

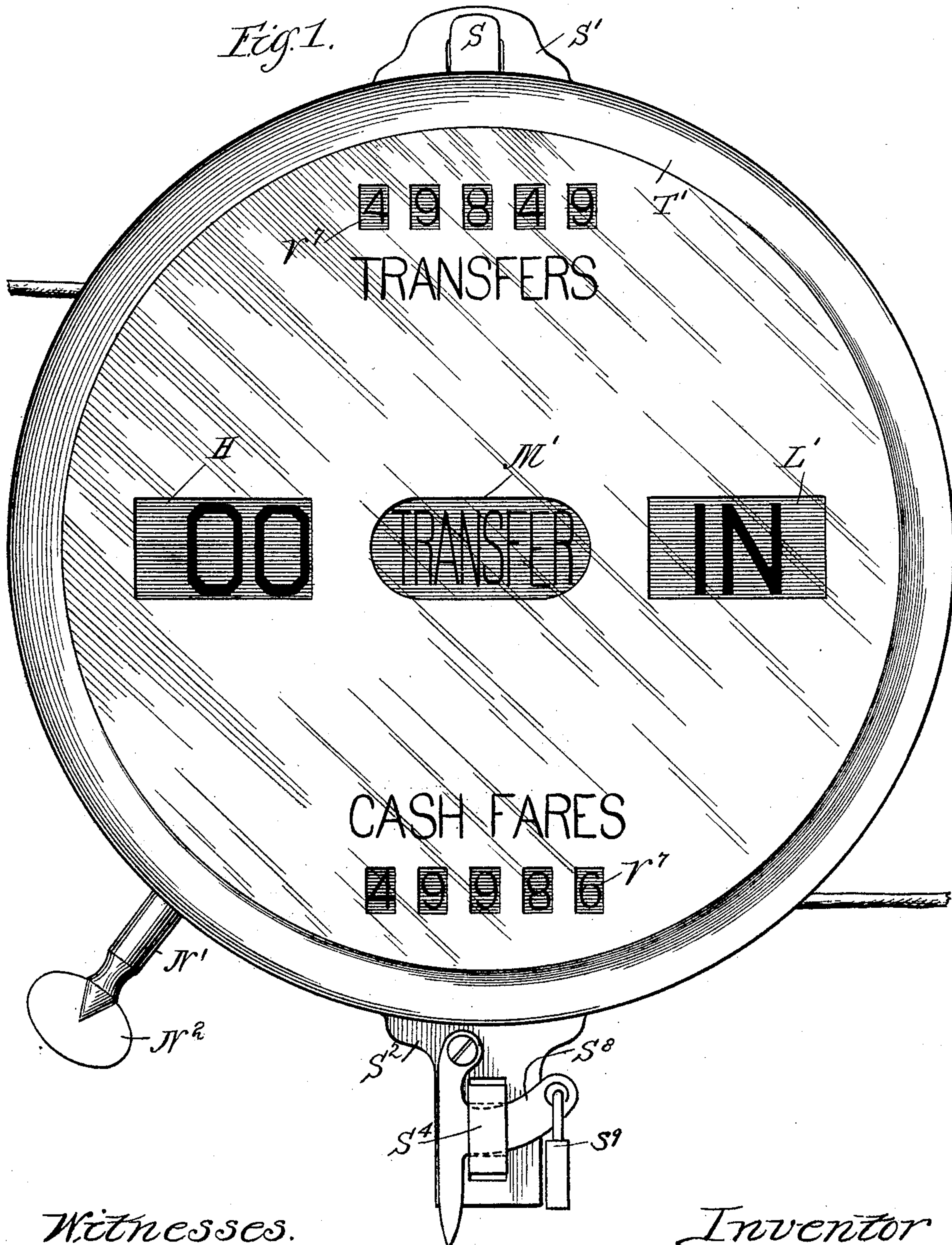
(No Model.)

9 Sheets—Sheet 1.

C. E. PRATT.
FARE REGISTER.

No. 605,912.

Patented June 21, 1898.



Witnesses.
Wm. M. Rheem.
Wm. L. Hanning

Inventor
Charles E. Pratt,
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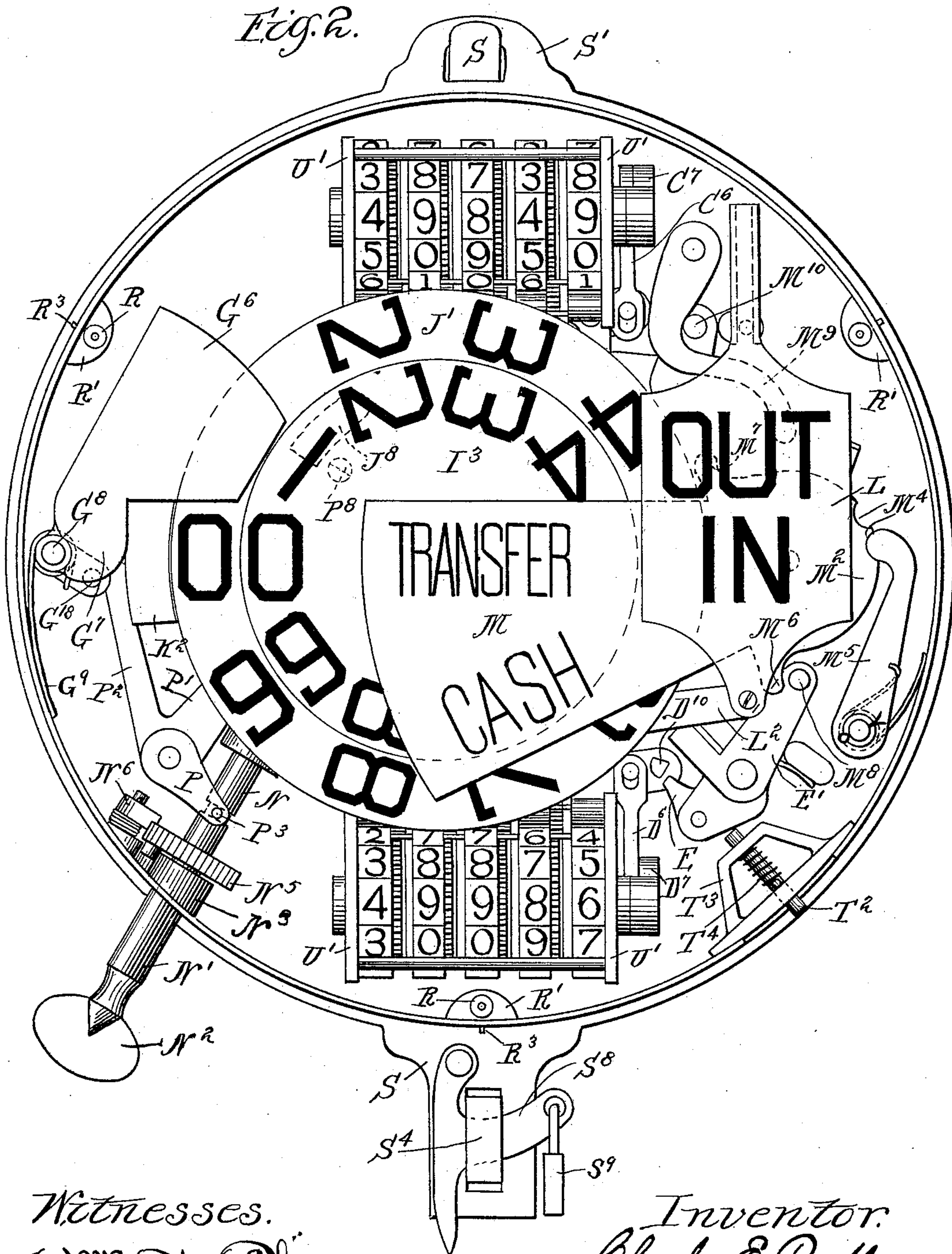
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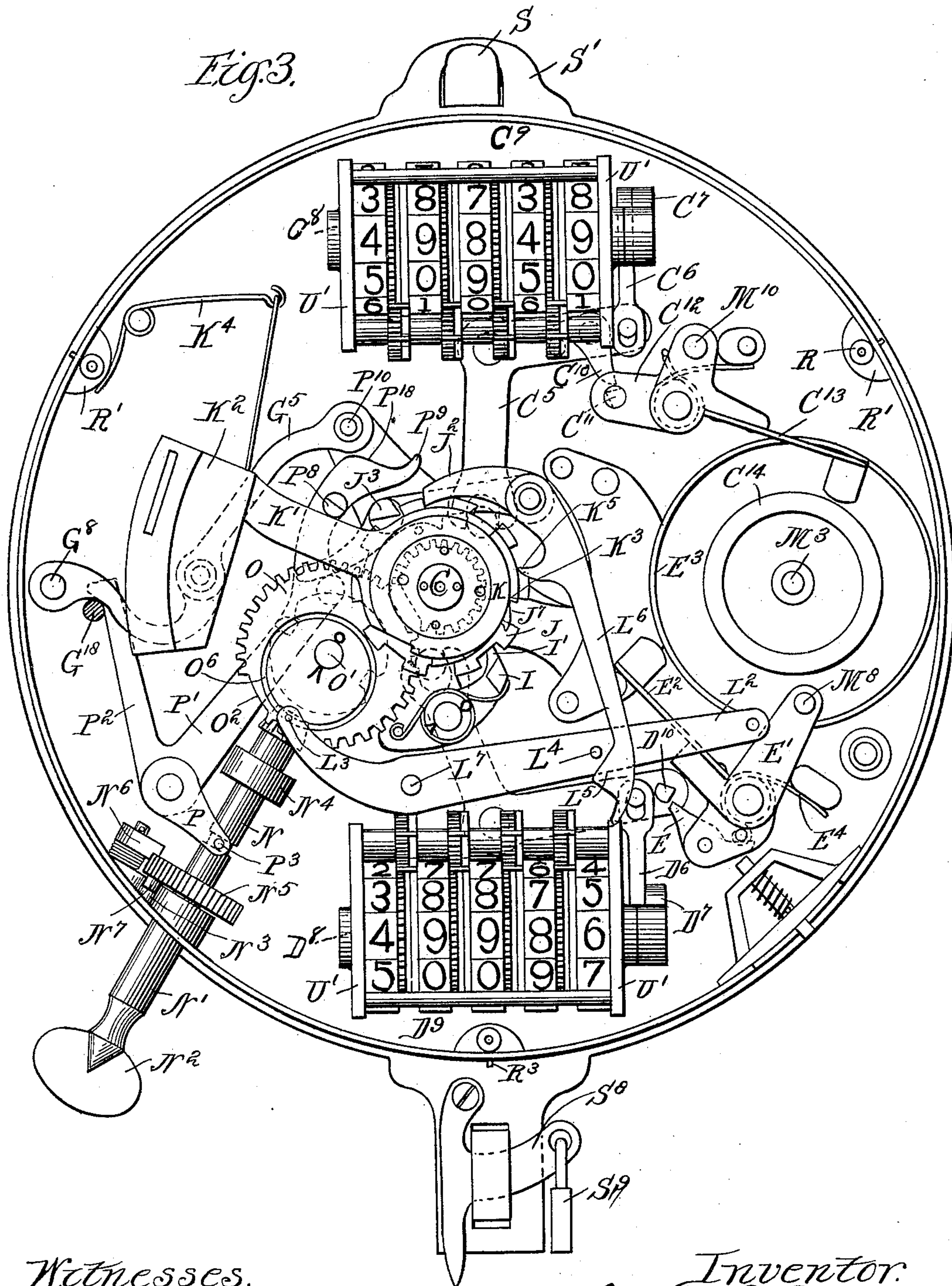
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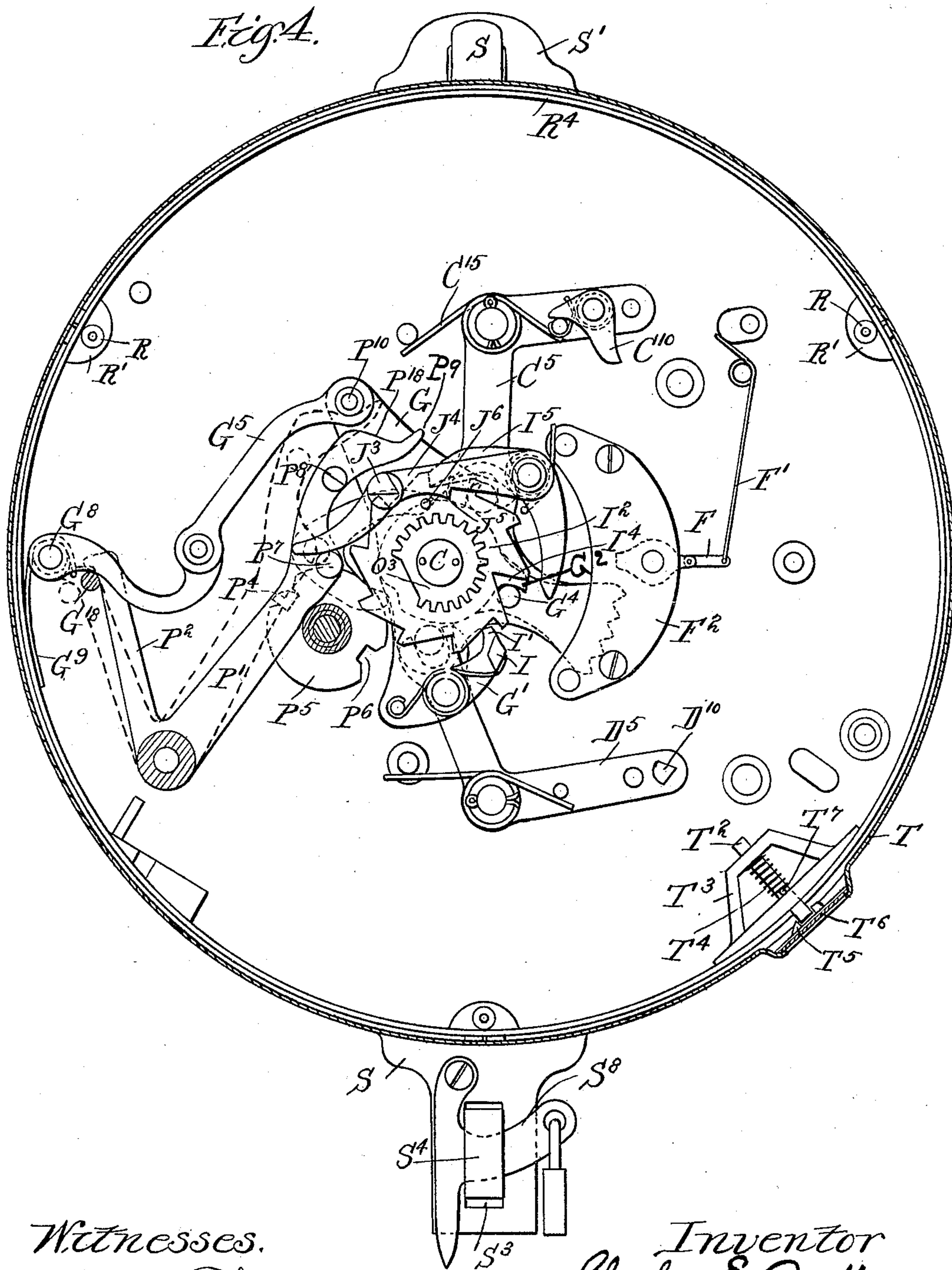
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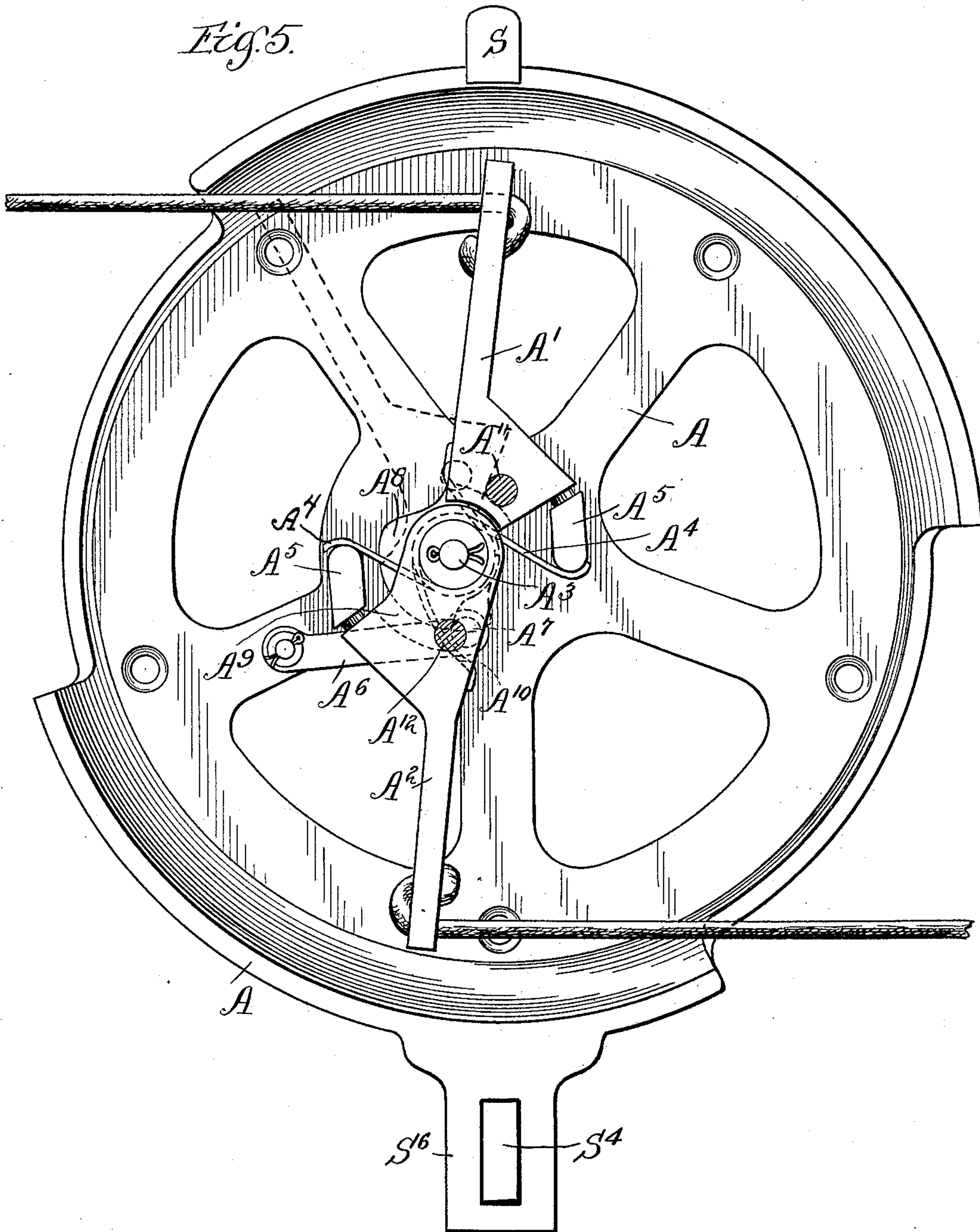
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Fig. 5.



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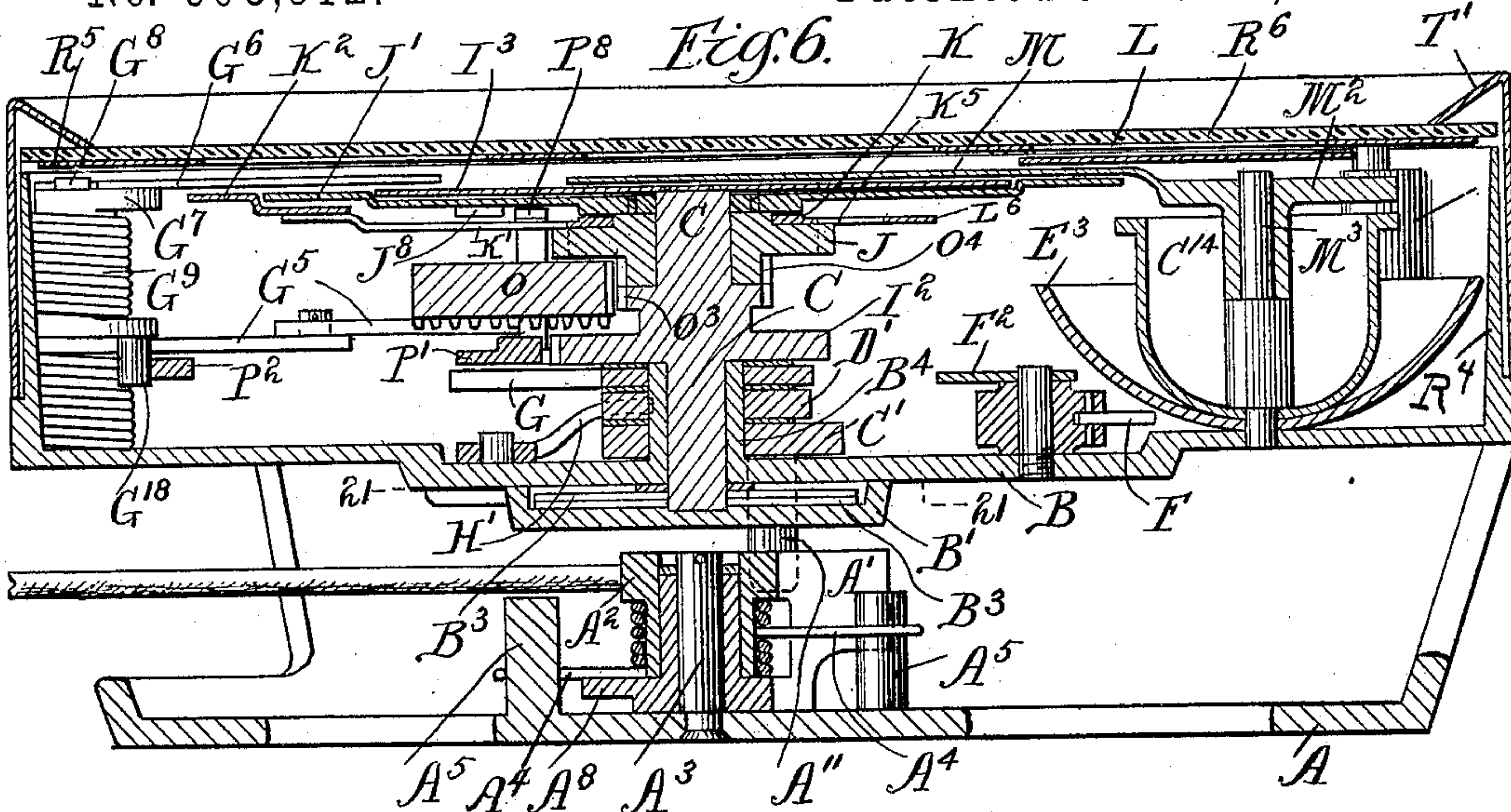


Fig. 7.

Fig. 8.

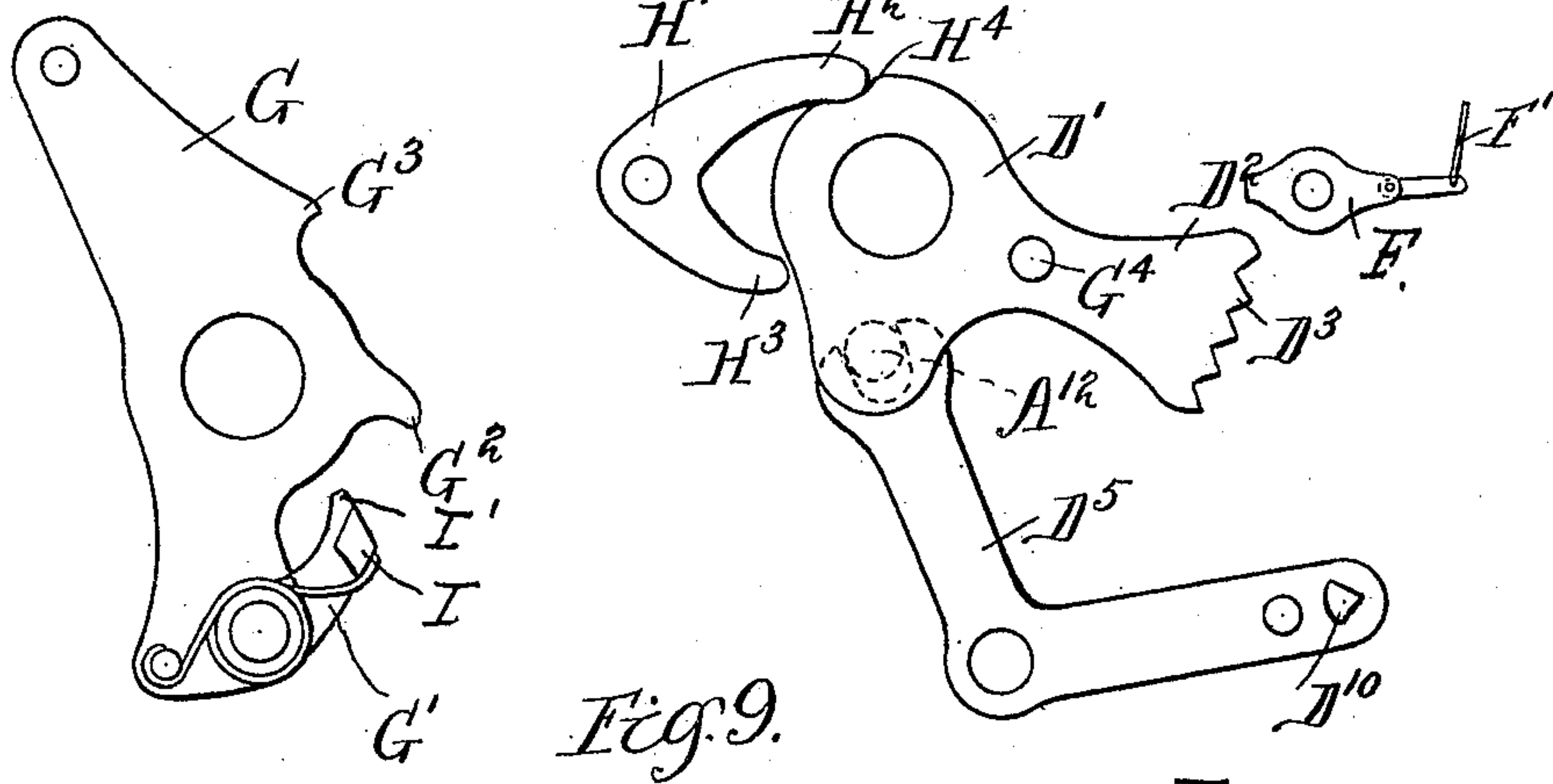


Fig. 9.

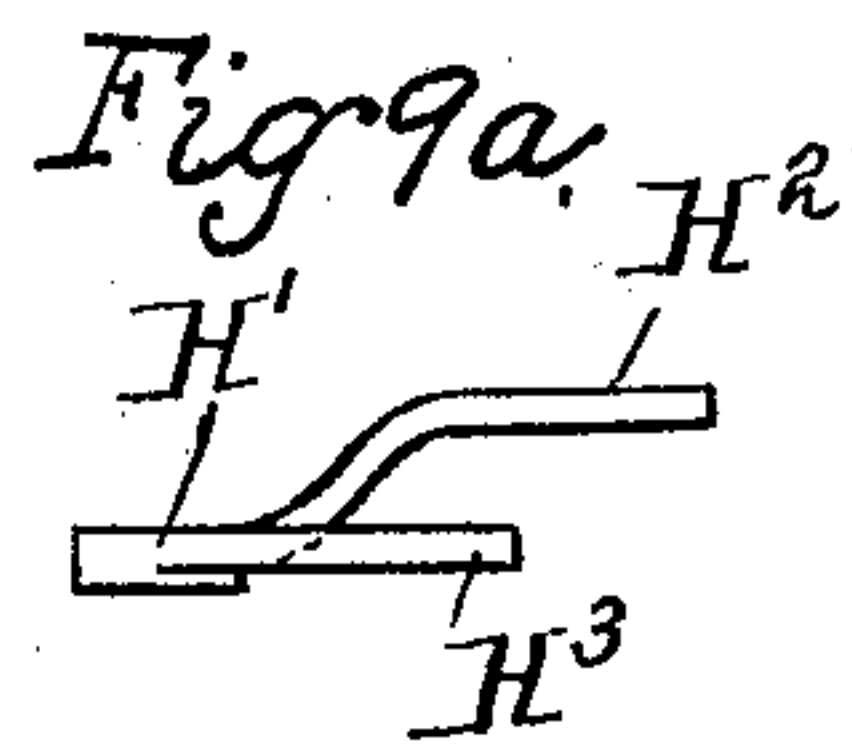


Fig. 9a.

Witnesses.

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(No Model.)

9 Sheets—Sheet 7.

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Fig. 10.

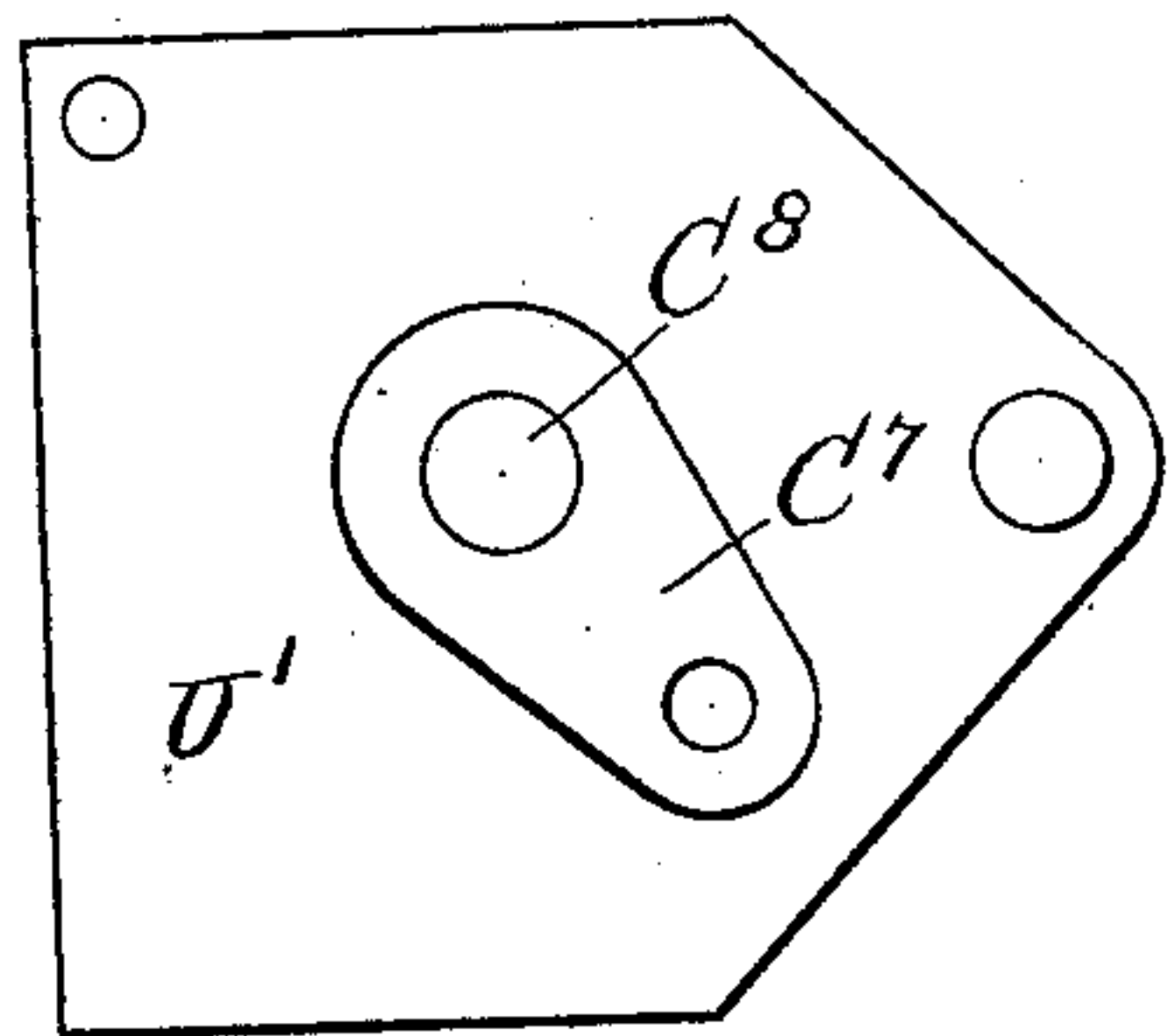


Fig. 11.

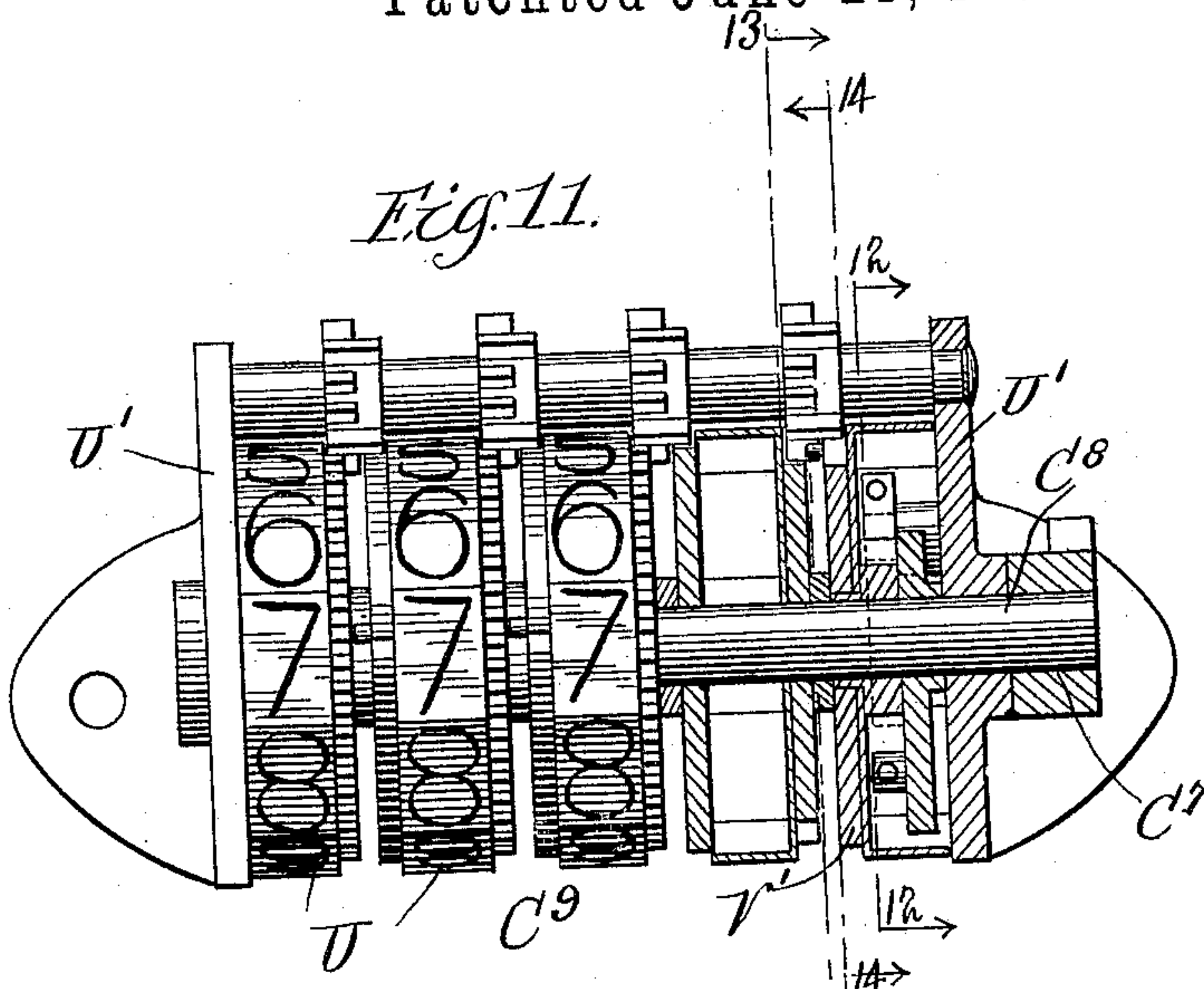


Fig. 12.

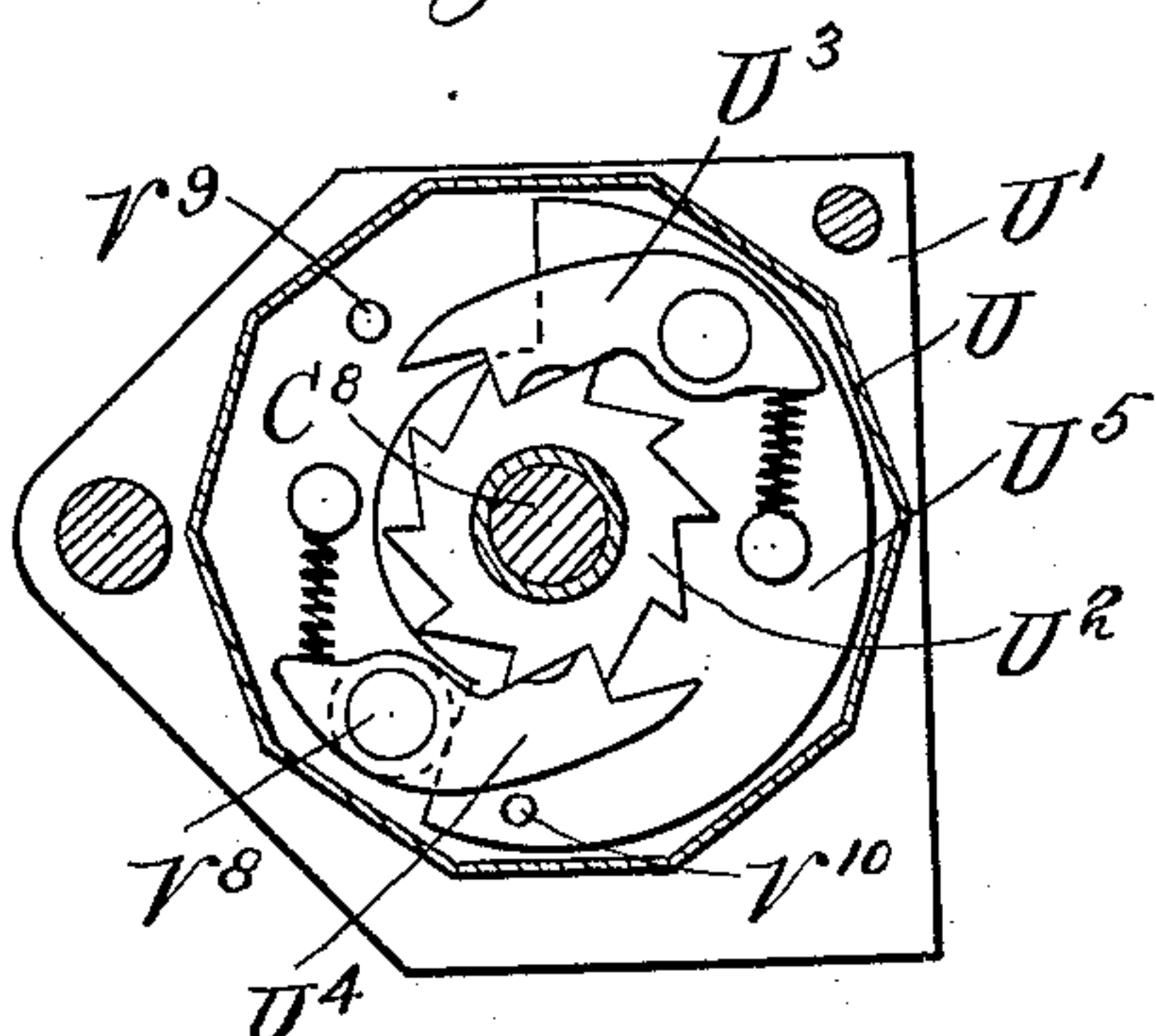


Fig. 13.

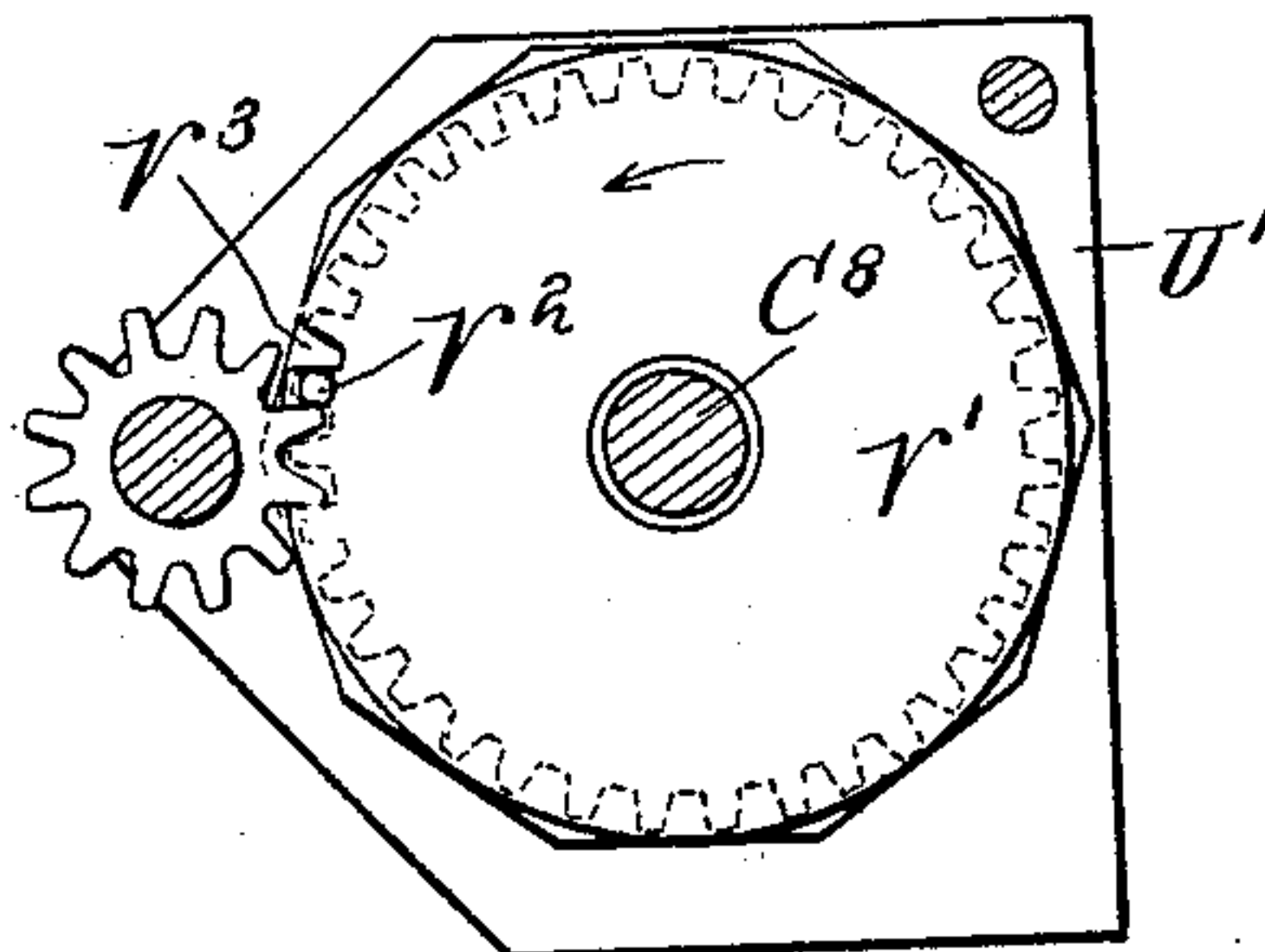


Fig. 14.

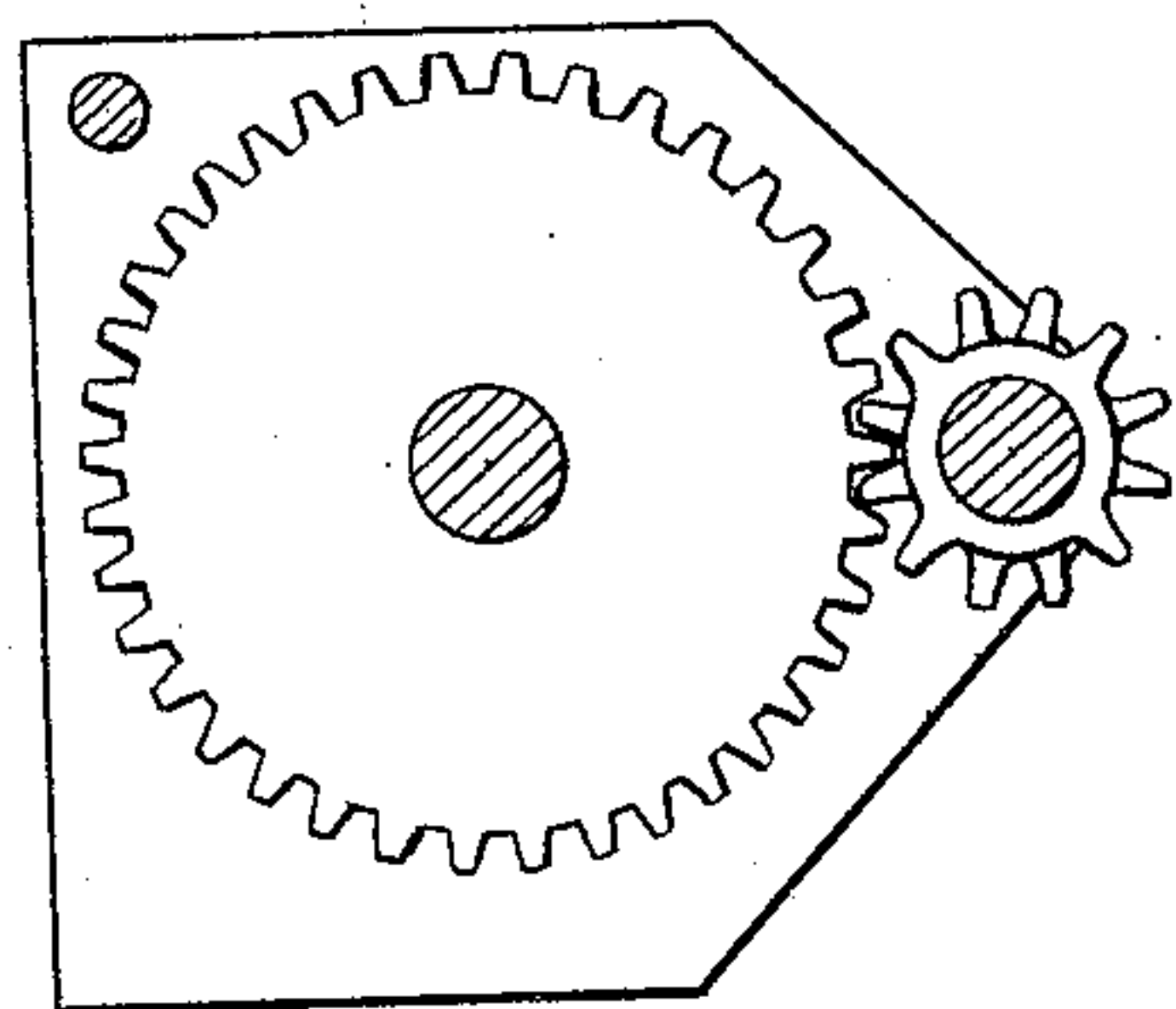
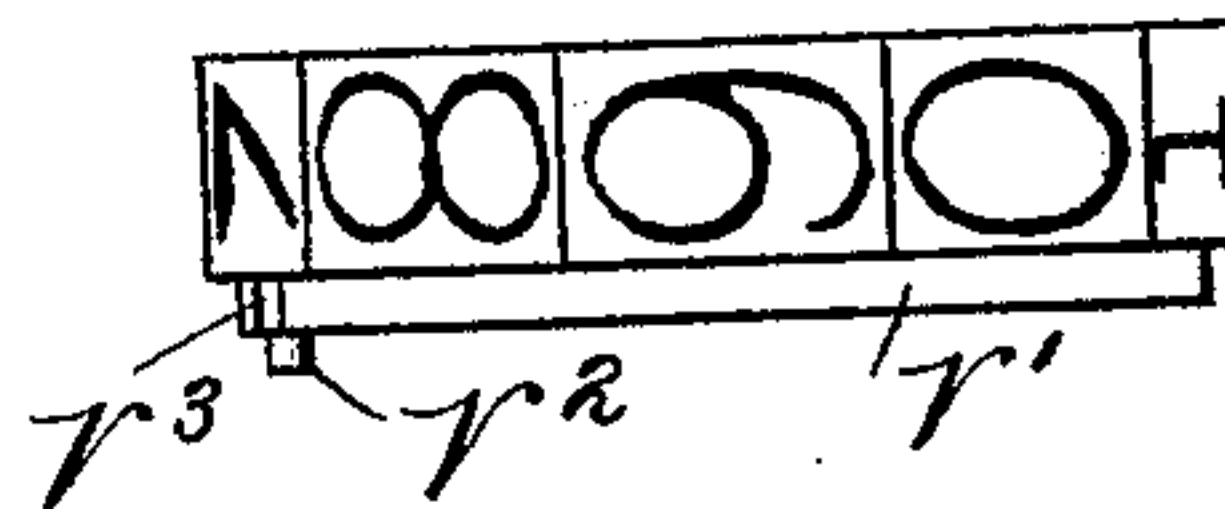


Fig. 15.



Witnesses.

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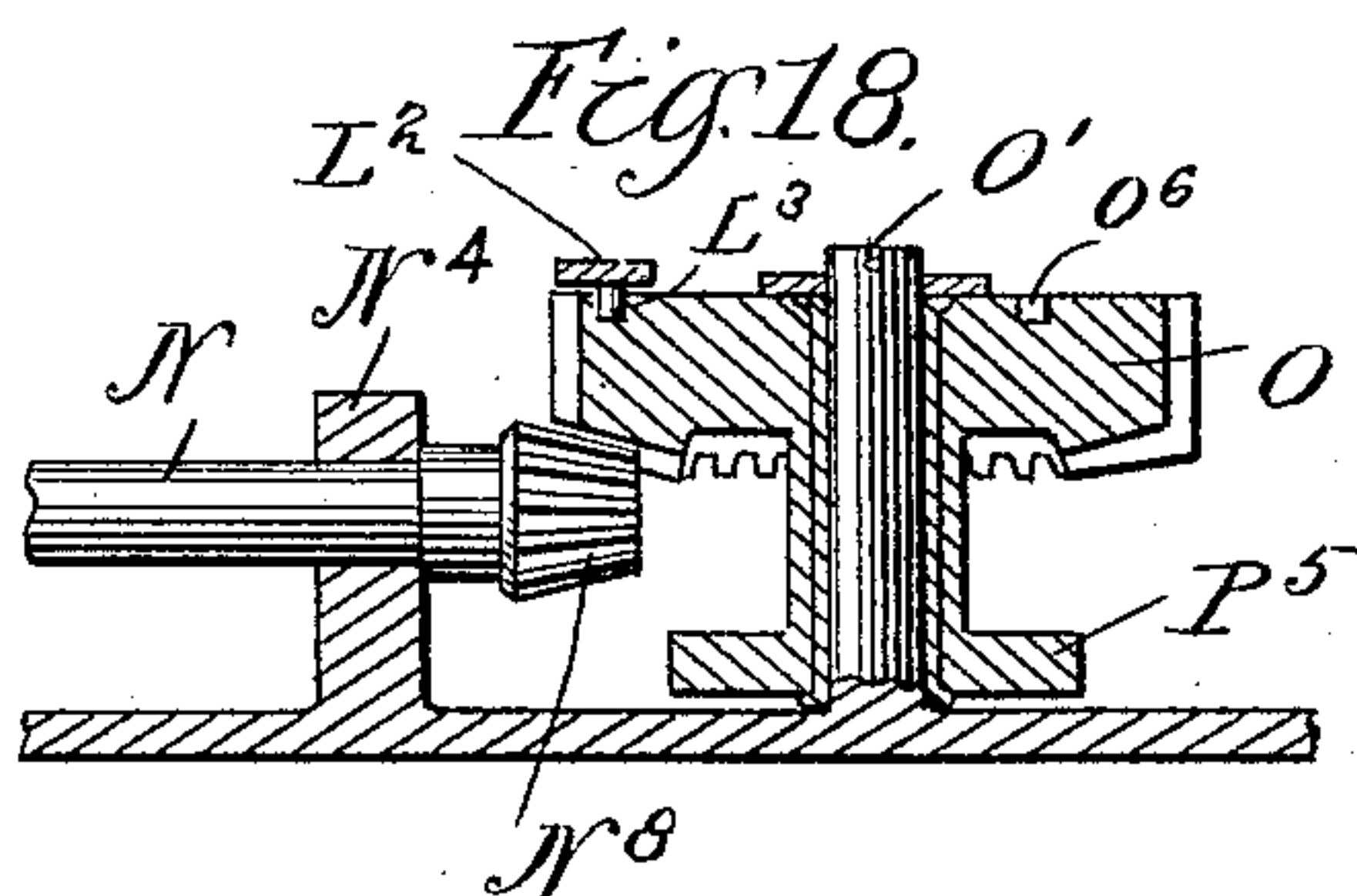
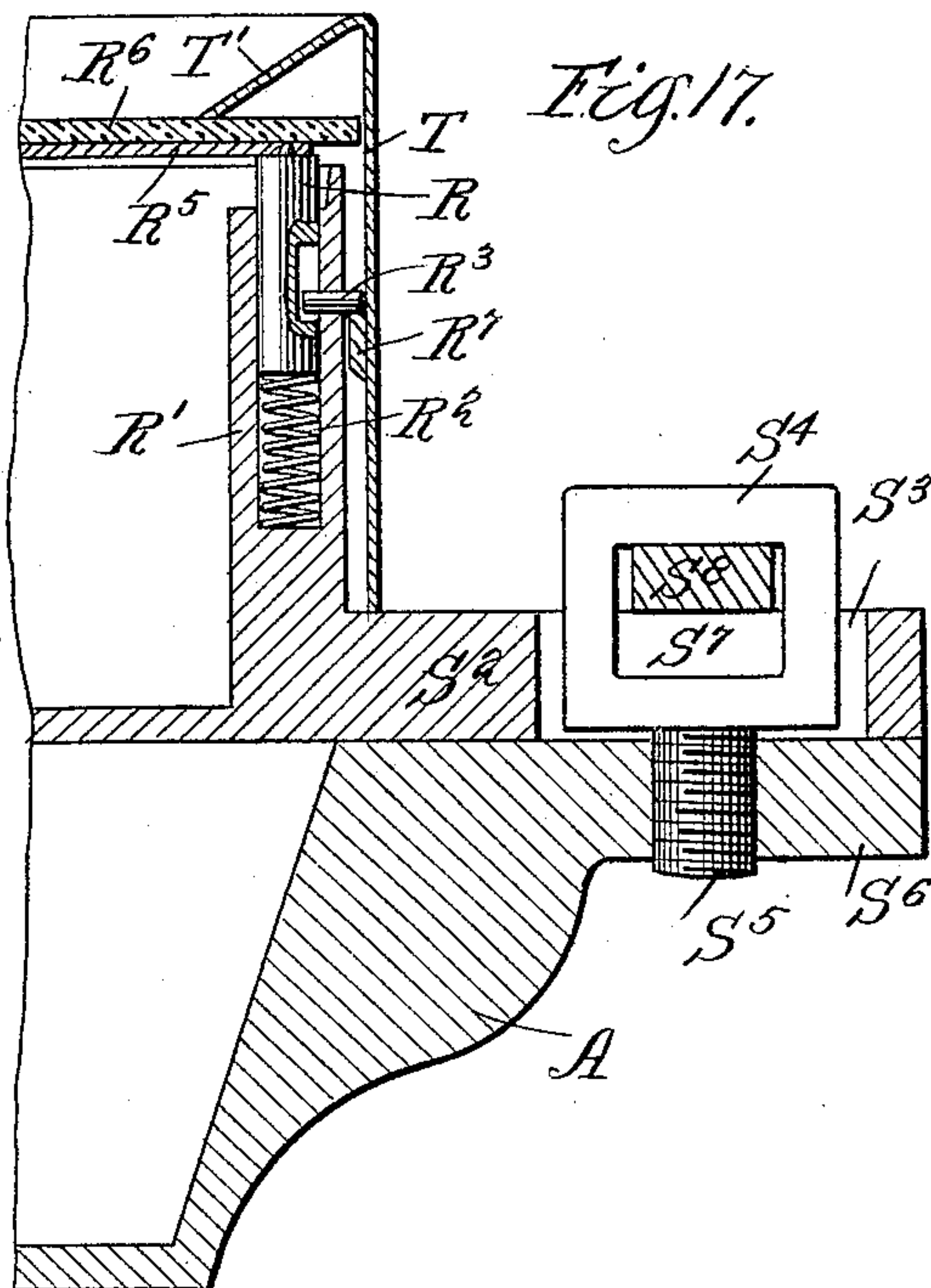
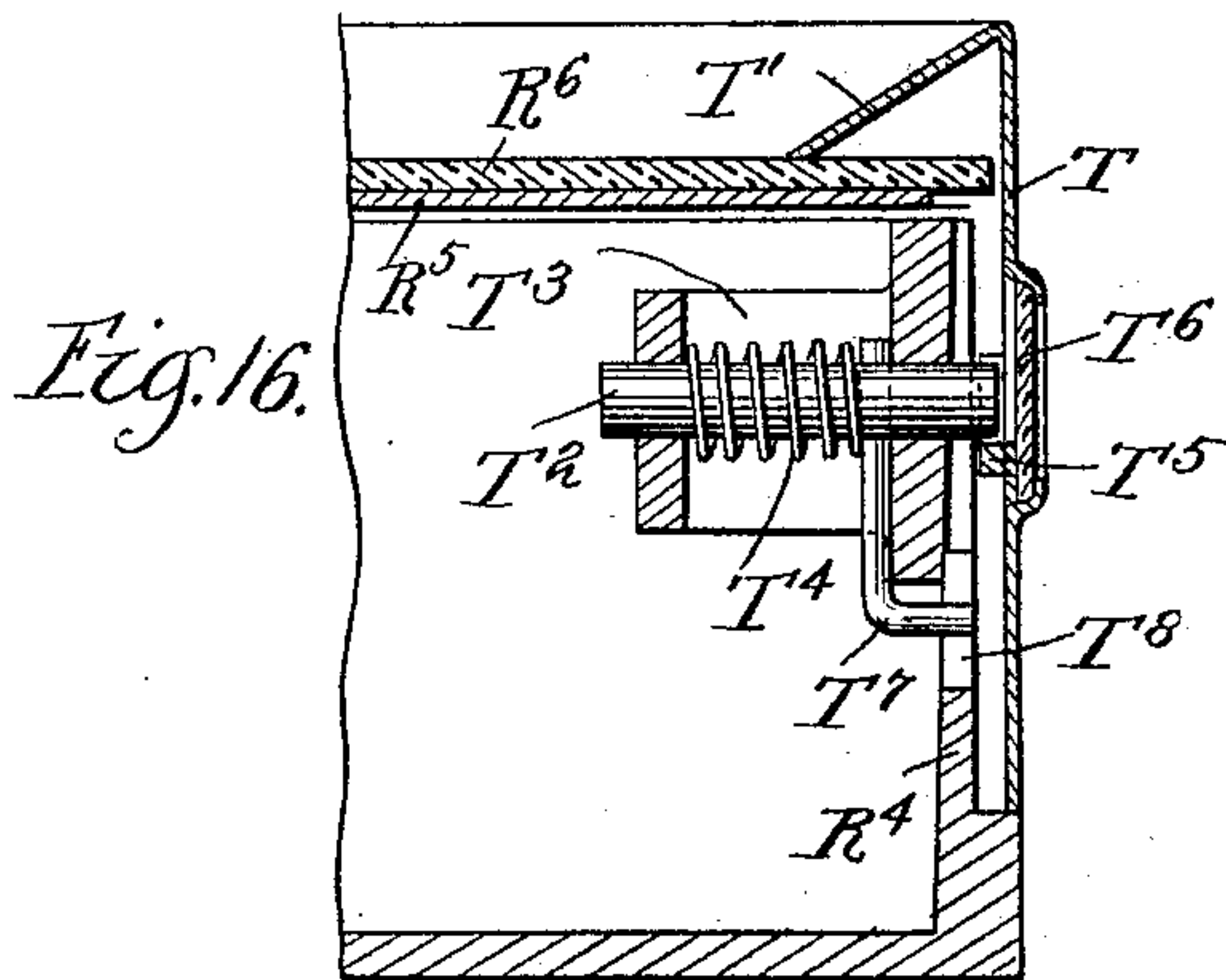


Fig. 19.

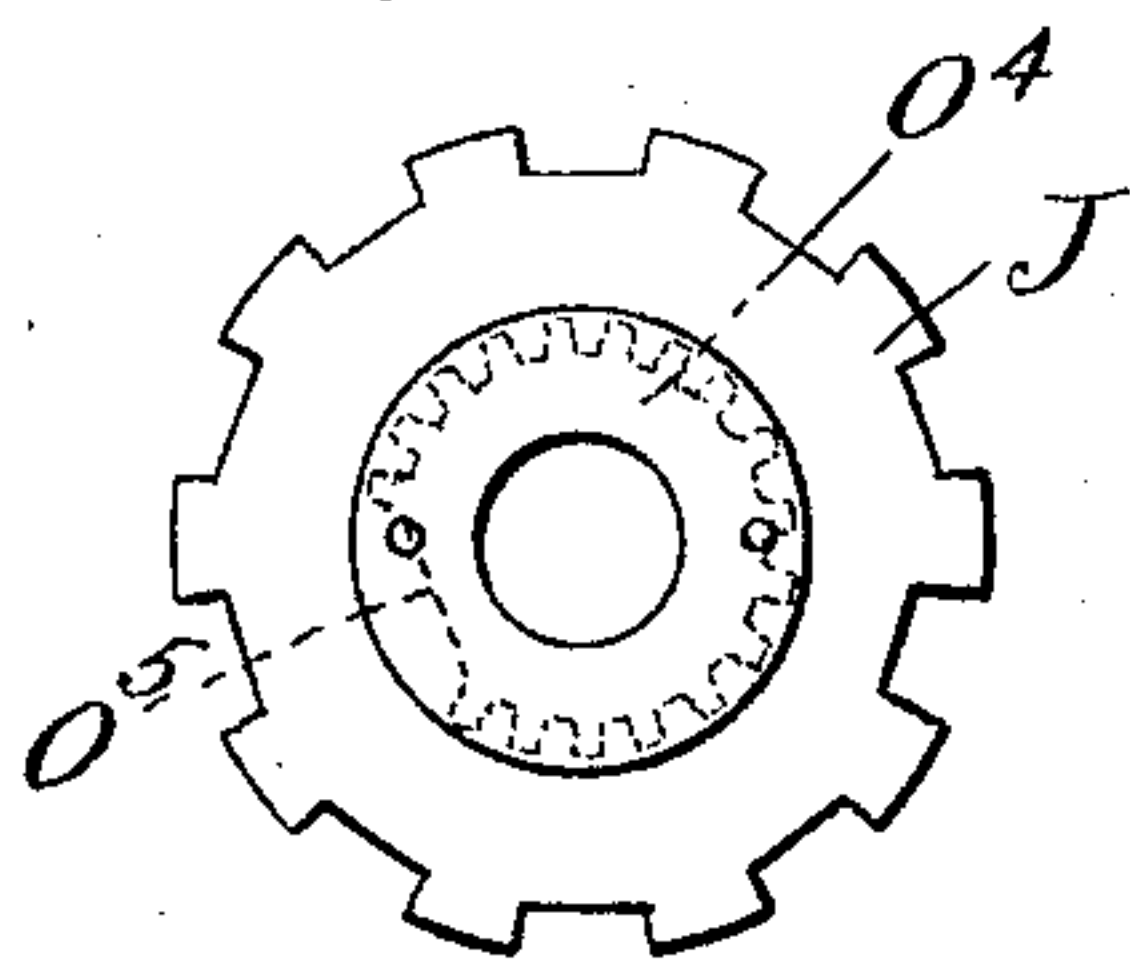


Fig. 20.

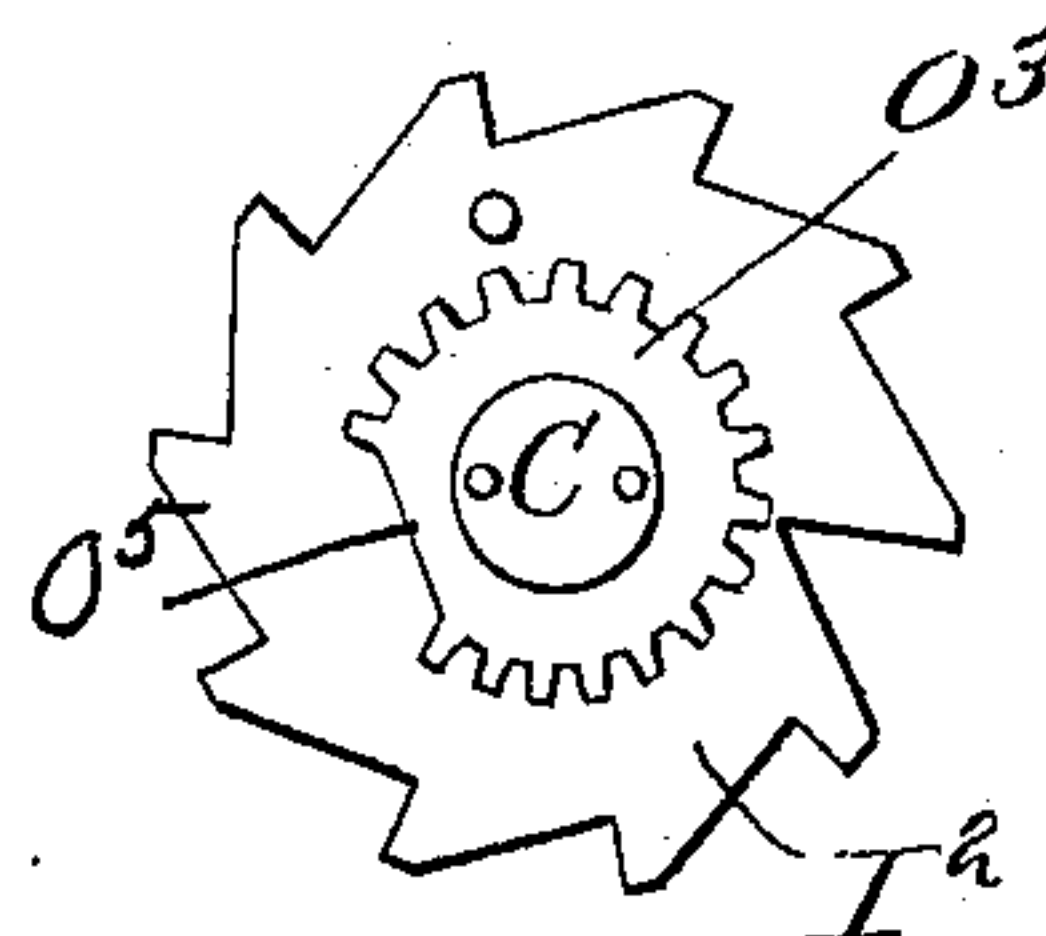
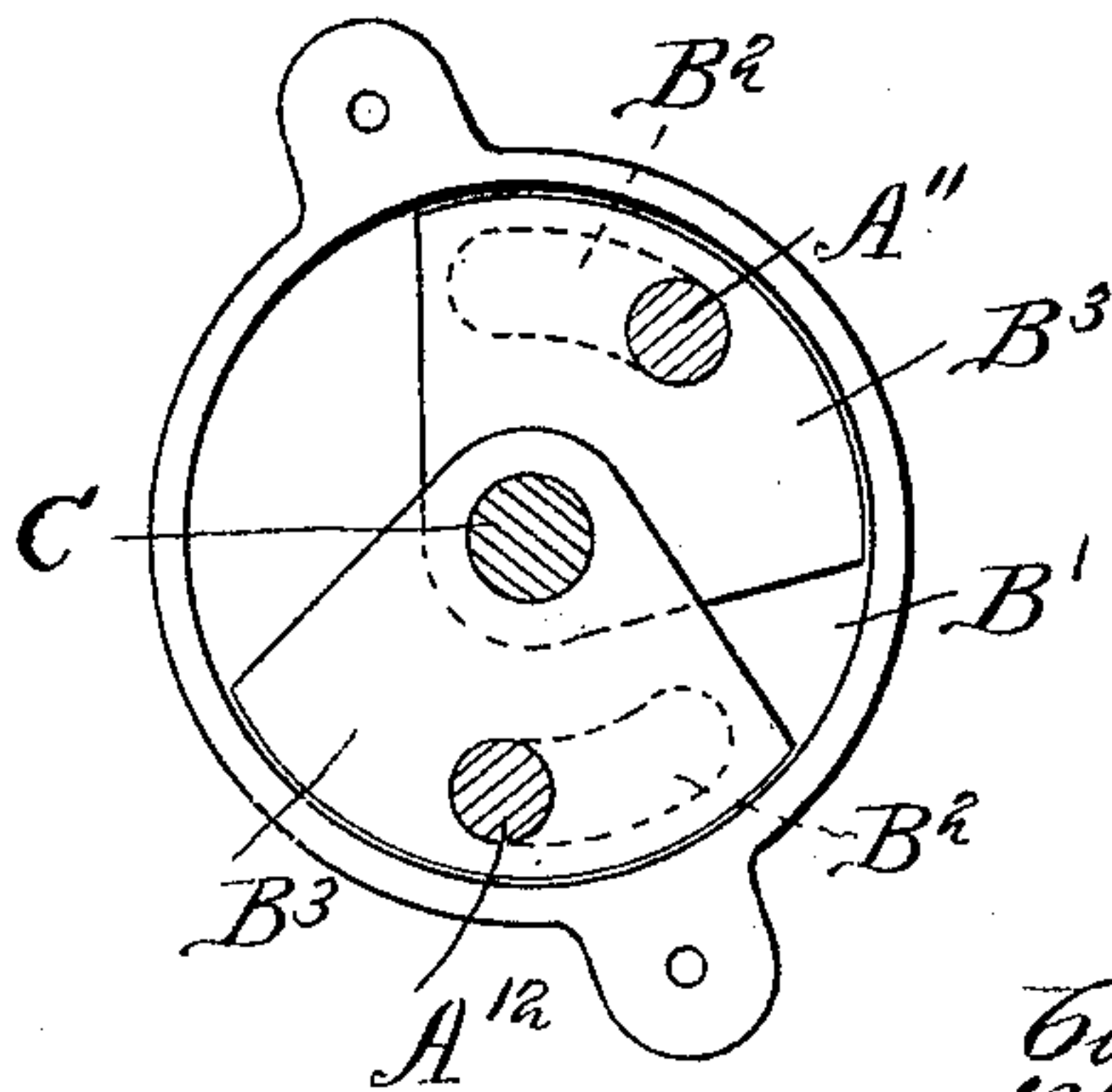


Fig. 21.



Witnesses.

Sydney M. Rheem.
Donald M. Carter.

Inventor
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by
Francis W. Parker,
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(No Model.)

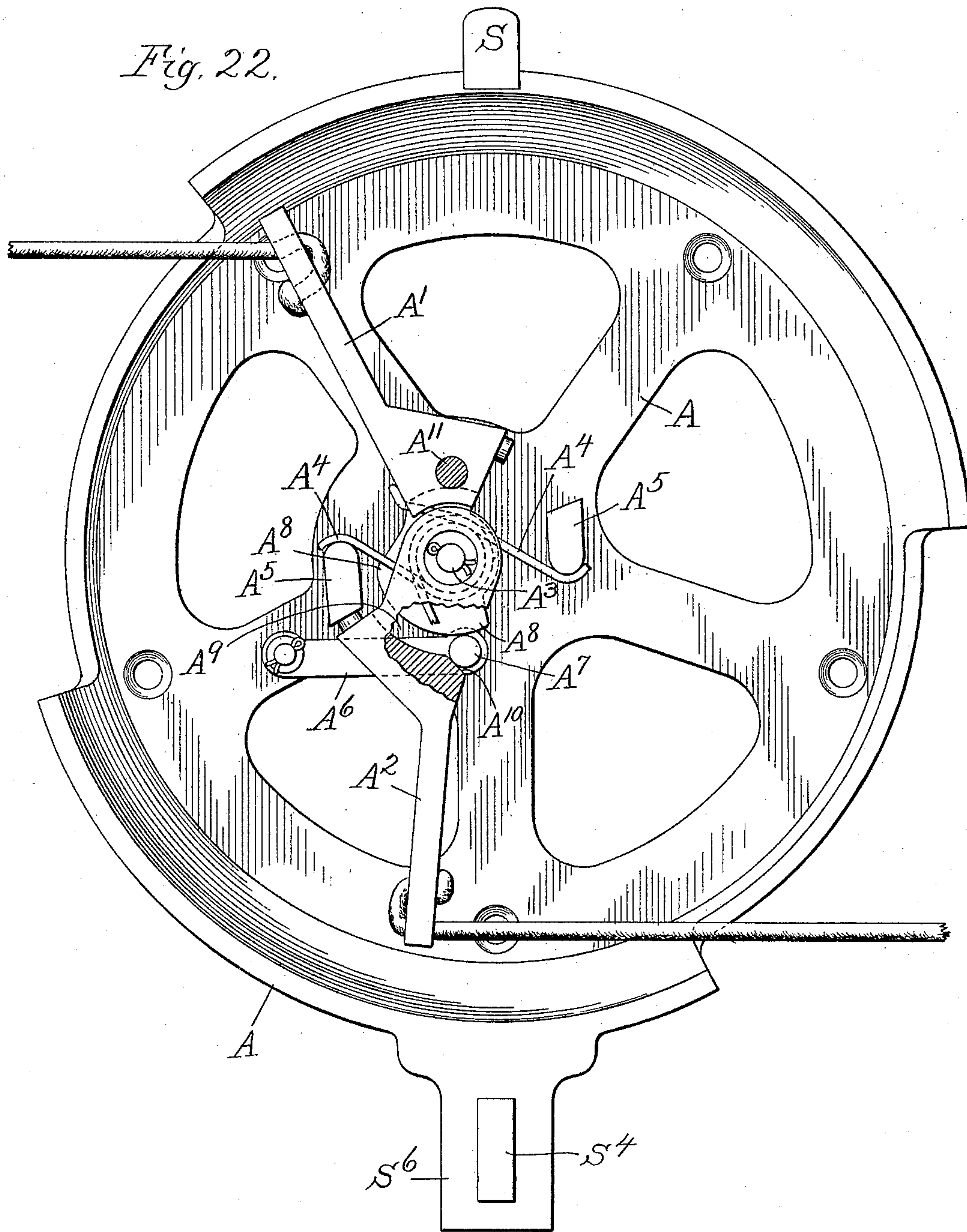
9 Sheets—Sheet 9.

C. E. PRATT.
FARE REGISTER.

No. 605,912.

Patented June 21, 1898.

Fig. 22.



Witnesses.

Edward T. Wray,
Harry D. White.

Inventor.

Charles C. Pratt.
By Donald M. Carter,
Atty.

UNITED STATES PATENT OFFICE.

CHARLES E. PRATT, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE INTERNATIONAL REGISTER COMPANY, OF SAME PLACE.

FARE-REGISTER.

SPECIFICATION forming part of Letters Patent No. 605,912, dated June 21, 1898.

Application filed April 17, 1897. Serial No. 632,689. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. PRATT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Fare-Registers, of which the following is a specification.

My invention relates to registering devices, and has for its object to provide a new and improved registering device, particularly adapted to be used upon street-cars and other vehicles, for registering fares, transfers, and the like.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a face view of a fare-register embodying my invention. Fig. 2 is a similar view with the dial-plate and the front of the casing removed. Fig. 3 is a similar view with the dials of the trip-register and the parts in front of such dials removed. Fig. 4 is a similar view with the upper part of the mechanism removed. Fig. 5 is a view of the back of the register, the register proper being removed. Fig. 6 is a section through the alarm-bells and the central shaft of the register. Fig. 7 is a view of the connecting-piece between the permanent-register mechanism and the trip mechanism. Fig. 8 is a view of the locking-dog for the controlling-levers of the permanent registers and shows the locking-dog in connection with one of said levers. Fig. 9 is a view of the locking-dog, showing its connection with the other controlling-lever. Fig. 9^a is a side elevation of the locking-dog. Fig. 10 is an end view of one of the permanent or totalizing registers. Fig. 11 is a plan view of the same with parts in section. Fig. 12 is a section on line 12 12, Fig. 11. Fig. 13 is a section on line 13 13, Fig. 11. Fig. 14 is a section on line 14 14, Fig. 11. Fig. 15 is a face view of one of the permanent-register wheels. Fig. 16 is a section through the locking device for locking the lid of the case in position. Fig. 17 is a section through a portion of the case, showing the adjustable connection between the register proper and the back upon which it is supported. Fig. 18 is a section through a portion of the resetting or canceling mechanism. Figs. 19 and 20 are views of the toothed wheels of the trip-

register. Fig. 21 is a section on line 21 21, Fig. 6. Fig. 22 is a view of the operating-levers, with parts broken away to more clearly show the construction.

Like letters refer to like parts throughout the several figures.

As illustrated, the register has two independent permanent registers for registering fares of different kinds, one adapted to register cash fares, for example, and the other adapted to register transfers or the like. These two permanent registers are connected with separate operating-levers. The register is provided with a trip-register connected with the operating-mechanism of both permanent registers, so as to be operated when either permanent register is operated. The trip-register is provided with a resetting or canceling mechanism, and there is also a trip-indicator which indicates the direction of the trip—as, for example, up or down or in or out—such indicator being connected with the resetting mechanism, so as to be operated thereby. A fare-indicator or distinguishing device is associated with the register and is connected with the operating-levers, so that the kind of fare registered—as, for example, cash fare or transfer—is indicated on the face of the register. A blind is also provided, which is moved so as to hide the figures on the trip-register each time a fare is registered.

Referring now to the drawings, Fig. 5 shows a view of the back A of the register with the register proper removed. The operating-levers A' and A² are contained within this back and are pivoted to the projecting part A³. These levers are provided with the retracting-springs A⁴ and the stops A⁵ A⁵. A locking-dog A⁶ is associated with these levers and prevents them both from being moved at once. This dog is so positioned that the first movement of either lever moves it to a position to lock the other lever. As illustrated in the drawings, this result is obtained by providing the dog with a projection or pin A⁷, which engages projecting parts on the levers. The lever A' is provided with the part A⁸, which when the lever is moved moves the locking-dog so as to engage the lever A² and prevent said lever A² from being moved. The lever A² is cut away, as shown at A⁹, so

as to allow the movement of the part A⁸. This cut-away portion A⁹ is enlarged near the outer edge of the lever, so as to form the shoulder A¹⁰. The width of the cut-away portion A⁹—that is, the distance between the wall of such cut-away portion and the part A⁸—is not great enough to allow the pin A⁷ to pass between such parts. The projection A⁷ on the dog A⁶ is so positioned that when the lever A¹ is moved the part A⁸ engages said pin and moves it over into contact with the shoulder A¹⁰ on the lever A². As the lever A¹ continues to move said pin is engaged by the edge of the part A⁸, and is hence prevented from being moved out of engagement with the shoulder A¹⁰. It will be seen that while the pin is held in engagement with the shoulder A¹⁰ it is impossible to move the lever A². If the lever A² is moved, the inner wall of the cut-away portion A⁹ engages the projection A⁷ and moves it so that it will engage the part A⁸. As the lever A² continues to move the inner wall of the cut-away portion A⁹ is kept in contact with the projection A⁷, thereby holding it in front of the part A⁸ on the lever A¹ and preventing the movement of said latter lever. The levers A¹ and A² may be provided with cords, rods, or the like, so that they may be operated from any desired position. Connected with these levers are the projections or pins A¹¹ and A¹², which project upwardly through the base-plate of the register proper, so as to operate the mechanism therein.

Connected to the base-plate B of the register is the cover-plate or dish-shaped piece B', secured from the inside of the register and provided with the slots B² B², (see Fig. 21,) through which project the pins connected with the operating-levers. Contained within the part B' are the shields B³ B³, through which project the pins A¹¹ and A¹². These shields B³ are of such size that the slots B² are always covered, thereby preventing any one from inserting a wire or the like through the base-plate into the register.

Mounted within the register is a central pin or shaft C, about which the mechanism is supported. The base-plate B of the register is provided with the upwardly-projecting part B⁴, which surrounds a portion of the shaft C. Mounted upon this projecting part B⁴ is the controlling-lever C' for one of the permanent registers, (see Figs. 6 and 9,) provided with a projecting arm C², having a notched or toothed face C³. The pin A¹¹ on the operating-lever A¹ passes upwardly through the lever C', so as to engage the same. This pin also engages the bell-crank lever C⁵, to which is fastened the connecting-rod C⁶, attached to a crank C⁷ on the shaft C⁸ of the permanent register C⁹. This bell-crank lever is provided with the spring-actuated dog C¹⁰, which engages the projection C¹¹ on the arm C¹², connected with the bell-hammer C¹³, associated with the bell C¹⁴. The lever C⁵ is also provided with a retracting-spring C¹⁵. A similar controlling-

lever D' for the other permanent register, provided with the projecting part D² and the toothed portion D³, surrounds the shaft C and is located just above the lever C'. The pin A¹² (see Fig. 8) engages the controlling-lever D' and also the bell-crank lever D⁵, to which is attached the connecting-piece D⁶, attached to the crank D⁷, fastened to the shaft D⁸ of the permanent register D⁹. A projection D¹⁰ on the lever D⁵ engages the spring-actuated dog E on the arm E', carrying the bell-hammer E², which strikes the bell E³. This arm E' is provided with a retracting-spring E⁴. A pivoted locking-dog II' is provided with the arms II² II³, said arms being in different planes, so that the arm II² will engage the controlling-lever D' and the arm II³ the controlling-lever C'. These controlling-levers are provided with the notches II⁴, so positioned as to be engaged by the ends of the arms II² and II³. This locking-dog is so positioned that when one of the controlling-levers is moved the locking-dog is moved so as to engage the other controlling-lever and lock it in an inoperative position. For example, when the lever D' is moved the end of the arm II² moves out of the notch II⁴ and rides upon the edge of the lever. This movement moves the arm II³ into the notch II⁴ on the lever C' and holds it in that position until the lever D' moves back to its initial position. It will thus be seen that the same locking-dog acts upon both controlling-levers C' and D'.

The permanent registers are so constructed that the operating mechanism is contained within the wheels, thereby preventing the register from being turned backward or forward even when access is obtained to the register.

Referring now to Figs. 10 to 15, inclusive, a series of counting-wheels U are mounted upon the shaft C⁸. This shaft is mounted in the end pieces U' U', which are connected to the base-plate of the register. The first wheel in the series is connected to the ratchet-wheel U², loosely mounted on the shaft C⁸. I have shown in the drawings a "ratchet-wheel" and use such term in the specification and claims; but I wish it to be understood that I of course do not limit myself to any particular construction of wheel and use the word "ratchet-wheel" to cover any analogous construction for the same purpose. Two oppositely-positioned spring-actuated dogs U³ U⁴ engage the teeth of this ratchet-wheel. The locking-dog U⁴ is connected to the end piece U' of the register and the feed-dog U³ is connected to the plate or piece U⁵, rigidly connected with the shaft C⁸, so as to move therewith. As the shaft is rocked forward by means of the crank C⁷ the dog U³ moves the ratchet forward one notch, thus moving the first wheel in the series forward one number. As the shaft is rocked in the opposite direction the dog U⁴ holds the ratchet-wheel from motion. The motion of the plate U⁵ is limited in one direction by the pin V⁸, which

supports the dog U^4 , and in the other direction by the pin V^9 . The pin V^9 also engages the side of the dog U^3 when the plate U^5 is moved toward said pin, thereby holding said dog in contact with the ratchet-wheel, so as to prevent said dog from being jarred or moved out of contact with such teeth, and thus allow the permanent register to be operated when no fares are being registered. A similar pin V^{10} is associated with the dog U^4 , and the parts are in such a position that one of the dogs U^3 or U^4 is held in contact with the ratchet-wheel at all times, so that the ratchet-wheel U^2 can only be moved during the process of registering fares. The permanent registers or totalizers may be constructed in any manner and I have shown one of the forms commonly used for this purpose. The counter-wheels are bound together between the plates U' , so that the operating mechanism contained in the first counter-wheel cannot be tampered with. The numbers of the wheels of the permanent registers are exposed through openings V^7 in the dial-plate. The teeth on the projecting parts C^2 and D^2 engage the safety-dog F , both levers D^5 and C^5 being controlled by the same safety-dog. This dog is provided with the retracting-spring F' . A holding-plate F^2 is placed over the projecting parts C^2 and D^2 to hold them in position so that they will engage the dog F when moved. This safety holding-dog makes it necessary to complete the movement of the controlling-levers after they have begun to move in order to allow the mechanism to return to its initial position. Mounted upon the projection B^4 of the base-plate and surrounding the shaft C is the connecting-piece G . (See Figs. 6 and 7.) This connecting-piece is placed between the controlling-levers for the permanent registers and the trip-register, and is so constructed and positioned that the trip-register is operated each time either one of the permanent registers is operated. This connecting-piece is provided with the actuating-pawl G' , which operates the trip-register (see Figs. 3, 4, and 7) and has the two engaging or projecting parts G^2 G^3 , by which it is connected with the permanent-register mechanisms. The pin A^{11} , associated with the lever C' , engages the projection C^3 when the lever C' is moved and moves the connecting-piece so as to actuate the trip-register. The pin G^4 (see Fig. 8) on the lever D' engages the projection G^3 when the lever D' is moved, so as to move the connecting-piece G and actuate the trip-register. A two-part arm G^5 is attached to the connecting-piece G and is operatively connected with the blind G^6 , so as to move said blind to a position where the registration of the trip-register is concealed each time either of the controlling-levers is moved. The registration of the trip-register is exposed through the opening H in the dial of the register, and the blind G^6 is so constructed and positioned as to move down in front of this opening and obstruct

the view while the registration is being made. The blind G^6 is connected with a piece G^7 , mounted upon a pin or shaft G^8 , and is provided with a retracting-spring G^9 . The piece G^7 , to which the blind is connected, extends along the shaft G^8 , and is provided at its lower end with a projection G^{13} , which is engaged by an arm G^5 when the register is operated. The piece G^7 is simply a separate piece to which the blind is connected, so as to form a convenient means of manipulating the same. As the arm G^5 moves back to its initial position the spring G^9 moves the blind away from the opening in the dial-plate. The actuating-dog G' is provided with two engaging parts I I' . The part I' engages the toothed wheel I^2 on the shaft C , said toothed wheel being rigidly connected with said shaft. The dial I^3 of the trip-register which registers the units is connected with the shaft C , so as to rotate therewith. The wheel I^2 is provided with a series of notches equal in number to the numbers on the dial. The notch I^4 is deeper than the other notches, so that when it comes opposite the pawl said pawl moves inwardly far enough to allow the engaging part I to engage the toothed or notched wheel J , rotatably mounted upon the shaft C . The dial J' of the trip-register which registers the tens is connected with the wheel J . The wheel I^2 is provided with the holding-dog I^5 , which prevents its backward rotation. The wheel J is provided with a locking-dog J^2 and also with the dog J^3 , which prevents it from being moved each time the wheel I^2 is moved or from spinning or moving more than one notch at a time. The dog J^3 is connected with the pivoted arm J^4 , provided with the projecting part J^5 . A pin J^6 on the wheel I^2 engages the projecting part J^5 once during each revolution and moves the arm J^4 , so that the dog J^3 is moved out of engagement with the wheel J . The pin J^6 is so positioned that the movement of the dog J^3 occurs when the pawl I engages the wheel J , thereby releasing the wheel J , so that it may be moved one notch. The arm J^4 is provided with a suitable retracting-spring J^{10} , so that it is moved back to its initial position as soon as the pin J^6 passes the projection J^5 . Mounted upon a projecting part of the wheel J is a toothed piece K , provided with the projecting arm K' , having at the end thereof the dial-piece K^2 , bearing the figure "1," as shown. One of the notches in the wheel J —as, for example, the notch J^7 —is deeper than the remaining notches, so that when the pawl I engages such notch it will move in far enough to engage one of the teeth K^3 on the piece K and move the dial-piece K^2 opposite the opening H in the dial-plate. A retracting-spring K^4 is connected with the arm K' , said arm being held in front of the dial-opening by the dog K^5 . By this construction the trip-register is enabled to register up to one hundred and ninety-nine fares. A trip-indicator L is placed so as to be moved back of the opening

I' in the dial-plate and indicates the direction of the trip—as, for example, in or out. This trip-indicator is connected with the arm L² of the resetting mechanism, so as to be controlled thereby. A fare-distinguishing device or indicator M is adapted to move back of an opening M' in the dial-plate and indicates when the fare registered is a cash-fare or a transfer. This fare-indicator is connected to a piece M², mounted upon the rod or post M³, which supports the alarm-bells. Said piece M² is provided with the notches M⁴, adapted to be engaged by the spring-actuated arm M⁵. The part M² is provided with the projections M⁶ and M⁷. A pin or projection M⁸ on the arm E', to which the bell-hammer E² is connected, is adapted to engage the projection M⁶ when the arm E' is moved, and thereby move the fare-indicator M. This movement of the fare-indicator brings the projection M⁷ in proximity to the pivoted arm M⁹ and exposes the word "Cash" through the opening in the dial-plate. The indicator stays in this position as long as cash-fares are registered, but when a transfer is registered the pin M¹⁰ on the arm C¹², carrying one of the bell-hammers which is in contact with the arm M⁹, moves said arm forward. The arm M⁹ engages the projection M⁷ and moves the fare-indicator M, so that the word "Transfer" is exposed through the opening in the dial-plate. It will be seen that by this construction the cash-indicator is moved so that it will always indicate the kind of fare last registered.

Referring now to the resetting mechanism for the trip-register, the shaft N, by which the resetting mechanism is operated, is provided with a projecting arm N', which projects through an opening in the case and is provided with an end piece N², by which it may be rotated. This shaft is mounted in the lug N³ on the case and the bearing N⁴, so that it may also be moved longitudinally, and is provided with a ratchet-wheel N⁵, which engages a spring-actuated dog N⁶, so that the shaft can only be rotated in one direction. A projection N⁷ on the wheel N⁵ normally engages the lug N³ and prevents the rotation of the shaft. A pinion N⁸ (see Fig. 18) on the end of said shaft engages a mutilated gear O, mounted on the shaft O'. The teeth on the periphery of this gear are cut away on opposite sides, as shown at O², and the gear is opposed to the mutilated pinion O³, connected with the wheel I², and the mutilated pinion O⁴, connected with the wheel J. Each of these pinions has the teeth cut away, so as to form the flat portion O⁵ at one part of their periphery. It will be seen that by this construction when the gear O is rotated it will move both the pinions I² and J until the flat portions O⁵ are opposite the gear O, and hence the parts of the trip-register will be moved so as to reset it at zero. A three-part reversing or resetting lever is associated with the shaft N. This lever is provided with the three arms P, P', and P². The

arm P is provided with a pin P³, which engages a groove in the shaft N, the parts being so constructed that the longitudinal movement of the shaft moves the resetting-lever, said resetting-lever not being affected by the rotation of the shaft. The arm P² engages the projection G⁸, (see Fig. 3,) associated with the blind, so as to move said blind in front of the opening through which the trip registrations are read when the trip-register is being reset and hold it there until the resetting operation has been completed. The arm P' is provided with a projection P⁴, which rides upon the periphery of the wheel P⁵ when the resetting mechanism is in operation and which engages the notches P⁶ when the resetting mechanism is at rest. The wheel P⁵ is rigidly connected with the gear O. A projection P⁷ on the arm P' engages the arm J⁴ when the arm P' is moved and moves the holding-dog J³ out of engagement with the wheel J. A projection P⁸ on the arm P' is moved outward, so as to engage the projection J⁸ on the dial J' of the trip-register and stop said dial when it is moved to zero, thereby preventing the inertia of the parts from moving it too far. The end of the arm P' is cut away at P¹⁸ and is provided with the projection P⁹, so that when said arm is moved outwardly the part P¹⁸ engages the pin P¹⁰, so that no fares can be rung up while the trip-register is being canceled or reset. The retracting-spring G⁹ of the blind acts to move the resetting mechanism to its initial position when the projection P⁴ comes opposite one of the notches P⁶ in the wheel P⁵. The gear O is provided with the eccentric groove O⁶, in which works the projection L³ on the lever L², to which the trip-indicator is connected. This arm L² is provided with the pin L⁴, which engages the beveled projection L⁵ on the arm L⁶, carrying the dog K⁵. As the wheel O is rotated the arm L², which is pivoted at L⁷, moves away, so as to change the trip-indicator, and the pin L⁴, engaging the bevel shaped piece L⁵, moves the arm L⁶, so as to release the dog K⁵ and allow the retracting-spring K⁴ to move the part K² away from the opening in the dial-plate. The base-plate rim of the register is provided with a series of pins R, which are contained within the openings in the enlargements R' on the base-plate rim R⁴. Back of each pin is a coil-spring R², tending normally to force it out of said opening. A stop R³ prevents the pin from being forced entirely out of the opening. The dial-plate R⁵ and the glass cover R⁶ rest upon these pins, as shown in Fig. 17. These pins form an automatic adjusting device for the dial-plate and glass, so that the glass dial is held tightly in place at all times. This construction also allows glasses of different thicknesses to be used with any register. As it is difficult to obtain glass of uniform thickness, this construction is an important feature. The back A is provided with the projection S, which passes through an opening in the lug S' on

the register proper. The parts are so positioned as to lock the register and back together. At the other side of the register and attached to the base thereof is a projection 5 S^2 , provided with an opening S^3 . A connecting-piece S^4 is provided with a screw-threaded end S^5 , which is adapted to be screwed into the projection S^6 on the back A. Said connecting-piece is provided with the opening S^7 , 10 through which passes the tongue S^8 , provided with the locking or sealing device S^9 . The connecting-piece S^4 is thus made adjustable, so that it may be adjusted in such a manner as to allow the tongue S^8 to pass tightly there- 15 through and prevent relative movement of the case and back. This construction avoids the expensive construction necessary to prevent the relative movement of the parts when the ordinary connection is used. The cover 20 T of the register is provided with a projecting flange T' , which holds the glass and dial-plate in position, and is connected to the register in any suitable manner, as by means of bayonet-joints or the like. As illustrated in 25 the drawings, the pins R^3 project slightly through the base-plate rim R^4 , and the cover fits loosely over the rim and closely over said pins. A series of lugs R^7 , connected with the cover, are so positioned as to pass by the pins 30 R^3 when the cover is placed on the rim. A slight rotation of the case with relation to the register moves said lugs back of the pins R^3 and fastens the cover securely to the register. The locking device locks the cover against 35 rotation, and hence prevents it from being moved. This base-plate rim projects upwardly within the cover, as shown, and hence it is impossible to insert a wire beneath the cover, so as to tamper with the mechanism of 40 the register. Fig. 16 shows a locking device used with this register which locks the cover in position. This locking device consists of a pin T^2 , mounted in the piece T^3 , so as to have longitudinal movement, and provided with 45 the coil-spring T^4 , normally tending to keep it in its locked position. The cover T is provided with the lug T^5 , which has a slot therein for the pin T^2 , the cover being locked, so that it cannot be moved when the pin T^2 engages 50 the slot in the lug T^5 . Said cover is provided with an opening which is normally sealed by the glass seal T^6 , so that the device cannot be unlocked until the seal is broken. A projecting arm T^7 , connected with the pin T^2 , projects downwardly through an opening T^8 in 55 the register-case and is adapted when the pin is moved to its unlocking position and given a partial rotation to engage a holding device—as, for example, the inner surface of the base-plate rim—and prevent further movement of 60 the pin. It will be seen that by the construction herein shown the mechanism is so inclosed as to make it impossible for any one to tamper therewith by inserting anything into 65 the case.

I have shown the two permanent registers as adapted to indicate cash-fares and trans-

fers; but it is of course evident that these registers may be used to indicate fares of any description. 70

I have described the several parts of the register in detail; but it is of course evident that these several parts may be greatly varied and that some of the parts may be omitted and others used with parts not herein shown 75 without departing from the spirit of my invention, and I therefore do not wish to be limited to the construction shown.

The use and operation of my invention are as follows: When it is desired to register a 80 transfer or ticket fare, for example, the operating-lever A' is moved. The initial movement of this operating-lever A' moves the locking-dog A^{10} , so as to lock the lever A^2 . The movement of the operating-lever A' is 85 communicated to the controlling-lever C' by means of the pin A^{11} , and said controlling-lever is moved so as to move the locking-dog H' , and thereby lock the controlling-lever D' . As the lever C' moves forward it engages 90 the safety-dog F and the parts cannot be returned to their initial position until the movement has been completed and a fare registered. The movement of the controlling-lever is communicated through the bell-crank 95 lever C^5 to the permanent register, where it is registered by means of the number-wheels U. The dog C^{10} on said bell-crank lever causes the arm carrying the bell-hammer to be drawn back. When the dog slips past the 100 projection C^{11} , the spring associated with the arm carrying the bell-hammer moves the bell-hammer forward and causes it to strike the bell C^{14} . At the same time the pin M^{10} , in contact with the arm M^9 , moves said arm so 105 that it engages the projection M^7 on the part M^2 and moves the fare-indicator, so that the word "Transfer" or other word which indicates the fare registered is exposed through the opening M' . This fare-indicator is held 110 in position by means of the arm M^5 engaging one of the notches M^4 . During this movement of the controlling-lever the pin A^{11} engages the projection G^3 on the connecting-piece G and moves said piece so as to move 115 the dog G' and actuate the trip-register. The projection or engaging pin I' of this dog engages the wheel I^2 of the trip-register and moves it so as to move the dial I^3 . At the same time the blind G^6 is moved in front of 120 the numbers on the dial of the trip-register by means of the connecting-piece G^5 , so as to conceal them from view while the registration is being made. After the registration has been made and the bell sounded the op- 125 erating-lever is released and the parts moved back to their normal position. If it is desired to register a cash-fare, for example, the operating-lever A^2 is moved thereby, moving the dog A^{10} , so as to lock the lever A' . The 130 movement of the lever A^2 is communicated by pin A^{12} to the controlling-lever D' , and thence through the lever D^5 to the permanent register D^9 . The projection D^{10} on said

lever engages the dog E and moves the arm E², carrying the bell-hammer. The dog and projection are released during the latter part of the movement and the hammer strikes the bell E³. At the same time the pin M⁸ engages the projection M⁶, associated with the fare-indicator, and moves said fare-indicator, so that the word "Cash" or other word indicating the kind of fare registered is exposed through the opening M'. During this movement the pin G⁴ on the controlling-lever D' engages the projection G² on the connecting-piece G and moves said connecting-piece, so as to actuate the trip-register and the blind, as before described. After the fare has been registered the operating-lever is released and the parts return to their initial position. When either controlling-lever C' or D' is moved, the holding-dog is also moved, so as to lock the other lever, as has been before described. The bells C¹¹ and E³ are preferably made to give forth a different sound, so that the kind of fare registered will be indicated thereby. When the dial I³ of the trip-register has made a complete revolution, the projection I' on the dog G' falls into the deep notch on the wheel I², thereby allowing the projection I to engage the wheel J and move it one notch, thereby moving the dial J'. After the wheel J has made a complete revolution the dog falls into the deep notch thereon and engages the tooth K³, so as to move the dial-piece K², so that it will be exposed through the opening II. When it is desired to reset the trip-register, the shaft N is moved longitudinally, so as to move the pin N⁷ out of engagement with the lug N³ on the case. This longitudinal movement of the shaft is communicated by the arm P to the arm P', and said latter arm is moved outwardly, so as to move the projection P⁴ out of one of the notches P⁶ and unlock the mechanism. At the same time the pin P⁷ engages the arm J⁴ and moves it so as to move the dog J³ out of engagement with the wheel J, thereby freeing the tens-wheel of the trip-register. The end P⁸ of the arm P' is moved out in front of the pin P¹⁰, so as to prevent the movement of the connecting-piece G, thereby locking the mechanism, so that no fares can be registered during the period of cancellation. As the arm P' moves outwardly in front of the pin P¹⁰ the arm P², which is connected therewith, engages the pin G⁸, connected with the blind G⁶, and moves the blind so as to conceal the figures on the dials of the trip-register. The shaft N is now rotated and the projection P⁴ rides upon the periphery of the wheel P⁵ and prevents the arm P' and associated parts from returning to their initial position. The rotation of the shaft N causes a rotation of the gear O. The gear O is in engagement with the pinions O³ and O⁴, associated with the tens and units wheels of the trip-register when said trip-register is not at zero, and hence the rotation of said pinion will move said wheels and the dials connected therewith until the

mutilated part of the gears is reached. These mutilated parts are so positioned that when they are opposite the gear O the trip-register is at zero. The gear O is also mutilated and is preferably so positioned that one of the mutilated parts thereon comes opposite the mutilated parts of the pinions O³ and O⁴ when the trip-register is set at zero. When the arm P' is moved outwardly, the projection P⁸ is brought in front of the projection J⁸ on the dial J' and stops said dial when it has been moved back to zero, thereby insuring a proper cancellation or resetting of the trip-register. It will be noted that the trip-register is canceled or reset by moving the parts in the same direction in which they are moved when the fares are being registered. The dog N⁶ engages the ratchet-wheel N⁵ when the shaft N is rotated and prevents any backward rotation of the shaft after the process of cancellation has been started, thereby insuring a complete cancellation of the trip-register. As the gear O rotates the pin L³ on the arm L², in engagement with the eccentric O⁶, causes the arm L² to be moved so as to change the trip-indicator L. During this movement of the arm L² the pin L⁴ engages the beveled projection L⁵ on the arm L⁶ and moves the pawl K⁵ out of engagement with the piece K, thereby releasing the dial K², so that the spring K⁴ moves said dial away from the opening II. The wheel O is given only one-half of a revolution in canceling or resetting the trip mechanism, and hence the arm L² only completes one-half of the cycle through which it moves each time the canceling or resetting mechanism is operated. When the wheel P⁵ is moved, so that one of the notches P⁶ is opposite the projection P⁴, the spring associated with the blind moves said arm, so that the projection P⁴ enters one of the notches P⁶, thereby allowing the several parts to be moved to their initial positions. The mechanism of the register is so completely inclosed that wires or other devices cannot be inserted through the case, and hence the mechanism cannot be tampered with without breaking the seal of the instrument.

I claim—

1. A fare-register comprising two permanent registers adapted to register different classes of fares, an independent operating-lever for each of said permanent registers, a locking-dog associated with said operating-levers and so positioned that a movement of one of said levers moves the dog to lock the other lever, a trip-register adapted to register the total number of fares during a trip, and a connection between said trip-register and each of said operating-levers whereby the trip-register is operated each time each of said permanent registers is operated.

2. A fare-register comprising a case containing two permanent registers adapted to register different classes of fares, and a trip-register for registering the total number of

fares during a trip, two controlling-levers within said case connected respectively with said permanent registers so as to operate the same, and a connection between said controlling-levers and the trip-register, a locking-dog for said controlling-levers so positioned that the movement of one moves the dog to lock the other and prevent its movement, an operating-lever for each controlling-lever outside the case and operatively connected therewith.

3. A fare-register comprising a case containing two permanent registers adapted to register different classes of fares, and a trip-register for registering the total number of fares during a trip, two controlling-levers within said case connected respectively with said permanent registers so as to operate the same, and a connection between said controlling-levers and the trip-register, a locking-dog for said controlling-levers so positioned that the movement of one moves the dog to lock the other and prevent its movement, an operating-lever for each controlling-lever outside the case and operatively connected therewith, a locking-dog for said operating-levers so positioned that the movement of one moves the dog to a position to lock the other.

4. A fare-register comprising two register mechanisms, means for operating the same, two toothed portions relatively movable and located in different planes, one above the other, one of said toothed portions connected with each of said register mechanisms, and a single safety-dog adapted to engage both of said toothed portions and prevent their backward movement before the registers have been actuated.

5. A fare-register comprising two permanent registers for registering different classes of fares, a controlling-lever for each of said registers, two toothed portions, relatively movable and located in different planes, one above the other, one of said toothed portions connected with each of said controlling-levers, a single safety-dog adapted to engage both of said toothed portions on both of said controlling-levers and prevent their backward movement before the registers have been actuated, a trip-register adapted to register the total number of fares for all classes during a trip, and operating-levers for actuating either one of said permanent registers and the trip-register at will.

6. A fare-register comprising two permanent registers adapted to register different classes of fares, a bell associated with each permanent register, a bell-hammer operated by each permanent register mechanism, a visual fare-indicator or distinguishing device adapted to indicate the class of fare last registered and a connection between said fare-indicator and the bell-hammers whereby said indicator is shifted by the movement of said bell-hammers.

7. A fare-register comprising two register

mechanisms adapted to register different classes of fares, a bell associated with each register mechanism, said bells both mounted upon a common support, a bell-hammer connected with each register mechanism so as to be operated when said register mechanism is operated, a fare-indicator or distinguishing device adapted to indicate the class of the fare last registered and mounted upon the bell-support, a connection between said fare-indicator and the bell-hammers whereby said indicator is shifted by the movement of said bell-hammers.

8. A fare-register comprising a registering device, means for operating the same, a blind connected with said operating means so as to be moved to a position to conceal the registrations each time the register is actuated, and a resetting or canceling device for said register, and a connection between said resetting device and said blind so that the blind is moved to a position to conceal the registrations of the register during the operation of resetting or canceling.

9. A fare-register comprising two permanent registers adapted to register the different classes of fares, a trip-register for registering the total number of fares of all kinds during a trip, means for actuating either one of said permanent registers and the trip-register at will, a resetting or canceling mechanism for said trip-register, a blind connected with the register-actuating mechanism so as to be moved to conceal the fares indicated by the trip-register each time said register is operated, and a connection between said blind and said resetting mechanism so that the blind is moved and held in its concealing position during the operation of resetting or canceling.

10. A fare-register comprising two permanent registers adapted to register different classes of fares, means for independently operating said registers, a trip-register for registering the total number of fares during a trip, a blind for said trip-register adapted to be moved so as to conceal the registrations of the trip-register, each time the trip-register is operated, a connecting-piece between the trip-register and the two permanent registers adapted to be connected with either of said permanent register mechanisms so as to be moved thereby, an actuating-dog for the trip-register attached to said connecting-piece and a connection from said connecting-piece to the blind.

11. A fare-register comprising a trip-register, a blind adapted to be moved so as to conceal the registrations of the trip-register each time a fare is registered, a canceling or resetting mechanism for said trip-register, a locking-piece associated with said canceling or resetting mechanism and adapted to lock the register so that it cannot be operated during the operation of resetting or canceling, and a connection between said resetting mechanism and said blind so that the blind is moved to its concealing position and held in such posi-

tion during the operation of resetting or canceling.

12. A fare-register comprising two permanent registers adapted to register different classes of fares, a trip-register adapted to register the number of fares during a trip, means for actuating either one of said permanent registers and the trip-register at will, a blind adapted to be moved so as to conceal the registrations of the trip-register, a canceling or resetting mechanism for said trip-register comprising a longitudinally-movable shaft, a three-part lever associated therewith, one of said parts connected with the shaft, another of said parts connected with the blind so as to move it to its concealing position during the resetting or canceling operation, the remaining part adapted to engage the register mechanism during the resetting operation and prevent it from being operated.

13. A fare-register, comprising a trip-register, a blind adapted to be moved so as to conceal the registrations of the trip-register, a canceling or resetting mechanism for said trip-register comprising a longitudinally-movable shaft, a three-part lever associated therewith, one of said parts connected with the shaft, another of said parts connected with the blind so as to move it to its concealing position during the resetting or canceling operation, the remaining part adapted to engage the register mechanism and prevent it from being operated.

14. A fare-register comprising a case containing the register mechanism, a glass or dial for the same, and an adjusting device interposed between said glass or dial and the register.

15. A fare-register comprising a base-plate containing the register mechanism, a lid or cover for the same, a dial-plate interposed between said base-plate and said lid or cover, and a series of springs interposed between said base-plate and said dial-plate so as to normally force the dial-plate toward said lid or cover.

16. A fare-register comprising a base-plate supporting the register mechanism, a lid or cover for the same, a glass interposed between said base-plate and said lid or cover, and supported upon a series of movable parts, said movable parts being provided with springs which normally tend to force the glass toward the lid.

17. A fare-register comprising a base-plate supporting the register mechanism, a lid or cover for the same, a lock to connect said base-plate and lid or cover together, comprising a movable spring-actuated pin connected with the base-plate adapted to engage said lid or cover when in position.

18. A fare-register comprising a base-plate supporting the register mechanism, a lid or cover for the same, a lock for locking the base-plate and lid or cover together, comprising a movable spring-actuated pin connected with

the base-plate and adapted when in its locking position to engage said lid or cover, said lid or cover provided with a glass seal opposite said pin so that the pin is accessible when the glass seal is broken.

19. A fare-register comprising a base-plate supporting the register mechanism, a lid or cover for the same, a lock for locking the base-plate and lid or cover together, comprising a movable spring-actuated pin connected with the base-plate and adapted when in its locking position to engage said lid or cover, said lid or cover provided with a glass seal opposite said pin so that the pin is accessible when the glass seal is broken, and an arm connected with said pin and adapted to engage a holding device and hold said pin in its unlocking position.

20. A registering device comprising a hollow counting-wheel, actuating mechanism therefor contained within said hollow wheel and completely inclosed thereby, said actuating mechanism comprising an actuating-dog adapted to engage a ratchet-wheel connected with the counting-wheel and rotate the wheel step by step when operated, a locking-dog to prevent the backward movement of said wheel, and a holding device associated with one of said dogs, and adapted to engage it and prevent it from being freed from said ratchet-wheel while the other dog is changing position thereon.

21. A fare-register comprising a permanent register provided with a series of counting-wheels rotatably mounted upon a shaft, an actuating-dog connected with the shaft and adapted to engage a ratchet-wheel associated with one of said counting-wheels so as to actuate the same, a locking-dog to prevent the backward movement of said wheel, and a holding device associated with each of said dogs, each adapted when in a predetermined position to hold its associated dog in contact with said ratchet-wheel, said holding devices so positioned that when one is operative, the other is inoperative so that one dog is at all times held in contact with the ratchet-wheel, said dogs and associated parts completely inclosed within one of said counting-wheels so that they cannot be tampered with.

22. A fare-register comprising a permanent register provided with a series of counting-wheels rotatably mounted upon a shaft, a dog connected with the shaft and adapted to engage a ratchet-wheel connected with one of said counting-wheels, a locking-dog adapted to engage the ratchet-wheel and prevent backward movement of the counting-wheel, said dogs completely inclosed within said counting-wheel so that they cannot be tampered with, a holding device for each of said dogs separate therefrom, each holding device adapted to engage its associated dog at predetermined times, said holding devices so positioned that one of the dogs is always held in contact with the ratchet-wheel so that the

counting-wheels cannot be moved except in the process of registering fares.

23. A fare-register comprising a base-plate supporting the register mechanism, a base-plate rim projecting therefrom, a series of pins projecting from said base-plate rim, a cover adapted to fit loosely over the rim and tightly over the pins, a series of lugs on said cover adapted to pass back of said pins when the cover is given a partial rotation and a locking device adapted to lock said cover against rotation.

24. A fare-register comprising a permanent register provided with a hollow units-wheel, two dogs associated with said wheel, one the actuating-dog and the other the locking-dog, a movable or rocking plate contained within said wheel with which said actuating-dog is connected, a ratchet-wheel adapted to be engaged by said dogs and two holding devices, one associated with each of said dogs, said holding devices so positioned that when one dog is free to be disengaged from the ratchet-wheel, the other is held in position, whereby

the shaft can only be rotated one tooth at a time.

25. A fare-register comprising a permanent register provided with a hollow units-wheel, actuating mechanism therefor contained within said wheel so that it cannot be tampered with, said actuating mechanism comprising a movable or rocking plate, an actuating-dog connected therewith, a ratchet-wheel adapted to be engaged by said dog, a locking-dog also adapted to engage said ratchet-wheel, two pins relatively movable and associated one with each dog, each pin so positioned as to engage its associated dog and hold it in engagement with the ratchet-wheel when the other dog is moving from one tooth to the other whereby the register cannot be actuated except in the process of registering fares.

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Witnesses:

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