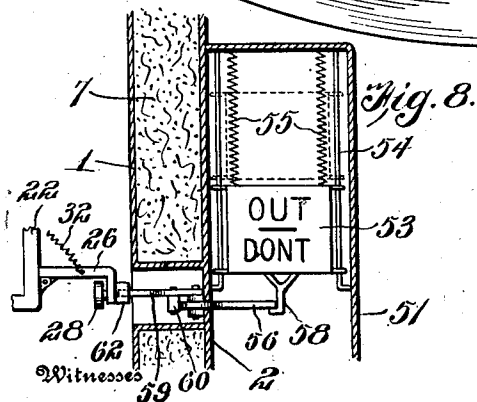
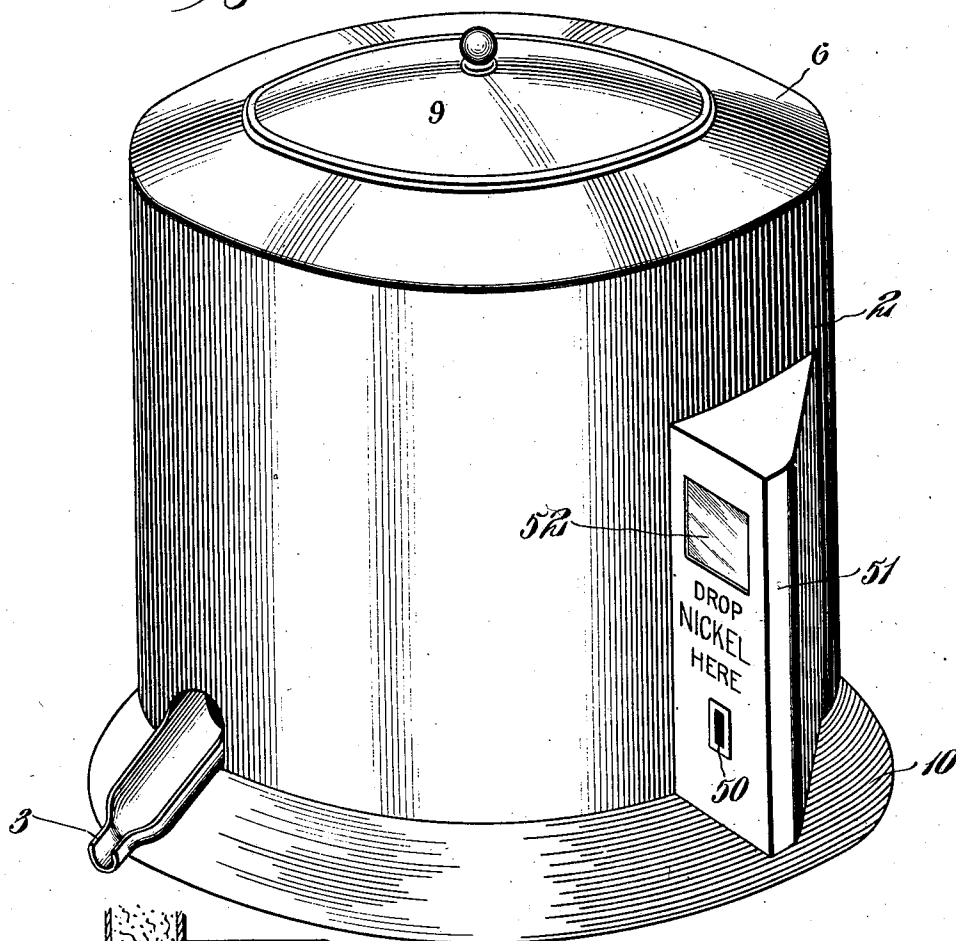


G. F. JOHNSON.
VENDING MACHINE.
APPLICATION FILED FEB. 11, 1909.

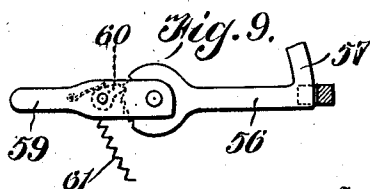
938,767.

Patented Nov. 2, 1909.
3 SHEETS—SHEET 1.

Fig. 1.



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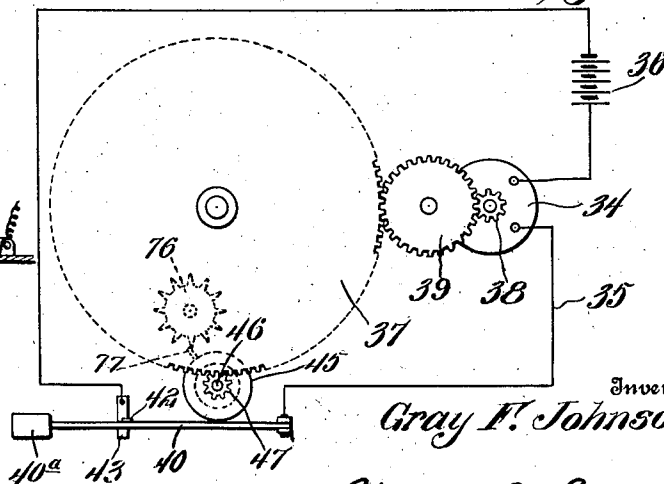
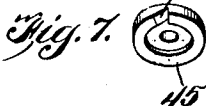


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3 SHEETS—SHEET 2.



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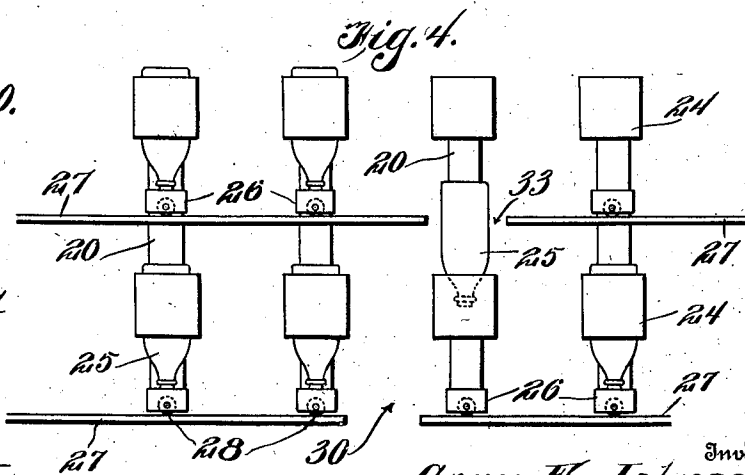
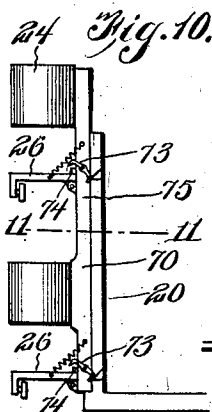
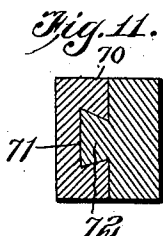
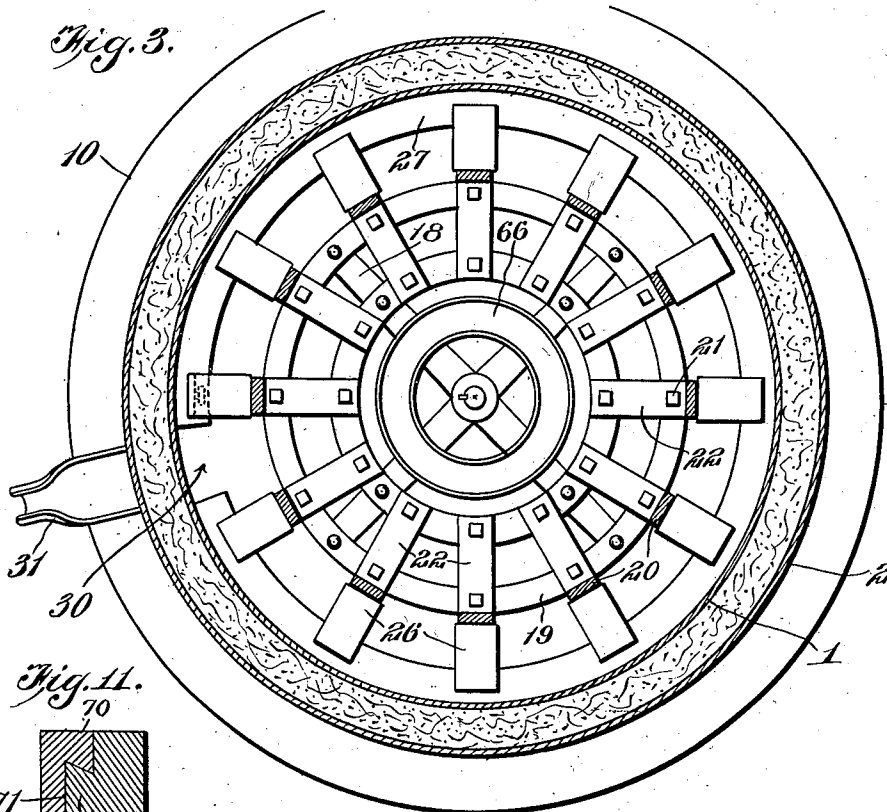
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938,767.

Patented Nov. 2, 1909.

3 SHEETS—SHEET 3.



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VENDING-MACHINE.

938,767.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Application filed February 11, 1909. Serial No. 477,309.

To all whom it may concern:

Be it known that I, GRAY F. JOHNSON, a citizen of the United States, residing at Thomson, in the county of McDuffie and State of Georgia, have invented new and useful Improvements in Vending-Machines, of which the following is a specification.

My invention relates to improvements in automatic vending machines.

10 The primary object of the invention is the provision of a machine in the use of which a packaged liquid is automatically vended.

A further object of the invention is the provision of an automatic vending machine 15 which is simple, durable and efficient, and which may be manufactured and sold at a comparatively low cost.

With the above and other objects in view, the invention consists in the construction, 20 combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, wherein:—

Figure 1 is a perspective view of an au- 25 automatic vending machine constructed in accordance with my invention. Fig. 2 is a sectional view taken on a plane extending centrally and vertically through the machine. Fig. 3 is a sectional view taken on 30 a plane extending horizontally through the machine. Fig. 4 is a detail plan view illustrating the manner in which a package is delivered from one of the upper receivers into one of the lower receivers. Fig. 5 is 35 a diagrammatic view illustrating the means by which the package carrier is rotated, and the electric circuit in which the motor is included. Fig. 6 is a sectional view illustrating the means by which the motor circuit 40 is closed to set the machine in operation. Fig. 7 is a detail perspective view of the detent wheel. Fig. 8 is a sectional view illustrating the warning sign and the means by which it is controlled. Fig. 9 is a detail 45 view illustrating the controlling means for the warning sign. Fig. 10 is a view in side elevation of a modified manner of securing the package receivers and package supporting arms to the standards, and Fig. 50 11 is a sectional view taken on the horizontal plane indicated by the line 11—11 of Fig. 10, the package carriers and the package supporting arms being omitted.

Like reference characters are employed to designate corresponding parts throughout 55 the several views.

My improved vending machine comprises a casing which includes inner and outer side walls 1 and 2, respectively, inner and outer bottom walls 3 and 4, respectively, and inner and outer top walls 5 and 6, respectively. 60 The walls of the casing are relatively spaced to receive between them a packing 7 of non-conducting material. The top of the casing is provided with an opening 8 which is 65 closed by means of a movable cover 9. The cover 9 may be secured against unauthorized removal by a suitably constructed lock, not shown. The casing is provided with a base which comprises a side wall 10 and 70 a bottom wall 11, the bottom wall being spaced from the wall 4 to provide a compartment 12.

A vertical shaft 13 is journaled in a bearing 14 carried by the walls 3 and 4 and in a 75 bearing 15 secured to the inner side of the wall 11. The upper end of the shaft 13 extends into the casing and has secured thereto a platform which comprises a hub 15^a provided with an opening for the reception 80 of the upper end of the shaft, the hub resting upon a shoulder 16 formed upon the shaft. The platform is held against movement on the shaft by means of a key 17. The platform also includes a plurality of 85 arms 18 secured to and extending radially from the hub 15^a, and annular members 19 secured to the upper surfaces of the arms 18. A plurality of vertical standards 20 are secured to the platform by means of bolts 21 90 which engage the members 19 of the platform and the horizontal bases 22 of the standards. The standards 20 are relatively spaced and are arranged in a circle. The upper ends of the standards are held against 95 movement by an annular retaining member 23 which is secured to the inner sides of the standards. A pair of relatively spaced and superposed package receivers is secured to each standard 20, said receivers being preferably cylindrical, and have their upper and 100 lower ends fully open. The packages 25 are disposed in the receivers 24 in inverted position and are retained therein by supporting arms 26, which are pivotally secured to the 105 standards 20 below the package receivers.

The package supporting arms 26 are retained in their active positions by annular tracks 27 which are secured to the inner side of the side wall 1 of the casing, the free ends of the arms being provided with rollers 28 which travel upon the tracks.

In practice the package carrier is rotated to bring one of the packages 25 in alinement with a discharge opening 29 in the casing. The package carrier includes the platform, the vertical standards 20, the receivers 24, and the package supporting arms 26. It will therefore be seen that the package carrier comprises a plurality of pairs of package receivers and package supporting arms, the package receivers and package supporting arms of each pair being positioned one above the other. At a point in alinement with the discharge opening 29 the track 27 is cut away as at 30 to permit the lower supporting arms 26 to successively fall into inoperative position by the weight of the package supported thereby. When an arm is in inoperative position the package supported thereby is discharged through the opening 29 into a receiver 30 which is formed to catch and support the package and from which the purchaser removes the package. After the package has been discharged through the opening 29, its supporting arm is returned to its normal position by means of a spring 32, which is secured at one end to the standard 20 and at its other end to the arm. As the supporting arm is returned to its normal position after it discharges its package, it is again placed in position to travel upon and be supported by the track. At a point out of alinement with the cut out portion 30 of the lower track 27, the upper track is cut away as at 33 to permit the upper supporting arms to successively fall into inoperative position. When one of the supporting arms falls into inoperative position, it directs its package into the lower package receiver.

The package carrier is rotated by an electric motor 34 which is included in the normally open circuit 35 of a battery 36. The shaft 13 upon which the package carrier is mounted, is connected with the armature shaft of the motor 34 by means of a train of gearing which consists of a large gear wheel 37 fixed on the shaft 13, a small gear wheel 38 fixed on the armature shaft of the motor, and an intermediate gear 39 meshing with the gears 37 and 38. A lever 40 is pivotally secured at one end to the inner side of the bottom wall 11 of the base of the casing, one side of the circuit 35 being connected to the pivoted end of the lever. The free end of the lever 40 is supported by a spring 41, and when the lever is depressed a contact point 42 formed thereon engages a contact plate 43 secured to the inner side of the bottom 11 of the base of the casing. When the

contact 42 engages the contact plate 43 the circuit is closed, the motor imparting rotation to the package carrier.

When one of the lower of a pair of package supporting arms 26 reaches the cut out portion 30 of the lower track 27, it falls and discharges the package supported thereby through the discharge opening 29 into the receiver 31. A further rotation of the package carrier will position the upper of the pair of supporting arms over the cut out portion 33 of the upper track 27, such supporting arm discharging its package into the lower receiver. As only one package is delivered at a time, the package carrier has only a limited rotary movement. The movement of the package carrier is controlled by a detent 44 formed upon the lever 40 and a detent wheel 45 journaled upon a shaft 46, the shaft 46 being provided with a pinion 47 which meshes with the gear wheels 37. The detent wheel 45 is provided with a recess 48 in which the detent 44 engages when the lever 40 is elevated. The depression of the lever 40 carries the detent 44 out of the recess 48 of the wheel 45, and closes the circuit 35, imparting rotary motion to the package carrier. When the detent wheel 45 has made a complete revolution the detent 44 again engages the recess 48, stopping the machine. The lever 40 is adapted to be depressed by a coin deposited into a coin chute 49 through a coin slot 50. The coin slot 50 is located in a casing 51 secured to the side wall 2, said casing being provided with a glass panel 52 through which a warning sign 53 is visible when the machine is empty. The sign 53 is slidably mounted upon guide rods 54, and is normally retained in warning position by means of springs 55. The sign 53 is retained out of warning position by means of a lever 56 which is pivotally secured to the wall 2 and which is provided with arcuate extensions 57 for engagement with a hooked extension 58 secured to and depending from the sign 53. When the lever 56 is thrown out of engagement with the extension 58, the springs 55 move and hold the sign 53 in warning position. The lever 56 is thrown out of engagement with the extension 58 through the operation of a lever 59 pivotally secured to the side wall 2 and projecting into the casing. The lever 59 is connected with the lever 56 through the medium of a spring pressed dog 60, and it is held in its normal position by means of a spring 61. The lever 59 is engaged by an extension 62 formed upon one of the package supporting arms 26. The connection between the levers 56 and 59 is such that the extension 62 must engage and operate the lever 59 twice before the sign 53 is released, whereby to permit all of the packages in the machine to be vended before the sign is moved to warning position.

The contents of the machine are kept at a low temperature by ice carried in a receptacle 63. The receptacle 63 is supported within the casing by means of hooks 64 which engage a flange 65 formed by the inward extension of the inner wall 5 of the casing and the wall 66 of the opening 8. The receptacle 63 is provided with a plurality of openings 64 and water is conveyed therefrom by a drip spout 65 which discharges into an annular member 66 carried by the arm 18 of the platform. The member 66 is provided with a drip spout 67 which discharges into a drip pan 68 mounted in the bottom of the casing.

The operation of my improved vending machine may be stated to be as follows:— Assuming that the machine has been supplied with packages, the coin deposited into the coin slot 50 will be directed by the coin chute 49 onto the coin plate 40^a which is secured to the free end of the lever 40, the weight of the coin depressing the lever. The depression of the lever 40 closes the circuit 35 and withdraws the detent 44 from the recess 48 of the detent wheel 45. As soon as the detent 44 is withdrawn from the recess 48 the motor rotates the package carrier, placing the lower of a pair of supporting arms 26 above the cut out portion 30 of the lower track 27. When the supporting arm has been positioned above the cut out portion, the detent 44 again engages the recess 48 and stops the operation of the machine, whereupon the arm falls and deposits the package supported thereby in the chute 31. The insertion of another coin into the coin slot 50 will depress the lever 40, again setting the package carrier in motion. This time the next lower arm is positioned above the cut out portion 30 of the track 27, and the upper arm of that pair whose lower arm fell on the preceding operation of the machine, drops and delivers the package into the lower receiver of the pair, and so on until all of the packages have been vended.

The package receivers 24 and the package supporting arms 26 may be removably applied to the standards 20 through the medium of supports 70 to which the receivers and arms are secured and which are provided with dove-tailed grooves 71 slidably receiving dove-tailed tongues 72 on the standards 20. To support the arms 26 in operative position during the application of the supports 70 to the standards 20, dogs 73 are pivotally mounted upon the supports for engagement with lugs 74 formed on the arms. Lugs 75 are secured to the standards 20 and throw the dogs 73 out of engagement with the lugs 74 when the supports 70 are applied to the standards, whereby to permit each supporting arm to fall on reaching one of the openings 30 or 33.

A register, not shown, is used in connection with the vending machine to indicate the number of packages sold, and it is adapted to be operated through the medium of a spur gear 76. The spur gear 76 is positioned for engagement by a pin 77 secured to and projecting radially from the detent wheel 45, see Fig. 5 of the drawings, the spur wheel being shown in dotted lines in said figure.

It should be apparent from the above description, taken in connection with the accompanying drawings, that I provide a machine which is admirably adapted for vending packaged liquids, such as root beer, ginger ale, and the like.

While I have described the method of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the apparatus shown is merely illustrative and that such changes may be made when desired as are within the scope of the claims.

Having thus described the invention, what is claimed as new is:—

1. A vending machine comprising a casing provided with a discharge opening, a package carrier rotatably mounted within the casing, a gear wheel fixed to the package carrier, an electric motor geared to the gear wheel, an electric circuit in which the motor is included, said circuit being normally open, a pivotally mounted lever adapted to close the circuit when depressed, a spring supporting the lever, a detent wheel provided with a pinion meshing with the gear wheel, said detent wheel being provided with a recess, and a detent carried by the lever for engagement with the recess of the detent wheel.

2. A vending machine comprising a casing provided with a discharge opening, a plurality of supports rotatably mounted in the casing, package receivers secured to the supports, pivotally mounted arms supporting the packages in the receivers, a track supporting the arms, said track being provided with a cut out portion alined with the discharge opening, means for rotating the supports, and means for controlling the rotating means.

3. A vending machine comprising a casing provided with a discharge opening, a plurality of supports rotatably mounted within the casing, a pair of package receivers secured to each support, arms pivotally secured to the supports and supporting the packages in the receivers, tracks supporting the arms, the lower track being provided with a cut away portion alined with the discharge opening, the upper track being provided with a cut away portion out of alinement with the cut away portion of the lower track, means for rotating the supports, and means for controlling the rotating means.

4. A vending machine comprising a casing provided with a discharge opening, a shaft journaled in the casing, a platform secured to the shaft, a plurality of standards secured to the platform, a pair of package receivers secured to each standard, a pair of arms pivotally secured to each standard and supporting the packages in the receivers, springs secured to the standards and to the arms, tracks supporting the arms, one of the tracks being provided with a cut away portion alined with the discharge opening, the other track being provided with a cut away portion out of alinement with the cut away portion of the first-named track, means for rotating the platform, and means for controlling the rotating means.

5. A vending machine comprising a casing provided with a discharge opening, a shaft journaled in the casing, a platform secured to the shaft, standards secured to the platform, package receivers secured to the standards, arms pivotally secured to the standards and supporting the packages in the receivers, springs secured to the standards and to the arms, tracks arranged within the casing and provided with cut away portions, rollers journaled on the arms and traveling on the tracks, an ice receptacle arranged within the casing, a gear wheel fixed on the shaft, an electric motor, a gear wheel fixed on the armature shaft of the motor and meshing with the first-named gear wheel, an electric circuit in which the motor is included, said circuit being normally open, a lever adapted to be depressed to close the circuit, means for supporting the lever, a detent wheel provided with a pinion meshing with the first-named gear wheel and with a recess, and a detent carried by the lever for engagement with the recess of the detent wheel.

6. A vending machine comprising a casing provided with a discharge opening, a plurality of standards rotatably mounted in the casing, supports removably secured to the standards, receivers secured to the supports, supporting arms pivotally secured to the supports below the receivers, a track supporting the arms, said track being provided with a cut out portion alined with the discharge opening, means for rotating the standards, and means for controlling the rotating means.

7. A vending machine comprising a casing provided with a discharge opening, a plurality of standards rotatably mounted in the casing, supports removably secured to the standards, receivers secured to the supports, supporting arms pivotally mounted upon the

supports below the receivers, dogs pivotally secured to the supports for engagement with the arms, said dogs being held out of engagement with the arms when the supports are applied to the standards, a track supporting the arms, said track being provided with a cut out portion alining with the discharge opening, means for rotating the standards, and means for controlling the rotating means.

8. A vending machine comprising a casing provided with a discharge opening, a package carrier rotatably mounted in the casing, a package carrier rotating means, means for controlling the rotating means, a sign, a pivotally mounted lever adapted to engage and retain the sign out of warning position, another pivotally mounted lever, a spring-pressed dog carried by said other lever for engagement with the first-named lever, and means carried by the package carrier for engagement with said other lever.

9. A vending machine comprising a casing provided with a discharge opening, a package carrier mounted in the casing, a package carrier operating means, means for controlling the operating means, guide rods, a sign slidably mounted upon the guide rods, a spring holding the sign in warning position, a lever adapted to engage and retain the sign out of warning position, and means on the package carrier adapted to move the lever out of engagement with the sign.

10. A vending machine comprising a casing provided with a discharge opening, means removably mounted in the casing, package receivers mounted upon said means, arms adapted to support the packages in the receivers, a track supporting the arms and provided with a cut out portion, means for operating the first-named means, and means for controlling the operating means.

11. A vending machine comprising a casing provided with a discharge opening, package receivers mounted in the casing, said package receivers being open at their upper and lower ends, arms adapted to support the packages in the receivers, a track supporting the arms and provided with a cut out portion alined with the discharge opening, means for operating the receivers, and means for controlling the operating means.

In testimony whereof I affix my signature in presence of two witnesses.

GRAY F. JOHNSON.

Witnesses:

U. S. A. GRUER,
J. O. SHIELDS.