

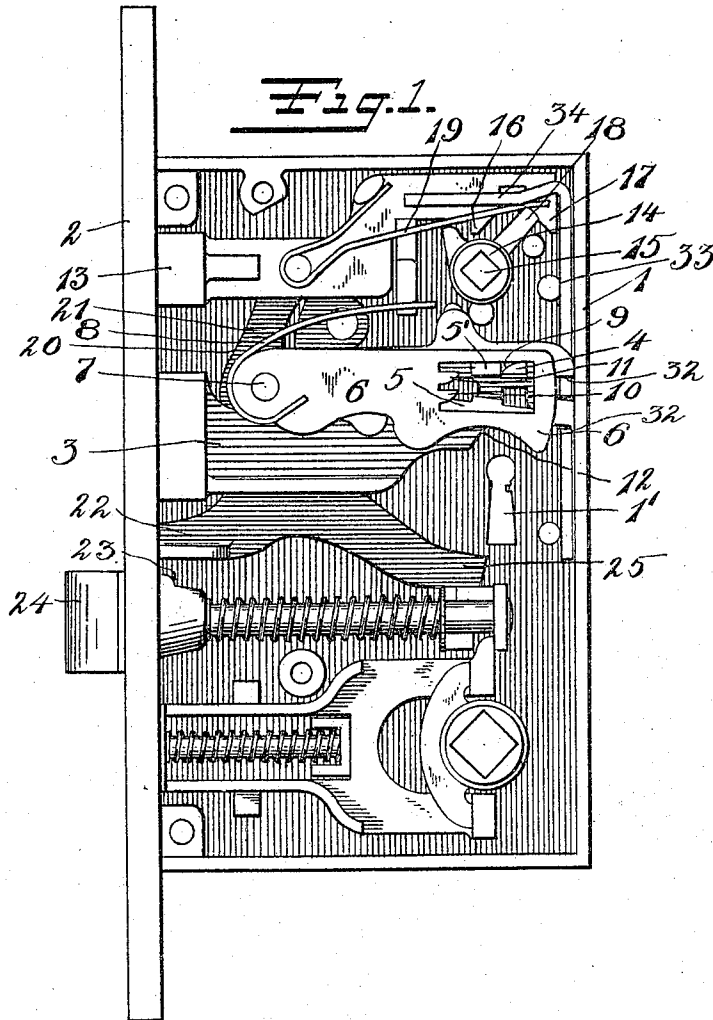
A. ARENS.
HOTEL LOCK.

APPLICATION FILED SEPT. 17, 1908.

950,315.

Patented Feb. 22, 1910.

3 SHEETS—SHEET 1.



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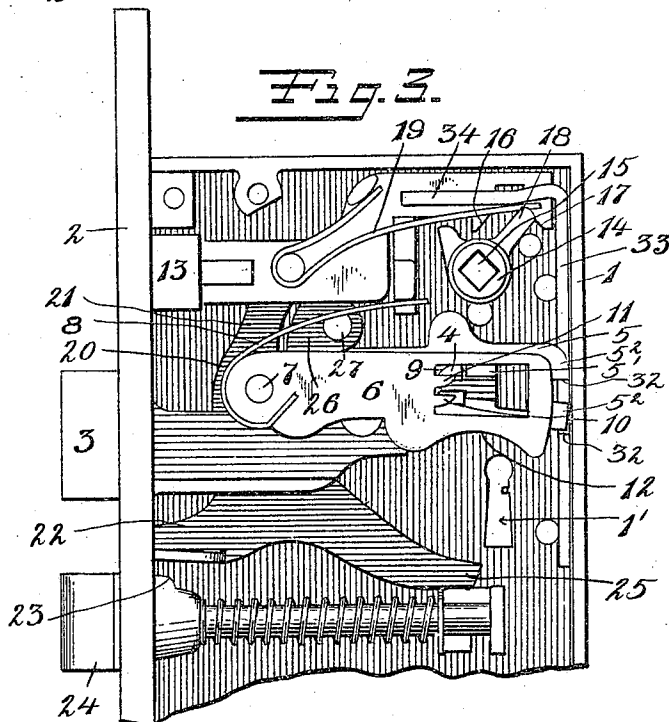
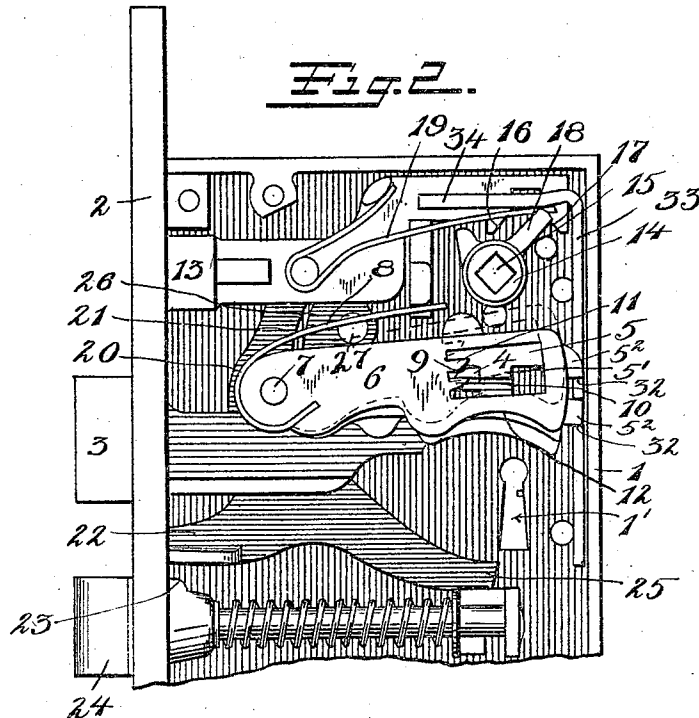
A. ARENS.
HOTEL LOCK.

APPLICATION FILED SEPT. 17, 1908.

950,315.

Patented Feb. 22, 1910.

3 SHEETS--SHEET 2.



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HOTEL LOCK.

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3 SHEETS—SHEET 3.

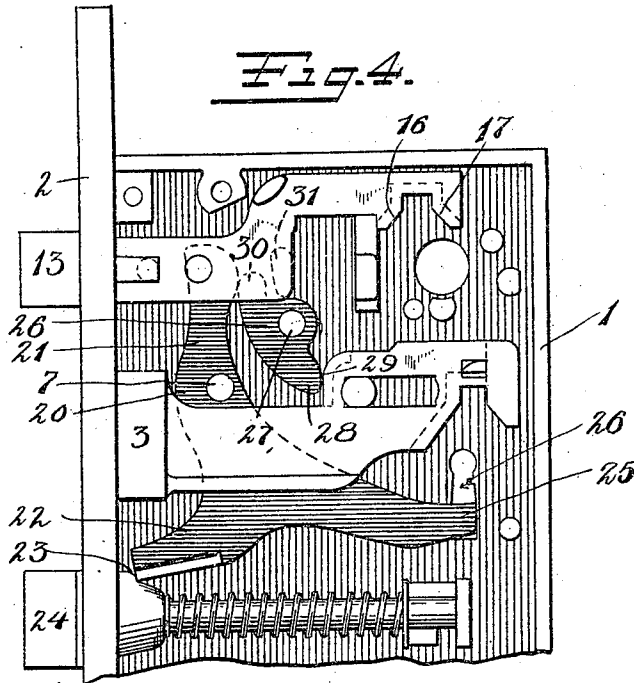


Fig. 5.

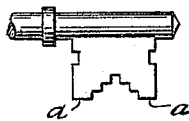


Fig. 6.

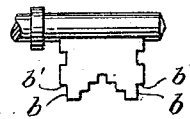


Fig. 7.

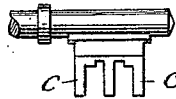


Fig. 8.

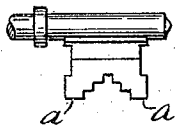
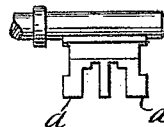


Fig. 9.



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UNITED STATES PATENT OFFICE.

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HOTEL-LOCK.

950,315.

Specification of Letters Patent. Patented Feb. 22, 1910.

Application filed September 17, 1908. Serial No. 453,550.

To all whom it may concern:

Be it known that I, AUGUST ARENS, a citizen of the United States, residing at New Britain, county of Hartford, State of Connecticut, have invented certain new and useful Improvements in Hotel-Locks, of which the following is a full, clear, and exact description.

My invention relates to improvements in locks for doors, and is particularly concerned with locks which are adapted to be used upon the doors of hotel rooms where it is desirable and necessary that a number of persons in different capacities have access to the room. For example, it is necessary that access may be had to the room not only by the guest or regular occupant, but also by the chambermaid, housekeeper and proprietor. Furthermore, it is frequently desirable that access to the room may be confined to the guest or regular occupant and the proprietor.

This invention is designed as an improvement on that disclosed in my Patent No. 932,364, dated August 24, 1909.

For the attainment of these objects, the lock is adapted to be operated by a plurality of keys, here five in number, which may be conveniently designated as the guest key, master key, grand-master key, display key and emergency key. The guest key, as its name indicates, is for the use of the regular occupant of the room. The master key is intended to give access to all the rooms of one floor, the grand-master key to all the rooms of all the floors, the lock being so constructed that the three keys mentioned will operate the same under normal conditions. If, however, it is desirable that access to the room be confined to the guest, as when the room is used for the display of goods and the like, a display key is provided which serves to block the lock against any key but itself and the emergency key held by the proprietor. The latter, or the emergency key, is adapted to operate the lock under all conditions.

A further object of the invention is to provide means for locking the door from the inside, and at the same time blocking the knob latch against retraction, so that any person trying the knob of the door will be apprised of the fact that the room is occupied.

A further object is to provide means for locking the door upon the inside so that it

cannot be unlocked from the outside by any but the emergency or the proprietor's key.

A further object is to provide means whereby should the door be accidentally locked from the outside while the room is occupied, it may be readily unlocked by operation of a hand bolt by the occupant.

A still further object is to provide means whereby access to the room may be confined to the proprietor.

With the above objects in view, the invention consists in the construction and arrangement of parts, a preferred embodiment of which is illustrated in the accompanying drawings, in which—

Figure 1 is a view of the interior of the lock, the cap plate being removed. Fig. 2 is a view similar to Fig. 1 of a portion of the interior showing the key bolt projected by certain of the keys. Fig. 3 is a view similar to Fig. 2 showing the key bolt projected by certain other of the keys. Fig. 4 is a view similar to Figs. 2 and 3, showing the hand bolt projected, parts being removed to clearly illustrate the structure. Fig. 5 is a view of the ward end of the guest key. Fig. 6 is a similar view of the display key. Fig. 7 is a similar view of the emergency key. Fig. 8 is a similar view of the master key. Fig. 9 is a similar view of the grand-master key.

In the embodiment of my invention herein selected for illustration, the device comprises the lock case 1 having a front plate 2 attached or secured thereto in any desirable manner. Within the lock case a key bolt 3 is mounted to slide in suitable guides, and has upon its rear end a racking stump 4 adapted to cooperate with the locking tumblers 5 and the display or emergency tumbler 6, said tumblers being pivoted upon a post 7 secured to the base of the lock case, and said tumblers are held in depressed or operative position with relation to the locking stump by suitable springs 8. The tumblers 5, moreover, are provided with the gates 5'.

It will be noticed from an inspection of Figs. 1, 2 and 3 that the racking stump 4 on the key bolt 3 is provided with a beveled forward face 9 which is arranged to cooperate with projections or teeth 10 and 11 on the emergency tumbler 6, according to which key is employed to operate the key bolt.

For example, when the key bolt is projected by the guest key, master or grand-master keys, the tumbler 6, which carries the teeth or projections 10 and 11, will be raised by the wards of said keys respectively, so that the beveled face 9 of the racking stump 4 will engage the beveled edge of the lower tooth or projection 10 and seat itself below said projection when the key bolt is in locking position. For this purpose, it will be noticed that the inner and outer corners *a a* of the wards of these keys, Figs. 5, 8 and 9, are of full outline, so that these portions will take against the sweep 12 of the tumbler 6 and raise it to such upper position. When the key bolt has been so operated, it will be possible to retract it by any one of the given set of keys, including the display and emergency key. Also when the key bolt is in locking position the gates 5' of tumblers 5 will drop behind the stump 4 to hold the bolt in such position.

Referring now to the display key, Fig. 6, it will be noticed that the inner and outer corners of its ward are cut away at *b b*, so that either of the shoulders *b' b'* will, in passing over the sweep 12 of tumbler 6, raise the tumbler to such position that the locking stump 4 will engage beneath the projection 11 on said tumbler, as indicated in Fig. 2. This position of the tumbler 6 will serve to prevent operation of the lock by the guest, master or grand-master keys, for the reason that the racking stump 4 being above projection 10 will prevent the tumbler 6 from being raised upwardly by the wards of these keys a sufficient distance to permit them to rotate beneath the sweep of tumbler 6.

Referring now to the emergency key, it will be noticed that the inner and outer ends *c c* of the ward of this key are entirely cut away, so that whether operated from the inner or outer side of the door it will not disturb the position of the tumbler 6, whereby, as will be seen in Fig. 3, the racking stump 4, when the bolt is projected by this key, will take above the tooth or projection 11 of the tumbler 6. Thus said tumbler will be held against operation not only by the guest, master and grand-master keys, but also by the display key, and it will be impossible to operate the key bolt to retracted or unlocked position except by use of the emergency or proprietor's key.

In order to provide for locking the door from the inside, and at the same time blocking the knob latch and consequently the door knob against operation, I provide a hand bolt 13, likewise mounted in suitable guides within the lock case 1, with the rear end of which a roll-back 14 coöperates, said roll-back having a suitable bore 15 to receive the shank of an operating thumb-piece, which is located upon the inside of the door. The

tail of the bolt 13 is provided with the beveled surfaces 16 and 17, which coöperate with a projection 18 upon the roll-back for the projection and retraction of said bolt, and a spring 19 serves to hold the roll-back in either its forward or rearward position.

To indicate the occupancy of the room when the hand bolt 13 is projected to locking position, I provide a lever 20, Fig. 4, pivoted upon the same post 7 which carries the tumblers 5 and 6, and having an arm 21 which engages within a suitable recess at the rear of the hand bolt 13, and having a second arm 22 adapted, when the lever is swung by the projection of the hand bolt 13, to lie in the path of the shoulder 23 upon the knob latch 24, whereby said latch, and consequently the roll-back and knobs connected therewith, will be held against operation when said hand bolt 13 is projected to locking position.

It is desirable when the door is locked from the inside by the occupant that access to the room be confined to the proprietor. To this end I provide means for preventing the unlocking of the door from the outside when it is locked on the inside by the hand bolt 13, by any but the emergency key, as follows. The lever 20 is provided with a third arm 25, which, when the upper end of the lever is rotated forward by means of the hand bolt 13, is swung across the key-hole 1', it being understood that the arm 25 will be arranged to lie against the bottom or inner face of the lock case 1. By this arrangement it will be impossible to fully insert any one of the four keys, namely, the guest, master, grand-master or display, for the reason that their respective wards will bring up against the extremity of the arm 25 so lying across the key-hole, before the opposite ends of their respective wards fully clear the key-hole in the cap plate of the lock case, hence said keys could not be rotated in the lock. The emergency key, on the other hand, by reason of having the ends of its ward cut away as at *c c*, Fig. 7, will clear the arm 25 sufficiently to permit its ward to be entirely inserted within the lock case and consequently to permit it to operate the key bolt. When the key bolt is so operated by the emergency key at a time when the hand bolt 13 is projected to locking position, the projection of the key bolt will serve to retract the hand bolt by the following means, namely, a lever 26 pivoted at 27 to the locking case and having an arm 28, which engages a shoulder 29 upon the key bolt, and having an arm 30 adapted to engage a shoulder 31 upon the hand bolt 13.

From an inspection of Fig. 4, it will be seen that when the key bolt 3 is projected, the hand bolt 13 will be simultaneously retracted through the agency of the lever 26, whereupon the key bolt may be retracted in

the usual manner and the door entirely unlocked. By this means it will be seen that when the door is locked from the inside by means of the hand bolt, the unlocking thereof from the outside would be confined entirely to the holder of the emergency key.

In order to enable the occupant of the room to unlock the door from the inside, even without a key, should the door have been accidentally locked from the outside, the same may be accomplished through the lever 26 above described and the hand bolt 13, whereby when the key bolt 3 is projected, the projection of the hand bolt 13 by means of its thumb-piece will serve to retract the key bolt. To permit such retraction of the key bolt through the agency of the hand bolt 13 and lever 26, the gates 5' of the tumblers 5 must be cleared of the racking stump 4. To this end said tumblers are provided with tail pieces 5² which overlie shoulders 32 on connecting plate 33, which plate has a forwardly projecting arm 34 arranged to overlie the lug 18 on the roll-back 14, so that when the roll-back is operated to project the hand bolt 13 and simultaneously retract the key bolt 3, the lug 18 will first raise connecting plate 33 and consequently free the gates 5' of tumbler 5 from the racking stump 4.

While I have here described the particular construction and operation of parts, it is to be understood that the same may be varied in detail and arrangement without departing from the spirit and scope of the invention.

What I claim is—

1. In a lock mechanism, the combination of a bolt normally operable in either direction by any of a series of keys including with others a display key and an emergency key, and means constructed and arranged to prevent the unlocking of said bolt by any except the display or emergency key when locked by the display key and to prevent unlocking of said bolt by any except the emergency key when locked by the emergency key.

2. In a lock mechanism, the combination of a bolt normally operable in either direction by any of a series of keys including with others a display key and an emergency key, tumbler mechanism for said bolt constructed and arranged to prevent unlocking of said bolt by any except the display or emergency key when locked by the display key and to prevent unlocking by any except the emergency key when locked by said emergency key.

3. In a lock mechanism, the combination of a bolt normally operable in either direction by any of a series of keys including with others a display and an emergency key, tumbler mechanism for said bolt including a tumbler having means to prevent unlock-

ing of said bolt by any except the display or emergency keys when locked by the display key and having means to prevent operation by any but the emergency key when the bolt is locked by said emergency key.

4. In a lock mechanism, the combination of a bolt adapted to be actuated by a plurality of keys including with others a display key and an emergency key, of a member having means to prevent the unlocking of the bolt by any but the display and emergency keys when locked by the display key and having means to prevent unlocking of the bolt by any but the emergency key when locked by the emergency key.

5. In a lock mechanism, the combination of a bolt normally operable in either direction by any of a series of keys including with others a display key and an emergency key, a tumbler for said bolt having means when the bolt is locked by the display key to prevent its retraction by any but the display or emergency keys and having means adapted when the bolt is locked by the emergency key to prevent its retraction by any but the emergency key.

6. In a lock mechanism, the combination of a bolt adapted to be actuated by any of a series of keys including a display key and an emergency key, a member having means to prevent the operation of any other key but the display and emergency keys when the bolt is locked by the display key and having means to prevent operation of any other key but the emergency key when the bolt is locked by said emergency key, a hand bolt and means operated by said hand bolt to prevent operation of said first bolt by any but the emergency key when said hand bolt is locked.

7. In a lock mechanism, the combination of a bolt and a series of main tumblers adapted to be actuated by a plurality of keys including a display key and an emergency key, an emergency tumbler having a tooth arranged to prevent operation of the lock by any but the display and emergency keys when locked by the display key and having a second tooth arranged to prevent operation of the lock by any but the emergency key when locked by said emergency key.

8. In a lock mechanism, the combination of a hand bolt operable from the inside of the door, a knob latch, and means operable by said bolt and arranged to engage said latch whereby whenever the bolt is locked the latch is blocked against operation.

9. In a lock mechanism, the combination of a hand bolt operable from the inside of the door, a knob latch, a shoulder on said latch and a lever operable by said bolt and cooperating with said shoulder to block said latch against operation when the bolt is locked.

10. In a lock mechanism, the combination

of a hand bolt, a knob latch a key bolt adapted for operation by a series of keys, and means operated by said hand bolt to prevent operation of said key bolt by certain of said keys and to block said latch when the hand bolt is locked.

11. In a lock mechanism, the combination of a lock case having a key hole in its outer face, a hand bolt, a key bolt, and means adapted to be projected across said key hole adjacent the inner face of said case by the projection of said hand bolt to prevent complete insertion of a key to operate the key bolt.

12. In a lock mechanism, the combination of a lock case having a key hole in its outer face, a lock bolt adapted to be operated by

a series of keys including an emergency key, a hand bolt and means adapted to be projected across said key hole by the locking of said hand bolt to prevent complete insertion of any but said emergency key.

13. In a lock mechanism, the combination of a hand bolt, a knob latch and a key bolt adapted for operation by a series of keys, and means operated by the locking of said hand bolt to prevent complete insertion of certain of said keys and to block said knob latch.

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Correction in Letters Patent No. 950,315.

It is hereby certified that in Letters Patent No. 950,315, granted February 22, 1910, upon the application of August Arens, of New Britain, Connecticut, for an improvement in "Hotel-Locks," an error appears in the printed specification requiring correction as follows: Page 4, line 27, the word "present" should read *prevent*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 15th day of March, A. D., 1910.

[SEAL.]

C. C. BILLINGS,
Acting Commissioner of Patents.