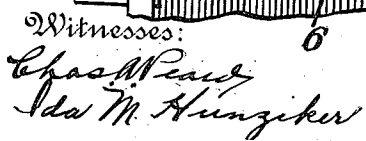


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2 SHEETS—SHEET 1.



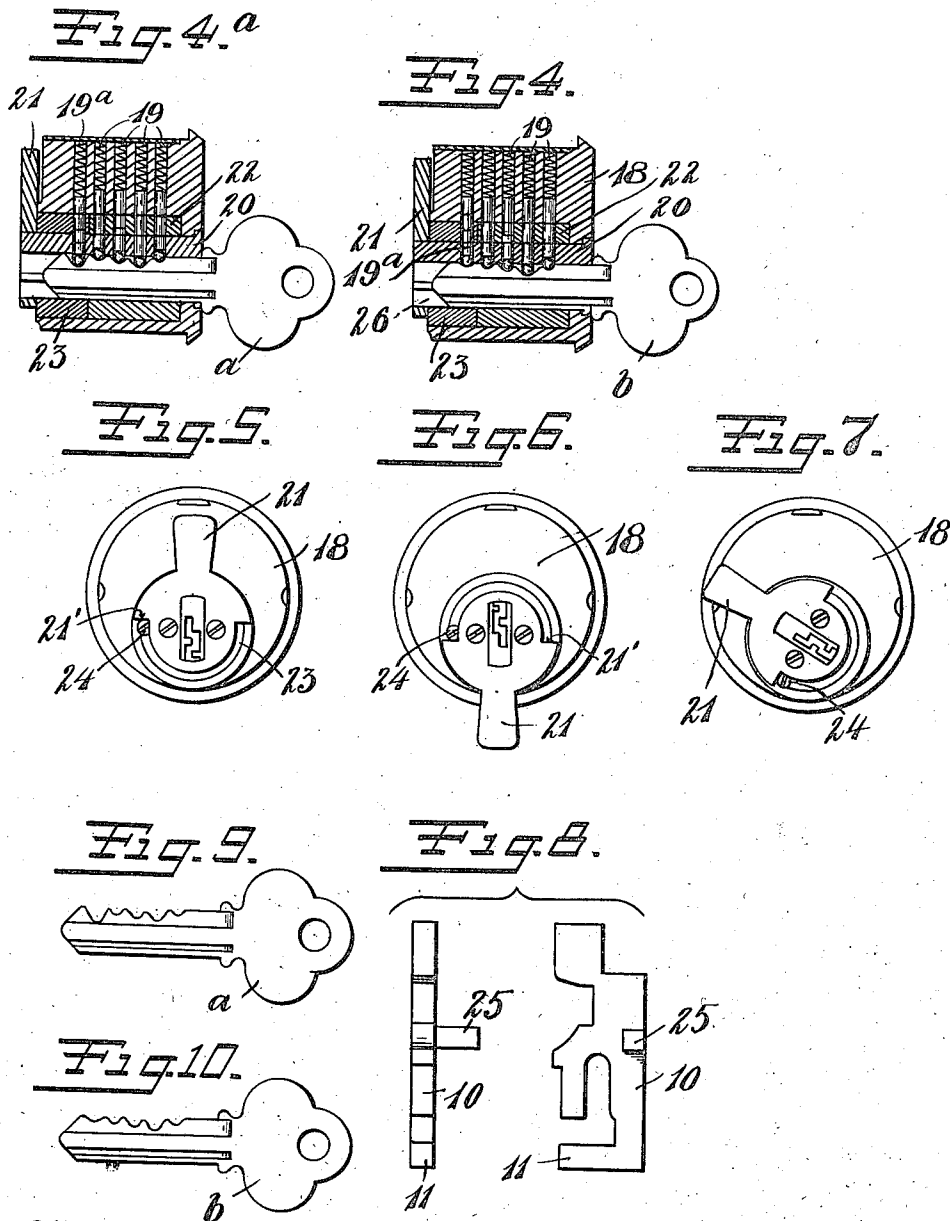
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A. ARENS & E. L. TEICH.
HOTEL LOCK, EMERGENCY CYLINDER.
APPLICATION FILED APR. 27, 1910.

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2 SHEETS—SHEET 2.



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HOTEL-LOCK, EMERGENCY-CYLINDER.

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Specification of Letters Patent.

Patented Mar. 28, 1911.

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To all whom it may concern:

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

Our invention relates to so-called hotel corridor locks, and is particularly concerned with mechanism whereby the latch bolt may be dead-locked from the inside in such manner that said bolt can not be operated from the outside except by the use of a key of particular construction commonly known as an emergency key.

To this end the invention contemplates a construction of lock of the so-called cylinder type in which the key-operable plug of the cylinder is so constructed that while the latch bolt may under normal conditions be retracted by any of a plurality of keys, such as the guest, master and grand master keys, said latch bolt when locked by the inside dead-locking mechanism can only be operated by a so-called emergency key.

With these 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 side view of the lock with the cap plate removed; Fig. 2 is a fragmentary view of the lock similar to Fig. 1, showing the inside dead-locking mechanism in dead-locking position; Fig. 3 is a sectional view on the line 3—3 Fig. 1, showing also a portion of the locking cylinder; Fig. 4 is a longitudinal sectional view of the locking cylinder and key-operated plug showing the position of the pin tumbler when operated by one of the ordinary keys. Fig. 4^a is a view similar to Fig. 4 showing the position of the pin tumbler when operated by the emergency key. Figs. 5, 6 and 7 are inner end views of the cylinder showing the locking cam in its several operating positions; Fig. 8 comprises an edge and side view respectively of the inside dead-locking member for dead-locking the latch bolt; Fig. 9 is a side view of the emergency key showing the bitting for operating the pin tumbler of the emergency cylinder, and Fig. 10 is a similar view of one of the other keys of the

series, for example, the master key showing the bitting which prevents operative positioning of the emergency pin tumbler.

In the embodiment of the invention herein selected for illustration, 1 is the lock case. 2 is the face plate thereof.

3 indicates the cover or the cap plate of the case in which the locking cylinder 4 is mounted.

5 indicates the latch bolt, which is provided with a stem 6 having a tail piece 7 to be engaged by the cam arm of the cylinder lock. The stem 6 of the latch bolt carries a coiled spring 8 bearing at one end against the head of the bolt and at the opposite end against an abutment 9 to normally project said bolt.

In the rear of the lock case is slidably mounted an inside dead-locking member 10, having an arm 11, which, when said dead-locking member is in normal position, lies opposite a notch 12 in the tail piece 7, whereby the latch bolt may be freely retracted without interference of the dead-locking member by any of the series of keys above mentioned. The dead-locking member is provided with a notch 13 adapted to be engaged by a roll-back 14, which is operated by a suitable thumb latch (not shown) from the inside of the door. The roll-back 14 is provided with cam faces 15 and 16 respectively, arranged to be engaged by a spring 17 to hold said roll-back in either of its positions.

Referring to Figs. 4 and 4^a, it will be seen that the lock cylinder is of the duplex plug type, that is to say, said cylinder consists of a casing 18 having the usual pin tumbler mechanism 19, which coöperates with the inside key-operated plug 20, to which the cam arm 21 is secured at its inner end, and also with a cylindrical key-operated plug surrounding the plug 20 and comprising two sections 22 and 23. The section 22 is of the usual construction to provide for an increased number of permutations of the lock, and is controlled by the pin tumbler mechanism 19, whereby a series of keys may be employed therewith, such as a guest, master and grand master key. Any one of the keys just mentioned will serve to release the inside key-operated plug 20 and the outside plug section 22 from the pin tumblers 19, in order to permit of rotation of the cam arm 21 for normal operation of the latch

bolt by engagement of said cam arm with the tail piece 7 of the latter. For such normal operation the inside locking plug is rotated clockwise (as viewed in Fig. 6).

Reverse movement of the inside locking plug by any of the keys just mentioned is prevented, however, by a pin 24 secured to the inner end of the cylindrical plug section 23 and engaging a shoulder 21' on the head of the cam arm 21, which section 23 remains stationary when the inside plug only is operated by any of the three keys just mentioned. This for the reason that said keys are so bitted that they cannot operatively position the pin tumbler 19^a which controls the inner or emergency cylindrical plug section 23. When the dead-locking member 10 is raised to dead-locking position, as shown in Fig. 2, the arm 11 of said member stands behind a shoulder 7' on the latch bolt tail piece, whereby operation of the latch bolt by any of the three keys mentioned will obviously be prevented.

In case it is necessary to unlock the door from the outside when the latch bolt is blocked from the inside by the dead-locking mechanism, means are provided whereby the dead-locking member 10 may be returned to inoperative position by operation from the outside by the so-called emergency key. To this end the dead-locking member is provided with a lug 25 and the so-called emergency key is so bitted that it is adapted to operatively position the pin tumbler 19^a of the locking plug section 23 which carries the stop pin 24. By this means the inner plug section 23 may be rotated in unison with the plug 20 and consequently the cam arm 21 may be rotated counter clockwise as viewed in Fig. 7 to enable said cam arm to engage the dead-locking member lug 25 and return the dead-locking member to its inoperative position. Thereupon the cam arm may be rotated in the reverse or clockwise direction by the emergency key and the latch bolt retracted. The lock, furthermore, may be provided with the usual independent knob spindles for independent operation of the latch bolt by means of the outer and inner knobs (not shown) respectively, the outer knob spindle operating the roll-back 29 which engages a latch operating roll-back and centering yoke 30, said yoke being provided with guide stems 31 carrying springs 32 which operate between the heads 33 of said stems and the guide lugs 34 secured to the lock case. The inner knob spindle is provided with a roll-back (not shown) lying immediately beneath the roll-back 29 and also adapted to engage the yoke 30. The roll-back 29 and consequently the outer knob may be blocked against operation in the usual manner by means of a dogging member 35 adapted to engage a notch 36 in said roll-back 29, said dogging member 35 being

operated in reverse directions by the press buttons 37 and 38 respectively and connecting member 39.

While we have herein described a particular embodiment of our invention, it is to be understood that the same may be varied in details within the scope of the appended claims.

What we claim is:

1. In a hotel corridor lock, the combination with a spring-projected latch bolt and a dead-locking member therefor adapted to be operated from the inner side of the lock, of a locking cylinder on the outer side of said lock having a cam arm arranged to be rotated in one direction by any of a plurality of keys, including an emergency key, to retract the latch bolt when said dead-locking member is in inoperative position, means in said cylinder to prevent rotation of said cam arm in the opposite direction by any except the emergency key, and means whereby said cam arm may move said dead-locking member to inoperative position by such opposite rotation of said cam arm.

2. In a hotel corridor lock, the combination with a spring-projected latch bolt and a dead-locking member therefor adapted to be operated from the inner side of the lock, of a locking cylinder adapted to be operated from the outer side of the lock having a cam arm adapted to be rotated in one direction by any of a plurality of keys, including an emergency key, to retract said latch bolt when said dead-locking member is in inoperative position, a key operated plug in said locking cylinder having means to prevent rotation of said cam arm in the opposite direction except by the emergency key, and means on said dead-locking member whereby said member may be thrown to inoperative position by such opposite rotation of said cam arm.

3. In a hotel corridor lock, the combination with a spring-projected latch bolt, of a dead-locking member therefor adapted to be operated from the inner side of the lock, a locking cylinder having a locking plug adapted to be operated from the outer side of the lock, a cam arm carried by said plug, pin tumbler mechanism arranged to permit rotation of said arm in one direction by any of a plurality of keys, including an emergency key, to retract the latch bolt, pin tumbler mechanism arranged to prevent rotation of said cam arm in the opposite direction by any except the emergency key, and means on said dead-locking member whereby said member may be thrown to inoperative position by such opposite rotation of said cam arm.

4. In a hotel corridor lock, the combination with a spring-projected latch bolt and a dead-locking member adapted to be operated from the inner side of the lock, of a

locking cylinder having a sectional locking plug arranged to be operated from the outer side of the lock, a cam arm carried by one of the sections of said plug and arranged to be rotated in one direction by any of a plurality of keys, including an emergency key, means carried by another section of said locking plug to prevent rotation of said cam arm in the opposite direction by any except the emergency key, means whereby said locking plug sections may be rotated in unison in said opposite direction by the emergency key, and means on said dead-locking member whereby said member may be thrown to inoperative position by such opposite rotation of said cam arm.

5. In a hotel corridor lock, the combination with a spring-projected latch bolt and a dead-locking member therefor arranged to be operated from the inner side of the lock, of a locking cylinder having a locking plug arranged to be operated from the outer side of the lock, a cam arm carried by said plug, means whereby said cam arm may be rotated in one direction by any of a series of keys, including an emergency key, to retract the latch bolt, a sleeve surrounding said locking plug having means to prevent rotation of said cam arm in the opposite direction, except by said emergency key, means permitting rotation of said plug and sleeve in such opposite direction by said emergency key, and means on said dead locking member whereby said member may be thrown to inoperative position by such opposite rotation of said cam arm.

6. In a hotel corridor lock, the combination with a spring-projected latch bolt and a dead-locking member therefor arranged to be operated from the inner side of the lock, of a locking cylinder on the outer side of the lock having a locking plug, a cam arm carried by said plug, pin tumbler mechanism for said plug arranged to be operated by any one of a plurality of keys, including an emergency key, to permit rotation of said arm in one direction, a sleeve on said plug having a stop to prevent rotation of said arm in the opposite direction, pin tumbler mechanism for said sleeve arranged to be operated by said emergency key to permit rotation of said cam arm in either direction, and means on said dead-locking member whereby said member may be thrown to inoperative position by said cam arm when rotated oppositely to said first mentioned rotation whereby said emergency key may first release said dead-locking mechanism and then retract said latch bolt.

7. In a hotel corridor lock, the combination with a spring-projected latch bolt, of a dead-locking member therefor arranged to be operated from the inner side of the lock, a locking cylinder upon the outer side of the lock having a locking plug, a cam

arm carried by said plug, means to permit rotation of said cam arm by any of a series of keys, including an emergency key, a cylindrical plug surrounding the inner end of said first mentioned plug having a stop to prevent rotation of said cam arm in the opposite direction of any except the emergency key, means operable by the emergency key to release said cylindrical plug whereby said key may operate said cam arm in either direction, means on said dead-locking member whereby said cam arm may move said member to inoperative position when said arm is rotated in said opposite direction whereupon said cam arm may thereafter be operated by said emergency key to retract said latch bolt.

8. In a hotel corridor lock, the combination with a spring-projected latch bolt, of a dead-locking member therefor, a roll-back piece for said dead-locking member, a thumb-piece for said roll-back operable from the inner side of the lock, a locking cylinder upon the outer side of the lock having a locking plug carrying a cam arm adapted to be rotated in one direction by any of a plurality of keys, including an emergency key, to retract the latch bolt, means to prevent rotation of said cam arm in the opposite direction by any except the emergency key, and means on said dead-locking member whereby said member may be moved to inoperative position by such opposite rotation of said cam arm.

9. In a hotel corridor lock, the combination with a spring-projected latch bolt of a dead-locking member therefor arranged to be operated from the inner side of the lock, a locking cylinder upon the outer side of the lock having a sectional locking plug, a cam arm carried by one section of said plug, means for permitting the rotation of said plug section in one direction by any of a plurality of keys, including an emergency key, a normally stationary plug section having means to prevent the rotation of said cam arm in the opposite direction, means coöperating with said second plug section adapted to be released by said emergency key to permit simultaneous rotation of said first and second plug sections in either direction, and means on said dead-locking member whereby said member may be moved to inoperative position by rotation of said cam arm in a direction opposite to said first named direction whereby said latch bolt may be thereafter retracted by rotation of said cam arm in said first mentioned direction.

10. In a hotel corridor lock, the combination with a latch bolt and a dead-locking member therefor adapted to be operated from the inner side of the lock, of a key controlled member operable from the outer side of the lock by any of a plurality of

keys, including an emergency key to retract the latch bolt when said dead-locking member is in inoperative position, and key controlled means to prevent retraction of the latch bolt by said key controlled latch retracting member except by the emergency key when said dead-locking member is in operative position.

11. In a hotel corridor lock, the combination with a latch bolt and a dead-locking member therefor adapted to be operated from the inner side of the lock, of a key controlled lever operable from the outer side of the lock to retract the latch bolt by any of a plurality of keys, including an emergency key, when said dead-locking member is in inoperative position, means to prevent retraction of the latch bolt by said lever except by operation of the emergency key when said dead-locking member is in operative position and means whereby said lever may be operated to throw said dead-locking member to inoperative position by the operation of the emergency key.

12. In a hotel corridor lock, the combination with a latch bolt and a dead-locking member therefor adapted to be operated from the inner side of the lock, of a locking cylinder on the outer side of the lock, having a cam arm arranged to be rotated by any of a plurality of keys, including an emergency key to retract the latch bolt

when said dead-locking member is in inoperative position, means to prevent operative rotation of said cam arm by any except the emergency key to retract the latch bolt when said dead-locking member is in operative position, and means whereby said cam arm may be rotated by said emergency key to throw said dead-locking member to inoperative position and thereafter permit retraction of the latch bolt by said cam arm.

13. In a hotel corridor lock, the combination with a latch bolt and a dead-locking member therefor operable from the inner side of the lock, of a locking cylinder on the outer side of the lock, having a cam arm arranged to be rotated by any of a plurality of keys, including an emergency key bitted to retract the latch bolt when said dead-locking member is in inoperative position, means in said cylinder to prevent rotation of said cam arm to retract the latch bolt by any but the emergency key when said dead-locking member is in operative position, said emergency key being bitted to control said last mentioned means to permit rotation of said cam arm to throw said dead-locking member to inoperative position.

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