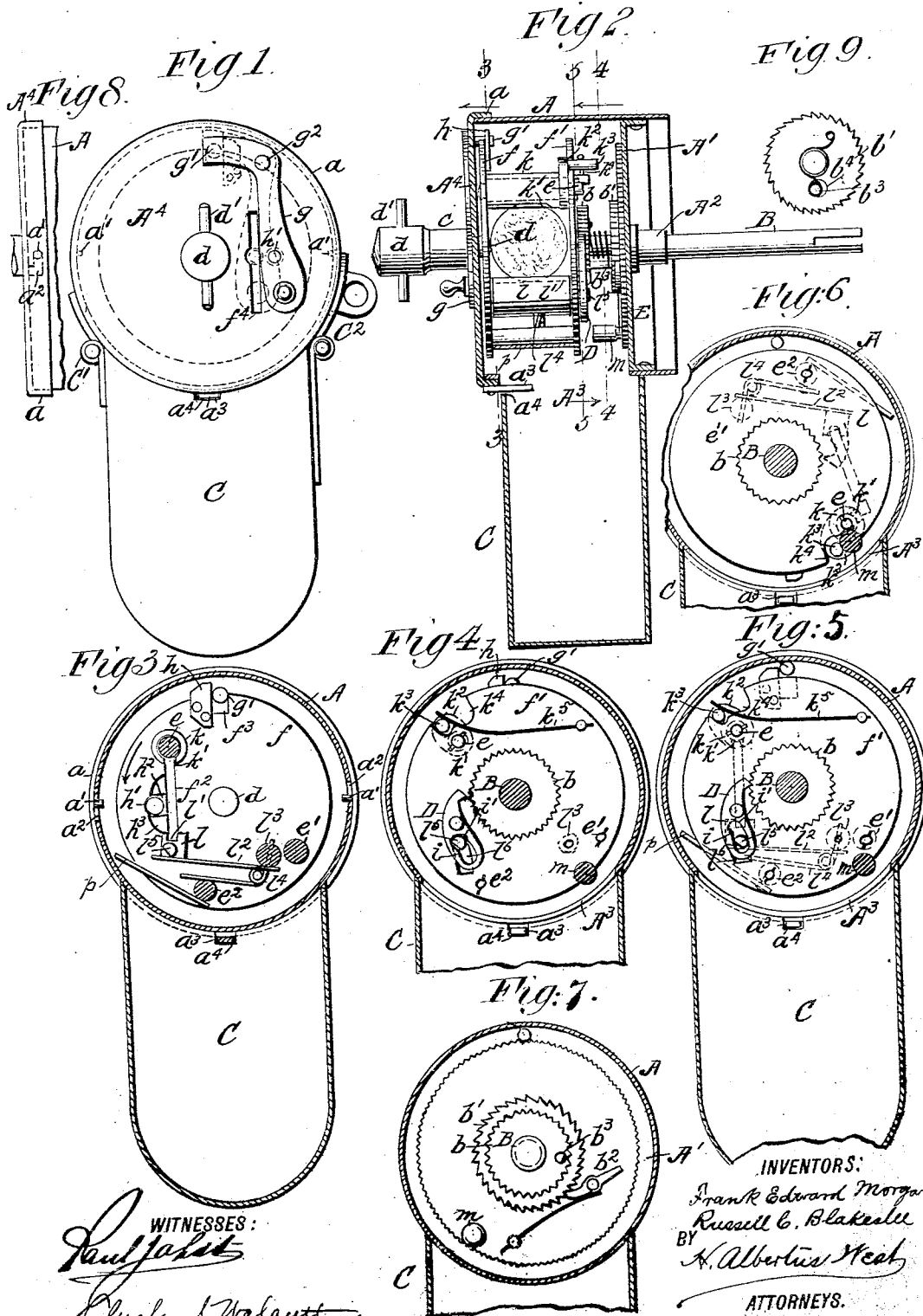


(No Model.)

F. E. MORGAN & R. C. BLAKESLEE.
PREPAYMENT VENDING APPARATUS.

No. 587,989.

Patented Aug. 10, 1897.



UNITED STATES PATENT OFFICE.

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PREPAYMENT VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 587,989, dated August 10, 1897.
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To all whom it may concern:

Be it known that we, FRANK EDWARD MORGAN, residing at West Haven, in the county of New Haven, and RUSSELL C. BLAKESLEE, residing at Torrington, in the county of Litchfield, State of Connecticut, citizens of the United States, have invented certain new and useful Improvements in Prepayment Vending Apparatus, of which the following is a specification.

This invention relates to certain improvements in prepayment vending apparatus of the type disclosed in Letters Patent of the United States No. 550,633, granted to Frank Edward Morgan December 3, 1895, and designed for use mainly in connection with supply-controlling mechanism of prepayment gas-meters.

The invention consists in the construction, arrangement, and combination of parts, as hereinafter described and claimed, whereby advantage is gained in cost of manufacture and accuracy of operation and whereby the general management of the apparatus is greatly facilitated.

In the accompanying drawings, to which reference is made and which form a part of this specification, Figure 1 is a front elevation of our new and improved cash-box with the coin-slot open to receive a coin. Fig. 2 is a central sectional elevation of the same, showing a coin retained between the coin-holders. Fig. 3 is a transverse sectional elevation taken on the line 3 3 of Fig. 2. Fig. 4 is a transverse left-hand sectional elevation on line 4 4 of Fig. 2, showing the parts in the position they assume when the slot is opened ready to receive a coin. Fig. 5 is a reproduction of Fig. 4, showing the parts in the position they assume after a coin has been inserted. Fig. 6 is a like view showing the parts in the position they assume at the time the coin is liberated. Fig. 7 is a transverse right-hand sectional elevation on line 4 4 of Fig. 2. Fig. 8 is a detailed side elevation showing one of the locks for attaching the cap to the main body of the box, and Fig. 9 is a detailed view of one of the ratchet-wheels.

The main casing A, which incloses the operative mechanism of the apparatus, is by preference circular in form, and is provided

at one end with a fixed diaphragm A', at the center of which is formed or secured a bearing or journal A² for the controller-shaft B. The interior of the casing A communicates through an opening A³ with the money receptacle or box C, which is connected to the casing A by means of a hinge C' at one side and a hasp and lock connection C² at the other. The front of the casing A is closed by a cap A⁴, formed with a flange a, which is provided with two or more studs or pins a' a', which are adapted to engage in bayonet-slots a² a³ (see Fig. 8) for locking the said cap A⁴ to the casing A. A lug, finger, or detent a³ projects inward from the flange a, so as to be embraced by the sides of another detent or recess a', formed in the upper edge of the receptacle C, when the same is closed, so that the act of closing and locking the money-receptacle C also locks the cap A⁴ in place upon the end of the main casing, and, reversely, the act of unlocking the money-receptacle also unlocks the cap A⁴, so that it may be readily removed for removing the coin-carrier attached to it and for repairing or inspecting the inclosing mechanism and as easily replaced.

On the controller-shaft B, inside the casing A, are placed two ratchet-wheels b b'. The ratchet-wheel b' is fast upon said shaft B and in connection with a click b³ serves to lock the said shaft from backward rotation. The ratchet-wheel b is adapted to have a slight rotation on the shaft B, so that in case the pawl D should in operation happen to strike upon the point of one of the teeth of said ratchet-wheel the wheel will under the pressure of the pawl yield or turn slightly in one direction or the other and allow the point of the pawl D to fully mesh with the teeth. This slight independent movement of the ratchet-wheel b is accomplished in this instance by placing it loosely upon the shaft and connecting it to the ratchet-wheel b' by a pin or arm b³, which reaches back into a slot or opening b⁴, formed in the ratchet-wheel b'. A spring b⁵ is applied to the wheel b' and arm b³ in such manner as to normally hold the said arm in contact with one side of the opening b, as shown in Fig. 9. We do not limit ourselves to this means for accomplishing the

slight independent movement of the ratchet-wheel *b*, as many other devices for this purpose may be used, but the pin and slot are at once cheap and effective and are therefore preferred.

The cap *A*¹ is provided at its center with a bearing *c*, in which is held a short shaft *d*, the outer end of which is enlarged and provided with handles *d'* for rotating said shaft *d*. To the inner end of the said shaft *d* is fixed a plate *f*, which, together with another corresponding plate *f'* and intermediate parts hereinafter described, constitutes the coin-carrier adapted to be rotated through a given space by the purchaser by means of the knob and handles *d d'* for each coin inserted.

The plate *f* is formed at one side of its center with a coin-slot *f*² and with a marginal locking detent or slot *f*³, which latter is so arranged in its relation with the slot *f*² and with an outer coin-slot *f*⁴ in the cap *A*¹ that when the locking pin, stud, or detent *g'* is inserted in the marginal slot *f*³ the inner slot *f*² in plate *f* will coincide with the outer slot *f*⁴, so that coins may be inserted from the outside into the coin-carrier to be retained thereby, as illustrated in Fig. 2 and as hereinafter described.

The locking-stud *g'* is a part of an angular laterally-sliding plate or apron *g*, which is fulcrumed to turn on a pivot *g*² at the front of the cap *A*¹. That portion of the plate *g* below the pivot *g*² is adapted to slide over and close the outer coin-slot *f*⁴ whenever the plate is turned to release the coin-carrier—that is to say, when the said plate *g* is shoved to the position shown in dotted lines in Fig. 1 the lower portion of the plate closes the slot *f*⁴, while the upper portion of the plate at the same time withdraws the locking-stud from the marginal slot *f*³. The withdrawal of the said locking-stud from the slot *f*³ permits the coin-carrier to be turned by the purchaser in the direction of the arrow shown in Fig. 3, and whenever the slot *f*³ is turned away from the stud *g'* the marginal slot of the plate *f* serves, in connection with the stud *g'*, to lock the plate or apron *g* in position for closing the outer coin-slot *f*⁴, so that a second coin cannot be inserted in the apparatus until the preceding one has been discharged from the coin-holders, as hereinafter described.

h represents a stop or limit pin attached to the plate *f*, and which acts against the locking-stud *g'* to prevent the coin-carrier from being turned completely around, and *h'* represents a beveled projection or cam on the inner surface of the plate or apron *g*, which when the said plate is moved to close the slot *f*⁴ and to release the coin-carrier acts to shove the coin completely out of the outer slot *f*⁴ and into the jaws or holders of the coin-carrier, clearance spaces or slots *h*² *h*³ being formed in the cap *A*¹ and plate *f*, respectively, to accommodate the swinging movement of the said cam *h'*, as shown clearly in Fig. 3.

The coin-carrier, which will now be de-

scribed, is connected bodily to the short shaft *d*, so that when the cap *A*¹ is removed the coin-carrier and shaft, being part and parcel of the cap, are removed with it. A plate *f'* is rigidly secured to the plate *f* by the columns *e e' e*², preferably three in number. On column *e* between the plates *f f'* is placed loosely a sleeve *k*, (the upper coin-holder,) which is provided with a longitudinal slot *k'* to receive the edges of the coins inserted in the apparatus, and said sleeve *k* is also provided at its inner end with crank *k*², having a horizontal stud *k*³, which latter projects through a slot or recess *k*⁴ in the plate *f'*. A spring *k*⁵ normally holds the pin *k*³ against the edge of the recess *k*⁴, in which position the inner coin-slot *f*² aligns or registers with the coin-slot *f*⁴ in the plate *f*, as shown clearly in Fig. 3. The said slotted sleeve *k* constitutes the upper coin-holding jaw to assist in temporarily holding the coins in the coin-carrier, and owing to its adaptability to be rotated on the column *e* for the distance of the width of the slot or recess *k*⁴ (as and by the means hereinafter described) it serves also at the proper time to discharge or "flip" the coin out of the coin-carrier.

l represents the lower coin-holder, complementary to the upper holder *k*. The said lower holder *l* is formed with a slot *l'* to receive the lower edge of the coin, as indicated in Fig. 2, and it is connected to a plate *l*², attached to a shaft *l*³, journaled in and between the plates *f f'*, so that the said lower holder is adapted to reciprocate to and from the upper holder *k*. The holder *l* is acted upon by a spring *l*⁴, which normally elevates it so that the space between the bottom of the slot *l'* and the top of the slot *k'* is somewhat less than the diameter of a coin proper to the apparatus and greater than the diameter of a smaller coin. When in normal position, as held by the spring *l*⁴, no coin being in the coin-carrier, the bottom of the slot *l'* is on a slightly-higher level than the bottom of the coin-slots *f*⁴ *f*², so that when a coin proper to the apparatus is inserted through said last-mentioned slots into the coin-carrier the holder *l* will be pressed downward by the action of the coin, that said holder *l* will be spread away from the holder *k*, the closing tendency of the holder *l*, due to the spring *l*⁴, will hold the coin. When the coin is discharged from between the holders *k l*, as hereinafter described, the spring *l*⁴ returns the holder *k* to its normal position. It may be said here that the said reciprocation of the holder *l* is utilized for operating the pawl *D* for connecting the coin-carrier with the controller-shaft *B* during the advance movement of the coin-carrier to the point of discharge of the coin and to disconnect it from the said shaft during the return movement, so that the discharge of the coin from the coin-carrier prevents the further purchase of gas.

The pawl *D* is pivoted to the plate *f'* and

is operated in this instance by a pin or stud l , which is connected to the holder l and projects back through a slot l^b in the plate f' and operates against or in contact with a cam i , preferably formed as the surface of a slot cut in the pawl, as shown in the drawings. When a coin is inserted, the movement of the pin l^b against the cam i closes the pawl D into engagement with the ratchet b , so that when the knob d and coin-carrier are rotated by the purchaser the shaft B will be likewise rotated, and when the coin is discharged from between the holders k l the return of the holder due to the action of spring l^4 will cause the said pin to strike cam i , and thus disconnect the pawl D from the ratchet b and, as stated, prevent the further purchase of gas.

The discharge of the coin from the coin-carrier or rather from between the holders l k is effected by means of a relatively fixed stud or stop m , held in the path of the projection k^3 of the coin-holder k , so that when the stud k^3 , in the rotation of the coin-carrier, strikes the stud m the holder k will be turned to the position shown in Fig. 6, which will shift the coin-holder slot k' and cause it to instantly throw out the coin, which will fall through the opening A^3 down into the cash receptacle or box C below.

The stud m is by preference attached to an adjustable plate E , (shown in Fig. 2,) which plate may be turned around the shaft B for shifting the locality of the stud m , and there secured in the same manner and for the same purpose as described in said Letters Patent.

p represents a guard-plate to prevent fraudulent use of the apparatus which might be attempted by withdrawing coins from the casing by means of a tape, string, or wire attached to the coin. Said plate is attached to the coin-carrier in such manner as to act in connection with the casing as a trap for catching and holding the coins below the coin-slots f^1 f^2 whenever they are brought into line with each other.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a prepayment vending apparatus, the combination with a supply-controlling shaft, a coin-carrier and a movable coin-holder in said coin-carrier, of a pivoted pawl connected to be oscillated by said coin-holder substantially as and for the purposes described.

2. In a prepayment vending apparatus, the combination with a supply-controlling shaft, of a coin-carrier, a movable coin-holder in said coin-carrier, a stud for discharging the coin from the coin-holder and a pivoted pawl connected to the coin-holder so that discharge of the coin from the coin-holder will limit the rotation of the supply-controlling shaft; substantially as described.

3. In a prepayment vending apparatus the movable pawl formed with a projection or stud l^b in combination with the pawl D ar-

ranged to be operated by said projection or stud substantially as described.

4. In a prepayment vending apparatus, a coin-carrier comprising two plates secured together one attached to a protruding shaft slotted to coincide with a coin-slot in the main casing and formed with a locking notch or dent and a pair of coin-holders held between said plates, in combination with a pivoted and laterally-sliding apron formed with a locking-stud and arranged to slide laterally over the external coin-slot and to be locked in that position by the locking-stud and one of said plates substantially as described.

5. In a prepayment vending apparatus, a coin-carrier comprising two plates secured together one attached to a protruding shaft slotted to coincide with a coin-slot in the main casing and formed with a locking notch or dent and a pair of coin-holders held between said plates, in combination with a pivoted and laterally-sliding apron formed with a locking-stud above its pivot and with a cam for pushing a coin below its pivot, and arranged to slide laterally over the external coin-slot and to be locked in that position by the locking-stud and one of said plates substantially as described.

6. In a prepayment vending apparatus, a coin-carrier comprising two plates secured together one attached to a protruding shaft and slotted to coincide with an external coin-slot, the other slotted to receive a projection or stud on the end of a movable coin-holder, in combination with said movable coin-holder and a pivoted pawl arranged to be operated by said projection or stud substantially as described.

7. In a prepayment vending apparatus the plate f' recessed as at k^4 in combination with the plate f and the rotating coin-holder k formed with a crank k^2 and stud k^3 substantially as described.

8. In a prepayment vending apparatus the plates f , f' secured together in combination with an interposed movable plate l^2 provided with a coin-holder l and sustained by a spring substantially as described.

9. In a prepayment vending apparatus, the plates f , f' in combination with an interposed plate p or guard beneath the coin-holders substantially as and for the purposes set forth.

10. In a prepayment vending apparatus, the combination with the main casing A of a removable cap A^4 , the short shaft d journaled in said cap, and a coin-carrier secured to the inner end of said short shaft substantially as described.

11. In a prepayment vending apparatus, the combination with the main casing A of a cap A^4 , a bayonet-lock for securing the cap A^4 to the end of the casing, a projection a^3 secured to said cap and a hinged cash-receptacle C formed with a recess to embrace the said projection a^3 substantially as and for the purposes set forth.

12. In a prepayment vending apparatus, the combination with the main casing of a rotatable cap connected to said main casing, a detent on said cap and a hinged coin-receptacle adapted when closed to engage with said detent so that the closing of the coin-receptacle will lock the said cap upon the main casing substantially as and for the purposes described.

13. In a prepayment vending apparatus, a controller-shaft B provided inside of the main casing with a ratchet-wheel adapted to have a slight independent movement on the said shaft in combination with a pawl controlled

by the insertion of the coin and arranged to engage with said ratchet substantially as and for the purposes described.

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