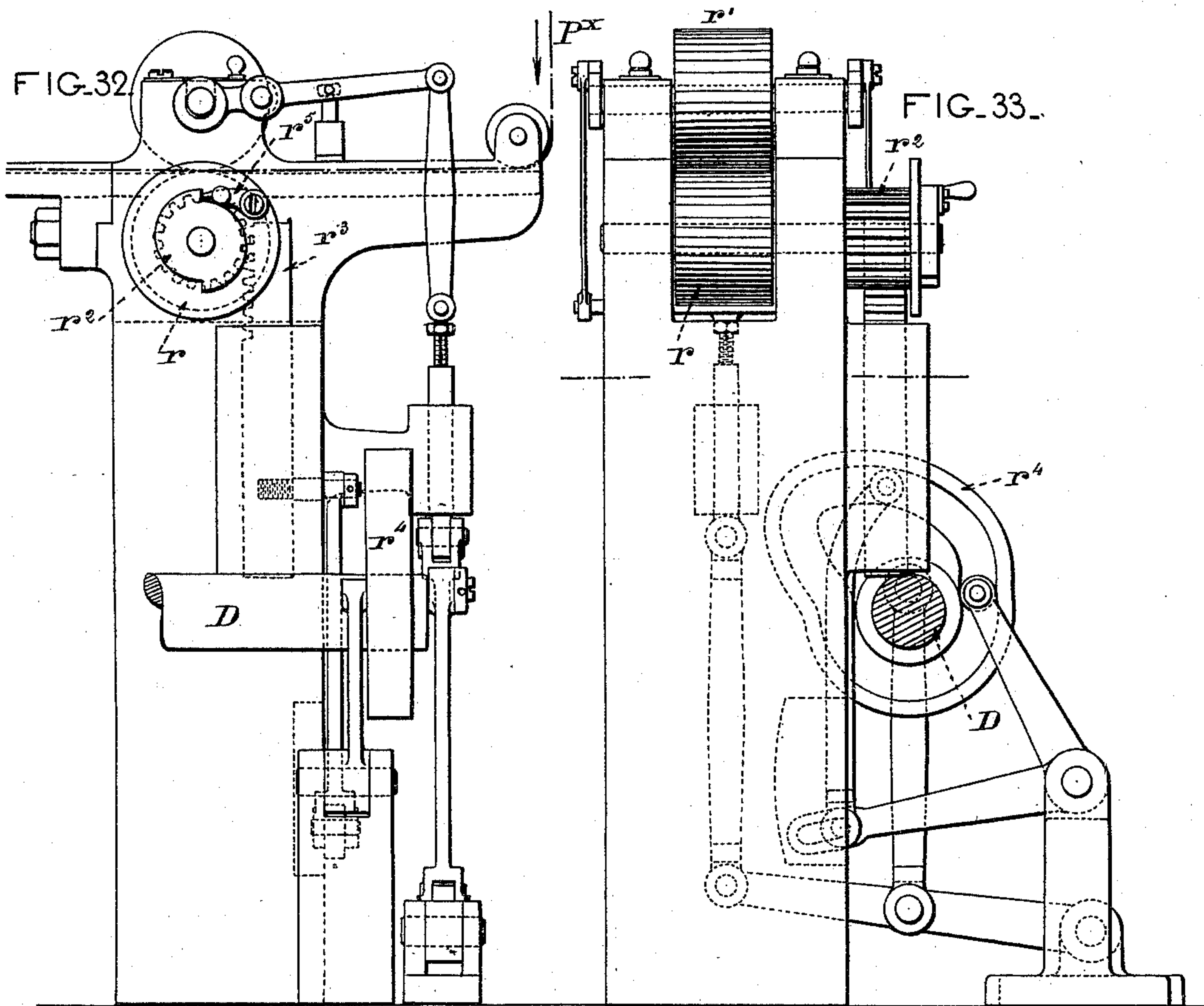
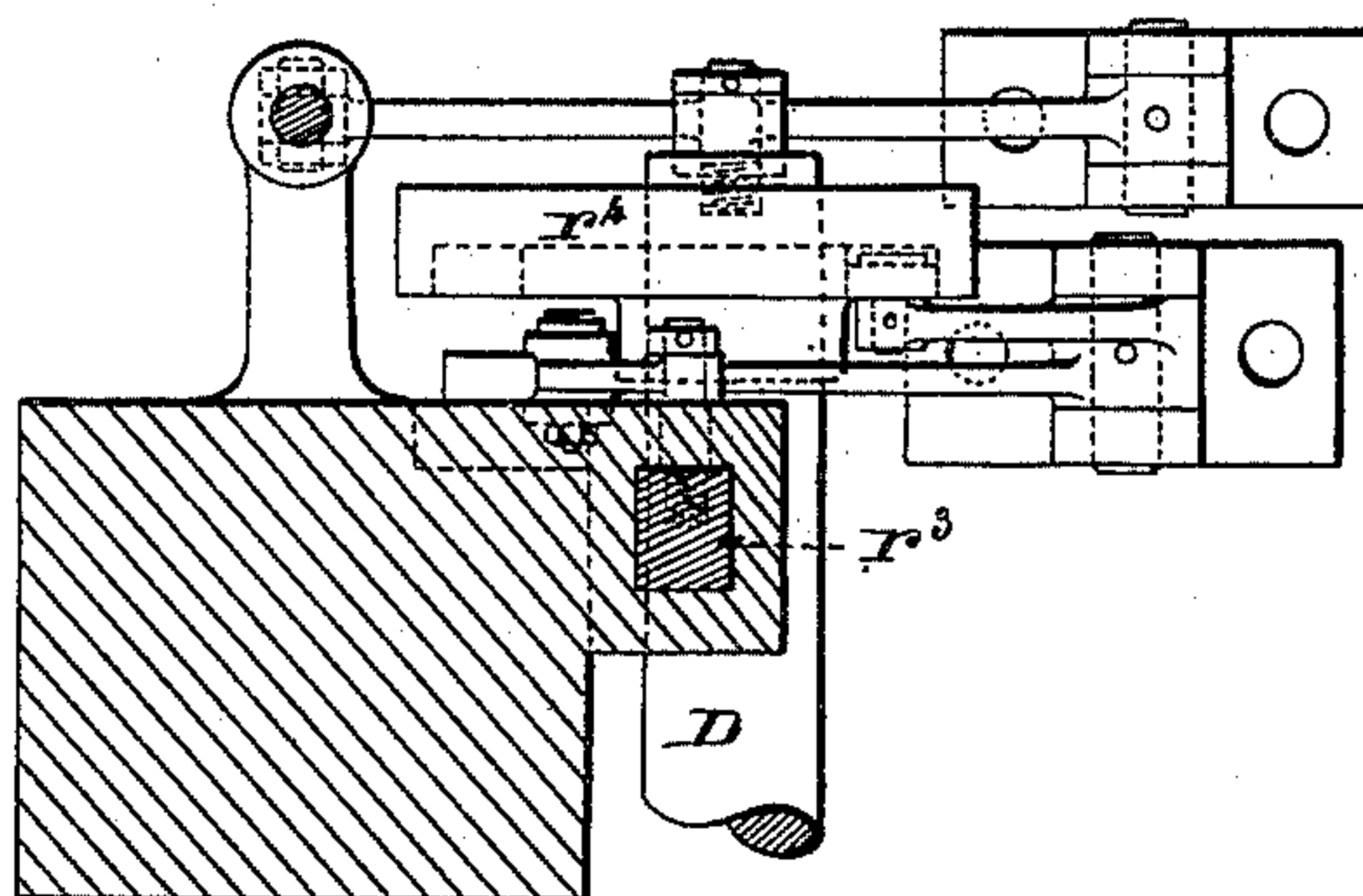


FIG-34\_



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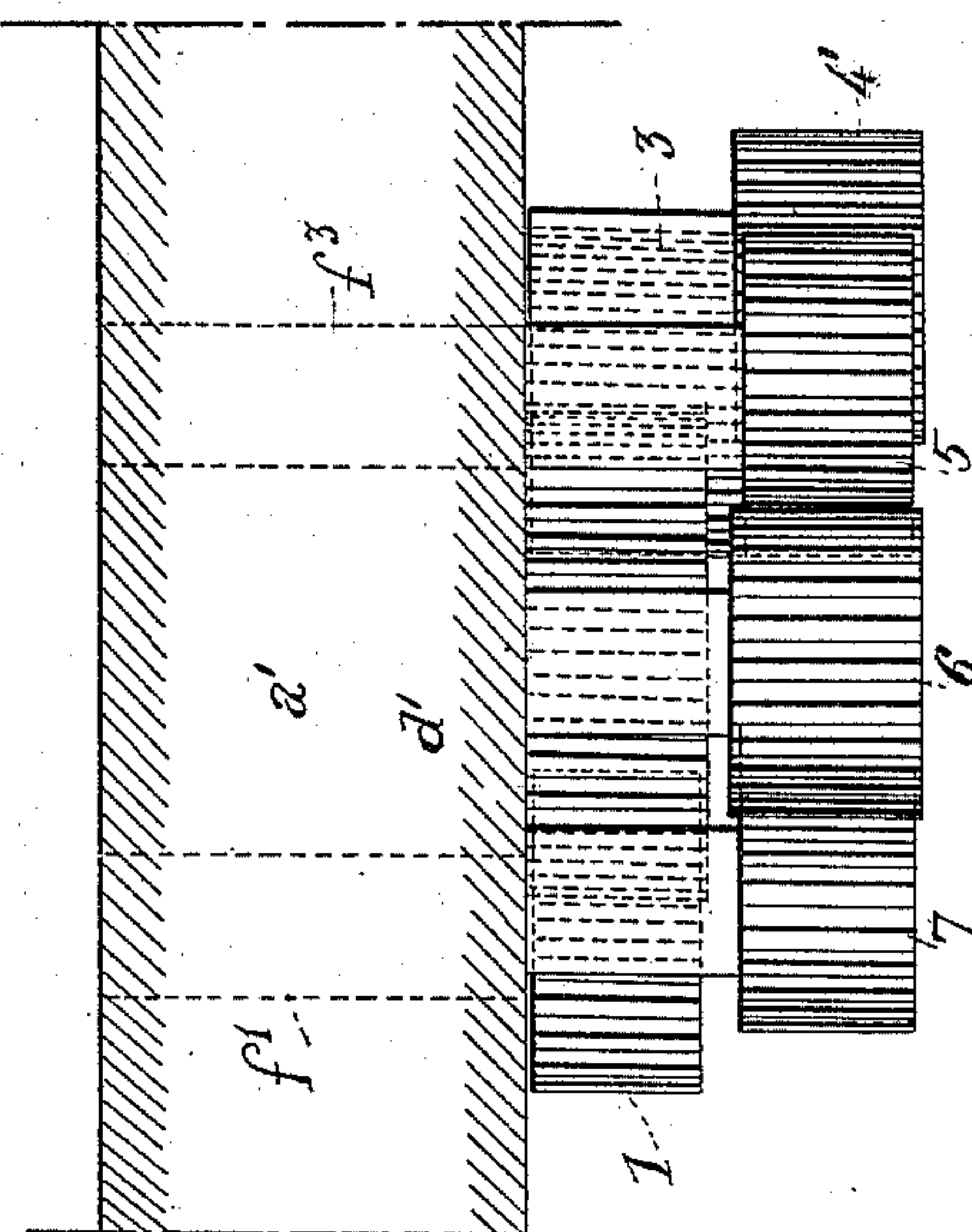
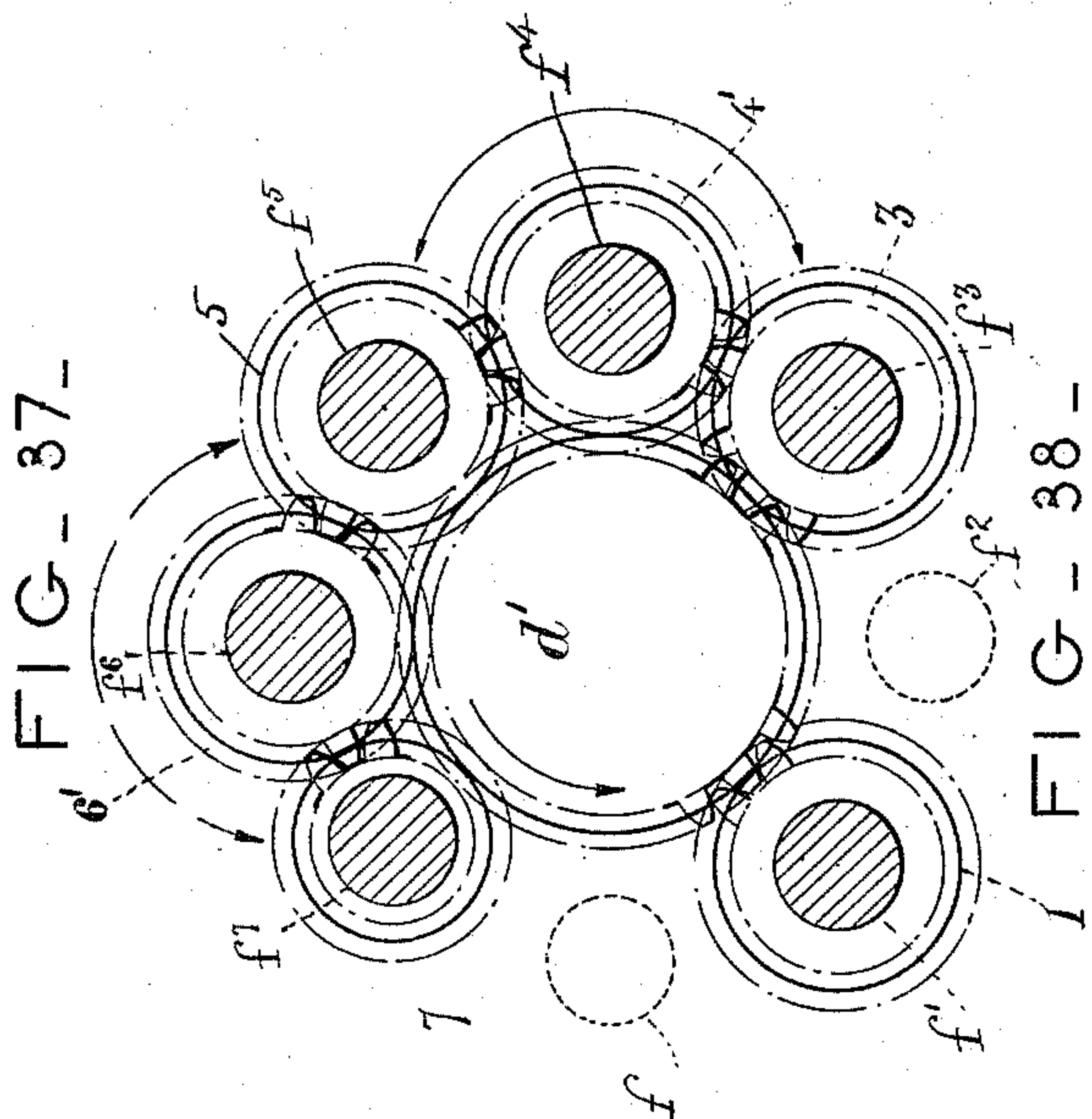
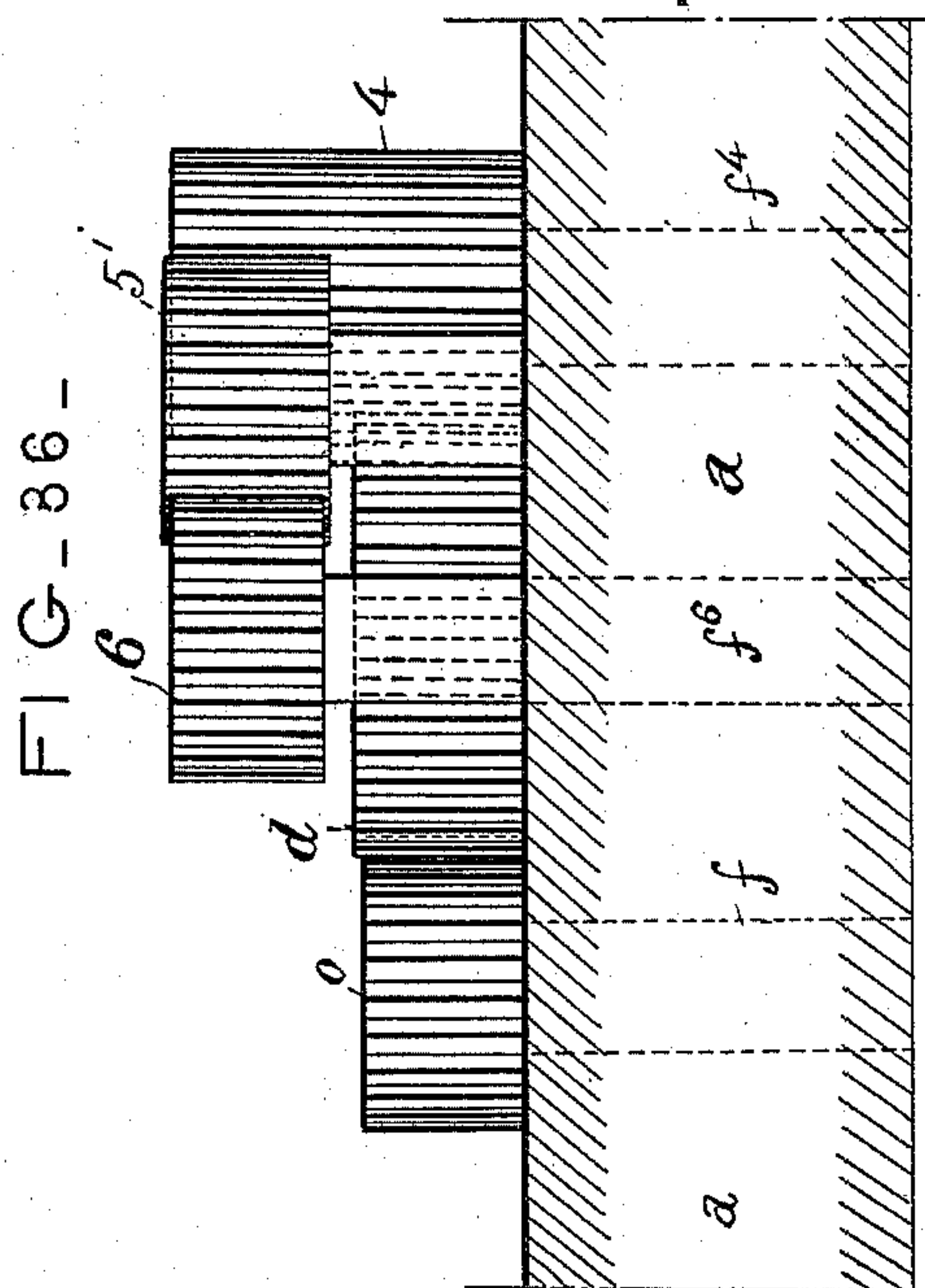
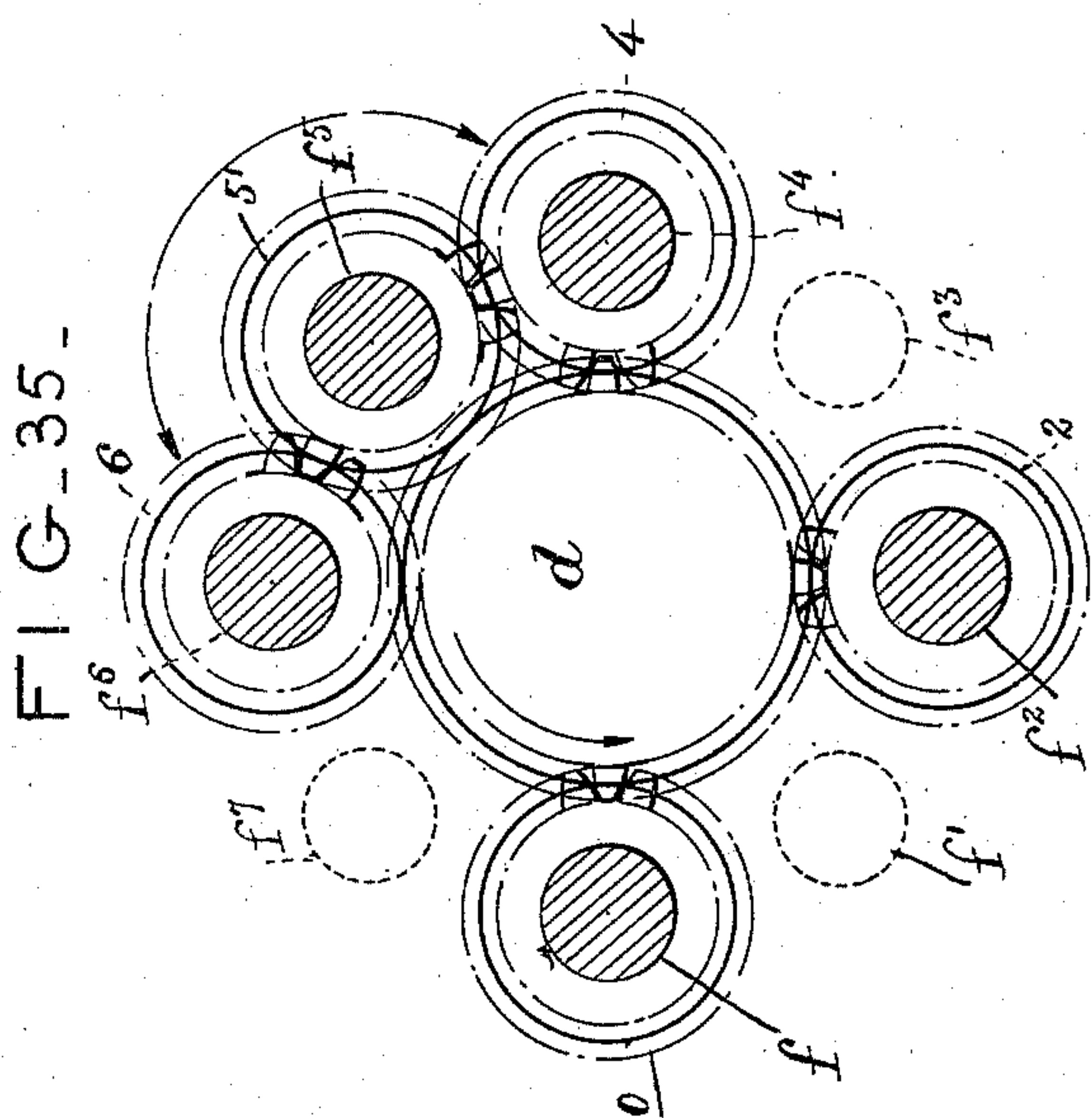
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Patented Mar. 21, 1893.



Witnesses:  
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Inventor  
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Attorneys:



# UNITED STATES PATENT OFFICE.

ANATOLE EDOUARD DECOUFLÉ, OF PARIS, FRANCE.

## CIGARETTE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 493,688, dated March 21, 1893.

Application filed April 3, 1891. Serial No. 387,480. (No model.)

*To all whom it may concern:*

Be it known that I, ANATOLE EDOUARD DECOUFLÉ, of No. 8 Rue Roger, in Paris, France, have invented Improvements in Cigarette-Machines, of which the following is a full, clear, and exact description.

The object of my invention is to produce a cigarette machine which will permit the manufacture of cigarettes from either greasy, wet or dry tobacco.

The invention consists in the improved cigarette machine and the combination and arrangement of its various parts and mechanism for operating the same, substantially as hereinafter described, and finally embodied in the claims.

In principle my invention consists in arranging upon the end flanges of a drum or rotating collar a casing containing a series of forming rollers, and in connection therewith a feeding and distributing device, so as to obtain by successive rotary movements of the collar, first, a roll of tobacco, then enveloping the roll with paper which has been previously cut and gummed, afterward discharging the finished cigarette, and lastly cleaning the forming rollers. The tobacco after being distributed by the operator on the receiving belt and compressed to any desired thickness, is continuously fed to the machine by the feeding belts. Between the last feeding belt, and the casing containing the forming rollers I have arranged automatic mechanical means whereby the tobacco is prepared in the best possible manner to receive the action of the forming rollers, and prepare it ready for the wrapper or envelope. The wrapping or enveloping of the tobacco is also performed automatically. Paper or equivalent material is drawn from a roll on the machine, cut off at the required length, gummed, wrapped around the roll of tobacco, and the gummed edge secured to the other edge of the wrapper or envelope. The edge of the paper cut from the roll can be gummed before wrapping if desired, or the gumming may be entirely dispensed with, in which case the ends of the cigarette may be twisted. The cigarette, when finished, is discharged into a receiver.

My machine is illustrated by the accompanying drawings, in which:

Figure 1 is a vertical cross section on line

1, 2 of Fig. 2. Fig. 1<sup>a</sup> is an enlarged view of the clipping and compressing mechanism, as shown in Fig. 1. Fig. 1<sup>b</sup> is a top plan of portions of Fig. 1<sup>a</sup>. Fig. 2 is a partial top plan of my machine. Fig. 3 is a vertical cross section on line 3—4 of Fig. 2. Fig. 4 is an end view of a portion of the machine showing the paper feeding and cutting mechanism. Fig. 5 is a front elevation of the clipping and compressing mechanism. Fig. 6 is a central vertical section of Fig. 5, showing the clipping and compressing mechanism open. Fig. 6' is an enlarged elevation, partly in section of the clipping and compressing mechanism when in its upper position, and open. Fig. 6<sup>2</sup> is a vertical section of the same in its lower position, and closed. Fig. 6<sup>3</sup> is a top plan view of the plate which supports the clipping and compressing mechanism. Fig. 7 is a central vertical section of Fig. 5, showing the clipping and compressing mechanism when closed together. Figs. 8 and 9 are front and side views of the tobacco clipping mechanism. Fig. 10 is a detail view of the counter plate of the tobacco clipping mechanism. Fig. 11 is a side view of a gear wheel on the main driving shaft provided with lugs or projections on its side at regular intervals. Fig. 12 is a central cross section of Fig. 11. Fig. 13 is a plan view of a friction wheel on shaft C. Fig. 14 is a central cross section of the same. Figs. 15 and 16 are front and side elevations of a pivoted lever operated by the projections on the gear wheel H, Fig. 11. Fig. 17 is an enlarged central longitudinal view of a number of the forming rollers, the mechanism for operating the group of forming rollers being shown in section in the left hand portion. Figs. 18 and 19 are end views showing the arrangement of the fluted forming rollers within the casing. Figs. 18' and 19' are enlarged detailed views of the end of the casing, with the pivoted portion open and closed, the forming rollers being shown in cross section. Fig. 20 is an enlarged front view of one of the devices for opening and closing the upper portion of one of the casings containing the forming rollers, and at the same time regulate the length of the tobacco roll. Fig. 21 is a cross section on line 5—6, Fig. 20. Figs. 22 and 23 are detailed views. Figs. 24 and 25 are end and



plan views of the paper gumming mechanism. Figs. 26 and 27 are end and plan views of the gummer detached. Figs. 28 and 29 are end and front views of the gum reservoir. Figs. 30 and 31 are plan and edge views of the paper cutter. Figs. 32 and 33 are front and side elevations of the paper feeding mechanism. Fig. 34 is a cross section of Fig. 33. Figs. 35 to 38 are enlarged detail views of the mechanism for turning the forming rollers.

Referring to the accompanying drawings A A' represent two metallic plates, secured in any desired manner to a table and forming a frame, and also furnishing bearings for a main driving shaft B, shaft C, and auxiliary shaft D. The driving shaft B is provided on one of its ends with fixed and loose pulleys B' B<sup>2</sup>, as shown in Fig. 3.

On the shaft C is secured a small collar C', Fig. 3, provided with end flanges *a*, *a'*, these flanges furnishing supports or bearings for a casing containing a series of groups of forming rollers. On the driving shaft B are also secured two gear wheels E E', of equal diameter, as shown in Fig. 3. These gear wheels mesh into equal sized gear wheels F F' loosely mounted on shaft C, and laterally secured to larger gear wheels G G' also loosely mounted on said shaft C. Upon the outside or outer periphery of the flanges *a* *a'* are secured, in any desired manner, bearings for hollow shafts *c*. These shafts can be of any required number, and arranged at regular intervals, and extend outside of the plane of the flanges *a* *a'* as shown in Fig. 17. Upon the hollow shafts *c* are loosely mounted pinions *b* *b'* adapted and arranged to mesh into the gear wheels G G' on shaft C. On these hollow shafts *c* are secured small pinions *d* *d'* adapted to mesh into pinions *o* *o'* secured on the ends of each of the spindles or rods carrying the forming rollers *f* *f'* &c., as shown in Fig. 17. On the main driving shaft B is also secured a gear-wheel H meshing into a gear wheel I loosely mounted on shaft C, as shown in Fig. 3. The sides of the wheel I are formed with a cone-shaped depression I', adapted to receive a cone J on the shaft C. This cone J is held in its normal position in the depression I' by a spring K resting in a groove in the collar J' of the cone J and supported at its rear by a collar L on shaft C. This cone J is also controlled by an oscillating lever M, the upper end of which is pivoted to said cone, as shown in dotted lines in Fig. 3, the lower end of said lever being pivoted to the frame of the machine at M'. The inner side of this lever is provided with an arm carrying a wheel adapted to be pressed by the projections O' on the side of the gear wheel H, as shown in Figs. 3 and 11. In the rotation of wheel H the projection O' striking against the wheel on the arm of the lever M forces it outward, carrying with it the cone J and breaking the connection between the cone and depression I' in the gear-wheel I. As the wheel on the lever M passes one of the

projections O' and slides onto the surface O of the wheel, the spring K resumes at once its normal position and forces the cone J into contact with I. This construction and arrangement gives an equal connection and disconnection between the cone J and wheel I, and thereby an intermittent motion is imparted to the shaft C.

I have shown in the drawings the gear-wheel H as double the diameter of the gear wheel I, and the length of the projections O' on the side of the wheel H is so arranged that the wheel I shall be put in connection and moved during one sixth of a revolution of the wheel H with an intermission between each one sixth movement of the wheel H, thereby imparting an intermittent movement to the collar C'. This intermittent motion brings the casing with the forming rollers successively in position in front of the tobacco feeding mechanism, while at the same time the forming rollers receive a continuous rotary motion through the gear wheels as above described. The gear wheel H meshes into a pinion D' on the auxiliary cam-shaft D, as shown in Fig. 2.

The formation of the tobacco roll and wrapping it with paper and discharging the finished cigarette from the machine, as shown in Fig. 1, is as follows: The sheet of tobacco on the belt having been cut off by the cutter *h*<sup>9</sup> and slightly compressed, is presented to the forming rollers as at P. The operation of the machine being continued, the successive rotation of the forming rollers will produce at R a completely formed tobacco roll ready to be wrapped or enveloped in paper by the process hereinafter described. As the machine continues to revolve, the finished cigarette will be ejected when the casing containing the forming rollers reaches the position shown at T Fig. 1. In the position shown at U, the forming rollers being empty, the brushing or cleaning of the rollers can be accomplished before reaching P to receive a fresh stock of tobacco.

The feeding and distribution of the tobacco to the forming mechanism are accomplished in the following manner: To the front of the main frame of the machine is secured in any desired manner an auxiliary frame supporting three endless belts N, V, and X, and an adjustable pressure-plate Y, as shown in Fig. 1. The rear end of the belt N passes around a roll N' which receives its motion in any desired manner from the main driving shaft B. The belt V passes over rolls V', V<sup>2</sup> and tension roll V<sup>3</sup>, and has the same movement as the belt N, the roll V' also receiving its motion from the main driving-shaft. The belt X is located directly above the belt V and the lower portion has the same movement as the belt V. This belt X is guided by the rolls X', X<sup>2</sup>, and stretching roll X<sup>3</sup> adjusted by thumb-screw X<sup>4</sup>, one of the rolls X<sup>2</sup> receiving its motion in a similar manner to roll N'. Between the rolls N' and V<sup>2</sup> is arranged a transfer plate N<sup>2</sup>. The space between the belts X, V, gradu-



ally decreases from the pressure plate Y to the last guiding rolls X<sup>2</sup>, V', as shown in Fig. 1, beyond which, the tobacco, being equally distributed between the belts is brought to a feed-table g which presents it to the action of the clipping and compressing mechanism. This clipping and compressing mechanism is formed of two arms or prongs h, h', pivoted together at h<sup>2</sup>, and is so arranged above the feed-table g that it can descend and by means of the blade or cutter h<sup>9</sup> cut from the sheet of tobacco on the feed-table a sufficient quantity of tobacco necessary to form a cigarette.

The arms h h' are then closed together and the tobacco compressed by the compressor h<sup>5</sup>. The device is then swung forward on the pivot h<sup>2</sup> in order to properly place the compressed portion of the tobacco within the casing containing the group of forming rollers.

The various movements of the clipping and compressing mechanism are obtained in the following manner. The ends of the pin or shaft h<sup>2</sup> rotate in bearings in the forward ends of arms or levers h<sup>0</sup>, h<sup>0</sup>, the other end of said levers being pivoted to supports h<sup>3</sup>, h<sup>3</sup>, and are held in a normal upward position by springs h<sup>4</sup>, h<sup>4</sup>, one of which is shown in Fig. 1. The arm h of the clipping and compressing mechanism is provided with the compressor h<sup>5</sup>, which is adapted to slide upward thereon. The head of the clipping and compressing mechanism h h' is also subjected to the descending action of a cam-lever i, Fig. 1, pivoted on shaft i<sup>2</sup>. The outer end of this cam-lever is pivoted to an arm i', the inner end of which is pivoted to another arm shown in dotted lines in Fig. 1 and pivoted on shaft i<sup>2</sup>. The outer end of the arm i' is pivoted to the upper end of the arm j of the bell-crank lever j, j' pivoted to the frame at j<sup>3</sup>, and provided at its inner end with a loose wheel adapted to bear upon the surface of a cam j<sup>2</sup> secured on shaft D. In the motion of the cam lever i, the portion i<sup>3</sup> of its surface will bear upon the top of the clipping and compressing device and force it downward, compressing the springs h<sup>4</sup>. In its downward movement the cutter of blade h<sup>9</sup>, on the arm h cuts the tobacco as evenly as possible, penetrating a little the wooden block g', which is an extension of the feed-table g, or one edge of the table g may be turned up to form with the blade h<sup>9</sup> a pair of shears, if desired. The rounded surface i<sup>5</sup> of the cam-lever i then permits the cutter h<sup>9</sup> to be withdrawn from the block g'. The push rod i<sup>4</sup> connected to cam-lever i now presses against h and forms a contact with h', compressing the spring h<sup>6</sup> which normally holds the two arms apart. The small wheel i<sup>10</sup>, Fig. 1, on the end of the cam lever i will now bear upon the inclined plane h<sup>7</sup> of the block of the compressor h<sup>5</sup>, controlled by a spring h<sup>3</sup> and forcing it down and compressing the cut off portion of the tobacco between the arms and within the lower concave of the compressor portion, and the feeding table. The lever i

still continuing its movement, the clipping and compressing mechanism is moved forward on its pivot h<sup>2</sup>, then opens, and the compressed tobacco falls into the casing containing the group of forming rollers in a partially cylindrical form. The cam-lever i still rotating, the various parts of the clipping and compressing mechanism are moved in a reverse direction to that which I have above described in order to return the various parts into the position shown in Fig. 1.

The tension of the various springs in the clipping and compressing mechanism can be regulated by any well-known device.

To complete the formation of the tobacco into a roll, ready for wrapping, the forming rollers comprise two series or groups of fluted rollers, the lower group consisting of rollers f, f', f<sup>2</sup>, f<sup>3</sup> and f<sup>4</sup>, being arranged in the fixed lower portion of a casing, and the upper group, consisting of rollers f<sup>5</sup>, f<sup>6</sup>, f<sup>7</sup> being arranged in the upper pivoted portion of the casing. This upper portion of the casing, carrying the upper group of fluted rollers, is pivoted on a pin or spindle of the roller f<sup>4</sup> of the group in the lower portion of the casing, and the group of rollers in the pivoted portion of the casing are kept out of contact with the group of rollers in the fixed lower portion of the casing by means of the spring rods shown in Fig. 1, and connected with the casing. These rods are arranged on the flanges a, a' of the collar C'. After the roll of tobacco has been dropped from the feed table into the casing containing the group of forming rollers, the pivoted portion of the casing, carrying one group of fluted rollers, is closed over the other portion. This is accomplished by the following means. To the pivoted portions of the casings are secured arms, in the outer ends of which are pivoted wheels m<sup>2</sup> adapted to move in and out of grooves or recesses in the inner edge of a projection on the surface of a plate m as shown in Figs. 1 and 20. This pivoted portion of the casing is kept closed by lever m<sup>3</sup> pivoted to the plate, and held in position by a spring m<sup>4</sup>, as shown in Fig. 20. This spring is a little more rigid than the spring on the spring rod f<sup>8</sup>. However, the closing of the pivoted portion of the casing is not entirely done in order to facilitate the beginning of the rotation of the fluted rollers, as at the moment of being filled these fluted rollers are all at rest. To effect this, I use the following mechanism: The pinions b, b', Fig. 17, which turn continuously through the action of the gear wheels G and G' are loosely mounted upon the hollow shafts c, and bear small couplings e, e', keyed to the shafts c, and adapted to move longitudinally inward and engage with the fixed inclined planes e<sup>2</sup>, e<sup>3</sup>, as shown in said figure. These inclined planes are secured to the outer ends of the rods secured to the plate m, as shown in Fig. 20, and in such position as to push the parts e' of said couplings e, e' out of contact with the notches b<sup>2</sup>, b<sup>3</sup> of the pinions b, b'. In this



condition the hollow shafts *c*, do not turn, and the motion of the fluted rollers stops. The casing containing the group of forming rollers is then in the position shown at P, Fig. 1, ready to receive a fresh supply of tobacco, as above described. When the couplings *e*, *e'*, have left the inclined planes *e*<sup>2</sup>, *e*<sup>3</sup>, they will be pushed outwardly toward the pinions *b*, *b'* by means of springs *e*<sup>5</sup>, *e*<sup>5</sup>, and the putting into motion will take place. The fluted rollers *f*, *f'*, and *f*<sup>7</sup> will turn and in connection with the other fluted rollers in the motion of collar C' will form a perfect roll of tobacco when the position, shown at R, Fig. 1, is reached, when the tobacco roll will be wrapped or enveloped as will be hereinafter described. The pinions *d*, *d'*, Fig. 17, turn when the couplings *e*, *e'* are out of contact with the pinions *b*, *b'*, which latter pinions turn continuously. These pinions *d*, *d'*, cause the fluted rollers *f*, *f'*, and *f*<sup>7</sup> to turn as will be hereinafter described. In order to form the tobacco as it comes from the feed-table into a perfect roll ready for wrapping or covering, all the fluted rollers *f*, *f'* and *f*<sup>7</sup> must turn in the same direction and the manner of their movement be such as to permit the opening and closing of the top of the casing without interrupting the rotary movement of the machine. This operation is shown more clearly in Figs. 35 to 38, where pinion *d*, Figs. 35 and 36 on hollow shaft *c* meshes into pinion 4, on the end of shaft or pinion carrying fluted roller *f*<sup>4</sup> on which the upper part of the casing is pivoted. This pinion also meshes into pinions 2, *o*, Fig. 35, on spindles of rollers *f*<sup>2</sup>, *f*. By means of a pinion 5', loosely mounted on the end of the spindle carrying fluted roller *f*<sup>5</sup>, motion is given by pinion 4 through pinion 5' to pinion 6 on the end of spindle carrying fluted roller *f*. Figs. 37 and 38 show the other end of the forming rollers, where pinion *d'* meshes into pinions 1 and 3 on the ends of spindles carrying fluted rollers *f'*, *f*<sup>3</sup>. This pinion 3 meshes into pinion 4 loosely mounted on end of spindle carrying fluted roller *f*<sup>4</sup> which in turn meshes into pinion 5 on end of spindle carrying fluted roller *f*<sup>5</sup>. This pinion 5 also meshes into pinion 6' loosely mounted on end of spindle carrying fluted roller *f*<sup>6</sup>, which in turn meshes into pinion 7 on end of spindle carrying fluted roller *f*<sup>7</sup>. Within the hollow portions of the shafts *c* as shown in Fig. 17, are arranged buffers *p*, *p*, connected to buffer-rods *p'*, *p'* and adapted to reciprocate within said hollow shafts *c*, for the purpose of limiting and controlling the length of the roll of tobacco. These buffers *p*, *p*, are at their greatest distance from each other at the moment when the tobacco leaves the clipping and compressing device. The desired distance between these buffers is regulated by guides or cams *p*<sup>2</sup>, *p*<sup>2</sup>, Fig. 17, secured to the plates *m*, as shown in Figs. 20 and 21. When the casing carrying the fluted rollers has reached the position shown at R Fig. 1, the roll of tobacco is ready to receive the paper

with which it is to be wrapped or enveloped. To accomplish this, the small rolls *m*<sup>2</sup> shown in Figs. 1, 18, 19 and 20, come in contact with grooves in the edge of the projection on plate *m* as shown in Fig. 1, and allow that portion of the casing which is pivoted to the spindle of fluted roller *f*<sup>4</sup> to be partially opened. The roll of paper is mounted on the rear of the machine, in any desired manner, and fed by any ordinary device to a table *q* where it is engaged by a reciprocating pusher *q'*, (Figs. 1, 24 and 25.) The feeding of the paper is effected by two rolls *r*, *r'* (Figs. 4, 32 and 33) between which it passes. The lower roll *r* communicates its motion to the upper roll *r'*. This roll *r* is secured to a shaft upon the outer end of which is arranged a ratchet-wheel *r*<sup>2</sup>, Fig. 32, adapted to turn loosely on the shaft in a backward movement, and engage with the shaft in a forward movement and cause the roll *r* to move forward carrying the paper. This ratchet wheel *r*<sup>2</sup> is operated by a vertically reciprocating rack *r*<sup>3</sup>, which is moved by means of rods connected with a grooved cam *r*<sup>4</sup> on shaft D, as shown in Fig. 33. This rack imparts alternate motions to the ratchet-wheel *r*<sup>2</sup>, but by means of a pawl *r*<sup>5</sup>, only a continuous intermittent motion in the same direction is imparted to the roll *r*. Vertical movement of the roll *r'* to allow the admission of paper is obtained by levers and rods connected with a cam on shaft D, as clearly shown in Figs. 32 and 33. The length of the piece of paper forming the wrapper or envelope having been previously determined, the paper is then cut by the knife *s* pivoted to rods connected with a cam *s'* on shaft D, as shown in Fig. 1. The cut piece of paper is then pushed forward and into the casing, the upper pivoted portion of the frame being then closed by the part *q*<sup>2</sup> striking upon the levers *q*<sup>3</sup> pivoted on plate *m*, which are thus forced against the small wheel *m*<sup>2</sup> on the pivoted portion of the casing, as shown in Fig. 1. As the rear edge of the paper leaves the table *q*, the edge of the paper is gummed by a gummer *t*, pivoted to the pusher *q'*, and the regularity of the gumming is effected by a lever *q*<sup>4</sup> pivoted to said pusher *q'* and moving therewith and adapted to come down on the paper at the same time that the gummer and paper come in contact with each other. When the paper has passed into the casing between the tobacco roll and the fluted rollers *f*, *f'*, the flanged collar C' will again commence to turn and the wrapping of the tobacco roll will be effected by the simultaneous combined movements of the casing and the fluted rollers therein. In order to prevent the fluted roller *f*<sup>7</sup> on the pivoted portion of the casing from coming in contact with the gummed edge of the paper, a protecting piece *u*, Fig. 1, may be employed. When the casing has passed the position shown at S Fig. 1, the pivoted portion of the casing will begin to open, and when the casing has reached the position marked T in said figure, the pivoted portion of the casing will



be open, and the finished cigarette will drop into any suitable receptacle placed underneath to receive it. After the finished cigarette has been ejected, the continuous movement of the flanged collar C' will throw back the pivoted portion of the casing until, when it has reached the position marked U, Fig. 1, the protecting piece *u* and the fluted rollers will be properly presented to the action of a wiping roll or brush *v* on the upper end of a support or standard *v'*. The flanged collar C', having received its regular intermittent motions through lever M operated by projections O' on the gear wheel H, is stopped at the right moment by a small roll *x* dropping into grooves or recesses in the face of the cone J. This roll *x* is mounted on a spring support *x'* so as to be without effect when the cone J is in contact with J'.

Having thus described my invention, what I claim is—

1. In a cigarette machine the combination with a rotating collar C', provided with end flanges *a, a'*, of two groups of forming rollers adapted to revolve within a casing arranged on the outer periphery of said flanges, a tobacco feeding mechanism, a clipping and compressing mechanism and a wrapping mechanism, all said parts being arranged and adapted to operate and be operated substantially as described, and for the purposes set forth.

2. In a cigarette machine the combination with an intermittently rotating collar C' provided with end flanges *a, a'* mounted to revolve about a single horizontal shaft, of a casing provided with a pivoted top and arranged on the outer periphery of said flanges, a group of forming rollers arranged in each of the parts of said casing, and mechanism, substantially as described, connected with said flanges, and adapted to open and close the pivoted portion of said casing, all substantially as described, and for the purposes set forth.

3. In a cigarette machine, the combination with an intermittently rotating collar C', provided with end flanges *a, a'*, of a casing provided with a pivoted top, and arranged on the outer periphery of said flanges, a group of forming rollers arranged in both parts of said casing, and mechanism, substantially as described, for rotating said forming rollers independent of said collar and casing, all substantially as described, and for the purposes set forth.

4. In a cigarette machine the combination with an intermittently rotating collar C' provided with end flanges *a, a'*, of hollow shaft *c* adapted to rotate in bearings in said flanges, a casing provided with a pivoted top and arranged on the outer periphery of said flanges, a group of forming rollers arranged in each of the parts of said casing, and means for regulating the length of the tobacco roll, said means consisting of rods adapted to reciprocate longitudinally in said hollow shaft *c* buffers *p* secured to the inner ends of said rods, and cams *p*<sup>2</sup> adapted to operate said rods and secured to and operated by plate *m*, substantially as described and for the purposes set forth.

5. In a cigarette machine the combination with an intermittently rotating collar C' provided with end flanges *a, a'*, and mechanism, substantially as described, for forming a roll of tobacco and arranged on the outer periphery of said flanges, of a tobacco feeding mechanism, a clipping and compressing mechanism, consisting of a clipping arm *h*, cutter *h*<sup>9</sup> on the lower end of said arm *h*, compressing arm *h*<sup>5</sup> adapted to reciprocate vertically on said arm *h*, and an arm *h'* pivoted to upper end of arm *h* and adapted to be closed against arm *h*<sup>5</sup>, and means for operating both said feeding and clipping and compressing mechanisms, all substantially as described, and for the purposes set forth.

6. In a cigarette machine the combination of an intermittently rotating collar C' provided with end flanges *a, a'* and adapted to revolve about a single horizontal shaft C, a series of groups of tobacco rolling and wrapper applying devices mounted on the end flanges of said collar C' and revolving therewith in a circular path about the axis of the shaft C, means for supplying tobacco to the rolling devices, devices for feeding wrappers thereto, and mechanism for revolving said collar, all said parts being adapted to operate in the manner and for the purpose substantially as described.

7. In a cigarette machine, the combination of an intermittently rotating collar C' mounted on shaft C, and provided with end flanges *a, a'* a hinged sectional casing arranged on said end flanges, circularly arranged tobacco-roll-forming and wrapper applying rollers mounted in each section of said casing, mechanism, substantially as described, for revolving said collar connected with the driving mechanism of the machine, and means independent of the collar rotating mechanism for rotating the forming rollers and opening and closing the casing to receive and form the tobacco roll, all substantially as described.

8. In a cigarette machine, a wrapper gumming mechanism combining therein a pusher *q'*, means for operating said pusher, a gummer *t* pivoted to said pusher, a regulating lever *q*<sup>4</sup> also pivoted to said pusher, and a gum reservoir, all said parts being adapted to operate and be operated substantially as shown and described and for the purposes set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ANATOLE EDOUARD DECOUFLÉ.

Witnesses:

PAUL MOREL,  
GEORGES LAURENT.