

H. B. MEADE.
 COIN CONTROLLED LOCK.
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928,613.

Patented July 20, 1909.

Fig. 1

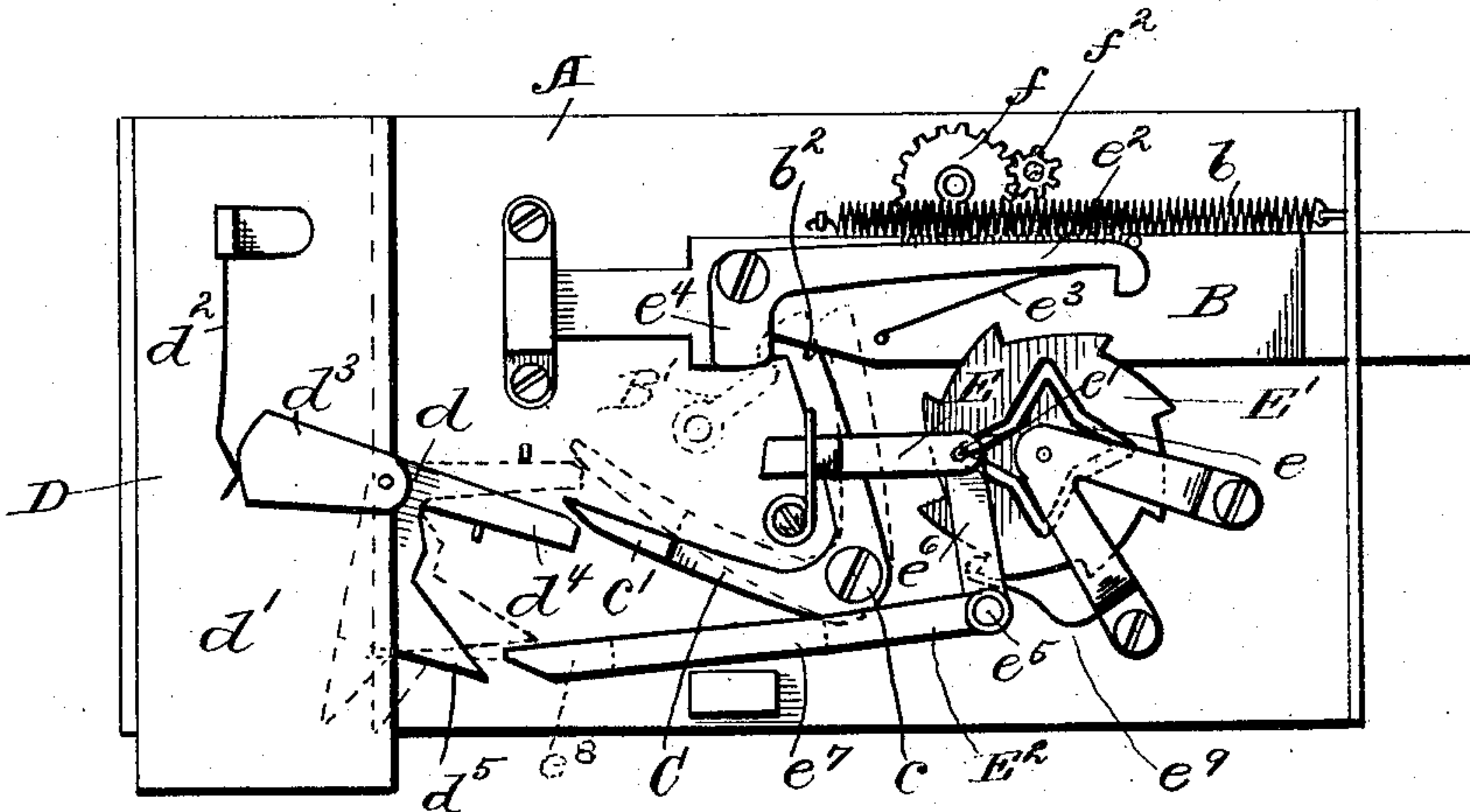


Fig. 2

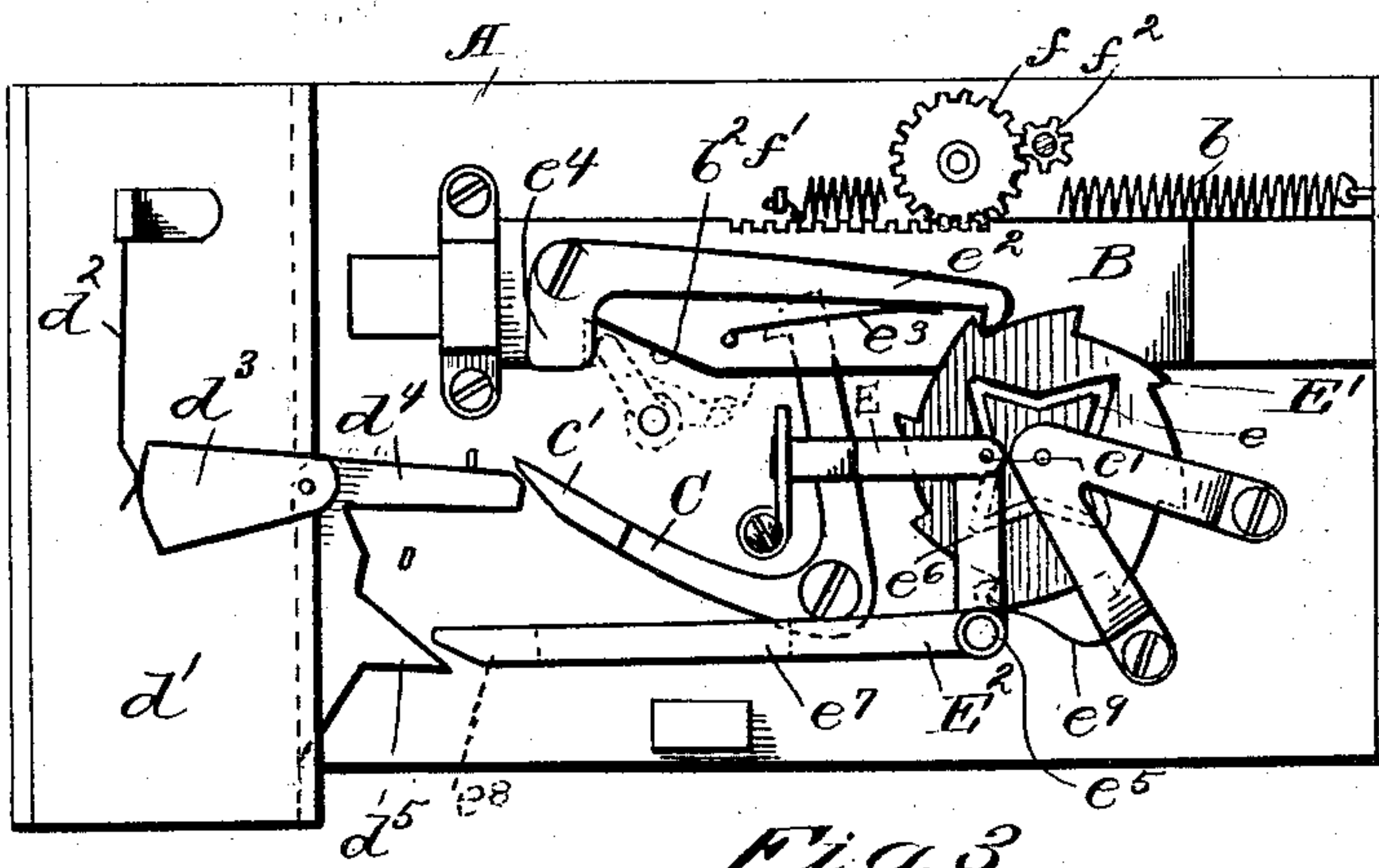
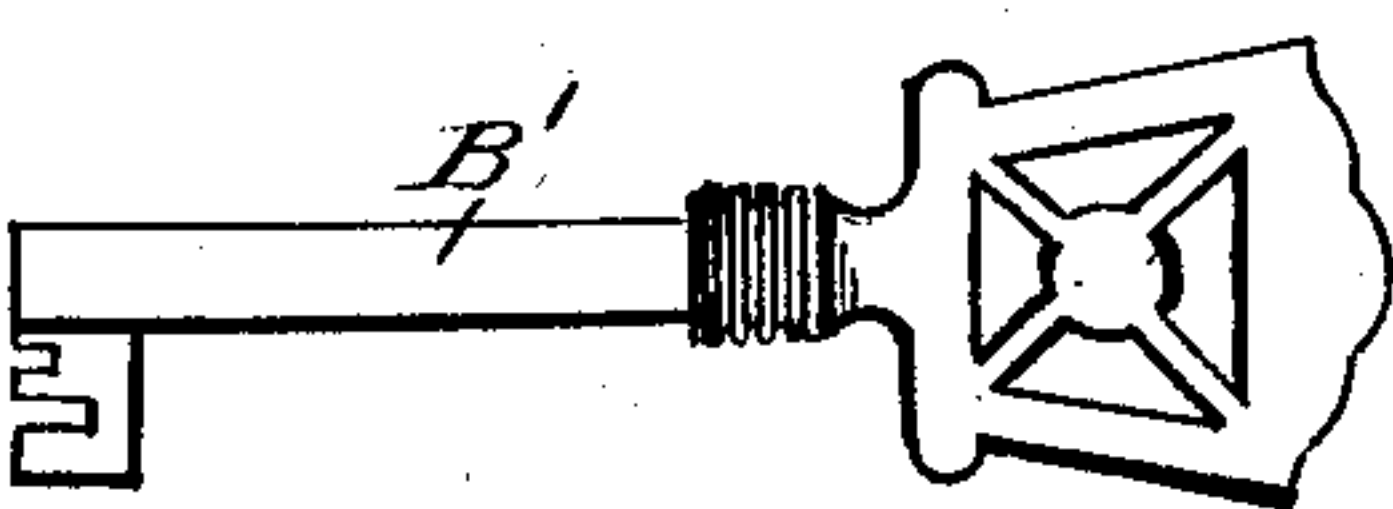


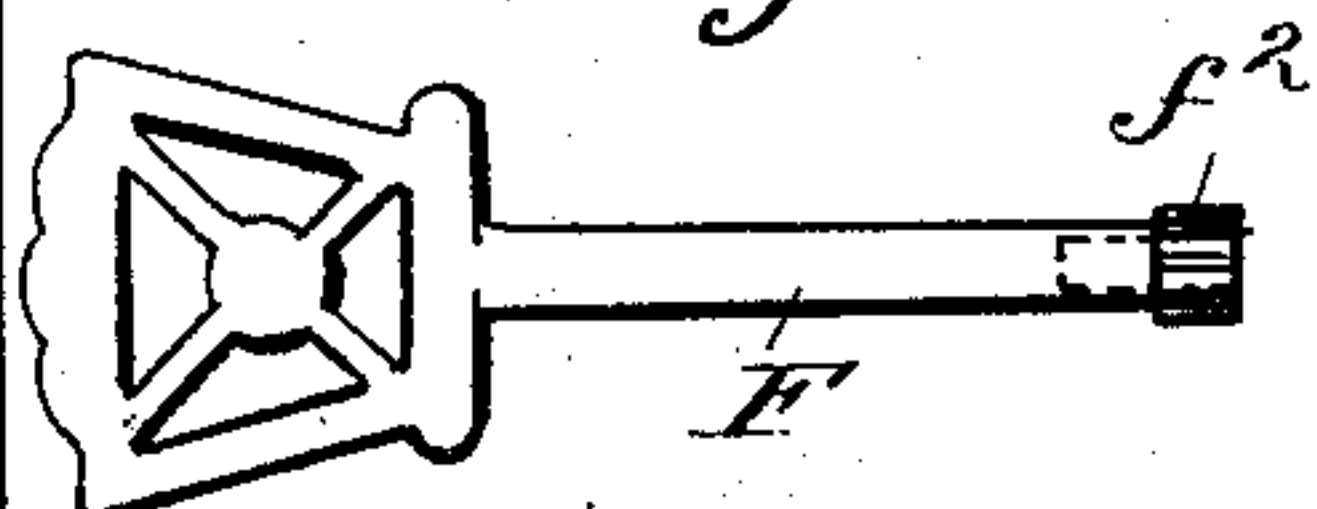
Fig. 3

Fig. 4



Witnesses:
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Fig. 5



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UNITED STATES PATENT OFFICE.

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COIN-CONTROLLED LOCK.

No. 928,613.

Specification of Letters Patent.

Patented July 20, 1909.

Application filed November 14, 1907. Serial No. 402,052.

To all whom it may concern:

Be it known that I, HENRY B. MEADE, a citizen of the United States, resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Coin-Controlled Locks, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to locks, and particularly to locks, the operation of which is designed to be controlled by a coin-actuated device or similar means.

The object of the invention is to provide a lock of this type that will be particularly adapted for use in connection with lockers and the like where it is desirable that exclusive use of a locker or compartment may be had by the payment of a coin without possibility of such use being extended to others than those thus paying and without possibility of unauthorized tampering with the locker or compartment. In other words and more particularly, my improved lock is designed to normally have the key held therein and the door locked, in which condition the coin will render the lock operable by the key, permit the subsequent withdrawal of the key, its insertion and a second operation of the lock, and then again retain such key against removal.

With a view to providing a locker of the above character that will be simple in construction and operation and not liable to get out of order, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing: Figure 1 is a side elevation of my improved lock mechanism shown as detached from the door or other part to which it may be affixed in the usual fashion of mounting locks, the several parts in such figure appearing in the initial position above referred to wherein the key is held both against operating the lock and against removal; Fig. 2 is a similar view of such lock mechanism, the parts being therein shown as positioned at the con-

clusion of the first operation of the lock permitted by the insertion of a coin; Fig. 3 is a detail showing the coin actuating device; Fig. 4 is a side elevation of one approved type of operating key such as may be used in conjunction with the mechanism shown in Figs. 1 and 2; and Fig. 5 is a similar side elevation of the master key for said lock.

Having reference then to the several figures just described, A will be seen to designate the back of the case to which the several parts of the lock are attached and by which, along with the front portion of such case, not shown, they are inclosed and protected against the ingress of dirt or like material that might interfere with the working of such parts. Such case it will be understood may be inserted in a suitable mortise of the door or door jamb, or may be secured bodily against the inner face of the same, as desired, depending upon the particular use to which the lock is being put. Of the several parts of the lock, a reciprocable bolt B constitutes the locking member proper, and is normally retained in its projecting or operating position by a spring *b*. Retraction of the bolt is had by a key B' of familiar construction, that, when properly inserted in the casing, Fig. 1, is adapted to engage a notch *b*² on the under side of the bolt and so render the same ineffective against holding the door closed. It is with the mechanism for controlling the use of the key in this manner that we are here particularly concerned. In the normal condition of the lock portrayed in full lines in Fig. 1, rotation of the key to thus retract the bolt is prevented by a weighted dog C oscillatorily mounted about a pivotal axis *c*, the weighted end *c*' of which extends into engagement with the coin-actuating device D. The latter consists simply of a plate or arm *d* pivoted at one side of a coin chute *d'* and adapted to be actuated outwardly by the passage of a coin through the latter. A spring *d*² engaging an arm *d*³, borne on the same shaft whereon such plate *d* is mounted, is adapted to resiliently secure such plate either in its inwardly projecting, or set, position, or in the position in which it is placed by the passage of a coin as aforesaid. Such plate is provided with two arms *d*⁴ *d*⁵ projecting outwardly from the chute, the upper *d*⁴ of which engages with the weighted end *c*' of dog C and is effective, upon the movement of the plate occasioned by the coin, to move

said dog out of engagement with the key. The function of the other arm d^5 will be adverted to presently. Key B' is not only held by dog C so as to be unable to actuate the bolt, but also against removal from the lock by reciprocable keeper E that prevents rotation of the key to turn into register with the key-hole, so that it is confined by the front plate of the case. Reciprocation of keeper E to thus project the same and alternately withdraw it, leaving the key free to be removed, is had by means of a ratchet wheel E' provided with a cam slot e on its one face in the form of a star. The rear end of the keeper being formed with a pin e' registering in such slot, it will be evident that upon successive partial rotations of the wheel the desired movement of the keeper will be secured. Such rotation of the wheel and operation of the keeper is effected jointly with successive retractions of the bolt by means of a pawl e^2 borne by the latter being pivotally mounted on its side. Such pawl is normally held out of engagement with the ratchet wheel E' by a spring e^3 that bears against its under side, but is adapted, upon engagement of the key B' jointly with a downwardly projecting portion e^4 thereof and with bolt B , to be depressed and engage the wheel simultaneously with the retraction of the bolt. By reason of this arrangement it will be obvious that actuation of the bolt from without, as might be attempted when the door has once been opened in order to disarrange the parts, is wholly impossible. This same mechanism, whereby keeper E is controlled, is also utilized to re-set the coin-controlled device D and thereby to restore the weighted dog C to its normal effective position. To this end a lever E^2 is provided, fulcrumed at e^5 , one arm e^6 of which is connected with the keeper E whereby said lever is rocked simultaneously with the movement of the keeper effected by rotation of the ratchet wheel. The other arm e^7 of the lever E^2 projects into the path of the lower of the two arms d^5 wherewith plate d is provided. This arm e^7 is constructed of spring metal so as to be capable of a slight lateral movement and its outer end is formed with a cam face e^8 whereby upon upward movement of the arm such end will ride over the arm d^5 of plate d and thus engage the upper face of the latter. Upon the subsequent depression or downward oscillation of the arm it will then be effective to restore the plate to its active position wherein it projects within the coin chute, and simultaneously weighted dog C is permitted to resume its normal active position. A spring e^9 is adapted to engage the periphery of ratchet wheel E in order to prevent rotation of the same further than that actually imparted by successive movements of the locking bolt B through pawl e^2 .

From the foregoing the operation of the mechanism as a whole should be fairly obvious. As has already been indicated the normal state of mechanism is that in which the key is locked both against withdrawal and so as to be incapable of retracting the bolt. Assuming the lock to be attached to a door, it will accordingly be impossible to open the latter. The insertion of the coin into the chute and its passage therethrough, however, will render inactive the dog that normally restrains the key against retracting the bolt; the door can thereupon be opened, such retraction of the bolt being simultaneously effective to withdraw keeper E , see Fig. 2, and so allow the key to be removed and carried by the party temporarily using the locker. Whatever he may have deposited in the locker will thus be secured against molestation upon the closing of the door, the lock when thus closed acting simply as an ordinary spring lock, snapping shut with the door. On his return the key that he has carried may be readily inserted and the door opened since both the keeper and the dog are inactive. Such second retraction of the bolt under action of the key, however, restores both the keeper and the dog again to their effective positions and thus the key cannot now be removed, nor, of course, can the lock be operated a second time without the deposit of another coin.

To permit actuation of the lock by authorized parties without deposit of a coin, or in case for any reason the mechanism of the lock should get out of order, I provide a master key F , Fig. 5, and mechanism operable thereby, Figs. 1 and 2, adapted to retract bolt B wholly independently of the coin-controlled device above described. Such mechanism consists simply of a small pinion f , mounted on the inner face of the case A and meshing with a rack f' on the upper side of bolt B . The end of key F is longitudinally grooved or fluted to form a pinion f^2 that when properly inserted is adapted to rotate pinion f and thus retract bolt B wholly independently of the mechanism before described.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

1. In a lock, the combination with a reciprocable bolt, a spring normally causing said bolt to project, and a key adapted to retract the same; of means adapted to prevent actuation of said key to thus retract said bolt; means adapted to prevent withdrawal of said key, both aforesaid means

being normally effective; mechanism adapted successively to render said second means inactive and thereupon both said first and second means again active; a ratchet wheel
5 connected to actuate said mechanism; and a pawl borne by said bolt and adapted to operatively engage said ratchet wheel upon retraction of said bolt, such engagement being controlled by said key.

10 2. In a lock, the combination with a reciprocable bolt, a spring normally causing said bolt to project, and a key adapted to retract the same; of means adapted to prevent actuation of said key to thus retract
15 said bolt; means adapted to prevent withdrawal of said key, both aforesaid means being normally effective; mechanism adapted successively to render said second means inactive and thereupon both said first and
20 second means again active; a ratchet wheel connected to actuate said mechanism; a pawl borne by said bolt and adapted to operatively engage said ratchet wheel upon retraction of said bolt; and a spring normally retaining
25 said pawl inactive, said key being adapted to jointly engage said bolt to retract the same and said pawl to render the same active.

3. In a lock, the combination with a locking member and a key adapted to operate
30 the same; of means, normally effective, adapted to prevent operation of said member; coin-controlled means adapted to render said first-named means ineffective; a reciprocable keeper adapted to engage said key to
35 prevent withdrawal of the same; a cam-wheel adapted to alternately project and withdraw said keeper, said cam-wheel being operatively connected with said locking member to thus alternately actuate said
40 keeper upon successive operations of said bolt; and means connecting said cam-wheel with said first-named means adapted to render the same effective simultaneously with the projection of said keeper.

45 4. In a lock, the combination with a locking member and a key adapted to operate the same; of means, normally effective, adapted to prevent operation of said member; coin-controlled means adapted to render
50 said first-named means ineffective; a reciprocable keeper adapted to engage said key to prevent withdrawal of the same; a cam-wheel adapted to alternately project and withdraw said keeper, said cam-wheel being
55 operatively connected with said locking member to thus alternately actuate said keeper upon successive operations of said bolt; and means connecting said cam-wheel with said coin-controlled means and adapted
60 to set the same and render said first-named means effective simultaneously with the projection of said keeper.

5. In a lock, the combination with a reciprocable bolt, a spring normally causing
65 said bolt to project, and a key adapted to re-

tract the same; of means, normally effective, adapted to prevent retraction of said bolt; a coin-controlled device adapted to render said means ineffective; a reciprocable keeper adapted to engage said key to prevent withdrawal of the same; a ratchet-wheel provided with a cam-groove adapted to alternately project and withdraw said keeper; a
70 pawl borne by said bolt and adapted to operatively engage said ratchet-wheel upon retraction of said bolt such engagement being controlled by said key; and means connecting said ratchet wheel with said first-named
75 means adapted to render the latter effective simultaneously with the projection of said
80 keeper.

6. In a lock, the combination with a reciprocable bolt, a spring normally causing said bolt to project, and a key adapted to retract the same; of means, normally effective, adapted to prevent retraction of said
85 bolt; a coin-controlled device adapted to render said means ineffective; a reciprocable keeper adapted to engage said key to prevent withdrawal of the same; a ratchet-wheel provided with a cam-groove adapted to alternately project and withdraw said
90 keeper; a pawl borne by said bolt and adapted to operatively engage said ratchet-wheel upon retraction of said bolt such engagement being controlled by said key; and means connecting said ratchet-wheel with said coin-controlled device and adapted to set the latter and thereby render said first-named means effective simultaneously with
95 the projection of said keeper.
100

7. In a lock, the combination with a reciprocable bolt, a spring normally causing said bolt to project, and a key adapted to retract the same; of means, normally effective, adapted to prevent retraction of said bolt; a
105 coin-controlled device adapted to render said means ineffective; a reciprocable keeper adapted to engage said key to prevent withdrawal of the same; a ratchet-wheel provided with a cam-groove adapted to alternately project and withdraw said keeper; a
110 pawl borne by said bolt and adapted to operatively engage said ratchet-wheel upon retraction of said bolt; a spring normally retaining said pawl inactive, said key being adapted to jointly engage said bolt to retract the same and said pawl to render the same
115 active; and means connecting said ratchet-wheel with said first-named means adapted
120 to render the latter effective simultaneously with the projection of said keeper.

8. In a lock, the combination with a reciprocable bolt, a spring normally causing said bolt to project, and a key adapted to retract the same; of a weighted dog normally engaging said key to prevent retraction of said
125 bolt thereby; a coin-controlled device adapted to actuate said dog to disengage said key; a reciprocable keeper adapted to engage said
130

key to prevent withdrawal of the same; a ratchet wheel provided with a cam-groove adapted to alternately project and withdraw said keeper; a pawl borne by said bolt and
5 adapted to operatively engage said ratchet wheel upon retraction of said bolt; a spring normally retaining said bolt inactive, said key being adapted to jointly engage said bolt to retract the same and said pawl to render the same active; and means connecting
10 said ratchet wheel with said dog adapted to render the latter effective simultaneously with the projection of said keeper.

9. In a lock, the combination with a reciprocable bolt, a spring normally causing said
15 bolt to project, and a key adapted to retract the same; of a weighted dog normally engaging said key to prevent retraction of said bolt thereby; a coin-controlled device adapted
20 to actuate said dog to disengage said key; a reciprocable keeper adapted to engage said

Key to prevent withdrawal of the same; a ratchet wheel provided with a cam-groove adapted to alternately project and withdraw
25 said keeper; a pawl borne by said bolt and adapted to operatively engage said ratchet wheel upon retraction of said bolt; a spring normally retaining said bolt inactive, said key being adapted to jointly engage said
30 bolt to retract the same and said pawl to render the same inactive; and means connecting said ratchet wheel with said controlled device and adapted to set the latter and thereby render said first-named means
35 effective simultaneously with the projection of said keeper.

Signed by me, this 7th day of November, 1907.

HENRY B. MEADE.

Attested by—

MARY ISRAEL,
JNO. F. OBERLIN.