Sept. 27, 1932. M. H. RICHARDSON ET AL 1,879,499

COIN CONTROLLED SWITCH AND TIMING MECHANISM

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Fig. 1

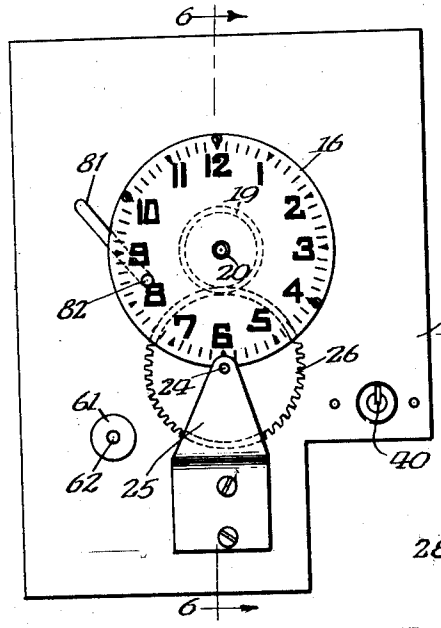


Fig. 10

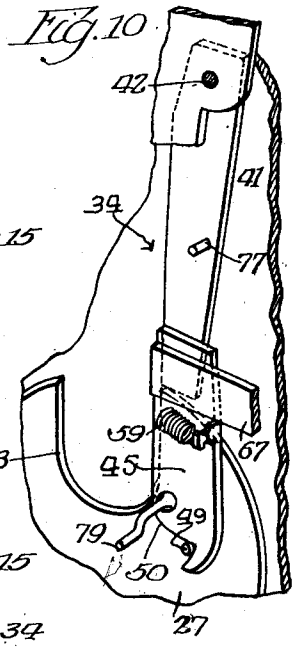


Fig. 2

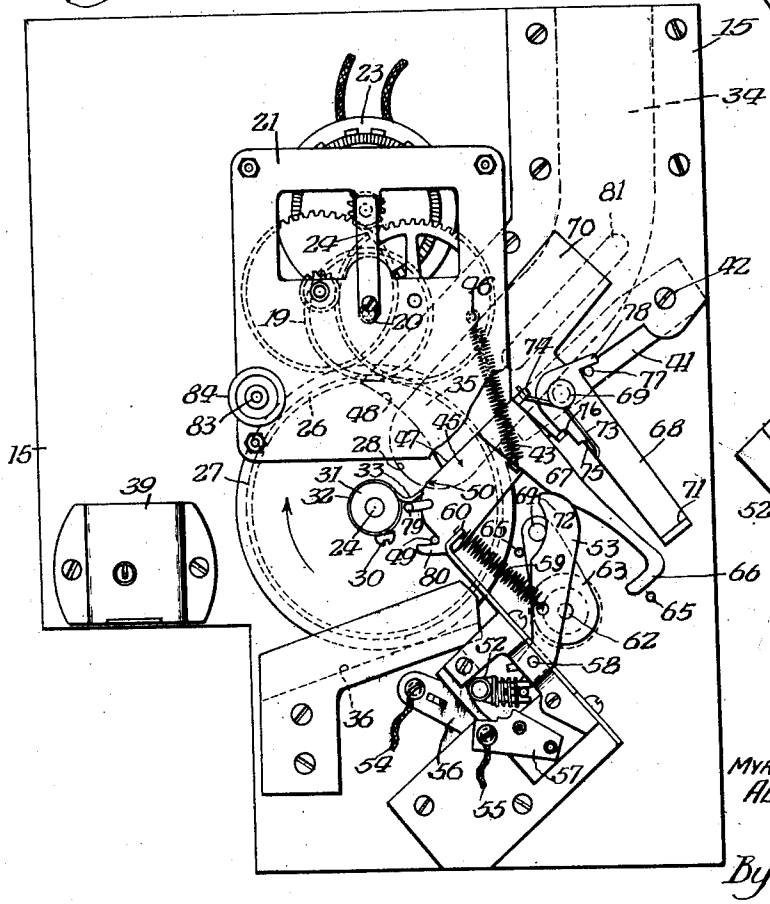
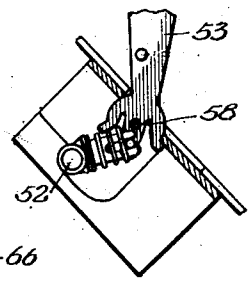


Fig. 2a



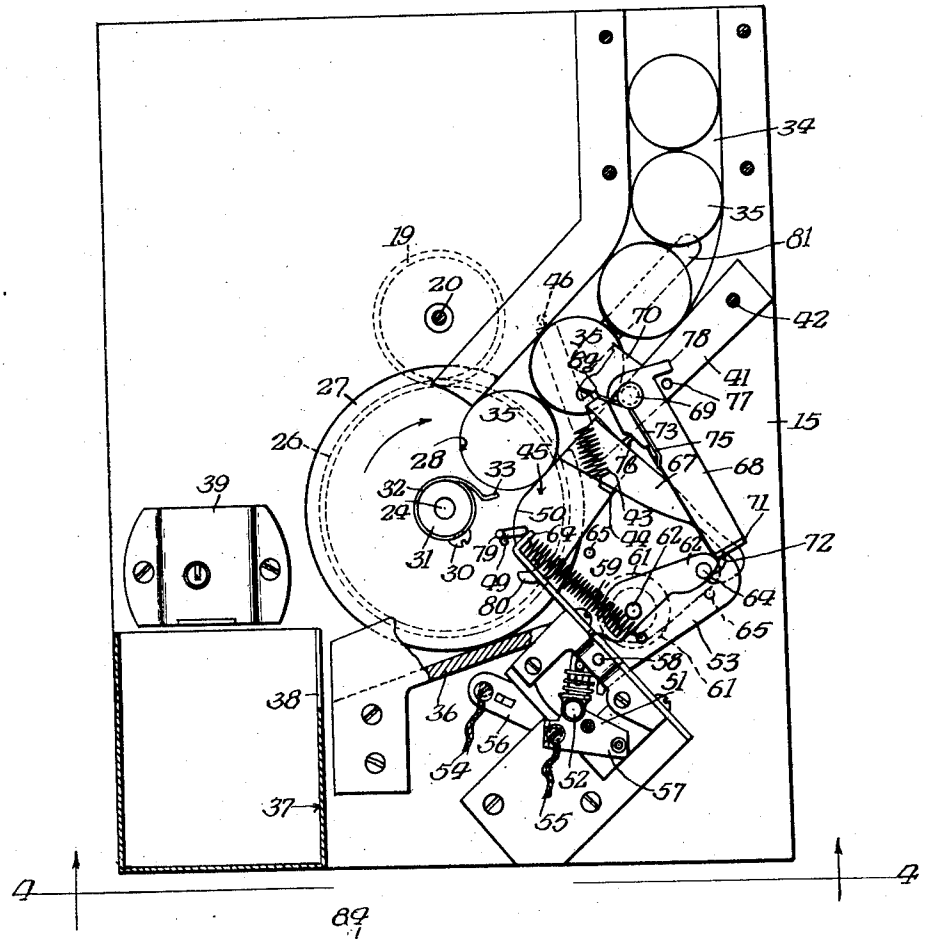
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COIN CONTROLLED SWITCH AND TIMING MECHANISM

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Fig. 3



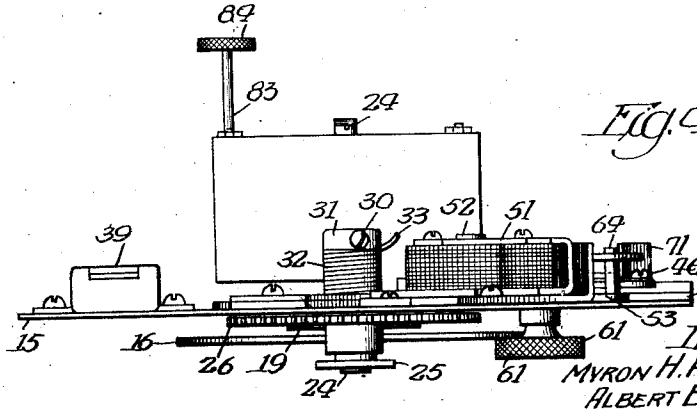


Fig. 4.

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COIN CONTROLLED SWITCH AND TIMING MECHANISM

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Fig. 5

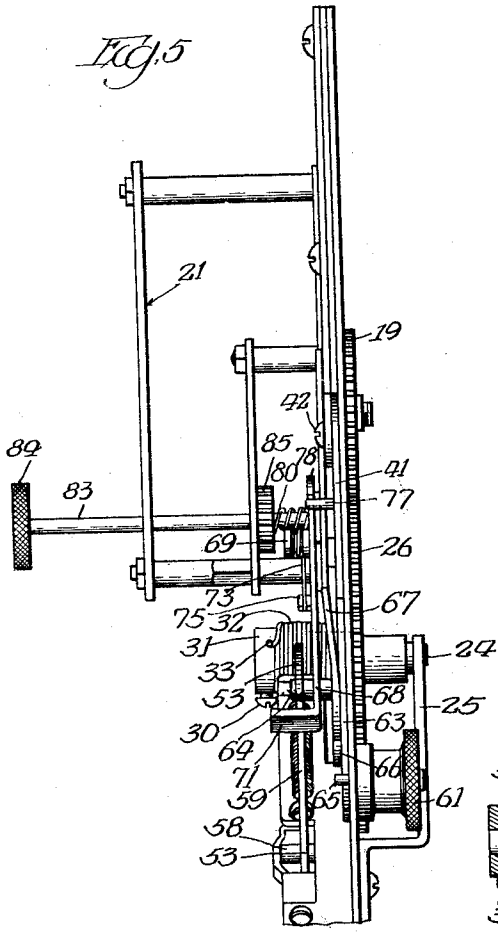


Fig. 6

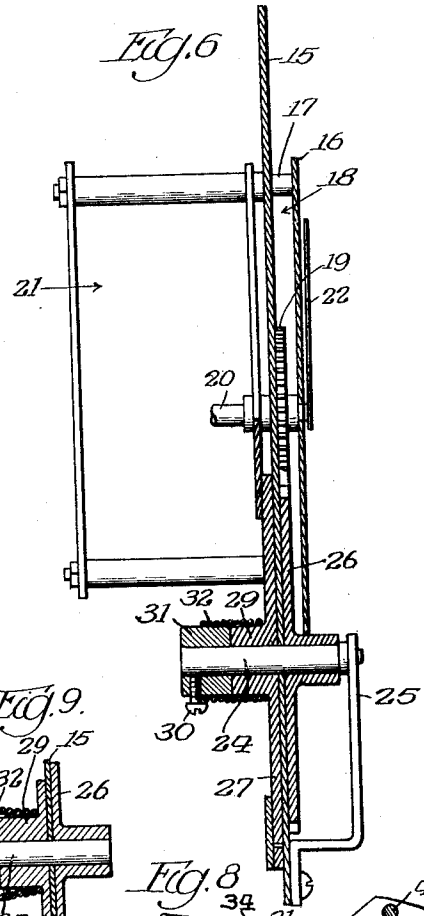


Fig. 9.

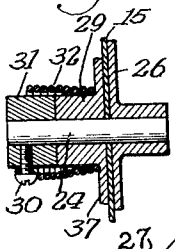


Fig. 7

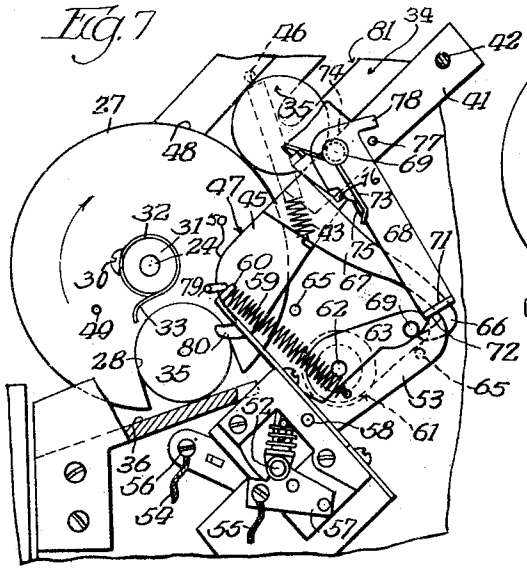
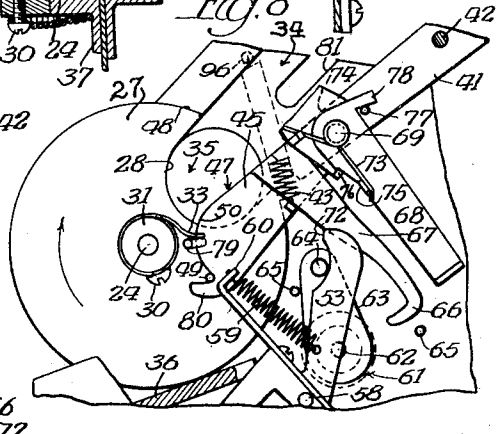


Fig. 8



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1,879,499

UNITED STATES PATENT OFFICE

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COIN CONTROLLED SWITCH AND TIMING MECHANISM

Application filed January 14, 1932. Serial No. 586,498.

This invention relates to improvements in time and coin controlled mechanism for controlling the actuation of a switch device used in connection with electric circuits, where it is desired to automatically actuate a switch device at the expiration af a predetermined time limit, for rendering the circuit active or inactive as the case may be, and one of the objects of the invention is to provide improved mechanism associated with a clock work, whereby upon the insertion of a proper coin or token the switch mechanism will be actuated after the expiration of a predetermined time limit, for controlling the circuit, and improved means whereby in the absence of a proper coin or token, the switch mechanism will be maintained against operation while the operation of the clock work will not be interfered with.

A further object is to provide improved means for manually setting the switch device upon the insertion or presence of a proper coin or token, and improved means whereby the switch device will be locked or prevented from being manually actuated in the absence of a proper coin or token.

A further object is to provide an improved connection between the clock work and a check carrier of the coin controlled mechanism, embodying a friction clutch, and improved means whereby said friction clutch will be automatically rendered inactive in the absence of a proper coin or token to permit the clock work to operate independently with respect to the check carrier and while the check carrier will be prevented from operation.

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 front elevation of a device of this character constructed in accordance with the principles of this invention.

Figure 2 is a rear elevation of Figure 1, on an enlarged scale, showing the parts in the position they will assume in the absence of coins or checks in the chute.

Figure 2ª is a view partly in detail and partly in elevation of a portion of the snap switch.

Figure 3 is a view similar to Figure 1, showing the parts in another position, i. e. the position which they will assume when checks of the proper size and denomination are in the chute, and with parts broken away.

Figure 4 is a view taken on line 4—4, Figure 3.

Figure 5 is a right hand end elevation of Figure 3.

Figure 6 is a sectional view on an enlarged scale, taken on line 6—6, Figure 1.

Figure 7 is a view partly in elevation and partly in section of a portion of the check chute and check carrier, showing a check in the chute and the position the parts will assume.

Figure 8 is a view similar to Figure 7, showing the check chute empty, with one check in the check carrier.

Figure 9 is a detail view in section of the friction clutch showing the clutch member expanded.

Figure 10 is a detail view showing the movable member of the check chute and a portion of the check carrier.

Referring more particularly to the drawings the numeral 15 designates a suitable supporting plate upon which the mechanism is mounted and this plate together with the mechanism supported thereby is adapted to be encased in a suitable casing not shown, and in which casing there is provided an opening through which the dial 16 constituting the face of the clock work, is visible.

The clock face or dial 16 is secured to the plate 15 in any suitable manner and is preferably spaced therefrom by means of elements 17 to form a space 18, and in which space is arranged a gear wheel 19 which is secured to a main shaft 20 of a clock work mechanism designated generally by the reference numeral 21 in Figure 2, and to which one of the hands 22 of the clock mechanism is secured.

This shaft is rotated in any suitable man-

ner but the clock is preferably of a motor operated type embodying a suitable electric motor actuating device 23, common in clocks of this character.

A shaft 24 is rotatably supported preferably by the plate 15 and a bracket 25 and is arranged parallel with the shaft 20. Secured to the shaft 24 for rotation therewith is a gear 26 with which the gear 19 meshes, so that upon rotation of the gear 19, the gear 26 will be rotated and with it the shaft 24.

Loosely mounted upon the shaft 24 and preferably in close proximity to the rear face of the plate 15 is a check carrying member or disc 27 having a check seat 28 opening through the periphery thereof and this check carrier is provided with an integral hub portion 29 of a length considerably less than the adjacent portion of the shaft 24, so that the shaft will extend beyond the hub, and secured to the shaft in any suitable manner such as by means of a screw 30 and for rotation with the shaft is a collar 31, of a diameter substantially equal to the external diameter of the hub 29 and which abuts the hub.

A friction clutch device in the form of a coiled spring 32 encompasses the hub 29, and one extremity of the coil is secured to the check carrier or hub 29 for rotation therewith. The coil is of such a length that its convolutions will extend over the collar 31 and the free extremity 33 of the coil is deflected so as to form a projecting finger, for a purpose to be hereinafter set forth.

The normal tendency of the convolutions of the spring 32 is to frictionally grip the periphery of the hub 29 and the periphery of the collar 31 so that upon rotation of the shaft 24 the check carrying disc 27 will be rotated therewith by reason of the frictional binding action of the convolutions of the spring 32 with the hub 29 and the collar 31.

In order to permit the shaft 24 together with the gear 26 to rotate independently of the check carrying disc 27, the friction or binding action of this spring is released, in a manner to be hereinafter set forth.

A check chute 34 is provided with a delivery outlet opening disposed in proximity to the periphery of the check carrying disc 27 so that when the check seat 28 is in register or alinement with the outlet of the chute 34, the checks or tokens 35 may be successively delivered into the check seat 28. The check carrier 27 is then advanced by rotating the same so as to invert the check seat 28, at which time the check 35 therein will be delivered therefrom on to a support 36 which is preferably inclined and the check will then roll down the support 36 to be delivered into a check or coin receiving box 37, preferably through an opening 38 in one wall thereof. This check receptacle 37 is held against removal by means of a suitable lock 39, controlled by means of a key inserted in the keyhole or slot 40, through the front face of the plate 15.

A portion of one of the walls, preferably the bottom wall of the check chute 34, is formed by a member 41 which is pivotally mounted as at 42 and is adapted to be moved in a direction to restrict a portion of the check chute to a size less than the diameter of the proper check or token 35, preferably by means of a spring 43, one end of which is anchored as at 44 to a portion 45 of the member 41, and the other end of the spring is anchored as at 46 to a stationary part of the mechanism.

The portion 45 preferably forming the lower extremity of the member 41 is offset with respect to the remaining portion of the member so as to extend over the face of the check carrier 27, and one edge of this offset portion 45 is adapted to engage a shoulder or stop 47 preferably formed by a member 48 which constitutes one of the walls of the check chute. The movable member 41 serves as a means for holding the checks 35 in the chute 34 by engaging the edge of the check and forcing another portion of the edge of the check against the opposite wall of the check chute, and also serves to prevent checks of an improper size from passing through the check chute. In order therefore to permit of the delivery of a check, from the check chute into the check seat 38 of the check carrier 37, to-wit: the first check upon the starting of the operation of the mechanism, it is necessary to shift the member 41 against the stress of the spring 43 to open the chute to allow the checks to pass therethrough.

This is accomplished preferably by means of a pin or projection 49 carried by and projecting laterally from the face of the check carrier 27 and is so positioned with respect to the axis of the check carrier that at a predetermined time in the rotation of the check carrier, it will engage the edge or the end of the portion 45 of the member 41 at approximately the point 50 (see Figure 3) so that upon a further rotation of the check carrier 27 in the direction of the arrow in Figure 3, the member 41 will be moved about its pivot 42 against the stress of the spring 43, thereby freeing, so to speak, the checks 35 in the check chute 34. When one of the checks is delivered into the check seat 28 and the member 41 held in the position to which it has been moved by the pin or projection 49, and as the check carrier advances, the remaining checks will be held against discharge from the chute by the engagement of the foremost check against the periphery of the check carrier 27.

So long as there are checks 35 in the chute 34 the member 41 will be held in this adjusted position against the stress of the spring 43, or in the position shown in Figure 3, but as

soon as the last check has passed out of the check chute the spring 43 will immediately move the member 41 about its pivot in the opposite direction so as to again restrict the size of the chute 34, or into the position shown in Figure 2.

The numeral 51 designates generally a spring switch of the ordinary and well known construction which embodies a spring actuated member 52 adapted to be moved by means of an arm 53 into and out of position to open and close an electric circuit embodying conductor members 54—55 secured to terminal members 56—57. This spring switch is of the ordinary and well known construction and therefore specific description thereof is not necessary, suffice it to say that by the operation of the arm 53 about its pivot 58, the switch member 52 will be caused to snap from one position to another. The arm 53 has connected to it one end of a spring 59, and the other end of the spring is anchored as at 60 to a stationary part of the mechanism, and the spring tends normally to move the arm 53 in a direction to cause the switch element 52 to assume the position shown in Figure 2, but when the arm 53 is moved about its pivot 58 and against the stress of the spring 59 the switch 52 will snap to the position shown in Figure 3.

Manual means controlled from the front of the plate 15 is provided for actuating the arm 53 in one direction to cause the switch to be rendered active. Such means may embody a knob or handle 61 secured to a shaft 62, and to this shaft 62 on the other side of the plate 15 is secured an arm or crank 63 having a lateral projection or pin 64 which is adapted to engage one edge of the arm 53 upon rotation of the knob or button 61 to swing the arm 53 about its pivot 58 from the position shown in Figure 2 to the position shown in Figure 3, thereby causing the switch element 52 to snap from the position shown in Figure 2 to the position shown in Figure 3.

The arm 63 operates between spaced stop pins 65, which latter limit the throw of the arm in the respective directions.

The pin 64 on the arm 63 is also adapted to engage a shoulder or projection 66 carried by an arm 67 that is secured to the member 41. This projection or shoulder 66 is arranged within the path of movement of the pin 64 on the arm 63 so that upon the first portion of the movement of the arm 63 from the position shown in Figure 2 to the position shown in Figure 3, the arm 53 will be swung about its pivot to move the switch element 52 from the position shown in Figure 2, to the position shown in Figure 3. Just before the switch element 52 starts to snap from the position shown in Figure 2 to the position shown in Figure 3, the pin 64 will engage the shoulder or projection 66 on the arm 67 to draw down upon the arm and thereby swing the member 41 about its pivot 42 to release the checks in the chute 34, so that they may be successfully delivered into the seat 28 of the check carrier 27. As long as there are any checks in the chute 34, the member 41 will be held against return movement, but upon the release of the knob or button 61, the spring 59 would have a tendency to return the arm 53 and thereby snap the switch element 52 back to the position shown in Figure 2, thereby interrupting the circuit, which is not desired. Therefore, in order to overcome this objection, means are provided for locking the member 41 against such return movement while there are checks in the chute 34.

Any suitable locking means for the purpose may be provided, such as a locking dog or member 68 which is pivotally mounted as at 69 to a fixed or stationary portion 70 of the mechanism. The free end 71 of this locking dog 68 is adapted to engage over or stand within the path of the return movement of the portion 72 of the arm 53, and a spring 73 is provided which engages a stationary projection 74 and a projection 75 on the locking dog 68, and tends normally to move the end 71 of the locking dog into a position to engage such portion of the arm 53.

A stop 76 limits the movement of the dog 68 under the influence of the spring 73. A pin or projection 77 is carried by the member 41 and engages a shoulder or projection 78 on the dog 68 so as to swing the locking dog 68 about its pivot 69 into an inactive position when the member 41 is moved to the position shown in Figure 2, under the influence of the spring 43.

As the member 41 is moved about its pivot by being drawn downwardly by reason of the engagement of the pin 64 on the arm 63 with the shoulder or projection 66 on the arm 67, the projection 77 will move out of contact with the shoulder 78 of the dog 68 so as to allow the spring 73 to move the dog 68 to the position shown in Figure 3 and into the path of the portion 72 of the arm 53 to be engaged by such arm, thereby locking the latter in the position shown in Figure 3. Upon release of the knob or button 61 and when there are checks in the chute 34, the member 41 will be held against return movement and the parts will be maintained in their locked positions. When, however, the last check is discharged from the chute 34, the member 41 will then be shifted about its pivot by reason of the stress of the spring 43 causing the pin or projection 77 on the member 41 to engage the shoulder or projection 78 on the locking dog 68 to rock the latter about its pivot 69 against the stress of the spring 73, and thereby move the extremity 71 out of contact with the arm 53, releasing the latter so that it will move under the stress of the spring 59 to cause the switch element 52 to snap from the position shown

in Figure 3 to the inactive position shown in Figure 2.

In the absence of checks in the check chute, it is desirable to arrest the rotation of the check carrier 27 so as not to interfere with the operation of the clock work and as the check carrier is connected with the clock work through the medium of the friction clutch mechanism embodying the coiled spring 32, the clutch device is rendered inactive. This is accomplished in the following manner. Carried by the portion 45 of the member 41 is a pin or projection 79 which is adapted to be positioned in the path of movement of the extremity 33 of the coiled spring 32 when the member 41—45 assumes the position shown in Figure 2, that is when there are no checks in the chute. Under these conditions the check carrier will continue to rotate with the shaft 24 until the pin 49 engages the edge 50 of the portion 45 of the member 41 and will swing the member 41 about its pivot 42 against the stress of the spring 43. As soon, however, as the pin or projection 49 passes out of engagement with the portion 45 of the member 41, the spring 43 will immediately return the member 41 to the position shown in Figure 2 and will position a shoulder or extension 80 carried by the portion 45 of the member 41 in the path of movement of the pin 49 to be engaged by the latter (see Figure 2), and thereby arrest the rotation of the check carrier 27. At the same time the pin or projection 79 will be moved into engagement with the end 33 of the clutch coil spring 32 to raise said end and thereby loosen or expand the coils or convolutions about the collar 31 to render the frictional clutch formed thereby inactive, thus permitting the shaft 24 to rotate independently with respect to the check carrier 27. As soon, however, as the shoulder 80 is moved away from the pin or projection 49 by the operation of the knob or button 61, the pin or projection 79 will also be moved away from the end 33 of the clutch coil spring 32, and the latter will be rendered active to frictionally connect the check carrier 27 with the shaft 24.

If there is a check present in the check chute at that time, the member 41 will be restrained against return movement under the influence of the spring 43, should the knob 61 be released. If, however, there is no check in the check chute, the member 41 will immediately return to the position shown in Figure 2, when the knob 61 is released.

The plate 15 is provided with a slot or opening 81 in alinement with the chute 34 so that the coins in the chute will be visible and if desired, the clock dial may be provided with an opening 82 in register with the opening 81.

The clock work may be provided with an ordinary setting mechanism preferably embodying a shaft 83 having a knob or handle 84 and provided with a gear 85 secured thereto for rotation therewith, and which gear 85 is normally held out of contact with a companion gear by means of a spring 86. By depressing the knob or button 84 so as to move the gear 85 against the stress of the spring 86 and into engagement with its companion gear and by then rotating the shaft 83, the hands of the clock mechanism may be set in the usual manner.

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. In a time switch, a time keeping mechanism having a main shaft, a circuit controlling switch device, means tending normally to render the switch device inactive, a check delivery chute, a check carrier movable adjacent the chute to successively receive the checks from said chute, said check carrier being responsive in its operation to the actuation of said shaft, manual means for setting the switch to render the circuit active, means for maintaining the switch in its set active position, and means rendered active in the absence of a proper check in said chute for rendering the last recited means inactive to permit the switch device to be moved by the first recited means to render the circuit inactive.

2. In a time switch, a time keeping mechanism having a main shaft, a circuit controlling switch device, means tending normally to render the switch device inactive, a check delivery chute, a check carrier movable adjacent the chute to successively receive the checks from said chute, said check carrier being responsive in its operation to the actuation of said shaft, manual means for setting the switch to render the circuit active, means for maintaining the switch in its set active position, means rendered active in the absence of a proper check in said chute for rendering the last recited means inactive to permit the switch device to be moved by the first recited means to render the circuit inactive, and means for locking the check carrier against operation without interfering with the operation of the time keeping mechanism.

3. In a time switch, a time keeping mechanism having a main shaft, a circuit controlling switch device, means tending normally to render the switch device active, a check chute, a portion of the wall of the chute being movable, means tending normally to move said portion of the chute wall to render the chute of a size less than the diameter of a proper check, a check carrier movable adjacent the chute to receive the checks there-

from, means for shifting said movable portion of the chute to permit the first check to be delivered to said carrier, the remaining checks in the chute maintaining the movable part of the chute against such restricting movement, manual means for setting the switch to a position to render the circuit active, means for locking the switch in the last recited position, and means whereby the movement of the said movable part of the chute under the influence of the second recited means will render the said locking means inactive.

4. In a time switch, a time keeping mechanism having a main shaft, a circuit controlling switch device, means tending normally to render the switch device active, a check chute, a portion of the wall of the chute being movable, means tending normally to move said portion of the chute wall to render the chute of a size less than the diameter of a proper check, a check carrier movable adjacent the chute to receive the checks therefrom, means for shifting said movable portion of the chute to permit the first check to be delivered to said carrier, the remaining checks in the chute maintaining the movable part of the chute against such restricting movement, manual means for setting the switch to a position to render the circuit active, means for locking the switch in the last recited position, means whereby the movement of the said movable part of the chute under the influence of the second recited means will render the said locking means inactive, an operative connection between said shaft and said check carrier for operating the latter, and means for locking the check carrier against operation in the absence of checks in the chute without interfering with the operation of the time keeping mechanism.

5. In a time switch, a time keeping mechanism having a main shaft, a circuit controlling switch device, means tending normally to render the switch device active, a check chute, a portion of the wall of the chute being movable, means tending normally to move said portion of the chute wall to render the chute of a size less than the diameter of a proper check, a check carrier movable adjacent the chute to receive the checks therefrom, means for shifting said movable portion of the chute to permit the first check to be delivered to said carrier, the remaining checks in the chute maintaining the movable part of the chute against such restricting movement, manual means for setting the switch to a position to render the circuit active, means for locking the switch in the last recited position, means whereby the movement of the said movable part of the chute under the influence of the second recited means will render the said locking means inactive, an operative connection between said shaft and said check carrier for operating the latter, and means rendered active by the movement of the movable part of the chute in the absence of checks in the chute for locking the check carrier against operation without interfering with the operation of the time keeping mechanism.

6. In a time switch, time keeping mechanism, a circuit controlling switch, means tending normally to render the switch inactive, a check chute, a movable member forming a part of the wall of the chute, means tending normally to move said member to restrict the chute to a size less than the diameter of a proper check, a check carrier rotatable adjacent the chute for receiving the checks therefrom, means whereby the movement of said carrier will shift said movable member to release the first check from the chute, the remaining checks holding said movable member against movement under the influence of the second recited means, manual means for setting the switch into an active position, and means responsive to the movement of the said movable member of the chute in the absence of a proper check in the chute, to cause said switch to be moved to an inactive position by the first recited means.

7. In a time switch, time keeping mechanism, a circuit controlling switch, means tending normally to render the switch inactive, a check chute, a movable member forming a part of the wall of the chute, means tending normally to move said member to restrict the chute to a size less than the diameter of a proper check, a check carrier rotatable adjacent the chute for receiving the checks therefrom, means whereby the movement of said carrier will shift said movable member to release the first check from the chute, the remaining checks holding said movable member against movement under the influence of the second recited means, manual means for setting the switch into an active position, means responsive to the movement of the said movable member of the chute in the absence of a proper check in the chute, to cause said switch to be moved to an inactive position by the first recited means, and means adapted to be set by the last recited movement of said movable member for arresting the movement of the said check carrier.

8. In a time switch, time keeping mechanism, a circuit controlling switch, means tending normally to render the switch inactive, a check chute, a movable member forming a part of the wall of the chute, means tending normally to move said member to restrict the chute to a size less than the diameter of a proper check, a check carrier rotatable adjacent the chute for receiving the checks therefrom, means whereby the movement of said carrier will shift said movable member to release the first check from the chute, the remaining checks holding said

movable member against movement under the influence of the second recited means, manual means for setting the switch into an active position, means responsive to the movement of the said movable member of the chute in the absence of a proper check in the chute, to cause said switch to be moved to an inactive position by the first recited means, a clutch connection between said time keeping mechanism and said check carrier, means responsive to the movement of the said movable member of the chute under the influence of the second recited means for arresting the movement of the check carrier, and means also responsive to the last said movement of said movable member to render said clutch connection inactive.

9. In combination a main shaft, means for rotating the same, a rotatable check carrier, a clutch for connecting the carrier with the shaft, said clutch embodying a resiliently yielding member coiled about a portion of the shaft and also about a portion of said carrier and tending normally to connect the two for rotation together, a check chute, and means rendered active in the absence of checks in said chute and adapted to engage said yielding member and spread or increase the diameter of said coils to render the clutch inactive and to disconnect the shaft and check carrier with respect to each other.

10. In combination a main shaft, means for rotating the same, a rotatable check carrier, a clutch for connecting the carrier with the shaft, said clutch embodying a resiliently yielding member coiled about a portion of the shaft and also about a portion of said carrier and tending normally to connect the two for rotation together, a check chute, means rendered active in the absence of checks in said chute and adapted to engage said yielding member and spread or increase the diameter of said coils to render the clutch inactive and to disconnect the shaft and check carrier with respect to each other, and means operatively related to the last recited means adapted to be set thereby to lock the said check carrier against rotation when said clutch connection is rendered inactive.

11. In a time switch, a time keeping mechanism having a main shaft, a spring actuated switch, check controlled mechanism intermediate said shaft and switch and embodying a rotatable check carrier, means operatively connecting said check carrier and main shaft, a check chute for supplying checks to said check carrier, and means rendered active in the absence of checks in said chute for rendering said switch inactive and for disconnecting said check carrier with respect to said shaft.

12. In a time switch, a time keeping mechanism having a main shaft, a spring actuated switch, check controlled mechanism intermediate said shaft and switch and embodying a rotatable check carrier, means operatively connecting said check carrier and main shaft, a check chute for supplying checks to said check carrier, means rendered active in the absence of checks in said chute for rendering said switch inactive and for disconnecting said check carrier with respect to said shaft, and positive means for maintaining said check carrier against rotation when the latter is disconnected with respect to said shaft.

13. In a time switch, a time keeping mechanism having a main shaft, a spring actuated switch, check controlled mechanism intermediate said shaft and switch and embodying a rotatable check carrier, means operatively connecting said check carrier and main shaft, a check chute for supplying checks to said check carrier, means rendered active in the absence of checks in said chute for rendering said switch inactive and for disconnecting said check carrier with respect to said shaft, a stop carried by said check carrier, and a stop carried with the last said means and positioned in the absence of checks in the chute, within the path of movement of said first recited stop to arrest the rotation of said check carrier.

14. In combination a main shaft, a rotatable check carrier responsive in its rotation to the rotation of said shaft, a check chute for delivering checks to said check carrier, a portion of said chute being movable, means tending normally to move said portion to restrict the size of the chute, a spring actuated control switch, means for setting the switch into an active position, means for locking the switch in its set position, the first said means being rendered active in the absence of checks in the chute to shift said movable portion of the chute, and means responsive to the last said movement of said movable portion of said chute to render the switch locking means inactive.

15. In combination a main shaft, a rotatable check carrier responsive in its rotation to the rotation of said shaft, a check chute for delivering checks to said check carrier, a portion of said chute being movable, means tending normally to move said portion to restrict the size of the chute, a spring actuated control switch, means for setting the switch into an active position, means for locking the switch in its set position, the first said means being rendered active in the absence of checks in the chute to shift said movable portion of the chute, means responsive to the last said movement of said movable portion of said chute to render the switch locking means inactive, and means controlled by the last said movement of the said movable portion of said chute for rendering said check carrier inactive with respect to said shaft.

16. In combination a main shaft, a rotatable check carrier responsive in its rotation to

the rotation of said shaft, a check chute for delivering checks to said check carrier, a portion of said chute being movable, means tending normally to move said portion to restrict the size of the chute, a spring actuated control switch, means for setting the switch into an active position, means for locking the switch in its set position, the first said means being rendered active in the absence of checks in the chute to shift said movable portion of the chute, means responsive to the last said movement of said movable portion of said chute to render the switch locking means inactive, means controlled by the last said movement of said movable portion of said chute for rendering said check carrier inactive with respect to said shaft, and means also controlled by said movable part of the chute for positively locking said check carrier against rotation when the latter is disconnected with respect to said shaft.

17. In combination, a main shaft, means for rotating the same, a rotatable check carrier, a chute for delivering checks to said carrier, a spring actuated switch, manual means for setting the switch, a lock for maintaining the switch in its set position, a portion of said chute being movable, means tending normally to move the said movable portion of the chute in one direction, said movable portion being maintained against such movement by the checks in the chute, the said switch setting means also operating to move said movable portion of the chute against the stress of the third recited means, to release the checks in the chute, and means whereby the movement of said movable portion of the chute in the absence of checks in the chute and under the influence of the third said means will render the said switch locking means inactive.

18. In combination, a main shaft, means for rotating the same, a rotatable check carrier, a chute for delivering checks to said carrier, a spring actuated switch, manual means for setting the switch, a lock for maintaining the switch in its set position, a portion of said chute being movable, means tending normally to move the said movable portion of the chute in one direction, said movable portion being maintained against such movement by the checks in the chute, the said switch setting means also operating to move said movable portion of the chute against the stress of the third recited means, to release the checks in the chute, means whereby the movement of said movable portion of the chute in the absence of checks in the chute and under the influence of the third said means will render the said switch locking means inactive, and means for locking the said check carrier against rotation when the said switch locking means is rendered inactive.

19. In combination, a main shaft, means for rotating the same, a rotatable check carrier, a chute for delivering checks to said carrier, a spring actuated switch, manual means for setting the switch, a lock for maintaining the switch in its set position, a portion of said chute being movable, means tending normally to move the said movable portion of the chute in one direction, said movable portion being maintained against such movement by the checks in the chute, the said switch setting means also operating to move said movable portion of the chute against the stress of the third recited means, to release the checks in the chute, means whereby the movement of said movable portion of the chute in the absence of checks in the chute and under the influence of the third said means will render the said switch locking means inactive, and means carried with said check carrier adapted to engage a portion of said movable portion of the chute to move the latter against the stress of the third recited means to release a check from the check chute to said check carrier.

In testimony whereof we have signed our names to this specification, on this 6th day of January, A. D. 1932.

MYRON H. RICHARDSON.
ALBERT E. GEBERT.