

W. S. FARNSWORTH.  
 COIN CONTROLLED ATTACHMENT FOR LOCKS.  
 APPLICATION FILED APR. 22, 1912.

1,045,780.

Patented Nov. 26, 1912.

2 SHEETS-SHEET 1.

Fig. 1.

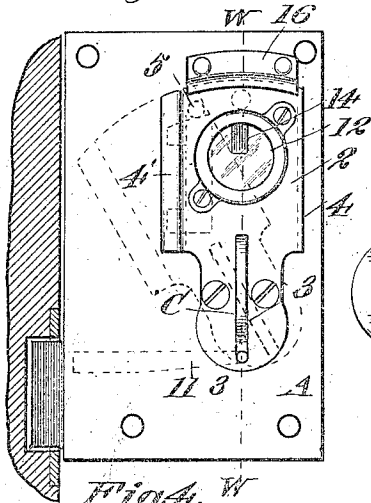


Fig. 2.

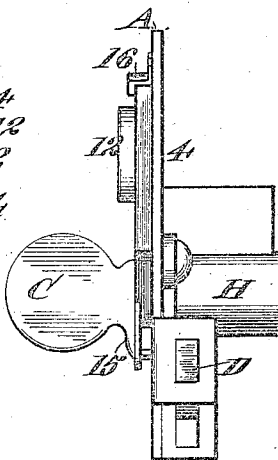


Fig. 3.

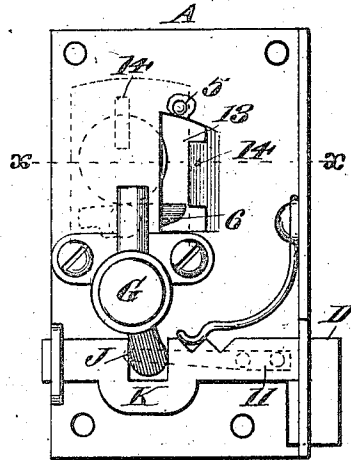


Fig. 4.

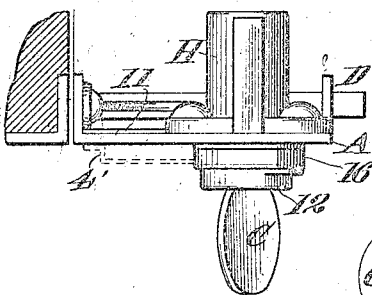


Fig. 5.

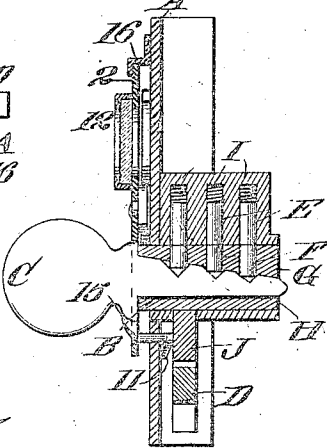


Fig. 6.

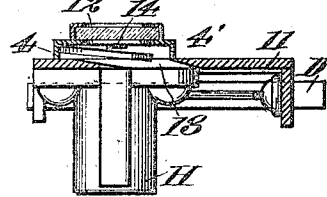
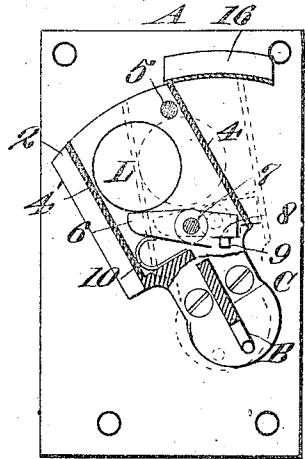


Fig. 7.



Witnesses,  
 Charles Pickles  
 R. S. Barry

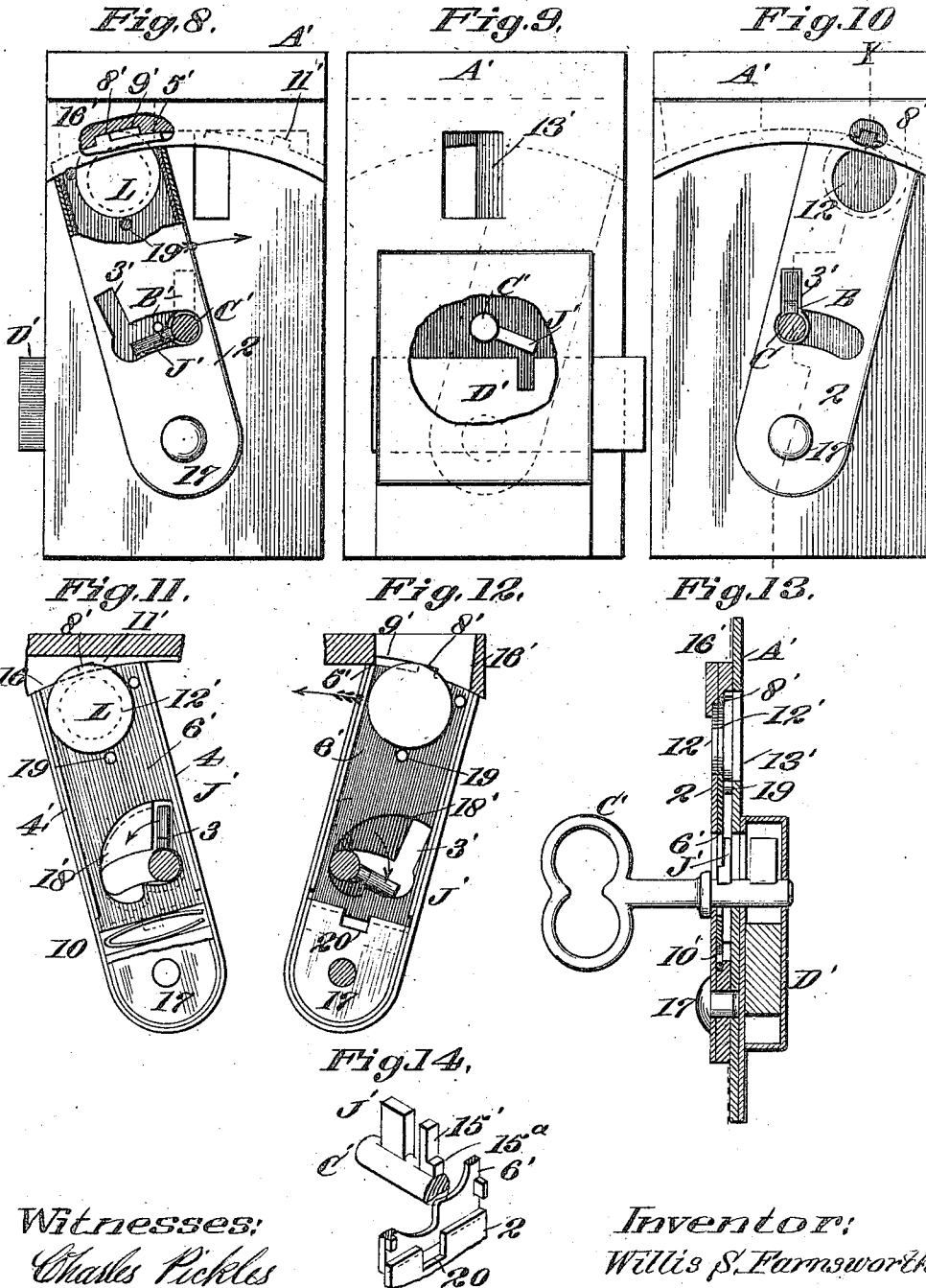
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

WILLIS S. FARNSWORTH, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO COIN CONTROLLED LOCK CO., OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF CALIFORNIA.

## COIN-CONTROLLED ATTACHMENT FOR LOCKS.

1,045,780.

Specification of Letters Patent.

Patented Nov. 26, 1912.

Application filed April 22, 1912. Serial No. 692,386.

### *To all whom it may concern:*

Be it known that I, WILLIS S. FARNSWORTH, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Coin-Controlled Attachments for Locks, of which the following is a specification.

This invention relates to a coin controlled attachment for locks, and particularly pertains to a device for permitting the operation of the lock and the withdrawal of the key therefrom only on the depositing of a proper coin or token.

It is the object of this invention to provide a coin controlled attachment suitable for any character of lock wherein it is necessary that the key of the lock be disposed in a certain position in the lock before it can be withdrawn therefrom, by means of which attachment the key will be securely held against withdrawal when the bolt is in its retracted or unlocked position.

A further object is to provide an attachment of the above character which is so constructed as to operate only on the depositing of a proper coin or token, to allow the key being turned to throw the bolt and thereafter be withdrawn from the lock.

Another object is to provide means for exposing the coin or token when the bolt has been advanced and the key removed from the lock.

A further object is to provide means controlled by a key for retaining the attachment in the coin exposing position and which means is operated by the insertion or turning of the key in the lock in such manner as to release the coin supporting device and admit of its being operated when the key is turned to throw the bolt, to discharge the coin into a receptacle.

Another object is to provide a device of the above character which is adapted to be attached to the escutcheon plate or outer face of the lock, and which is not dependent upon any portion or part of the movable members of the lock for its operation, other than the key thereof.

A further object is to provide a coin controlled device for preventing the withdrawal

of keys from locks which is simple in construction and efficient in operation, and which may be applied to most locks now generally in use without materially altering the lock structure.

Other objects will appear in the following specification.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a front elevation of the invention as applied to a tumbler lock. Fig. 2 is a side elevation of same. Fig. 3 is a rear view of the tumbler lock. Fig. 4 is a plan view. Fig. 5 is a vertical section on the line W—W of Fig. 1. Fig. 6 is a horizontal section on the line X—X of Fig. 3. Fig. 7 is a front elevation of the attachment on a tumbler lock with parts broken away. Fig. 8 is a front elevation of the invention as applied to a dead bolt lock with parts broken away with the attachment in its normal retracted position. Fig. 9 is a rear view of same. Fig. 10 is a view corresponding to Fig. 8, showing the attachment in its advanced position. Fig. 11 is a rear view of the attachment in the position shown in Fig. 10. Fig. 12 is a similar view in the position shown in Fig. 8. Fig. 13 is a detail vertical section on the line Y—Y of Fig. 10. Fig. 14 is a detail perspective view of the key employed in the dead bolt lock, illustrating the manner of releasing the attachment from its locked advanced position.

In the drawings A represents the face plate or escutcheon of a lock of any suitable type or construction; Figs. 1 to 7, inclusive, illustrating a lock of the well known Yale or tumbler type; and Figs. 8 to 14, inclusive, illustrating the application of the invention to locks of the dead bolt type. The keyhole of the lock is indicated at B into which a key C is designed to be inserted for the purpose of advancing or retracting the bolt D of the lock in the usual manner.

In the form of lock shown in Figs. 1 to 7, inclusive, the key C is formed with a substantially flat shank, which is rectangular in cross-section and is formed with a series

of notches or serrations on its upper edge, which serrations are designed to actuate a series of tumblers E and F, of the ordinary barrel or tumbler lock. The keyhole B in this instance is formed in a barrel G revolvably mounted in a casing H, and the tumblers E and F are mounted in recesses I formed in the casing H and are designed to extend into perforations formed in the barrel G opening to the key-hole B, which extends longitudinally therethrough. In locks of this character the key C, when inserted in the keyhole B, is designed to dispose the superposed tumblers E and F in such position that the line of separation between the tumblers E and F will coincide with the periphery of the barrel G so that the latter may be freely rotated within the casing H; the tumblers F extending into the serrations on the upper edge of the key C in such manner as to prevent the key C being withdrawn from the keyhole B when the tumblers F are positioned out of alinement with the tumblers E. The bolt D in this form of lock is operated by means of a bit J carried by the barrel G, which bit engages a notch K formed in the bolt D in such manner that when the barrel G is rotated, the bolt D may be either advanced or retracted.

The present invention when applied to locks of the character just described, and as shown in Figs. 1 to 7 inclusive, is constructed as follows: Mounted on the outer face of the lock is a movable plate 2, which plate is designed to be pivoted to rock from side to side on the axis of rotation of the key C; the plate 2, in this case, being shown as rigidly mounted on the barrel G. It is obvious, however, that the plate 2 may be mounted in any other manner whereby it may be rocked in unison with the key C. The plate 2 is formed with a slot or perforation 3, which registers with the keyhole B in the barrel G through which the shank of the key C is inserted. The plate 2 is here shown as normally extending upward at an angle, as indicated in dotted lines in Fig. 1, and in full lines in Fig. 7; the plate 2 being so disposed in relation to the outer face of the lock A as to form a space approximately the thickness of a coin therebehind. The side edges of the plate 2 are bent inwardly to form flanges 4-4', the outer edges of which flanges contact the face plate or escutcheon A of the lock, thus forming a channel into which a coin may be delivered at the upper or outer end of the plate 2, in any desired manner. The plate 2 is normally rigidly held against movement by means of a pin or other abutment member 5, mounted on the face plate or escutcheon A in such position as to engage the flange 4 to limit of movement of the plate 2 in one direction. A pawl or trip-lever 6 is

pivotaly mounted at 7 on the back of the plate 2, the inner end of which is notched at 8 to engage a pin or projection 9 mounted on the face plate or escutcheon A, when the plate 2 is in its normal lowermost or oblique position, as shown in Fig. 7; the engagement of the pawl 8 with the pin 9 acting to limit the movement of the plate 8 toward its vertical or uppermost position. The pins 5 and 9 thus act collectively to normally retain the plate 2 in its oblique position, thus positioning the barrel G and the key C therein with the tumblers F out of alinement with the tumblers E, in which position the key C cannot be withdrawn, as is well-known in locks of this character. In the operation of this form of the invention, a coin or other token L of a suitable diameter is inserted in the space behind the plate 2, between the flanges 4-4'; the coin or token L falling upon the outer end of the trip-lever 6 where it is supported, as shown in Fig. 7. The key C is then turned to move the plate 2 a short distance toward the vertical, which movement is accomplished by reason of a slight lost motion permitted between the engagement of the notch 8 on the trip-lever 6 and the pin 9. This initial movement of the plate 2 brings the coin or token L, supported on the trip-lever 6, beneath the pin 5, which pin is spaced from the outer end of the trip-lever 6 a distance slightly less than the diameter of the coin or token L. This action causes the coin or token L to move downward and thereby depress the outer end of the trip-lever 6 in opposition to a spring 10 carried by the plate 2 and bearing upward on the outer end of the trip-lever, thereby raising the inner end of the trip-lever 6 out of engagement with the pin 9, as shown in dotted lines in Fig. 7, so that the plate 2 may be moved into the vertical position shown in Fig. 1. When this action is accomplished the barrel G will be disposed in such position that the tumblers F and E will be in alinement and thereby permit the key C being withdrawn; the barrel G on moving into this position acting through the bit J to advance the bolt D into its locking position.

Means are provided for securely holding the plate 2 against movement in its vertical position when the key C is withdrawn, which means is here shown in Figs. 1 to 7 as consisting of a spring member 11, mounted on the face-plate or escutcheon A and normally bearing against the back of the plate 2, which member is designed to spring into and engage the slot 3 when the plate 2 is moved into its vertical position, thereby locking the plate 2 against movement until the key C is reinserted in the lock, as later described.

The coin or token L will be supported upon the trip-lever 6 when the plate 2 is

in its locked vertical position, and is exposed to view through a perforation 12 formed in the plate 2, as shown in Fig. 1, thus enabling a person to ascertain the character of the coin or token deposited behind the plate 2 and thereby tending to prevent the use of spurious coins or improper tokens.

Formed in the face-plate or escutcheon A, rearward of the plate 2, is a vertical slot 13, the side walls of which are cut diagonally to the thickness of the plate A; one edge of the slot being beveled in such manner that when the coin or token L is disposed adjacent thereto on the trip-lever 6, which occurs when the plate 2 is in its vertical position, a spring plate 14 on the plate A will act to crowd the coin or token L against the beveled face of the slot 13 and thereby dispose it at such an angle that when the plate 2 is moved to restore it to its normal oblique position, the coin will be caused to pass through the slot 13 and be delivered to any suitable receptacle. In some instances the spring 14 may be dispensed with, as the coin will have a tendency to tip and lean against the beveled wall of the slot 13 and thereby position one of its vertical edges rearward of the forward edge of the other side of the slot 13, so that when the plate 2 is retracted the coin will be engaged by the forward edge of the slot and directed therethrough.

From the foregoing it will be seen that when it is desired to operate the lock to throw the bolt D, it will be necessary to deposit a certain coin or token behind the plate 2, so as to permit of the operation of the key C, as before described; the key being withdrawn when the bolt D is thrown, leaving the plate 2 locked in its vertical position by the spring member 11 with the coin L exposed in the perforation 12. When it is desired to retract the bolt D to unlock the lock, the key C is reinserted in the keyhole B through the slot 3. A shoulder 15 formed on the key C acts to depress the spring member 11 and throw it out of engagement with the walls of the slot 3, thereby permitting the plate 2 being restored to its normal position; the coin L passing through the slot 13 on this operation, as above described.

A guard 16 in the form of a flange is mounted on the face plate or escutcheon A above the upper end of the plate 2 in such manner as to close the open space between the flanges 4—4' when the plate 2 is in its vertical position, thereby preventing the insertion of instruments at this point; a coin chute, not shown, leading to the upper end of the plate 2 in its oblique position to prevent tampering with the coin-operating mechanism behind the plate 2.

The perforation 12 is preferably covered with some transparent material so as to prevent access being had to the coin L, when

the plate 2 is in its vertical position, and to prevent the insertion of tools for operating the trip-lever 6 when in its oblique position.

In the form of the invention shown in Figs. 8 to 14, wherein it is illustrated as applied to a lock of the dead-bolt type, the plate 2 is pivoted at 17 to the face-plate or escutcheon A' below the axis of rotation of the shank of a dead-bolt key, indicated at C', which is designed to be inserted in a keyhole B' in the face-plate or escutcheon A' through a slot 3' formed in the plate 2 to operate the lock bolt D' in the usual manner. Mounted on the plate 2, between the flanges 4—4' and reciprocable longitudinally thereon, is a plate or bolt 6' which extends from the upper end of the plate 2 to a point below the slot 3, and which is formed with a perforation 18 through which the key C' extends, and with the lower wall of which perforation a bit 15' on the key C' is engageable, as will be later described. The upper end of the bolt 6' terminates adjacent to the upper end of the plate 2 and is formed with a projection or pin 8' which is adapted to extend into a slot 9' formed in a flange 16' carried on the face-plate or escutcheon A'. The projection 8' extending into the slot 9' is provided as a means for retaining the plate 2 in its lowermost or oblique position; a plate spring 10' carried by the plate 2 bearing against the underside of the bolt 6' in such a manner as to normally retain the projection 8' in engagement with the slot 9'. This slot 9' is of such length as to permit of a limited movement of the plate 2 on its pivot 17. Formed on the inner face of the bolt 6' is a pin or other projection 19 on which the coin L is designed to rest when inserted in the upper end of the plate 2. Formed on the inner side of the plate 2, below the bolt 6', is a notch 20, the side walls of which project beyond the inner face of the bolt 6' and form shoulders or projections which are disposed in the path of travel of the bit 15' on the key C', so as to be engaged thereby when the latter is rotated to throw the lock bolt D' in either direction.

In the application of the invention now under consideration, the key C' is inserted in the keyhole B' of the lock, with the bit J' thereon in engagement with the bolt D' when the latter is in its retracted position in the manner common in dead-bolt locks; the key C' being turned to dispose the bit J' out of alinement with the keyhole B', as shown in Fig. 8, so as to prevent its being withdrawn from the lock. The key C' is prevented from being turned sufficiently far to throw the bolt D' and to hold the bit J' out of alinement with the keyhole B', by reason of the engagement of the bit 15' with the side walls of the notch 20, formed on the pivoted plate 2; the plate 2 being locked

against movement by reason of the projection 8' on the bolt 6' extending into the slot 9'. In the operation of this form of invention, the coin L is inserted behind the pivoted coin-receiving plate 2 where it rests upon the projection 19 on the bolt 6'. The key C' is then turned so as to move the bit 15' in the direction of the arrow thereon in Figs. 8 and 12 into engagement with the walls of the notch 20 on the plate 2, so as to give the plate 2 a slight movement on its pivot, which initial movement is permitted by reason of the slotted connection with the projection 8' on the bolt 6'. The coin L will now be crowded under a projection 5', here indicated as formed by the flange 16'; this action moving the coin downward in such manner as to depress the bolt 6' in opposition to the spring 10' and thereby withdraw the projection 8' out of engagement with the slot 9', so that a continued movement of the key C' will carry the plate 2 into its advanced position, as shown in Fig. 10. This being accomplished, the key C' may be turned so as to dispose the bit J' in alinement with the keyhole B' and admit of the key being withdrawn from the lock; the bolt D' being previously thrown into its advanced or locked position on the movement of the key just described. When the plate 2 has reached its advanced position, it is locked against being retracted by means of a notch 11', formed on the flange 16', into which the projection 8' on the bolt 6' is impelled by the action of the spring 10' when the plate 2 reaches its advanced position. The coin L will now rest on the pin 19 and will be exposed through the perforation 12 in the plate 2 and a perforation 12' formed in the bolt 6'. When it is desired to unlock the lock, the key C' is reinserted in the keyhole B' and is turned in the direction of the arrow in Fig. 11; the bit J' engaging the bolt D' to retract it in the usual manner. A shoulder 15<sup>a</sup> on the bit 15' engages the lower edge of the perforation 18 in the bolt 6' in such manner as to depress the bolt 6' in opposition to the spring 10' and withdraw the projection 8' out of engagement with the notch 11' as the bit 15' engages the notch 20 on the plate 2. This being done, continued movement of the key C' causes the bit 15' to act on the pivoted plate 2 to restore it to its normal position, shown in Fig. 8, in which position it is again locked against movement by the projection 8' being engaged by the slot 9'. The plate 2 being retracted to its normal position causes the coin L to pass through a slot 13' in the face-plate or escutcheon A', which slot corresponds to the slot 13 in the plate A, previously described.

It is manifest that this invention is not limited to use on tumbler or dead-bolt locks,

but it is applicable to any type of lock in which a key is employed.

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

1. The combination with a lock and a key therefor, of a pivoted plate adapted to be rocked by the key, means for limiting the movement of the plate in its retracted position to prevent the key being withdrawn from the lock, means for supporting a coin on the pivoted plate, and means coacting with a coin controlled by the key for permitting an increased movement of the plate to an advanced position.

2. The combination with a lock and a key therefor, of a pivoted plate adapted to be rocked by the key, means for limiting the movement of the plate in its retracted position to prevent the key being withdrawn from the lock, means for supporting a coin on the pivoted plate, means coacting with a coin controlled by the key for permitting an increased movement of the plate to an advanced position, and means for locking the plate in its advanced position.

3. The combination with a lock and a key therefor, of a pivoted plate adapted to be rocked by the key, means for limiting the movement of the plate in its retracted position to prevent the key being withdrawn from the lock, means for supporting a coin on the pivoted plate, means coacting with a coin controlled by the key for permitting an increased movement of the plate to an advanced position, and means for locking the plate in its advanced position, said means operated by the key to unlock the plate and permit its being retracted.

4. The combination with a lock and a key therefor, of a pivoted plate adapted to be rocked by the key, means for limiting the movement of the plate in its retracted position to prevent the key being withdrawn from the lock, means for supporting a coin on the pivoted plate, means coacting with a coin controlled by the key for permitting an increased movement of the plate to an advanced position, means for locking the plate in its advanced position, said means operated by the key to unlock the plate and permit its being retracted, means for exposing the coin when the plate is in its advanced position, and means for discharging the coin on the retraction of the plate.

5. An attachment for locks comprising a pivoted plate, means for supporting a coin on the plate, means controlled by a key for rocking the plate, means for limiting the movement of the plate, rigid means for engaging a coin carried by the plate within the limited range of movement of the plate to depress the coin, and means operated by the depression of the coin for re-

leasing the plate and admitting a greater movement thereof.

6. An attachment for locks comprising a pivoted plate, means for supporting a coin on the plate, means controlled by a key for rocking the plate, means for limiting the movement of the plate, rigid means for engaging a coin carried by the plate within the limited range of movement of the plate to depress the coin, means operated by the depression of the coin for releasing the plate and admitting a greater movement thereof, and means for locking the plate in its advanced position.

7. An attachment for locks comprising a pivoted plate, means for supporting a coin on the plate, means controlled by a key for rocking the plate, means for limiting the movement of the plate, rigid means for engaging a coin carried by the plate within the limited range of movement of the plate to depress the coin, means operated by the depression of the coin for releasing the plate and admitting a greater movement thereof, means for locking the plate in its advanced position, and means for exposing the coin through the plate when in its advanced position.

8. An attachment for locks comprising a pivoted plate, means for supporting a coin on the plate, means controlled by a key for rocking the plate, means for limiting the movement of the plate, rigid means for engaging a coin carried by the plate within the limited range of movement of the plate to depress the coin, means operated by the depression of the coin for releasing the plate and admitting a greater movement thereof, means for locking the plate in its

advanced position, means for exposing the coin through the plate when in its advanced position, and means operated by the key for releasing the plate from its locked advanced position.

9. An attachment for locks comprising a pivoted plate, means for supporting a coin on the plate, means controlled by a key for rocking the plate, means for limiting the movement of the plate, rigid means for engaging a coin carried by the plate within the limited range of movement of the plate to depress the coin, means operated by the depression of the coin for releasing the plate and admitting a greater movement thereof, means for locking the plate in its advanced position, means for exposing the coin through the plate when in its advanced position, means operated by the key for releasing the plate from its locked advanced position, and means for discharging the coin on the reverse movement of the plate.

10. The combination with a face-plate, of a lock and the lock key, of a coin-receiving plate pivoted on the face-plate, means for rocking said plate controlled by the lock key, and means for locking the plate to prevent the withdrawal of the key from the lock adapted to be operated by a coin of a certain diameter to release the plate and permit its being advanced by the key.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIS S. FARNSWORTH.

Witnesses:

JOHN H. HERRING,

GENEVIEVE S. DONELIN.