

No. 657,665.

Patented Sept. 11, 1900.

E. VON MARSÓVSZKY.

CYLINDER LOCK.

(Application filed Dec. 3, 1897.)

(No Model.)

8 Sheets—Sheet 1.

FIG. 1

FIG. 3

FIG. 7

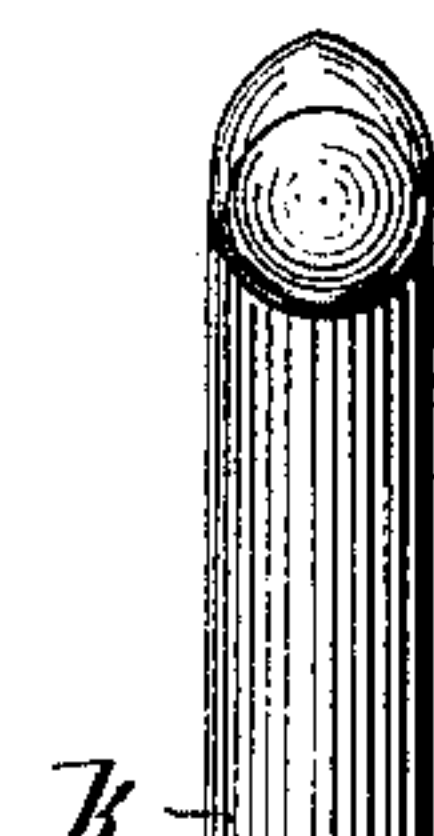
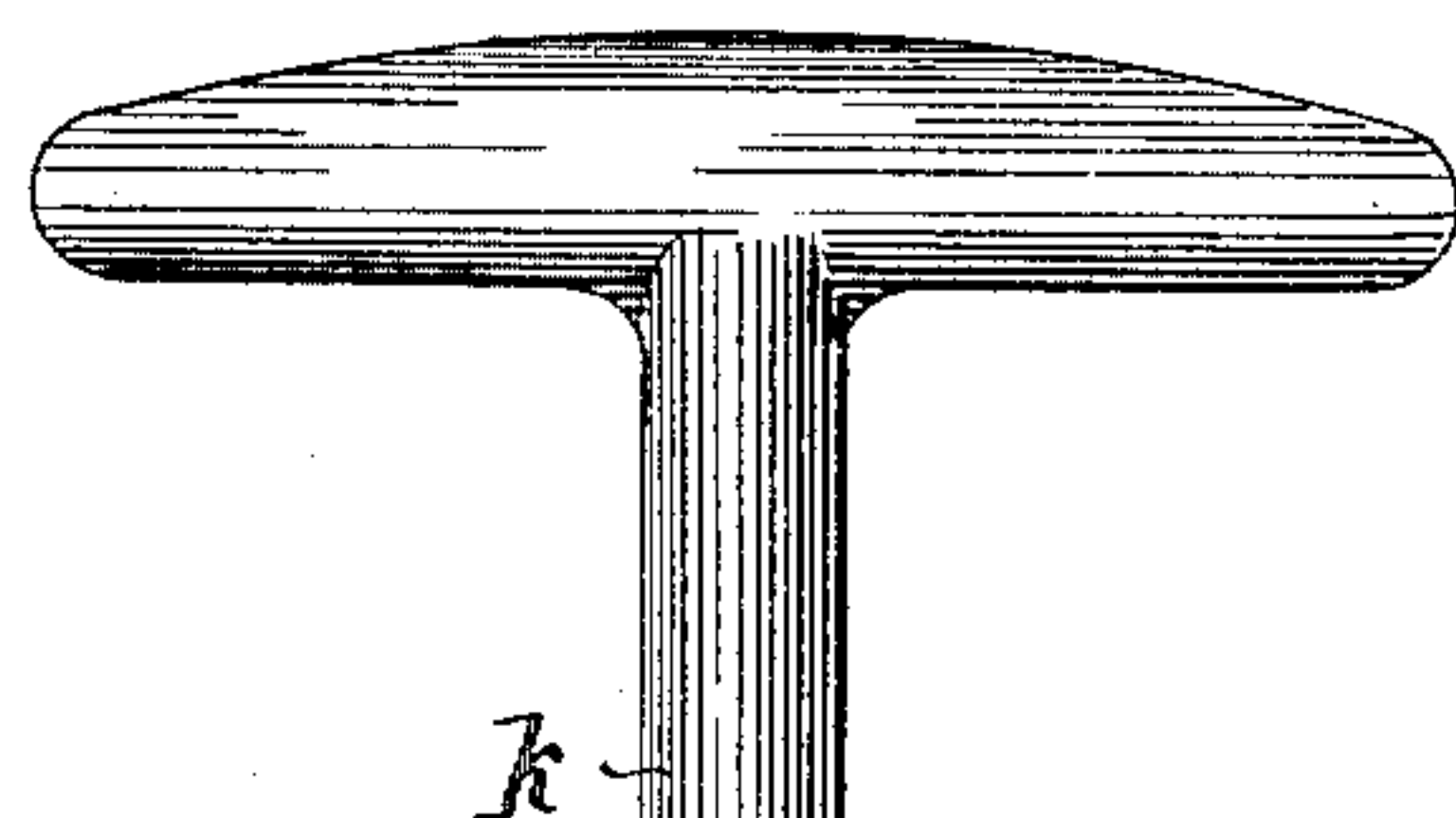


FIG. 2.

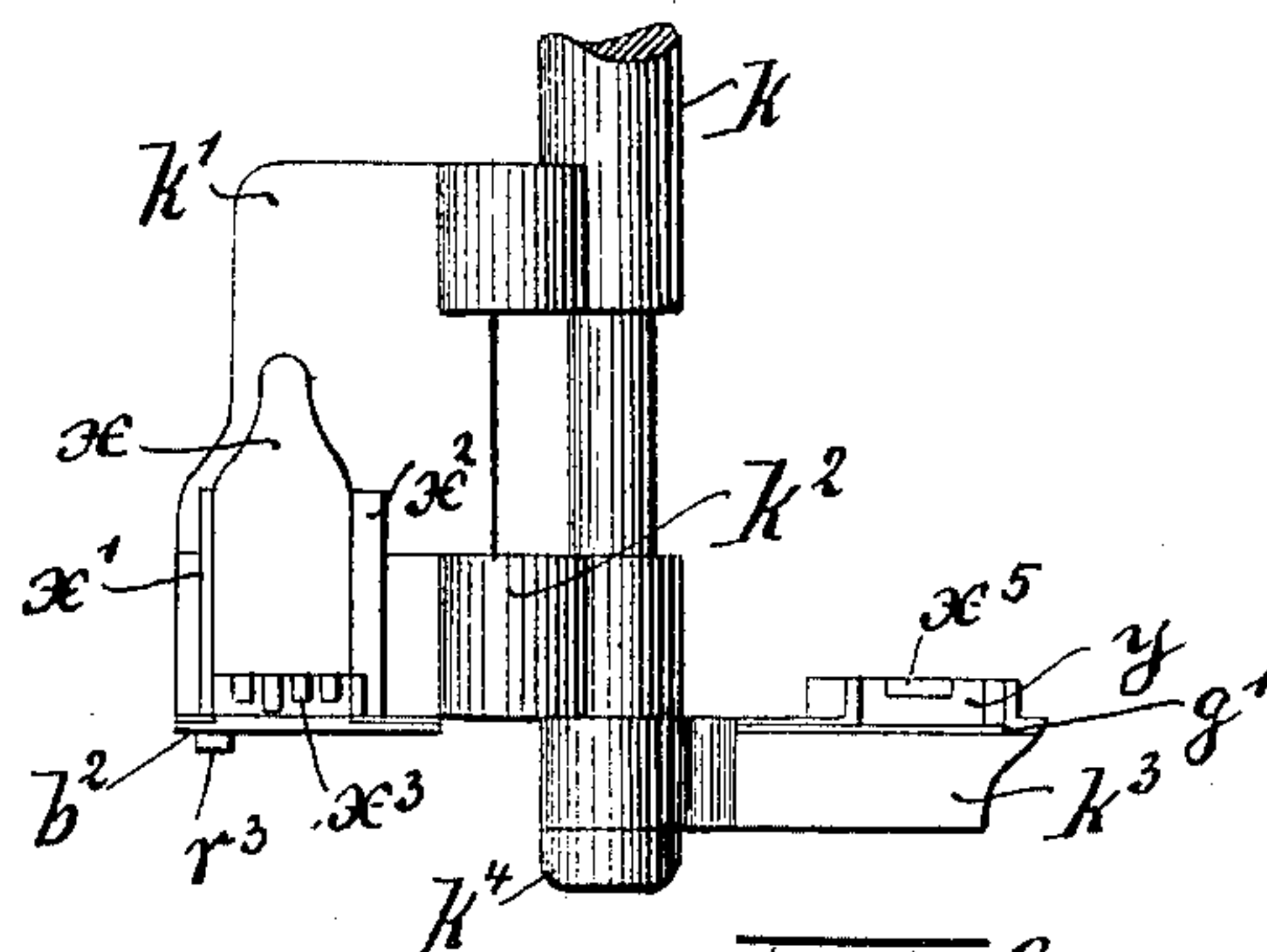
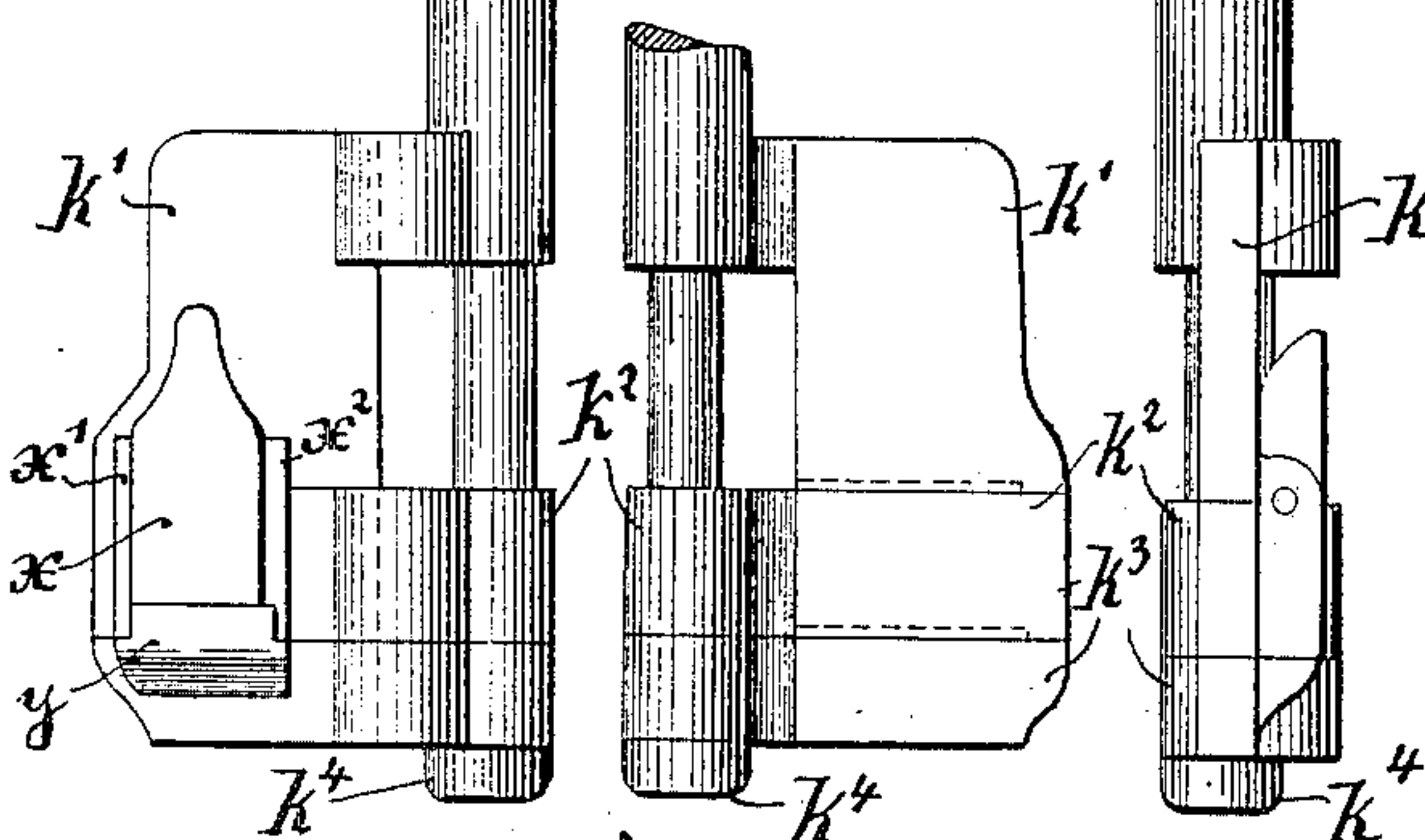


FIG. 8.

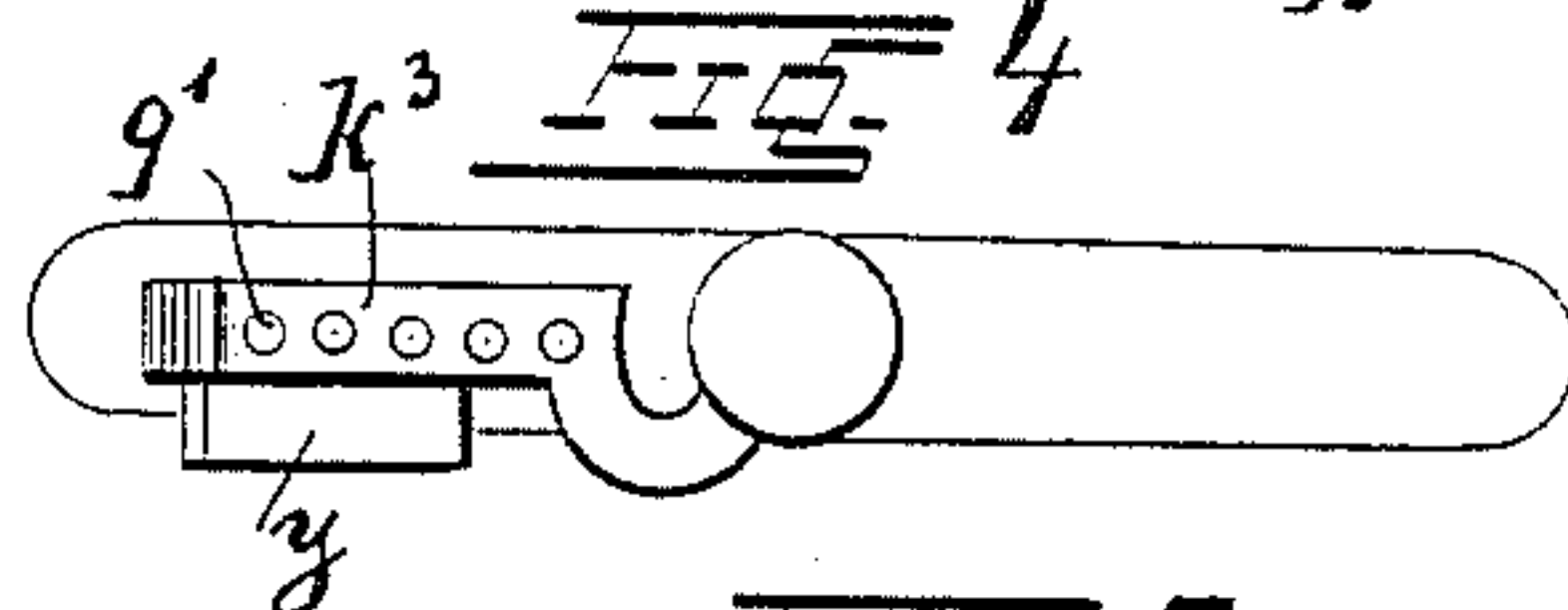
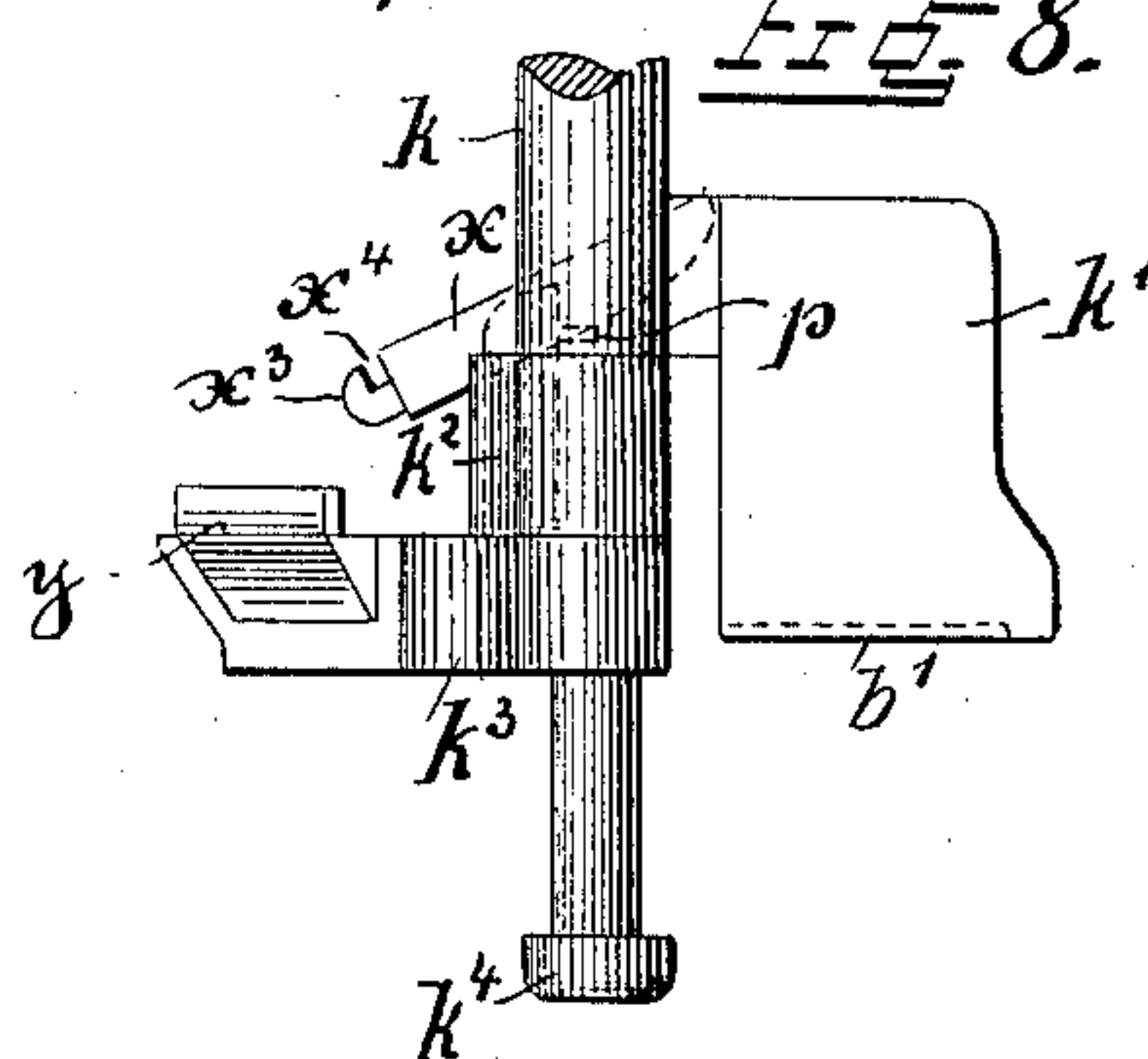


FIG. 6.

FIG. 5.

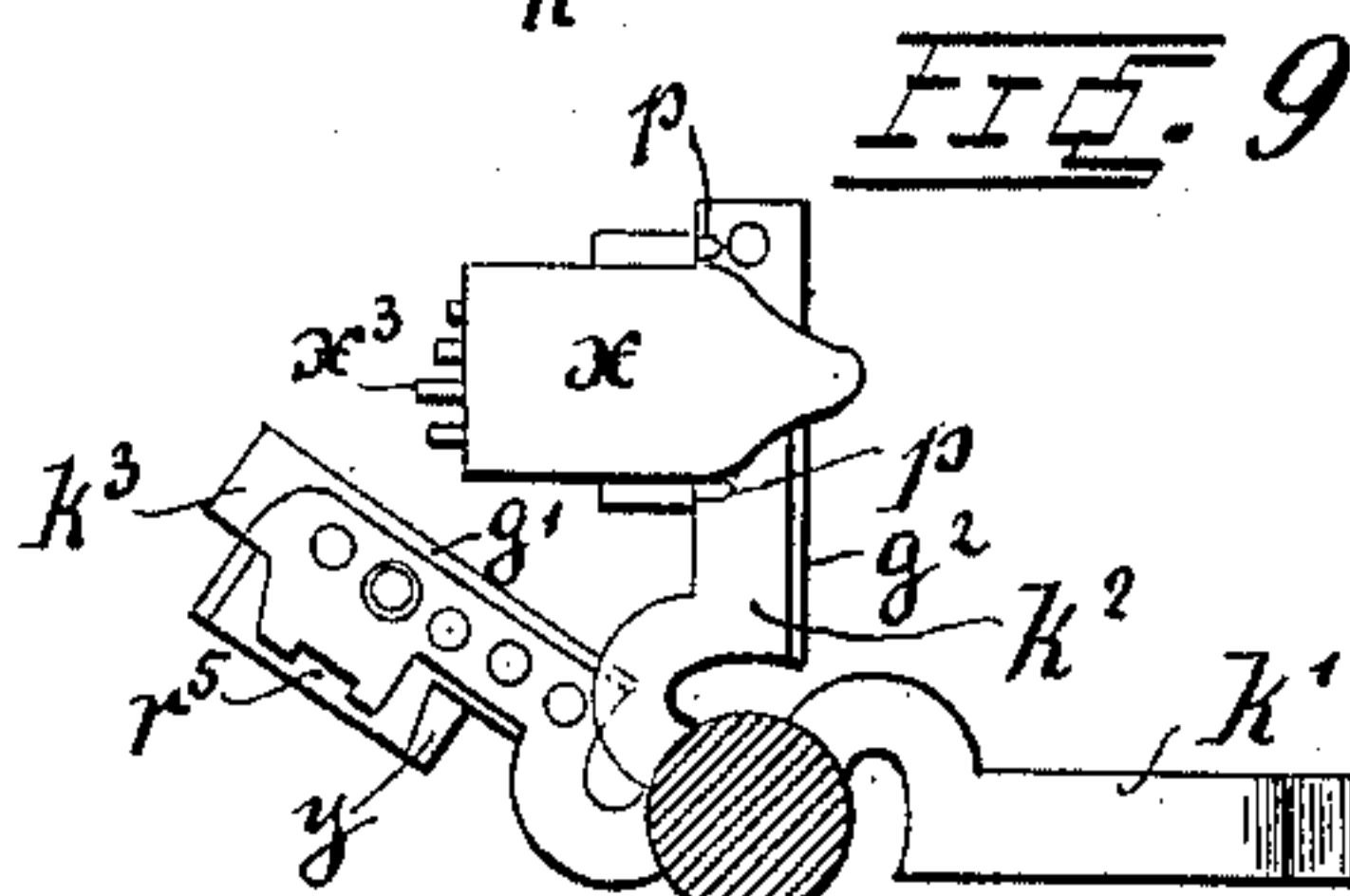
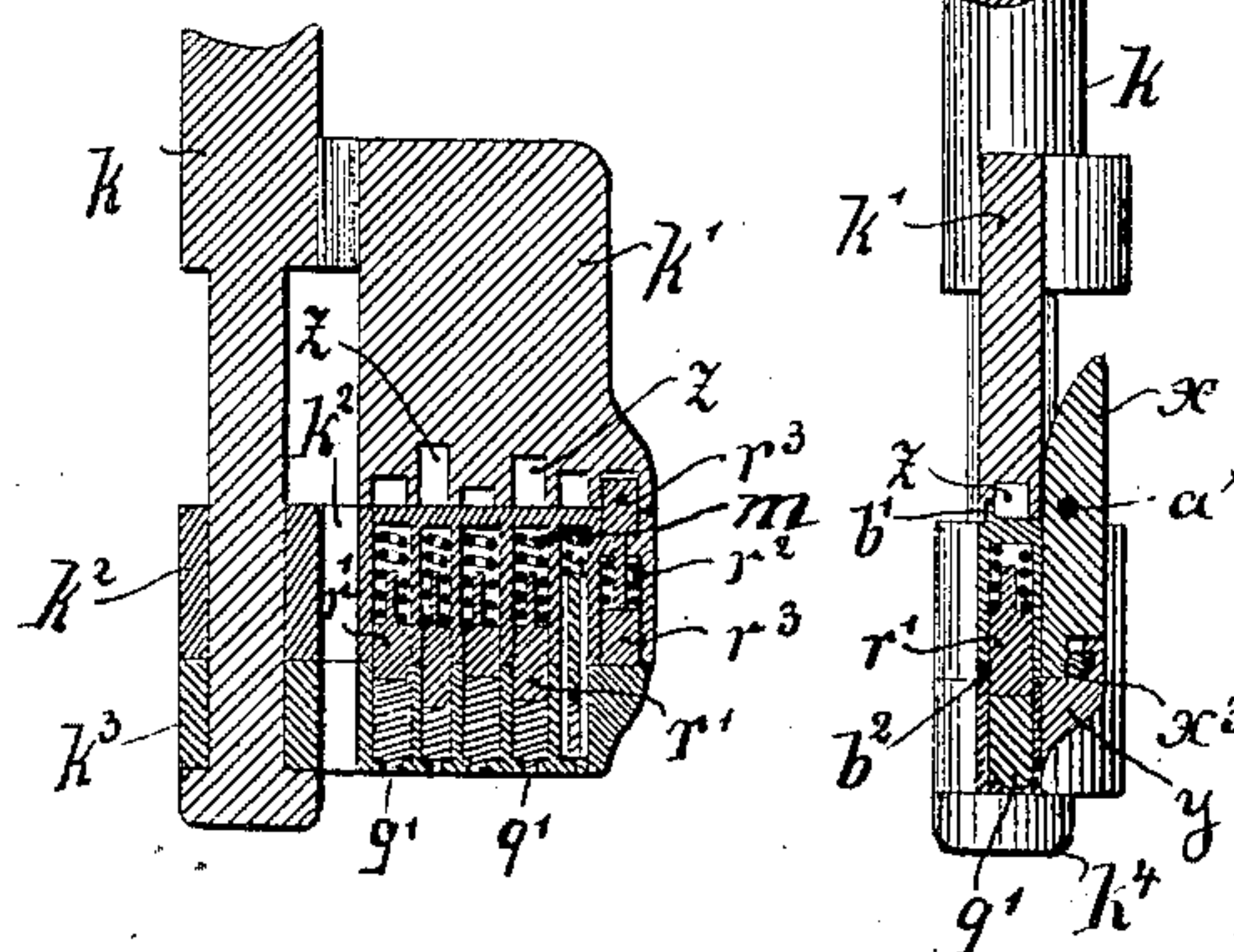


FIG. 9.

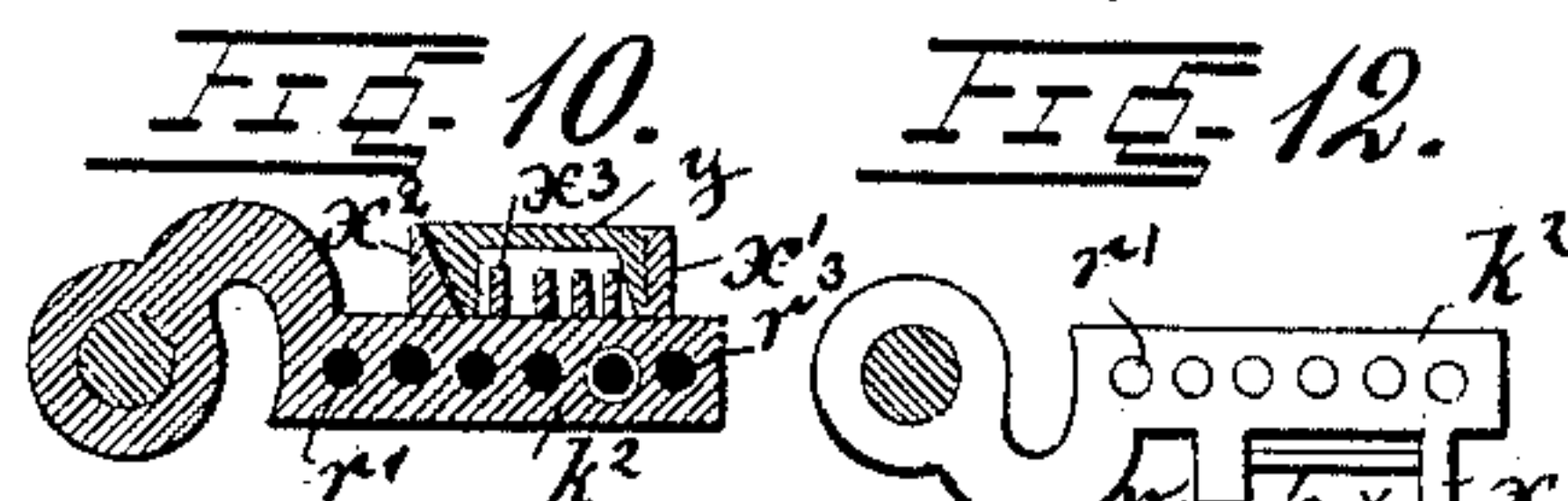


FIG. 10.

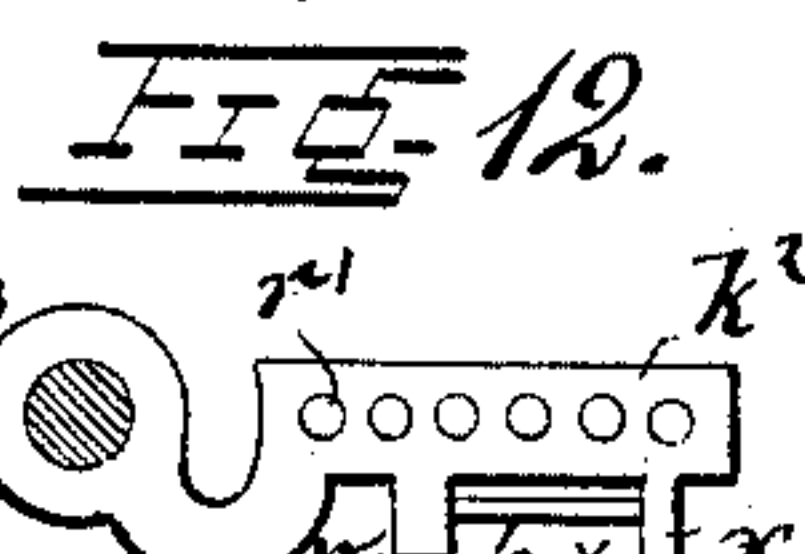


FIG. 12.

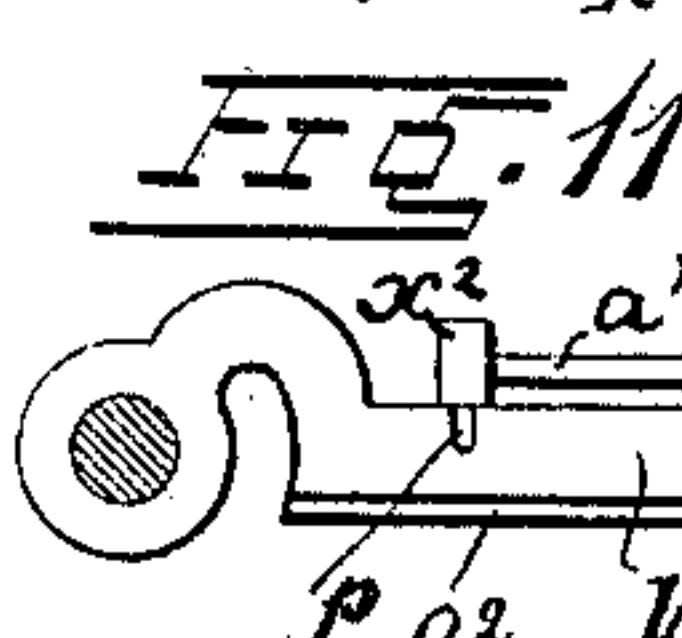


FIG. 11.

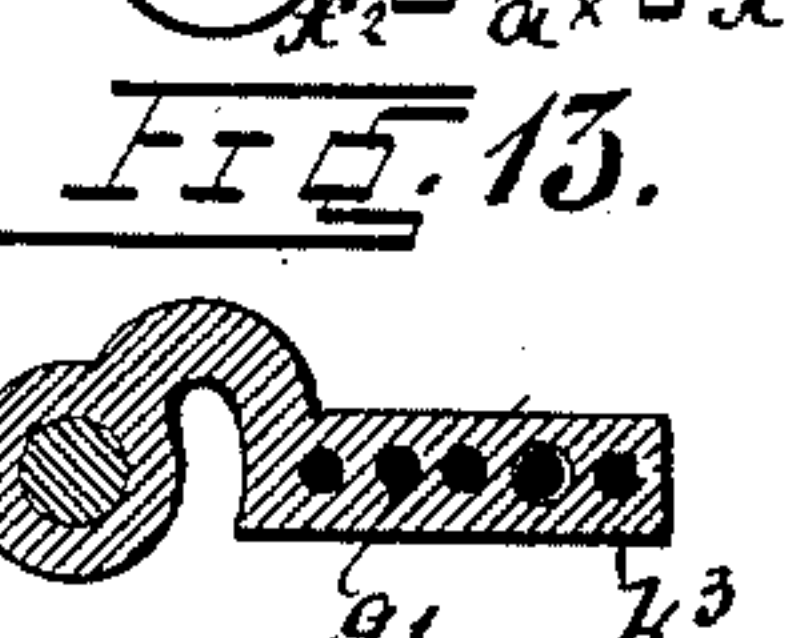


FIG. 13.

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No. 657,665.

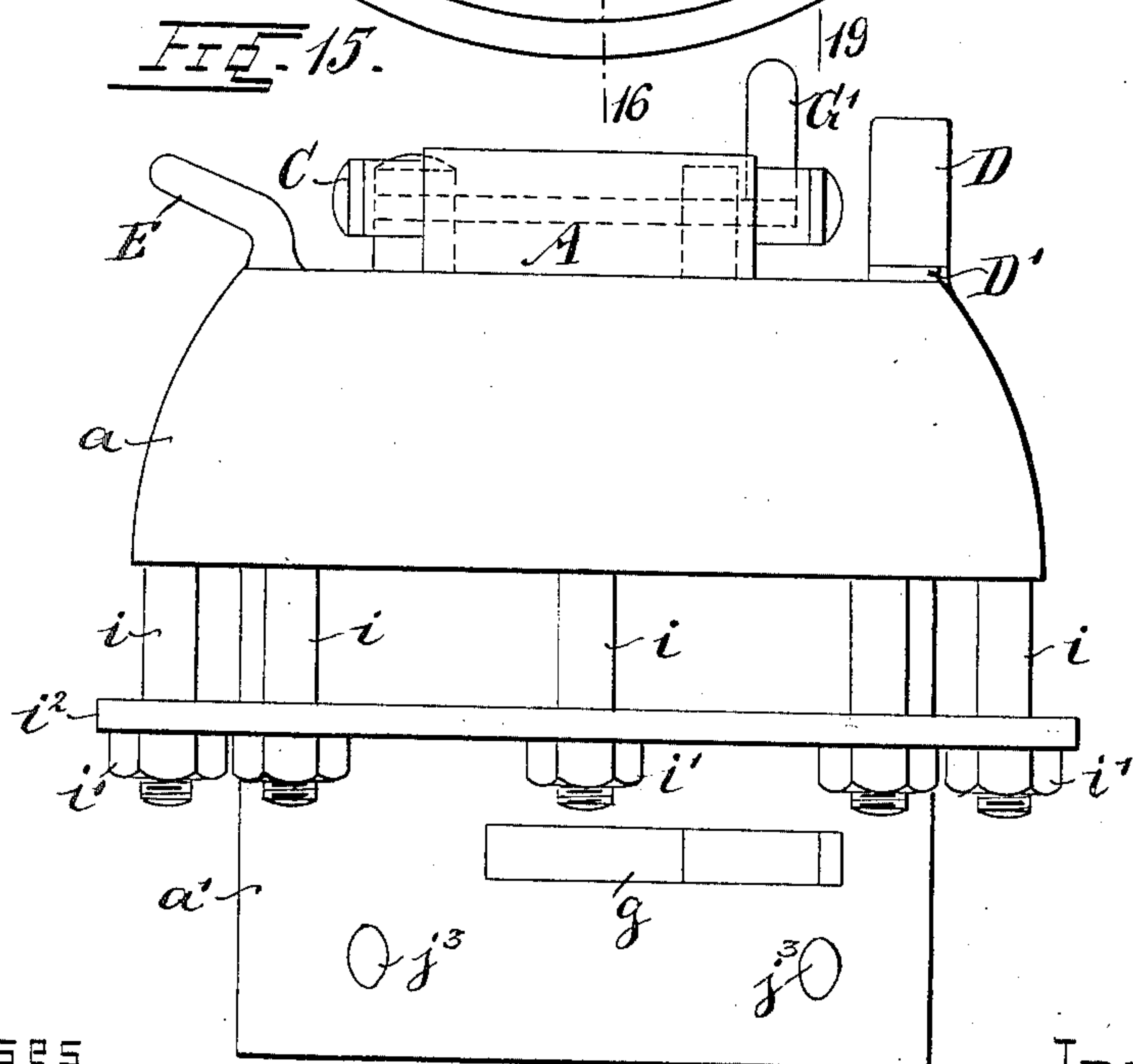
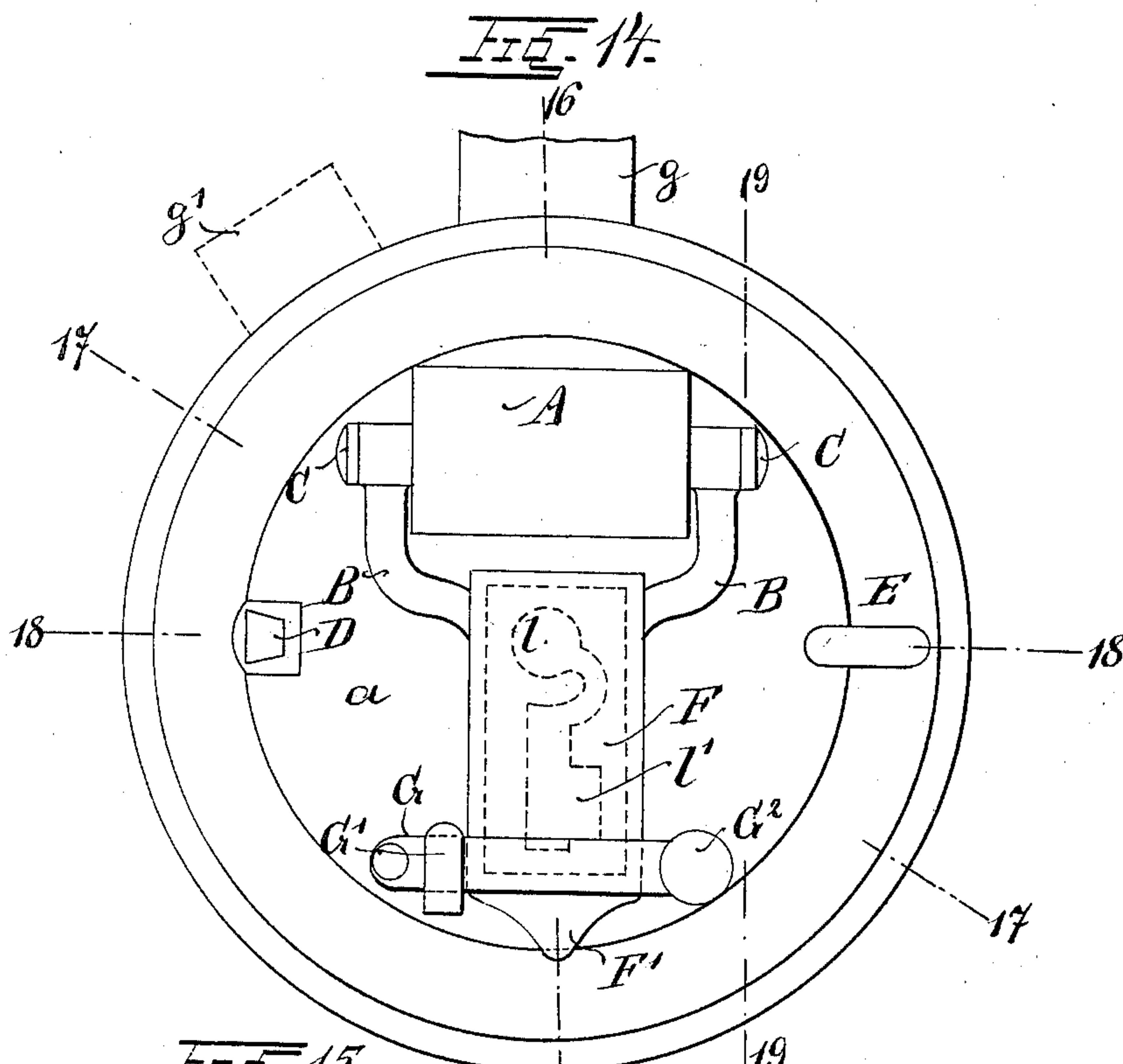
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(Application filed Dec. 3, 1897.)

(No Model.)

8 Sheets—Sheet 2.



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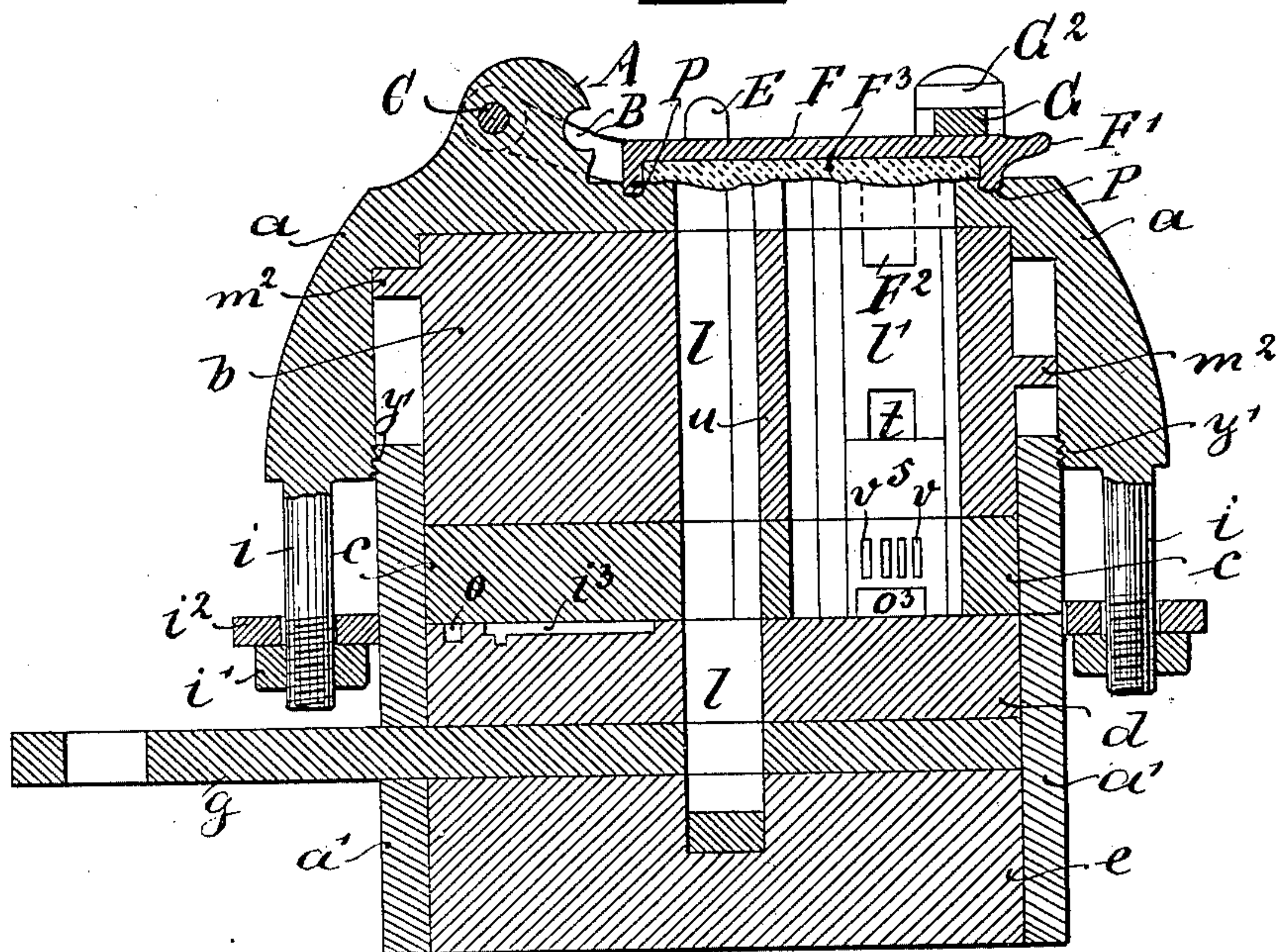
**CYLINDER LOCK.**

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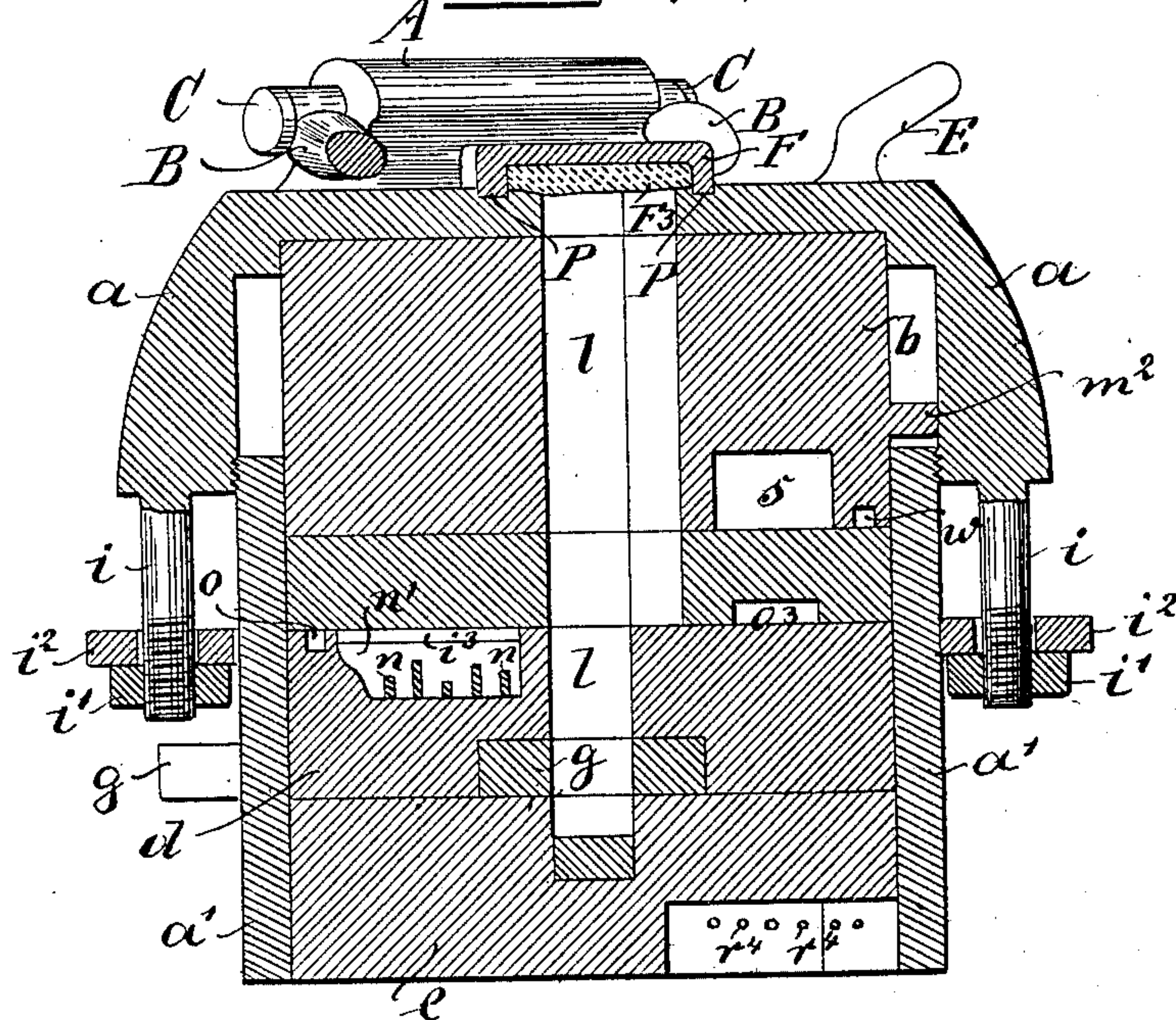
(No Model.)

8 Sheets—Sheet 3.

III. 16.



III-14.



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8 Sheets—Sheet 4.

FIG. 18.

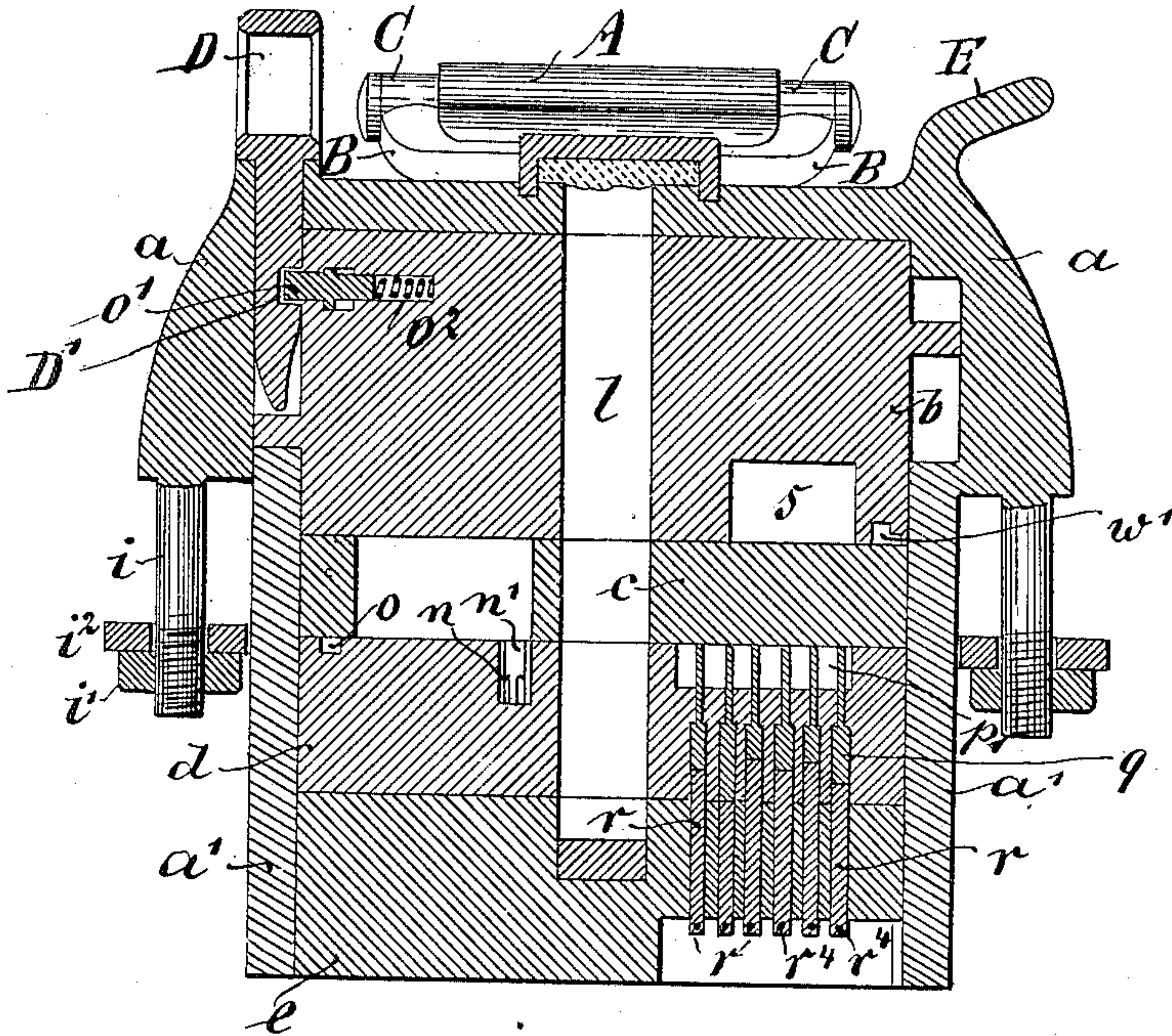
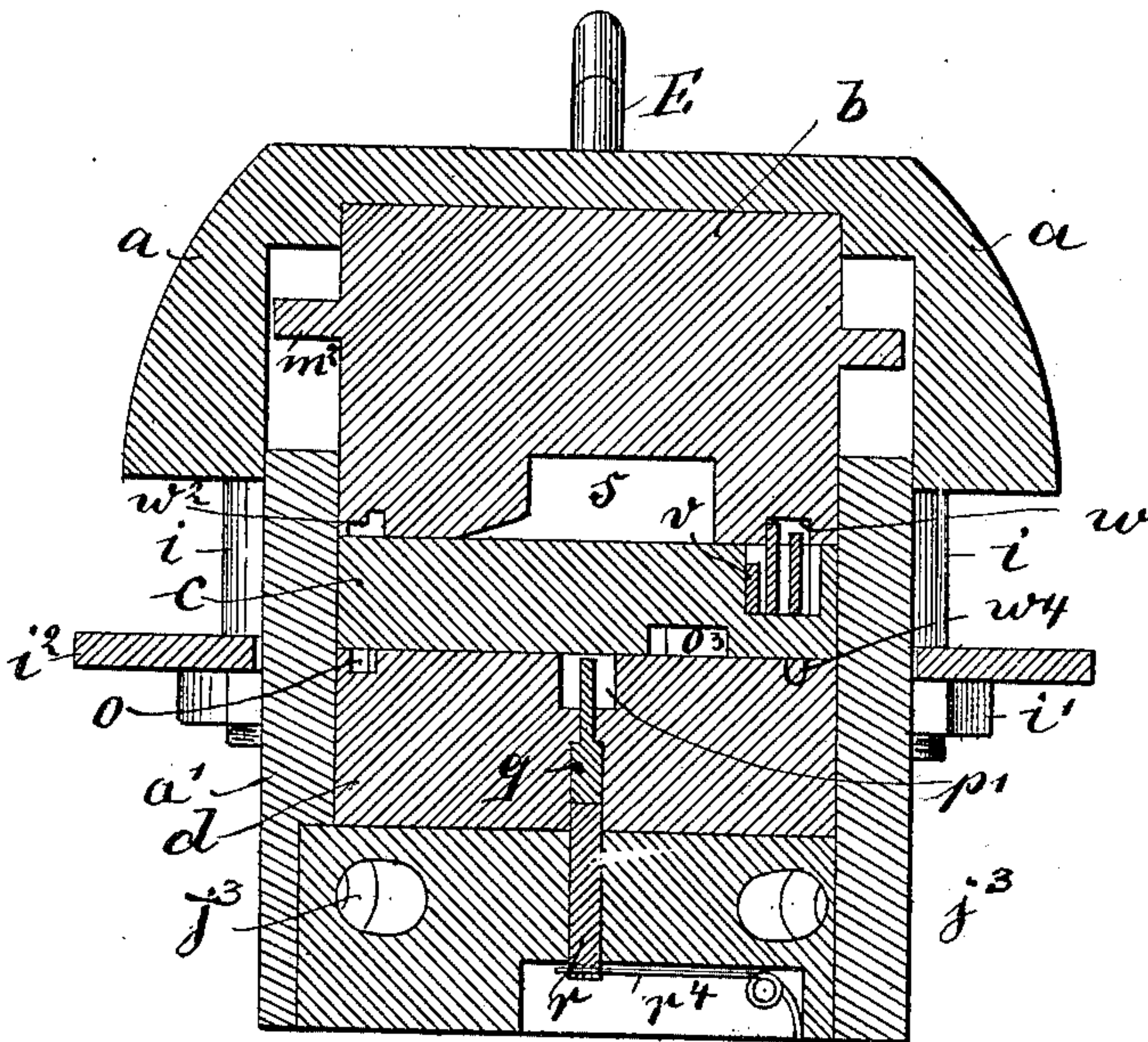


FIG. 19.



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(Application filed Dec. 3, 1897.)

(No Model.)

8 Sheets—Sheet 5.

FIG. 20.

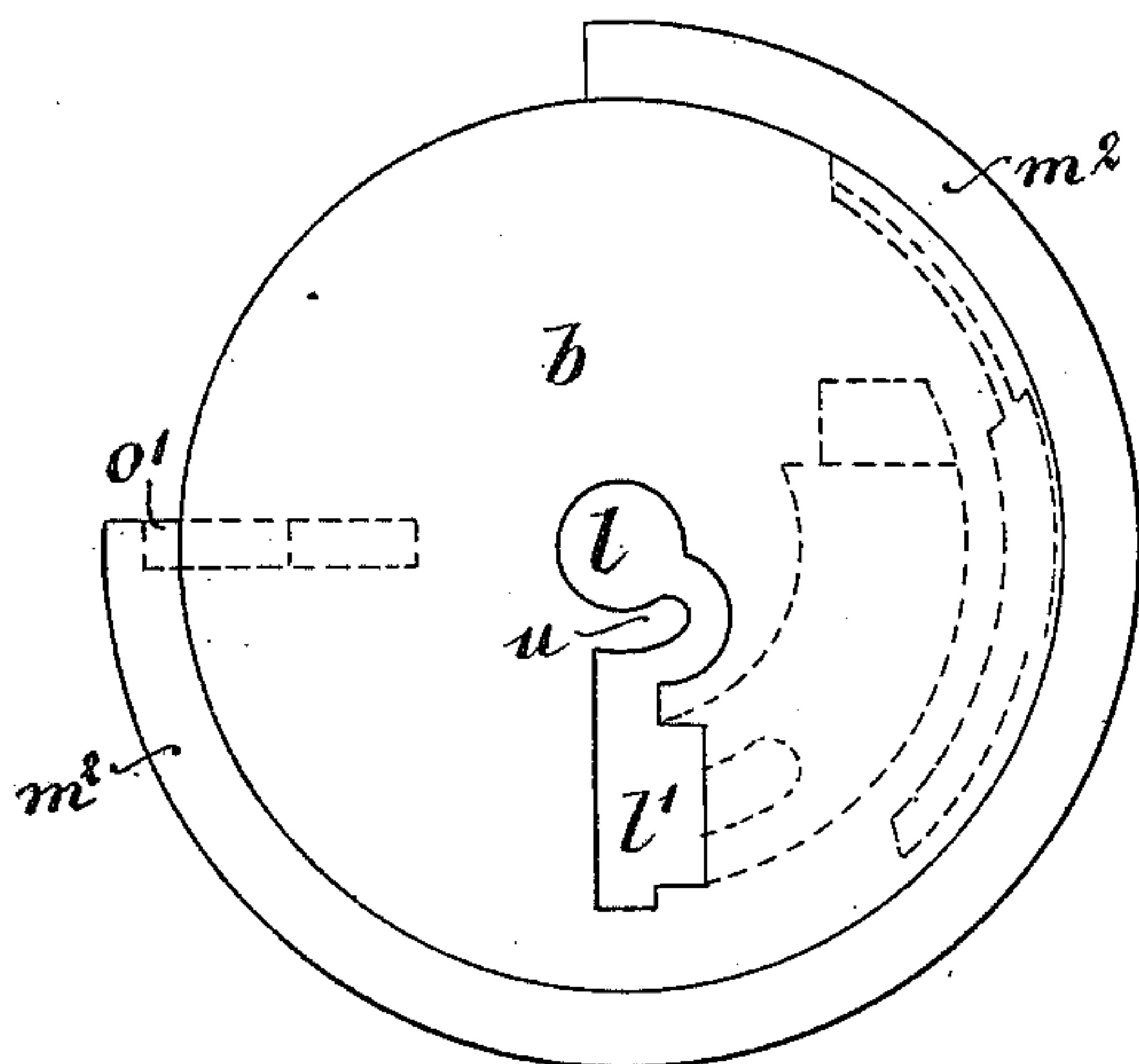


FIG. 23.

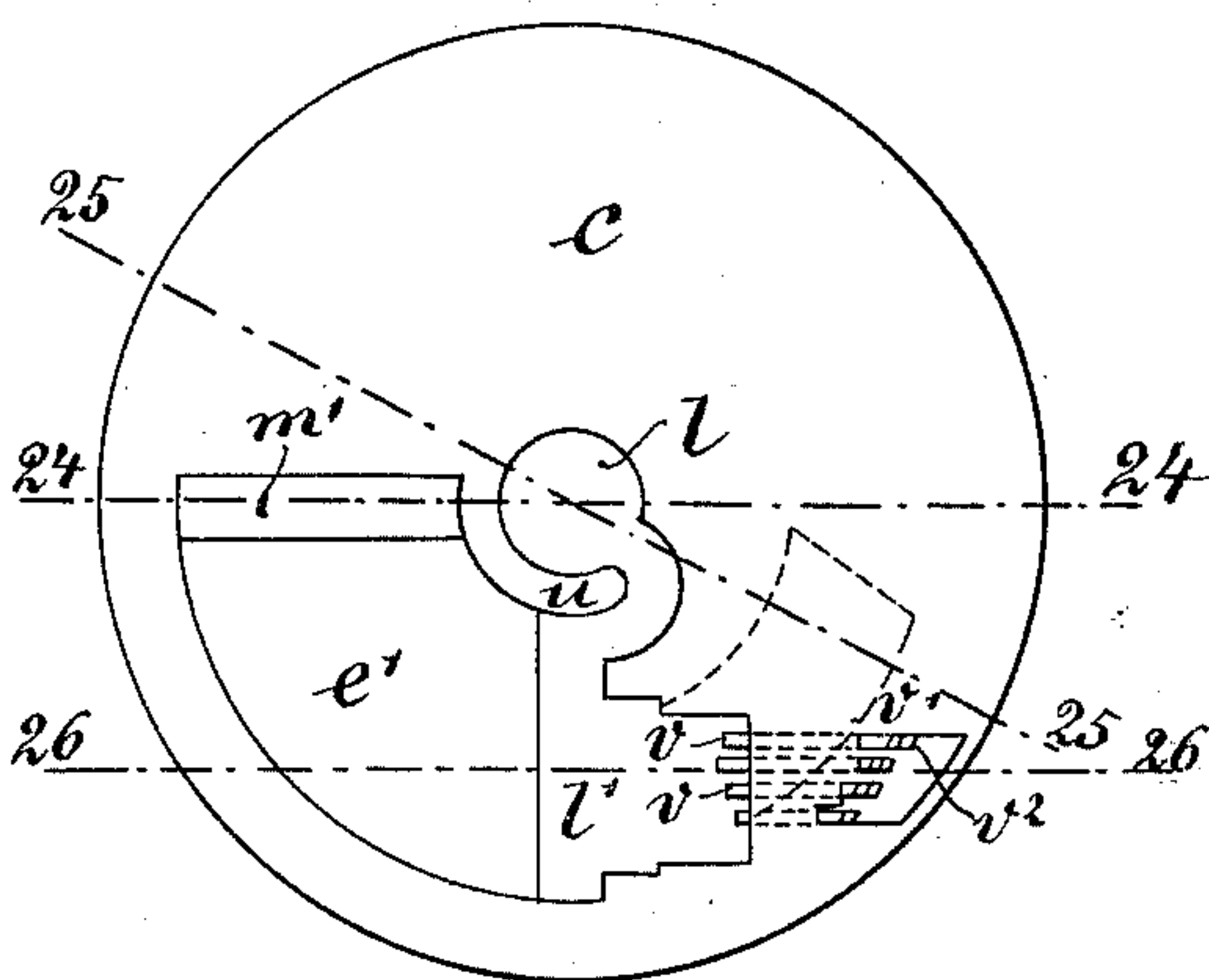


FIG. 21.

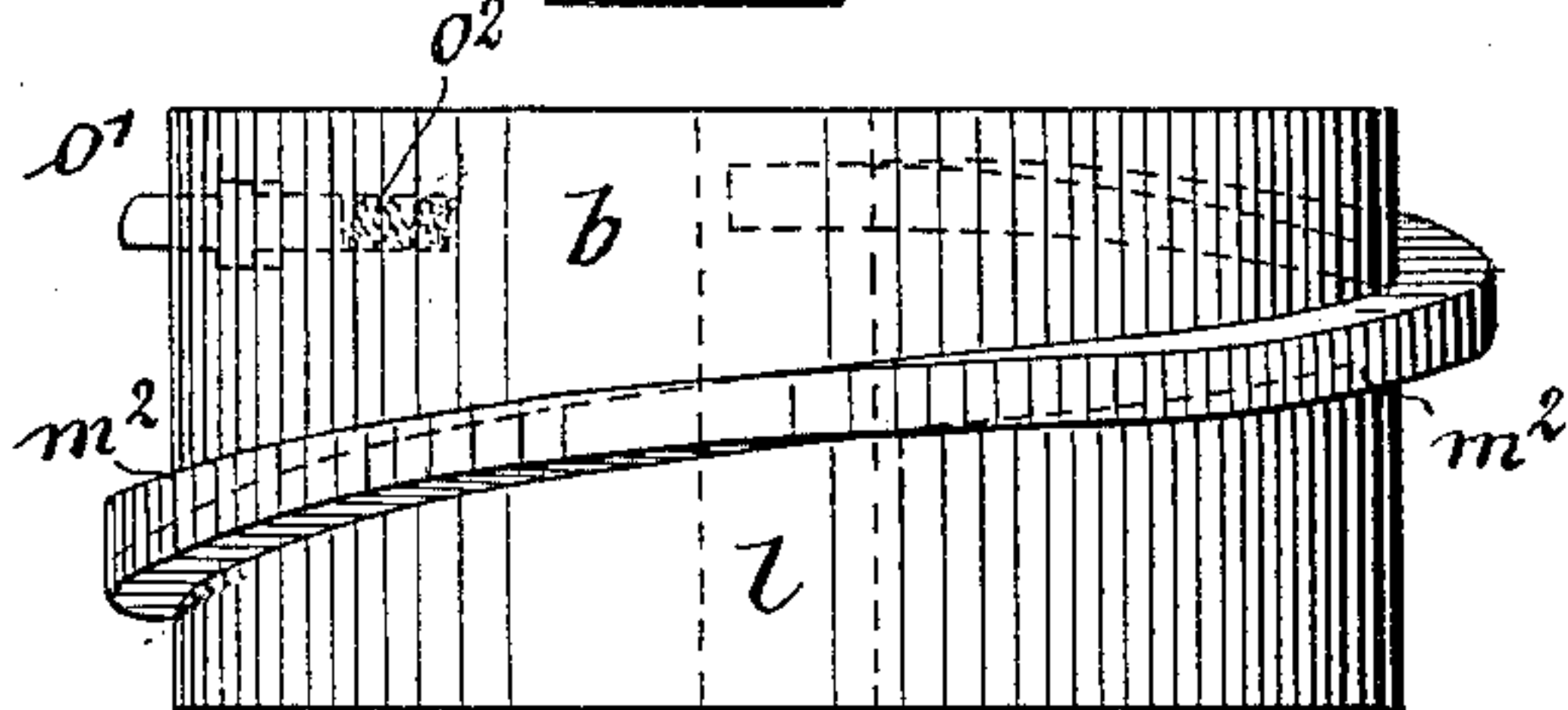


FIG. 24.

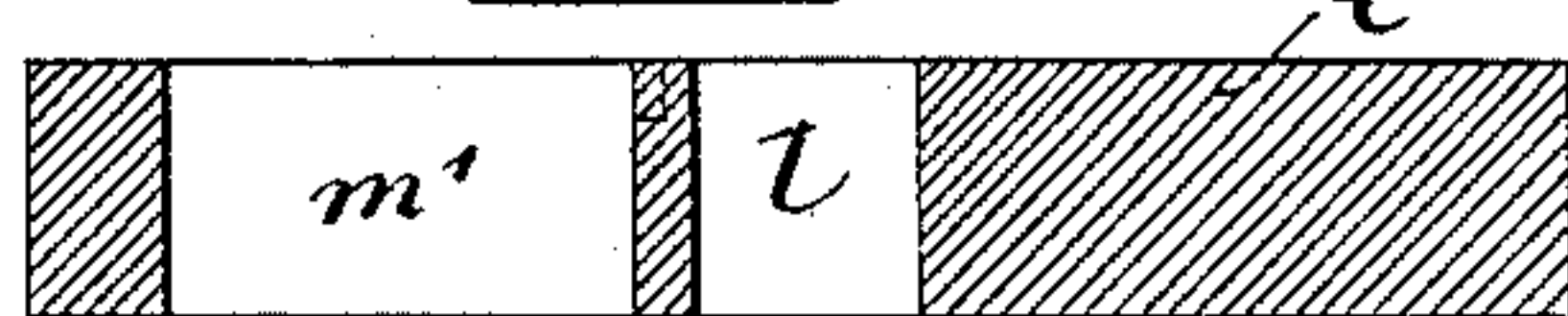


FIG. 25.

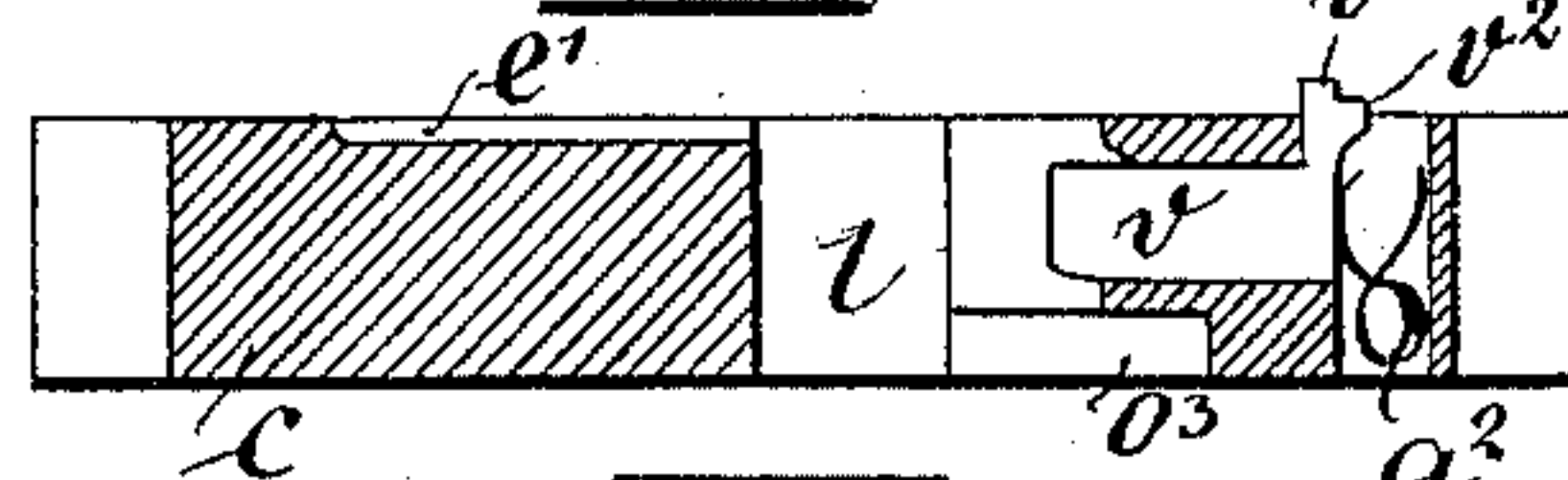


FIG. 26.

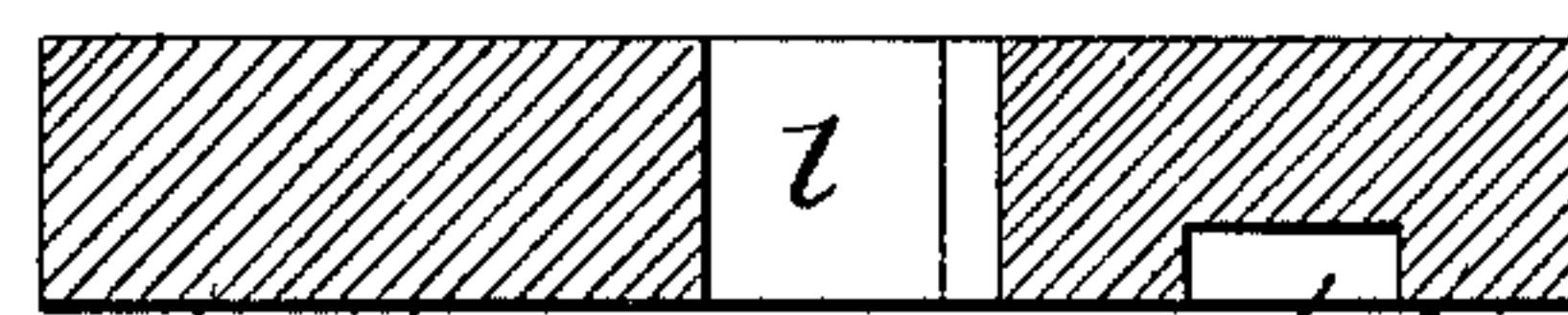


FIG. 27.

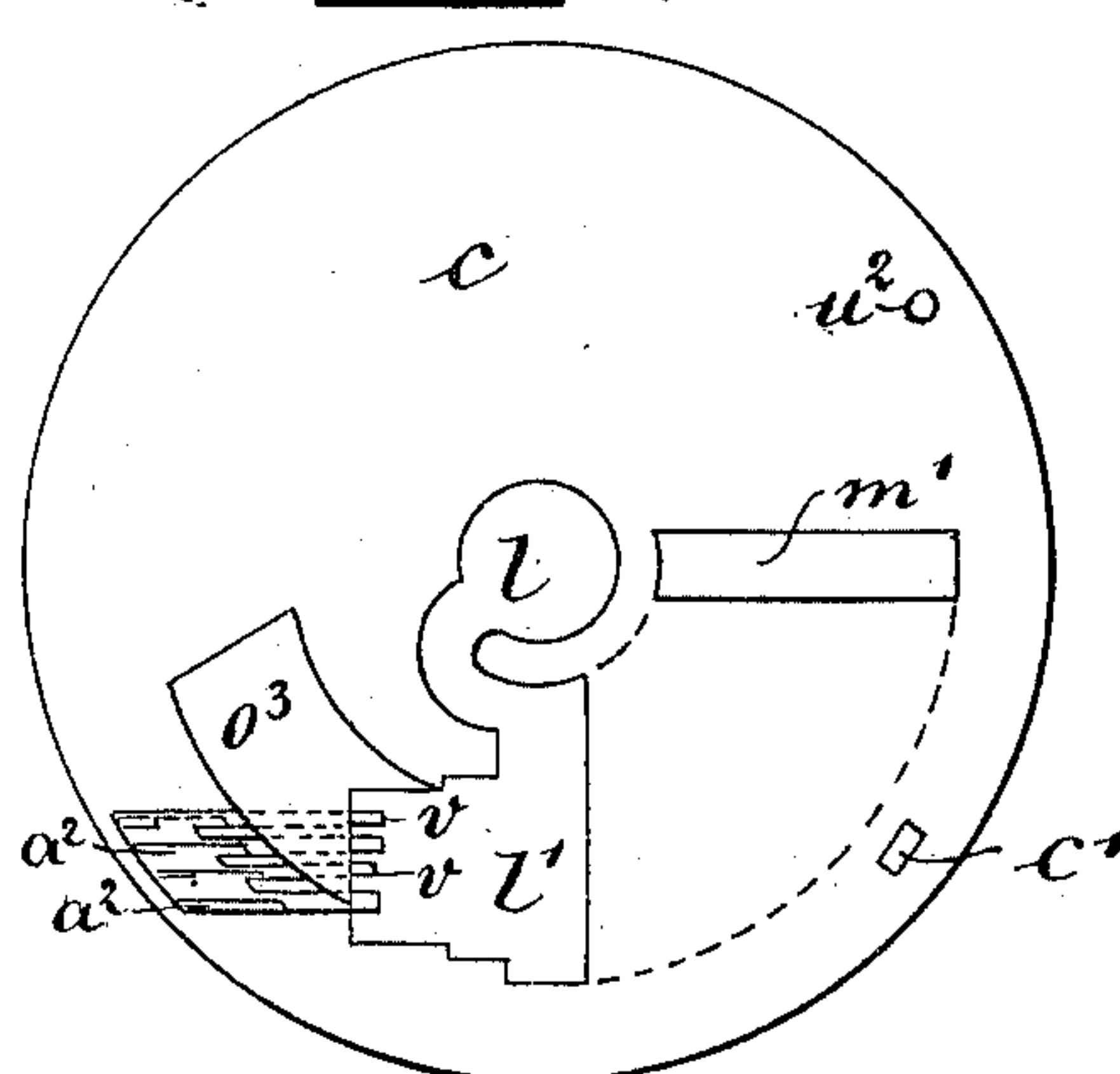
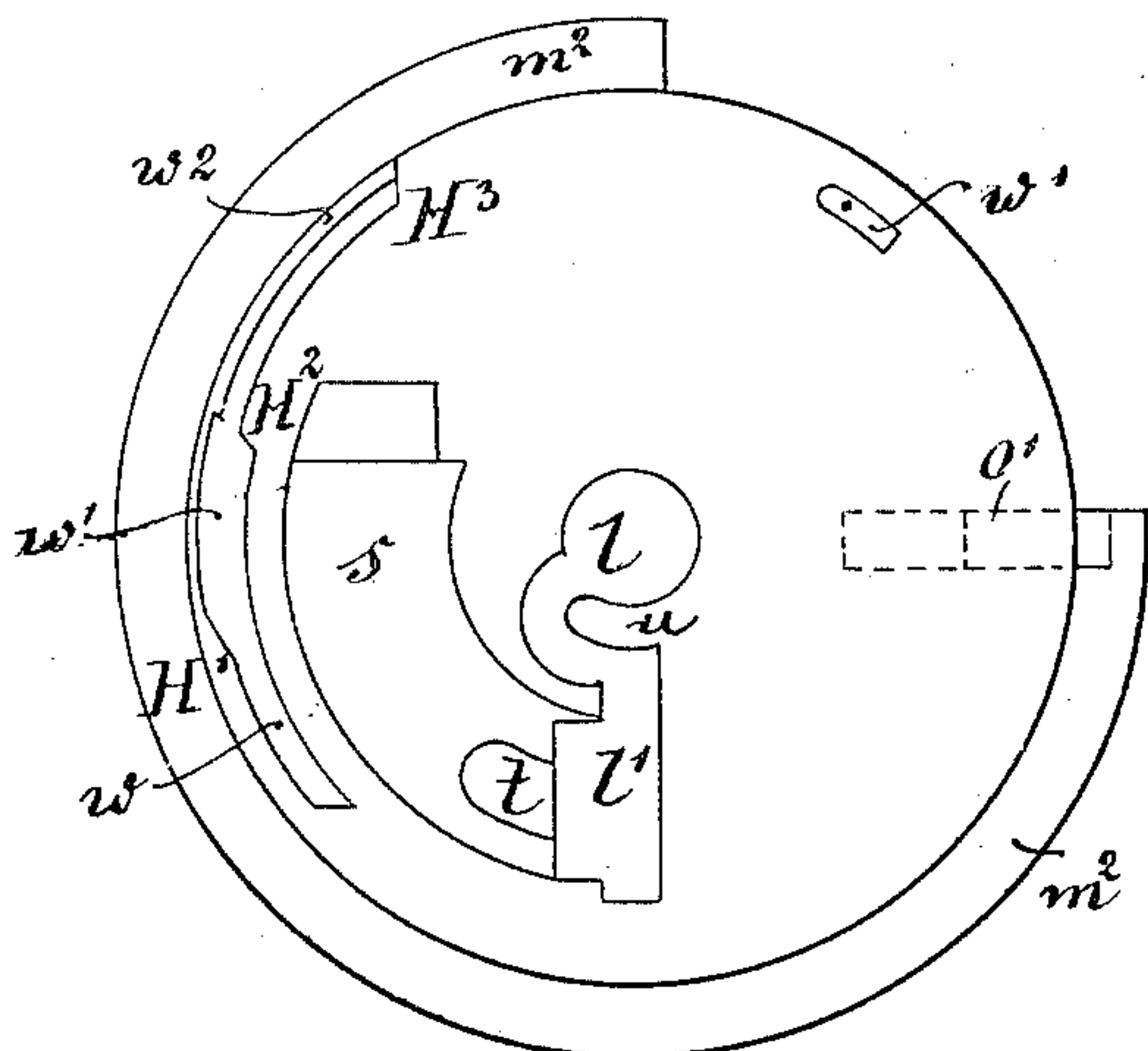


FIG. 22.



Witnesses

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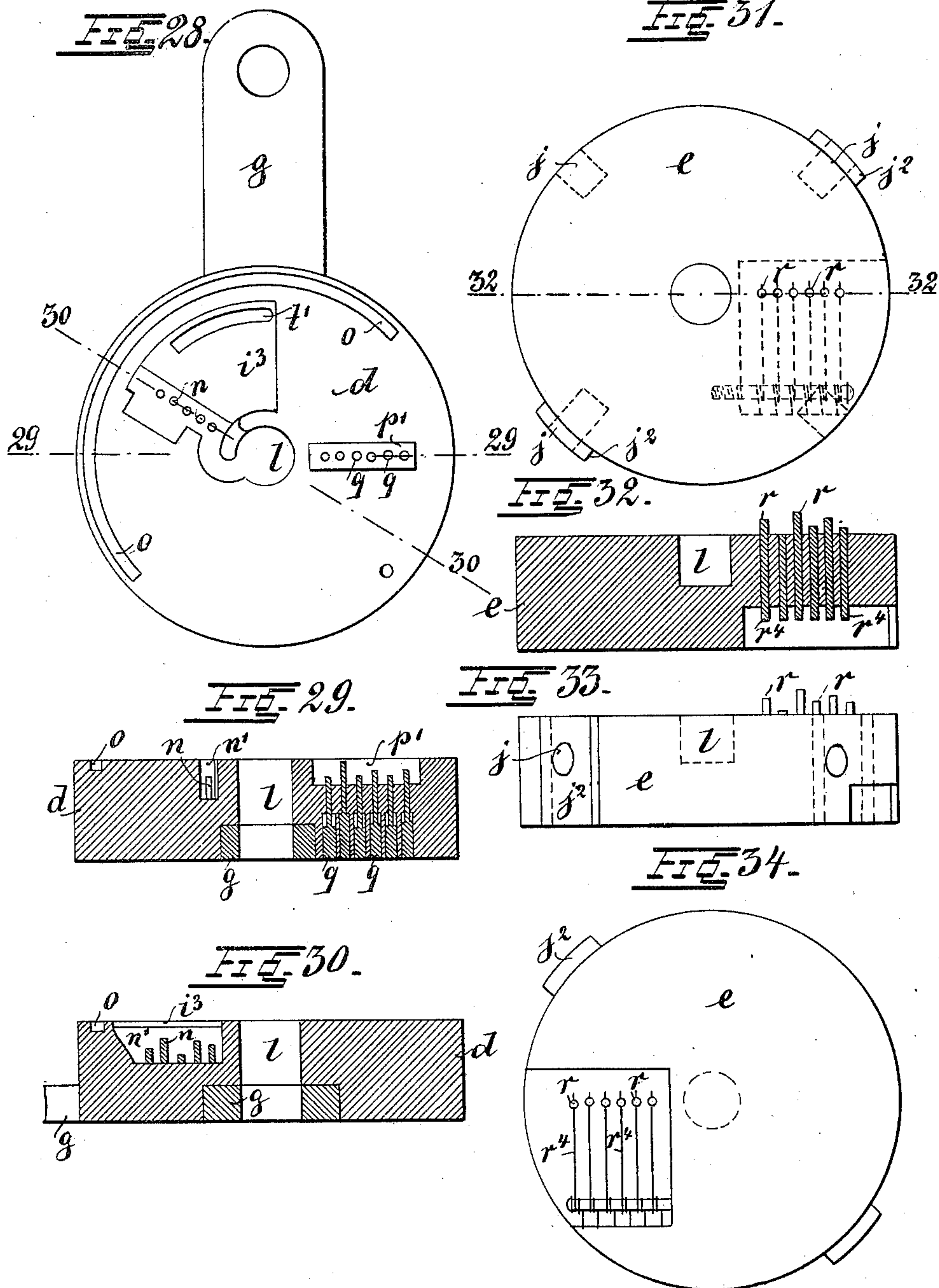
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8 Sheets—Sheet 6.



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(Application filed Dec. 3, 1897.)

(No Model.)

8 Sheets—Sheet 7.

FIG. 35.

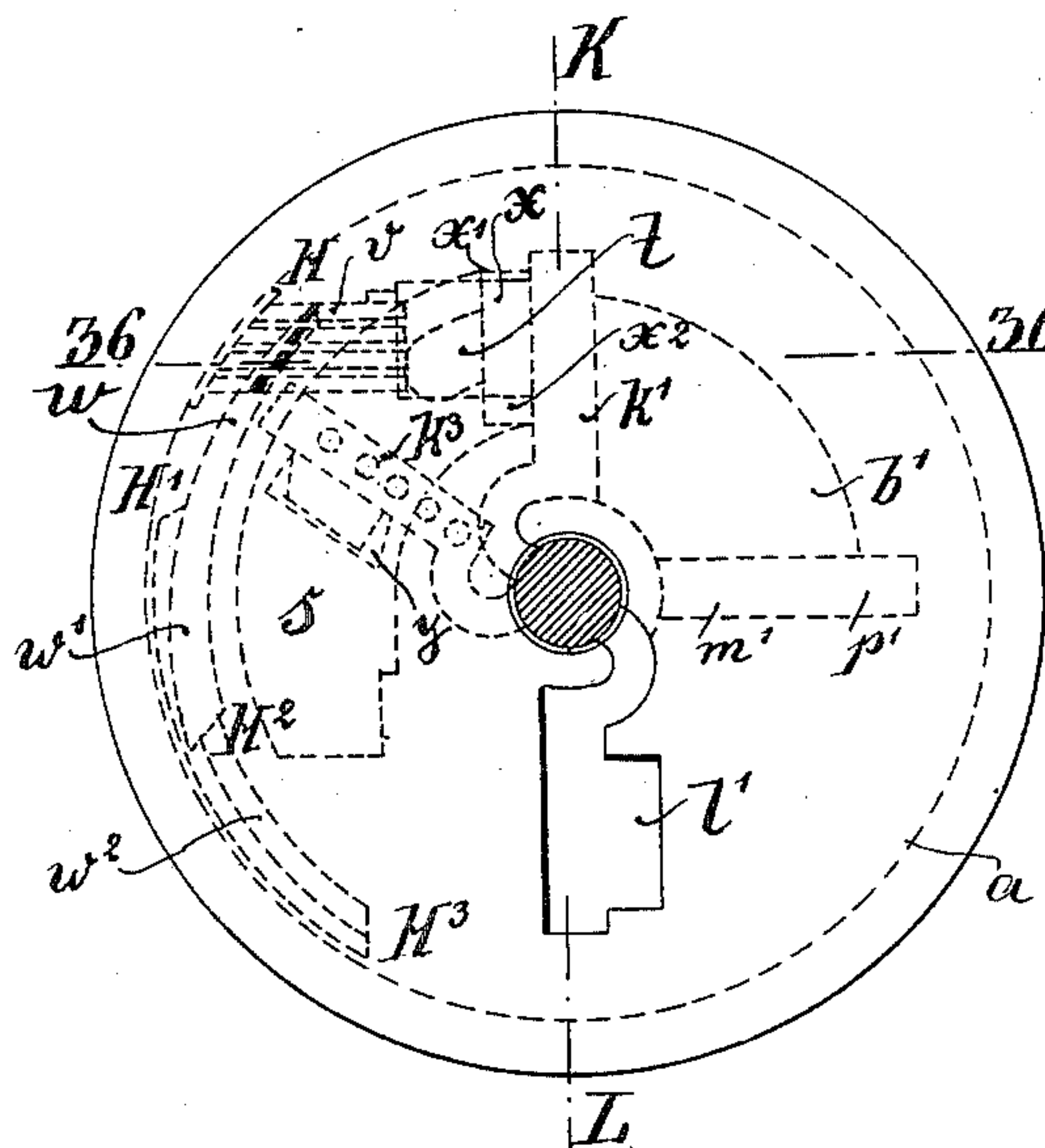


FIG. 37.

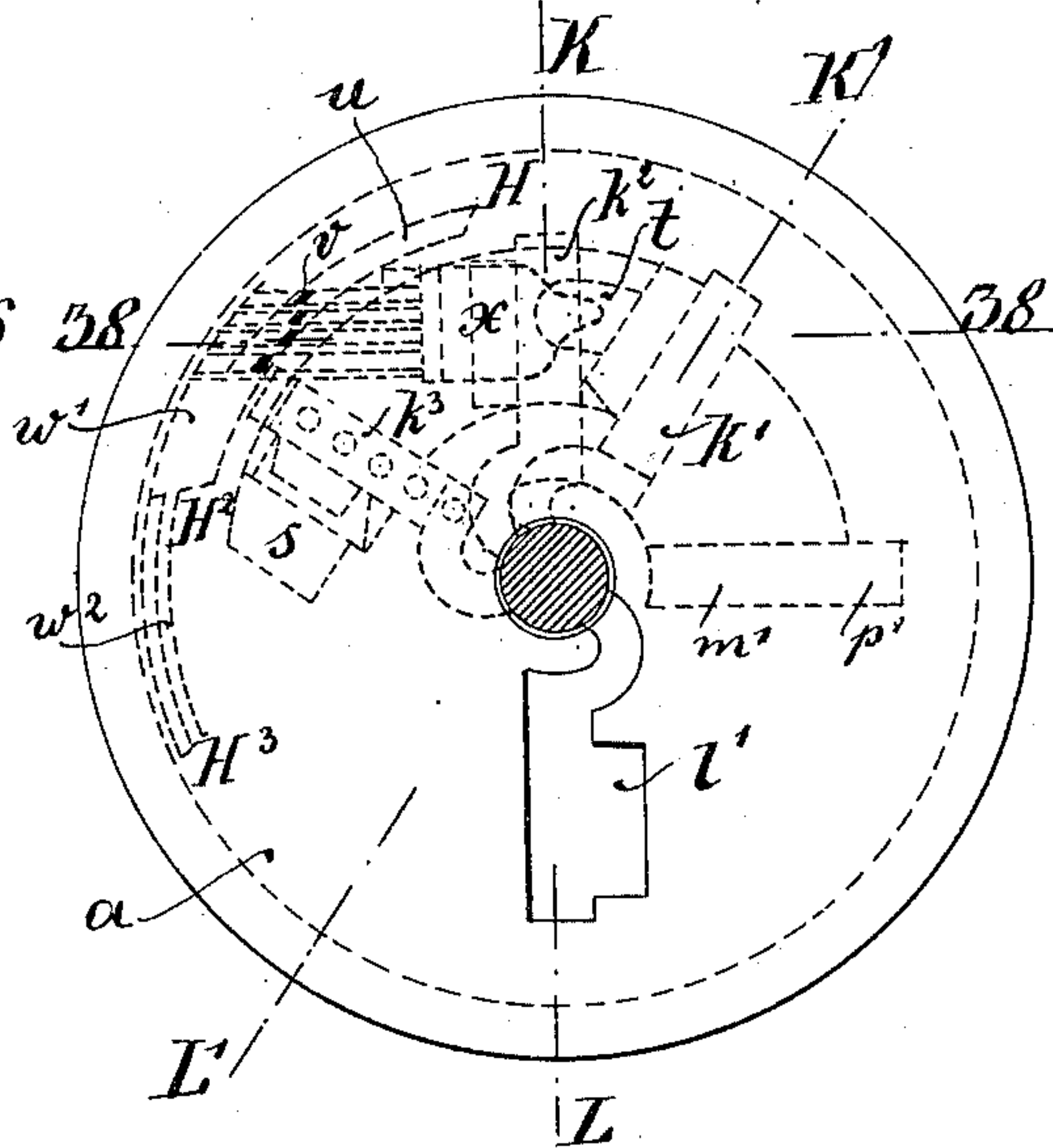


FIG. 39.

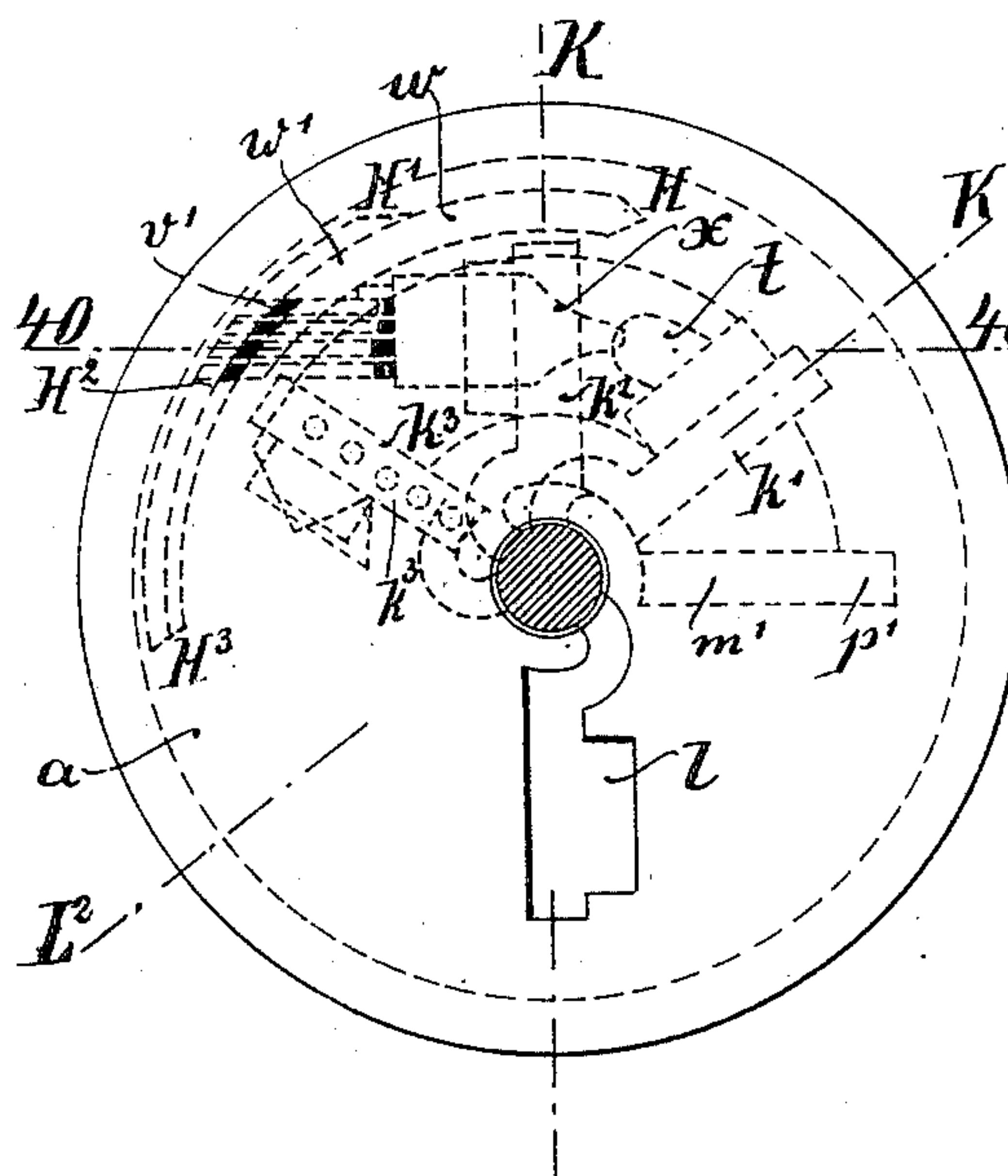
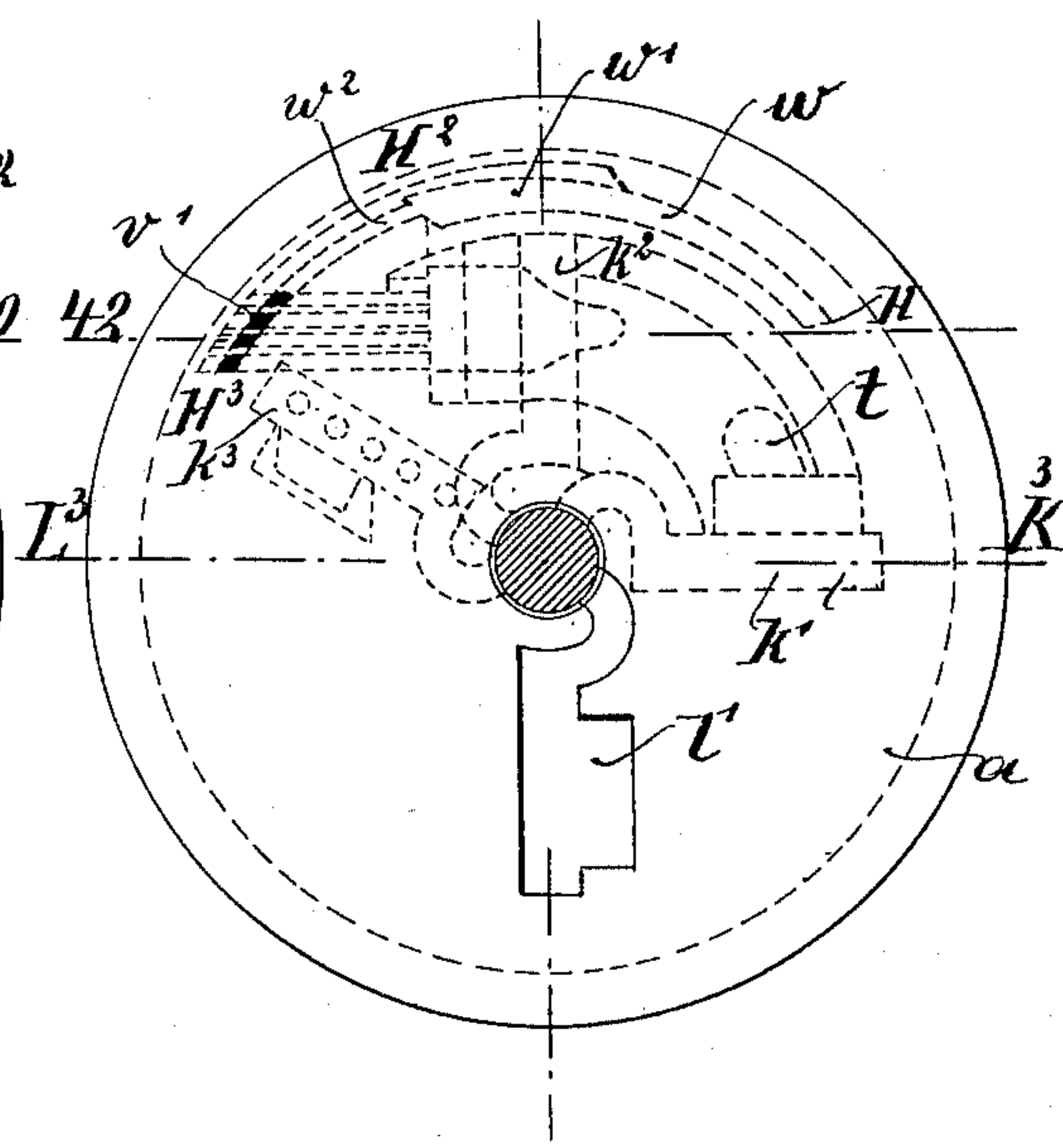


FIG. 41.



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8 Sheets—Sheet 8.

FIG. 36.

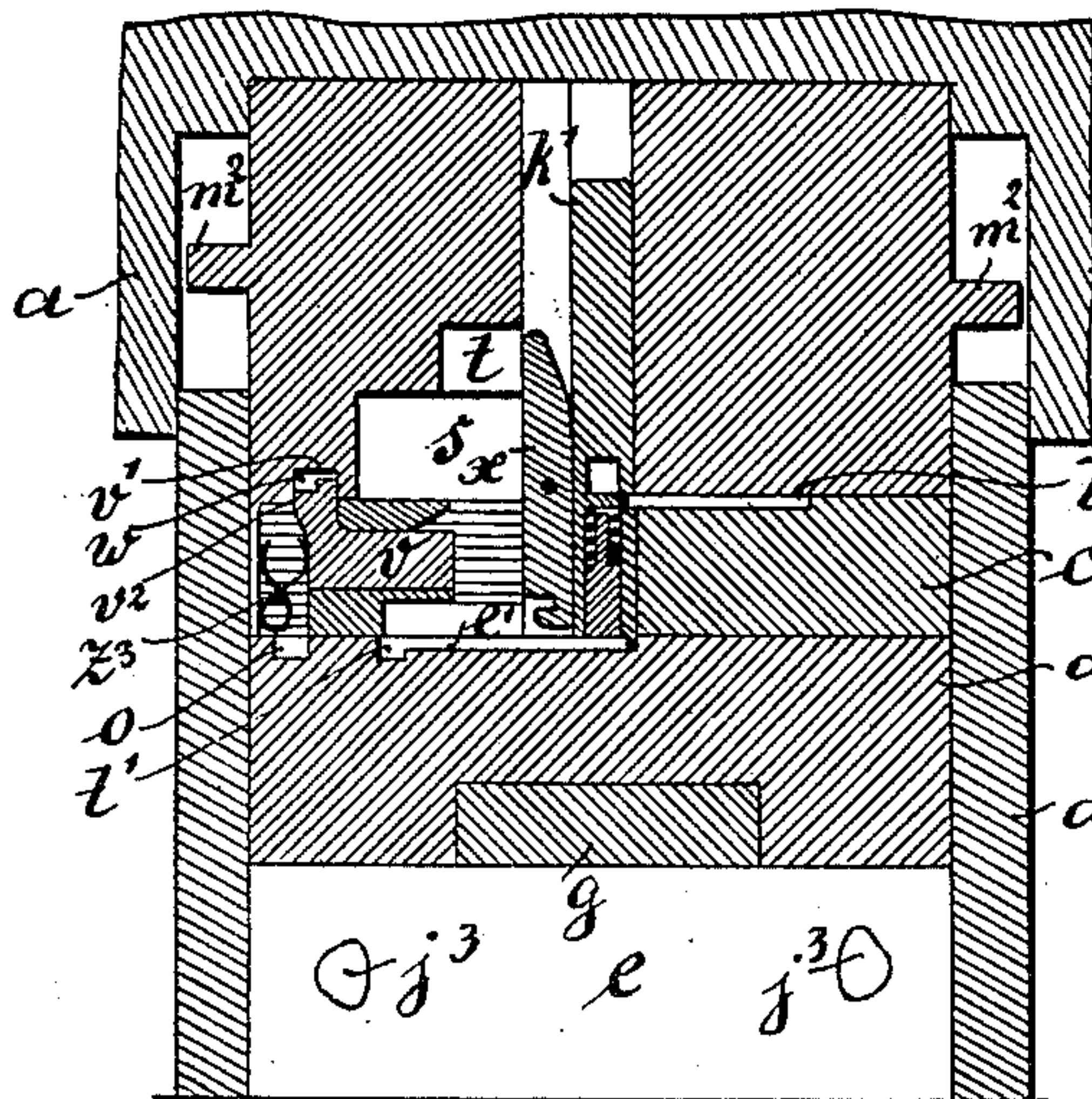


FIG. 38.

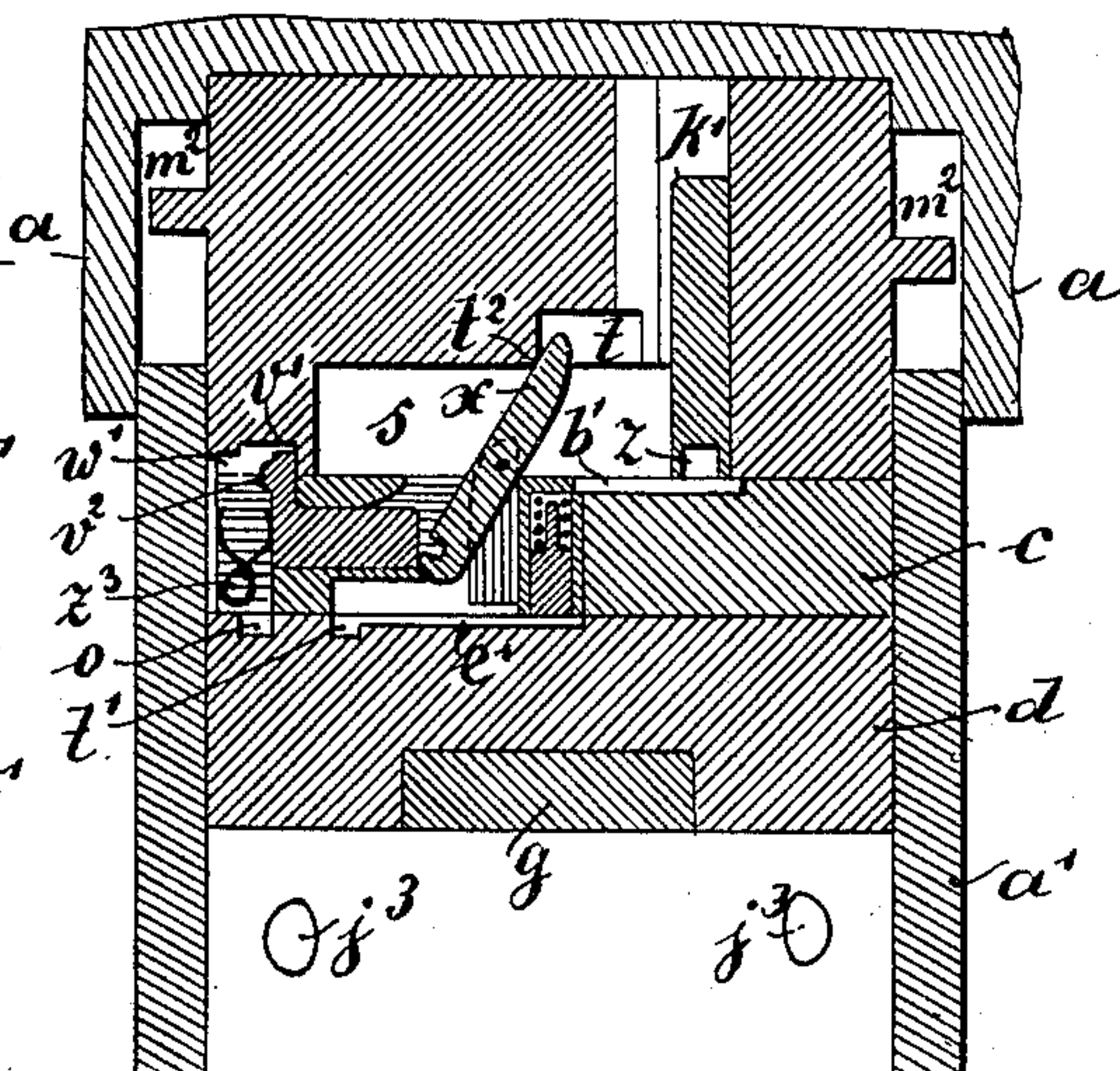


FIG. 40.

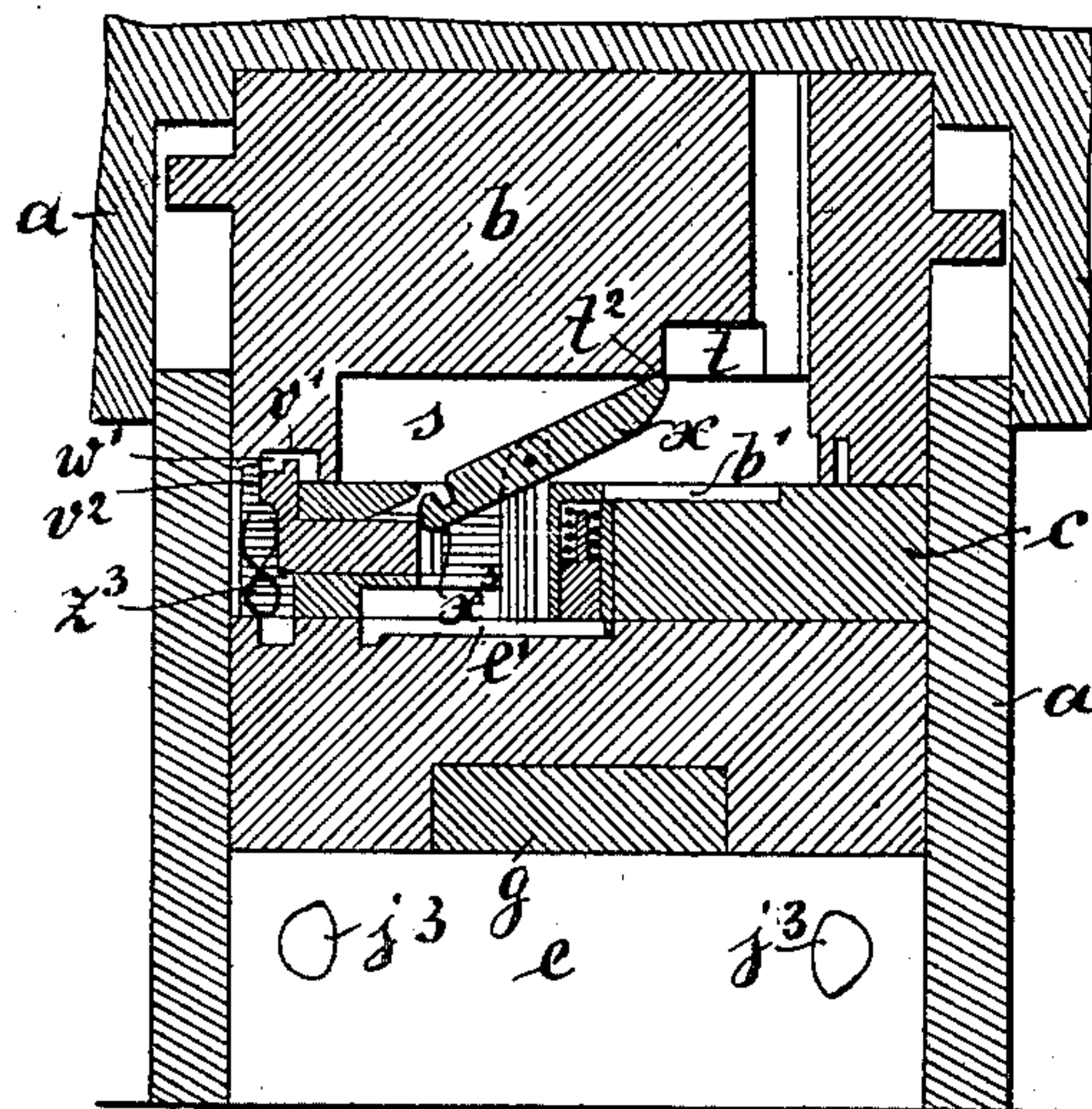
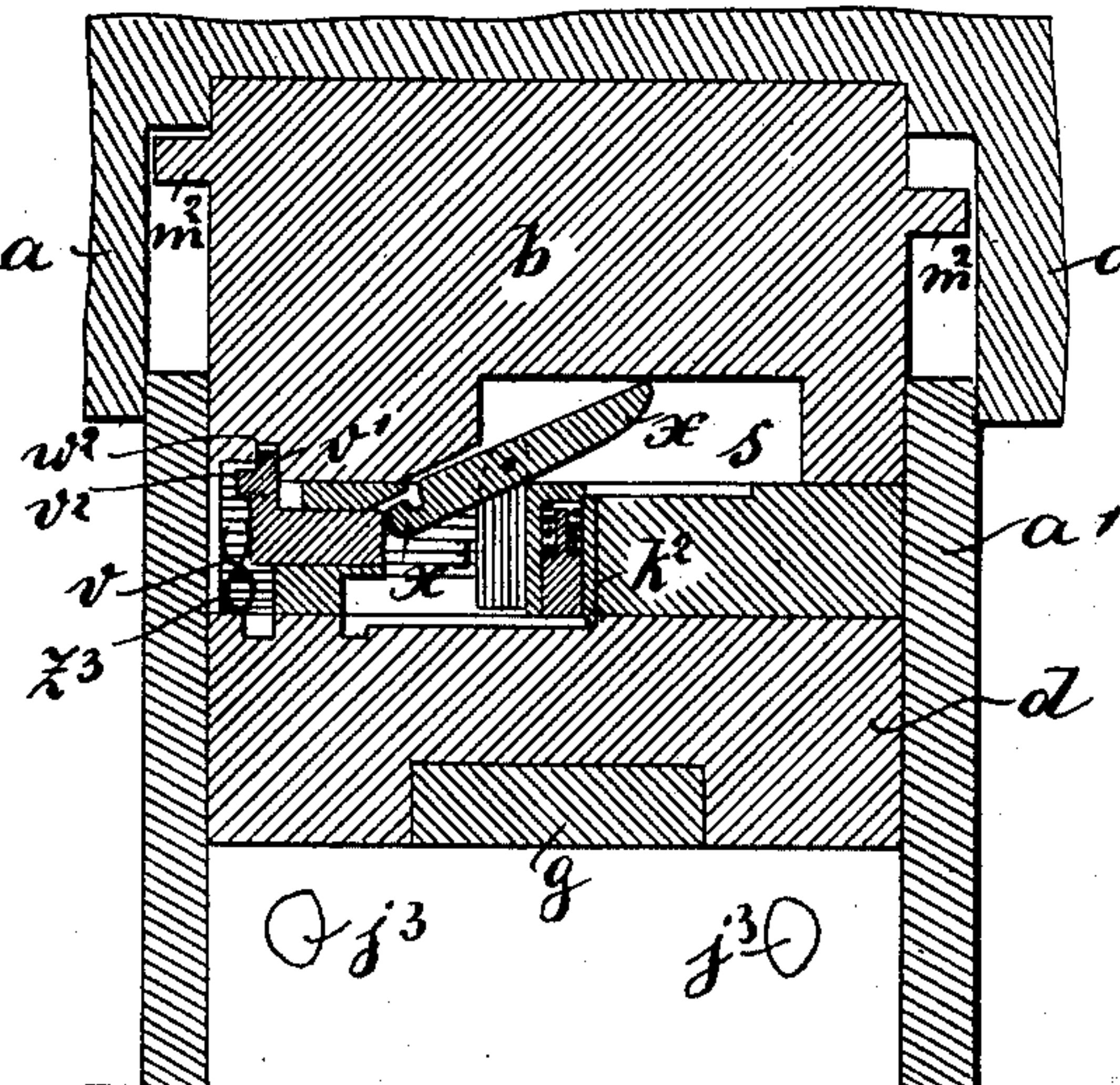


FIG. 42.



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# UNITED STATES PATENT OFFICE.

EMERICH VON MARSÓVSZKY, OF BUDA-PESTH, AUSTRIA-HUNGARY.

## CYLINDER-LOCK.

SPECIFICATION forming part of Letters Patent No. 657,665, dated September 11, 1900.

Application filed December 3, 1897. Serial No. 660,692. (No model.)

*To all whom it may concern:*

Be it known that I, EMERICH VON MARSÓVSZKY, a subject of the Emperor of Austria-Hungary, and a resident of Buda-Pesth, Austria-Hungary, have invented certain new and useful Improvements in Cylinder-Locks, of which the following is a full, clear, and exact description.

The present invention relates to locks, particularly that class of locks which are applied to doors, cash-boxes, furniture and railway carriages, and closed trucks.

The invention consists of a lock comprising a series of superposed cylinders and tumblers in connection therewith and a key having a separable or divided bit, the parts of said bit being separated after the key has been inserted in the lock and each part acting to operate one cylinder, the said bit-sections being again locked together as the key is withdrawn. The construction of the key-bit is such that neither the locking mechanism for its constituent parts nor the nature of the mechanism in the lock for locking and unlocking the said parts are visible exteriorly, nor can the bit-sections be separated without the coöperation of the lock-cylinders, as will be hereinafter particularly described.

In order to render the present specification more easily intelligible, reference is had to the accompanying sheet of drawings, in which similar letters of reference denote similar parts throughout the several views.

Figures 1 to 13, Sheet 1, represent the construction of the key, Fig. 1 being a side elevation of the key, Fig. 2 a similar elevation seen from the opposite side, Fig. 3 an end elevation, Fig. 4 a view seen from underneath, Fig. 5 a vertical section through the composite bit, Fig. 6 a central cross-section in the vertical plane through the said bit, Fig. 7 a side elevation of the bit with the lower section detached and swung around on the key-shaft, Fig. 8 a similar elevation with all the sections detached and swung around, as also slid longitudinally along the key-shaft, Fig. 9 a plan of Fig. 8, Fig. 10 a horizontal section through the middle bit-section, Fig. 11 a view of the middle key or bit section seen from the upper side, Fig. 12 a similar view of the same section seen from underneath, and Fig. 13 a horizontal section through the lower bit-section.

Figs. 14 to 19, inclusive, show the general construction of the lock, Fig. 14 being a plan of the lock, Fig. 15 a side elevation of the same, Fig. 16 a vertical section on line 16 16 of Fig. 14, Fig. 17 a similar section on line 17 17 of Fig. 14, Fig. 18 a similar section on line 18 18 of Fig. 14, and Fig. 19 a similar section on line 19 19 of Fig. 14. Figs. 20 to 34, inclusive, show in various elevations and sections the construction of the various cylinders. In the present case three are shown; but the number may be varied, as also the number of the bit-sections. Fig. 20 is a plan of the top or front cylinder; Fig. 21, a side elevation of the same. Fig. 22 is a view of the same cylinder seen from underneath; Fig. 23, a plan of the middle cylinder; Fig. 24, a cross-section of the same on line 24 24 of Fig. 23; Fig. 25, a similar section on line 26 26 of Fig. 23; Fig. 26, a similar section on line 25 25 of Fig. 23; Fig. 27, a view of the same cylinder seen from underneath. Fig. 28 is a plan of the lower cylinder carrying the bolt. Fig. 29 is a cross-section of the same on line 29 29, Fig. 28; Fig. 30, a similar section on line 30 30, Fig. 28. Fig. 31 is a plan of the base-plate of the lock; Fig. 32, a cross-section on line 32 32, Fig. 31; Fig. 33, a side elevation of the said plate, and Fig. 34 a view of the same seen from underneath. Figs. 35 to 42 are a series of plans and vertical sections showing the position of the parts of the lock when the key is placed therein at various points in the passage performed by the key to open the lock. Fig. 35 is a plan showing the key in the position it has attained after having been turned from the keyhole to L<sup>2</sup>, Fig. 39, and from L<sup>2</sup> to K. At a point intermediate of the two latter points the lower key-bit section has been detached, while the middle and upper sections are still connected and lie in the line K L of Fig. 35. Fig. 36 is a vertical section on line 36 36 of Fig. 35. Fig. 37 is a plan showing the position of the key after the same has been turned to the point K', at which point the latch retaining the middle and upper sections has been thrown back and the locking-pin for the two sections disengaged, so that these two sections have now also been separated and the second cylinder may be operated. Fig. 38 is a vertical section on line 38 38 of Fig. 37.



Fig. 39 is a plan showing the passage of the upper bit-section from the point  $K^1$  of Fig. 37 to the point  $K^2$  of Fig. 39, the latch being thrown back and its fingers operating to throw out of engagement the tumblers of the middle cylinder. Fig. 40 is a section on line 40 40 of Fig. 39. Fig. 41 is a plan showing the upper bit-section on the line  $L^3 K^3$  or in the position to open the lock, and Fig. 42 is a section on line 42 42 of Fig. 41.

In the drawings I have illustrated a form of my invention involving a key having a bit composed of three sections, the lock being provided with three cylinders; but I do not wish the invention to be confined to the particular number of bit-sections and cylinders, as these may be increased or decreased by means of simple mechanical contrivances patent to any one skilled in the art.

The lock illustrated comprises the following main points: First, a key having a bit comprising three sections; second, the latch in connection with a middle section; third, a lock having a bolt-operating cylinder and bit-operating cylinders, and, fourth, means for closing the keyhole.

*First. The construction of the key.*—The shaft  $k$  is provided with a suitable handle and with an upper bit-section  $k^1$ , rigidly attached thereto, a middle section  $k^2$ , pivotally mounted on a reduced diameter at the forward end of said shaft, and lower or forward bit  $k^3$ , also mounted on said shaft, the latter two bit-sections being capable of longitudinal movement on said shaft and being prevented from detachment from same by means of a head  $k^4$ , formed at the end of the said shaft. The lower surface of the upper bit-section  $k^1$  is provided with a series of borings  $z$ , varying in depth, Figs. 5 and 6, said borings corresponding in depth and diameter to a series of pins  $q$ , Fig. 18, mounted in the bolt-cylinder  $d$  and capable of depressing a series of spring-pressed bolts  $r$ , having springs  $r^4$ , and thus releasing the said bolt-cylinder, as hereinafter set forth. The shape and depth of the borings  $z$ , Fig. 5, are concealed from view in the key by means of the intermediate bit-section  $k^2$ , which is pivotally mounted on the reduced part of the shaft  $k$  of the key. A third section  $k^3$  is mounted on the said shaft below the said second section. A detent-bolt  $r^3$  is mounted at about the outer end of the intermediate section  $k^2$ , said bolt being normally depressed by means of a spring  $r^2$  and being retained in the end depression  $z$  of the section  $k^1$  by the upper surface of the under section  $k^3$  when the key is not in the lock. As soon as the under section  $k^3$  has been separated from the middle section  $k^2$  by the action of the lock-cylinder the bolt  $r^3$  will be depressed by the spring  $r^2$  by means of a groove, hereinafter described, after the said key shall have been turned a certain part of the revolution. The spring-bolt  $r^3$  is concealed by the under section  $k^3$  when the key is not in the lock. The lower section  $k^3$  is

coupled to the middle section  $k^2$  by means of a series of spring-bolts  $r'$ , which engage in a corresponding series of vertical borings of the said lower bit-section, depressing a corresponding series of bolts  $q'$  of varying length, the reduced ends of which bolts  $q'$  are visible through openings in the under surface of the said lower bit-section. The bolts  $r'$  are normally depressed by means of springs  $m$ , mounted above the same in the middle section  $k^2$ . If the bolts or pins are by any means pressed upwardly, so as to cause the ends of bolts  $r'$  to be in alinement with the line of section between bit-sections  $k^2 k^3$ , the latter will be released from the former. When this has taken place and provided that no means are present to retain the spring-bolt  $r^3$  in its upward position, the latter would be normally depressed and accordingly disengage the upper fixed bit-section  $k^1$  from the said middle section. If now the key-shaft  $k$ , and with it the upper section  $k^1$ , is turned far enough to bring the latter out of engagement with the section  $k^2$ , this, and with it the lower section  $k^3$ , will slide along the key-shaft  $k$  into planes approximate that of the fixed bit  $k^1$ . This is, in fact, the position of the bit-sections when operating to open the lock, Figs. 8 and 9. In order to effectually close the crevices between the bit-sections, the lower edges of sections  $k^1 k^2$  are provided with chamfers  $b^1 b^2$ , respectively, Figs. 6, 7, and 8, which engage corresponding recesses  $g^1 g^2$  of sections  $k^3 k^2$ , Figs. 9 and 11.

*Second. The latch on section  $k^2$ .*—The latch  $x$  is pivoted on a bar  $a^x$ , mounted on lugs  $x^1 x^2$  of the middle bit-section  $k^2$ , and its lower end is concealed in a small housing  $y$ , fast on the lower bit-section  $k^3$ , said housing serving mainly to conceal a series of hooked fingers  $x^3$  at the lower end of the said latch and for disengaging said fingers from a series of tumblers or sliding bolts, as hereinafter described, Figs. 6, 11, and 12. When the housing  $y$  is in position over the ends of the fingers  $x^3$ , a ledge  $x^5$ , Fig. 7, of said housing engages in the hook-shaped recess  $x^4$ , Fig. 8, of the fingers and conceals their form. The projections  $p p$ , Figs. 8, 9, and 11, engage the corresponding recess on the section  $k^1$  to guide the same into proper position against the middle section  $k^2$ . By means of the bolts  $q'$ , which fit the orifices in the ends of the lowest bit, and the latch  $x$  the connections between the bit-sections are so concealed and the latter so coupled that it is impossible to separate the parts even when the section  $k^1$  and the button  $k^4$  of the reduced part of the shaft  $k$  may have been detached by means of a chisel or other tool.

*Third. The lock with bolt and bit operating cylinders.*—The lock consists of the cylindrical housing  $a'$ , having base-plate  $e$ , cover  $a$ , with keyhole and keyhole-cover, as hereinafter described, and in this case three cylinders  $b$ ,  $c$ , and  $d$ . The cover  $a$  is screwed to the housing  $a'$  at  $y'$  and is provided with



the keyhole  $l'$ . In the housing  $a'$  are mounted the superposed cylinders  $b$ ,  $c$ , and  $d$ . As will be seen from the drawing described in connection with the key, the bit-sections  $k'$   $k^2$   $k^3$  are connected to the shaft by means of curved or bow-like arms corresponding in shape to that part of the key-orifice which connects the orifice  $l$  with the lower part of the orifice  $l'$ , so that in all the cylinders the nose  $u$ , Figs. 20 to 27, will extend into the keyhole and prevent an examination of the interior of the lock through the hole  $l$ . The head  $k^4$  and the shaft of the key  $k$  will be inserted into the hole  $l$ , while the bit, comprising the three sections  $k'$   $k^2$   $k^3$ , will enter the extension  $l'$  of the keyhole. In the immediate proximity of the orifice  $l'$  a cavity  $s$   $t$  is formed on the under surface of the cylinder  $b$ , Figs. 16 to 22, the cross-section of said cavity corresponding to the shape of the latch  $x$ , so that the latter can pass into the cavity when the bit has been sufficiently far inserted into the lock. The cavity  $s$   $t$  extends radially, the part  $s$  being gradually flattened or made lower, and as soon as the latch  $x$  meets this lower part  $s$  of the cavity it will be turned on its pivot  $a^x$ . The lower surface of the cylinder  $b$  is further provided with a radial depression having various sectional areas  $w$   $w'$   $w^2$ , in which the tumblers  $v$  of the intermediate cylinder  $c$  may move.

The intermediate cylinder  $c$ , Figs. 16 to 19 and 23 to 27, is provided at its under surface with a recess  $o^3$  for the reception of the housing  $y$  on the bit-section  $k^3$ . The keyhole in the cylinder  $c$ , Figs. 23 and 27, is extended or widened, and the ends of the tumblers  $v$  extend into the widened part of the same. These tumblers are operated by the fingers  $x^3$  of the latch  $x$  and forced backward when the latter is turned on its pivot  $a^x$ . The hooks  $v'$   $v^2$  of the sliding tumblers  $v$  engage successively in the radial groove  $w$   $w'$   $w^2$  of the cylinder  $b$ , which groove, as above mentioned, is provided with varying cross-sections, so that each part of the said groove will correspond to certain positions of the tumblers  $v$ . The movement of the hooks  $v'$   $v^2$  from one section of the groove to another is facilitated by means of springs  $a^2$ , Fig. 25, which normally force the tumblers  $v$  into the opening  $l'$ . The cylinder  $c$  is further provided with an orifice for the admission of the section  $k'$  of the key and with an inclined groove  $e'$ , which corresponds to the width of the bit-section and is gradually flattened. On the lower surface of the said cylinder  $c$  a guide-pin  $w^4$ , Fig. 19, is mounted which engages in a groove  $o$ , provided in the bolt-cylinder  $d$ . The bolt-cylinder  $d$  having bolt, hook, or catch  $g$ , Figs. 16 to 19 and 28 to 30, is provided with the key-orifice extension  $l$ . Instead of the part  $l'$  of the keyhole a deep groove  $n'$ , corresponding to the shape of the bit-section  $k^3$ , is provided, said groove containing a series of pins  $n$ , adapted on contact with the pins  $q'$  to press the latter upwardly

into the bit-section  $k^3$ . Another groove  $i^3$ , similarly inclined to the groove  $e'$  in the cylinder  $c$  and becoming gradually flattened, is provided in the cylinder  $d$ , Fig. 28, said groove being recessed at  $t'$  in order to guide the spring-pressed pin  $r^3$ . The cylinder  $d$  is further provided with a series of bolts, by means of which it is locked to the base-plate  $e$ . The detent-bolts proper, which are operated by the said bolts  $q$ , are mounted in the base-plate  $e$  and extend into borings of the bolt-cylinder  $d$ , in which the said bolts  $q$  are mounted. The bolts  $q$  correspond in position to the borings  $z$  of the bit-section  $k'$ , and their ends extend into a cavity  $p'$ , formed in the upper surface of the said cylinder  $d$ . The cylinder  $d$  is locked, as before mentioned, to the base-plate  $e$ , Figs. 16 to 19 and 31 to 34. The projections or lugs  $j^2$  of the base-plate fit into recesses  $j^3$ , Fig. 36, of the housing  $a'$ , and the said base-plate may be further secured to the cylinder-walls of the housing by means of screws. The base-plate  $e$  forms the closure for the part  $l$  of the keyhole, being provided with a depression only deep enough to receive the head  $k^4$  of the key-shaft. The series of bolts  $r$ , mounted in this plate and which, as previously mentioned, serve to lock the bolt-cylinder  $d$ , are normally pressed upwardly by means of springs  $r^4$ , mounted on a spindle fitted in a recess in the under surface of the said base-plate.

When the lock is locked, the cylinders  $b$   $c$   $d$  and the base-plate  $e$  are in the following positions: The detent-bolts  $r$  of the base-plate  $e$  are in engagement with the bolt-cylinder  $d$  and prevent the same from rotation. At the same time the sliding bolts  $q$  of the bolt-cylinder  $d$  are covered and effectually concealed by the cylinder  $c$ . The orifice  $m'$  of the cylinder  $c$  is not in position above the recess  $p'$ . The tumblers  $v$  are in position in the opening  $l'$  on the cylinder  $c$  and prevent the movement of the hooks  $v'$   $v^2$  in the groove  $w$   $w'$   $w^2$ . The orifice  $m'$  may be brought into position above the recess  $p'$  by turning the cylinders  $c$  and  $b$ ; but the said opening will still be concealed by the cylinder  $b$ . Not until the latch  $x$  has disengaged the tumblers  $v$  can the bit-section  $k'$  by rotating the cylinders  $d$  and  $c$  be passed from the cylinder  $b$  to the orifice  $m'$  and to the recess  $p'$ .

In locking the lock the latter and the key cooperate in the following manner: The key is passed into the orifices  $l$   $l'$  of the cylinders  $b$  and  $c$  far enough to allow the whole composite bit to reach the cylinder  $d$ . If now both the cylinders are turned, the bit  $k'$   $k^2$   $k^3$  will be turned to the position indicated by the line 30 30 of Fig. 28. At this point the lowest bit-section  $k^3$  will enter the recess  $n'$  of the cylinder  $d$ , and the pins  $n$  in the recess will engage the ends of the bolts  $q'$  of the key, pressing the same upwardly, and thus raising the bolts  $r'$  sufficiently high in the section  $k^2$  to detach the latter from the lower section  $k^3$ . The middle section  $k^2$  is, however, still



coupled, by means of the latch  $x$  and the spring-bolt  $r^3$ , to the upper section  $k'$ , while the lower section  $k^3$  will remain fixed in the recess  $n'$ . If now the key is turned further, the cylinders  $b$  and  $c$  will rotate with the same. When the sections  $k'$   $k^2$  have been turned to the position indicated by the line K L, Fig. 35, the latch  $x$  comes into operation. The position just described is illustrated in Figs. 37 and 38 in plan and section. In these views the cylinders  $b$  and  $c$  are in the same position, one about the other, as in Fig. 35 along the line K L. The bit-sections  $k'$   $k^2$  are still coupled, owing to the fact that the spring-bolt  $r^3$  has not yet reached the deepest point of the inclined groove  $t'$ . A moment afterward the said bolt  $r^3$  will be enabled, by means of the groove, to move downward far enough to pass out of the section  $k'$ , and at this point the intermediate cylinder  $c$  will remain stationary, since the pin  $o^x$  has attained the end of the concentric groove  $o$  in the upper surface of the cylinder  $d$ , Figs. 28 and 29. The bit-section  $k'$  is now uncoupled from the section  $k^2$ , and on continuing to turn the key the former section  $k'$  alone will effect the further rotation of the cylinder  $b$  as long as the hooks  $v'$   $v^2$  remain in the section H H', Figs. 35 and 39, of the groove  $w w'$   $w^2$ . The tumblers  $v$  can only be operated by the latch  $x$ , and as long as this latch is in the enlarged part of the groove  $s t$ , Figs. 37 and 38, the same will be in a substantial vertical position and will not influence the said tumblers  $v$ . When the bit-section  $k'$  has reached the position indicated by the line L' K' of Fig. 37, the groove  $t$  will have been turned far enough to the right to cause its decreased section to operate the latch  $x$ , tipping the same on its pivot by means of the edge  $t^2$ . The further rotation of the key operates the fingers  $x^3$  against the ends of the tumblers  $v$ , causing the hooks  $v'$   $v^2$  of the same to be forced outwardly, so that the same may now pass into the section H' H<sup>2</sup> of the groove  $w'$  of the cylinder  $b$ , along which groove they will now pass. They must not, however, enter the groove  $w'$  before the keyhole of the cylinder  $d$  has passed off that of the cylinder  $c$  entirely. (See the position indicated by line K' L' of Fig. 37.) If the section  $k'$  is further turned from the position indicated by line L<sup>2</sup> K<sup>2</sup>, Fig. 39, the cylinder  $b$  will move with it, because the hooks  $v'$   $v^2$  can now move in the part  $w^2$  of the groove  $w w' w^2$ . The orifice  $m'$  of the cylinder  $c$  will now register with the recess  $p'$  of the bolt-cylinder  $d$ . When the bit-section  $k'$  has arrived at the position indicated by the line K<sup>3</sup> L<sup>3</sup> of Fig. 41, the said section may be pushed through the orifice  $m'$  into the recess  $p'$ . When this is the case, the bolts  $q$  may enter the borings  $z$  on the lower surface of the bit-section  $k'$ , by which section they will be depressed, thus pushing the detent-bolts  $r$  of the base-plate  $e$  out of the borings of the bolt-cylinder  $d$ . The latter is now free to rotate. The three bit-sections  $k'$   $k^2$   $k^3$

will now be in the position indicated at Figs. 8 and 9, and the bolt-cylinder  $d$  may be turned either by means of the key or by means of the bolt  $q$ , thus disengaging the latter and enabling the door to be opened.

It should be remarked that the section  $k^3$  is retained in the cylinder  $d$  and the section  $k^2$  in the cylinder  $c$ . The grooves  $l^3$  and  $t'$  serve to guide the detent-bolts  $r'$  and the spring-bolt  $r^3$ , respectively. The groove  $e'$  forms the guide for the bit-section  $k'$ . In turning the key back the bit-section  $k'$  is first withdrawn from the orifice  $m'$  and recess  $p'$  and then turned backward in the recess or depression  $e'$ , Fig. 23. The section  $k'$  will then recouple with the section  $k^2$ , and at the same time or immediately afterward the latch  $x$  will begin to move into its vertical position. On continuing to turn the key back the sections  $k'$   $k^2$  will move together, the inclined groove  $t'$  will press the spring-bolt  $r^3$  back into the section  $k'$ , and at the same time the spring-bolts  $r'$  will be pushed home in the section  $k^2$  by the inclined groove  $i^3$ , so that the lower section  $k^3$  will be able to be turned into position against the section  $k^2$ . If the cylinder  $d$  has not been turned back far enough to allow the detent-bolts  $r$  and the bolts  $q$  to come into alinement, the key may be withdrawn from the lock without locking the door. The lock will not be closed until the bolts  $r$  have been brought into alinement with the bolts  $q$  either by turning the bolt-cylinder  $d$  by means of the key or by means of the bolt  $q$ .

*Fourth. The device for covering the keyhole.*—The device for covering the keyhole is illustrated in Figs. 14 to 19 and consists of a cover F, having a handle F' and having arms B, Figs. 14 to 19, pivotally attached to hinge-pin C, which is mounted in a block A of the lock cover or cap  $a$ . The said cover is provided with downwardly-extending ledges P, between which a rubber disk or disk of other yielding material F<sup>3</sup> is secured, said disk serving to tightly close the keyhole. The cover F is retained in position by means of a lever G, pivoted at G<sup>2</sup>, Fig. 14, and adapted to engage under a hook G' on the lock-cover. In order to prevent the cover F from being opened by unauthorized persons, a strip of paper, linen, leather, or the like may be stretched over the same. The strip is attached to the hook E, Fig. 18, and drawn over the cover and over an orifice in the same, in which the bolt D fits. After the lock has been closed the pin D may be passed through the strip into its orifice, when a laterally-sliding spring-pressed bolt  $o'$  with spring  $o^2$  will advance into a recess D' of the said pin D, retaining same in position. On opening the lock when the cylinder  $d$  is turned the bolt  $o'$  will be turned out of the recess of the pin D, and the latter will be raised by means of a screw-like rib  $m^2$ , formed around the cylinder  $b$ . The bolt-cylinder may be arranged in any desired manner.



The lock may be attached to the car or truck or door-frame, &c., in any suitable way—for instance, by means of bolts *i*, attached to the cap *a*, and which may be passed 5 through the wall of the car. These bolts may be secured on the interior of the car by means of a ring *i*<sup>2</sup> and nuts *i*<sup>1</sup>.

The bolt *g* may be caused to engage a suitable orifice in a locking-plate or to act in any 10 other known manner in connection with the wall to which the door is to be locked, or if the lock is on the wall then the bolt may engage a suitable orifice of the door, as will be evident without further explanation.

15 I claim as my invention—

1. In a lock the combination of a key, having separable bit consisting of a series of sections, means for locking said sections together, a series of superposed cylinders in 20 said lock and means in connection with the same for disengaging the bit-sections when the lock is opened and relocking the same when the lock is closed, door-fastening means, being attached to one of said lock-cylinders, 25 substantially as described.

2. In a lock the combination of a cylindrical housing, having a base-plate and having therein a series of superposed cylinders and a bolt fast on one of said cylinders, a key, 30 having a composite bit, one section of which is fast to the key-shaft and bit-sections pivotally mounted on said key-shaft, means concealed within said bit for locking the sections together and means in connection with lock- 35 cylinders for unlocking said bit-sections and for releasing the bolt-cylinder after said sections have been disengaged and for relocking said sections before the key has left the lock, substantially as described.

3. In a lock the combination of a cylindrical housing, having a base-plate, a bolt-cylinder mounted on said base-plate and superposed bit-operating cylinders, revolvably mounted in said casing, a key, having separable bit, 45 comprising a fixed section fast on the key-shaft and other sections pivotally attached thereto, and longitudinally movable thereon, means for locking said sections together, and means in connection with the lock-cylinder 50 for unlocking said sections and for moving same, with the exception of the fixed section, longitudinally on the shaft when the key is forced into the lock and turned therein and means in connection with the base-plate of 55 the lock-housing for releasing the bolt-cylinder when the key has been turned home and means in connection with the lock-cylinders for relocking the bit-sections together, before the key has left the lock, substantially as described. 60

4. The combination of a lock, having cylindrical housing and the base-plate fixed therein, a bolt-cylinder and superposed lock-cylinders, revolvably mounted on said base-plate 65 and means for locking said bolt-cylinder to said base-plate, a key having separable bit, one section of which is fast on said key-shaft

and two sections of which are revolvably mounted thereon, a latch pivotally mounted to the middle bit-section, and having formed at its 70 end a series of fingers, a housing on the lower section to conceal said fingers and means for locking said three sections together, a series of sliding tumblers mounted in the lower locking-cylinder and means in connection with 75 the upper locking-cylinder, for tripping said latch, means in connection with the bolt-cylinder for disengaging the lower bit-section and operating the fingers of the same against 80 said tumblers to permit movement of said upper cylinder on said lower cylinder, an orifice in said lower cylinder for the passage there-through of the fixed key-bit, means for un- 85 locking the fixed section of the bit and the revolvable section thereunder, a series of bolts mounted in the base-plate and springs to press same upwardly a series of sliding bolts, to operate said detent-bolts and a series of 90 depressions in the under side of the said fixed section, to engage said sliding bolts and depress same, when the key has been forced into the lock and the bit-sections of the same have been detached and means in connection with the lock-cylinders for relocking the bit- 95 sections, before the key has left the lock, substantially as described.

5. The combination of a cylindrical lock-casing having a base-plate and a bolt-cylinder and superposed lock-cylinders mounted therein, a series of bolts, spring-mounted in said 100 base-plate, to engage said bolt-cylinder, a key having a separable bit comprising three sections, one of which is fixed to the key-shaft and two of which are revolvable and longitudinally movable thereon, means in connection 105 with said fixed bit, to depress the detent-bolts of the base-plate, a series of sliding bolts, mounted in the lower section of said bit, a series of spring-pressed bolts, mounted in the intermediate bit-section, and a spring-pressed 110 bolt, to connect said upper and intermediate section, when the three sections are interlocked, a series of sliding tumblers mounted in the intermediate lock-cylinder and adapted to couple same to the upper lock-cylinder, 115 a latch pivoted to the intermediate key-section and having fingers to operate said tumblers, means in connection with the upper lock-cylinder to trip said latch, means in connection with the bolt-cylinder to unlock the 120 lower bolt-section and means in connection therewith to release the lock-bolt between the upper and intermediate bit-section, after said latch has been tripped and means for relocking the key before the same is withdrawn 125 from the lock, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EMERICH VON MARSÓVSZKY.

Witnesses:

ALEXANDER ARRÁGONZ,  
PAUL BOTUKEY.