

No. 716,505.

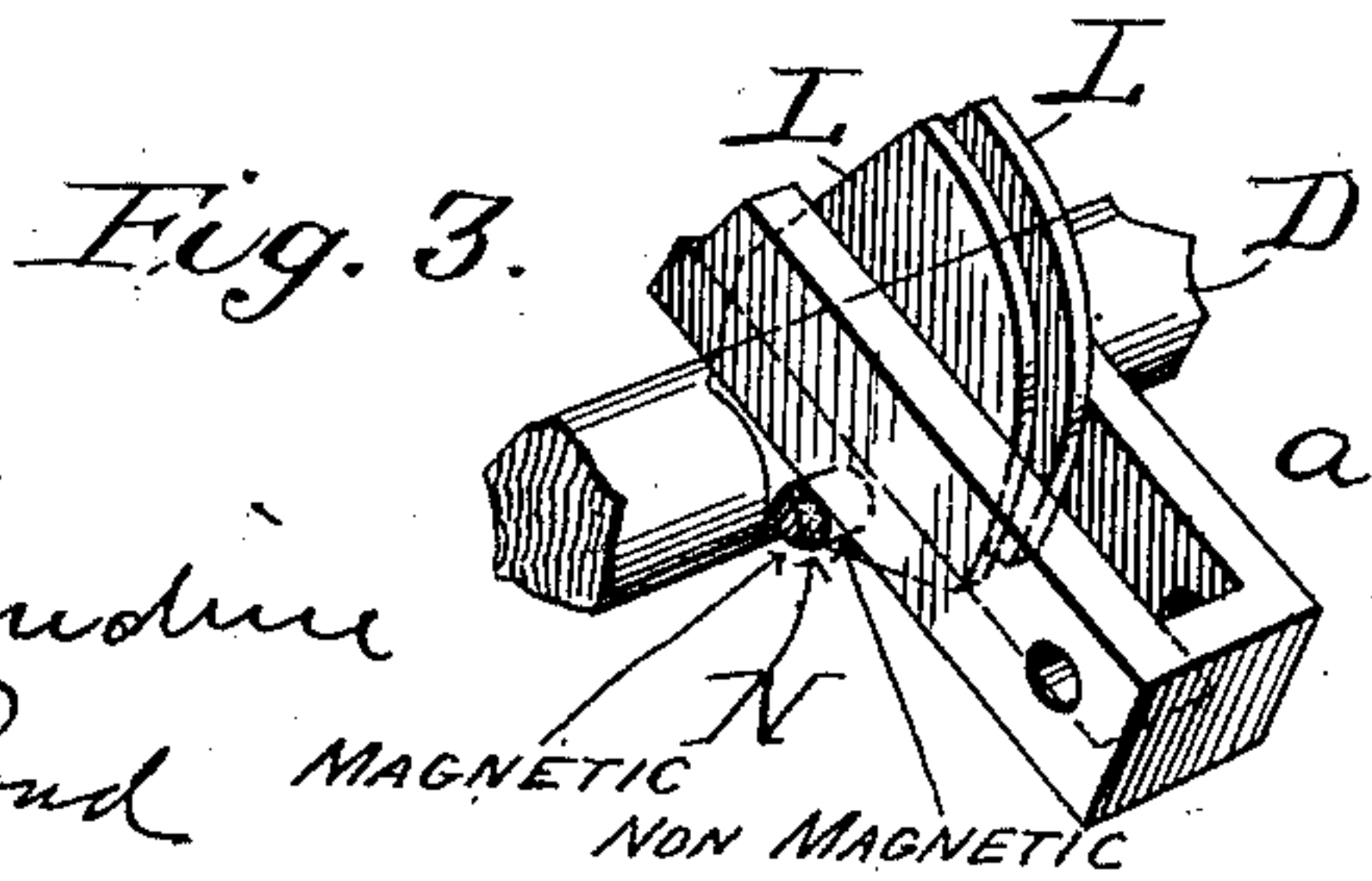
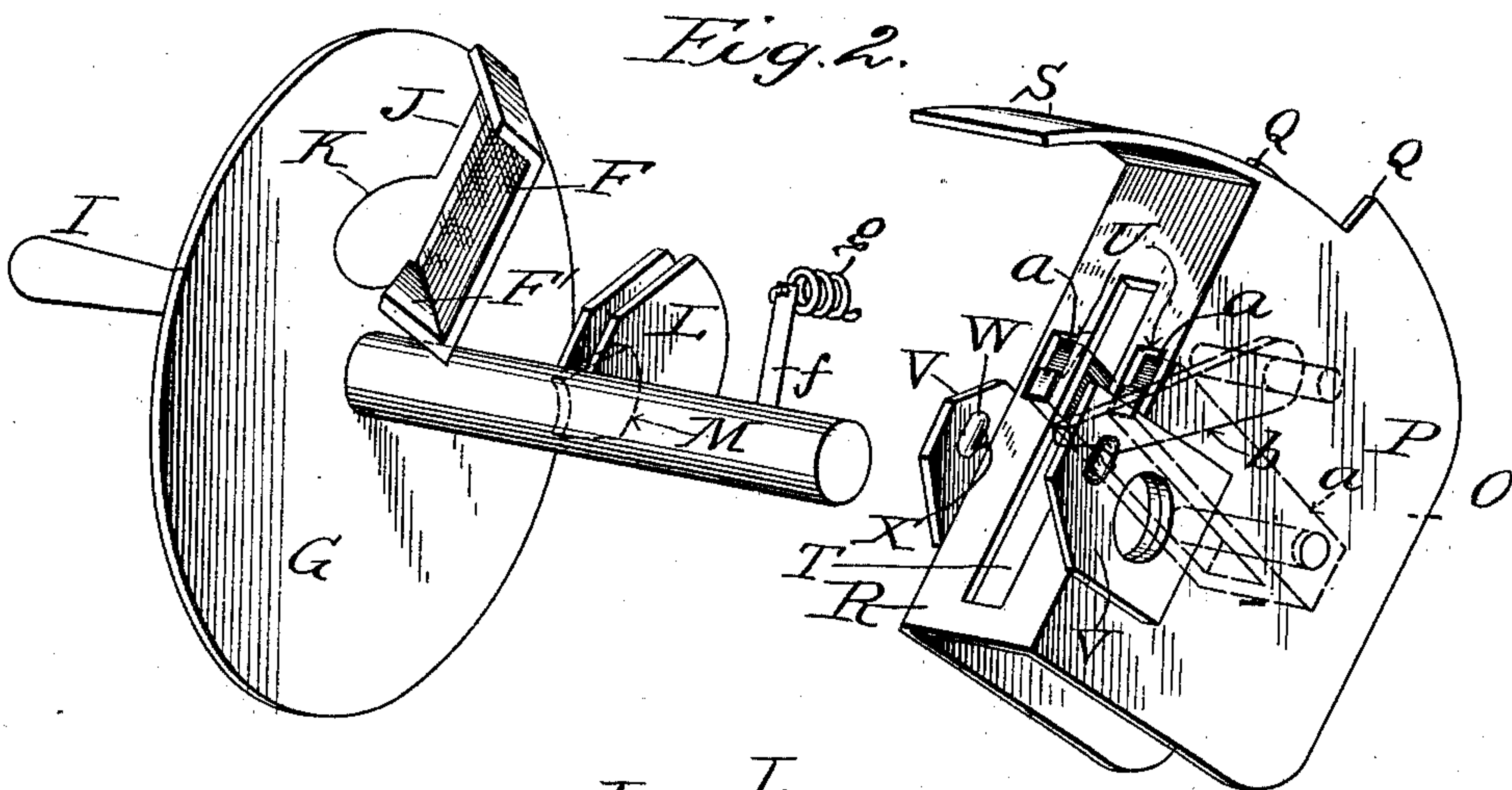
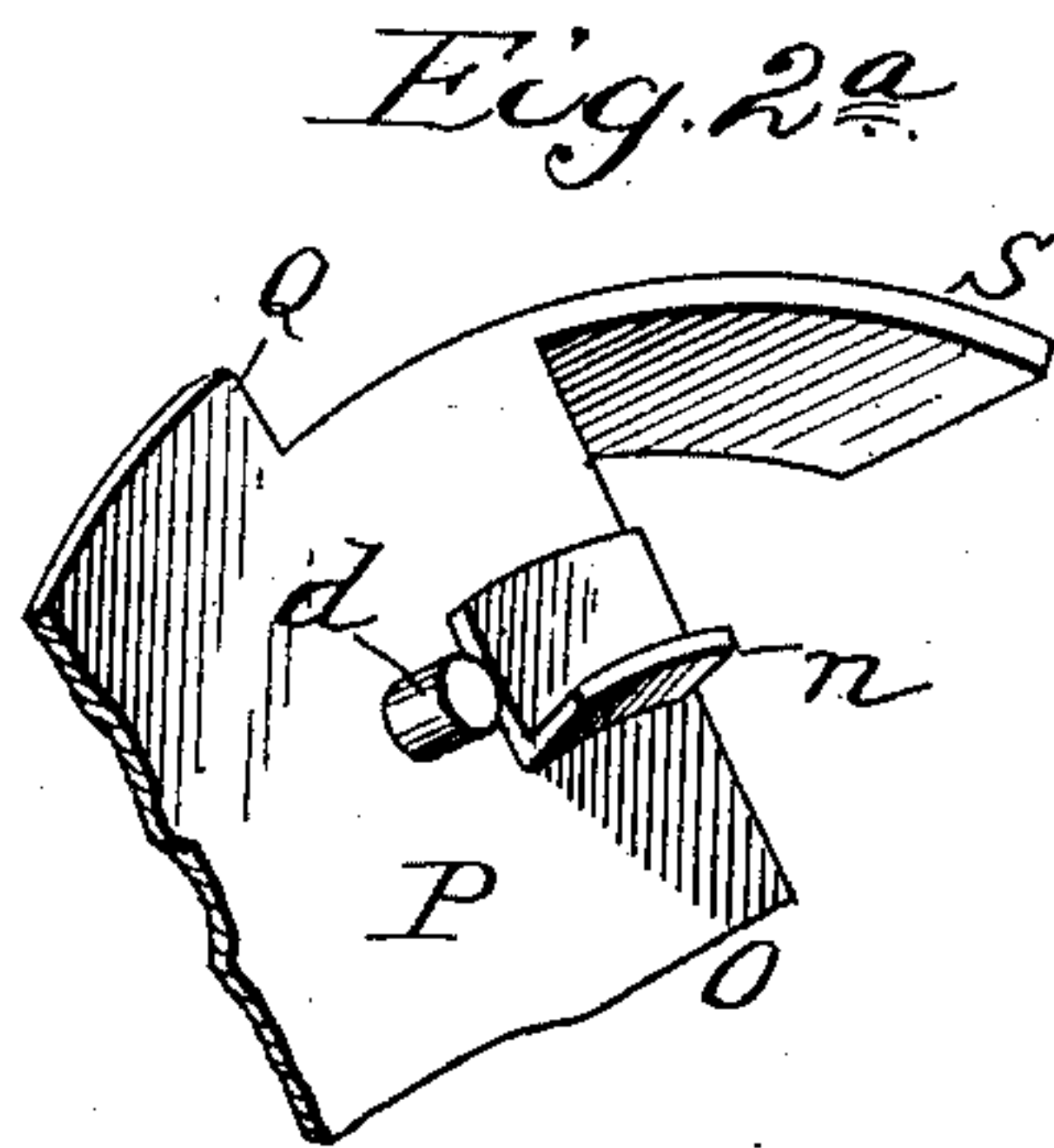
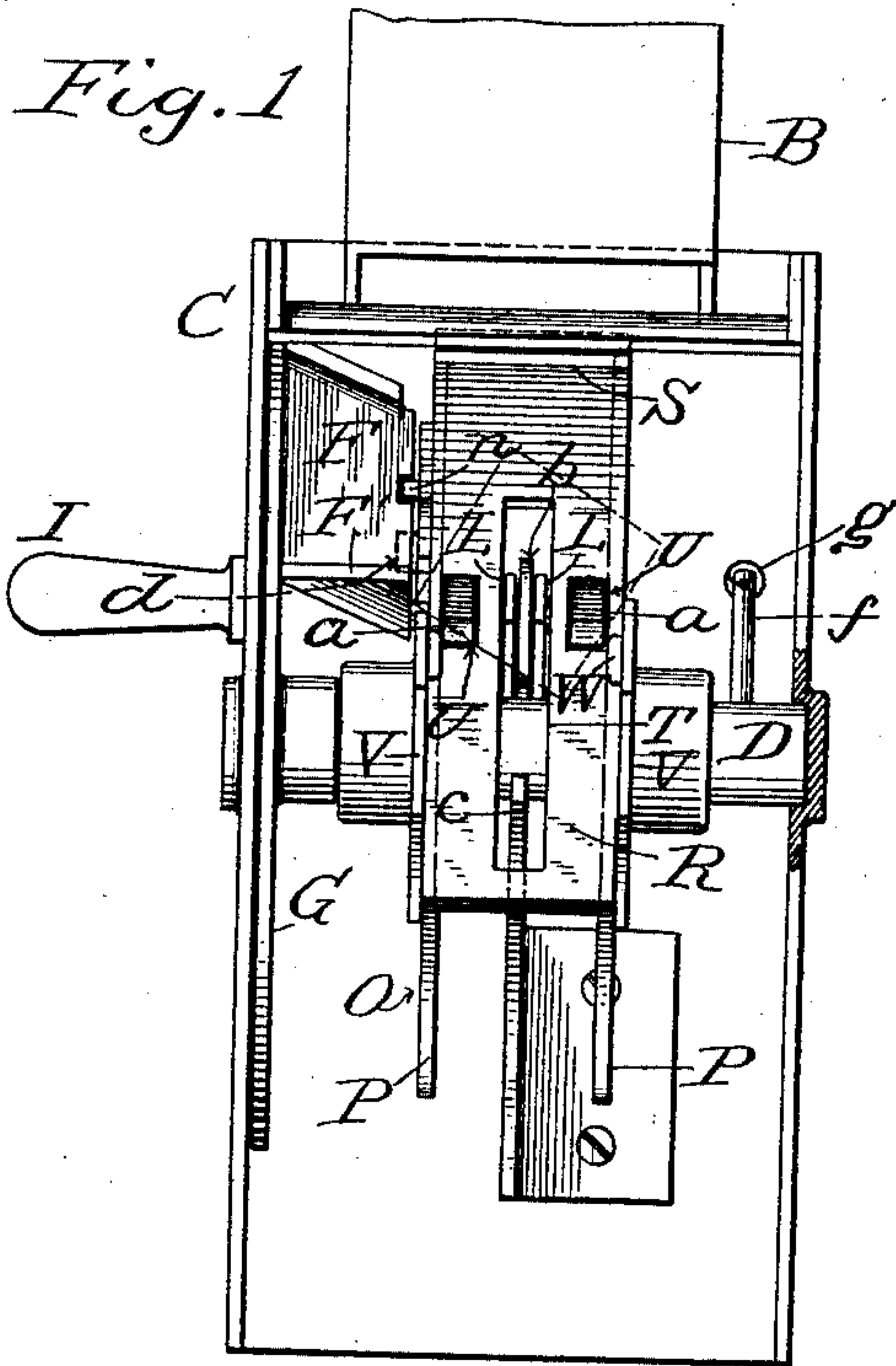
Patented Dec. 23, 1902.

J. A. WILLIAMS.
COIN CONTROLLED APPARATUS.

(Application filed Dec. 16, 1897.)

(No Model.)

2 Sheets—Sheet 1.



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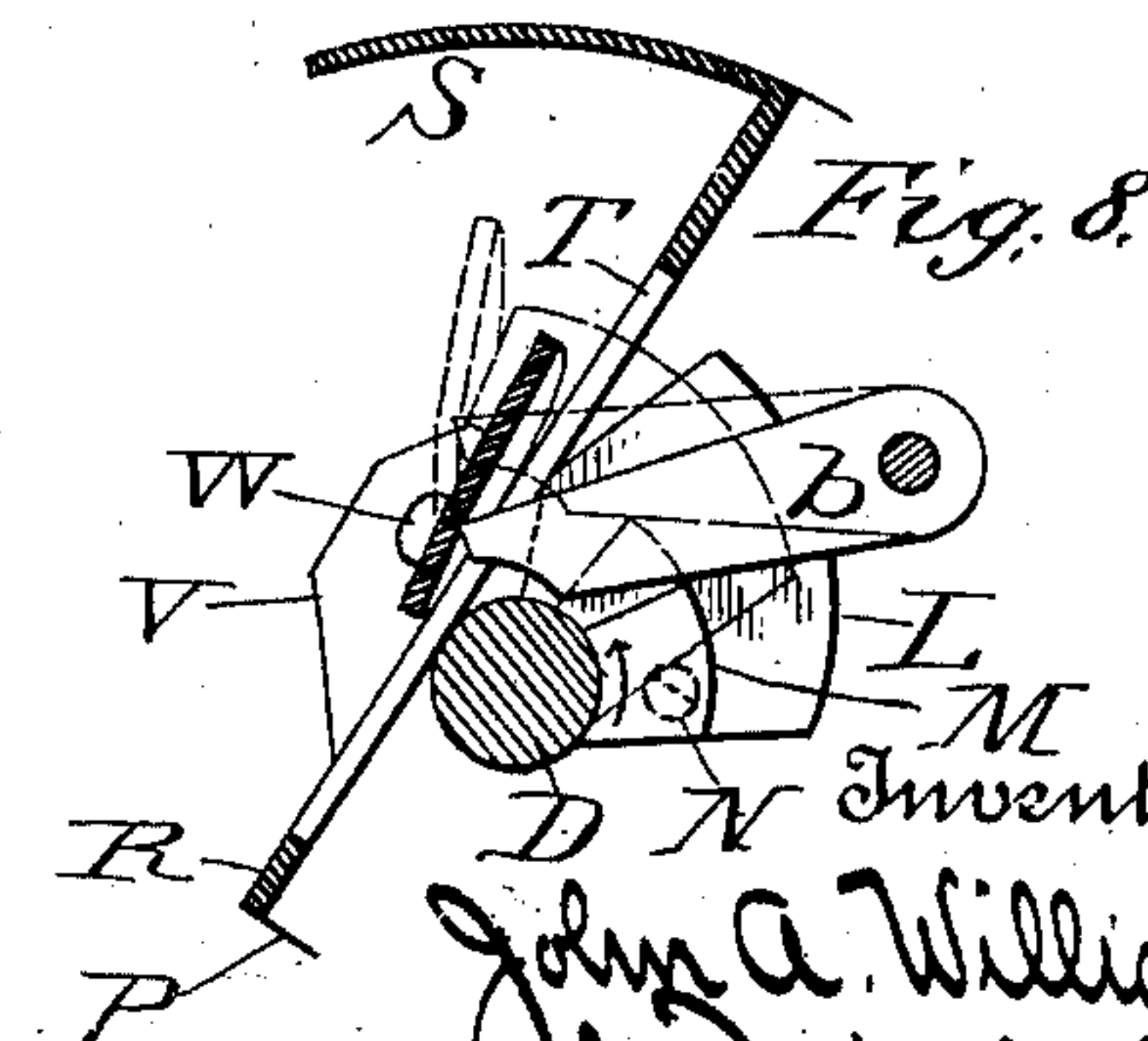
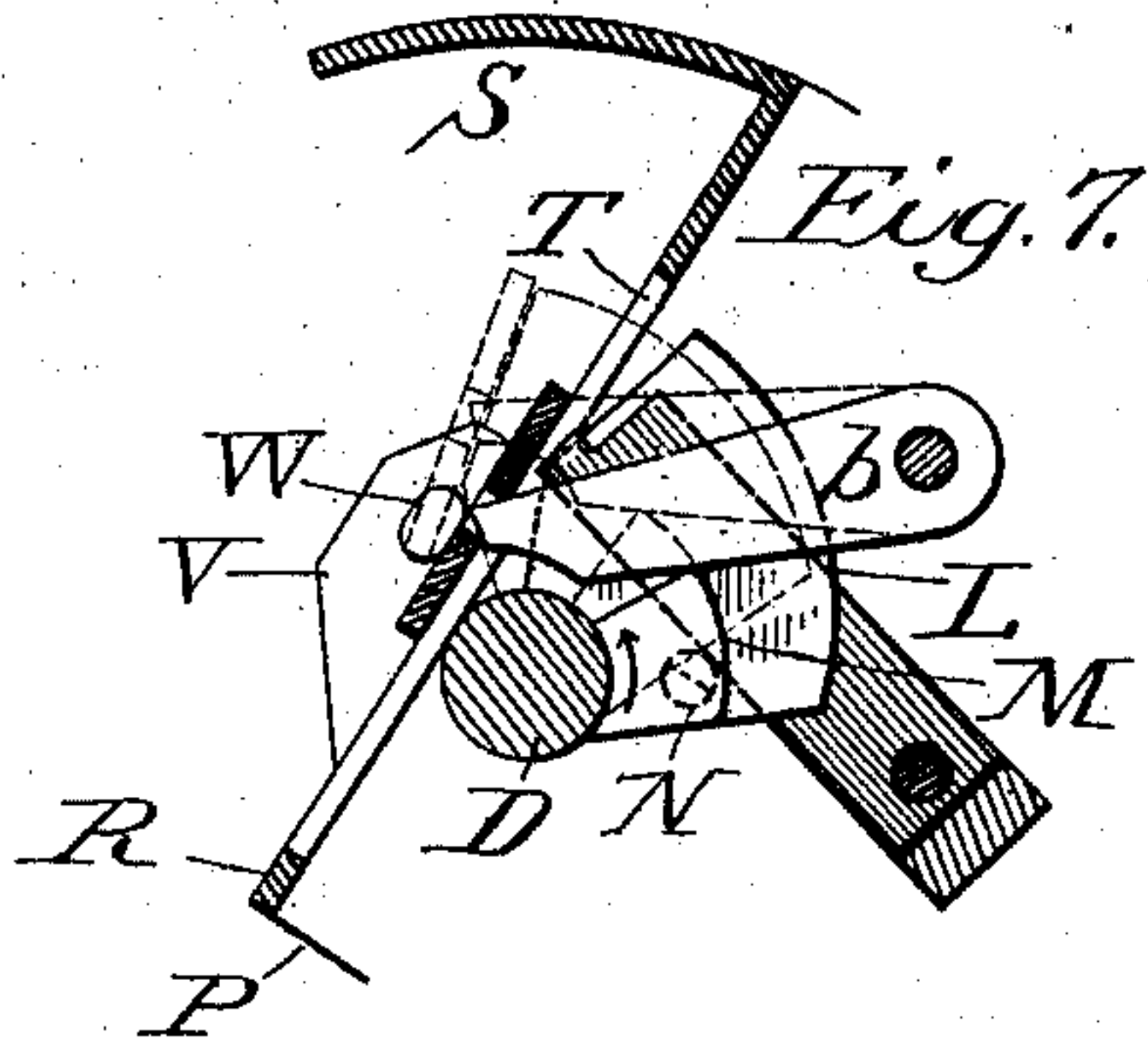
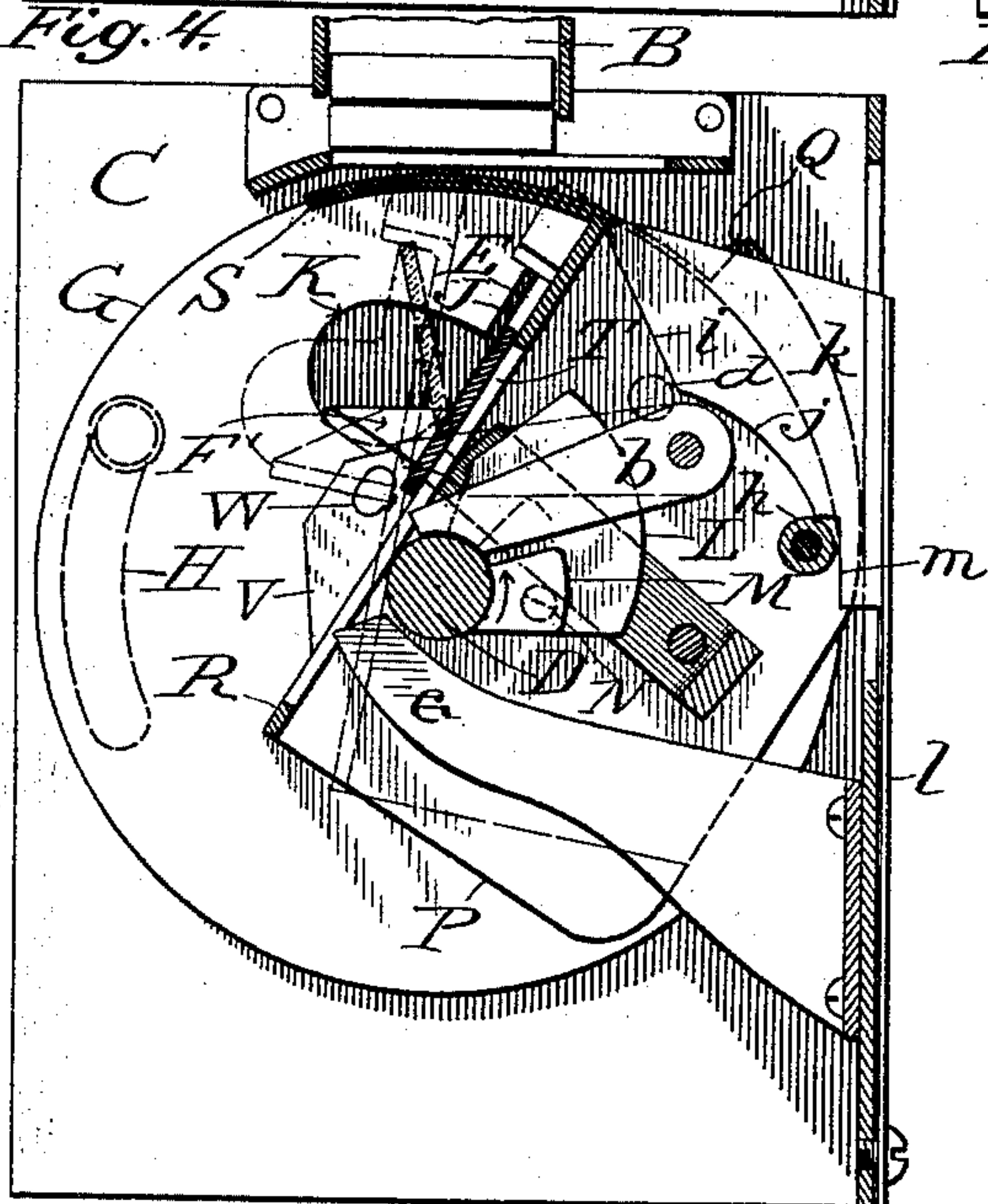
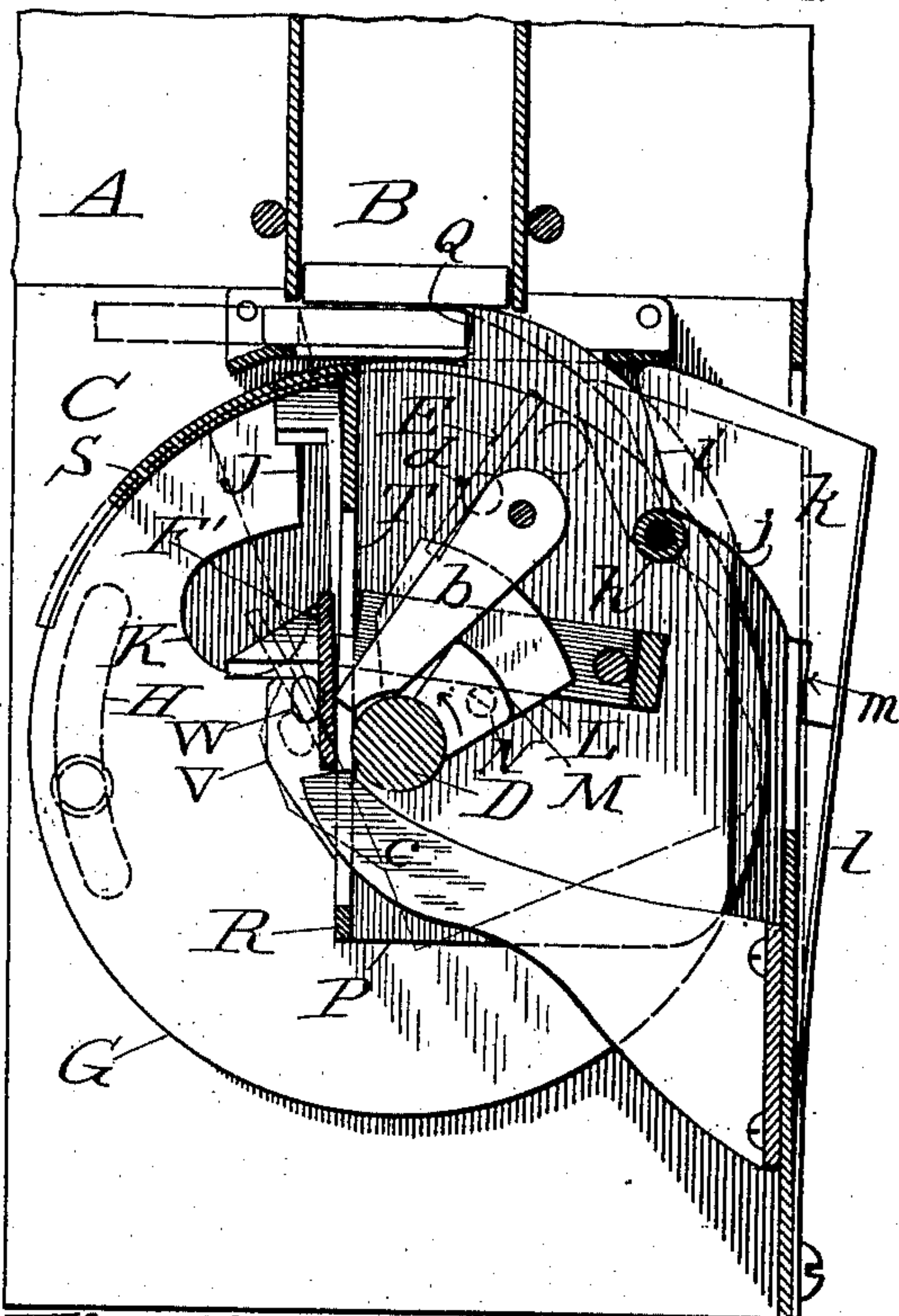
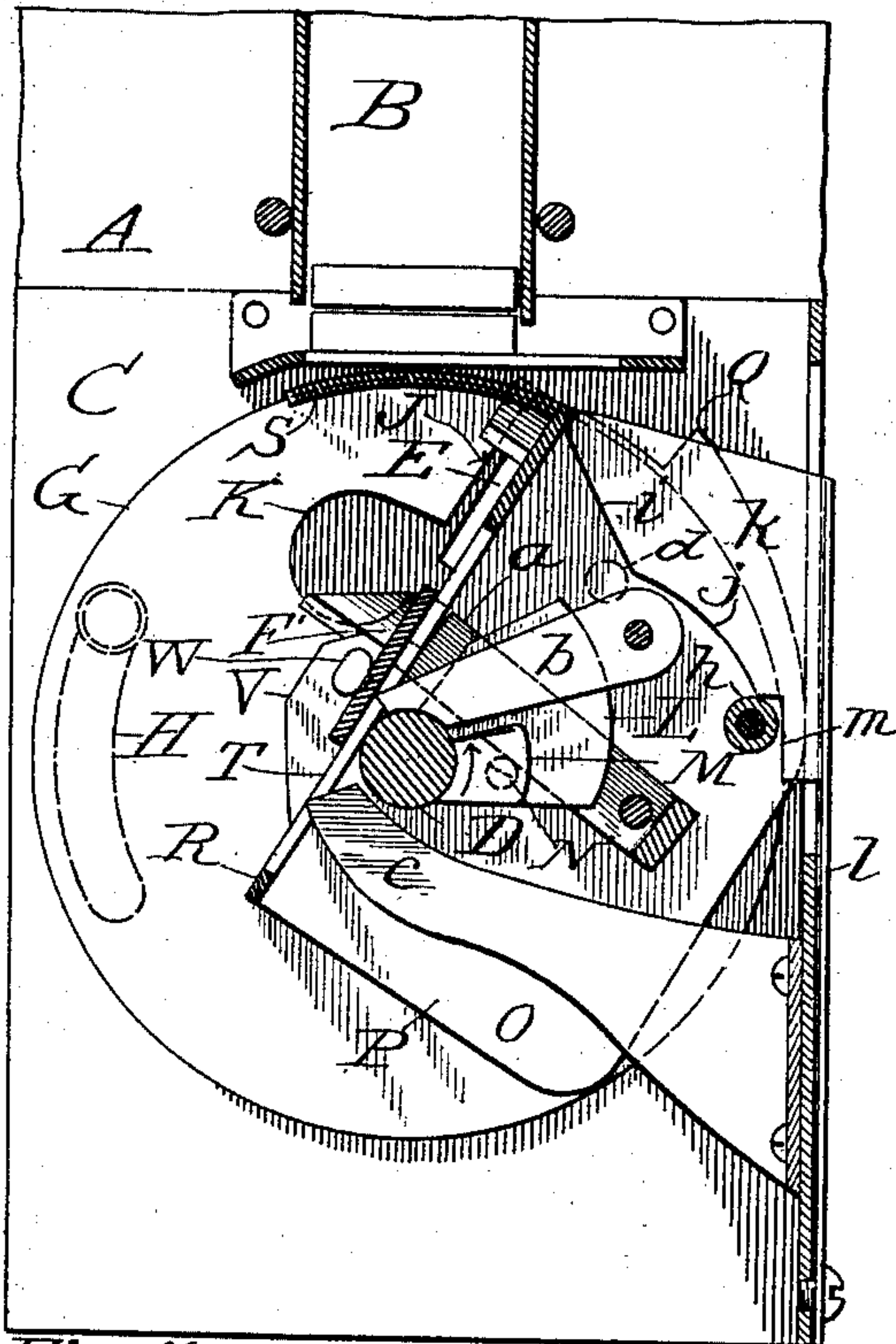
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

JOHN A. WILLIAMS, OF BROOKLYN, NEW YORK, ASSIGNOR TO UNITED STATES SLOT MACHINE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

COIN-CONTROLLED APPARATUS.

SPECIFICATION forming part of Letters Patent No. 716,505, dated December 23, 1902.

Application filed December 16, 1897. Serial No. 662,131. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. WILLIAMS, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Coin-Controlled Apparatus, of which the following is a specification.

My present invention pertains to improvements in coin-controlled apparatus, the construction and advantages of which will be hereinafter set forth, reference being had to the annexed drawings, wherein—

Figure 1 is a front elevation of the working or operative mechanism, the casing of the machine not being shown; Figs. 2 and 2^a, detail perspective views; Fig. 3, a similar view; Figs. 4 and 5, sectional views showing the parts in their different operative relation with a coin of proper value; Fig. 6, a similar view illustrative of the operation of the movable magnet; Fig. 7, a detail view showing the operation of the machine for displacing or removing a washer; and Fig. 8, a similar view, the displacement of a flexible washer being shown.

The object of my invention is to provide a simple and at the same time highly-efficient machine of its class, one which will readily reject any false device or token which may be inserted and also one which will clear itself of paper, strings, and the like, which are oftentimes introduced into this class of machines.

Referring to the drawings, A, Figs. 4 and 5, denotes the casing of the machine, and B the reservoir or chute designed to hold the articles to be vended, said chute being secured therein in any suitable manner.

C indicates a supplementary frame or casing, and D a shaft mounted therein, as shown. While I prefer to use this supplementary frame, it is not absolutely necessary, and the shaft may be mounted directly in the casing A. A coin-slot E is provided in the frame, as indicated in Figs. 4, 5, and 6, in line with a coinway F, carried by a disk G, secured upon the shaft and designed to move there- with.

Frame C is provided with a slot H, (shown

in dotted lines, Figs. 4, 5, and 6,) through which extends an operating-handle I, said handle being secured to the disk and designed to impart motion thereto when the machine is operated. As will be noted upon reference to Figs. 1 and 2, the coinway or chute F inclines back and downwardly for a purpose which will presently appear. The lower side F' widens as it leaves the disk.

The disk G, immediately in front of the coin-chute, is cut away as shown, forming a slot J and an enlarged curved recess K, the recess extending forward of and down below the bottom of the coin-chute F.

Secured upon the shaft D and designed to move therewith are two arms or wings L, between which is a fixed cam M. A pin N is passed through and carried by the wings, the ends projecting beyond the side faces of the wings, as indicated in Fig. 3.

O denotes a frame loosely mounted upon the shaft, comprising the side walls P, P, formed with shoulders Q, said side walls being connected by a plate R. To the upper end of said plate there is secured a curved guard S, which when the mechanism is in a position to receive a coin occupies a position beneath the chute B and effectually closes the same against any tampering from without by wires or the like inserted through the coin-slot E.

Plate R is formed with an elongated opening T, extending both above and below the shaft, as shown, and also with two smaller openings U U above said shaft D to each side of opening T.

Plates V are secured to the side walls P, extending up above the face of plate R, forming therewith the coin-holder. To maintain or hold the coin in its proper position, bosses or projections W are struck up out of said plates V, as clearly shown in Fig. 2. Said projections are elongated and rounded, and upon that side next to plate R are formed with a projection X, said projections being of a less height than the bosses W and forming the gage upon which the edges of the coin rest.

A magnet *a* is pivoted, as shown, between

the side walls P, the poles extending forward into the openings U in plate R. Said poles, as shown in Fig. 2, are reduced at their outer ends, permitting the magnet to be swung upon its pivot and the poles moved from one end of the slots or openings U to the opposite end by the pin N, when the shaft is oscillated and the frame O remains stationary. After the magnet is mounted within the frame the poles are ground off flush with the face of plate R, so that as the magnet is rocked upon its pivot the poles will not protrude, while they will still come approximately into contact with any substance which lies flat upon the face of plate R. An arm or lever *b* is also pivoted between the side walls P of the carrier-frame, the pivotal point being somewhat elevated above the axis of shaft D, so that said arm extends forward in a downwardly direction between wings L, resting upon the fixed cam M and shaft D. Its free end is sharp and extends into slot or opening T, being flush with the face of plate R. This arm acts as a washer catcher or remover and also serves to dislodge any spurious token made of flexible or fragile material, as will be presently explained.

To dislodge a coin from the carrier after the machine has been operated, an arm *c* is employed, said arm, as shown in Figs. 1, 4, 5, and 6, being secured to the casing and extending forwardly below the shaft into the lower part of the opening T.

The normal position of the carrier-frame is that indicated in Fig. 4, the face of plate R inclining backward above the shaft D and in line with the coin-slot E. To turn shaft D back and bring the coin chute and slot into alinement, an arm *f* is attached to the shaft and a spring *g* connected thereto at its upper end, the spring extending back and being secured to the rear of the casing.

A roller *h* is mounted between the side walls P at the rear thereof and is designed to work against the two faces *i* and *j* of a cam-plate *k*, carried by the upper end of a spring *l*, said spring being secured to the casing at its lower end, as shown in Figs. 4, 5, and 6. The tendency of the cam while the roller is acting upon the face *j* is to throw the carrier-frame back into its normal position; but immediately the carrier-frame is carried forward past the meeting-point of the faces *i* and *j* and passes onto said face *i* the cam exerts a forward pressure upon the roller, tending to throw the carrier-frame O forward with a sudden impulse.

As will be seen upon reference to Fig. 4, the roller *h* when the parts are in their normal position rests against a flat face *m*, formed upon the cam-plate *k* immediately below the face *j*, while at the same time the upper end of the cam-plate comes in contact with the rear face of the plate R.

To prevent the insertion of a second coin after the machine has been partly operated and assuming that the handle is turned back,

so that the coin-slot and opening J are in alinement, I provide a rib or projection *n* upon that side of the carrier-frame next to the coin chute or runway. This rib works through an opening formed in the edge or end of said coinway or chute. The length of the coinway and the opening J and the coin-slot outside of the rib *n* is such that if the rib is extending into said coinway the coin after coming in contact therewith will still project slightly beyond or without the coin-slot, thus permitting its withdrawal.

The operation of the machine is as follows, reference being had to Figs. 4 and 5 and it being assumed that the proper coin or token is used: The operator inserts the coin edgewise through the coin-slot E, it passing onto the coin-chute F, rolling down the same and over onto the plate R, resting with its edges upon the projections X. By then moving the handle I downward motion is imparted to the shaft D and to the stationary cam M, carried thereby. Said cam bears against the arm or lever *b* and forces its point against the coin held in place by the projections W. It will thus be seen that the carrier-frame O and the shaft and its attendant parts are locked together through the medium of the coin. The operator continues to move the handle downward, thereby bringing the projections Q of the carrier-frame beneath the chute B, said projections Q coming into contact with the edge of one of the articles to be vended and forcing the same out from beneath the column into any suitable receptacle. As soon as the handle I is depressed the coin-slot E and opening J pass out of alinement, so that no further coin or object can be inserted into the machine through the coin-slot E, as the disk G comes over the same and effectually closes it. The relation of the parts shown in Fig. 5 is such that the coin is about to be dislodged from its seat upon the carrier-frame. It will be noted that the fixed arm *c* projects through the opening T as the frame is rotated and comes in contact with the under edge of the coin. The movement of the handle to its extreme downward position will bring the coin in contact with the upper end of the fixed arm *c*. At the same time the roller *h* will be carried off of the cam-face *j* over onto the cam-face *i*, and, as above set forth, the spring-cam will exert a forward pressure upon the roller, forcing the carrier-frame over with a quick throw and dislodging the coin from beneath the projections W and X. The carrier-frame O is provided on that side next to the coin-chute F with a projecting stud or pin *d*, the relation of the parts in their normal condition being indicated in Fig. 4—that is to say, said pin *d* is not in contact with the rear face of the coin-chute when the machine is being operated and the parts carried forward. Immediately, however, to dislodge the coin the cam-plate *k* will force the carrier-frame forward independent of the shaft and parts connected therewith to a po-

sition where said pin comes in contact with said coin-chute. Movement of the carrier-frame will then of course be arrested. This free forward movement of the frame not only serves to fully dislodge the article being vended, but also brings the parts in such relation that the fixed clearer-arm *c* passes up through the opening *T* and dislodges the coin from between the bosses or projections *W*. The downward movement of the handle and the forward movement of the carrier-frame will of necessity put spring *g* under tension; but inasmuch as the shaft is limited in its movement by the handle coming in contact with the lower end of slot *H* the carrier-frame is forced forward by the cam-plate *k*, independent of the shaft, a greater distance, dislodging the coin, as above stated. The machine of course cannot be operated until the parts are returned to their normal position. The spring *g*, acting upon shaft *D* through arm *f*, serves to draw the parts back as soon as the handle is released, the coin-chute striking against pin *d* and forcing the carrier-frame back against the action of the spring-actuated cam *k*, the spring *g* of course being of such strength as to overcome the action of the cam-face *i* upon the roller, which would tend to hold the carrier-frame in its forward position.

In Figs. 3 and 6 the operation and relation of the magnet are shown in connection with a disk of magnetic material. If such a disk be passed through the coin-slot, it will roll down the coin-chute over onto the face *R* of the carrier-frame and be caught and held by the magnet, the poles of which, as shown, are in line with said coinway or chute. The relation of such a magnetic disk to the parts is shown in full lines in Fig. 6, and it will be noted that said disk does not and cannot pass down in between the projections *W* and *X*, and thus be in a position to lock the parts together and render the operation of the machine possible. A downward movement of the handle will rotate the shaft, and the pin *N*, acting on the under face of the magnet, will elevate the poles thereof, lifting the magnetic disk. The cam *M* at the same time acts upon the arm or lever *b*, forcing the same upward and outward relative to the face *R* of the carrier-frame. This movement will elevate the disk, and when elevated to such an extent as to be entirely clear of any possible engagement with the projections will be forced off of the magnet by the arm or lever *b* and drop down out of the way of the operating mechanism.

It is of course possible that a metallic disk may be inserted into the machine which will be attracted by the magnet and yet be forced down into a position from without between the projections *W* and *X*, and if it should remain there would operate the machine. This, however, is precluded by the operation of the mechanism, the magnet drawing the disk upward and the arm *b* bearing against its rear

face and forcing the same off of the carrier-frame. In some instances the relation of the magnetic disk may be such that the wings *L* will be brought into action to fully dislodge the disk.

In Fig. 7 I have illustrated the relation of the parts with reference to a washer which has been inserted into the machine. The slightest movement of the handle *H* will elevate the arm *b*, and its forward end will enter the opening in the washer, carrying the same up and out between the projections, elevating the same clear thereof, when the wings *L* will come into play and strike the washer off of the end of said arm. The wings *L* prevent any washer being wedged upon the arms. Immediately the handle is released spring *g* will return the parts to the position to receive another coin or disk, as the case may be.

In Fig. 8 the operation of the mechanism with a flexible disk is shown. It is often the case that disks of papier-mâché, lead, and the like are inserted into machines of this class. Said devices can of course be readily made or procured and are favorite substitutes for the proper coin or token. Assuming that such a disk be inserted in the machine, it will pass down on the face of the carrier-frame into operative position between the projections *W* and *X*. Immediately the handle is depressed arm *b* is elevated, and its free end bearing against the central rear side of the flexible disk will bow the same, as indicated. The disk, bearing against the rounded faces of the projections *W* at two points and being forced forward from the rear at a point intermediate its bearings upon the projection *W*, will be readily flexed and discharged from the carrier-frame. As above noted, the arm *b* has an upward and a forward movement relative to the face of the carrier-frame when said frame is stationary, and the comparatively sharp point of the arm *b* will take hold of the flexible disk and while bowing the same will also elevate it, thus causing it to ride over the projections, the combined action serving to more readily dislodge it.

If a glass disk be inserted, it will be broken by the pressure exerted upon it by the arm *b* and will of necessity fail to operate the machine.

It will be found that any disk not possessing sufficient stiffness will fail to operate the machine. This is true of the disks above enumerated and also of disks formed of comparatively soft metal, such as aluminium and the like.

The operation of the parts is so arranged and timed that the magnet operates in advance of the elevation of the lifter-arm *b*, so that a magnetic disk which may be placed in the machine will first be lifted and then thrown off by the magnets.

It will also be noted that the stripper-wings *L* do not come into operation until after the lifter-arm has been elevated to quite an ex-

tent, so that in removing washers from the machine the washer will first be elevated and then removed.

With some disks of flexible or yielding material which remain flexed after being once bent by the elevating-arm *b* the clearer-wings *L* come into action and complete the dislodgment of the disk.

The material of which the machines are constructed must of course be taken into consideration with reference to the magnet *a*. The stripper-wings *L* and pin *N* must be of some non-magnetic material in order that the poles of the magnet may act upon a disk of magnetic material which is inserted into the machine. Shaft *D*, however, may be and is made of iron or other like magnetic material, and the poles of the magnet may rest thereon, so that it will act as a keeper for said magnet, and thus serve to prolong the life and strength of the magnet. So, too, the pin *N*, which serves to elevate the magnet, may be provided with a magnetic portion, which when the magnet is elevated to that position where the object should be released will come in contact with the magnet, short-circuiting the same, and thus weakening its power of holding attached objects and causing comparatively light bodies to drop off without the intervention or operation of any clearing-wings.

If a flat square piece of metal or glass be inserted into the machine, it will assume a relation or position shown in dotted lines in Fig. 1 and not fall or drop down into operative position between the projections *W* and *X*. This is due to the inclination of the coin-runway and also to the increased height of the wing *V* upon that side of the carrier-frame opposite the coin-chute. A movement of the handle will cause the coin-chute to throw the disk off.

If, for instance, a coin with a string be inserted through the coinway or slot into the machine, the string will be severed by the edge of the slot *J* passing the edge of the coin-slot, or by reason of the inclined form given to the lower wall of the coinway the string will be thrown to one side.

Any paper which may be forced into the narrow slot *E* will be dislodged therefrom by the coin next placed in the machine by reason of the curvature given to the enlarged opening *K* and the inclination or beveled formation of the lower wall of the coin chute or runway, the paper having a chance to expand, and thus free itself.

The construction of the machine is and should be such that the plates *V* will be properly supported and rigidly held in place with relation to each other, in order that the projections *X* will always bear the same relation to each other and properly gage the coins which are inserted into the machine.

With the construction shown the carrier frame or ejector may be used with different-sized compartments or chutes *B* without any variation of the mechanism, so long as the

projections *Q* pass beneath said chute in line with the material or article to be vended.

Having thus described my invention, what I claim is—

1. In a vending-machine, the combination of a frame or casing having a coin-slot formed therein; a coin-holder; and a coinway intermediate said slot and holder, said way inclining downward and backward, its lower side being narrow at that end next to the slot and widening as it approaches the coin-holder.

2. In a vending-machine, the combination of a frame or casing having a coin-slot formed therein; a rotary disk carrying a coinway normally in line with said slot; a slit or opening in said disk in line with the coin slot and way; and an enlarged opening *K* formed in said disk at the lower side of the coinway, substantially as and for the purpose described.

3. In a vending-machine, the combination of a frame or casing; a coin-slot formed therein; a rotary disk; a slit formed in said disk in line with the coin-slot; a coinway carried by said disk, its lower side widening as it extends from the disk; and an enlarged opening *K* formed in the disk at the lower side of the coinway.

4. In a vending-machine, the combination of a frame or casing; operative mechanism; a coin-holder designed to hold the coin in position to lock the parts together; a pivoted magnet working in conjunction therewith; and means for moving the magnet past the coin-holder and thereby removing any magnetic material therefrom, substantially as described.

5. In a vending-machine, the combination of operating means; a coin-holder designed to hold the coin in position to lock the parts together; a pivoted magnet; and means for rocking the magnet upon its pivot, whereby upon an attempted operation of the machine any magnetic material which may be deposited in the holder will be removed therefrom, substantially as described.

6. In a vending-machine, the combination of operating means; a coin-holder designed to hold the coin in position to lock the parts together; a pivoted magnet working in conjunction therewith, the poles of which lie in close proximity to said holder; and means for rocking the magnet upon its pivot.

7. In a vending-machine, the combination of operating means; a coin-holder designed to hold the coin in position to lock the parts together; a pivoted magnet, the poles of which work in close proximity to said holder; a clearer for said magnet; and means for moving the magnet and clearer.

8. In a vending-machine, the combination of operating means; a coin-holder designed to hold the coin in position to lock the parts together; a pivoted magnet working in proximity to said holder; and means for connecting the poles of said magnet by a magnetic material when the machine is not in operation.

9. In a vending-machine, the combination

of operating means; a coin-holder; a pivoted magnet; means for connecting the poles of said magnet by a magnetic material when the machine is not in operation; and means for short-circuiting the magnet when raised approximately to its extreme position.

10. In a vending-machine, the combination of operating means; a coin-holder; a pivoted magnet; and means for connecting the poles of the magnet while the machine is at rest, breaking said connection as the magnet is moved, and short-circuiting the poles as the magnet nears its limit of movement.

11. In a vending-machine, the combination of operating means; a coin-holder designed to hold the coin in position to lock the parts together; a pivoted magnet; and means for short-circuiting the poles of the magnet as it nears its limit of motion.

12. In a vending-machine, the combination of operating means; a coin-holder designed to hold the coin in position to lock the parts together; a pivoted magnet, the poles of which move in proximity to the face of the holder; a pivoted arm, the outer end of which is free to be moved up between the poles of the magnet; and means for moving said parts.

13. In a vending-machine, the combination of operating means; a coin-holder; a pivoted magnet, the poles of which move in proximity to the face of the holder; a pivoted arm, the free end of which moves up between the poles of the magnet; and means for successively elevating the magnet and the arm.

14. In a vending-machine, the combination of operating means; a coin-holder; a pivoted magnet, the poles of which move in proximity to the coin-holder; a pivoted arm, the free end of which moves between the poles of the magnet; clearing-wings also working between the magnet-poles; and means for moving said parts successively.

15. In a vending-machine, the combination of operating means; a coin-holder; a pivoted arm normally in rear of said holder; and means for imparting a forward and upward motion to the free end of said arm at the beginning of the movement of the operating means.

16. In a vending-machine, the combination of operating means; a coin-holder; a pivoted washer catcher-arm normally in rear of said holder; a clearer for said arm; and means for imparting a forward and upward movement to said arm, and advancing said clearer as the arm nears its limit of movement.

17. In a vending-machine, the combination of an operating-shaft; a coin-holder journaled thereon; a pivoted arm normally in rear of said holder; and means for imparting an upward motion to the free end of said arm past the coin-holder.

18. In a vending-machine, the combination of an operating-shaft; a coin-holder journaled thereon; a pivoted arm normally in rear of said holder; and means operated by the shaft for elevating the free end of said arm and

causing it to pass in between the coin-supporting members of the coin-holder, whereby upon the depositing of a proper coin within the holder, the end of the arm will bear against the coin and lock the parts together.

19. In a vending-machine, the combination of operating means; a coin-holder comprising a plate; wings extending up at each side thereof; rounded projections extending in from each wing over the plate; and projections X also extending in from the wings, intermediate the rounded projections and the plate.

20. In a vending-machine, the combination of operating means; a coin-holder comprising a plate; wings extending from said plate up at each side thereof; rounded projections extending in from each wing over the plate; and gages of a height less than the height of the rounded projections intermediate said projections and the plate.

21. In a vending-machine, the combination of a shaft; means for oscillating the same; an ejector-frame journaled upon the shaft; a coin-holder carried by the frame; an arm pivoted in the frame its free end lying in rear of the coin-holder; and a cam carried by the shaft acting on said arm to force the same forward.

22. In a vending-machine, the combination of a shaft; means for oscillating the same; an ejector-frame journaled thereon; means for locking said frame and shaft together by a deposited coin; and means for imparting an independent forward movement to the frame after the shaft has reached its limit of forward movement.

23. In a vending-machine, the combination of a shaft; means for oscillating the same; a spring for normally holding the shaft and its attendant mechanism in one position; an ejector-frame journaled upon the shaft; means for locking the same together by a deposited coin; and means for imparting an independent forward movement to the frame after the shaft has reached its limit of forward movement.

24. In a vending-machine, the combination of a shaft; means for oscillating the same; a spring connected with said shaft working in opposition to its forward movement; an ejector-frame journaled upon the shaft and designed to be locked thereto by a deposited coin; a roller carried by the rear of the frame; and a spring-actuated cam-plate acting on the roller to first retard the forward movement of the frame and then to impart a sudden forward impulse to the same as it nears its limit of forward motion.

25. In a vending-machine, the combination of a shaft; means for oscillating the same; an ejector-frame journaled thereon; a coin-holder carried by the frame; an opening T extending lengthwise of the face of the frame below and intermediate the coin-holder; openings U to each side of the opening T and above the coin-holder; a magnet pivoted in the frame and having its poles extending into the open-

ings U; an arm *b* likewise pivoted in the frame and extending downwardly and forwardly into the opening T; a cam carried by the shaft for elevating said arm; and means also carried by the shaft for elevating the magnet.

26. In a vending-machine, the combination of a shaft; means for oscillating the same; an ejector-frame journaled thereon; a coin-holder carried by said ejector-frame; an opening T formed in the face of the frame and extending lengthwise thereof; openings U also formed in the face of the frame and being located at a point above the coin-holder and at each side of the opening T; a magnet pivoted in the holder, the poles of which extend into the openings U; an arm *b* likewise pivoted in the frame extending forwardly and downwardly into the opening T; wings L carried by the shaft; a cam intermediate said wings and designed to act upon the arm *b*; and a

pin carried by the wings designed to elevate the magnet, the parts being so arranged that as the shaft is oscillated the magnet will first be raised, the arm then raised, and the wings L projected through the opening T, substantially as and for the purpose described.

27. In a vending-machine, the combination of a frame or casing; a coin-slot formed therein; an ejector-frame; a rib *m* carried upon one side thereof; and a coinway or chute intermediate said coin slot and carrier, said coinway being provided with a recess or opening designed to receive the rib, substantially as and for the purpose described.

In witness whereof I hereunto set my hand in the presence of two witnesses.

JOHN A. WILLIAMS.

Witnesses:

H. RAWLEY, Jr.,

EDW. B. VANDERVEER.