

No. 878,173.

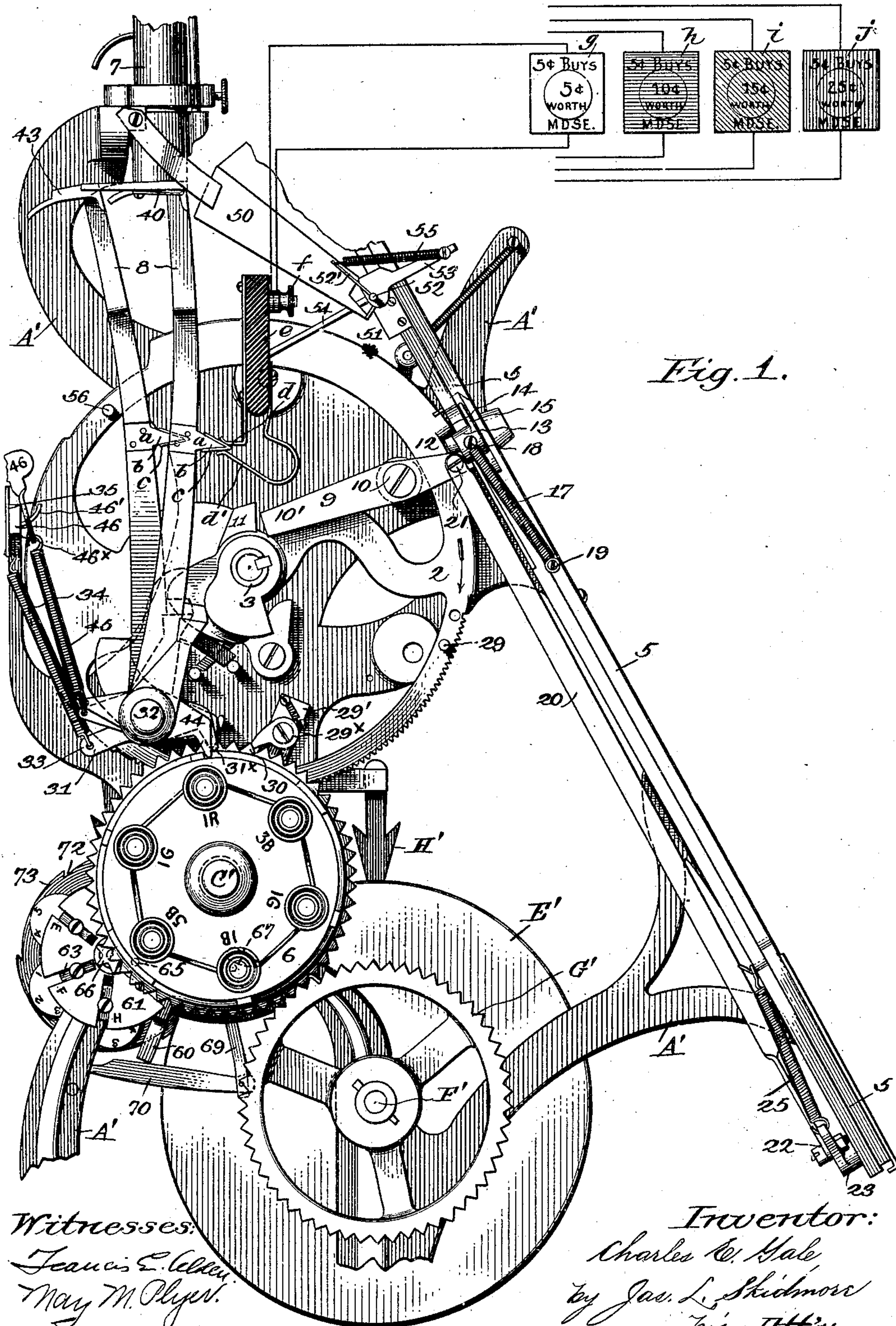
PATENTED FEB. 4, 1908.

C. E. YALE.

AUTOMATIC CASHIER AND DISCOUNT MACHINE.

APPLICATION FILED OCT. 9, 1906.

4 SHEETS—SHEET 1.



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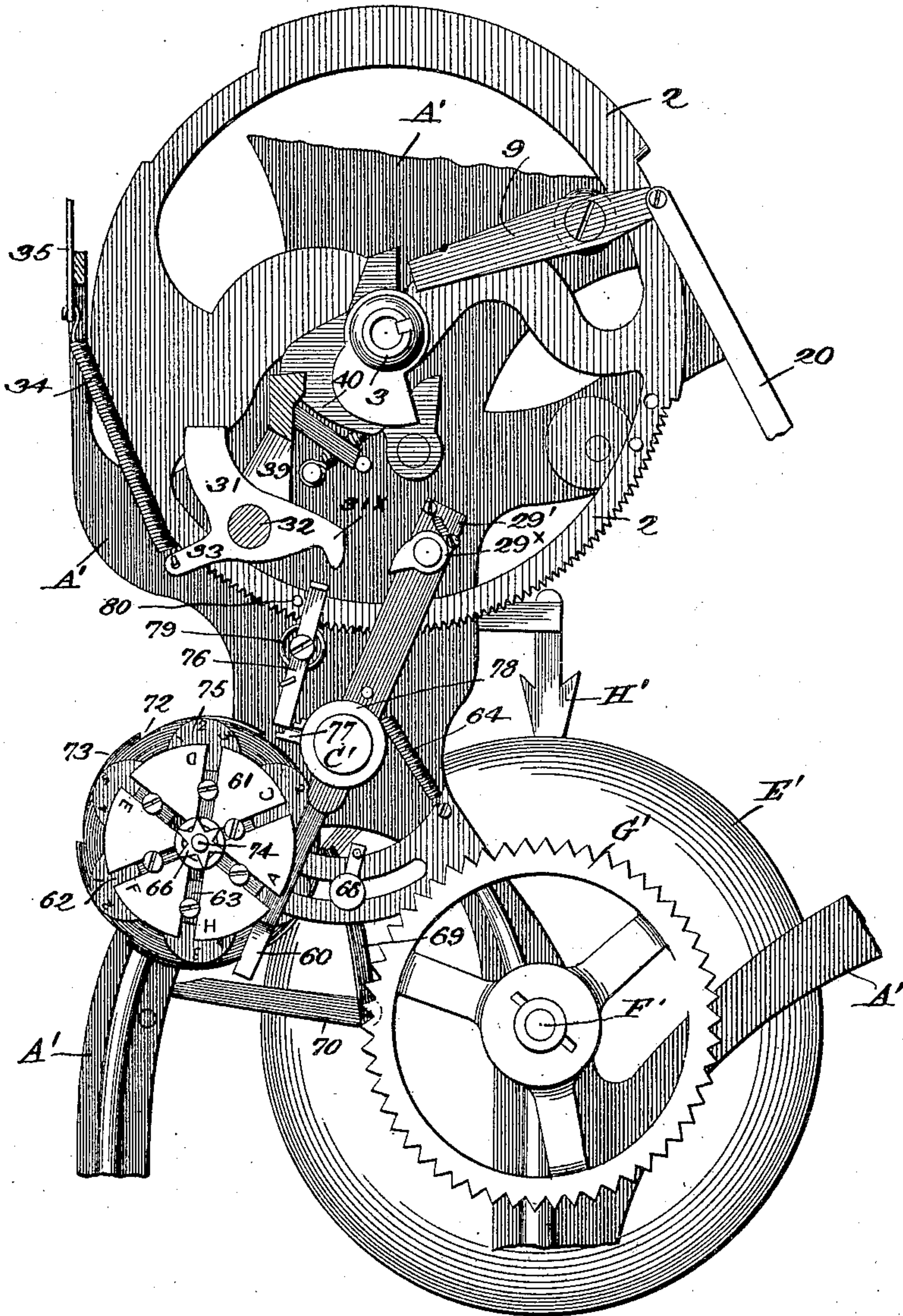
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APPLICATION FILED OCT. 9, 1906.

4 SHEETS—SHEET 2.

Fig. 2.



Witnesses:
Francis E. Alden.
May M. Plym.

Inventor:
Charles E. Yale,
by Jas. L. Skidmore
his Att'y.

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4 SHEETS—SHEET 3.

Fig. 6.

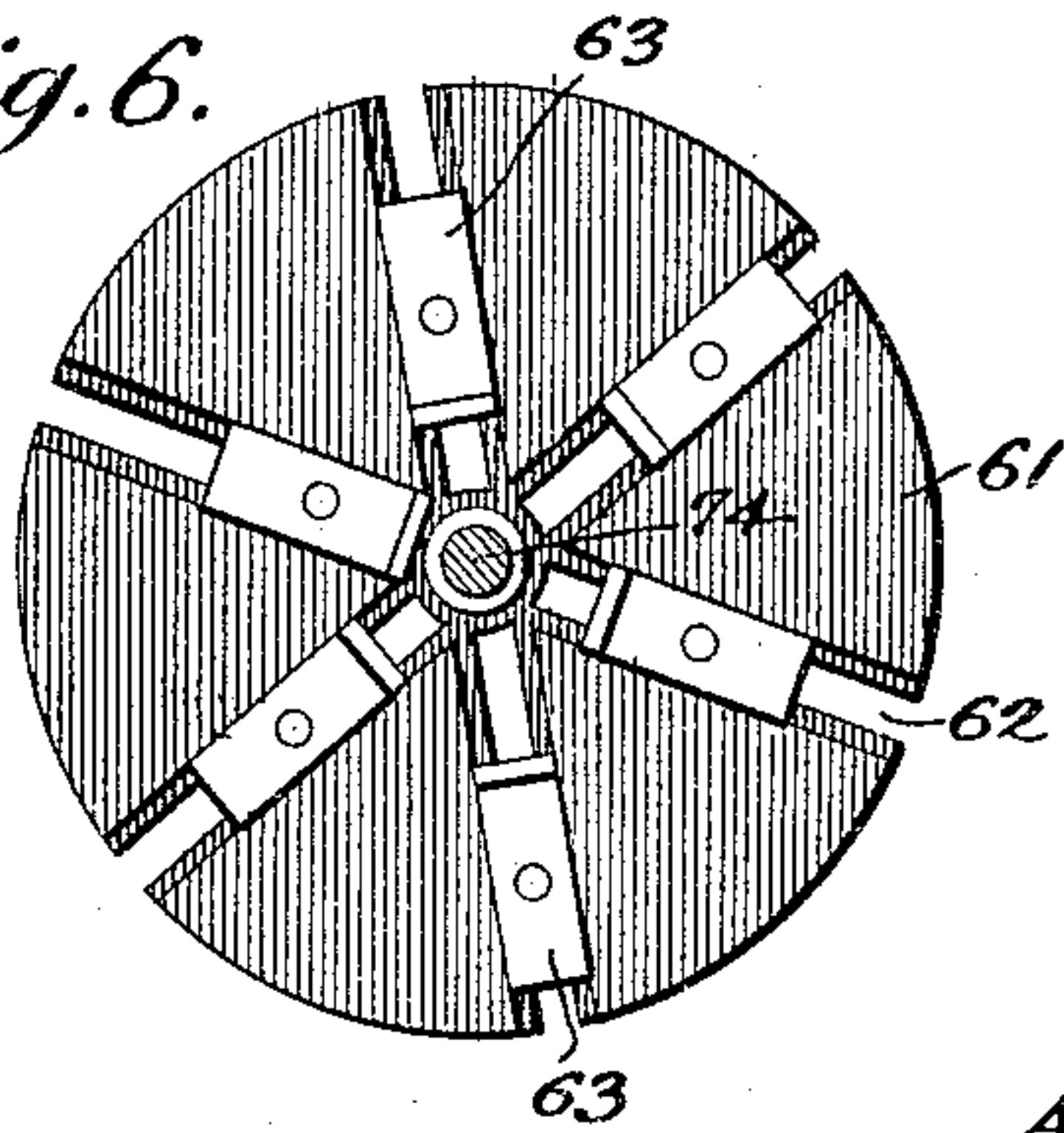
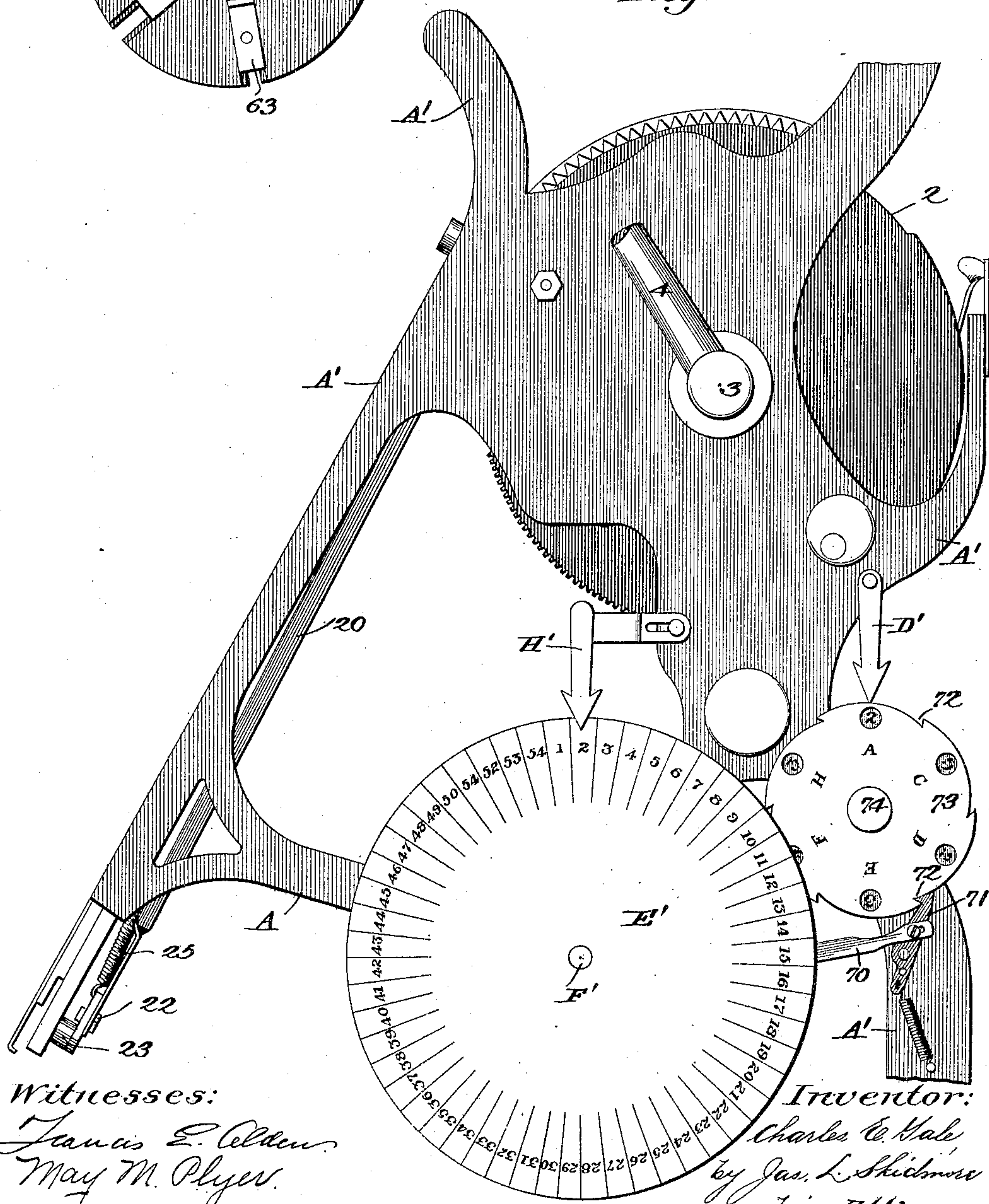


Fig. 3.



Witnesses:

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4 SHEETS—SHEET 4.

Fig. 4.

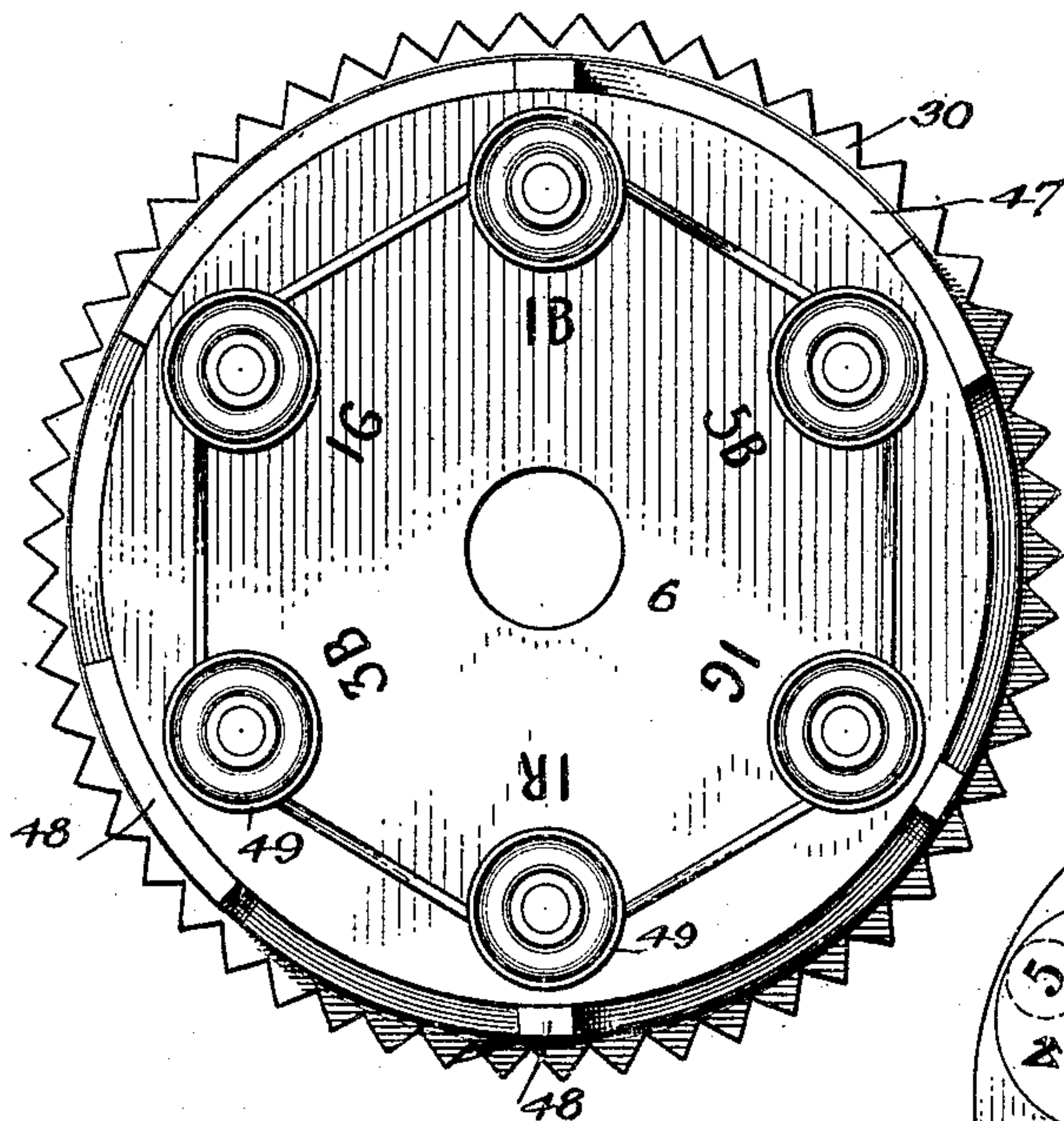


Fig. 7.

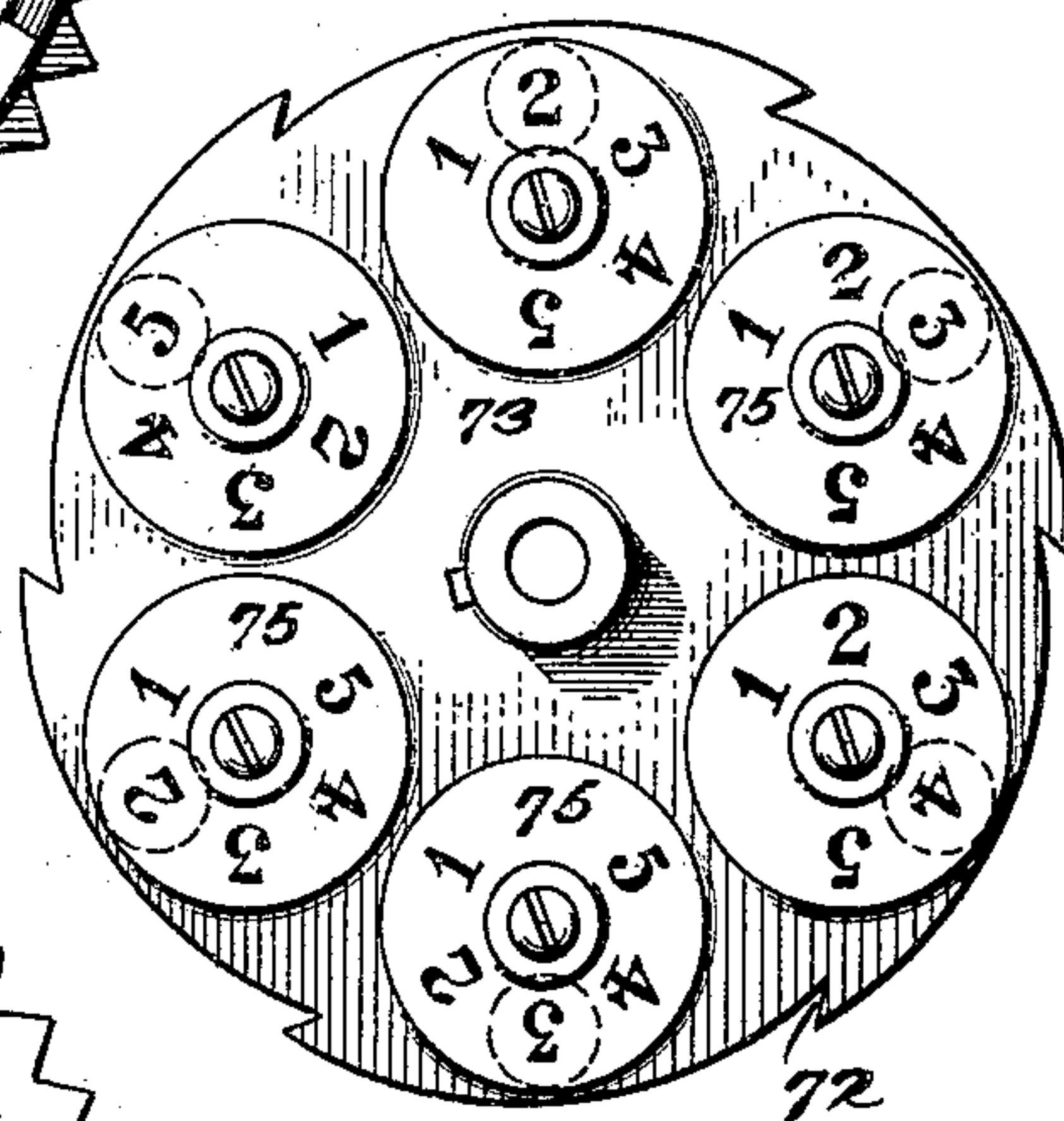
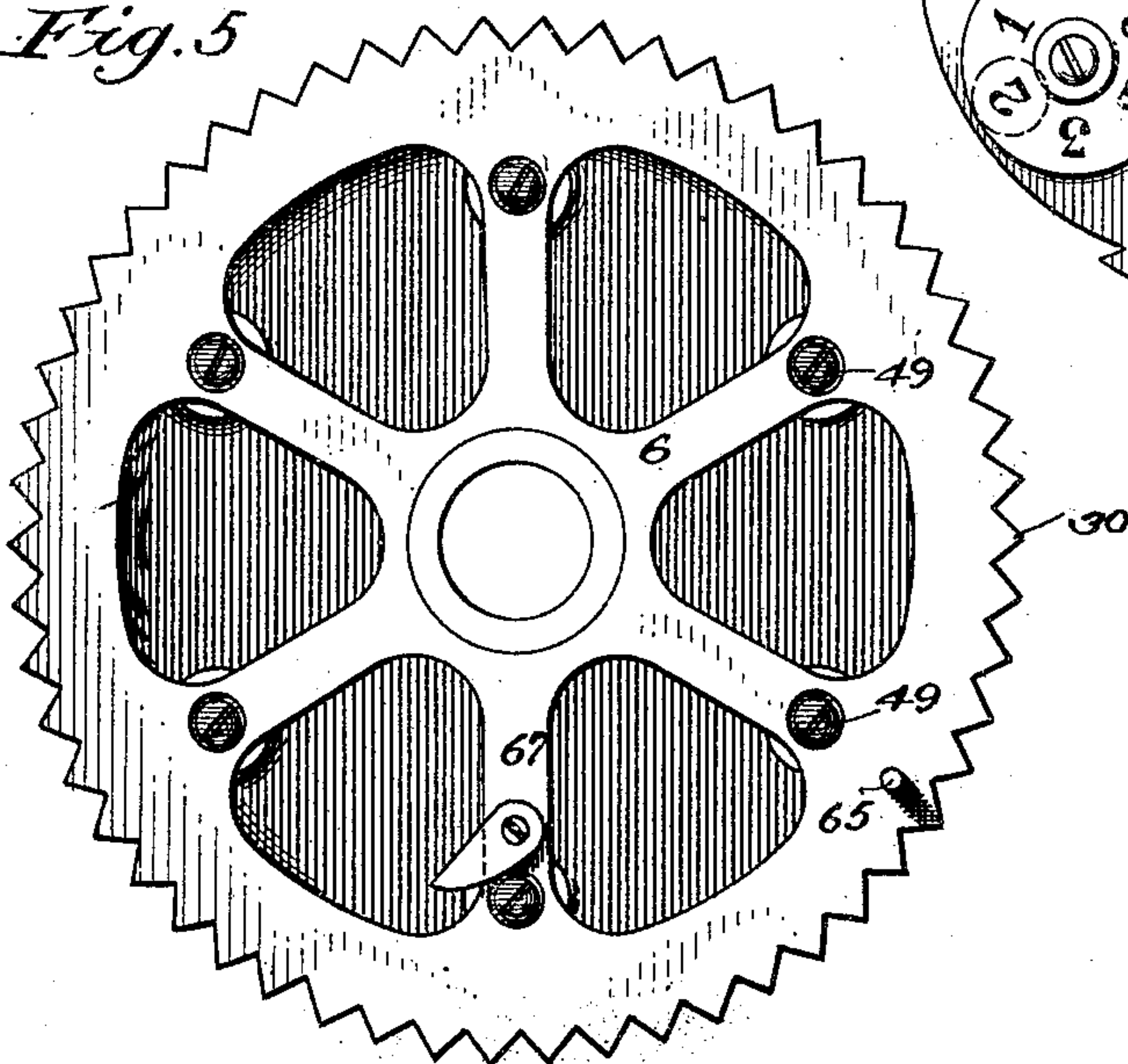


Fig. 5.



Witnesses:
James E. Allen.
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Inventor:
Charles E. Yale,
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his Att'y.

UNITED STATES PATENT OFFICE.

CHARLES E. YALE, OF BURLINGTON, VERMONT, ASSIGNOR TO YALE WONDER CLOCK COMPANY, OF BURLINGTON, VERMONT, A CORPORATION OF VERMONT.

AUTOMATIC CASHIER AND DISCOUNT MACHINE.

No. 878,173.

Specification of Letters Patent.

Patented Feb. 4, 1908.

Application filed October 9, 1906. Serial No. 338,156.

To all whom it may concern:

Be it known that I, CHARLES E. YALE, a citizen of the United States, residing at Burlington, in the county of Chittenden and State of Vermont, have invented certain new and useful Improvements in Automatic Cashier and Discount Machines, of which the following is a specification.

My invention relates to an automatic cashier and discount machine.

The objects of this invention are to provide legitimate means for the disposition and selling of goods mechanically, and furnish the client or customer such discount as the dealer may be able to allow; to provide protection of the proprietor's financial interests by a positive cashier system by which only the proprietor or his duly authorized assistant may have access to the money accumulated by the mechanism, and to furnish a machine which possesses novel features of entertainment, constituting an automatic mechanical trade stimulator.

Another object of my invention is to provide combined mechanism, including, receiving, delivering and controlling devices for coin controlled apparatus; discount mechanism, and means for automatically indicating in advance to the customer the amount or value of the merchandise he will receive for the nickel deposited into the receiver of the machine.

A further object of this invention is to furnish mechanism whereby every customer will be notified in advance so that he will be positively assured as to what he will receive for his money; that is, for each and every nickel deposited in the coin receiver, and means by which the customer may be informed as to the amount he will receive for future deposits.

The foregoing and such other objects as may occur from the ensuing description are attained by the mechanism illustrated by the accompanying drawings forming a part of this application in which:—

Figure 1 is a view illustrating a rear side elevation of the mechanism embodying my invention, showing at the upper portion thereof a diagrammatic view of the electrically operated indicating means. Fig. 2 represents a rear side elevation showing portions of the supporting frame broken away and parts of the operating mechanism removed therefrom. Fig. 3 is a view in front

side elevation showing portions of the frame broken away, and a face view of the dials forming a part of the shifting and mechanical indicating mechanism employed. Fig. 4 is a front view of the discount or percentage mechanism. Fig. 5 is a rear view of the mechanism shown in Fig. 4, and Figs. 6 and 7 are detail views of parts of the shifting mechanism used in connection with my invention.

It will be understood that this invention includes improvements and additions to and combined with mechanism shown, described and claimed in an application filed by me under date of July 7, 1905, bearing Serial Number 268,684.

Similar numerals and letters of reference indicate corresponding parts in the figures.

Referring to the drawings, I will now describe the combined delivery and controlling mechanism for coin controller apparatus.

A' designates the supporting frame or casting, 2, the controller, which consists of a wheel of skeleton form, mounted upon a shaft or pin 3, provided with a crank 4 (shown partly broken away in Fig. 3), adapted to be operated by hand to actuate the mechanism for permitting a coin to pass down the coin chute 5, and to also revolve the percentage drum 6 and discharge a check from one of the check tubes 7, through the medium of the check plungers 8, hereinafter more fully described. These check tubes 7, four in all, are alined along side of each other, one of them being shown as partly broken away in Fig. 1, and each tube is suitably secured in an upright position at the upper portion of the frame A'.

The supporting frame-work A' has a locking arm 9 pivoted to it at 10 within the periphery of the controller 2, and said arm 9 is provided at one end with a long arm 10' disposed in the path of a stop 11 integral with or secured to the hub of the controller. The opposite end or shorter arm of the locking arm 9 has a hooked portion 12 which projects into the coin chute 5 in the path of a coin when placed therein. When the crank arm 4 is operated in a downward direction to move or partially rotate the controller in the direction of the arrow, (see Fig. 1) a coin releaser 13, is carried downward by means of a cam 14, and moves the hooked portion 12 out of the path of the coin, while the coin detent 15 permits one coin to pass

and arrests the column of coins above, provided several was placed in the chute 5 before actuating the crank arm 4. This coin detent is suitably secured to or integral with the coin releaser 13 and both are so pivoted as to move simultaneously. A spring 17, is fastened at one end to a pin 18 on the detent 15, and the opposite end of the spring is secured to the chute 5, at the point 19. A pitman or connecting bar 20, is pivoted at 21 to the short member of the locking arm 9, and at its opposite or lower end is pivotally secured at 22, to a lever 23. The lever 23 is pivoted to the coin chute 5, and is provided with means (not shown in the drawings) which permits the lowermost coin to drop or be ejected into the money drawer or receptacle and arrests the column of coins above when the mechanism is operated. A spiral spring 28, secured to one end of the lever 23, and at its opposite end to the chute 5, serves to return the coin ejecting means to its original position after the locking arm 9 has returned. The lower end of the chute may be provided with a sight opening, covered with transparent material, in order that a suitable number of coins may be visible before they are discharged into the money receptacle.

The controller 2 is provided with a pin 29 rigidly secured thereto which projects in the path of the lever 29', the latter carrying a spring pawl 29^x at its upper end adapted to contact with the teeth 30 forming part of the percentage drum 6, and partially rotate the drum on its axis, as will more fully appear hereinafter. In order to rigidly hold the drum at the point at which it comes to a stop after partial rotation, a dog 31, is pivoted to a stud or pin 32, secured to the frame, said dog 31 having an arm 33 to which a spring 34 is secured at one end, the opposite end of the spring being fastened to a plate 35 formed on the frame adapted to receive the upper or hooked end of said spring. The dog 31 has connected therewith an arm 39, adapted to engage or contact with a cam 40 formed on the hub of the controller 2, the purpose of which is to hold up the nose 31^x of the dog from between the teeth on the percentage drum during the time that the said drum is being partially rotated by the controller, after which the nose of the dog is thrown down by the spring 34 and caused to engage one of a series of notches formed by the teeth 30 on the periphery of the percentage drum, thereby securely locking the drum until further rotation of the same is desired.

The check plungers 8, four in all, alined along side of each other, are pivoted upon the stud 32, at their lower ends, and at their upper ends ejector heads 43 extend horizontally under the check tubes 7, in position to eject the bottom check in the tube when

actuated. Each of the coin plungers is provided at its lower end with an integral pawl or dog 44, similar in shape to the dog 31. Coiled springs 45 are secured one to each pawl 44, and the opposite end of said springs are connected to plates 46 provided with any suitable means for engagement with hooks 46' on the cross-bar 46^x. The noses of the dogs or pawls 44 are adapted to contact lightly with the periphery of the percentage drum 6, and said noses are adapted to engage apertures or recesses 47 in said drum. These apertures are adapted to be closed more or less by adjustable slides 48, connected to thumb-screws 49. There are six adjustable slides, and the same number of thumb-screws 49, as shown in Figs. 4 and 5.

The specific construction and arrangement of adjustable slides 48, and the means for manipulating the slides for forming the apertures forms the subject-matter of an application for patent filed by me under date of July 7th, 1905, bearing Serial Number 268,685.

It will be readily perceived that by means of the slides 48 the apertures 47 may be each increased or diminished in area, and hence the rate of discount can be arranged by the proprietor, as the percentage of the toes of the pawls 44 dropping into said apertures or recesses is increased or diminished correspondingly, when the percentage drum comes to the locked position.

The springs 45 exert sufficient pressure or stress upon the dogs 44 to force their noses into the apertures or recesses formed in the periphery of the drum when they are carried to register therewith, and this movement or action will project the check plunger, or plungers forward and carry one check from the bottom of the check tube out and deposit it into a tray or chute 50, from which it is ejected by the action of the controller 2 and caused to slide into a suitable pocket or cup at the side of the apparatus.

The check receiving tray or chute 50 is provided at its lower end with a swinging valve or gate 51, secured to a transversely supported rotatable shaft or pin 52, having an upward projected arm 52' and an inward extended arm or rod 54. To the lower portion of the chute 50 is fastened an arm 53 and connected thereto is a coiled spring 55, the other end of the spring being fastened to the arm 52', so that when the controller 2 is operated in the direction of the arrow (see Fig. 1), the projecting pin 56 secured to the controller will contact with the arm or rod 54, thus causing the valve to swing outward and permit the escape of the check, the tension of spring 55 acting to return said valve to its normal position as soon as the rod 54 is out of contact with or disengaged from said pin 56.

The electrically operated indicating means,

shown in Fig. 1 of the drawings will now be described, it being obvious that current may be obtained from any desirable electrical source. Each of the four check plungers 8 is provided with a piece of suitable insulating material *a*, having a projected portion *b*, the upper and lower faces of said portion *b* being provided with a metallic covering *c* adapted to contact with the flat yielding metallic pieces *d*, *d'*, each of which is secured to a bar *e* of insulating material fastened to the framework of the apparatus. This bar is provided with suitable binding posts *f* and a series of metallic pieces *d* *d'* arranged in alinement, thereby forming what may be termed four electric switches, having wires leading therefrom to the incandescent lights *g*, *h*, *i*, *j*, respectively, said lights being preferably displayed in colors, as for instance, white, blue, green and red, each light being provided with suitable indicating means whereby the customer is notified as to the value of the merchandise to be received before the nickel has been deposited.

As clearly shown in Fig. 1, it will be seen that the pawl carried by one of the check plungers has dropped into a recess on the periphery of the percentage drum, thus throwing the check plunger forward and closing the electric circuit leading to the "white light", thereby indicating that the party who deposits the next coin will receive five cents' worth of merchandise from the dealer, the same action is true with respect to the three remaining plungers, hence when either of them are caused to close the circuit the proper corresponding light and indicating means will be displayed.

The shifting mechanism, means for operating the same and mechanical indicating mechanism will now be described.

By a partial revolution of the controller (see Fig. 1) the pin 29 is caused to engage the upper arm of the pivoted lever 29', said lever and the percentage drum being supported by a pin *C* secured to or forming part of the framework. By such contact of the pin 29 with the lever 29', the pawl 29^x engages one of the teeth 30, on the periphery of said drum 6, and causes the drum to revolve a certain predetermined number of teeth or notches. The number of notches or distance the drum revolves is regulated by the number of teeth on said drum which said pawl and arm are returned to on the backward or reverse motion of the controller and its operating crank handle. The number of teeth or distance to which the pawl 29^x is brought back or returned is controlled by the distance traveled by the lower or opposite end 60 of said lever 29' is permitted to travel in the reverse direction. In order to regulate the distance or number of teeth the lever 29' and pawl 29^x are allowed to move, a disk 61 is used provided with six radial slots 62, each slot having arranged

therein an adjustable stop 63 (see Fig. 6). Each of these stops, six in all, are adjusted and secured respectively at such a distance from the center of the disk that each will serve as a stop for the lower end 60 of the lever and thereby regulate limit and determine the distance traversed by the said lever from its own perpendicular center. In other words, the nearer this lever 29' approaches the center of the disk 61, to contact with the stops 63, the greater the distance it travels from its own center and the more numerous the teeth the pawl passes over on its return or reverse movement. After the lever 29' is released from contact with the pin 29 on the controller it will be returned to its normal or first position by the tension of the spring 64, connected to the lever and framework, respectively. This disk 61 is revolved one sixth of its diameter, or to the next stop 63, by means of a pin 65 on the drum 6, (shown by dotted lines in Fig. 1 and full lines in Fig. 5) engaging a star gear 66 passing to said disk once every complete revolution of the drum, and by this action changing, if desired, the number of teeth (or distance) the drum may be moved during ensuing operations of said controller until another change or shift of the stops is made.

By means of a cam 67 (see dotted lines Fig. 1 and full lines Fig. 5) secured to the rear face of the drum 6, making contact at the proper time with an arm 68, the levers or arms 69 and 70 are actuated which in turn operates a spring pawl 71, thereby releasing said pawl from a notch 72 on the periphery of the disk 73, and again locking into another notch in harmony with the movement of the percentage drum to prevent the disks 61 and 73 from shifting from the position intended they should occupy, both of said disks being carried by a single shaft 74 supported by the framework. The disk 73 may be exposed to the public in whole or in part through an aperture or glass door, and by an arrangement of six small disks 75 set by hand and pivoted to said parent disk 73 and containing numbers, the small disks may be adjusted so that one number on each of these small disks will show through an opening in the parent disk 73 (see Figs. 3 and 7). These respective apertures are identified by letters, and accord with the identification of its respective stop. The numbers shown through the respective identified apertures correspond with the numerical positions of the stop, that is, for example, if aperture *A* on parent disk 73 is opposite a pointer *D*, (see Fig. 3) stop *A* is resisting the lower end or arm 60 of the lever 29'; and again, if number 3 is visible in aperture *A* the stop is so adjusted as to permit arm 60 to move forward far enough to allow its opposite end, bearing pawl 29^x, to drop back three notches and thus, in the next downward movement of the controller han-

dle, the percentage drum 6 will be propelled or rotated to the extent of three notches.

To prevent the shifting of the drum 6 from its predetermined and accurate movement, a safety device is used to lock the lever 29' before the controller is unlocked on its movement in either direction. This safety device consists of a dog or lever 76, pivoted to the frame A' and engaging ratchet teeth or projections 77 on the hub 78 of said lever 29'. This dog 76 is operated by a spring 79 so that one end of it will at the proper time engage and ride the ratchet teeth or projections 77. A pin 80 on the controller contacts with the other end of the dog 76 releases the ratchet 77 at the proper time, and permits the lever 29' and pawl 29^x to be drawn back by means of the spring 64 to engage teeth on the percentage drum at the next operation of the machine.

A large disk E' exposed to the public in whole or in part is carried by a shaft F', the latter being supported by the framework, said shaft F' also supporting a gear wheel G' at the rear of said disk E' and the frame. The face of this last named disk is divided in a number of spaces corresponding with the teeth or notches in the periphery of the drum 6 and the wheel G' gearing with said drum, and said spaces are numbered or lettered for reasons hereinafter explained. It will be readily evident that, since the disk E' and gear wheel G' are secured to the same shaft, and provided with the same number of teeth as the percentage drum, when said drums 6 is moved or revolved the large disk E' will move the identical number of spaces from a given point, indicated by the pointer H' as does the percentage drum. The purpose of these numbers, letters, or symbols on the disk or dial E' and dial or disk 73, and the exact correspondence with those on the percentage drum (not shown), are for explaining to the customer or public in advance, by means of a printed schedule or chart, if desired, and the figuring into consideration the identification letter and the number of shifts denoted by the shift dial 73, six shifts in all, the exact amount of merchandise (represented in merchandise checks) and including, if there are any, the premium checks that may be purchased for any and all sums of money expended on future investments at various positions of said dials or disks.

The operation of the machine may be briefly described as follows:—When the parts are all properly assembled and timed, in accordance with the foregoing description, and after a coin or nickel has been deposited in the coin chute to unlock the controller 2, the operating handle is first moved downward which partially rotates the controller in the direction of the arrow Fig. 1, said handle is then moved upward to impart a reverse movement to said controller. The

first or forward movement of the controller operates the cashier mechanism and causes a coin to be deposited in the money receptacle; partially rotates the discount or percentage drum or mechanism a suitable or predetermined distance or number of notches, the rotation of this drum permitting one of the coin plungers to move forward and eject a check into the check chute or receiver, and at the same time said plunger closes an electric circuit thus operating electrically means for indicating the value of the next check to be ejected from the machine; in turn, the combined mechanical shifting and indicating mechanism provided with visible dials or disks is caused to travel or rotate a predetermined distance, and the reverse movement of the controller acts to open the gate valve of the check chute to permit the check to fall into a cup or receiver at the outside of the machine.

By the foregoing description it will be readily apparent that, this invention includes combined mechanism constituting an automatic cashier system; discount or percentage mechanism whereby the proprietor may regulate the amount of discount he is willing to allow his customers; electrically operated means for indicating and advising the customer in advance as to the value in merchandise he will receive, when a coin or nickel is deposited in the coin chute or receiver; means for receiving, retaining and ejecting a check, and automatically and mechanically operated shifting mechanism and visual indicating dials or disks, whereby the customer or client may calculate or figure the amount he will receive on future investments.

Various changes in the detail construction and arrangement of the various parts may be resorted to, without departing from the spirit or scope of my invention.

Having thus described my invention what I claim and desire to secure by Letters Patent is:—

1. An automatic cashier and discounting machine including coin controlled mechanism coin-receiving means, check ejecting mechanism, and means for indicating in advance the variable value of the check to be ejected when a coin is deposited into the coin receiver.

2. An automatic cashier and discounting apparatus comprising, coin controlled mechanism, and means for electrically indicating in advance the variable value of the check to be ejected after a coin is deposited into the coin chute or receiver.

3. An automatic cashier and discount machine comprising coin controlled mechanism, discount or percentage mechanism, and means for indicating in advance the variable value to be received by a customer after a coin is deposited into a coin receiver.

4. An automatic cashier and discounting machine including coin controlled mechanism, percentage mechanism, and means operatively connected with said coin controlled mechanism and percentage mechanism, whereby future money investment may be calculated in advance of the investment.

5. An automatic cashier and discounting apparatus including coin controlled mechanism, discount or percentage mechanism, and mechanical means for calculating future money investments in advance of the actual investments.

6. An automatic cashier and discounting apparatus comprising coin receiving mechanism, check holding receptacles, and check retaining devices, means for delivering a check, and means for advising the operator of the apparatus the variable amount or value to be received in advance of the deposit of a coin into the apparatus.

7. An automatic cashier and discounting machine comprising coin receiving means, check holding receptacles, check receiving devices, check retaining mechanism, means for delivering a check, discount mechanism, and means for advising a customer or operator in advance the changeable value he will receive for the coin when it is deposited into the coin receiver.

8. An automatic cashier and discounting machine comprising coin receiving means, check holding receptacles, check retaining mechanism, means for delivering a check, electrically operated mechanism for advising or indicating in advance the variable amount or value to be obtained after a coin has been deposited into the machine, and means for calculating or estimating future investments.

9. An automatic cashier and discounting machine comprising coin controlled mechanism, alterable value indicating means displayed in advance of the deposit of a coin, and discounting mechanism whereby the ratio of percentage may be fixed in advance of the operation of the machine.

10. An automatic cashier and discounting apparatus including coin controlled mechanism, and means for advising and indicating to a customer in advance of the deposit of a

coin the variable amount or value to be received by the deposit of such coin.

11. An automatic cashier and discounting apparatus including coin controlled mechanism, means for advising and indicating to a customer in advance of the deposit of a coin the different amount or value received by the deposit of such coin, and means for calculating and indicating in advance the possible profits to be made on future money investments.

12. An automatic cashier and discounting machine, comprising coin controlled mechanism, a discount or percentage drum, and means connected with said drum for indicating and estimating in advance the variable amount to be made on future money investments.

13. An automatic cashier and discounting machine, comprising a controller, discount or percentage mechanism, and automatically operated means for estimating profits to be derived from future money investments.

14. An automatic cashier and discounting apparatus, including mechanically operated discount mechanism, value indicating and advising mechanism, and means for estimating profits to be derived from future money investments.

15. An automatic cashier and discounting machine, comprising a controller, check holding receptacles, a check retaining device, check, delivering mechanism, means for indicating in advance the changeable value of the check to be ejected when a coin is deposited into the machine, discount or percentage mechanism and automatically operated mechanism whereby future money investments may be calculated in advance of the investment.

16. An automatic cashier and discounting machine comprising means for receiving a check, a check retaining device, check ejecting mechanism, coin delivering mechanism, and means for indicating in advance of the operation of the machine the variable value of the check to be ejected therefrom.

CHARLES E. YALE.

In presence of—

HARRIETTE M. WHEELER,
MAY JOHNSON.