

J. B. KAIGHN.
CHECK CONTROLLED APPARATUS.
APPLICATION FILED AUG. 31, 1912.

1,047,651.

Patented Dec. 17, 1912.

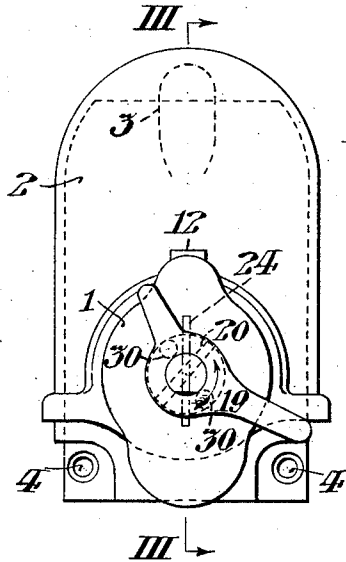


FIG. I.

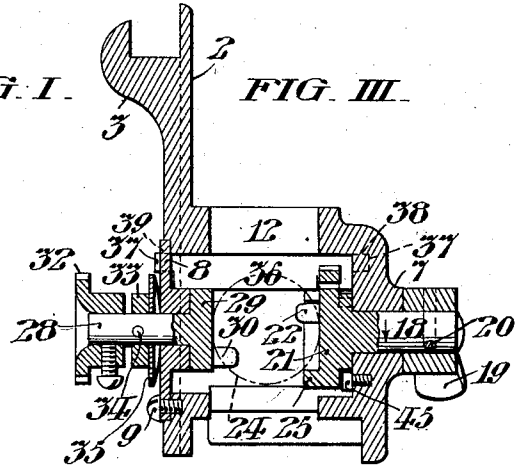


FIG. III.

FIG. II.

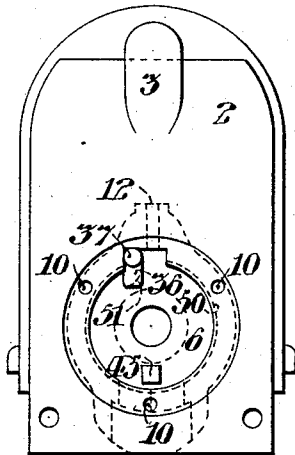


FIG. IV.

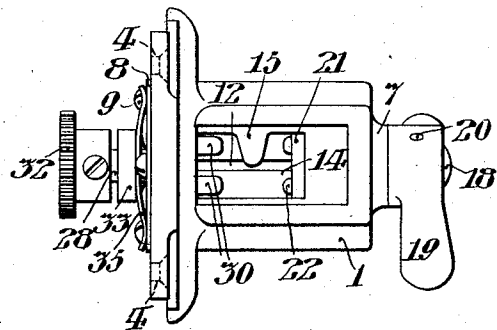


FIG. VI.

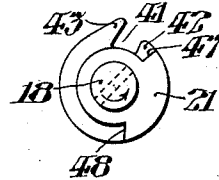
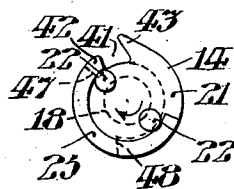


FIG. V.



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UNITED STATES PATENT OFFICE.

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CHECK-CONTROLLED APPARATUS.

1,047,651.

Specification of Letters Patent.

Patented Dec. 17, 1912.

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To all whom it may concern:

Be it known that I, JAMES BARTON KAIGHN, of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Improvement in Check-Controlled Apparatus, whereof the following is a specification, reference being had to the accompanying drawing.

My improvement relates to coin controlled vending machines of the general construction described in Letters Patent of the United States 957,684 granted to me May 10, 1910, and is particularly applicable to gas meters wherein a rotary coin carrier may be operatively connected by a coin with meter mechanism, which may then be manually set in position to deliver a predetermined quantity of gas, by turning an exterior handle attached to said carrier. The rotary coin carrier shown in said Letters Patent is inclosed in a casing having a narrow slot at the bottom thereof, extending parallel with the axis of the carrier, for the escape of the coin; said slot being out of vertical alinement with the coin inlet slot at the top of said casing so as to prevent the extension of an implement in alinement through both slots into the coin receptacle. However, I find that the insertion of an implement may be prevented and other advantages attained by substituting for said narrow slot a wide opening which is only partially obstructed by a projection extending transversely with respect to the axis of the carrier far enough to prevent insertion of an implement as above contemplated. Such an opening substituted for the narrow slot of the prior art not only prevents obstruction of the device by candle grease and similar material dropped through the coin slot at the top in endeavors to wrongfully operate the prepayment mechanism, but, also prevents obstruction thereof by pennies and other coins smaller than the quarter dollars for which the device is designed, such smaller coins being permitted to fall through said opening aside from said projection. Moreover, said mechanism of the prior art includes exterior stops whereby the rotary movement of the coin carrier is intended to be limited but which serve to retain candle grease or other obstructing matter dropped thereon and thus prevent proper operation of the carrier. Therefore, I find it advantageous to substi-

tute interior stop mechanism for such exterior stops of the prior art, and, the present invention provides such interior stop mechanism.

My invention includes the various novel features of construction and arrangement hereinafter more definitely specified.

In the drawings:—Figure I is a front elevation of the casing for the rotary coin carrier. Fig. II is a rear elevation of said casing shown in Fig. I. Fig. III is a vertical sectional view taken on the line III, III in Fig. I. Fig. IV is an inverted plan view of said casing. Fig. V is a rear elevation of the coin carrier. Fig. VI is a front elevation of the coin carrier.

In said figures; the coin carrier casing 1 comprises the plate 2 having the hook lug 3 arranged to detachably engage a bracket in the gear casing of the prepayment mechanism which forms no part of the present invention and is omitted from the drawing. Said plate has holes 4 at its lower corners for screws which engage said gear casing so that said coin carrier casing is rigidly but detachably connected with said gear casing which is attached to the meter which the prepayment mechanism is designed to control. Said casing 1 has the internal cylindrical chamber 6 in concentric relation with the bearing 7 at the outer end thereof and the bearing plate 8 at the inner end thereof, said plate 8 being detachably connected with said casing by the screws 9 which are entered in the sockets 10. Said casing 1 has the coin inlet slot 12 at the top of said chamber 6; said slot being in vertical alinement with the axis of said chamber as shown in Fig. II. Said chamber 6 has the coin outlet 14 at the bottom thereof having the projection 15 extending transversely with respect to the axis of said chamber and projecting as shown in Fig. IV so as to underhang said slot 12 as indicated in Fig. IV. The shaft 18 of the coin carrier is journaled in said bearing 7 in concentric relation with said chamber 6 and has the exterior handle 19 which is rigidly secured thereon by the pin 20 so that said carrier may be manually turned. Said carrier has at its inner end the disk 21 provided with two diametrically opposite crank pins 22 adapted to engage a coin, for instance, a quarter of a dollar 24, and, has the circumferential flange 25 which

supports said coin during the operation of setting the meter mechanism therewith. The crank shaft 28 is journaled in said bearing plate 8 in concentric relation with said chamber 6 and in axial alinement with said shaft 18 of the coin carrier, and has at its inner end the disk head 29 provided with two diametrically opposite crank pins 30 between which said coin 24 is engaged as indicated in Figs. I and III. Said crank shaft 28 has at its inner end the gear 32 which is operatively connected with mechanism by which the meter valve may be manually opened when said coin carrier is operatively connected with said crank shaft 28 by the coin 24 as above described. In order to prevent accidental turning movement of said crank shaft 28 I find it convenient to provide the same with the collar 33 secured thereon by the pin 34, and interpose between said collar and the bearing plate 8, the triangular plate spring 35 which encircles said shaft 28 and holds said disk head 29 in frictional engagement with the bearing plate 8 so that it may only be turned by manipulation of the handle 19 when said head is connected with the coin carrier by the coin 24.

The coin inlet 12 through which the coin 24 is deposited in the coin carrier, is provided with means to prevent the wrongful removal or displacement of said coin, including the plate 36 which is eccentrically pivoted upon the alined trunnions 37 journaled in the bearings 38 and 39 respectively in said coin carrier casing 1 and in said plate 8. Said plate 36 being a gate thus interposed in the passageway between said inlet 12 and the coin carrier, fits in the recess 41 in the flange 25 of the coin carrier, shown in Fig. V; said carrier having the opposite shoulders 42 and 43 arranged to co-operate therewith so that when said carrier is turned to the position shown in the drawing said gate 36 is opened to admit the coin 24 to the position shown in Fig. III. Said carrier must be turned from the position shown in Fig. III, in the direction of the arrow on Fig. I, one-half revolution, to set the meter mechanism and release the coin, and, at the beginning of such movement the gate 36 being shifted by the shoulder 42 pushes the coin away from the slot 12 so that the coin disappears and the gate is closed before the coin is engaged by the pins 22. Said gate remains closed until the carrier is returned to its initial position shown in said figures; said coin being dropped through the opening 14 into the coin receptacle when disengaged by the pins 22 and unsupported by the flange 25. It may be observed that the operator cannot catch and retain the coin by the flange 25 because the latter is concentric with the axis of the carrier and merely supports the coin loosely in

the central position until it is engaged by said pins 22. In order to limit the manual movement of said coin carrier I provide said casing 1 with the stop stud 45 projecting into the chamber 6 adjacent the bearing 7 as shown in Figs. II and III, and, I provide the coin carrier with peripheral abutments 47 and 48 adapted to alternately encounter said stop stud 45. It may be observed that said stop stud 45 and the abutments 47 and 48 are not only inclosed in the chamber 6 within the casing 1 but are also disposed aside from the coin inlet 12 so that nothing may be interposed between said stop and abutments to prevent the proper turning movement of the coin carrier.

The operation of the mechanism above described is as follows:—The mechanism being in the position shown in the drawing, with the abutment 48 against the stop stud 45, a coin 24 is dropped through the inlet 12 and caught between the crank pins 22 of the coin carrier, being upheld by the semi-annular flange 25 on said carrier. Said carrier being then turned in the direction of the arrows on Figs. I, III and V, the coin carrier closes the coin inlet by movement of said gate 36, and, said crank pins 22 encountering the coin 23 cause the latter to engage the crank pins 30 on the head 29 of the shaft 28 so as to cause the gear 32 to turn and thereby set the meter mechanism to the desired extent, such movement being limited by the shoulder 47 encountering the opposite side of said stop stud 45, in which position the lower edge of the coin is carried past the projection 15 so that it is free to fall into the coin receptacle through the opening 14. Thereupon, the coin having fallen from the carrier, reverse rotary movement of said carrier, by means of the handle 19, does not change the set position of said gear 32 and the mechanism connected therewith, because of the absence of the coin, and, the parts connected with said handle 19 are thus returned to their initial position shown in Fig. III to receive another coin. It may be observed that as the carrier approaches the limit of its return movement to normal position the shoulder 43, shown in Fig. V, which projects into the circumferential groove 50 in the wall of said chamber 6, overlaps the curved edge 51 of the gate 36, and insures that said gate shall be drawn down into the peripheral recess 41 of the carrier so as to be opened to the position shown in Figs. II and III. Although said flange 25 serves to uphold the coin 24 it will not uphold any smaller coin, and, as shown in Fig. IV the opening 14 is of such size and shape that such smaller coins are free to fall therein even when disposed more or less diagonally with respect to the axis of the carrier. Moreover, it may be observed that although said flange 25 ceases to support

the coin 24 as the carrier approaches the limit of its movement with the coin, the latter is retained, connecting the carrier with the crank shaft, until the lower edge of the coin is carried past said projection 15, so that said projection necessitates that the carrier shall be turned to the full extent limited by the stud 45 and abutment 47 before the coin is released. Moreover, in the construction shown in my prior Patent 957,684 aforesaid the opposed pairs of pins between which the coins are engaged are of such shape and so spaced that it is possible to fraudulently set the prepayment mechanism by a coin smaller than the normal coin. For instance, a nickel may be suspended by a thread between the opposed pins until the carrier is turned far enough to clamp the nickel between the pins. Therefore, it may be observed that I have in the present construction made the opposed pins 22 and 30 so shaped and in such spaced relation that they will only coöperate with the normal coin, to wit, a quarter of a dollar, and, consequently, attempts to fraudulently operate the prepayment mechanism with a smaller coin are frustrated by the twisting and release of the coin consequent upon any attempt to turn the handle 19.

It is to be understood that I do not desire to limit myself to the precise details of construction and arrangement above described, as it is obvious that various modifications may be made therein without departing from the essential features of my invention, as defined in the following claims.

I claim:—

1. In prepayment mechanism, a rotary coin carrier having an axial shaft, with a disk head and two diametrically opposite crank pins and two peripheral abutments; of a coin carrier casing having a bearing for said axial shaft, a chamber concentric with said bearing inclosing said carrier, having a coin slot at the top thereof and a coin discharge opening at the bottom thereof; a projection extending from one side of said bottom opening, intermediate of the length thereof, past the center thereof, transversely with respect to the axis of said carrier; and, a stop stud in said casing, within said chamber adjacent said bearing, adapted to be alternately encountered by said abutments; whereby, a normal coin is retained in operative relation with said carrier until carried past the center of said opening, and, obstruction of the mechanism by abnormal coins or otherwise is obviated.

2. In prepayment mechanism, a rotary coin carrier having an axial shaft, two peripheral abutments and means to engage a coin; of a coin carrier casing having a bearing for said axial shaft, a chamber concentric with said bearing inclosing said carrier, having a coin slot at the top thereof

and a coin discharge opening at the bottom thereof; a projection extending from one side of said bottom opening, intermediate of the length thereof, past the center thereof, transversely with respect to the axis of said carrier; and, a stop stud in said casing, within said chamber adjacent said bearing, adapted to be alternately encountered by said abutments; whereby, a normal coin is retained in operative relation with said carrier until carried past the center of said opening, and, obstruction of the mechanism by abnormal coins or otherwise is obviated.

3. In prepayment mechanism, a rotary coin carrier having an axial shaft, two peripheral abutments and means to engage a coin; of a coin carrier casing having a bearing for said axial shaft, a chamber inclosing said carrier, having a coin slot at the top thereof and a coin discharge opening at the bottom thereof; a projection extending from one side of said bottom opening, past the center thereof, transversely with respect to the axis of said carrier; and, a stop stud, within said chamber, adapted to be alternately encountered by said abutments; whereby, a normal coin is retained in operative relation with said carrier until carried past the center of said opening, and, obstruction of the mechanism by abnormal coins or otherwise is obviated.

4. In prepayment mechanism, a rotary coin carrier having an axial shaft and means to engage a coin; of a coin carrier casing having a bearing for said axial shaft, a chamber inclosing said carrier, having a coin slot at the top thereof and a coin discharge opening at the bottom thereof; and, a projection extending from one side of said bottom opening, intermediate of the length thereof, past the center thereof, transversely with respect to the axis of said carrier; whereby, a normal coin is retained in operative relation with said carrier until carried past the center of said opening, and, obstruction of the mechanism by abnormal coins or otherwise is obviated.

5. In prepayment mechanism, a rotary coin carrier having an axial shaft, with a disk head, two diametrically opposite crank pins, a semiannular flange, and two peripheral abutments; of a coin carrier casing having a bearing for said axial shaft, a chamber concentric with said bearing inclosing said carrier, having a coin slot at the top thereof and a coin discharge opening at the bottom thereof; and, a stop stud in said casing within said chamber adjacent said bearing adapted to be alternately encountered by said abutments.

6. In prepayment mechanism, a rotary coin carrier having an axial shaft, with means to engage a coin and two peripheral abutments; of a coin carrier casing having a bearing for said axial shaft, a chamber

concentric with said bearing inclosing said carrier, having a coin slot at the top thereof and a coin discharge opening at the bottom thereof; and, a stop stud removably secured
5 within said chamber, adapted to be alternately encountered by said abutments.

In testimony whereof, I have hereunto

signed my name at Philadelphia, Pennsylvania, this thirtieth day of August, 1912.

JAMES BARTON KAIGHN.

Witnesses:

JOHN BASSLER,
ARNOLD MATZ.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."