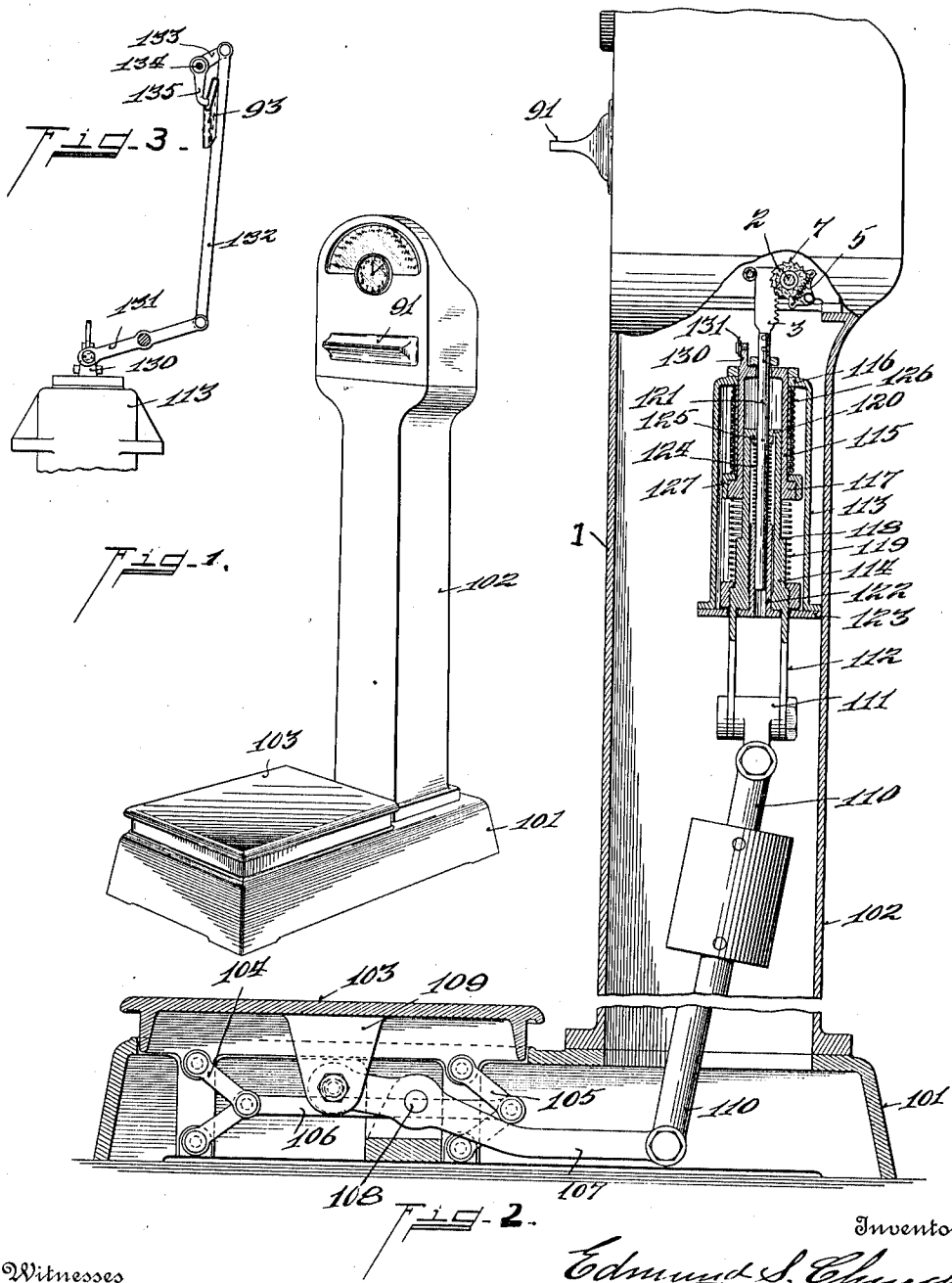


E. S. CHURCH.
CHECK CONTROLLED APPARATUS.
APPLICATION FILED APR. 25, 1910.

1,011,320.

Patented Dec. 12, 1911.

2 SHEETS-SHEET 1.



Witnesses

Oliver B. Kaiser
Attorney

Inventor

Edmund S. Church

By *Wood & Wood.*

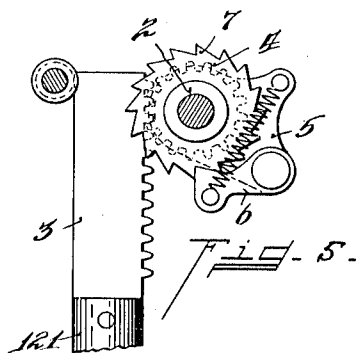
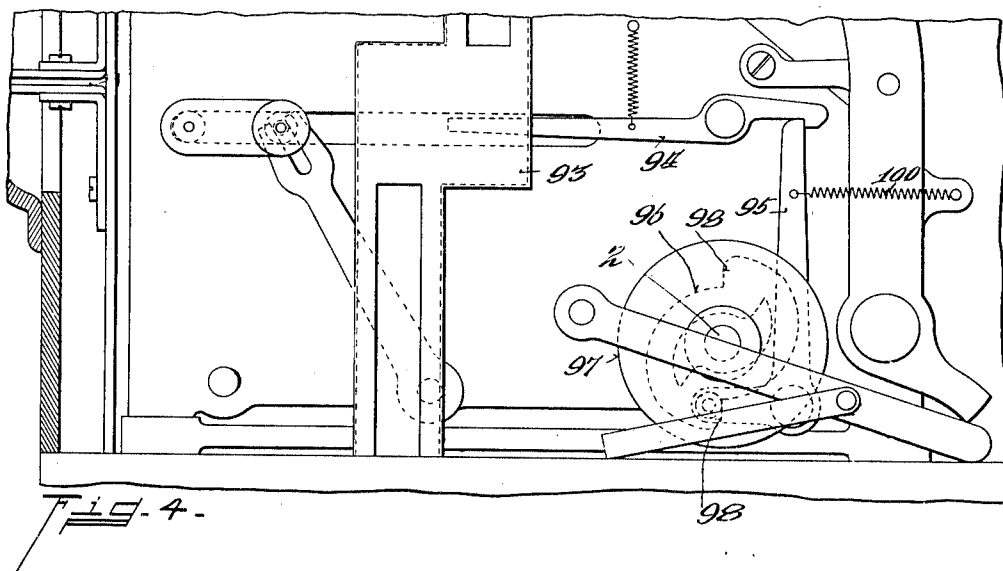
Attorneys

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Witnesses

Oliver B. Haier
Attorney

Inventor

Edmund S. Church

By *W. W. & W. W.*

Attorneys

UNITED STATES PATENT OFFICE.

EDMUND S. CHURCH, OF DAYTON, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE TRAVELERS INSURANCE MACHINE COMPANY, OF LOUISVILLE, KENTUCKY, A CORPORATION OF ARIZONA TERRITORY.

CHECK-CONTROLLED APPARATUS.

1,011,320.

Specification of Letters Patent.

Patented Dec. 12, 1911.

Application filed April 25, 1910. Serial No. 557,315.

To all whom it may concern:

Be it known that I, EDMUND S. CHURCH, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Check-Controlled Apparatus, of which the following is a specification.

My invention relates to a coin controlled apparatus, primarily adapted to issue a ticket or coupon in the nature of an accident insurance policy.

The power means for operating the coupon printing and issuing mechanism is made the subject-matter of a separate application, filed by me on September 30, 1909, and described and claimed herewith, in combination with check controlled apparatus, whereby both the weight of the operator and the deposit of the coin are required to effect an operation.

Primarily, a predetermined weight must be applied for initially creating power to operate the vending mechanism upon its release, but for the purposes herein any source of power may be utilized.

One of the objects of my invention is to provide a vending machine, in which the operating mechanism is released by the deposit of a coin, together with means necessitating the compliance of certain acts or restrictions before a deposit of coin can be effected.

Another object of my invention is to provide a vending machine with coin-controlled tripping means for releasing the operative elements for a vending operation, with means for positively returning the tripping mechanism to normal, and locking the vending mechanism against operation.

Another object of my invention is to provide a vending machine with a main power transmitting shaft, a cam mounted thereon, a lever in engagement with said cam, a trip lever to release said cam engaging lever actuated by a coin, the cam being arranged to restore the levers and lock the power shaft on completion of a vending operation.

Another object of my invention is to provide a vending machine with weighing mechanism, and means interposed between the weighing mechanism and coin slot, to prevent a deposit of the coin until a predetermined weight has been applied upon the

weighing mechanism, after which the coin can be deposited to trip the check-controlled mechanism of the machine.

Various other details and features of my invention are more fully set forth in the description of the accompanying drawings, forming a part of this specification, in which:—

Figure 1 is a perspective view of my vending machine. Fig. 2 is a central vertical section, through the base, column and power mechanism. Fig. 3 is a detail view of lever mechanism in connection with the power mechanism for controlling the deposit of a coin. Fig. 4 is a detailed side elevation primarily illustrating the mechanism for releasing the main driving shaft for a vending operation upon the deposit of the coin. Fig. 5 is a detail sectional view of rack gear and pawl mechanism for operating the main power shaft.

In the preferred use of the machine, a strip of paper is fed therein, having a series of pre-printed coupons and stubs therefor, with the coupons representing an accident insurance policy, and which for validation and issuance, both coupon and stub are simultaneously stamped with the date and time upon each actuation of the machine. The coupon is the vendee's receipt and the stub means for the vendor in the identification of the vendee, which is deposited within the machine at each operation, after the vendee has suitably identified himself thereon with his signature or the like.

1 represents the frame of the machine, which may be provided of suitable form to serve as a casing to support and house the various elements.

2 represents the main driving shaft conveying motion to the cam and lever mechanism of the various operative parts. Various means may be employed to convey rotary motion to said shaft upon its release, without departing from the features of my invention. Preferably, such power mechanism should be of a design to provide a given predetermined revolution to said shaft upon each vending operation, in order to insure a complete operation and a restoration to normal of all the moving parts after a vending operation. In this instance, I have illustrated the power means actuating a re-

reciprocating rack bar 3, see Fig. 5, with the rack teeth thereof in mesh with the teeth of rack gear 4, loose on said main shaft 2, fixed to a pawl plate 5, said plate carrying a pawl 6, adapted to engage with a ratchet wheel 7, fixed to the main shaft 2. Thus, on each upward reciprocation of the rod or bar 3, the shaft 2 is given a predetermined revolution and remains stationary upon the return stroke of said actuating bar 3. In a machine of this class it is preferable that the operation of this rack bar be controlled or released by the weight and deposit of the coin, with the weight serving as a means for creating the driving power, and which latter feature will be more fully hereinafter described.

As illustrated, a complete revolution of the shaft 2 performs two vending operations as a two-to-one ratio is employed between the rack bar 3 and rack gear 4, but it is obvious, that this ratio may be modified, without departing from the features of my invention.

It is desirable to have the main shaft 2, controlled in its rotation by the deposit of a coin, with tripping means provided to release the shaft, and automatically locked upon completing a half revolution, producing one vending operation. This shaft control comprises the following instrumentalities:—93 represents a vertical coin-chute, see Fig. 4. 94 represents a spring controlled trip lever, with one arm projected into the coin-chute and adapted to be engaged by a descending coin, to release the opposite end of said lever from its latch engagement with the bell crank lever 95, said lever 95 is suitably pivoted to the side frame of the machine and maintained under tension by a spring 100. The opposite right-angled arm of said bell crank lever 95 is provided with an anti-friction roller, projected into a cam groove 96, of the cam wheel 97, said groove provided with the stop shoulders 98, adapted to respectively engage with the roller of the bell crank lever 95, arresting the rotation of the shaft 2. The cam groove being of such outline as to swing the bell crank lever against the tension of the spring 100, to be engaged with and locked by the latch trip lever 94, with the parts in position for a second release.

In the preferred form of the machine, it is adapted to issue a coupon or coupons, primarily actuated by the weight of the vendee and the deposit of a coin, and preferable to the operation thereof, that the vendee be equal to or above a given weight before it is possible for him to operate the same. Thus, a given idle movement of the power mechanism is had for storing energy sufficient to operate the vending mechanism upon its release. This automatic storing of energy by the weight of the vendee has many inherent

advantages, which, in this instance it is not necessary to elaborate upon.

101 represents the base of the machine, supporting the vertical column 102.

103 represents a platform projecting through an opening in the base 101, and movably mounted in order that the weight of the vendee will depress the platform to actuate the mechanism contained in the machine.

104, 105, represent toggle links pivotally connected to ears formed on the platform 103 and to the base 101. 106 represents a connecting link, connecting said toggle links intermediately. This connection between the base and platform forms equalizing means in the downward movement of the platform to prevent a tilting of the platform, and a binding effect or uneven movement of the platform relative to the base.

107 represents a lever pivoted at 108, to brackets within the base of the machine, one end of which is pivotally connected to a lug 109, projected from the platform 103, while the opposite end of said lever 107, is pivotally connected to a weighted connecting rod 110 projected upwardly into the hollow column. The opposite end of said connecting rod 110 is pivotally connected to a knuckle 111, which in turn is pivotally connected to the arm 112 of the power mechanism. A preferable requisite for the operation of the machine, is the weight of the vendee and the deposit of a coin to effect an operation, eliminating manual manipulation in actuating the various parts, and as a given movement is required to perform the various operations, I have accomplished the same by utilizing a given weight as the primary actuating mechanism, which is adapted to govern the condition of automatic means, which I term power mechanism, to furnish the power upon its release, necessary for actuating the various parts.

As illustrated in Fig. 2, the power mechanism in this instance comprises the following instrumentalities:—113 represents a cylinder suitably mounted within the body of the machine or column 102. 114 represents a sleeve, carrying the arms 112, heretofore described, said sleeve having a telescopic engagement with the sleeve 115, movably mounted and projected through the head 116, of the cylinder 113. The sleeve 115 at one end is provided with a flange 117, against which the shoulder 118 engages, after the sleeve 114 by the weight of the vendee has been moved upwardly against the tension of the spring 119. 120 represents an inturned flange or head of the sleeve 114, through which the main actuating rod 121 projects, said rod 121 being further supported in a sleeve projection 122, formed integral with the support 123, in the form of a cross-plate secured to the column

102. 124 represents a coil spring, encircling the rod 121, one end of which bears against the sleeve projection 122, with the opposite end against a collar 125, fixed to the rod 121, said collar in a normal condition engaging with the head 120, of the sleeve 114. In the position shown in Fig. 2, spring 124 is under tension and serving as stored up energy or power for operating the various parts of the machine upon the release of the rod 121. The preliminary movement of the sleeve 114, caused by the weight of the operator, which must be equal to or above a fixed amount, moves the sleeve 114 upward against the tension of the spring 119, until the shoulder 118 engages with the flange 117, of the sleeve 115, which movement is sufficient to release the required energy for operating the parts upon their release, allowing the collar 125 and the rod 121 to move upward after their release by the expansion of spring 124. Additional weight, beyond the compressive pressure of spring 119, will cause a continued movement of sleeves 114, 115, against the spring 126, one end of said spring bearing against an adjusting collar 127, screw threaded upon the flange 117, of the sleeve 115, while the opposite end of the spring engages against the inner surface of the head 116, of the cylinder 113, thus forming a resistance against the weight of the vendee, permitting scale indicating movement of the sleeve 115, for operating an index finger, indicating upon a dial the weight of the vendee, serving the same purpose as the common spring balanced weighing machine. If the weight upon the platform is removed after a vending operation, the sleeve 114, through the weighted connecting rod, will cause the spring 124 to be compressed, and the rod 121 restored to normal position for a second operation. It is quite obvious, however, that the machine can be operated by any weight above that required to compress the spring 124, by eliminating spring 119. This spring is employed for the purpose of requiring the vendee to be equal to or above a predetermined weight, a qualification imposed by the insurer or vendee in vending accident insurance. It is obvious, however, that power mechanism may be employed between the weighing mechanism and vending mechanism, automatic in its action after the deposit of a coin, and an applied weight brought upon the weighing mechanism, without departing from the features of my invention.

It is impossible under the construction of the machine, to trip the mechanism for a vending operation, unless the vendee is of the weight required, or above the same, before the coin will be released or free to travel in the chute to trip the catch which locks the power mechanism. This is preferably accomplished as follows:—The sleeve

115 is provided with an ear 130, to which is pivotally connected a lever 131, said lever in turn being fulcrumed within the column of the machine. The opposite end of the lever 131 is pivotally connected to a connecting link 132, extended upward and pivotally connected to an arm 133, fixed upon the rock shaft 134, for actuating the same, said rock shaft being suitably supported in bearings formed in the head of the machine. 135 represents an arm fixed to the rock shaft 134, L-shaped at one end and projected into a slot formed in the coin chute 93, when the machine is in normal position, the given weight upon the platform being sufficient to move the sleeve 114 upward, so as to bring the shoulder 118, into engagement or contact with the sleeve 115, moving the same upward to actuate the lever 131, drawing the connecting link 132 downward, and swinging the L-shaped arm 135, so as to withdraw the same from the path within the coin chute, which permits the coin to descend with the chute, and in its travel to engage and strike the tripping lever, releasing the power mechanism.

Having described my invention, I claim:—

1. In a machine of the class described, vending mechanism, weighing mechanism for operating the vending mechanism, means for locking said weighing mechanism against operation to be released by the deposit of a coin within the machine, and means preventing the deposit of the coin until the application of a predetermined weight upon said weighing mechanism.

2. In a machine of the class described, vending mechanism, check-controlled apparatus therefor actuated by the deposit of a coin within the machine, weighing mechanism, a coin chute leading to the check-controlled mechanism, and connections between said coin chute and weighing mechanism obstructing said coin passage, and operative upon the application of a predetermined weight to said weighing mechanism to make a coin deposit effective.

3. In a machine of the class described, vending mechanism, coin controlled mechanism for operating said vending mechanism for a vending operation, a coin chute, means projecting into the chute for normally blocking the passage of a coin therethrough, and means operative by a predetermined applied weight for withdrawing said projecting means and affording a free passage for the coin.

4. In a machine of the class described, vending mechanism, coin controlled mechanism for operating said vending mechanism for a vending operation, weighing mechanism, a coin chute, means projecting into the chute for normally blocking the passage of a coin therethrough, and means operated

by the application of a predetermined weight to said weighing mechanism for withdrawing said projecting means and affording a free passage for the coin.

- 5 5. In a machine of the class described, vending mechanism, weighing mechanism, coin controlled mechanism for operating the vending mechanism, a coin chute, means normally blocking said chute for preventing
10 a coin reaching the vending operating mechanism, and means actuated by the application of a predetermined weight to the weighing mechanism for withdrawing said blocking means.
- 15 6. In a machine of the class described, vending mechanism, weighing mechanism, coin-controlled mechanism for releasing said vending mechanism, means for locking the entrance of coin adapted to be released upon
20 application of a predetermined weight upon said weighing mechanism, comprising a movable member maintained under tension in one direction adapted to be engaged by said weighing mechanism, after the predetermined weight has been applied thereto,
25 and lever connections between said movable member and coin entrance.
7. In a machine of the class described, vending mechanism, coin-controlled means
30 for releasing said mechanism, means for closing the entrance of coin to said releasing mechanism, and means for opening said entrance operative by the application of a predetermined weight, comprising two relatively
35 movable members, the one to receive the applied weight, and the second in

connection with said entrance controlling mechanism, both members maintained under tension in the same direction, one of greater resistance than the other, whereby said second movable member remains stationary during the preliminary movements of said first member in the application of the weight thereto, thereby governing the minimum amount of weight required, after which both members move as a unit. 40 45

8. In a machine of the class described, vending mechanism, coin-controlled means for releasing said mechanism, means for closing the entrance of the coin to said coin-controlled releasing mechanism, means for operating the same, to open the entrance, controlled by the application of a predetermined weight, comprising two movable members under variable resistance, the one adapted to move the second after its resistance has been overcome by the application of a predetermined weight thereto, with the movement of the second operating said coin entrance controlling mechanism. 50 55 60

9. In a machine of the class described, vending mechanism, coin-controlled means for releasing said mechanism, means for controlling the entrance of a coin to said releasing mechanism operative upon the application of a predetermined weight thereto. 65

In testimony whereof, I have hereunto set my hand.

EDMUND S. CHURCH.

Witnesses:

DAVID R. CASTLEMAN,
MARY BURNS.