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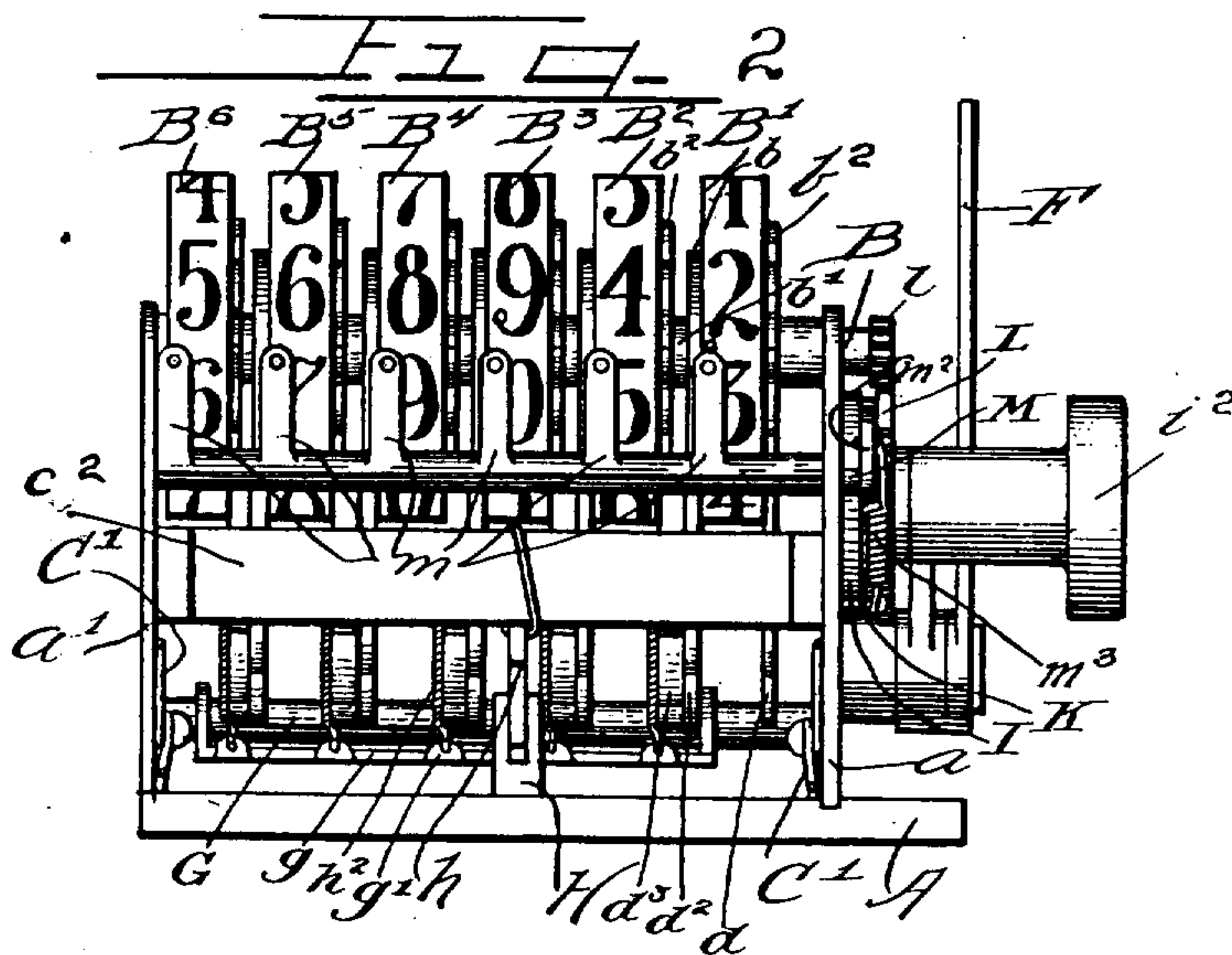
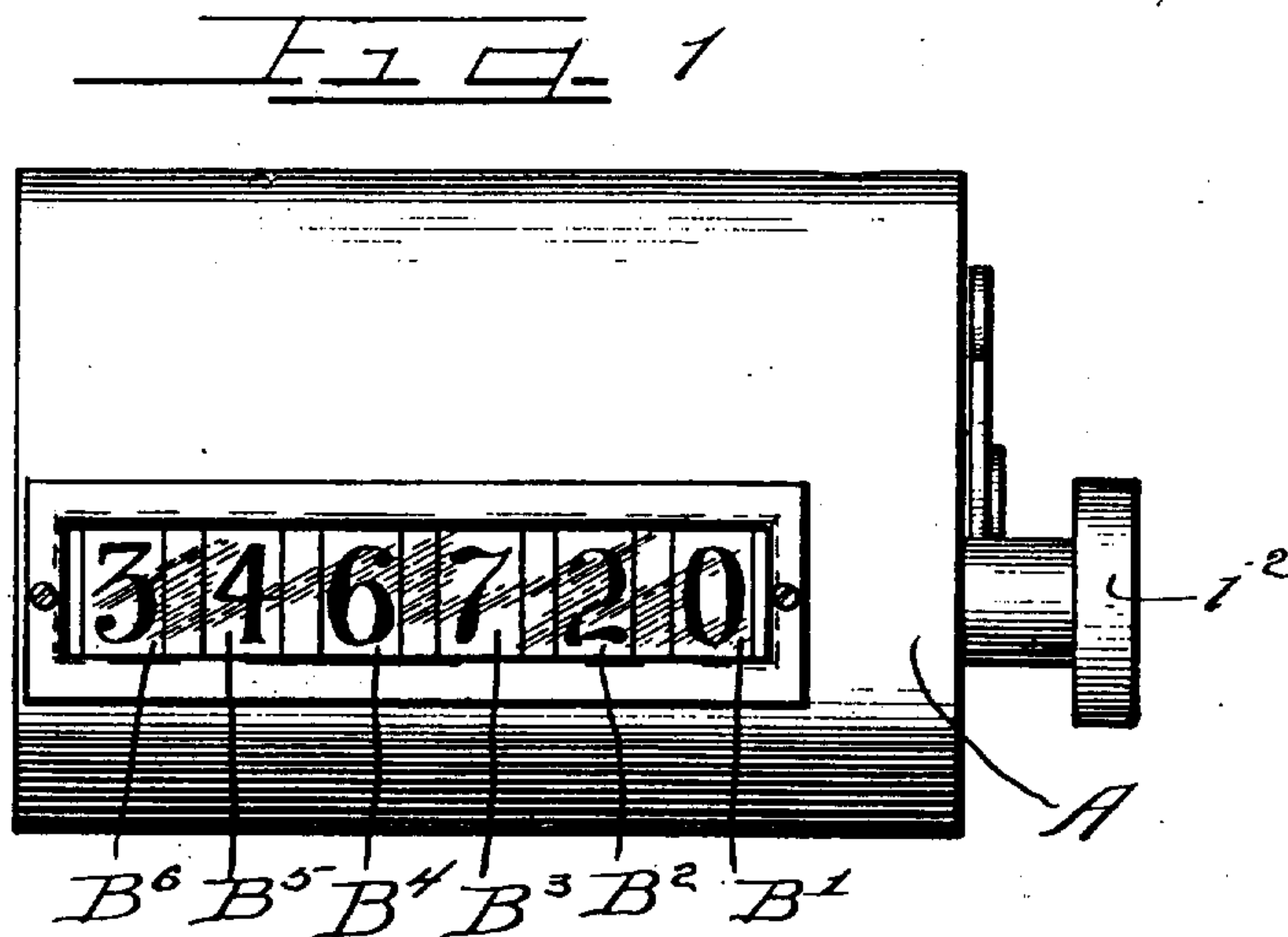
PATENTED JULY 28, 1908.

J. M. JOHNSON.

AUTOMATIC REGISTERING AND COUNTING MACHINE.

APPLICATION FILED AUG. 13, 1906.

5 SHEETS—SHEET 1.



WITNESSES
J. W. Angell.
J. W. Haman.

INVENTOR
Jay M. Johnson
by Charles E. Rice,
ATTY.

No. 894,506.

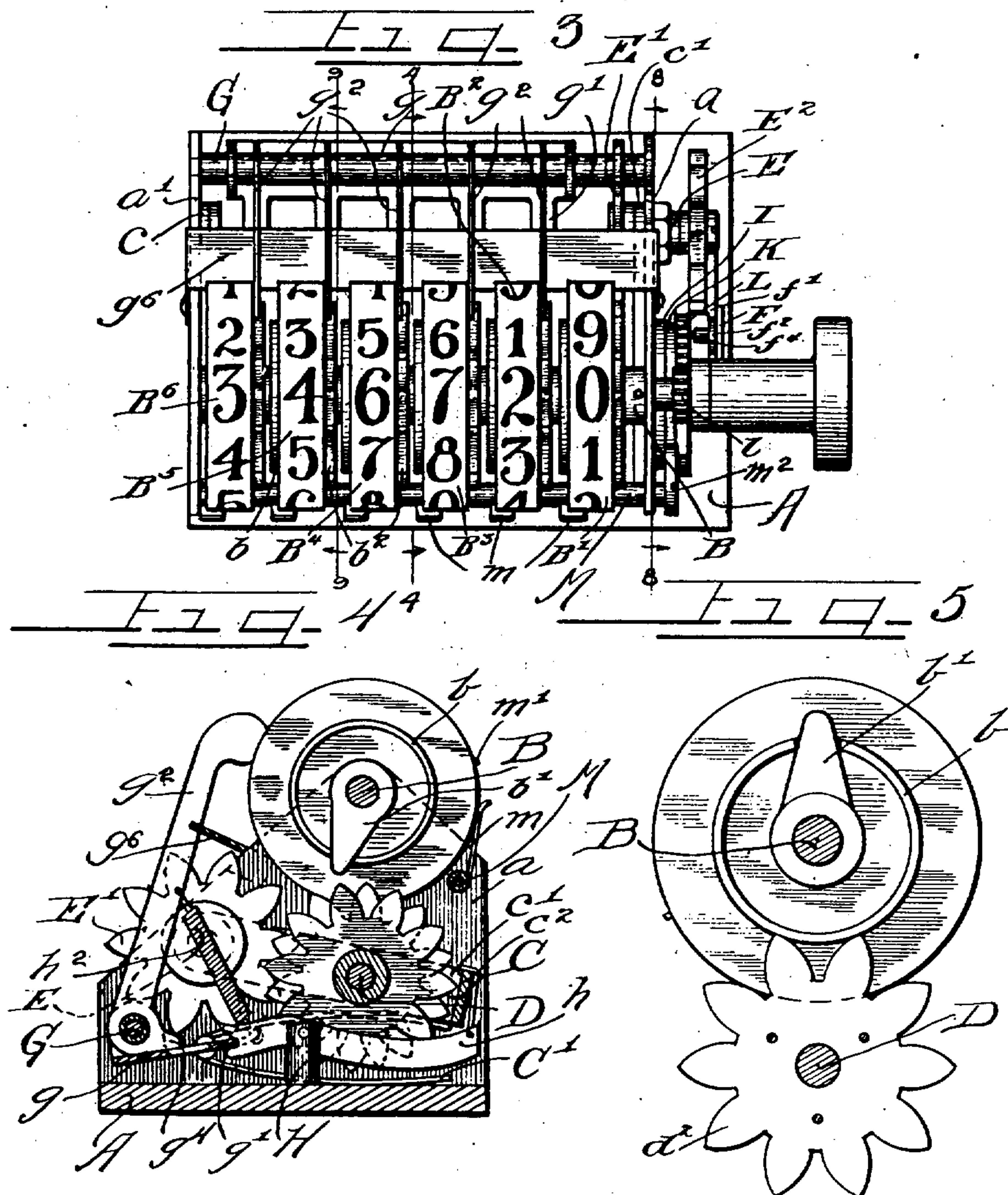
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5 SHEETS—SHEET 2.



Witnesses

J. H. Angell
Keston

INVENTOR

Wm M. Johnson.

Charles W. Fries, Atty.

No. 894,506.

PATENTED JULY 28, 1908.

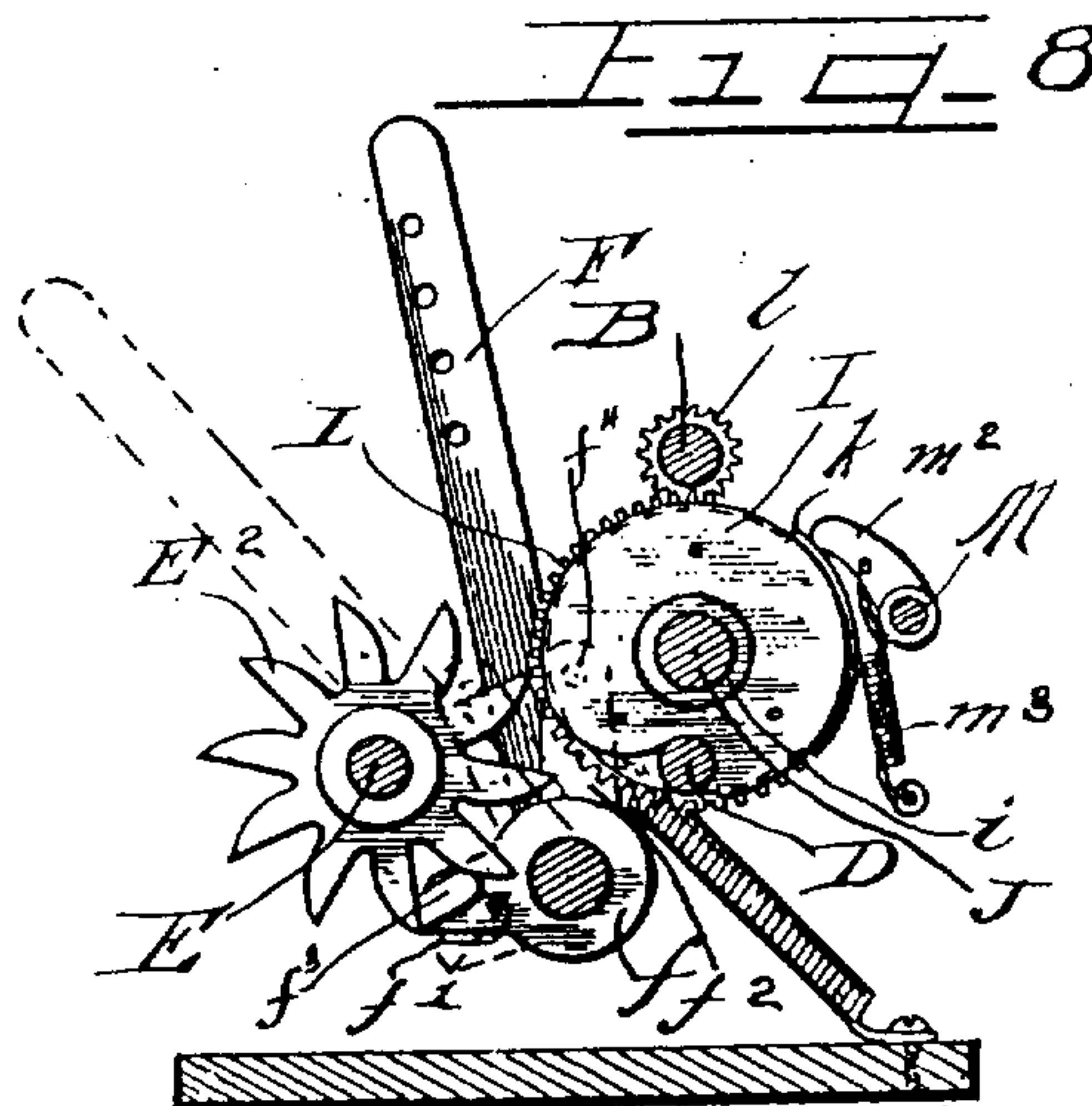
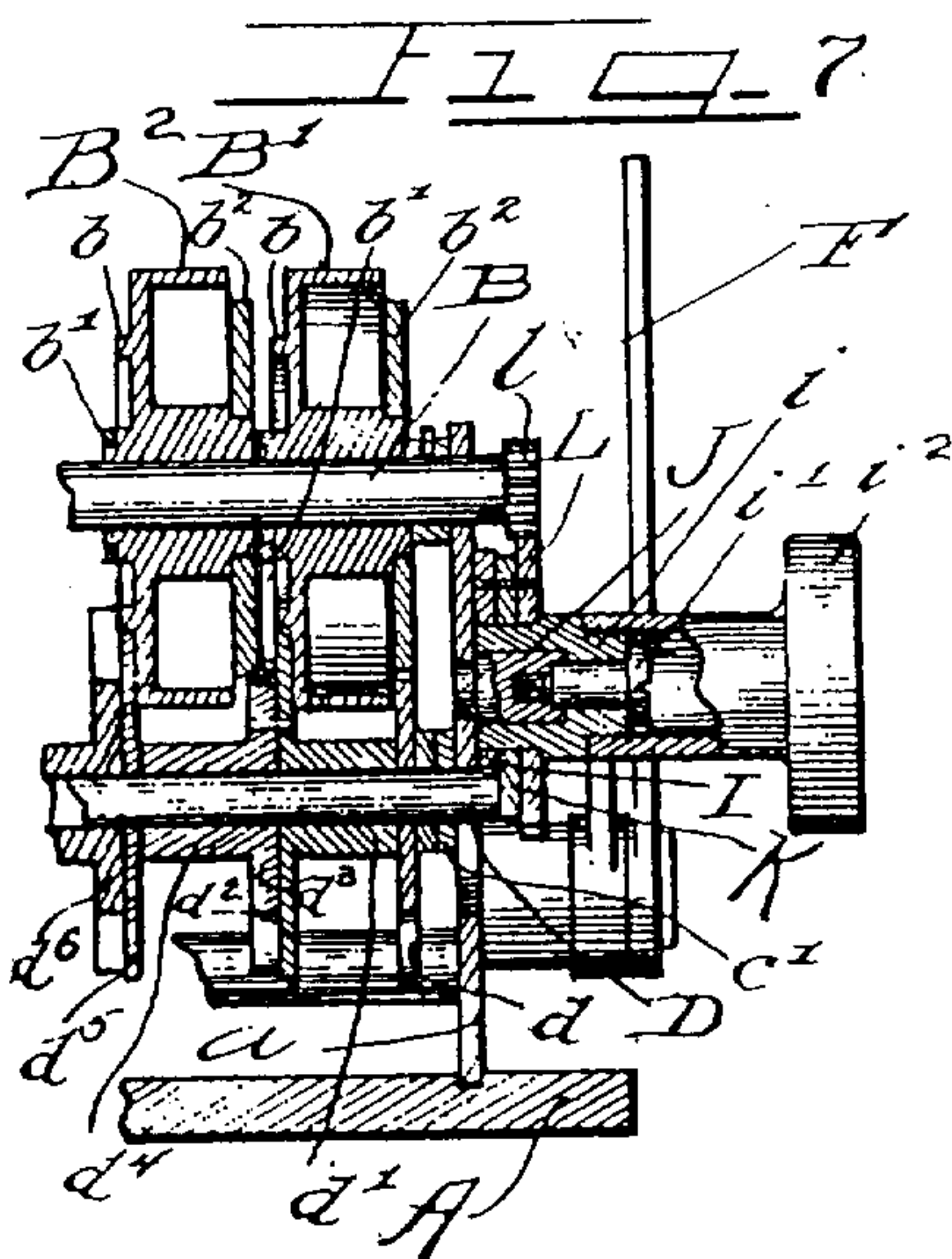
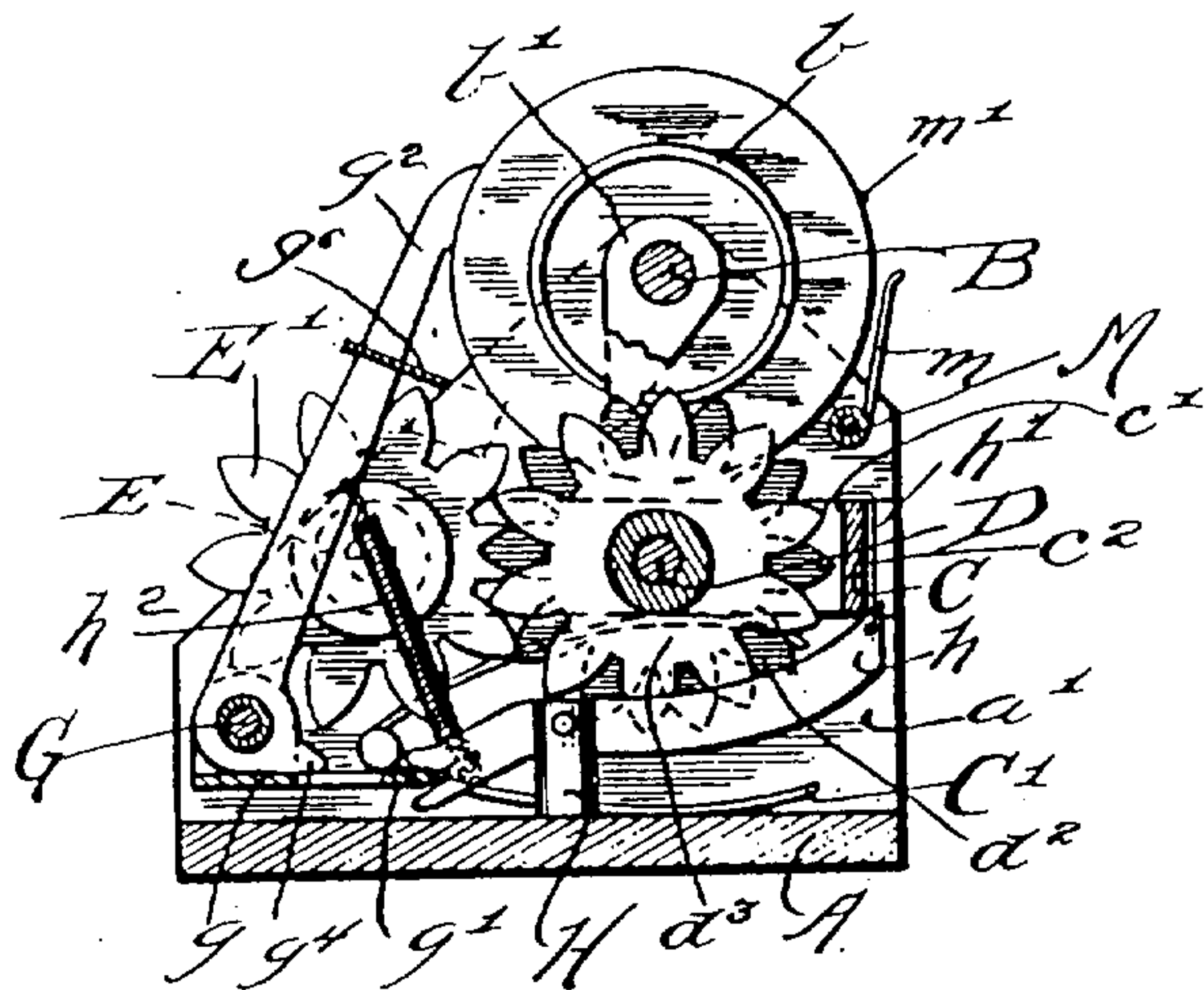
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6 SHEETS-SHEET 3.

FIG. 6



WITNESSES

J. H. Angell
J. C. Kammah

INVENTOR

Jay M. Johnson.

Charles W. Rice

Att'y.

No. 894,506.

PATENTED JULY 28, 1908.

J. M. JOHNSON.

AUTOMATIC REGISTERING AND COUNTING MACHINE.

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6 SHEETS—SHEET 4.

Fig. 9

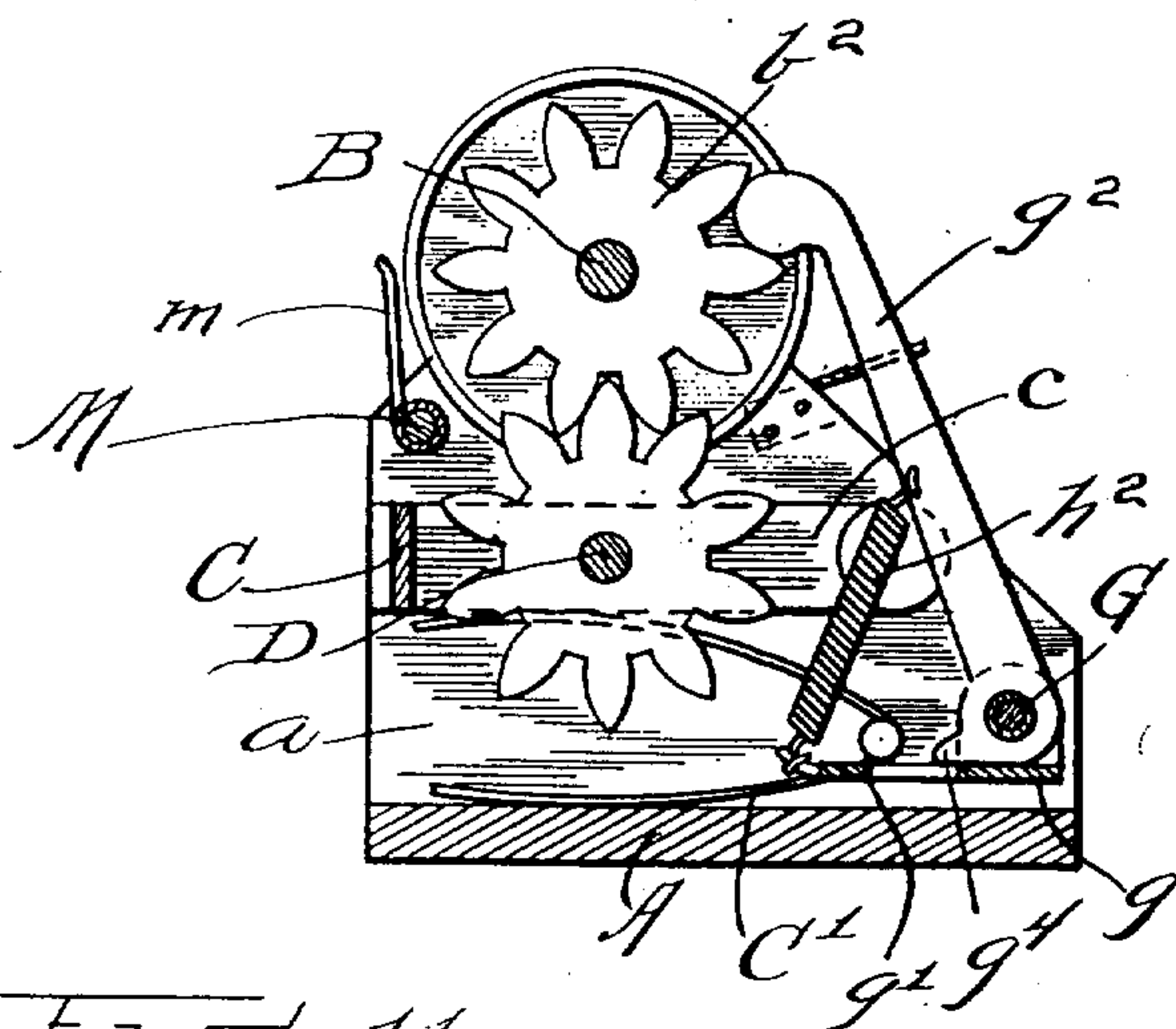


Fig. 10

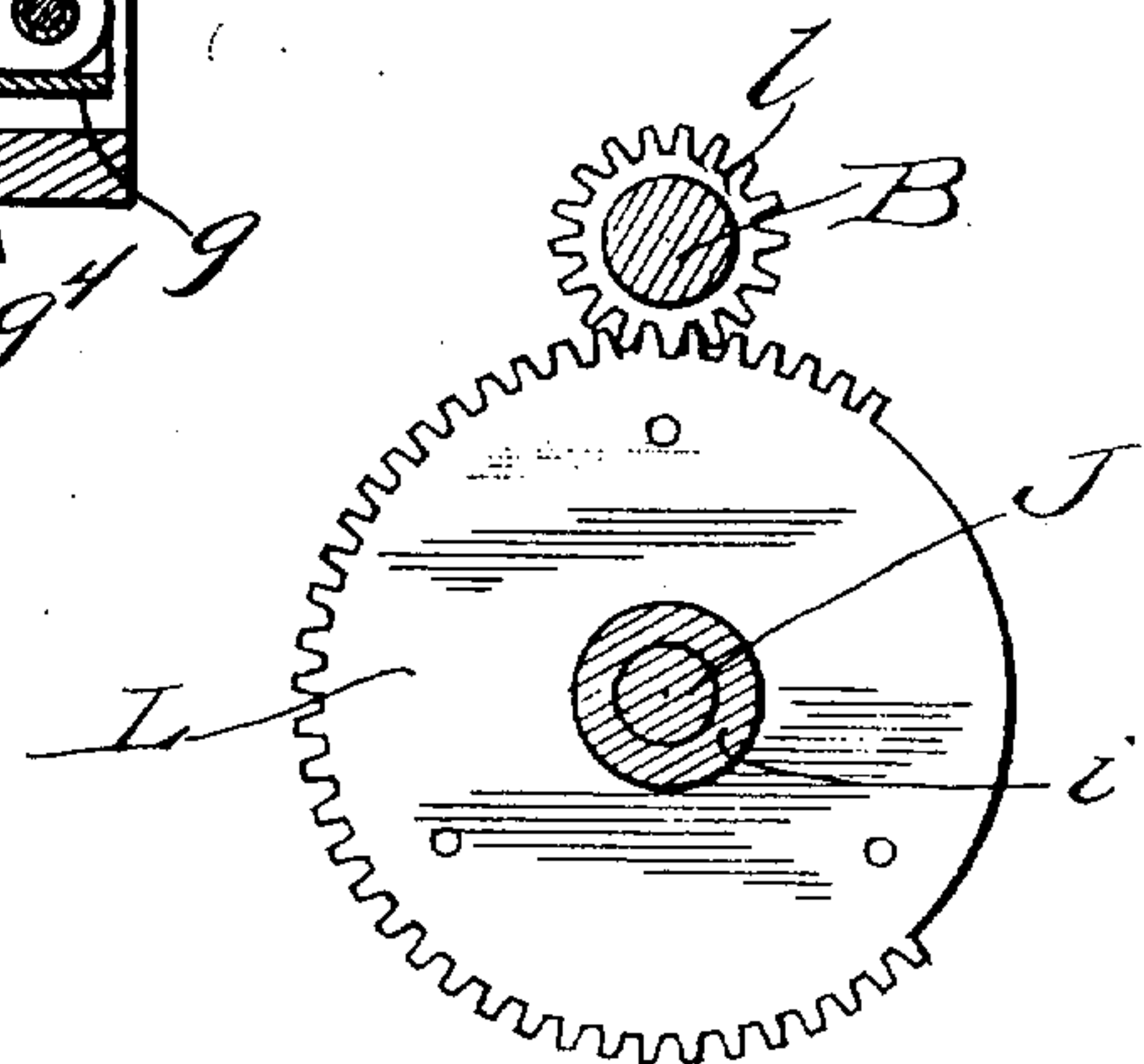


Fig. 11

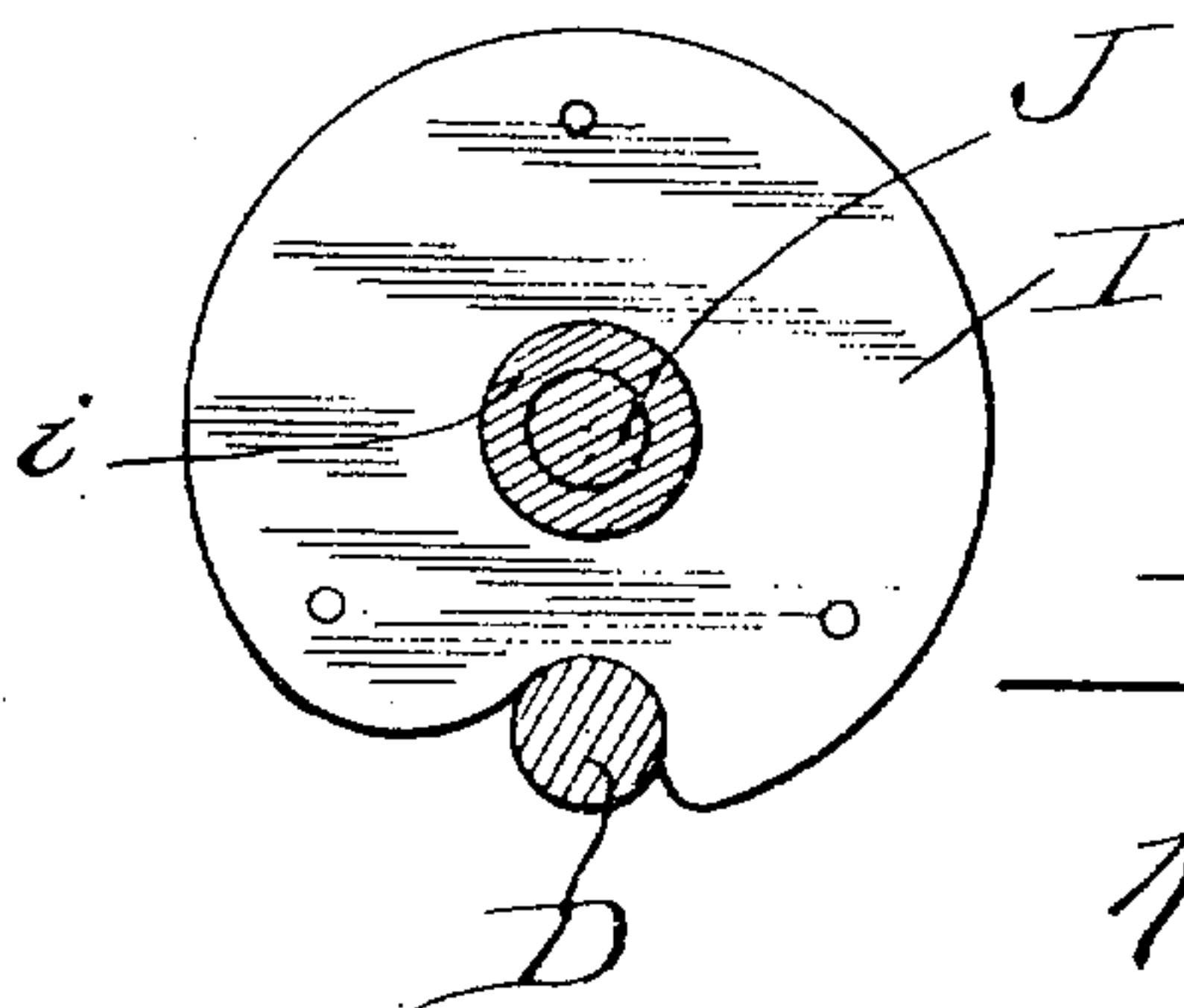
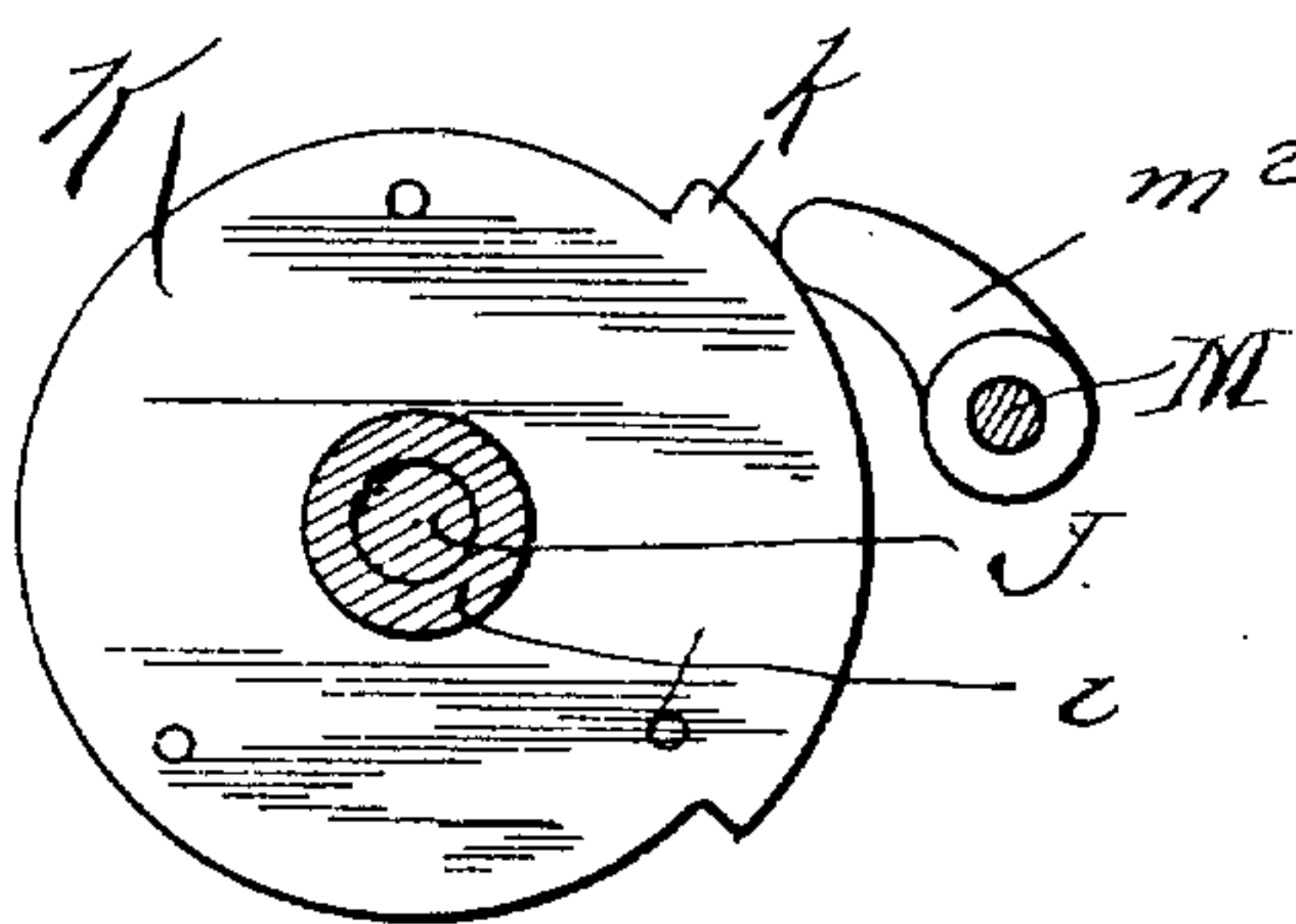


Fig. 12



WITNESSES

J. St. Angell.
J. E. Korman

INVENTOR

Jay M. Johnson.
Charles W. Rice,
Att'y.

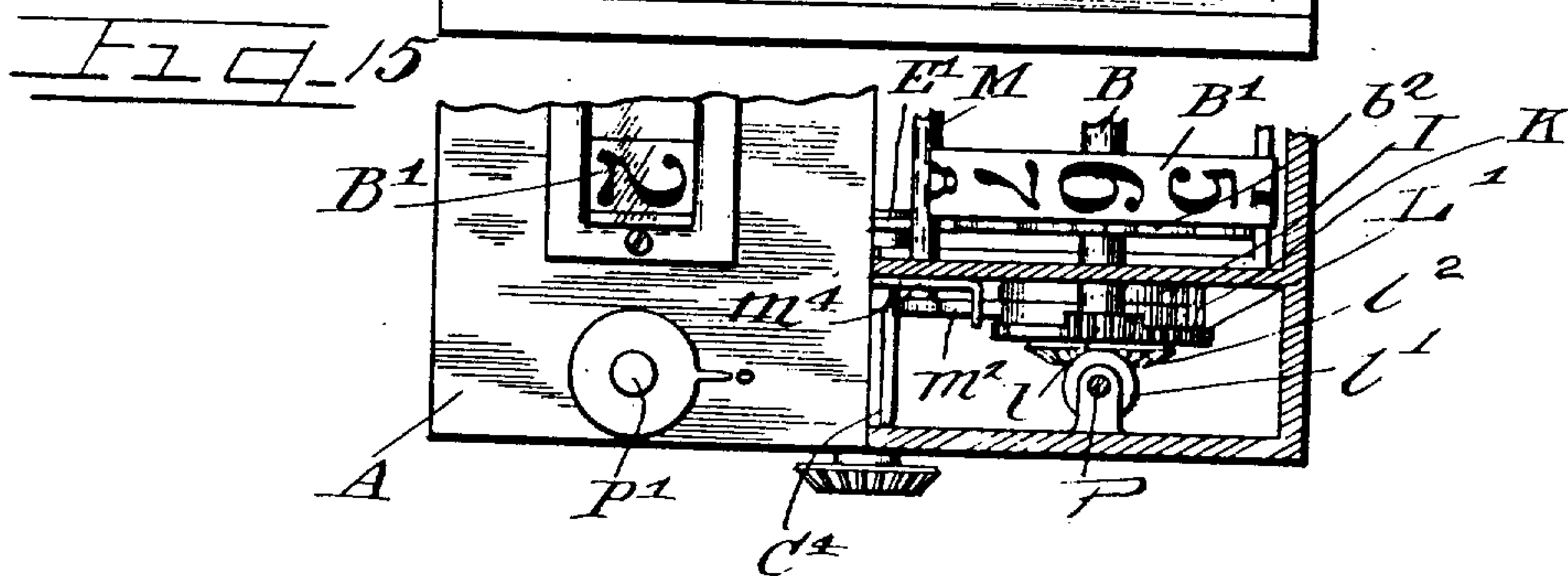
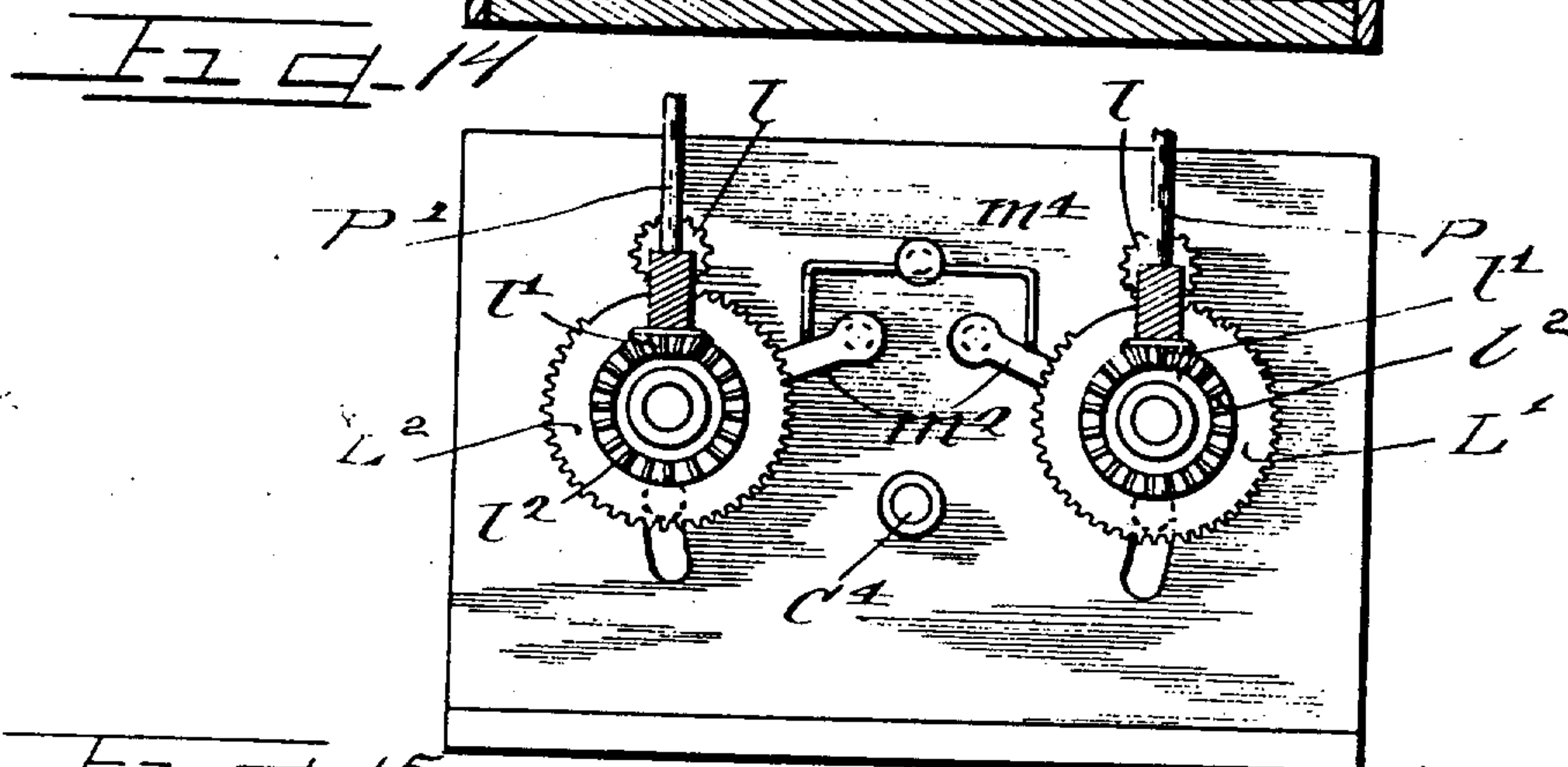
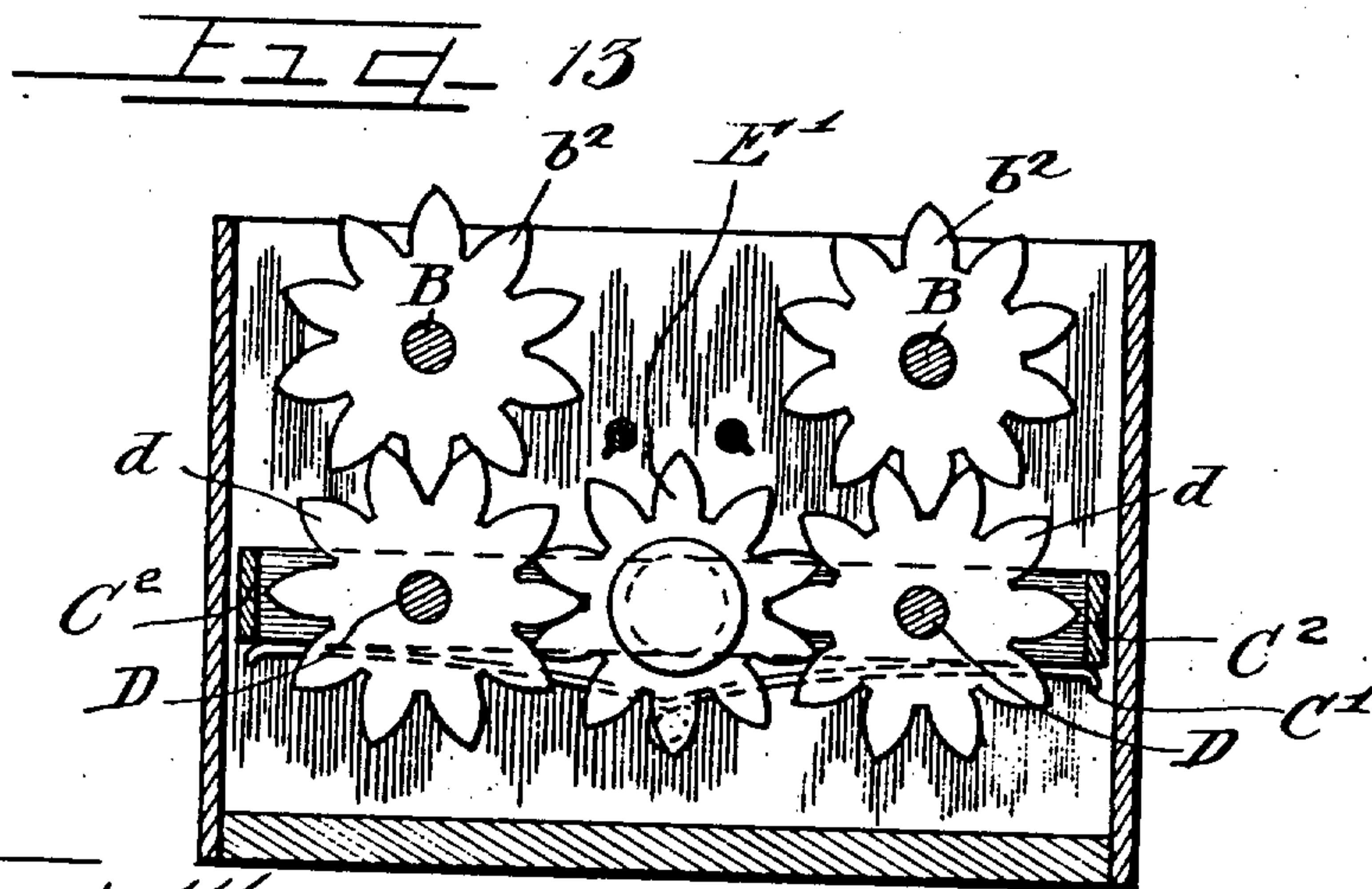
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J. M. JOHNSON.
AUTOMATIC REGISTERING AND COUNTING MACHINE.

APPLICATION FILED AUG. 13, 1908.

5 SHEETS—SHEET 5.



WITNESSES

J. H. Angell
J. H. Angell

INVENTOR

Jay M. Johnson
by Charles W. Kiehl
Att'y.

UNITED STATES PATENT OFFICE.

JAY M. JOHNSON, OF CHICAGO, ILLINOIS.

AUTOMATIC REGISTERING AND COUNTING MACHINE.

No. 894,506.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed August 13, 1906. Serial No. 330,277.

To all whom it may concern:

Be it known that I, JAY M. JOHNSON, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Automatic Registering and Counting Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in automatic registers and counters and more particularly to a counter or register adapted for registering successively the count, from 0, to any desired number.

In counting and registering machines of the class described, while it has been possible to number or count successively from 1 to a higher number including hundreds or thousands, said devices have been complicated and likely to get out of order and the count having been made it was difficult to set back the counter to 0.

With this in view the object of my invention is to provide a set back counter which not only accurately registers the count but which can be set back very quickly to 0, when desired.

It is a further object of the invention to afford a counter whereby reciprocating movement is capable of being counted and registered.

It is a further object of the invention to afford a construction whereby a simple duplication of parts, enables the device to register for any number desired however great.

It is a further object of the invention to afford a positive lock for the mechanism controlling each counting wheel excepting at the moment when that counting wheel is moved to register.

It is a further object of the invention to afford an exceedingly cheap, simple, durable, and above all an accurate mechanism in fact incapable of error adapted for universal use for the purpose for which designed and of small size and very compact construction.

The invention consists in the matters described and more fully pointed out and defined in the appended claims.

The drawings: Figure 1 is a top plan view of a device embodying my invention. Fig. 2, is a front elevation of the same with the cas-

ing removed. Fig. 3, is a top plan view of the same. Fig. 4, is a section taken on line 4—4, Fig. 3, showing the parts adjusted to set back. Fig. 5, is an enlarged detail illustrating the locking of one of the counting wheels. Fig. 6, is a section similar to 4 showing the parts in operating position. Fig. 7, is a fragmentary longitudinal section taken at the set back end of the mechanism. Fig. 8, is a section taken on line 8—8 of Fig. 3, with parts omitted. Fig. 9, is a section taken on line 9—9 as on Fig. 3 but looking towards the rear. Fig. 10, is an enlarged detail of the set back gear. Fig. 11, is an enlarged detail of the cam for shifting the actuating gears out of mesh with the counting gears of the machine. Fig. 12, is an enlarged detail view of the cam for releasing the lock from the counting wheels. Fig. 13, is a transverse section illustrating the gear mechanism for a double counter or recorder. Fig. 14, is a section taken at the end of said machine illustrating the setback mechanism. Fig. 15, is a fragmentary top plan view showing the two parallel counters.

As shown in the drawings: A indicates a base or under frame plate for the machine, provided with end walls a' — a' and upon and around which a cover or casing A' fits, which incloses the mechanism and is provided with a longitudinal slot in the top to enable the count to be read. Journaled at its ends in said end walls a and a' , is a shaft B upon which is rotatively carried the counting wheel B^1 , B^2 , B^3 , B^4 , B^5 , and B^6 each of which is marked on its periphery with numerals 0 to 9, inclusive arranged equal distances apart. As there are six counting wheels the machine can thus register to one million.

Each counting wheel is independently movable upon said shaft and is provided with a relatively flat periphery to receive the numerals whereby the count is indicated and on the rear side thereof is provided with a concentric flange or rib b intermediate the center and the periphery of the counting wheel and which serves as a brake surface to permit its counting wheel to be held from rotation. Said rib b as shown in Fig. 6 is provided with a notch or opening.

Rigidly secured also on the hub of said counting wheel and projecting over said opening in said rib or flange b and approximately flush with the outer edge thereof, is a finger b' which extends beyond the rib. On the front side of each of said counting wheels

and concentric therewith, is rigidly secured a gear b^2 , provided with ten teeth each of which is pointed and provided with convex sides and between which is provided relatively deep cuts or notches. A pivotally supported yoke C is provided, the arms $c-c'$ of which at the rear edges of the end plates $a-a'$ are pivoted one on the shaft E which is journaled in the plate a , and the other on a stud shaft secured to the plate a' . Said arms $c-c'$ extend forwardly along said end plates, and are connected at the front of the machine with a longitudinal bar c^2 . Resting on the base A and bearing upwardly against the under side of said yoke with one of its arms is a spring C' which acts to hold said yoke normally elevated as shown in Figs. 6 and 9. Rigidly secured at its ends centrally on said yoke ends and extending centrally and longitudinally of the yoke directly beneath the counting shaft B is a gear shaft D and rotatively secured on said gear shaft is a gear d which meshes with the gear b^2 rigidly secured on the first counting wheel. Also rotatively secured on said shaft and having a hub d' which bears against the gear d is a gear d^2 which engages at the rear of said counting wheel and the teeth thereof bearing against the flange or rib thereon serve as a brake to prevent said counting wheel rotating further than one notch or tooth of the gear at each movement. Rigidly secured to said gear d^2 is a comparatively wide gear d^3 which meshes with the gear b^2 on the second counting wheel. This is provided with a hub d^4 against the rear end of which bears a gear d^5 which engages the rib or flange b of the counting wheel B^2 as before described with the first counting wheel B' and bearing against and secured to the last named gear d^5 , and in mesh with the gear b^2 on the second counting wheel is a gear d^6 . In the said manner gears are disposed the entire length of said gear shaft D, successively meshing with the gears b^2 on the counting wheels and bearing beneath the rib or flanges b thereon respectively. Said gears d^3-d^6 and the corresponding gears on the shaft D are sufficiently wide and are in position to be actuated by the fingers on the respective counting wheels.

Rigidly secured on the stud shaft E, upon which the yoke end c' is pivoted is a gear E' which at all times meshes with the gear d which meshes with the gear b^2 on the first counting wheel. On the outer end of said stud shaft E is an escapement wheel E^2 provided as shown with ten relatively long teeth, the front sides of which are relatively straight and the rear sides of which are convexly curved to throw the tooth forwardly. Pivotally mounted on the end plate a is a lever F, and rigidly secured to said lever at said pivot is a bell crank f , the arms $f'-f^2$ of which are provided with projections or de-

tents f^3 and f^4 as shown in Fig. 8. These successively engage the teeth of the escapement wheel E^2 as the lever F is oscillated thereby rotating the shaft E and the gear wheel E^2 , one tooth or 1/10 with each complete movement or forward and back of said lever. All the gears in the mechanism are equal hence the first counting wheel is also rotated 1/10 or sufficiently to make the count, which may be seen in the view aperture.

For the purpose of insuring accuracy and perfect alinement at all times an additional brake is provided for each counting wheel after the first. For this purpose a shaft G is secured at its ends on the end plates and extends along the rear of the mechanism near its base A and carried thereon is a frame g which extends inwardly and is provided with forwardly directed arms g' as shown in Fig. 3, 4, 6, and 9. Mounted upon said shaft and provided at their upper ends with a rounded head adapted to engage between the teeth of the respective gears b^2 on the said counting wheels or arms g^2 which are yieldingly held in engagement with said gears.

For the purpose of engaging said arms in place to hold the counting gears in alinement and also to enable the same to be readily released from the gears in setting back, a post H is secured centrally on the base plate A and pivoted thereon is a lever h the longer end of which extends forwardly beneath the yoke C and is positively engaged thereto. The rear end of said lever extends downwardly and inwardly and is notched at its end to engage one of the forwardly directed arms g' of said plate g . Strong pulling springs h^2 at one end engage centrally, one on each arm g^2 , and at their other ends engage the forward edge of the frame g , or on the ends of the arms g' , and thereby acts to pull said arm g^2 inwardly. A forwardly directed toe g^4 is provided on the lower end of each arm g^2 , and engages on the respective arms g' , of said plate. These act when the plate is elevated as shown in Fig. 4, (by the downward movement of the yoke) to release all said arms g^2 from the gears. As shown a comb g^6 is secured on the end frame members and acts to guide the arms g^2 into register with the appropriate gears.

To enable the counter to be quickly set back to 0 a stud shaft J is secured in the end plate a below the counting shaft B, and comprises a post rigidly secured on said end plate, and on which is rotatively secured a sleeve i , held in place by a pivot screw i' which engages through the end thereof and in said stud. The outer end of said sleeve is threaded to permit a hand wheel i^2 , to be engaged thereon whereby said sleeve may be rotated. Rigidly secured on said sleeve i is a cam I provided in one side with a notch

which receives the end of the shaft D which protrudes through a vertical slot in the end plate *a*, as shown in Fig. 7. Said notch is of sufficient depth to permit the yoke on which
 5 said shaft is carried to swing upwardly to bring all said gears on both shafts in mesh and is so shaped as to afford a firm bearing for the end of said shaft against the same. Said cam acts when partly rotated to move
 10 said shaft downwardly throwing all the gears thereon out of mesh with the gears on the counting wheels. Also secured on said sleeve and rigidly secured to the cam I, is a cam K provided on one side of the same with
 15 a throw or extension *k*. And secured on said sleeve beyond the cam K is a mutilated gear L of a size to mesh with a pinion *l* rigidly secured on the end of the counting shaft. Rotation of said cams and the gear
 20 L act to throw said yoke C downwardly shifting the gears out of mesh and at the same time rotate the shaft B to bring said counting wheel back to 0. It is necessary to stop the counting wheels at the desired point,
 25 when setting back and for this purpose a shaft M is journaled at its ends in the end plates *a-a'* and is provided with upward extending resilient arms *m*, one for each of the counting wheels said arms at their upper
 30 ends are sprung outwardly and provided with an aperture as shown in Fig. 2. Set in the face of each counting wheel is a pin *m'* each adapted to register and to engage in said aperture in the corresponding resilient
 35 arm *m*, to arrest and lock the counting wheel during the operation of setting the same back. At the outer end of said shaft M is a pawl *m²* engaged by a spring *m³* which holds the same at all times in bearing on the periph-
 40 ery of the cam K. Said pawl is normally supported on the throw *k* whereby the resilient arms *m* are normally held out of engagement with said pins.

The operation is as follows: In counting,
 45 the forward and back oscillation of the lever F rotates the first counting wheel B' one tenth of its complete rotation bringing the numerals and its periphery successively into view at the view space in the casing. When
 50 nine (9) appears in the view space the finger *b'* on the rear of the wheel is in position to mesh with the wide gear *d³* which is rotated one tooth or one tenth thus rotating the gear *b²* and counting 1 on the second count-
 55 ing wheel B², and obviously counting one (1) more for each complete rotation of the units wheel B'. When said finger *b'* is in position to actuate the gear *d³*, a tooth of the gear *d²* which is acting as a brake on the rib,
 60 or flange *b* and normally locks the transferring mechanism from movement engages in the notch or opening in said rib permitting the double gears to rotate one tooth. In the same manner when the wheel B² shows 9
 65 tens and the wheel B' shows 9 units the fin-

gers *b'* of both wheels are in mesh with the appropriate gears on the gear shaft to move the wheel B² to 0 and the hundreds wheel B³ to 1, with the next count of the units wheel B' which of course registers 0, thus counting 70 100, in the same manner of course any desired number of counting wheels may be employed the detailed description of which may be omitted as the construction and operation is mere duplication of those already 75 described. The arms *g²* at all times hold the counting wheels in perfect alinement.

The operation in the setting back is very simple and is accomplished almost instantaneously. Rotation of the sleeve *i* acts to 80 throw all the gears out of mesh by tilting the yoke down as shown in Fig. 4, and also elevates all the arms *g²* out of engagement with the gears on the counting wheels. The cam K has acted at the same time to drop the re- 85 silient arms *m* against the counting wheels in position to engage the pins *m'* thereon. At the moment the parts are so adjusted the teeth on the mutilated gear L, mesh with the pinion *l* on the shaft B rotating the same and 90 the counting wheels therewith which fit snugly on said shaft, thus quickly bringing all the counting wheels to 0 as the pins engage in the apertures in said arms. When each wheel shows 0 in the view space the 95 cams are rotated until the yoke again swings up to bring the gears in mesh, in which position the resilient arms *m* are again lifted from the pins and the machine is ready for use.

Obviously the machine can readily be ar- 100 ranged to provide two sets of counting wheels one of which can be used to keep the record of the total count while the other may be used for individual or particular counts. 105 For this purpose it is only necessary to provide duplicate yokes C² on each side the stud shaft for the driving gear E' and each of which is provided with gears meshing with the gears *b²* of counting wheels above the 110 same as shown in Figs. 13 to 15. The set back can also be operated as before described. I have shown, however, vertical shafts P P' for rotating the gears L'—L² and the cams concealed behind the same. Each 115 of said shafts has a beveled pinion *l* at its inner end which meshes with a beveled gear *l²* on the mutilated gears L'—L². Obviously any suitable arrangement of cams may be employed in the set back and while 120 I have shown a lever throw to actuate the driving gear it is evident that any mechanism may be employed that will rotate the driving gear a suitable proportionate part of a rotation to make the count. I there- 125 fore do not purpose limiting this application for patent otherwise than necessitated by the prior art as many details of construction and operation may be varied without departing from the principle of my invention. 130

I claim as my invention.

1. In a mechanism of the class described the combination with actuating means of gears driven thereby, a plurality of pairs of gears independently rotatable, duplicate independently rotatable counting wheels, a gear rigidly secured on each and meshing with one of the gears of the appropriate pair of gears, a rigid projection on each counting wheel actuating one gear of the appropriate pair, thereby actuating the next succeeding counting wheel to count 1 when the next preceding counting wheel completes its revolution, means securing said intermeshing gears in alinement, resilient means adapted to arrest the counting wheels when set back to zero and means releasing said arresting means from said wheels.

2. In a mechanism of the class described the combination with actuating means of a plurality of gears journaled to rotate independently in pairs and on a common axis, a single gear also thereon, a plurality of axially aligned independently rotatable hubbed counting wheels each marked on its periphery with numerals 0 to 9 inclusive, and between the peripheries of each pair of counting wheels project one of the said pairs of gears, one gear of each pair acting exclusively as a brake, means secured to the hub of each counting wheel actuating the other of the gears of each pair 1/10 of a revolution by the rotation of a lower denomination counting wheel, means on the next higher counting wheel actuated by the same gear to drive the second counting wheel 1/10 of a rotation simultaneously, means affording an instantaneous set back for the counting wheels and resilient arms for limiting the movement of each counting wheel to zero position.

3. In a device of the class described the combination with counting wheels of means for actuating the first counting wheel in making each count, mechanisms between adjacent counting wheels operated wholly by rotation, each adapted to transfer a count from the adjacent lower to the next higher denomination counting wheel, normally elevated means adapted to stop the counting wheels at zero position when said wheels are set back, a rotatable element and mechanisms operated by actuation of said rotatable element adapted to adjust the rotatable transferring mechanism out of normal position to release the elevated means to stop the counting wheels and to rotate the counting wheels to zero position.

4. A register embracing counting wheels appropriated to different denominations and having numerals marked on the periphery thereof, a pair of gears extending between each adjacent counting wheel, one adapted to actuate the higher denomination counting wheel of the two between which positioned,

means carried by the lower denomination counting wheel to actuate the same gear in effecting a transfer, the other of said pair of gears acting exclusively as a brake for the higher denomination counting wheel, means for depressing each pair of gears prior to setting the counting wheels to zero, means adjusted to position to independently stop the wheels at zero position and means automatically elevating the pairs of gears after the set back.

5. A counting mechanism embracing an escapement moving 1/10 of a revolution with each impulse to be counted, and duplicate interchangeable counting wheels arranged for each when completing a rotation to drive the next succeeding wheel 1/10 of a revolution, operative connections between the escapement and the first counting wheel, a brake lever acting to hold said counting wheels until actuated and means disconnecting the brake and driving means from the counting wheels.

6. A set back counter embracing a plurality of duplicate interchangeable counting wheels, means actuating the same in counting and a set back mechanism embracing means releasing the counting wheels from the actuating mechanism, resilient arms, one engaging each counting wheel, and acting to arrest said wheels at 0 position when the wheels are rotated.

7. A set back counter embracing a plurality of duplicate interchangeable counting wheels, means actuating the same in counting and a set back mechanism embracing means releasing the counting wheels from the actuating mechanism, a resilient arm engaging each counting wheel, and acting to stop said wheels at 0 position when said wheels are rotated, and means simultaneously rotating said counting wheels to set the same back.

8. A set back counter embracing a plurality of duplicate interchangeable counting wheels, means actuating the same in counting and a set back mechanism embracing means releasing the counting wheels from the actuating mechanism, resilient arms, one appropriated to and engaging each counting wheel, and acting to stop said wheels at 0 position when the same are rotated, and a pinion and gear for rotating said counting wheels in setting back to locking position.

9. In a mechanism of the class described coacting duplicate interchangeable counting wheels each adapted with each revolution to rotate the next succeeding 1/10 of a revolution, a brake for each counting wheel, driven actuating means for the first counting wheel, a set back therefor embracing a shaft, thereon acting to disengage the actuating means and the brakes from the counting wheels, resilient detents engaging said wheels

and arresting the same in 0 position and a mutilated gear on said shaft acting to rotate all the counting wheels until arrested at 0.

10. In a device of the class described registering wheels, means transferring a count from one wheel to another, brakes for the registering wheel, one acting from above and one below each wheel, mechanisms acting to simultaneously adjust the transferring means and the brakes out of engagement with the register wheels prior to the set back and means adjusted to limit each wheel to zero position.

11. In a register the combination with independently rotatable pairs of gears of independently rotatable counting wheels adjacent to the same, a finger on one counting wheel to rotate one of said gears of each pair of gears 1/10 of a revolution for a revolution of a lower counting wheel, a gear on an adjacent counting wheel adapted to intermesh with the same gear of the pair of gears to move said counting wheel 1/10 of a revolution for each actuation of the pair of gears, means integral with each counting wheel coacting with the other gear of said pair locking the gears from movement except when transferring the count, a single gear adapted to actuate the first counting wheel, an escapement which operatively connected with the single gear and a bell crank lever for actuating the escapement.

12. In a device of the class described the combination with registering wheels, mechanisms for transferring a count from one wheel to another, brakes for each register, on each side thereof and mechanisms actuated wholly by rotation for adjusting the brakes out of operative relation with the register wheels and the transferring mechanism out of operative relation with the registering wheels and also to actuate all of the registers to zero position.

13. A register embracing registering wheels, marked with appropriate digits, mechanism for transferring a count from one wheel to another, a plurality of brakes on each register wheel, mechanism operatively connecting the brakes whereby both are operated simultaneously, means adapted by rotation for adjusting the transferring mechanism and the brakes out of operative relation with respect to the register wheels, means also operated by rotation to adjust the wheels to zero position and means automatically returning all parts to operative relation with the wheels after the set back.

14. In a device of the class described the combination with independently rotatable counting wheels, means operating the first counting wheel, a gear rigidly connected to one side of each counting wheel, operative means connecting a gear engaged to one wheel, of a lower denomination to the gear engaged to the wheel of the next higher, thereby im-

parting 1/10 of a revolution to each wheel of a higher denomination for a revolution of the adjacent wheel of a lower denomination, brakes one yielding engaging between the teeth of each gear after the gear of the first counting wheel to limit the movement of said counting wheels and means for guiding said brakes.

15. In a device of the class described the combination with independently rotatable counting wheels, means operating the first counting wheel, a gear rigidly connected to one side of each counting wheel, operative means connecting a gear engaged to one wheel of a lower denomination to the gear engaged to the wheel of the next higher, thereby imparting 1/10 of a revolution to each wheel of a higher denomination for a revolution of the adjacent wheel of a lower denomination, brake levers, one yielding engaging between the teeth of each gear after the gear of the first counting wheel to limit the movement of said counting wheels, means simultaneously elevating said brakes for setting the counting wheels to 0, a projection on each counting wheel and means for engaging the projections as the wheels reach zero position.

16. In a device of the class described the combination with independently rotatable counting wheels, means imparting 1/10 of a revolution to a higher denomination counting wheel for a complete revolution of an adjacent lower denomination counting wheel, a lever for each counting wheel acting as a brake and to keep the same in proper position, means elevating said levers out of engagement with the counting wheels, means adapted to turn said counting wheels to 0 when said levers are elevated, means adapted to contact the peripheries of said counting wheels as they turn to zero and means adapted to engage said contacting means to arrest the wheels at zero position.

17. In a device of the class described the combination with counting wheels, a gear engaged to each counting wheel on one side thereof, a projection engaged to each counting wheel on the opposite side thereof, a yoke pivoted adjacent to the counting wheels, means carried thereby to operatively connect adjacent counting wheels to effect the count, means for adjusting said yoke thereby shifting the connecting means out of operative relation with the counting wheels a shaft extending longitudinally of said wheels, a frame journaled thereon, levers engaged to said shaft each having a rounded outer end and one for each counting wheel after the first adapted to engage between the teeth of said gear to afford a brake for the same.

18. In a device of the class described the combination with independently rotatable counting wheels, a gear engaged to each, a yoke pivoted adjacent the counting wheels,

operative mechanism carried thereby connecting the gears of adjacent wheels adapted to register the count from each lower to a higher denomination counting wheel, a brake lever for each counting wheel after the first having an outer end shaped to engage between the teeth on said gear to limit the movement of said counting wheel to 1/10 of a revolution for a revolution of a lower denomination counting wheel and means simultaneously depressing the yoke and mechanism carried thereby and elevating the brake levers prior to setting the counting wheels to 0.

19. In a device of the class described the combination with independently rotatable counting wheels, means registering a count from a lower to a higher denomination counting wheel, a brake for each counting wheel, means operated by rotation for adjusting the registering mechanism out of operative position and releasing said brakes prior to the set back, independent means for the register wheels to arrest the same in zero position and mechanisms adjusting said means into operative position and rotating the registers to zero position.

20. In a device of the class described the combination with independently rotatable counting wheels, means registering a count from a wheel of a lower to a higher denomination, a brake for each counting wheel after the first, mechanism approximately simultaneously throwing the registering mechanism out of operation, releasing said brakes and rotating said counting wheels to 0 and resilient arms for stopping the wheels at zero position.

21. In a device of the class described the combination with counting wheels of a yoke carried adjacent the same, mechanism carried on said yoke to transfer the count from lower to higher denomination counting wheels, a brake limiting each counting wheel of a higher denomination to receive the exact count from the counting wheel of the next lower denomination, means moving said yoke to throw the registering mechanism out of operative position, means connecting said yoke and brakes adapted to elevate the brakes, mechanism rotating the counting wheels simultaneously as the registering mechanism is thrown out of operative position and resilient means for stopping the wheels at zero position.

22. In a device of the class described the combination with counting wheels, of a yoke carried adjacent the same, mechanism carried on said yoke to transfer the count from lower to higher denomination counting wheels, a brake limiting each counting wheel of a higher denomination to receive the exact count from the counting wheel of the next lower denomination, means moving said yoke to throw the registering mechanism out

of operative position, means connecting said yoke and brakes adapted to elevate the same, means rotating the counting wheels simultaneously as the registering mechanism is thrown out of operative position and means limiting the movement of each counting wheel at a predestined position.

23. In a device of the class described the combination with independently rotatable counting wheels, a yoke carried adjacent the same, a shaft engaged to said yoke, mechanism carried by said shaft adapted to transfer the count from a lower to a higher denomination counting wheel, a brake for each counting wheel after the first, means yieldingly holding the same in position, means connecting said yoke and brakes adapted to elevate said brakes when the yoke is depressed and rotatable mechanism simultaneously depressing said yoke and rotating said counting wheels a predetermined distance.

24. In a device of the class described the combination with a plurality of rotatable counting wheels, each having a gear and finger carried thereby, a yoke pivoted adjacent the counting wheels, a shaft carried thereby, gears journaled thereon adapted to operatively connect the gear and finger of adjacent counting wheels to register the count, a projection on the periphery of each counting wheel, a lever for each counting wheel adapted at one end to act as a brake therefor, and to keep said wheels in alignment, means connecting the yoke and levers to elevate or depress said levers, means moving said yoke shaft to throw the registering mechanism out of operative position and to simultaneously move the counting wheel to 0 and stops adapted to engage the projections on the periphery of said counting wheels when moved to 0.

25. In a device of the class described the combination with a plurality of rotatable counting wheels, a shaft extending longitudinally thereof, pairs of gears journaled on said shaft adapted to actuate the counting wheel to register the count, a pin engaged to the periphery of each wheel, a shaft extending longitudinally of the counting wheels, resilient arms engaged thereto each having an aperture to engage said pins, means normally holding said arms elevated and means adapted to simultaneously depress the gear shaft, to rotate the counting wheels and to lower said resilient arms to engage said pins.

26. In a register the combination with counting wheels of a gear engaged to each, a finger movable with each wheel, a shaft extending beneath the counting wheels, pairs of rigidly connected gears journaled on said shaft adapted one of each pair to intermesh with the gear on one of said counting wheels and positioned in the path of the finger on an adjacent counting wheel whereby each successive ten from a lower denomination wheel

is carried to the next higher wheel, a single gear adapted to intermesh with the gear on the first counting wheel, a shaft extending longitudinally of the counting wheels, a gear thereon adapted to intermesh with said single gear to actuate the first counting wheel, an escapement wheel on said shaft and means adapted to rotate the same $1/10$ of a revolution for each successive count.

27. In a device of the class described the combination with independently rotatable counting wheels, means actuating the same to make the count, a brake lever for each counting wheel except the first, means normally holding the same in yielding engagement with said wheels, a frame adjacent the levers having an arm for each of the same, a lever pivoted beneath the counting wheels adapted to engage one of said arms to elevate said brake levers and means holding said brake levers equal distance apart.

28. In a device of the class described the combination with a shaft, counting wheels journaled thereon, adapted to register the count, a plurality of brakes for each counting wheel, one on each side thereof thereby keeping the same in the proper position, and operative mechanism between said brakes adapted when one is thrown out of engagement with the counting wheels to simultaneously elevate the other, means rotating said wheels to 0 position and means adapted to stop each wheel in its proper place.

29. The combination with a frame of a counting shaft journaled therein, counting wheels rotatable thereon, a transferring shaft extending parallel with the counting shaft, means thereon operatively connecting said counting wheels whereby the successive counts are transferred from a lower to a higher denomination wheel, a projection on each counting wheel, a shaft journaled in the frame adjacent the counting wheels, resilient arms thereon adapted each to engage one of the projections on said wheel and normally out of engagement therewith, a stud shaft journaled in the frame, a cam thereon adapted to depress the transferring shaft to throw the registering mechanism out of operative position, a mutilated gear on said stud shaft adapted to simultaneously rotate the counting wheels and a cam on said shaft rigidly connected to said cam and mutilated gear adapted to actuate the shaft carrying the resilient arms to lower the same to engage said projections on said counting wheels.

30. The combination with a frame of a counting shaft engaged thereto, counting wheels journaled thereon, a gear on said counting shaft a shaft extending longitudinally of said frame, means engaged thereto adapted to operatively connect the counting wheels to register the count, a shaft adjacent the counting wheels, arms engaged thereto one for each counting wheel, a pawl on the

end of said shaft, a stud shaft journaled in the frame, a mutilated gear thereon adapted to mesh with the gear on the counting shaft, cams on said stud shaft one for each of the other shafts adapted when said stud shaft is actuated to simultaneously drive the counting shaft to set the counting wheels to 0, to throw the registering mechanism out of operation and to lower said arms to stop the counting wheels at 0.

31. The combination with a frame of a counting shaft engaged thereto, counting wheels journaled thereon, a gear on said counting shaft, a shaft extending longitudinally of said frame, means engaged thereto adapted to operatively connect the counting wheels to register the count, a shaft adjacent the counting wheels, arms engaged thereto one for each counting wheel, a pawl on the end of said shaft, a stud shaft journaled in the frame, a mutilated gear thereon adapted to mesh with the gear on the counting shaft, cams on said stud shaft one for each of the other shafts adapted when said stud shaft is actuated to simultaneously drive the counting shaft to set the counting wheels to 0, to throw the registering mechanism out of operation and to lower said arms to stop the counting wheels to 0, said stud shaft upon further rotation thereof after said register is set back adapted to move said cams to throw the registering mechanism into operative position and to release said arms from the counting wheels.

32. In a device of the class described the combination with counting wheels of means for automatically transferring the count from the lower to the higher denomination counting wheels, a brake on each side of each counting wheel and means adapted to simultaneously depress one brake and elevate the other of each counting wheel and simultaneously throw the transferring mechanism out of operative relation prior to the set back.

33. In a device of the class described the combination with counting wheels of mechanism for transferring the count from a lower to a higher denomination counting wheel, a brake for each counting wheel acting downwardly thereon, a brake for each counting wheel acting upwardly thereon, mechanisms acting simultaneously to move both brakes and the transferring mechanism out of operative position prior to the set back and means automatically returning all of said mechanisms and brakes to normal after the set back.

34. In a device of the class described the combination with register wheels bearing numerals on their peripheries of means for actuating the first of said wheels, mechanism transferring a count from each lower to the next higher denomination register wheel, brakes for each wheel acting on opposite

sides thereof and in different directions, a rotatable shaft, mechanisms adapted by rotation of said shaft to simultaneously throw the brakes and transferring mechanism out of operative relation with the register wheels and means automatically moving the brakes and transferring mechanism into operative position after each register has been turned to zero position.

35. In a device of the class described the combination with counting wheels of means for transferring the count to the appropriate wheel, means adapted to lock the transferring mechanism from movement except when registering up the count, means securing said counting wheels in operative position and acting as a brake to limit the movement of each for each transfer, mechanisms for simultaneously moving said transferring mechanism, locking mechanism and brake mechanism to permit the counting wheels being turned to zero, means independently locking each counting wheel when the same reaches zero position and mechanisms automatically returning the aforesaid transferring, brake and locking mechanisms to normal and the last named locking mechanism to normal.

36. In a device of the class described the combination with counting wheels of mechanism for transferring the count from a lower to a higher denomination counting wheel, a brake for each wheel, means locking the transferring mechanism from movement except to transfer the count, a shaft, mechanism actuated by rotation of the shaft to move all of said mechanisms out of operative relation with the counting wheels prior to setting the counting wheels to zero and means operated by rotation of said shaft to rotate the counting wheels to normal.

37. In a device of the class described the

combination with counting wheels of mechanism for transferring the count from a lower to a higher denomination counting wheel, a brake for each wheel, means locking the transferring mechanism from movement except to transfer the count, a shaft, mechanism actuated by rotation of the shaft to move all of said mechanisms out of operative relation with the counting wheels prior to setting the counting wheels to zero, means operated by rotation of said shaft to rotate the counting wheels to normal and a lock for each counting wheel adjusted by actuation of said shaft to lock the respective counting wheel at zero position.

38. In a device of the class described the combination with counting wheels of mechanism for transferring the count from a lower to a higher denomination counting wheel, a brake for each wheel, means locking the transferring mechanism from movement except to transfer the count, a shaft, mechanism actuated by rotation of the shaft to move all of said mechanisms out of operative relation with the counting wheels prior to setting the counting wheels to zero, means operated by rotation of said shaft to rotate the counting wheels to normal, a lock for each counting wheel adjusted by actuation of said shaft to lock the respective counting wheel at zero position and means automatically returning the transferring, brake and first named locking mechanisms to operative position.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

JAY M. JOHNSON.

Witnesses:

W. W. WITHEBURY,
K. E. HANNAH.