

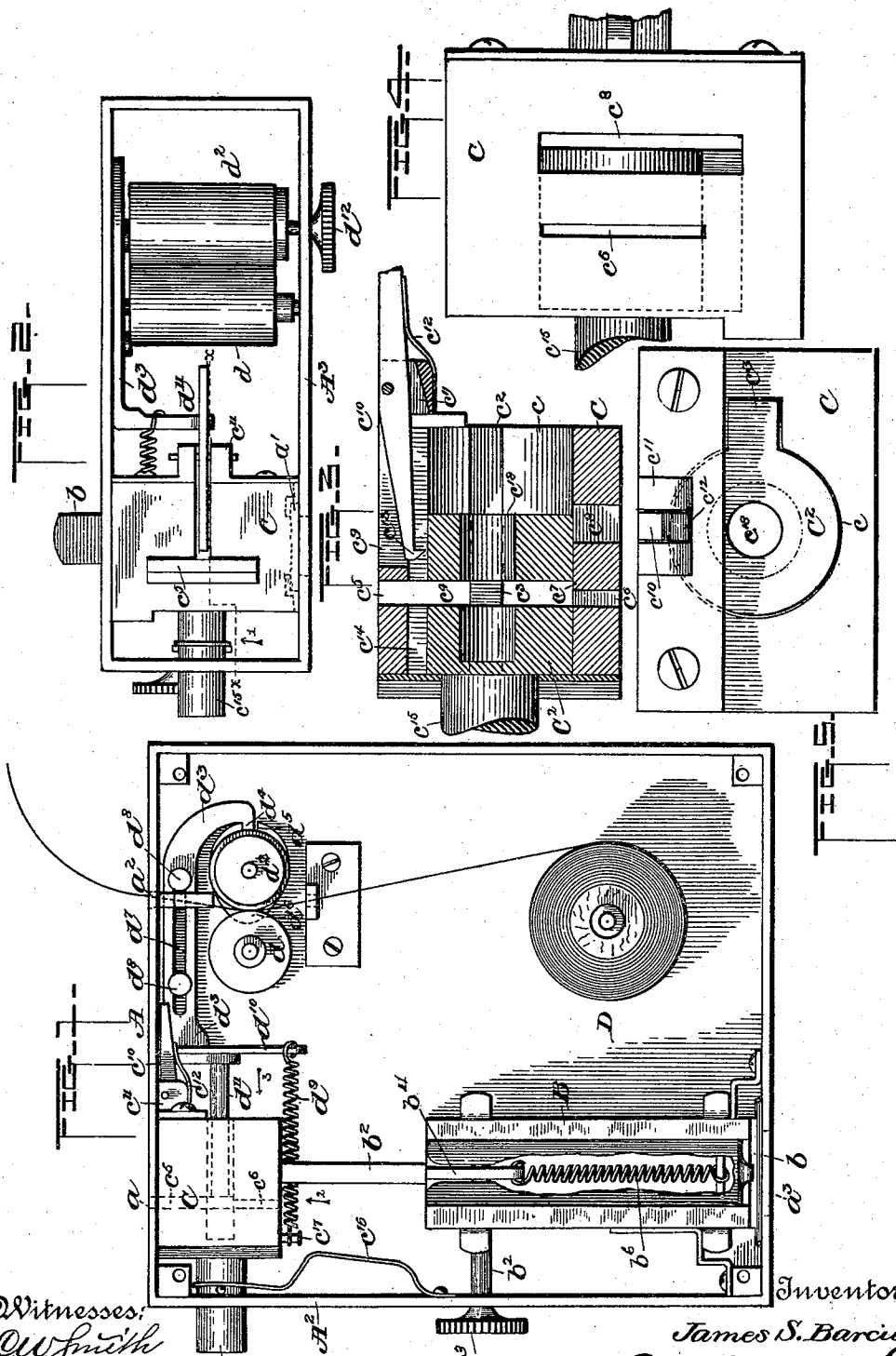
(No Model.)

2 Sheets—Sheet 1.

J. S. BARCUS.
COIN CONTROLLED APPARATUS.

No. 572,496.

Patented Dec. 1, 1896.



Witnesses:
W. Smith
R. E. Smith

Inventor:
James S. Barcus
by *A. S. Dyreforth*
his Attorney.

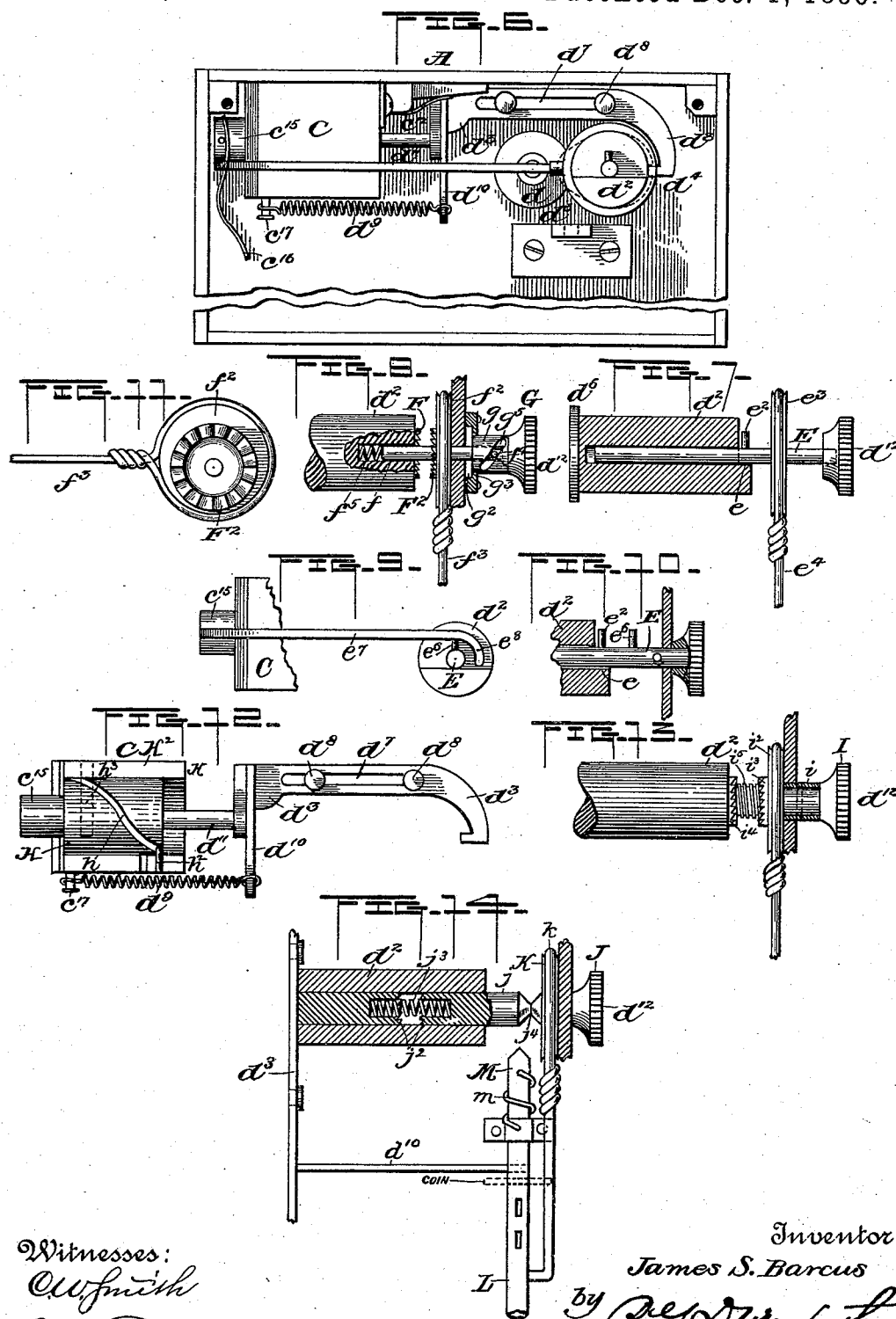
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his Attorney.

UNITED STATES PATENT OFFICE.

JAMES S. BARCUS, OF NEW YORK, N. Y.

COIN-CONTROLLED APPARATUS.

SPECIFICATION forming part of Letters Patent No. 572,496, dated December 1, 1896.

Application filed October 10, 1895. Serial No. 565,257. (No model.)

To all whom it may concern:

Be it known that I, JAMES S. BARCUS, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Coin-Controlled Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to coin-controlled apparatus.

The objects are, in an apparatus comprising a locked coin-receptacle which can be unlocked only after the accumulation in it of a predetermined or definite and fixed number of coins and an information-presenting device normally locked against movement, but adapted to be released by coin-controlled mechanism upon the insertion of a coin, to effect the automatic release of the locking mechanism of the information-presenting device by the movement of a coin-conveying or coin-carrying device; to provide for the automatic return of the operative parts of the device to their normal positions after the completion of each operation; to provide a simple and effective mechanism constituting a movable coin-carrier for carrying a coin from its place of insertion to its place of deposit within the apparatus; to provide in connection with the coin-carrier means for preventing the extraction of a coin once inserted or of its fraudulent reuse to release the information-presenting device and operate it an indefinite number of times without the insertion of a coin for each operation, and, finally, to provide means for preventing the use of any coin to unlock the mechanism but those of a predetermined size.

With these objects in view the invention consists in the novel construction and combination of parts of a coin-controlled apparatus, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like letters of reference indicate corresponding parts in all the figures, I have illustrated a preferred form of embodiment of my invention together with several different forms

of modification thereof, and in these drawings—

Figure 1 is a view in side elevation with the front side of the casing removed, showing the relative arrangement of the parts constituting the operating mechanism. Fig. 2 is a plan view with the top of the casing removed to show certain parts of the mechanism not seen in Fig. 1. Fig. 3 is a longitudinal sectional view through the coin-carrier, taken on the line xx of Fig. 2 and looking in the direction of the arrow 1. Fig. 4 is an inverted plan view of the coin-carrier, looking in the direction of the arrow 2, Fig. 1. Fig. 5 is a front elevation of the carrier, looking in the direction of the arrow 3, Fig. 1. Fig. 6 is a view similar to Fig. 1, showing an arrangement of mechanism for mechanically effecting the operation of the coin-carrier and the information-presenting device. Fig. 7 is a sectional detail view of the feed-roller of the information-presenting device shown in Fig. 6. Fig. 8 is a sectional detail view of another form of mechanism for mechanically effecting the operation of the coin-carrier and the information-presenting device. Figs. 9 and 10 are detached detail views of mechanism that may be employed to operate the coin-carrier and the information-presenting device in lieu of that shown in Figs. 6 and 7. Fig. 11 is a detail view of an eccentric which may be employed for imparting a reciprocatory movement to the coin-carrier. Fig. 12 is a detail sectional view of a modified form of carrier wherein the carrier has a reciprocatory and rotary motion. Figs. 13 and 14 are detached detail views of different forms of mechanisms for effecting the mechanical operation of the coin-carrier and the information-presenting device.

Referring to the drawings, A designates the casing of the apparatus, which may be constructed in any preferred manner and of any suitable material; but by preference, in this instance, it is cast in two parts, one part, A^1 , constituting the casing proper and the other part the front A^2 or the back, as may be preferred, this latter part being suitably secured to the casing in such manner as to permit of its ready removal when desired.

The top of the casing is provided with two narrow slits or openings a and a^2 , (indicated

by dotted lines in Fig. 1,) of which the slit a forms the coin-opening through which coins are introduced into the casing and the slit a^2 a passage-way for a strip of paper having im-
 5 printed thereon information in the nature of maxims, proverbs, witticisms, quotations, and questions. The front A is provided with a slot or opening, (indicated by dotted lines in Fig. 2,) back of which is mounted a piece of
 10 glass a' , which permits inspection of the coin-receptacle B , but prevents removal of the contents thereof, and the bottom of the casing is provided with an opening a^3 , (indicated by dotted lines,) through which the contents
 15 of the coin-receptacle may escape when the bottom b thereof is removed.

The coin-receptacle, which is designed to hold a predetermined or definite and fixed number of coins, has located near its top a shaft b^2 , one end of which projects out through the side of the casing and carries a knob b^3 , and on this shaft is mounted a rigid arm b^4 , designed to be turned down into the receptacle and by contacting with the top of a pile
 25 of coins therein force the bottom b downward clear of the walls of the receptacle, so that by sliding the bottom from under the receptacle the coins will be free to escape. The movement of the bottom is effected by means
 30 of an extension b^5 , Fig. 2, integral with the bottom and projecting out through a slot in the back of the casing, this extension being normally bent up to lie flush with the back of the casing to avoid presenting an obstruction. The arm b^4 is held normally out of the
 35 receptacle by a spring b^6 , secured to the arm and to a fixed portion of the receptacle, and is operated by the knob b^3 , as will be obvious by reference to Fig. 1.

40 Secured within the casing at a point beneath the slit a is a coin-carrier comprising a shell or holder C and a cylinder C^2 , constituting the coin-carrier proper, adapted to contain and support a coin in proper position for deposit within the coin-receptacle independently of the mechanism that actuates the carrier. The shell is provided with a longitudi-
 45 nally-disposed cylindrical bore or chamber c , having at any preferred point in its circumference and extending parallel with its long diameter a recess or groove c^2 designed to be engaged by a feather or spline c^3 on the coin-carrier, the function of the recess and spline being to guide the carrier in a horizontal
 50 path and also to prevent its turning within the shell when being operated.

55 Cut transversely across the carrier from its circumference to the spline c^3 is a channel c^4 , which is to receive the coin when dropped through the slit a , this channel c^4 , when the cylinder is in its normal or retracted position, being in alinement with two transversely-disposed slots c^5 c^6 , located, respectively, in the bottom and in the top of the shell, as
 60 clearly shown in Fig. 3. The slot c^5 is of a width to permit of the insertion of a coin of a predetermined size—say a dime—the dis-

tance between the walls of the channel corresponding, approximately, to the thickness of a newly-minted coin, while the slot c^6 is shorter
 70 and narrower than the slot c^4 and is designed to form an escape-opening through which coins of improper size—as, for instance, a three-cent piece or a silver half-dime—will fall into the interior of the casing without
 75 effecting the movement of any of the mechanism, the difference in width between the two slots c^5 and c^6 forming an offset or shoulder c^7 , upon which a coin rests, when of proper size, previous to its discharge into the coin-
 80 receptacle, a slot c^8 , registering with the chute b^2 of the said receptacle, constituting a discharge-opening. In addition to the transverse slots c^5 , c^6 , and c^8 the top of the shell is further provided with a longitudinally-dis-
 85 posed groove c^9 , extending from the slot c^5 outward to the end of the coin-carrier, and in this groove works a coin-detaining device c^{10} , adapted, on the initial movement of the carrier, to catch and hold a coin against ex-
 90 traction or to prevent its fraudulent reuse to unlock the information-presenting device and operate it an indefinite number of times. This device comprises a lever which is pivoted be-
 95 tween lugs c^{11} on the shell, a spring c^{12} , exerting upward pressure on the outer end of the lever, and a hook or catch c^{13} on the inner end of the lever projecting into a longitudinal groove c^{14} in the upper face of the carrier, this hook constituting the means for
 100 catching and holding a coin, as will be understood by reference to Fig. 3. The carrier is further provided with a projection or push-rod c^{15} , which extends out through a side of the casing in position to be operated by a per-
 105 son using the apparatus, a spring c^{16} serving to keep the carrier normally in the position shown in Fig. 1, with the slot c^4 in register with the coin-opening a of the casing.

The information-presenting device, to which
 110 reference has been made, comprises a roller D , upon which is wound a strip of paper having printed on its two sides questions, maxims, proverbs, or the like; two feed-rollers d^1 d^2 , between which the strip passes and thence out through the opening a^2 , and a combined
 115 locking and releasing latch d^3 , having a toe or projection d^4 , adapted, normally, to engage a recess d^5 in a cam d^6 , carried by the roller d^2 , and thereby lock this roller against
 120 rotation. The latch is provided with a slot d^7 , through which project headed pins or screws d^8 for holding the latch in operative position, a spring d^9 , secured to an arm d^{10} of the latch and to a projection c^{17} of the shell C , serving
 125 to hold the latch normally in locked engagement with the cam d^6 . To the arm d^{10} is secured a rod d^{11} , constituting a push-rod, the end of which projects a sufficient distance into a centrally-disposed orifice c^{18} in the coin-
 130 carrier C^2 to contact with a coin held in the channel c^4 previous to the operation of the apparatus.

The operation of the apparatus thus far de-

scribed is as follows: The parts being in the position shown in Fig. 1, a coin is inserted into the slit *a* and drops into the channel *c*⁴ with its lower edge resting upon the offset *c*⁷.

5 The operator now pushes in the projection *c*¹⁵, moving the coin-carrier and with it the coin to a point where the channel *c*⁴ registers with the slot *c*⁸, the inward movement of the carrier causing the edge of the coin to trip
10 the lever *c*¹⁰ and cause its hook *c*¹³, by engagement with the coin, to prevent full backward movement of the carrier until the coin shall have been discharged through the slot *c*⁸ into the coin-receptacle B. In the forward
15 movement of the carrier the end of the rod *d*¹¹ contacts with the coin, which forms an abutment and constitutes the means for imparting longitudinal movement to the latch *d*³ to move the toe *d*⁴ out of engagement with
20 the recess *d*⁵ of the cam, and thereby leave the roller *d*² free to turn. This roller is now turned by means of the knob *d*¹² and unwinds the strip of paper from the roller D and feeds it out through the slot *a*² until the
25 roller *d*² has made a complete revolution, whereupon the toe *d*⁴ will again engage with the recess *d*⁵ and lock the roller against turning until the insertion of another coin. When the coin has been deposited within the coin-receptacle, the spring *c*¹⁶ draws the carrier
30 back to its normal position, the spring *d*⁹ performing the same function for the latch *d*³.

The apparatus illustrated in Fig. 1 is to be operated by hand, but it is desirable in some
35 instances that the mechanism should be operated by purely mechanical means, and in order to effect such result I have devised several ways, as shown in Figs. 6 to 14, inclusive.

40 In Fig. 7 the roller *d*² is shown as loosely mounted on its shaft E, the cam *d*⁶ being rigidly secured to the roller proper, by which arrangement the shaft will be free to turn without imparting motion to the roller. The
45 end of the roller opposite that to which the cam is secured is cut away for, say, two-thirds of its diameter or more or less, as the requirements of the case may be, thereby leaving a shoulder or offset *e*, which is designed
50 to be engaged by a pin *e*² on the shaft E. The shaft is therefore free to make a partial revolution in either direction without moving the roller *d*², but as soon as the pin *e*² contacts with the shoulder *e* the roller *d*² will be
55 turned with the shaft in the same manner as though it were rigid with it. The shaft E carries an eccentric *e*³, connected by a rod *e*⁴ with the coin-carrier, the push-rod *c*¹⁵ of which is shortened so as to lie wholly within the
60 casing, and to this rod the rod *e*⁴ is secured.

The operation of this form of apparatus is as follows: Until the insertion of a coin into the coin-carrier C² the shaft E may be freely
65 turned backward and forward to impart a reciprocatory motion to the coin-carrier through the agency of the eccentric *e*³ and the rod *e*⁴ without effecting the release of the locking-

latch *d*³ or moving it in the least. As soon, however, as a coin is dropped into the carrier and the knob *d*¹² is turned the coin by
70 contacting with the rod *d*¹¹ forces the latch *d*³ to one side and frees the toe *d*⁴ from engagement with the recess *d*⁵, thereby leaving the roller *d*² free to turn, and coincidentally with
75 the freeing of the cam from engagement with the toe of the locking-latch the pin *e*² contacts with the shoulder *e* of the roller, so that the further turning of the shaft revolves the roller and feeds the paper strip out through
80 the top of the casing until the cam *d*⁶ has made one complete revolution, whereupon the toe *d*⁴ again engages the recess *d*⁵ and locks the roller against rotation until the insertion of another coin.

It is to be understood that the movements
85 of the coin-carrier and the shaft E are so timed that the toe *d*⁴ will be free of the cam *d*⁶ before the pin *e*² engages the shoulder *e*, and that the release of the coin is effected when the eccentric passes its dead-center and
90 starts to push the coin-carrier back to its normal position.

Instead of employing the eccentric *e*³ and rod *e*⁴ for imparting a reciprocatory motion to the coin-carrier the mechanism shown in
95 Figs. 9 and 10 will in some instances be found preferable. This latter mechanism comprises a pin *e*⁶ on the roller-shaft E and a rod *e*⁷, one end of which is secured to the coin-carrier, the opposite end being provided with a hook
100 designed to be engaged by the pin *e*⁶. This rod *e*⁷ is made rigid in order that when the pin *e*⁶ rides against the under side of the hook *e*⁸ the rod, and with it the carrier, will be moved longitudinally until the pin has
105 reached the extremity of the hook, when it will escape, and thus allow the carrier to resume its normal position. It will readily be seen that the rod and pin will subserve the same function in reciprocating the coin-carrier
110 as does the eccentric and rod shown in Fig. 6, and that being much simpler of construction it will in many instances be preferred to the first-described mechanism.

In Fig. 8 the roller *d*² is shown as provided
115 with a clutch-face F, which is adapted to engage with a similar clutch-face F², secured on the shaft *f*, which shaft also carries an eccentric *f*², connected by a rod *f*³ with the push-rod *c*¹⁵ of the coin-carrier. The shaft *f*
120 projects without the casing and fits within the hollow shank *g* of a knob G, the shank being provided with a circular flange *g*², against which bears a plate *g*³ for holding the knob in place and permit of its being turned in
125 either direction. Projecting from the shaft *f* is a pin or stud *f*⁴, which works in a spiral slot or groove *g*⁵ in the shank *g*, by which means a reciprocatory motion is imparted to the shaft *f* when the knob is turned back and
130 forth, thus throwing the clutch-face F² into and out of engagement with the clutch-face F. The shaft of the roller *d*² is provided with a recess in which is seated a spring *f*⁵, which

bears against the end of the shaft f and operates, automatically, to force the shaft outward when the knob G is released, and thereby separate the clutch-faces. The roller d^2 carries, at the end opposite the clutch-face F, a cam (not shown) having a recess (not shown) which is engaged by the toe d^4 of the locking and releasing latch, as described in connection with Fig. 1.

The operation of the form of apparatus just described is as follows: A coin is dropped into the carrier and the knob G is turned, the coin, by contacting with the rod d^{11} , forcing the latch d^3 to one side and freeing the toe d^4 from engagement with the recess of the cam d^6 , thereby leaving the roller d^2 free to turn. As the knob is turned the shaft f is forced inward toward the roller by means of the pin f^4 and the slot f^5 until the two clutch-faces F and F² interlock, the further turning of the knob now causing the roller to turn, and thus feed the paper strip D out through the top of the casing. The cam d^6 having made one complete revolution, the toe d^4 again engages the recess d^5 and locks the roller against further turning until the insertion of another coin, the spring f^3 operating, automatically, to separate the clutch-faces as soon as the knob is released.

It will be seen that the movement of the coin-carrier and the shaft f must be so timed that the toe d^4 will be free of the recess of the cam d^6 before the clutch-faces F and F² interlock, and that the release of the coin is effected when the toe of the locking-latch rides up on the largest part of the cam or when the eccentric passes its dead-center and starts to push the coin-carrier back to its normal position.

In Fig. 12 is illustrated a modified form of coin-carrier, wherein, instead of having the carrier reciprocate in a horizontal line, it is constructed to have a combined reciprocatory and rotary motion, by which means the carrier, acting as a screw, forces the rod d^{11} to one side when a coin is in the carrier and thus releases the locking and releasing latch of the information-presenting device, and at the same time conveys the coin from its place of insertion to the point of its deposit. To accomplish these ends, the carrier H is made circular in cross-section and is provided with a spirally-disposed groove h , which is engaged by a pin h^2 on the shell H² of the carrier. The carrier is further provided with a slot h^3 , into which the coin is inserted, and as the coin is moved forward by the eccentric, which is connected by interposed mechanism and operates it in the same manner as that described in connection with Fig. 6, it makes one-half a turn and brings the coin into register with the discharge-opening in the bottom of the shell and in position to be dropped into the coin-receptacle, the coin acting, in the manner heretofore described, to actuate the locking and releasing latch of the information-presenting device.

In Fig. 13 is illustrated another form of mechanism for operating the coin-carrier from the knob that actuates the feed-roller of the information-presenting device. In this form of mechanism the shank i of the knob I works in an opening in the front of the casing and has rigidly secured to its inner portion an eccentric i^2 , provided with a clutch-face i^3 , designed to interlock with a similar clutch-face i^4 on the roller d^2 , a spring i^5 interposed between the two clutch-faces serving to hold them normally separated. The knob I, being free to turn, reciprocates the coin-carrier through the eccentric and its rod in the manner already described. When a coin is inserted and the carrier has released the locking and releasing latch d^3 , the knob I is pushed inward, thereby bringing the two clutch-faces into engagement with each other, so that the roller d^2 may be turned with the knob to feed out the paper strip.

In Fig. 14 there is illustrated still another form of mechanism for operating the coin-carrier and coincidentally therewith effecting the release of the locking-latch of the information-presenting device. In this form of mechanism the shaft j is in two parts, one part being rigid with the roller d^2 and the other part rigid with the knob J, the opposing ends of the shaft being provided with clutch-faces j^2 , held normally out of engagement with each other by means of a spring j^3 , the shaft j being further provided with a circumferential groove j^4 . The rod k of the eccentric K, which latter is carried by the shaft j , connects with a bar L, secured to the coin-carrier, so that upon turning the knob J a reciprocatory motion is imparted to the carrier. Arranged in alinement with the bar L is a latch M, a spring m serving normally to hold the latch out of engagement with the groove j^4 and the shaft j , the end of the latch next to the shaft being wedge-shaped, so that by being forced into the groove j^4 , which normally lies to one side of the point of the latch, lateral motion will be imparted to the shaft j and thereby cause it to engage with the other section of the roller through the clutch-faces i^2 , whereupon, by further turning the knob, the paper strip will be fed out of the apparatus. In order to effect the release of the locking-latch of the information-presenting device by the movement of the eccentric K, the arm d^{10} of the locking-latch is elongated to connect with the latch M, as clearly shown in the figure. As the bar L is reciprocated before the insertion of a coin there is no motion imparted to the locking-latch of the information-presenting device, but as soon as a coin is dropped between the latch M and the bar L, as indicated by dotted lines, the release of the locking-latch is effected, and coincidentally therewith the locking together of the two sections of the shaft j .

It is to be understood that the coin-carrier and the locking and releasing latch, either singly or combined, may be employed in con-

nection with other coin-controlled apparatus, as, for example, with a machine for vending confections, taking photographs, playing music, or the like, and as such application will be perfectly obvious, any illustration thereof is deemed unnecessary.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of a coin-carrier, a feed-roller, a shaft loosely connected with the roller and adapted to make a partial revolution in either direction without imparting motion to the said roller, a detent normally holding the roller against rotation, and mechanism connecting the feed-roller and the coin-carrier, substantially as described.

2. The combination of a coin-carrier, a feed-roller, a shaft loosely connected with the roller and adapted to be brought into locked engagement with the roller, a detent normally holding the roller against rotation, and mechanism connecting the roller and the coin-carrier, substantially as described.

3. The combination of a coin-carrier, a feed-roller having one end provided with a projection or shoulder, a shaft loosely connected with the roller and carrying pins extending approximately at right angles to the shaft,

one of which pins is adapted to engage the shoulder on the roller, and a rod connecting with the coin-carrier and engaging the other pin, substantially as described.

4. The combination of a coin-carrier, a feed-roller having one end provided with a projection or shoulder, a shaft loosely connected with the roller and carrying pins extending approximately at right angles to the shaft, one of which pins is adapted to engage the shoulder on the roller, and a rod connecting the feed-roller and the coin-carrier and having a hook engaging the other pin, substantially as described.

5. The combination of a coin-carrier, a feed-roller, a shaft loosely connected with the roller and adapted to make a partial revolution in either direction without imparting motion to the said roller, a detent normally holding the roller against rotation, mechanism connecting the feed-roller and the coin-carrier, and a coin-detaining device, substantially as described.

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

JAMES S. BARCUS.

Witnesses:

R. G. DYRENFORTH,
R. M. ELLIOTT.