



No. 876,284.

PATENTED JAN. 7, 1908.

W. ROHDE.  
VENDING MACHINE.

APPLICATION FILED AUG. 20, 1906.

2 SHEETS—SHEET 2.

Fig. 4

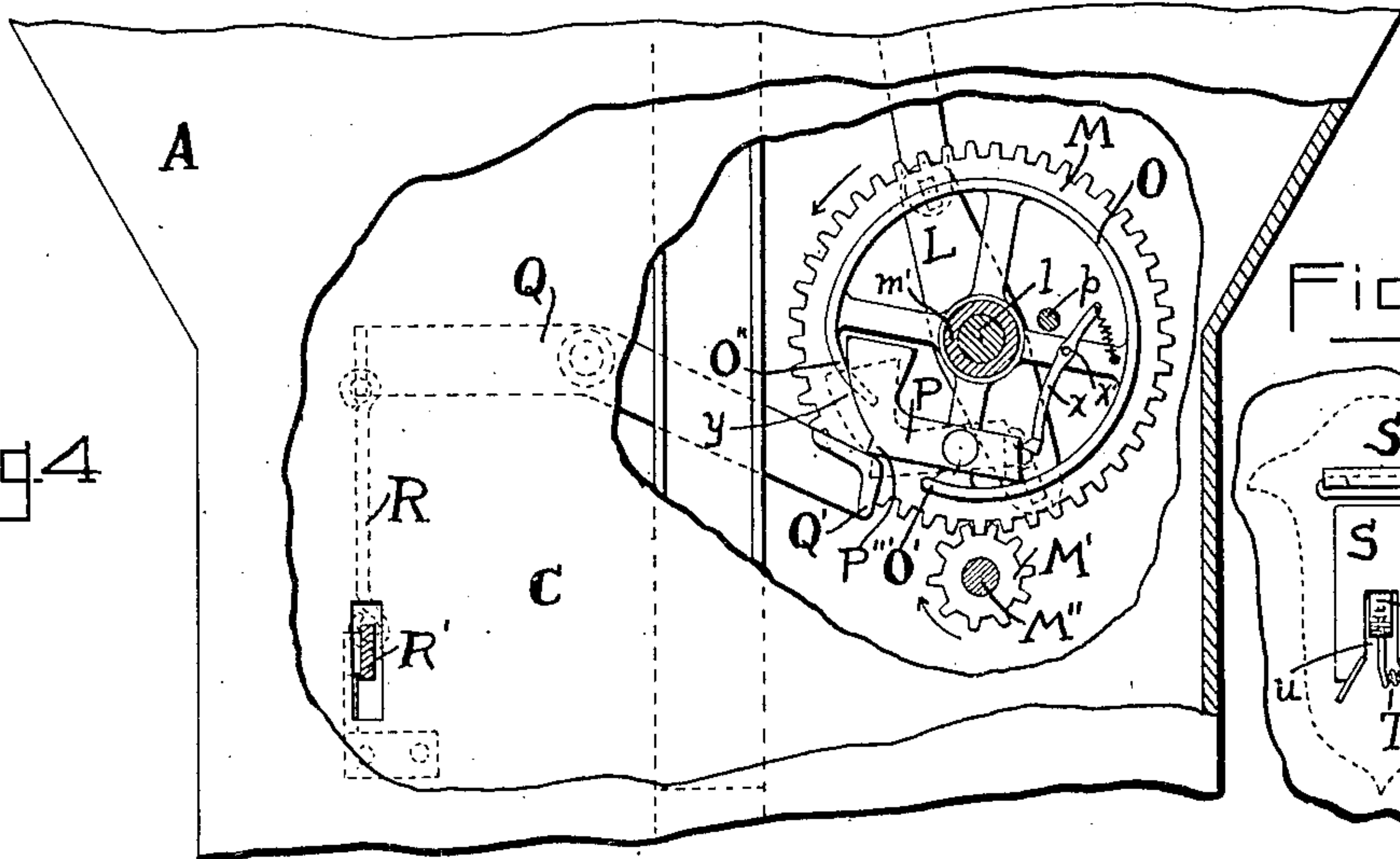


Fig. 8

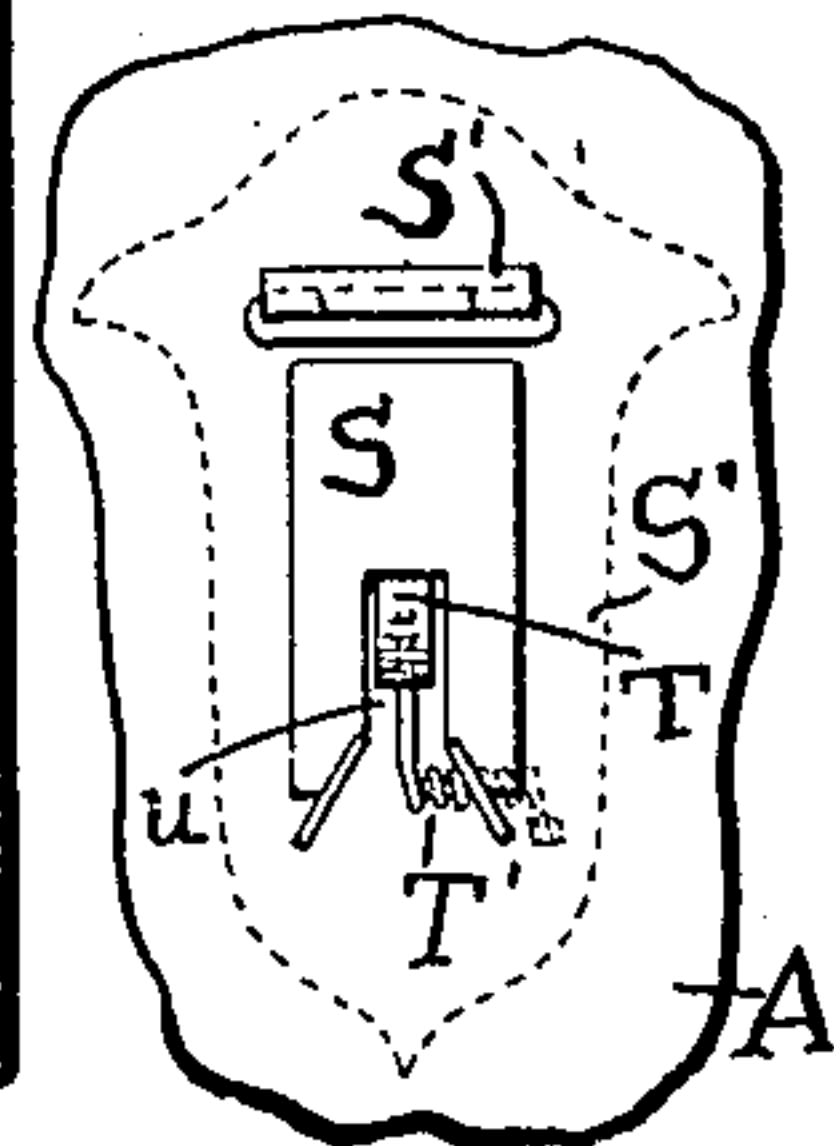


Fig. 5

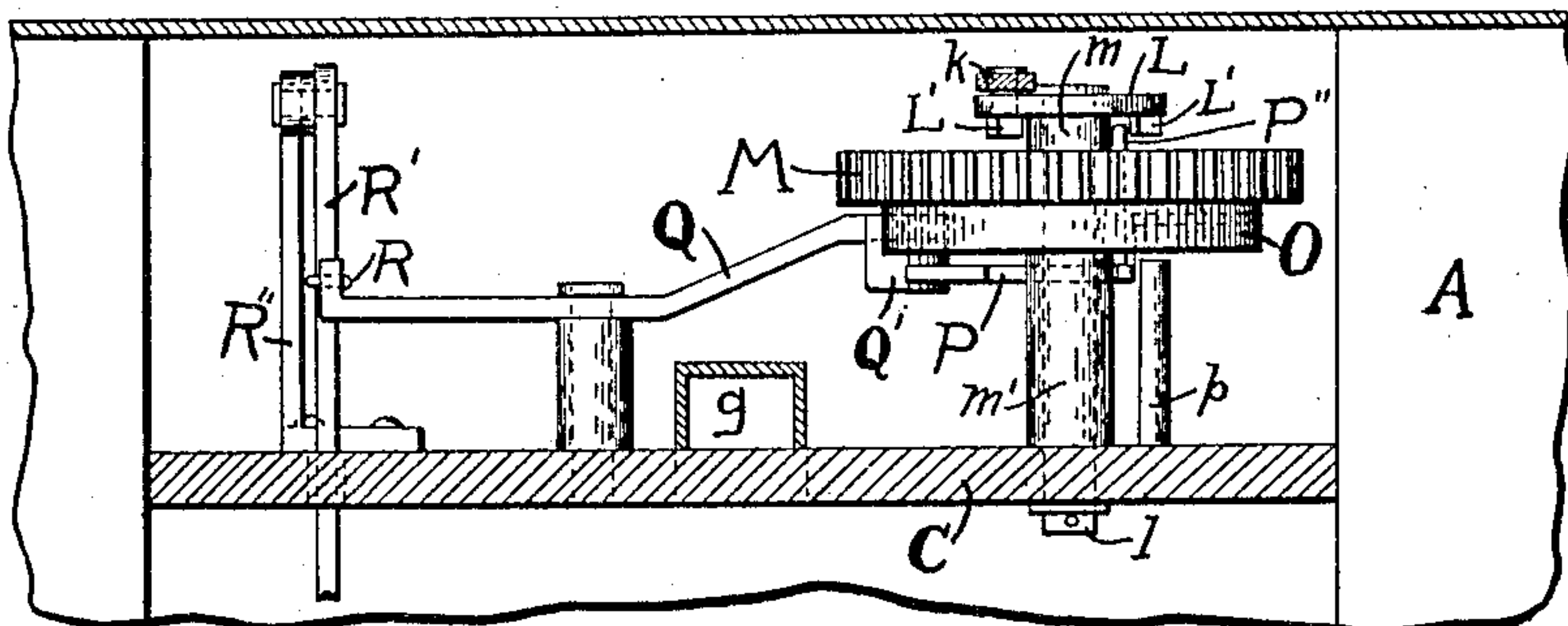


Fig. 7

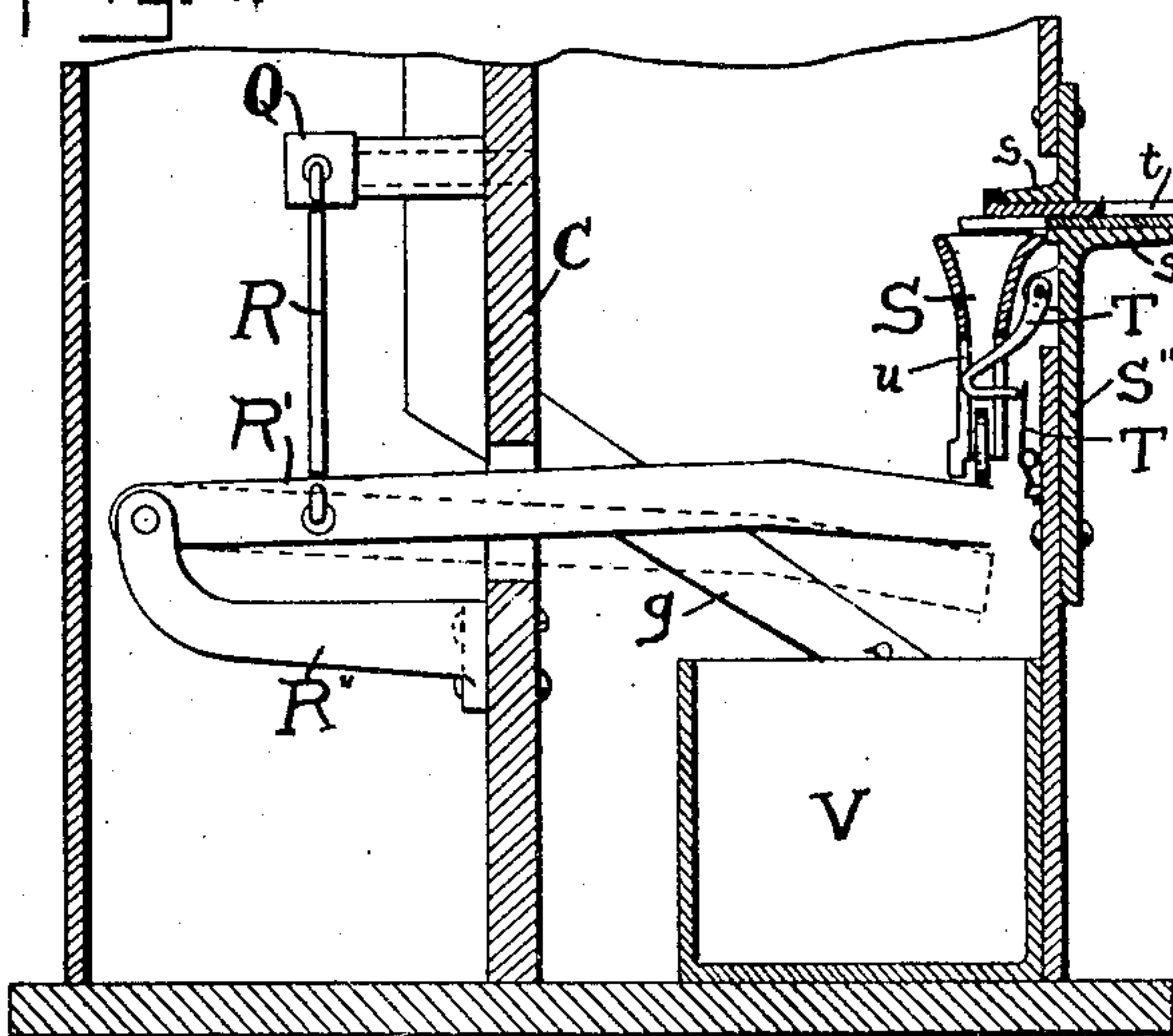
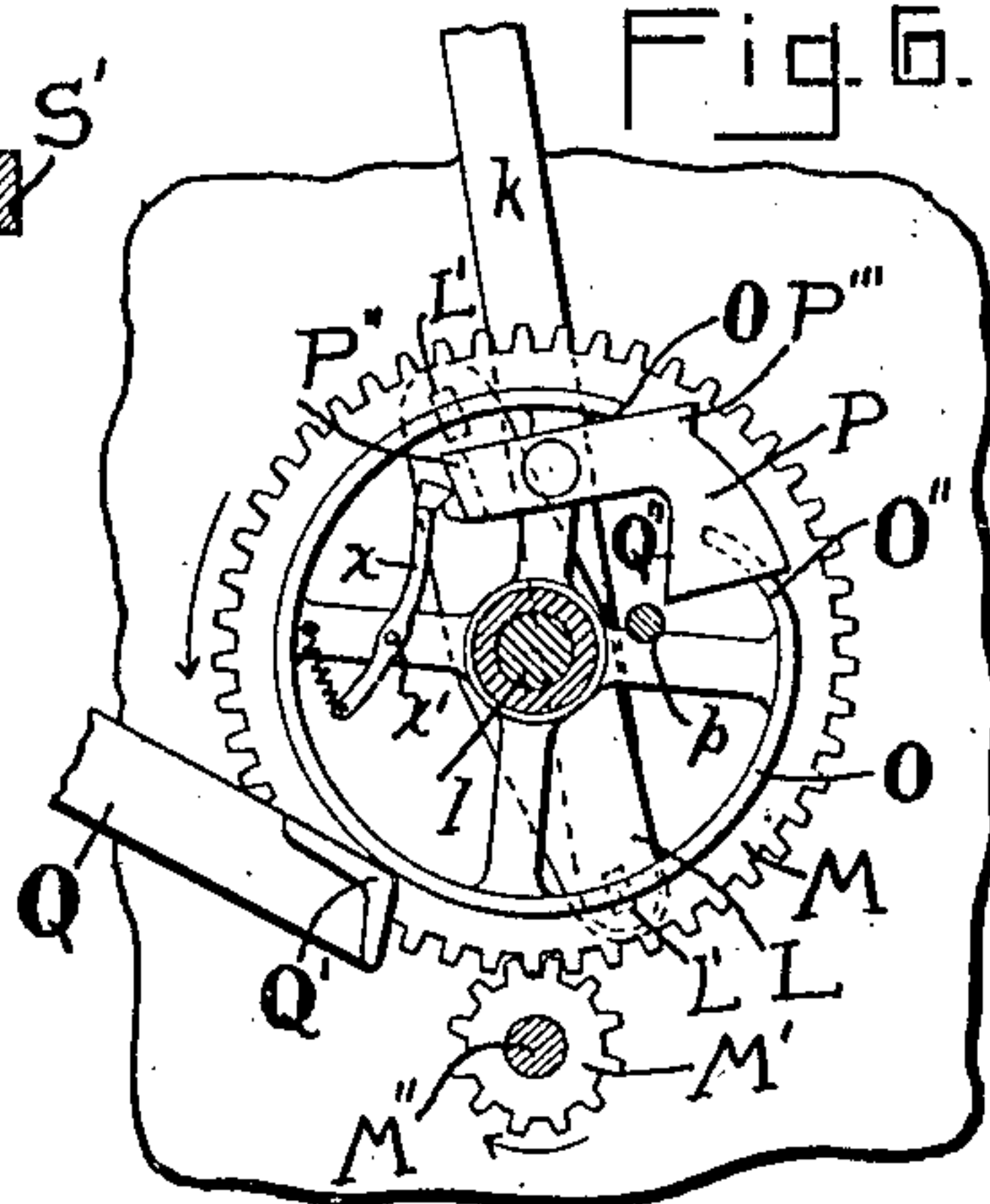


Fig. 6



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# UNITED STATES PATENT OFFICE.

WILLIAM ROHDE, OF CINCINNATI, OHIO.

## VENDING-MACHINE.

No. 876,284.

Specification of Letters Patent.

Patented Jan. 7, 1908.

Application filed August 20, 1906. Serial No. 331,315.

*To all whom it may concern:*

Be it known that I, WILLIAM ROHDE, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented a certain new and useful Improvement in Vending-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of my specification.

My invention relates to a vending machine, and more particularly to the mechanism for operating the same. Its object is to produce such a mechanism of simple and compact construction, and of such few parts as to reduce the likelihood of the machine getting out of order,—all the parts being so arranged that they may readily be gotten out for repairs or cleaning.

In the drawings:—Figure 1 is a front elevation of the vending machine provided with my improved mechanism; Fig. 2 is a vertical section of Fig. 1, on the line 2—2; Fig. 3 is a rear view showing the mechanism in elevation, the back of the case being removed for this purpose; Fig. 4 is a front view on an enlarged scale of a part of the case, broken away to show the internal mechanism; Fig. 5 is a top view of the mechanism shown in Fig. 4; Fig. 6 is a view of part of the mechanism shown in Fig. 4, but in an inoperative position; Fig. 7 is a partial vertical section on the line 7—7 of Fig. 1 on an enlarged scale; and Fig. 8 is a rear view of the coin chute.

In the drawings, A is the case, A' the sub-reservoir supplied by a chute A'' from an upper reservoir B with the articles to be vended. This sub-reservoir is semi-circular. C is a board fitting within the casing back of the sub-reservoir, said board forming a rear wall of the said sub-reservoir. G, G are openings in said board leading to branches G' G' of a chute G'' which leads down near an opening in the bottom of the board C to the spout g which empties into a saucer g', said saucer being in an opening in the front face of the case.

Journaled in the board C at the center of the circle of which the sides and bottom of the chamber A' form an arc, is a short trunnion I, with an arm I', made integral or secured to it, and having right and left branches I'' which engage closely against the face of the board C. The ends of the branches I'' are provided with scoops J, J, which are adapted, as the arm I' is oscillated

to the right or the left, to come into a position registering with the openings G, G. The arm I, with its branches I'' and the scoops J have together somewhat the shape of an anchor. The scoops J, J, are preferably detachably secured to the branches so that scoops of various sizes may be used.

On the rear face of the board C, at the opposite end of the trunnion I is secured a bell-crank-lever K, one end of which is provided with a counter-weight K', and the other end of which is pivoted to a link k. The normal positions of the counter-weight K', and the anchor-shaped arm I' are as indicated in Figs. 1 and 3, with a scoop J in a position to empty at one of the openings G.

The mechanism that is now to be described has for its object, the rotation of the trunnion I after the insertion of a coin, in one direction, so as to cause one of the scoops J to travel up to a position registering with the corresponding opening G; then after the insertion of another coin, to cause the trunnion I to rotate in the opposite direction and raise the other scoop J into a position where it will register with the other opening G. In addition, this mechanism is so arranged that it will not operate except upon the insertion of a suitable coin, or check, and there can be but one operation for each coin or check.

L is an arm (see Figs. 4, 5 and 6) having a trunnion l which is journaled in the board C at a point below the link end of the bell-crank-lever K. The trunnion l is secured in place in any convenient manner, as for example by a cotter-pin.

M is a gear-wheel which is journaled on the trunnion l, being suitably separated from the arm L and the board C by means of short hubs m, m'. Immediately below said cog-wheel M is a small pinion M' keyed to a shaft M'' which passes through the board C and through the front wall A'' of the case A, in both of which it is provided with suitable bearings. A crank N is secured to its outer end (see Figs. 1 and 2). It is apparent that the turning of the crank N will cause the rotation of the pinion M' and with it the gear-wheel M. The arm L is provided with lugs L' at each end, as indicated in Figs. 2 and 5. One end of the link k is pivotally connected to one end of the arm L.

The face of the gear M, on the side next to the board C, is provided with a guide flange O of a slightly less diameter than the diameter of the gear wheel. This guide flange is



circular but is cut away at O' (see Fig. 4), and the other end of it slightly bent in as at O''. Near the end O' is pivoted to the inner face of the gear-wheel a pawl P of peculiar shape 5 shown in Figs. 4 and 5. A spring-controlled catch  $x$  pivoted to a spoke of the gear wheel at  $x'$  tends to hold this pawl in fixed position. The end of said pawl has a lug P'' which projects through the opening between the 10 spokes of the gear-wheel M into the course of travel of the lugs L', L', on the arm L.

Q is a bell-crank-lever pivoted to the rear of the board C having one end provided with a lug Q' adapted to bear against the flange O 15 of the gear-wheel M as said gear-wheel is rotated, and also adapted to engage a heel P''' of the pawl P when the rotation of the gear-wheel has brought it into its neighborhood. The other end of the lever Q has 20 loosely pivoted to it a link R whose other end is pivoted to a cantaliver R' whose end is fulcrumed in a bracket R'', which is supported on the board C (see Figs. 3, 5 and 7). The opposite end of the lever R' projects 25 forward so as to normally rest below the coin-chute S. The coin-chute S comprises a flat rectangular chute, wide enough to permit a coin of the desired size to slide through it, and having a flared mouth at the upper end 30 so as to insure the coin falling into it. At the upper end of this is located a slide S', the same resting on shoulders  $s, s$  on a bracket S'' which supports the coin-chute and by means of which it is attached to the front face of the 35 case A. The slide has an opening  $t$  which will just hold the desired coin. Upon pushing the slide inwards, the coin is carried with the slide, and when the hole  $t$  comes above the mouth of the coin-chute S, the coin falls 40 through the hole  $t$  and slips past a small pivoted lever T which is normally held in the road of the coin by means of a spring T'. The shape of this lever and the intensity of the spring is such, that the coin will readily 45 drop through the chute, but cannot be pushed back.

As before stated, the end of the lever R' projects below the lower opening of the coin-chute S, and when the coin is dropped in the 50 machine it is caught by the end of said lever (see Fig. 7). The rotation of the gear M by means of the crank N, brings the heel P''' of the dog P once in each revolution against the lug Q' at the end of the lever Q. This de- 55 presses that end of the lever and raises the other, which of course raises also the end of the lever R' which projects under the coin-chute. The coin-chute is provided with a vertical slot  $u$  in its front and rear walls in 60 order to permit the end of the lever R to oscillate up and down as the crank is turned. However, when the coin is caught by the end of the lever R', the next time the rotation of the gear M brings the heel P'' of the dog 65 P into engagement with the lug Q' on the

end of the lever Q, the lever R' again at- tempts to rise, but its movement is inter- fered with and limited by reason of the fact that the upper edge of the coin is brought into engagement with the lower side of the 70 lever T in the coin-chute (see Fig. 7). This immediately fixes the position of the lug Q' on the lever Q, thereby causing the pawl P to be rotated towards the center of the gear-wheel (see Fig. 4). This rotation forces the 75 lug P'' outwardly so as to bring it into a position to engage one of the lugs L' on the arm L, the gear-wheel M thereby carrying the arm L with it in its rotation. Such movement of the arm L operates the link  $k$ , 80 and thus rotates the trunnion I and causes the arm I' to move one of the scoops J up into a position registering with an opening G, carrying with it as it does so, any candy 85 or other articles that it may have scooped up. At this point a suitably placed stop  $p$  engages the inner face Q'' of the pawl P, and forces it out again (see Fig. 6), thus releasing the lug P'' from its engagement with the lug 90 L'. The other scoop is now in position to gather up candy and upon the insertion of the next coin and the operation of the machine, it will be brought up so as to empty its contents at its corresponding opening G.

Immediately after the lug Q' on the end 95 of the lever Q has forced the pawl P from its normal position as indicated in dotted lines into the position indicated in full lines in Fig. 4, the weight of the parts causes the end of the lever Q to slide into the depression 100 between the outer edge of the pawl and the bent portion O'' of the flange O indicated at  $y$  in that figure, which allows the end of the lever R' to drop low enough to permit the coin to slide off into the coin receptacle V. 105 This consists of a drawer suitably located below the coin chute and properly arranged so as to be drawn out or pushed in and locked in place.

Although the construction of any machine 110 of this class would appear more or less complicated to the uninitiated, to those familiar with the art, it is apparent that the mechanism controlling the operation of my machine is simple, and has comparatively few parts, 115 and these parts are arranged in such manner that they may be readily gotten out at any time for cleaning or repairs. At the same time, the operation is definite and positive, and so arranged that there can be by no pos- 120 sibility more than one operation for each coin.

Having thus described my invention, what I desire to claim as new, and to cover by Letters Patent, is:— 125

1. In a coin operated mechanism and in combination, a coin-chute, an oscillating lever below said coin-chute, a spring controlled catch in said coin-chute movable in one direction but fixed in the opposite direc- 130



tion, the distance between said lever and said catch when nearest together being less than the diameter of the coin to be used in the machine, a crank operated from the outside of the machine, mechanism intermediate said crank and said lever including means whereby said crank is thrown into operative connection with the element ultimately to be actuated upon the interference of a coin between said catch and said lever, substantially as described.

2. In a coin controlled apparatus, an element to be actuated, a manually operated element, and means interposed between the two for imparting movement to the first element upon the operation of the second element, said interposed means comprising two rotatable elements normally disconnected, one of the rotatable elements being actuated upon the operation of the manually operated element, a coupling member movable with the latter rotatable element, an abutment shifted into the path of the coupling member upon the insertion of a check whereby said member is shifted to couple the two rotatable elements to each other and means co-acting with the check after the insertion of the same for locking the abutment against movement until the coupling member is actuated, substantially as described.

3. In a check controlled apparatus, and in combination, an element to be actuated, a handle manually operated, an interposed mechanism for actuating the said element from the handle on the insertion of a check comprising, a rotatable arm, movement transmitting means interposed between the same and said element, a rotatable wheel normally disengaged from the arm, movement transmitting means interposed between the wheel and handle for positively rotating the same when the handle is actuated, a coin chute, a lever having one end in register therewith and designed to be depressed by a check or coin inserted in the chute, a second lever carrying an abutment, a connection between the levers whereby when the first lever is depressed by the check the abutment will be thrown upwardly, a stop surface for the abutment carried by the wheel and having an interrupted portion, and a coupling member carried by the wheel having a part designed to engage the arm and a part to be operated by the abutment located at said interrupted portion of the stop surface, the latter part of the coupling member engaging the abutment, when in its raised position, during the rotation of the wheel whereby the coupling member is shifted to engage the arm to couple the same to the wheel, substantially as described.

4. In a check controlled apparatus, and in combination, an element to be actuated, a handle manually operated, an interposed mechanism for actuating the said element

from the handle on the insertion of a check comprising, a rotatable arm, movement transmitting means interposed between the same and said element, a rotatable wheel normally disengaged from the arm, movement transmitting means interposed between the wheel and handle positively rotating the same when the handle is actuated, a coin chute, a lever having one end in register therewith and designed to be depressed by a check or coin inserted in the chute, a second lever carrying an abutment, a connection between the levers whereby, when the first lever is depressed by the check, the abutment will be thrown upwardly, a stop surface for the abutment carried by the wheel and having an interrupted portion, and a coupling member carried by the wheel having a part designed to engage the arm and a part to be operated by the abutment located at said interrupted portion of the stop surface, the latter part of the coupling member engaging the abutment when in its raised position during the rotation of the wheel whereby the coupling member is shifted to engage the arm to couple the same to the wheel, said abutment moving into the interrupted part of the stop surface after actuating the coupling member whereby the first named lever is permitted to fall and discharge the coin, substantially as described.

5. In a check controlled apparatus, an element to be operated, a handle manually operated, an interposed mechanism for operating the former from the latter upon the insertion of a check comprising, a coin chute, a rotatable wheel geared to the handle, an arm connected to the element to be actuated and normally disconnected from the wheel, a member for coupling the wheel to the arm, an abutment for shifting the coupling member during the rotation of the wheel for engaging the same with the arm whereby the wheel and arm are coupled to each other, a lever co-acting with the coin chute and connected to the abutment to shift the abutment when the lever is shifted by the weight of a check inserted in the coin-chute, the end of the lever and chute being so relatively arranged that the check will be held in the chute until the lever reaches the limit of its downward movement, a stop surface on the wheel co-acting with the abutment for preventing the lever moving to the limit of its downward movement upon the initial insertion of a check, said surface having an interrupted portion and said coupling member having a part to be actuated by the abutment located at said interrupted part whereby on the insertion of a check the latter will depress the lever until the abutment is thrown against the stop surface and said lever will be held up to retain the check in the chute until by the rotation of the wheel the coupling member is brought into co-action with



the abutment and is actuated thereby and the interrupted part of the stop surface is brought into register with the abutment whereby the latter continues its upward movement under the weight of the check and the lever is permitted to fall to the limit of its downward movement and release the check from the coin chute, substantially as described.

6. In a check controlled apparatus, an element to be operated, a handle manually operated, an interposed mechanism for operating the former from the latter upon the insertion of a check comprising, a coin-chute, a rotatable wheel geared to the handle, an arm connected to the element to be actuated and normally disconnected from the wheel, a member for coupling the wheel to the arm, an abutment for shifting the coupling member during the rotation of the wheel for engaging the same with the arm whereby the wheel and arm are coupled to each other, a lever co-acting with the coin chute and connected to the abutment to shift the abutment when the lever is shifted by the weight of a check inserted in the coin chute, the end of the lever and chute being so relatively arranged that the check will be held in the chute until the lever reaches the limit of its downward movement, a stop surface on the wheel co-acting with the abutment for preventing the lever moving to the limit of its downward movement upon the initial insertion of a check, said surface having an interrupted portion and said coupling member having a part to be actuated by the abutment located at said interrupted part whereby on the insertion of a check the latter will depress the lever until the abutment is thrown against the stop surface and said lever will be held up to retain the check in the chute until by the rotation of the wheel the coupling member is brought into co-action with the abutment and is actuated thereby and the interrupted part of the stop surface is brought into register with the abutment whereby the latter continues its upward movement under the weight of the check and the lever is permitted to fall to the limit of its downward movement and release the check from the coin chute, and an abutment associated with the coin chute co-acting with the check for locking the abutment in its raised position until the check is discharged from the chute, substantially as described.

7. In a check controlled apparatus and in combination, an element to be actuated, a manually operated shaft carrying a pinion, and coin controlled means interposed between the pinion and first named element for operating the latter when the pinion is

rotated comprising, a gear wheel meshing with the pinion, a rotatable arm journaled concentric with the gear wheel normally disconnected therefrom, and permanently connected by transmitting mechanism to the element to be actuated, a coupling pawl carried by the gear wheel having its coupling part normally disengaged from the arm, a flange on the gear wheel forming a stop surface and having an interrupted part through which the heel of the pawl normally projects, a lever carrying an abutment, a coin chute, a second lever pivotally mounted at one end having its opposite end in register with the coin chute, a link connection between the intermediate part of said lever and the end of the first named lever opposite the abutment whereby, when the end of the second lever is depressed by the check the abutment will be thrown up against said flange to arrest the movement of the first named lever for retaining the check in the coin chute, a stop associated with the coin chute co-acting with the check and preventing the upward movement of the first named lever and thereby locking the abutment in raised position whereby in the rotation of the geared wheel the heel of the pawl will be struck by said abutment and the said pawl shifted to engage the said arm, said abutment passing into the interrupted part of the stop flange upon the continued rotation of the geared wheel whereby the end of the second lever is free to drop to discharge the check, substantially as described.

8. In a coin controlled apparatus the combination with an element to be operated, a driven member connected thereto, a driving member normally disconnected from the driven member, manual means for operating the driving member, a coupling member, a check operated means for controlling the coupling member comprising, a coin chute, an oscillating lever having a part co-acting with the chute and designed to be depressed upon the insertion of a check within the chute, an abutment designed to engage the coupling member, a positive connection between the lever and abutment for raising the abutment as said end of the lever is lowered, and a spring controlled catch in the coin chute movable in a downward direction but immovable in an upward direction and co-acting with the coin while supported on said lever for preventing the upward movement thereof whereby the abutment is locked in operative position, substantially as described.

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