No. 864,567. PATENTED AUG. 27, 1907.

S. J. SALTER, DEC'D.

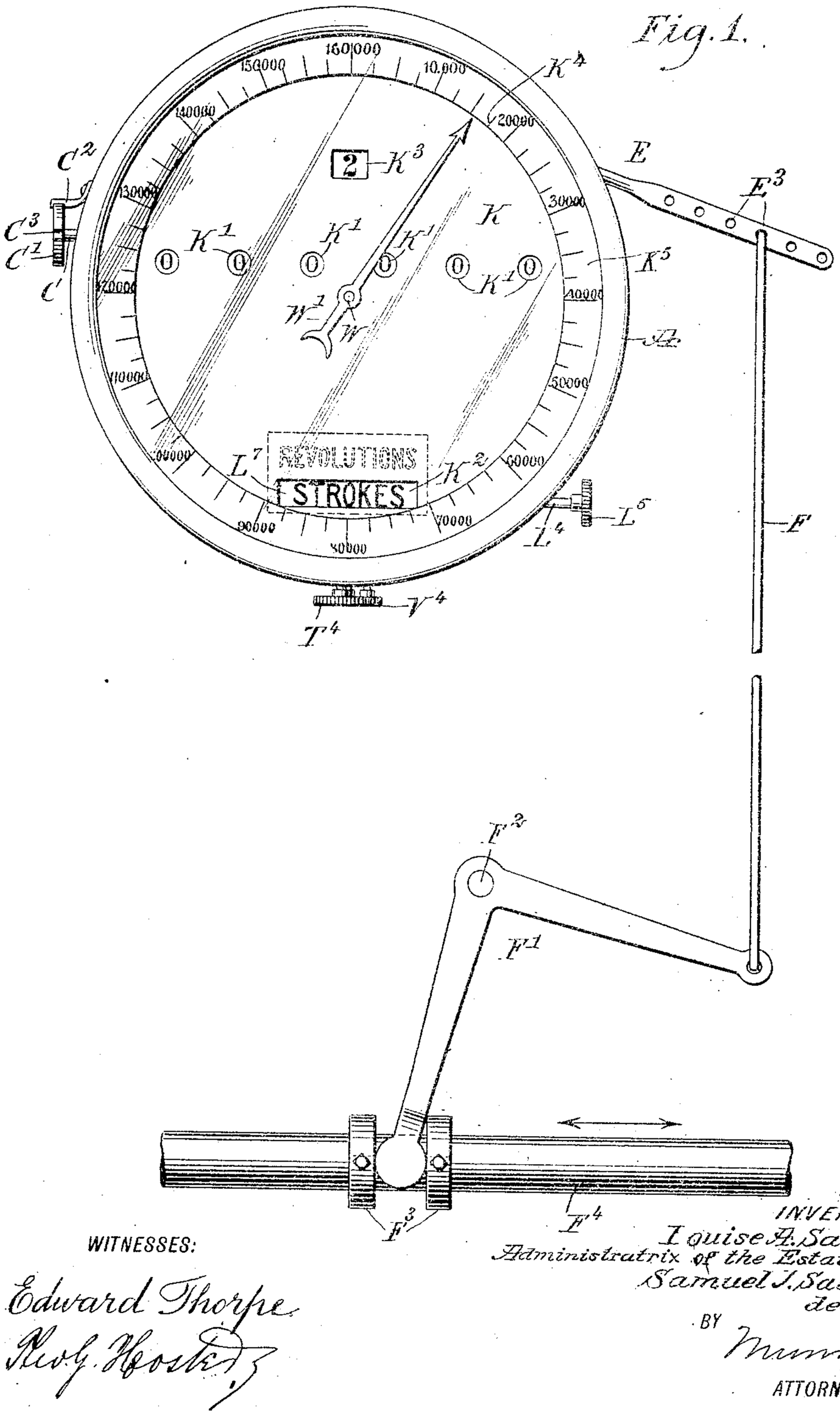
L. A. SALTER, ADMINISTRATRIX.

REGISTER.

APPLICATION FILED JAN. 2, 1907.

5 SHEETS—SHEET 1.

Fig. 1.



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deceased.

BY Munn & Co

ATTORNEYS

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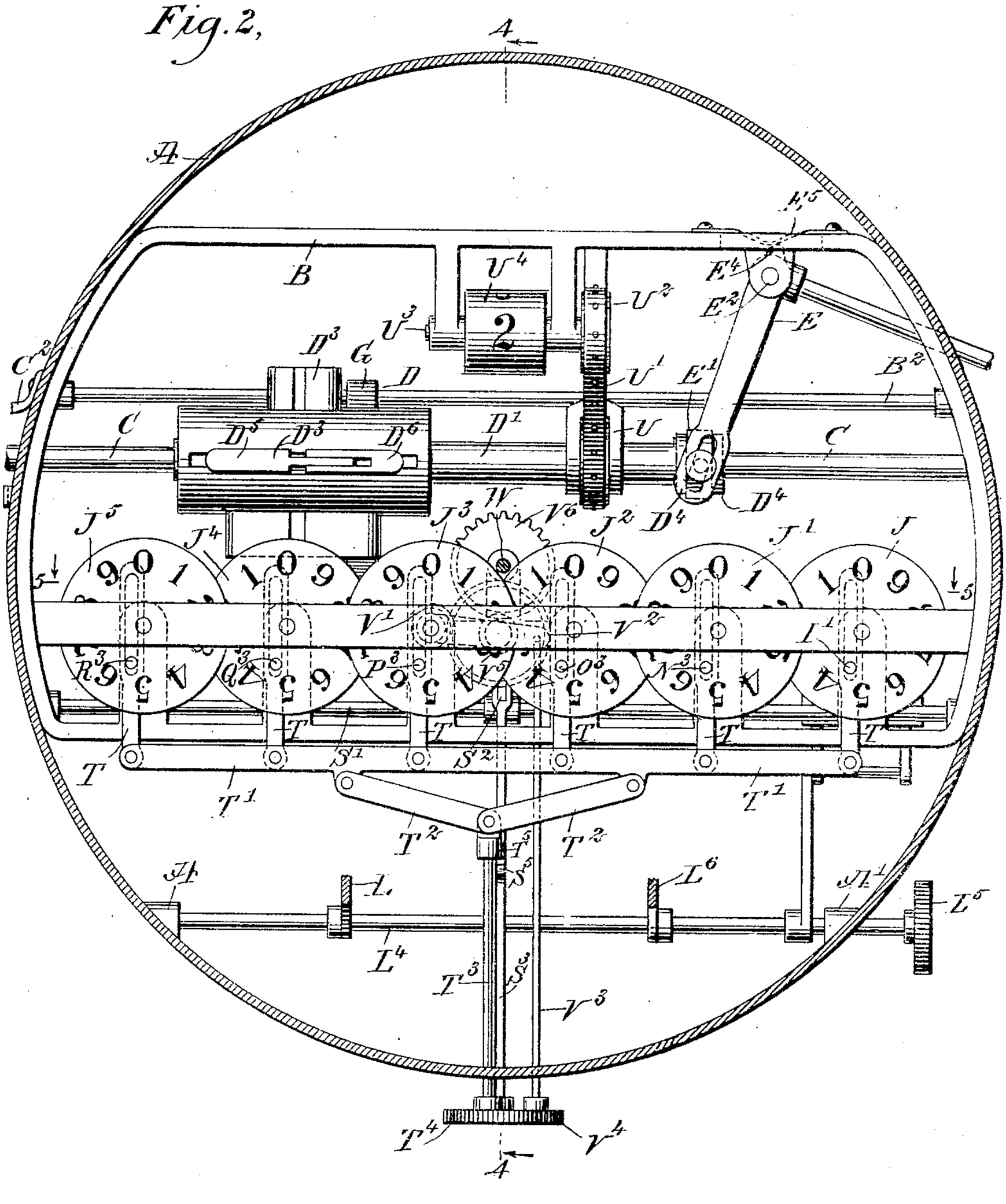
5 SHEET SHEET 2

Fig. 2,



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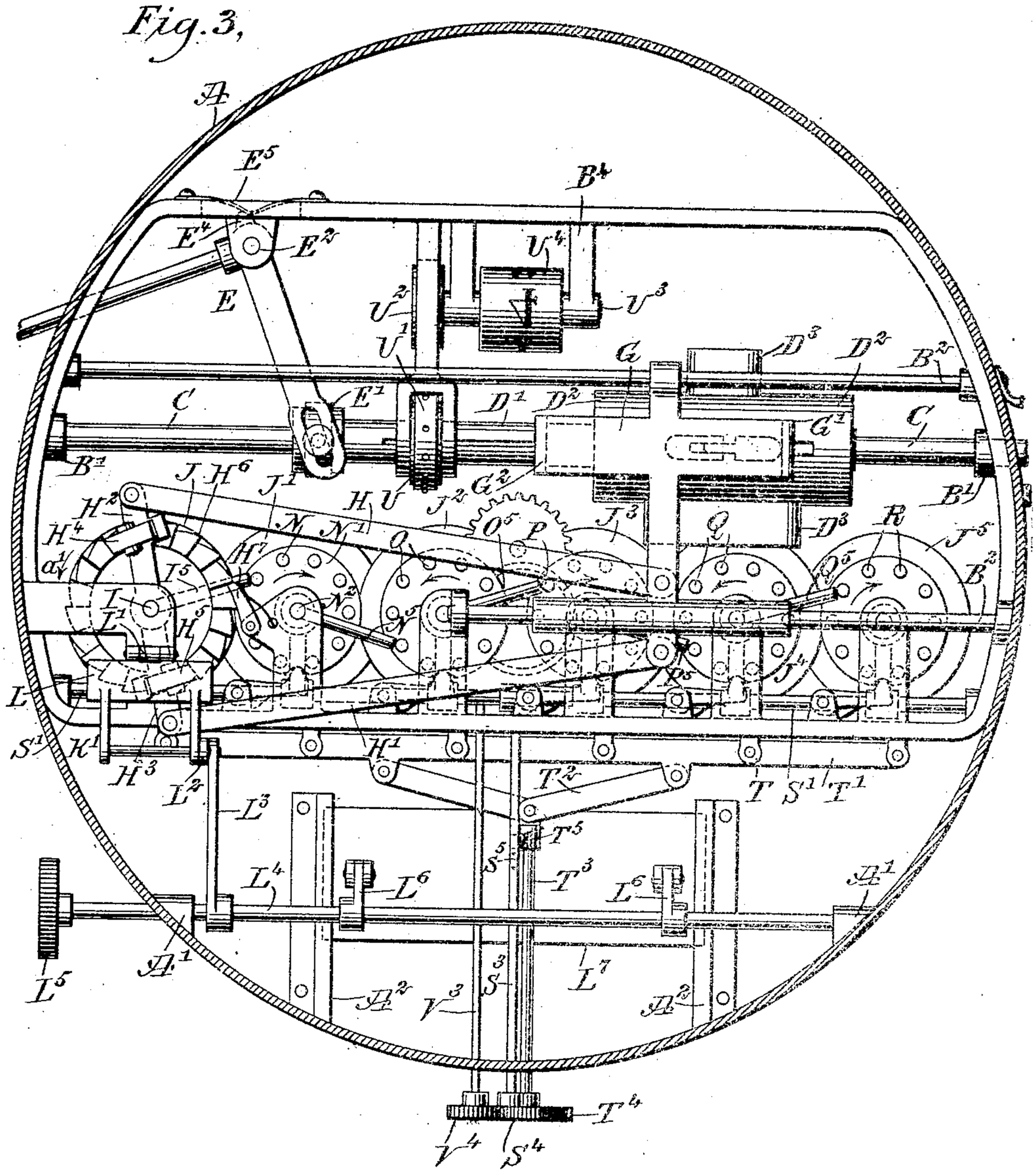
5 SHEETS—SHEET 3.

Fig. 3,



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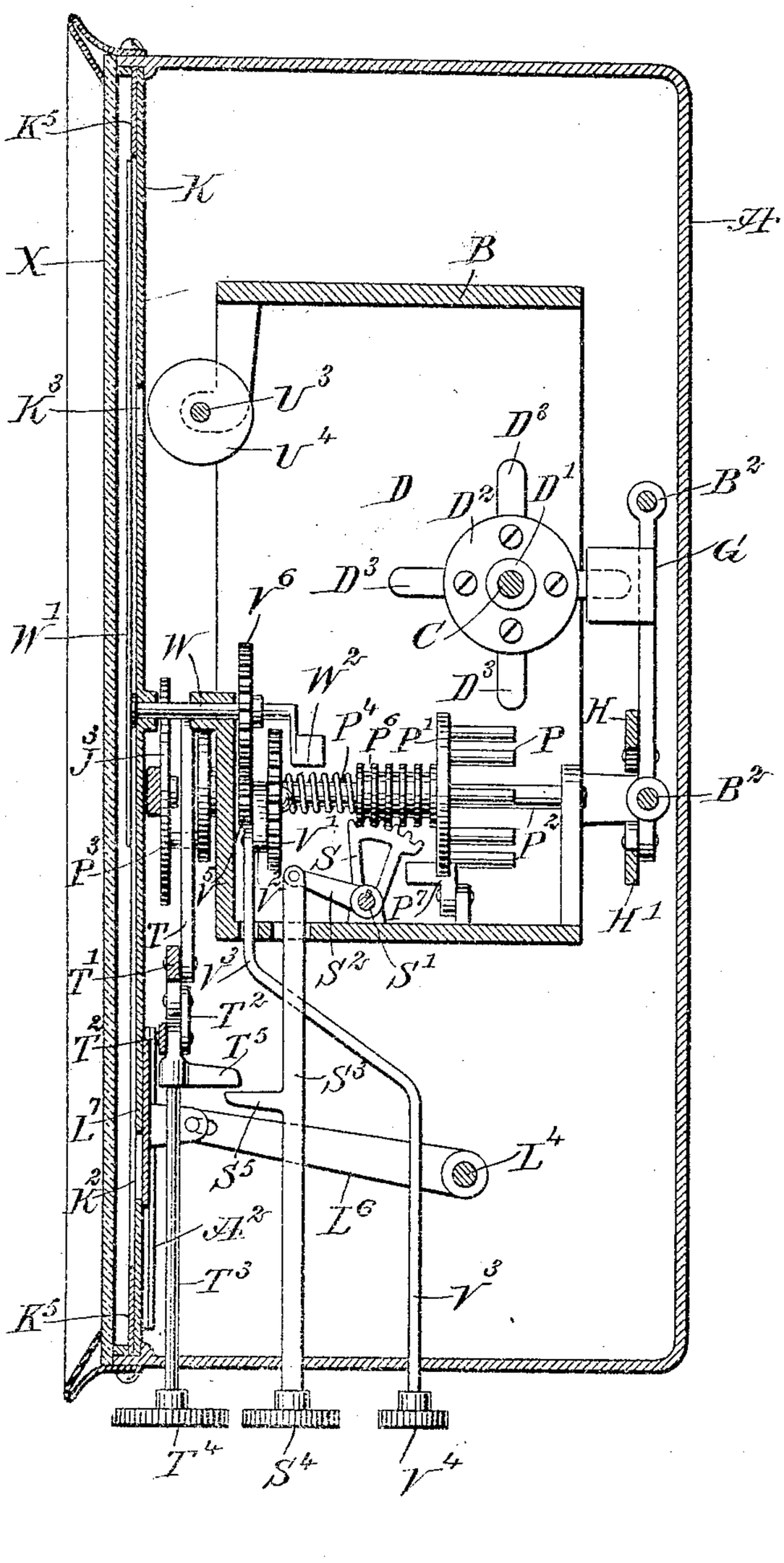
5 SHEETS—SHEET 4.

Fig. 4.



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APPLICATION FILED JAN. 2, 1907.

5 SHEETS—SHEET 5.

Fig. 5,

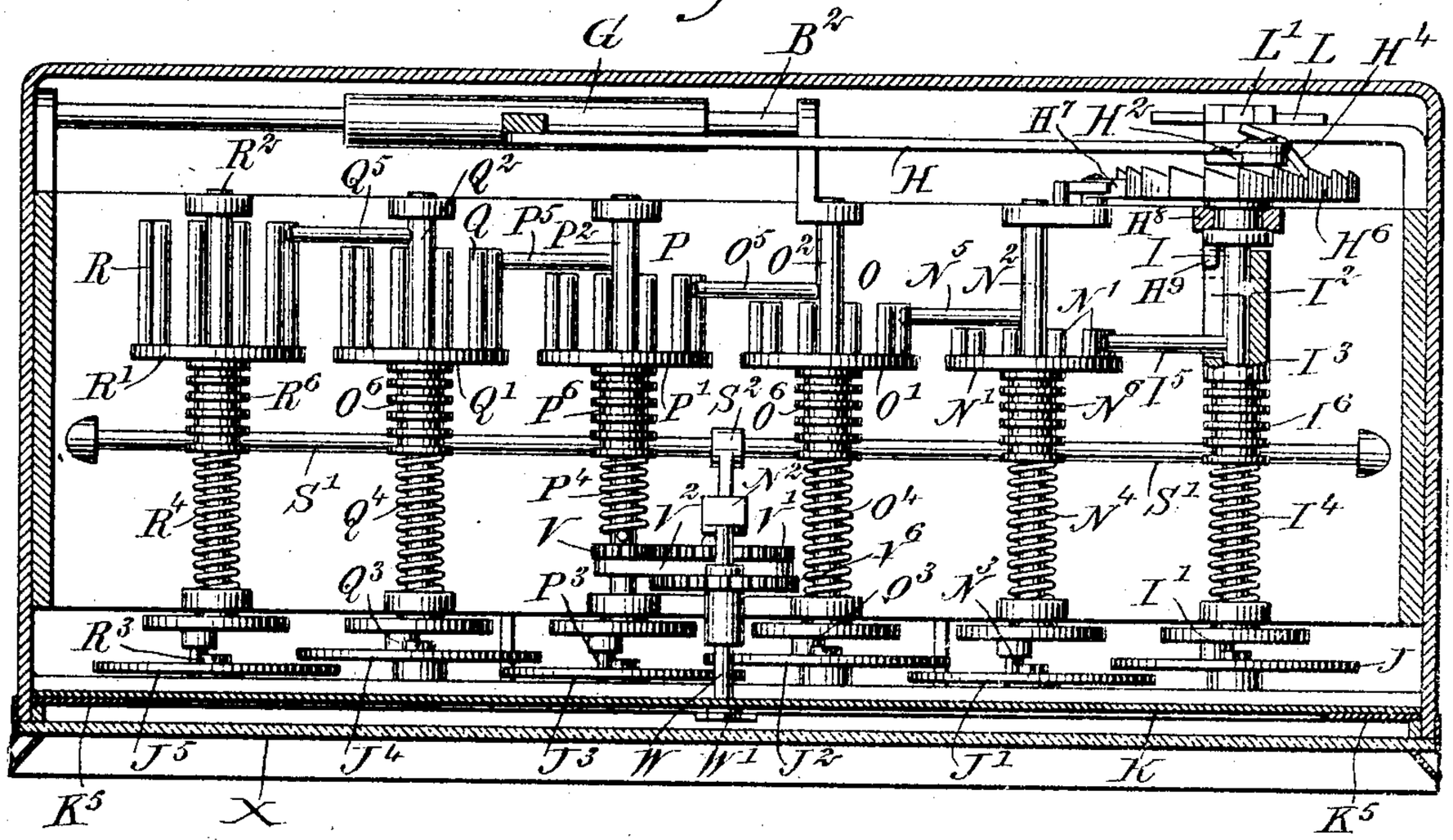


Fig. 6,

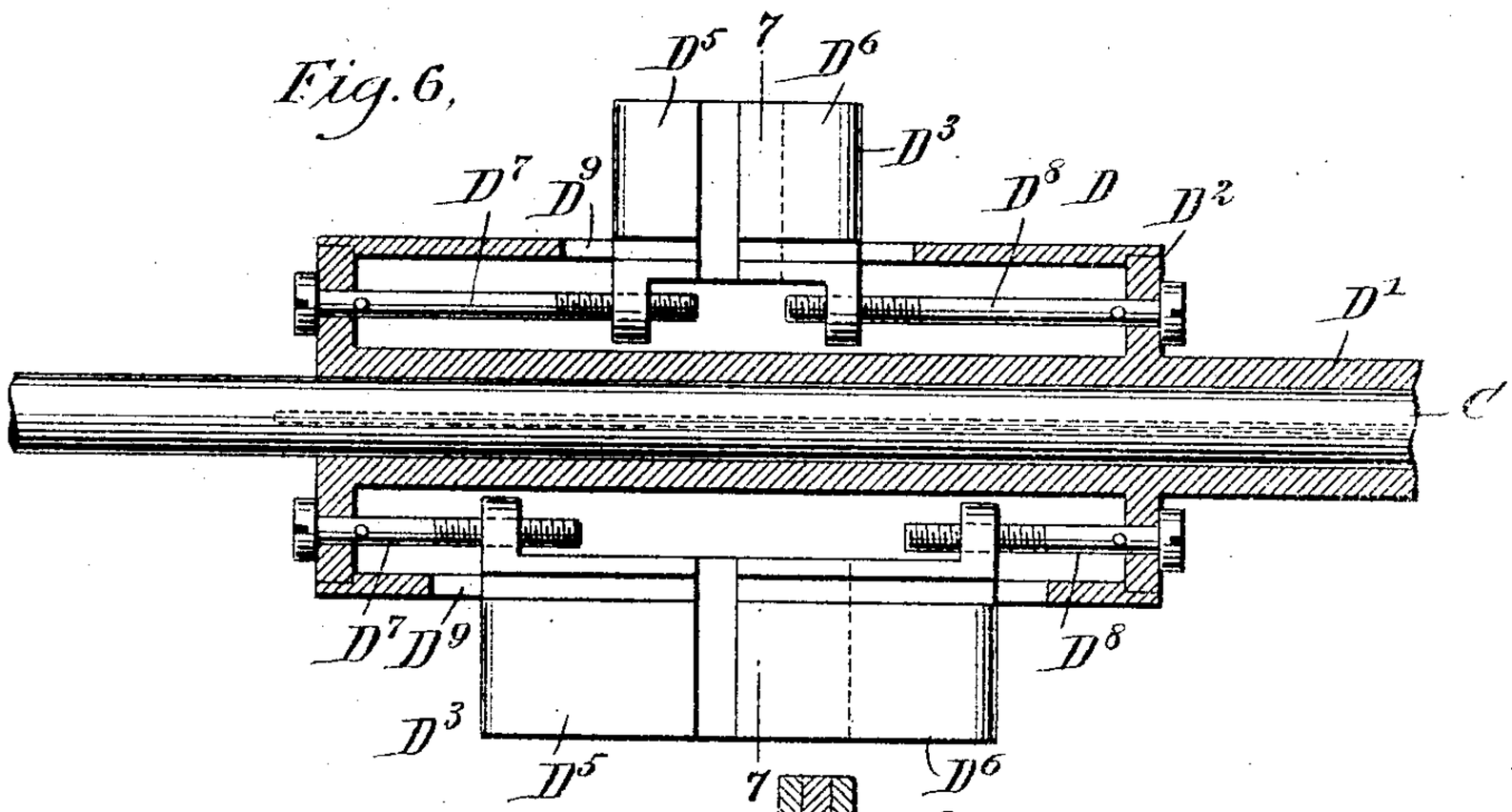
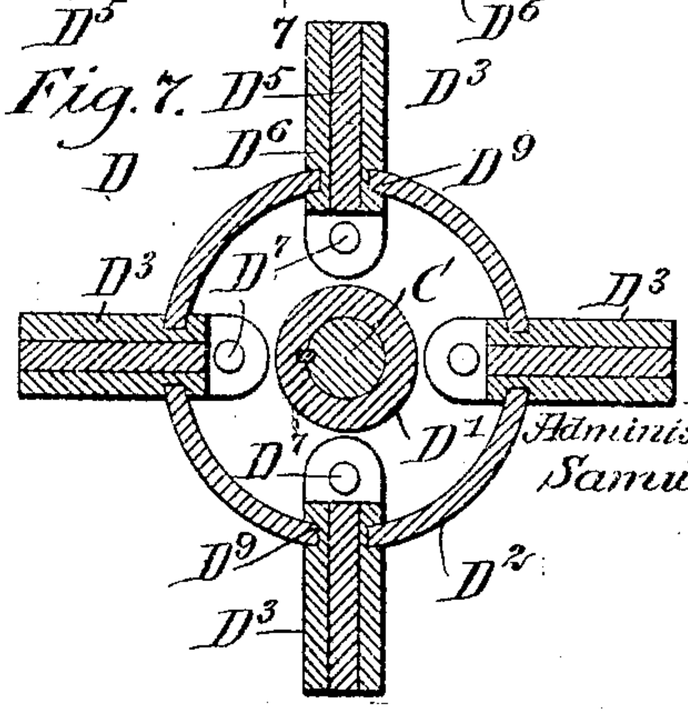


Fig. 7.



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UNITED STATES PATENT OFFICE.

LOUISE A. SALTER, OF NILES, CALIFORNIA, ADMINISTRATRIX OF SAMUEL J. SALTER, DECEASED.

REGISTER.

No. 864,567. Specification of Letters Patent. Patented Aug. 27, 1907.

Application filed January 2, 1907. Serial No. 350,322.

To all whom it may concern:

Be it known that I, LOUISE A. SALTER, a citizen of the United States, and a resident of Niles, in the county of Alameda and State of California, administratrix of the estate of SAMUEL J. SALTER, deceased, late a citizen of the United States, and late a resident of Niles, in the county of Alameda and State of California, (as by reference to the duly-certified copy of letters of administration hereunto annexed will more fully appear,) and who did in his lifetime invent a new and useful Improvement in Registers, do hereby declare the following to be a full, clear, and exact description of said invention.

The object of the invention is to provide a new and improved register or counter, more especially designed for registering the strokes or revolutions of engines, pumps and other machines and devices, and if attached to a pump, to indicate the amount of liquid pumped in a given time, the register being arranged to permit of conveniently stopping or starting it at any time without stopping the machine on which it is applied, and to allow of setting it quickly back to zero.

The invention consists of novel features and parts and combinations of the same, as will be more particularly described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a face view of the improvement as applied to a working part of a machine; Fig. 2 is a face view of the improvement, the casing being shown in section; Fig. 3 is a rear face view of the same, the casing being shown in section; Fig. 4 is a transverse section of the improvement, on the line 4—4 of Fig. 2; Fig. 5 is a sectional plan view of the same, on the line 5—5 of Fig. 2; Fig. 6 is an enlarged sectional side elevation of the driver for the cross-head; and Fig. 7 is a transverse section of the same, on the line 7—7 of Fig. 6.

In a cylindrical casing A is arranged a suitable framework B, in which is mounted to turn a longitudinally-extending shaft or rod C, extending at one end through the casing A and carrying, at the outer end, a knob or handle C′ to enable the operator to turn the shaft C for the purpose hereinafter more fully described. Normally the shaft C is locked against rotation by a spring catch C^2 engaging one of a series of notches C^3 formed on the peripheral face of the knob C′ (see Fig. 1).

On the shaft C within the casing A is mounted to reciprocate a driver D having a sleeve D′ mounted to slide on the shaft C, the sleeve D′ being provided with an integral head D^2, in which are held adjustable longitudinally-extending wings D^3 disposed radially and of different lengths, for the purpose hereinafter more fully described. On the sleeve D′ are formed spaced shoulders D^4, between which is held a ring E′ engaged by one arm of a bell-crank lever E, fulcrumed at E^2 on the frame B, and extending with its other arm through the wall of the casing A to the outside thereof, the outer end of this arm of the bell-crank lever being provided with a row of apertures E^3 (see Fig. 1), one of which is connected by a link F with a bell-crank lever F′, fulcrumed at F^2 adjacent to or on the engine, pump or other machine on which the register is used. The bell-crank lever F′ is connected with the collars F^3 of a reciprocating part F^4 of the engine, pump or other machine, so that when the latter is in motion and a reciprocating motion is given to the part F^4, then a swinging motion is given to the bell-crank lever F′, which, by the link F, imparts a swinging motion to the bell-crank lever E, and the latter imparts a reciprocating motion to the driver D.

In order to insure a full, accurate stroke of the driver D, the bell-crank lever E is provided, at its fulcrumed end, with an offset or tooth E^4, pressed on alternately on opposite sides by a spring E^5 at the time the bell-crank lever E reaches the end of its swinging motion.

Each of the wings D^3 is preferably made in sections D^5 and D^6 (see Figs. 6 and 7), mounted to slide in a longitudinal direction one upon the other, and engaged by the threaded ends of screw-rods D^7 and D^8 screwing in the ends of the head D^2. Thus, by the operator turning the screw-rods D^7 and D^8, the sections D^5 and D^6 can be adjusted relative to each other and the entire wing D^3 can be adjusted in a lengthwise direction on the head D^2. Each of the wings D^3 is mounted to slide in suitable guideways D^9 formed on the head D^2, as will be readily understood by reference to Figs. 6 and 7. One of the wings D^3 is adapted to engage at a time a cross-head G mounted to slide longitudinally in suitable bearings B^2 arranged on the frame B. For the purpose mentioned, the cross-head G is provided, at its ends, with flanges G′ and G^2, between which extends the wing D^3 at the time in operative position, so that when the driver D is reciprocated, the wing D^3 imparts a reciprocating motion to the cross-head G by alternately striking the flanges G′ and G^2. The flanges G′ and G^2 are spaced a distance apart, corresponding approximately to the length of the longest wing D^3 in the series of wings on the head D^2, so that when this longest wing D^3 engages the cross-head G, as described, it is evident that the full reciprocating motion given to the driver D by the engine, pump or other machine, as described, is fully transmitted to the cross-head G. When, however, the position of the driver D is changed,—that is, turned by the operator turning the rod C,—and another wing D^3 is passed into operative position between the flanges G′ and G^2, then the cross-head G is intermittently reciprocated a less distance than that given to the driver D. It is understood that the sleeve D′ is mounted to slide on and to turn with the

shaft or rod C, so that when the latter is given a quarter turn by the operator manipulating the knob C′, as previously stated, then another wing D^3 is brought into operative engagement with the cross-head G.

By making the wings D^3 in sections and adjustable, as above described and shown in Figs. 6 and 7, it is evident that the wings can be brought into proper position relative to the flanges G′ and G^2 to insure an accurate reciprocating of the cross-head G for different distances, according to which of the wings D^3 is in engagement at the time with the cross-head G.

The cross-head G is pivotally connected by links H and H′ (see Figs. 3 and 4) with arms H^2 and H^3 mounted to swing loosely on the unit shaft I extending transversely and journaled in suitable bearings on the frame B. The arms H^2 and H^3 carry spring-pressed pawls H^4 and H^5, adapted to mesh with a ratchet wheel H^6 for turning the same in the direction of the arrow a' (see Fig. 3), return movement of the ratchet wheel being prevented by a spring-pressed dog H^7. The ratchet wheel H^6 is mounted to turn loosely on the unit shaft I, and in order to turn the unit shaft I from the ratchet wheel H^6, the latter is provided, at its hub H^8, with a clutch member H^9 adapted to engage a slot I^2 in a clutch member or pin wheel I^3 mounted to slide on and turning with the unit shaft I, and pressed on by a spring I^4 to hold the clutch member I^3 normally in mesh with the clutch member H^9. On the shaft I is secured a radially extending pin I^5 passing through the slot I^2, so that on turning the clutch member I^3, the unit shaft I is turned. Thus when the ratchet wheel H^6 is turned the unit shaft I turns with it, as long as the clutch member H^9 and the pin I^5 engage the slot I^2 in the clutch member I^3. The forward end of the unit shaft I is connected by a crank I′ with the unit number wheel J, adapted to display one of its numbers at a time through an opening K′ forming one of a series of openings K′ arranged in a dial K, held in the front of the casing A. The unit number wheel J, the 10th number wheel J′, the 100th number wheel J^2, the 1,000th number wheel J^3 the 10,000th number wheel J^4 and the 100,000th number wheel J^5 are arranged one alongside the other, as plainly indicated, and display one of their numerals at a time through a corresponding opening K′. The 10th number wheel J′ is driven from the shaft I of the unit number wheel J, and the number wheel J^2 is driven from the number wheel J′ and in a like manner the retaining number wheels J^3, J^4 and J^5 are driven from the preceding number wheels, in a manner hereinafter more fully described.

When the cross-head G is reciprocated, as previously described, a swinging motion is given by the links H and H′ to the arms H^2 and H^3, which, by their pawls H^4 and H^5, turn the ratchet wheel H^6, and the latter, by the clutch members H^9 and I^3, turns the shaft I and the unit wheel J. When the latter has made one complete revolution, the 10th number wheel J^8 is moved a distance to display the next number through the corresponding opening K′, and when the 10th number wheel J′ completes a revolution, the 100th number wheel J^2 is moved a distance to display the following number through the corresponding opening K′, and the same operation is repeated for the several remaining number wheels J^3, J^4 and J^5, whenever the preceding number wheel has completed a revolution.

By reference to Fig. 3, it will be seen that the two arms H^2 and H^3 extend in opposite directions, so that the ratchet wheel H^6 is actuated on each forward and on each backward stroke of the cross-head G, so that the register indicates the number of strokes of the engine, pump or other machine on which the register is used. When it is desired to count the number of revolutions, then it is necessary to throw the spring-pressed pawl H^5 out of gear, so that only the pawl H^4 intermittently turns the ratchet wheel H^6 once for every full forward stroke of the cross-head G, and consequently the number wheels J, J′, J^2, J^3, J^4 and J^5 indicate revolutions of the engine, pump or other machine instead of strokes, as previously explained.

In order to throw the pawl H^5 out of mesh with the ratchet wheel H^6, the following device is provided, special reference being had to Fig. 3: The pawl H^5 is extended somewhat beyond its fulcrum on the arm H^3, and its extended end rests against a plate L hinged at L′ on the frame B. The free end of the plate L is connected by a link L^2 with an arm L^3 secured on the shaft L^4 journaled in suitable bearings A′ arranged on the casing A, and on the outer end of this shaft L^4 is secured a knob L^5, to enable the operator to turn the shaft L^4 to impart a swinging motion to the arm L^3, which, by the link L^2, imparts a swinging motion to the hinged plate L. Thus, when the latter is swung inward, it presses against the extension end of the spring-pressed pawl H^5, to swing the free end thereof out of engagement with the teeth of the ratchet wheel H^6, and consequently this pawl H^5 remains inactive relative to the ratchet wheel H^6. When the knob L^5 is turned in an opposite direction and the plate L is swung forwardly, then the pawl H^5 engages the teeth of the ratchet wheel H^6, and consequently the pawl H^5 becomes active, together with the pawl H^4, to count strokes, as previously explained.

In order to indicate how the register is set relative to counting strokes or revolutions, the following device is provided: On the shaft L^4 are secured arms L^6 carrying a sign L^7 mounted to slide in suitable guideways A^2 arranged on the casing A, and on this sign L^7 are arranged the legends, "Revolutions" and "Strokes," one above the other (see Fig. 1), one of the legends appearing at a time through an opening K^2 in the dial K. Thus, when the plate L is in such position that the pawl H^5 is active, then the sign L^7 displays the word "Strokes" in the opening K^2, indicating that th register is set for counting strokes; and when the plate L has moved the pawl H^5 into an inactive position, then the sign L^7 displays the word "Revolutions" through the opening K^2, it being understood that the plate L, as well as the sign L^7, are simultaneously adjusted on the operator turning the knob L^5.

In order to turn one number wheel from the other, as previously mentioned, the following device is provided: The pin I^5 secured on the shaft I and previously mentioned is sufficiently long (see Fig. 5) to successively engage pins N on the pin wheel N′ mounted to slide on and to turn with a shaft N^2 connected by a crank N^3 with the 10th number wheel J′. The pin wheel N′ is pressed on by a spring N^4 to hold the same in proper position for the pin I^5 to engage the

pins N, as above explained. On the shaft N^2 is secured a pin N^5 adapted to actuate successively the pins O on a pin wheel O′ mounted to slide on and to turn with a shaft O^2 connected by a crank O^3 with the 100th number wheel J^2; and the spring O^4 holds the pin wheel O′ in proper position relative to the pin N^5. On the shaft O^2 is secured a pin O^5 for engaging pins P on the pin wheel P′ mounted to slide on and to turn with the shaft P^2 connected by a crank P^3 with the 1,000th number wheel J^3, the pin wheel P′ being pressed on by a spring P^4 similar to the spring O^4. A pin P^5 on the shaft P^2 serves to actuate the pins Q on a pin wheel Q′ mounted to slide on and to turn with a shaft Q^2 connected by a crank Q^3 with the 10,000th number wheel J^4, a spring Q^4 normally holding the pin wheel Q′ in proper position. A pin Q^5 secured on the shaft Q^2 successively actuates pins R on a pin wheel R′ mounted to slide on and to turn with a shaft R^2, connected by a crank R^3 with the 100,000th number wheel J^4. A spring R^4 presses the pin wheel R′ to hold the pins R thereof in proper relation to the pin Q^5.

By reference to Fig. 5, it will be seen that the pins N, O, P, Q and R increase in length to allow free rotation of the pins I^5, N^5, O^5, P^5 and Q^5 without interfering with the pins N, O, P, Q and R, respectively.

In order to stop the turning of the number wheels J, J′, J^2, J^3, J^4 and J^5 and re-set the same to zero whenever it is desired to do so, the following arrangement is made: On the pin wheels I^3, N′, O′, P′, Q′ and R′ are formed racks I^6, N^6, O^6, P^6, Q^6 and R^6, each engaged by a toothed segment S (see Fig. 4), and the several segments S are secured on a longitudinally-extending shaft S′ journaled in suitable bearings on the frame B. On the shaft S′ is attached a forwardly-extending arm S^2 pivotally connected with a downwardly-hanging rod S^3 extending through the bottom of the casing A and carrying, at its lower end, a knob S^4. When the operator pulls the knob S^4, a swinging motion is given to the shaft S′, and by the segments S and racks I^6, N^6, O^6, P^6, Q^6 and R^6 a forward sliding motion is given to the several pin wheels I^3, N′, O′, P′, Q′ and R′, to move the same out of engagement with the pins I^5, N^5, O^5, P^5 and Q^5 and also to move the clutch member or pin wheel I^3 out of engagement with the clutch member H^9, so that the number wheels J, J′, J^2, J^3, J^4 and J^5, as well as the shaft I, are stopped, while the ratchet wheel H^6 is still rotated; that is, the counting is stopped without requiring the stopping of the machine on which the register is used.

In order to set the several number wheels J, J′, J^2, J^3, J^4 and J^5 into a zero position during the time the pin wheels are moved forwardly on pulling the knob S^4, as previously described, the following arrangement is made: Each of the cranks I′, N^3, O^3, P^3, Q^3 and R^3 is engaged by a slotted arm T, and the several slotted arms T are pivotally connected with a bar T′ (see Figs. 2 and 4) connected by links T^2 with a rod T^3 extending through the bottom of the casing A to the outside thereof, the lower end of the rod being provided with a suitable knob T^4. On the rod T^3 (see Fig. 4) is secured or formed a lug T^5 adapted to engage a lug S^5 secured or formed on the rod S^3, and hence when the knob T^4 is pulled down by the operator, then the lug T^5 in engagement with the lug S^5, pulls down the rod S^3 so that the several pin wheels I^3, N′, O′, P′, Q′ and R′ are released from the pins I^5, N^5, O^5, P^5 and Q^5, so that the number wheels J, J′, J^2, J^3, J^4 and J^5 are free to turn and are turned to zero position by the action of the cranks I^3, N^3, O^3, P^3, Q^3 and R^3 actuated by the slotted arms T, links T· and rod T^3 pulled down by the operator. In order to insure a correct return of the number wheel. to zero position at the time the knob T^4 is pulled, each pin wheel N′, O′, P′, Q′ and R′ is provided, at its peripheral face, with a recess adapted to be engaged by a spring dog J^7 at the time the corresponding number wheel is moved into zero position by the device mentioned. When the number wheels have been reset, as described, then the knobs T^4 and S^4 are pushed upward, back to their former positions, so that the pin wheels are moved rearwardly to bring the several parts again in proper relation to each other for turning the number wheels in succession whenever the shaft I is rotated.

The strokes and revolutions of the engine, pump or other machine on which the register is applied may be counted consecutively, or by twos, threes and fours. In order to count the strokes and revolutions consecutively, it is necessary that the driver D be turned into such position that its shortest wing D^3 is in engagement with the flanges G′ and G^2 of the cross-head G. When it is desired to count by twos, such as two, four, six, eight, etc., the driver D is turned so that the wing D^3 following the shortest wing is in engagement with the cross-head G: and in a like manner when it is desired to count by threes, such as three six, nine, twelve, etc., the driver D is turned to bring the third shortest wing D^3 into active position relative to the cross-head G; and when it is desired to count by fours, such as four, eight, twelve, sixteen, etc., then the driver D is turned to bring the longest wing D^3 in active position relative to the cross-head G. It is understood that the length of the wings D^3 is so proportioned relative to the pawl and ratchet mechanism, that when the longest wing D^3 is in use, the pawls H^4 and H^5 turn the ratchet wheel H^6 the distance of eight teeth for each forward and eight teeth for each backward stroke of the cross-head G and driver D; and when the next longest wing D^3 is used, the ratchet wheel H^6 is turned the distance of six teeth on each full stroke of the cross-head G, and when the third longest wing D^3 is in use, the ratchet wheel H^6 is turned the distance of four teeth on each full stroke of the cross-head G, and when the shortest wing D^3 is in active position, the ratchet wheel H^6 is turned the distance of two teeth. In a like manner when the pawl H^5 is thrown out of mesh with the ratchet wheel H^6 and the pawl H^4 is only active, then the ratchet wheel H^6 is turned the distance of eight, six, four, or two teeth, according to which of the wings D^3 is active at the time, but it only acts one way, thus counting for a whole revolution.

In order to indicate which of the countings is in use at the time, the following device is provided: On the sleeve D′ is mounted to turn and to slide a sprocket wheel U, connected by a sprocket chain U′ with a sprocket wheel U^2 secured on a shaft U^3 journaled in suitable bearings B^4 arranged on the frame B. On the shaft U^3 is secured a number wheel U^4 carrying, on its peripheral face, the numerals 1 to 4, one of which is

displayed at a time through an opening K^3 arranged in the dial K (see Fig. 1). The numerals on the number wheel U^4 are so arranged relative to the wings D^3, that when the longest wing D^3 is in active position at the time, then the numeral 4 is displayed in the opening K^3; and when the next following longest wing D^3 is in active position, the numeral 3 appears in the opening K^3, and so on relative to the next following wings and the corresponding numbers 2 and 1, on the number wheel U^4.

When the device is used on a four plunger pump and it is desired to know the number of revolutions the pump is making, then the operator sets the register to display "4" at the opening K^3 and "Revolutions" at the openings K^2. The pawl H^5 is now disengaged from the ratchet wheel H^6 and the longest wing D^3 is now in position to move the link H a full stroke or eight teeth of the ratchet wheel H^6, on the forward motion only, and hence the pump must make a whole revolution for turning the ratchet wheel H^6 a distance of eight teeth. As the ratchet wheel H^6 has twenty teeth, it is evident that the numeral disk J is turned four points for each revolution of the pump. When it is desired to indicate strokes, the sign L^7 is changed to display "Strokes", so that the pawl H^5 is moved into active position and the register now indicates twice as much as before when counting revolutions, as both pawls H^4 and H^5 are now active.

In order to indicate the amount of liquid pumped by the pump during a given time, the following arrangement is made, special reference being had to Figs. 2, 4 and 5: On the shaft P^2 for the 1,000th number wheel J^3 is secured a pinion V in mesh with a gear wheel V′ journaled on an arm V^2 mounted to swing loosely on the shaft P^2, and provided, at its free end, with a downwardly-extending rod V^3 passing through the bottom of the casing A and carrying, at its outer end, a knob V^4. On the shaft of the gear wheel V′ is secured a pinion V^5 in mesh with a gear wheel V^6 secured on a pointer shaft W journaled in suitable bearings carried by the frame B; and on the forward end of this shaft W is secured a pointer W′ indicating on a graduation K^4 formed on a separate ring-shaped disk K^5 held on the face of the dial K, the graduation K^4 representing gallons, the zero point being located at the top of the graduation. On the pointer shaft W is arranged a weight W^2 for returning the pointer W′ immediately to zero whenever the operator pulls the knob V^4 downward and thereby swings the arm V^2 in a downward direction, to disengage the pinion V^5 from the wheel V^6. Thus the pointer W′ can be immediately returned to zero position whenever it is desired to do so, on the operator pulling the knob V^4 in a downward direction. Normally, however, the pinion V^5 and gear wheel V^6 are in mesh with each other, and when the pump is working and the register is actuated, then the rotation of the shaft P^2 causes a turning of the pointer W′ by the gearing just described, so that the pointer indicates the amount of liquid pumped by the pump. The ring-shaped dial K^5 used varies according to the capacity of the pump on which the register is used. Thus for instance the dial shown in Fig. 1 is for a pump delivering one gallon per stroke, and if the pump delivers five gallons a stroke, the numerals on the graduation K^4 must be five times as large, numerically, as the one shown; that is, the graduation would total 800,000 instead of 160,000, as represented in Fig. 1. Now, presuming that the pinion V has eight teeth, the gear wheel V′ thirty-two teeth, the pinion V^5 eight teeth, and the gear wheel V^6 thirty-two teeth and the shaft J^3 makes one revolution, then the pointer W′ makes one-sixteenth of a turn on the dial V^5; that is, indicates 10,000 gallons.

If the device is to be used on a three-plunger pump, of different capacity, then it is only necessary to set the driver D correspondingly and change the dial K^5, as above explained.

The dials K and K^5 are preferably protected by a disk X of glass or other suitable transparent material, and secured to the casing A.

Having thus described the invention, I claim as new and desire to secure by Letters Patent:—

1. A register comprising a number wheel, a reciprocating cross head, a connection between the cross hend and the number wheel, whereby to transform the reciprocatory movement of the cross head into rotary movement of the number wheel, and means for varying the relative movement of the cross head and the number wheel.

2. A register comprising a reciprocating cross-head, a ratchet wheel, two pawl devices for the said ratchet wheel connected with the said cross-head, number wheels, mechanism for the same adapted to be driven from the said ratchet wheel, and manually controlled means for throwing one of the said pawl devices out of action.

3. A register comprising a dial, a pointer therefor, cross head, mechanism connected with the said cross head for turning the said pointer, a reciprocating driver for reciprocating the cross head, and means for varying the relative movement of the cross head and the driver.

4. A register for pumps comprising a driver receiving a uniform reciprocating motion from the pump on which the register is used, the driver having actuating parts of different sizes, each of which parts can be brought into an active position, and a mechanism for indicating the amount of liquid pumped by the machine, the said mechanism being actuated by one of the said actuating parts of the said driver.

5. A register for pumps comprising means for registering the amount of liquid pumped by the pump, means connected with the pump for actuating the registering means, and means for varying the relation between the registering means and the actuating means in accordance with the area of the pump plunger.

6. A register for pumps comprising a driver uniformly reciprocated from a part of the pump, the driver having a plurality of wings of different lengths, either of which may be moved into an operative position, a cross-head mounted to reciprocate and adapted to be engaged by the driver wing which is in an operative position at the time, and registering means actuated by the said cross-head.

7. A register for pumps comprising a driver uniformly reciprocated from a part of the pump, the driver having a plurality of wings of different lengths, either of which may be moved into an operative position, a cross-head mounted to reciprocate and adapted to be engaged by the driver wing which is in an operative position at the time, a ratchet wheel and pawl mechanism actuated from the said cross-head, a dial, a pointer for the same, and a driving gear for the said pointer connected with the said ratchet wheel and pawl mechanism.

8. A register comprising a plurality of number wheels, shafts provided with cranks engaging the said number wheels, means for intermittently rotating one shaft from the next adjacent one, means for driving the shaft of the unit number wheel, and a manually controlled device engaging the said cranks for simultaneously turning the said number wheels to zero position.

9. A register comprising a plurality of number wheels, shafts provided with cranks engaging the said number wheels, means for intermittently rotating one shaft from the next adjacent one, means for driving the shaft of the

unit number wheel, a bar carrying slotted links engaging the said cranks, and means under the control of the operator, connected with the said bar for turning the said number wheels simultaneously to zero position.

10. A register provided with a plurality of number wheels, shafts having cranks connected with the said number wheels, manually controlled means engaging the said cranks for turning the number wheels simultaneously to zero position, pin wheels mounted to slide on and to turn with the said shafts, each shaft having a pin for engaging the pins of the next following pin wheel, and manually controlled releasing means for imparting a simultaneous sliding motion to the pin wheels on the said shafts for disengaging the pin wheels from the said pins.

11. A register provided with a plurality of number wheels, shafts having cranks connected with the said number wheels, manually controlled means engaging the said cranks for turning the number wheels simultaneously to zero position, pin wheels mounted to slide on and to turn with the said shafts, each shaft having a pin for engaging the pins of the next following pin wheel, manually controlled means for imparting a simultaneous sliding motion to the pin wheels on the said shafts, a clutch mechanism for connecting the shaft for the unit number wheel with its pin wheel, and means for driving the said clutch mechanism for the unit number wheel in accordance with the revolutions or strokes of the machine on which the device is applied.

12. A register for pumps comprising a driver uniformly reciprocated from a part of the pump, the driver having a plurality of wings of different lengths, either of which may be moved into an operative position, a cross-head mounted to reciprocate and adapted to be engaged by the driver wing which is in an operative position at the time, registering means actuated by the said cross-head, and means operating in conjunction with the said driver for indicating which of the wings is in operative position at the time.

13. A register for pumps comprising a driver uniformly reciprocated from a part of the pump, the driver having a plurality of wings of different lengths, either of which may be moved into an operative position, a cross-head mounted to reciprocate and adapted to be engaged by the driver wing which is in an operative position at the time, registering means actuated by the said cross-head, a number wheel for indicating which of the wings is in operative position at the time, and a pulley and belt connection for connecting the said number wheel with the said driver.

14. A register comprising a reciprocating cross-head, a ratchet wheel, two pawl devices for the said ratchet wheel connected with the said cross-head, number wheels, mechanism for the same adapted to be driven from the said ratchet wheel, manually controlled means for throwing one of the said pawl devices out of action, and a sign actuated by the said means to indicate revolutions or strokes.

15. A mechanical movement comprising a driver having a uniform reciprocating movement and provided with wings of different lengths extending in the direction of the movement of the driver, and a cross-head adapted to be engaged by either of the said wings to impart a varying reciprocating motion to the cross-head from the said driver.

16. A mechanical movement comprising a shaft adapted to be turned by the operator, a sleeve mounted to slide on the said shaft and adapted to turn with the same, a plurality of longitudinally-extending radially-disposed wings on the said sleeve of different lengths, and a cross-head having flanges for receiving one of the said wings on turning the sleeve.

17. A register for pumps comprising a driver receiving a uniform reciprocating motion from the pump on which the register is used, the driver having actuating parts of different sizes, each of which parts can be brought into an active position, and a mechanism for indicating the amount of liquid pumped by the machine, the said mechanism being actuated by one of the said actuating parts of the said driver, the said mechanism comprising an interchangeable graduated dial, a pointer indicating on the said dial, and means for imparting motion to the said pointer from the actuating part of the said driver.

18. A register comprising a driver receiving a uniform reciprocating motion from the machine on which the register is used, the driver having actuating parts of different sizes, each of which parts can be brought into an active position, a ratchet wheel, two pawls actuated from the said driver and adapted to engage the said ratchet wheel, a unit shaft, a clutch mechanism for connecting the said ratchet wheel with the said unit shaft, and a unit wheel on the said unit shaft.

19. A register comprising a driver receiving a uniform reciprocating motion from the machine on which the register is used, the driver having actuating parts of different sizes, each of which parts can be brought into an active position, a ratchet wheel, two pawls actuated from the said driver and adapted to engage the said ratchet wheel, a unit shaft, a clutch mechanism for connecting the said ratchet wheel with the said unit shaft, a unit wheel on the said unit shaft, and manually controlled means for throwing the said clutch mechanism in or out of gear.

20. A register comprising a driver receiving a uniform reciprocating motion from the machine on which the register is used, the driver having actuating parts of different sizes, each of which parts can be brought into an active position, a ratchet wheel, two pawls actuated from the said driver and adapted to engage the said ratchet wheel, a unit shaft, a clutch mechanism for connecting the said ratchet wheel with the said unit shaft, a series of number wheels driven from the said unit shaft, manually controlled means for throwing the said clutch mechanism out of gear, and manually controlled means connected with the said number wheels for returning the same to zero position.

21. A register comprising a driver receiving a uniform reciprocating motion from the machine on which the register is used, the driver having actuating parts of different sizes, each of which parts can be brought into an active position, a ratchet wheel, two pawls actuated from the said driver and adapted to engage the said ratchet wheel, a unit shaft, a clutch mechanism for connecting the said ratchet wheel with the said unit shaft, a series of number wheels driven from the said unit shaft, a pointer geared with one of the shafts of the said number wheels, and an interchangeable graduated dial on which indicates the said pointer.

22. A register provided with a plurality of number wheels, shafts having cranks connected with the said number wheels, manually controlled means engaging the said cranks for turning the number wheels simultaneously to zero position, pin wheels mounted to slide on and to turn with the said shafts, each shaft having a pin for engaging the pins of the next following pin wheel, manually controlled releasing means for imparting a simultaneous sliding motion to the pin wheels on the said shafts for disengaging the pin wheels from the said pins, and manually controlled setting means controlling the said releasing means for re-setting the numeral wheels to zero position.

23. A register, comprising a number wheel, a cross head, a reciprocating driver for operating the cross head, a connection between the cross head and the number wheel, whereby the movement of the cross head will rotate said number wheel, and means for varying the relative movement of the cross head and the driver.

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

LOUISE A. SALTER,
Administratrix of the estate of Samuel J. Salter, deceased.

Witnesses:
MARY SALTER,
JNO. G. MATTS, Jr.