June 7, 1932. M. H. RICHARDSON 1,862,372

COIN CONTROLLED MECHANISM

Filed Nov. 4, 1929 2 Sheets-Sheet 1

Fig. 1

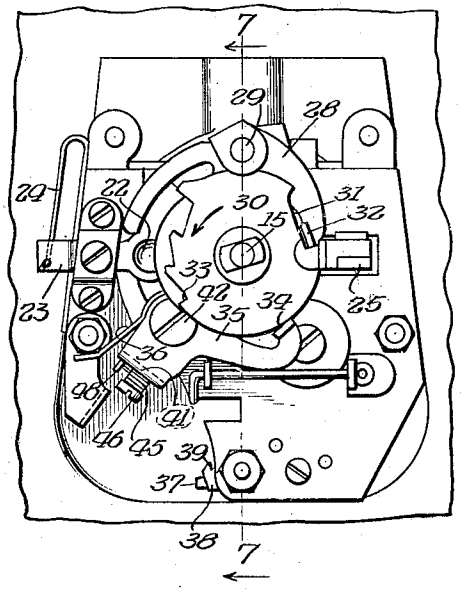


Fig. 2

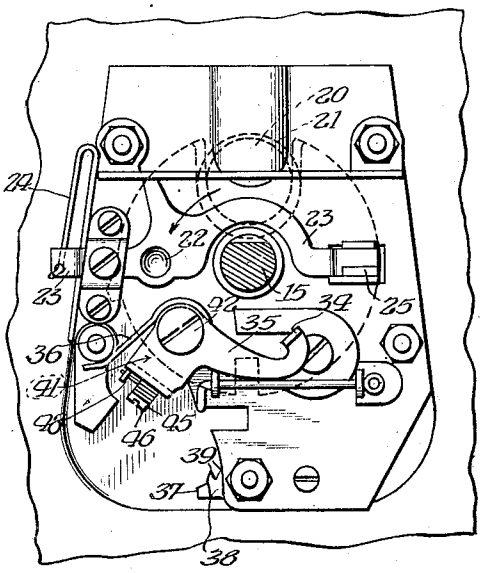


Fig. 3

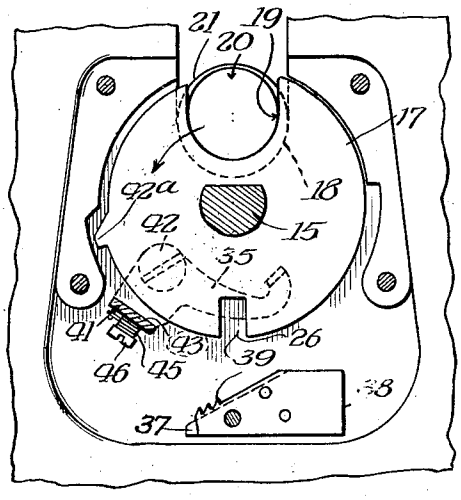
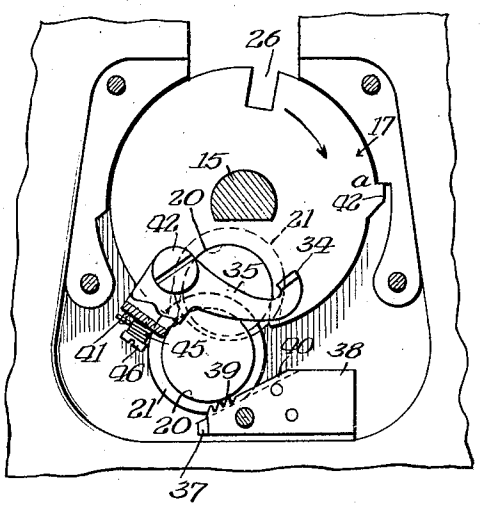


Fig. 4



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COIN CONTROLLED MECHANISM

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Fig. 5

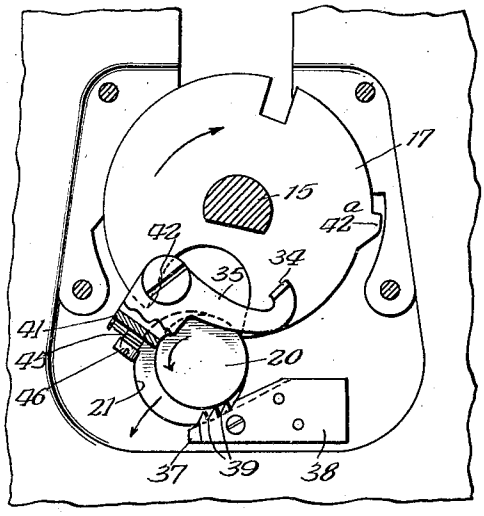


Fig. 6

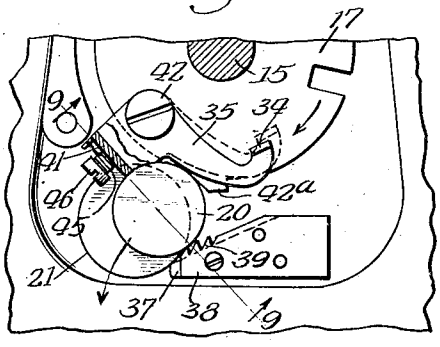


Fig. 7

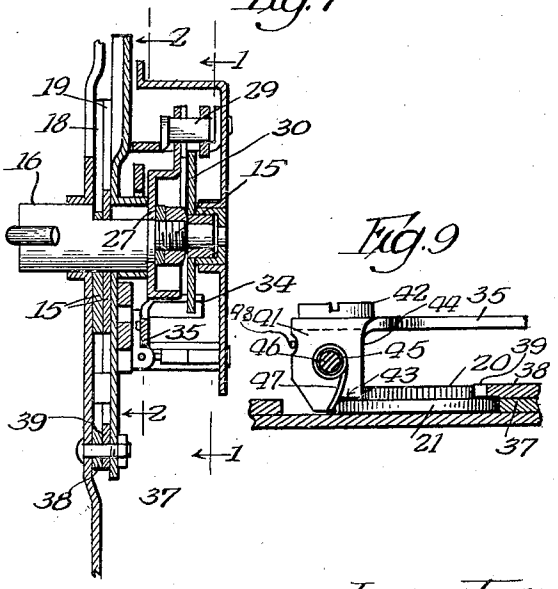


Fig. 8

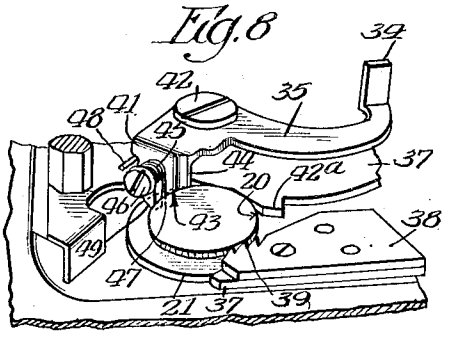


Fig. 9

Inventor:
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By
Atty.

Patented June 7, 1932 1,862,372

UNITED STATES PATENT OFFICE

MYRON H. RICHARDSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO ADVANCE MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS

COIN CONTROLLED MECHANISM

Application filed November 4, 1929. Serial No. 404,558.

This invention relates to improvements in coin controlled mechanism, and one of the objects of the same is to provide an improved device of this character which will receive a coin of a predetermined denomination and permit the same to move into an operative position with respect to the coin actuated mechanism, but which will arrest improper coins and prevent the same from actuating the mechanism.

Heretofore in machines of this character, and especially where the coin is advanced by a carrier and which coin, during a portion of the cycle of operation of the mechanism, is bodily moved over a support after it is wholly or partially delivered from the carrier, considerable difficulty and inconvenience is experienced, in that the mechanism may not be actuated even by the insertion of a proper coin, due in some instances to the fact that the coin may have a flat or worn portion in its peripheral edge, resulting in the positioning of the coin in such a manner that it will not have its full diameter properly arranged to actuate a member which forms with the coin support a space through which the coin must be passed.

It also sometimes happens that when the coin support is of a softer material than the coin, the constant sliding of the coins over such support causes the latter to wear, thereby increasing the coin passage space beyond the diameter of the proper coin, which is objectionable and not desirable.

It is one of the objects of the present invention to overcome these and many other serious objections and difficulties and to provide improved means for insuring and compelling the coin to roll over the support and rotate about its own axis during the time that it is passing through the coin space and actuating the trip or release mechanism, with the result that even if the proper coin is provided with a flat or worn space in its periphery, the releasing mechanism will be actuated by such a coin.

A further object is to provide in mechanism of this character means whereby the mechanism can be operated only by the insertion and joint operation of a predetermined plurality of coins of predetermined value, and improved means whereby when coins of different values or standards are to be employed the mechanism will be actuated only by the coin of the highest standard or value.

A further object is to provide improved mechanism of this character which is operable only by the combined thickness of all of the coins inserted.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings illustrating this invention and in which

Figure 1 is a rear elevation with parts omitted, of a coin controlled mechanism of this character constructed in accordance with the principles of this invention and as taken on line 1—1, Figure 7.

Figure 2 is a sectional view taken on line 2—2, Figure 7.

Figure 3 is a diagrammatic view of a portion of the mechanism showing the coin carrier, the releasing member to be actuated by the coin and the support for receiving the coin from the coin carrier.

Figure 4 is a view similar to Figure 3, showing the parts in a different position.

Figure 5 is a view similar to Figure 4, showing the parts in another position.

Figure 6 is a view of a portion of Figure 5, showing the parts in still another position.

Figure 7 is a sectional view taken on line 7—7, Figure 1.

Figure 8 is a detail perspective view of a portion of the coin actuating mechanism.

Figure 9 is a detail sectional view taken on line 9—9, Figure 6.

The present invention is shown in connection with the check controlled mechanism disclosed in the application of Alfred D. Antoine, Serial No. 210,768, but the invention is adapted for use with any other suitable form of check controlled mechanism. Suffice it to say that in the present illustration there is

shown a shaft 15 which is adapted to be actuated by means of a handle 16 and to the shaft 15 is secured a coin carrier 17, having two seats 18 and 19 therein for receiving coins 20 and 21 of different denominations or size with their faces in proximity to each other.

When the proper coins are inserted in the coin carrier the handle 16 may be operated to move the coin carrier 17 in the direction indicated by the arrow in Figure 3. The combined thickness of the proper coins will engage a projection 22 on a member 23 to laterally shift the latter against the stress of a spring 24, but when no coins or an improper number of coins or coins of an improper combined thickness are in the seats 18 and 19, the projection 22 will enter one of the seats and hold the coin carrier 17 against rotation by reason of the fact that a projection 25 on the member 23 will enter a notch or recess 26 on the coin carrier and hold the latter against rotation.

Connected also with the shaft 15 is a member 27 to which a dog 28 is pivotally connected as at 29. This dog 28 co-operates with a disc 30 having a recess 31 therein, into which the end 32 of the dog enters and the dog co-operates with the ends of the recess 31 to rotate the disc 30 in either direction.

The disc 30 is also provided with a series of teeth 33 with which the end 34 of a locking member or dog 35 co-operate and a spring 36 tends normally to move the end 34 of the member 35 against the periphery of the disc 30 and to cause such end to co-operate with the teeth 33 when the disc 30 is properly positioned with respect thereto.

All of the above referred to parts are preferably of the construction shown in the application above referred to and therefore constitute no part of the present invention, but are merely described for the purpose of making clear the complete operation of the device with the present invention applied thereto.

When the coin carrier 17 reaches a predetermined position, that is so as to invert the coin seats, the coins 20 and 21 will be discharged or partially discharged therefrom, the coin 21 falling upon a support 37 while the coin 20 will fall upon a support 38, the latter being preferably constructed of some suitable hard material and provided with teeth 39 adapted to engage the periphery of the coin 20. A portion of the support 38 preferably projects above the face of the support 37 for a short distance as at 40, so as to hold the coin 21 in position.

Connected with the member 35 is a projection 41, the edge of which co-operates with the supports 37 and 38 to form a space between which the coins 20 and 21 are adapted to be forced against the stress of the spring 36 by the engagement of the projection 41 with the peripheries of the coins 20 and 21.

If the proper coins are inserted in the coin carrier and deposited upon the supports 37—38, the member 35 will be moved about its pivot 42 to move the end 34 of the member 35 out of engagement with the teeth 33 so as to permit the coin carrier to be advanced to the full extent of its movement in the direction indicated by the arrow in Figure 4, but if improper coins or coins of smaller diameter than the width of the space through which the coins are to be forced are placed in the carrier, the member 35 will not be moved sufficiently to release the member 30, with the result that the mechanism will remain locked.

A portion of the front edge of the projection 41 of the member 35 is removed or cut away as at 43 and the remaining portion of the front edge thereof is preferably reduced or shaped to form a comparatively sharp edge as at 44.

A coiled spring 45 is secured to the projection 41 by means of a screw or fastening device 46, and one edge 47 of the spring projects over the cut away portion 43 of the projection 41, the other end of the spring being anchored as at 48.

The projecting portion 47 of the spring is normally spaced from the bottom 49 of the cut away portion 43, for a purpose to be set forth.

The normal position of the coin carrier is shown in Figure 3 and when the proper coins 20 and 21 are inserted respectively in the coin seats 18 and 19 the coin carrier 17 may be moved from the position shown in Figure 3, to the position shown in Figure 4, whereupon the coins will drop out of the coin seats upon the respective supports 37—38, the larger coin 21 engaging and resting upon the support 37 while the smaller coin 20, but of higher denominational character, will drop upon the support 38 to engage the teeth 39 of the support.

A portion of the periphery of the coin 21 which is larger in diameter will pass into the cut away portion 43 of the projection 41 on the member 35, and will engage and depress the portion 47 of the spring 45 so as to permit the edge of the coin to enter the cut away portion 43. The stress of the spring 47 against the periphery of the coin 21 will hold it against its support 37 and will prevent it from dropping down or passing through the coin space by its own weight. At the same time that the coin 20 rests upon the teeth 39 it will also rest against the forward edge 44 of the projection 41 and will be held against passing through the coin space, inasmuch as the spring 36 acting upon the member 35 will hold the edge 44 against the periphery of the coin 20.

On coins of the denomination represented by the coin 20, the periphery thereof is gen-

erally knurled and the knurling will co-operate with the teeth 39 of the support 38.

The coins in the positions just described are shown in Figure 4 and will assume this position when the coin carrier 17 has reached the limit of its movement in one direction.

Upon the reverse movement of the coin carrier 17 or in the direction indicated by the arrow in Figure 4, one edge of the coin seats will cause the respective coins to be advanced over their supports (see Figure 5) until they reach the positions shown in Figure 6. The coin of the larger diameter, to-wit: the coin 21 will be advanced a sufficient distance upon its support 37 to cause it to pass through the coin space formed by its respective portion of the projection 41 and its support, and will drop into the machine, the spring 47 yielding to permit the coin 21 to drop. The coin 20, however, will be advanced only a short distance and will be held against passing through the coin space by the engagement of the edge 44 of the projection 41 with the periphery of the coin.

During this advancing movement, however, of the coin 20, it will be rotated about its axis by reason of the teeth 39 on the support 38 engaging the periphery of the coin 20. The edge of the coin carrier, however, is not sufficient to discharge the coin 20 and cause it to pass entirely through the coin space. Upon a further movement of the coin carrier 17 in the direction indicated by the arrow in Figure 4, see Figures 6 and 8, the projection 41 on the coin carrier 17 will engage the periphery of the coin 20 and further advance the coin so as to rock the member 35 about its pivot 42 a sufficient distance to cause the portion 34 thereof to move into an inactive position to release the member 30. As the coin 20 is advanced by the projection 41 it will be further rotated about its axis during its passage through the coin space and until it drops from its support 38 into the machine.

It will therefore be manifest that the coin 20 will be rotated about its axis as it is moved over its support 38, thereby insuring the operation of the mechanism when the proper coin 20 is inserted in the machine with the coin 21, even though the coin 20 has a flat or worn portion in its periphery.

It will also be manifest that unless the proper coins are inserted the mechanism cannot be operated, and furthermore that the mechanism will be operated only by the coin of the highest denominational value. Should any improper coin be inserted into the mechanism with the proper coin, the mechanism will also remain inoperative as the coin carrier 17 cannot be advanced to the position to deposit the coins upon the supports 37—38, for the reason that the detector member 23 is only operable by the combined thickness of the proper coins.

While the preferred form of the invention has been herein shown and described, it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:—

1. Coin controlled mechanism embodying a coin passage, a member arranged within the path of movement of the coin through the passage and adapted to be moved by the coin, means for advancing the coin in the passage to move said member and stationary means for causing the coin to be rotated about its axis as it moves the said member.

2. Coin controlled mechanism embodying a support for receiving a coin, a member forming with said support a passage through which the coin is moved, said member being moved by the coin, means for advancing the coin in the passage to move said member, and stationary means for causing the coin to rotate about its axis as it passes through said passage.

3. Coin controlled mechanism embodying a support for receiving the coin, a yieldable member forming with the support a passage for the coin, said passage being normally of a size less than the diameter of the coin, means for causing the coin to move through the passage, and stationary means over which the coin passes for causing the coin to rotate about its axis during its movement through said passage.

4. Coin controlled mechanism embodying a support for receiving the coin, a yieldable member forming with the support a passage for the coin, said passage being normally of a size less than the diameter of the coin, means for causing the coin to move through the passage, and a stationary tooth formation engaging the peripheral edge of the coin for rotating the coin about its axis as it moves through said passage.

5. Coin controlled mechanism embodying a stationary toothed element, a yieldable member co-operating with said element to form a passageway for the coin, said passage being normally of a size less than the diameter of the coin, and means for causing the coin to move through said passage, the said toothed element engaging the periphery of the coin for rotating the coin about its axis as it moves through said passageway.

6. Coin controlled mechanism embodying a stationary toothed element, a resiliently yieldable member forming with said element a passageway for the coin, said member adapted to be shifted by the coin as it moves through said passageway, and means for forcing the coin through said passageway, said toothed element operating to rotate the coin about its axis as it moves through said passageway.

7. Coin controlled mechanism embodying

a passageway including a member adapted to be moved by a coin as the coin passes therethrough, means for moving the coin through the passageway, and stationary means for causing the coin to rotate about its axis as it operates upon said member.

8. Coin controlled mechanism embodying a passageway including a member adapted to be moved by a coin as the coin passes therethrough, means for moving the coin through the passageway, and stationary means for causing the coin to rotate about its axis as it passes through the mechanism.

9. Coin controlled mechanism embodying a coin carrier, a support for receiving the coin from the carrier, a shiftable controlling member forming with the support a passage through which the coin is moved, means for advancing the coin with respect to the support and stationary teeth on one of the walls of the passage and engaging the periphery of the coin for rotating the coin about its axis as it is thus advanced.

10. Coin controlled mechanism embodying a passageway for the coin and normally of a size less than the diameter of the coin, one of the walls of the passageway being yieldable, the periphery of the coin engaging said yieldable wall, means for moving the coin through the passageway, and stationary means for causing the coin to rotate about its axis as it moves through said passageway.

11. Coin controlled mechanism embodying a coin carrier adapted to simultaneously receive and hold a predetermined plurality of coins, a member controlled only by the action of one of said coins, means for maintaining the said member against actuation by the other of said coins, and means for yieldingly holding the said other coin against advancement until the coin which controls the said member operates thereupon to shift the member.

12. Coin controlled mechanism embodying a coin carrier adapted to receive and hold a predetermined plurality of coins of different denominational value face to face a member adapted to be engaged and shifted by only one of said coins as both of the coins pass said member, means permitting the other one of the coins to pass said member with the actuating coin, and means permitting the non-actuating coin to pass the said member while the latter remains active and in the absence of the coin which actuates said member.

13. Coin controlled mechanism embodying a coin carrier adapted to receive and hold a predetermined plurality of coins face to face, a support for receiving the coins, and a member forming with said support a passage through which the coins are adapted to pass, a portion of said passage being normally of a size less than the diameter of one of said coins, another portion of said passage being of a size greater than the diameter of the other coin, whereby the said member will be shifted only by the coin of a predetermined diameter, said member remaining inactive to the operation of the other of said coins.

14. Coin controlled mechanism embodying a coin carrier adapted to receive and hold a predetermined plurality of coins face to face, a support for receiving the coins, a member forming with said support a passage through which the coins are adapted to pass, a portion of said passage being normally of a size less than the diameter of one of said coins, another portion of said passage being of a size greater than the diameter of the other coin, whereby the said member will be shifted only by the coin of a predetermined diameter, said member remaining inactive to the operation of the other of said coins, and yielding means for engaging the periphery of the last said coin for temporarily holding the same against movement past the said member.

15. Coin controlled mechanism embodying a coin carrier adapted to receive and hold a predetermined plurality of coins face to face, a support for receiving the coins, a member forming with said support a passage through which the coins are adapted to pass, a portion of said passage being normally of a size less than the diameter of one of said coins, another portion of said passage being of a size greater than the diameter of the other coin, whereby the said member will be shifted only by the coin of a predetermined diameter, said member remaining inactive to the operation of the other of said coins, and means for rotating about its axis the coin which engages and shifts the said member, while the last said coin is thus shifting said member.

16. Check controlled mechanism embodying a support for receiving a check, a yieldable member forming with said support a passage through which the check is to be moved, means for depositing the check upon the support, means for moving the check through said passage, and teeth arranged to be engaged by the periphery of the check whereby the check will be rotated by the teeth during the movement of the check through the passage, the said yieldable member operating upon the check to cause the said teeth to penetrate the periphery of the check when the latter is of soft material.

In testimony whereof I have signed my name to this specification on this 30th day of October, A. D. 1929.

MYRON H. RICHARDSON.