A. ARENS.

ENTRANCE DOOR LOCK.

APPLICATION FILED DEC. 20, 1909.

959,834. Patented May 31, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

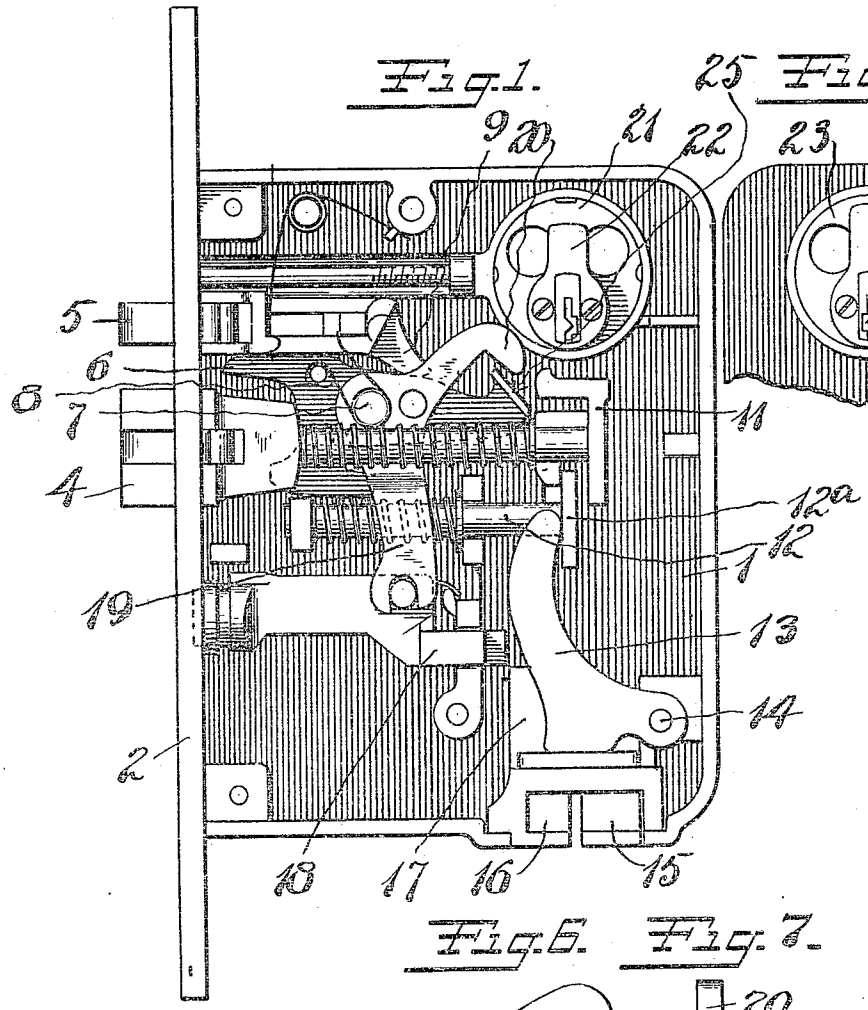


Fig. 2.

Fig. 5.

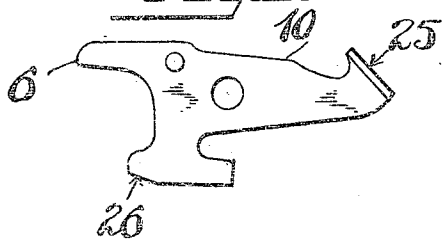


Fig. 6.

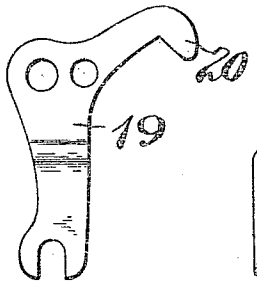
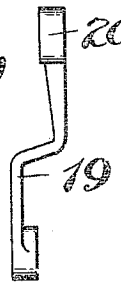


Fig. 7.



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2 SHEETS—SHEET 2.

Fig. 3.

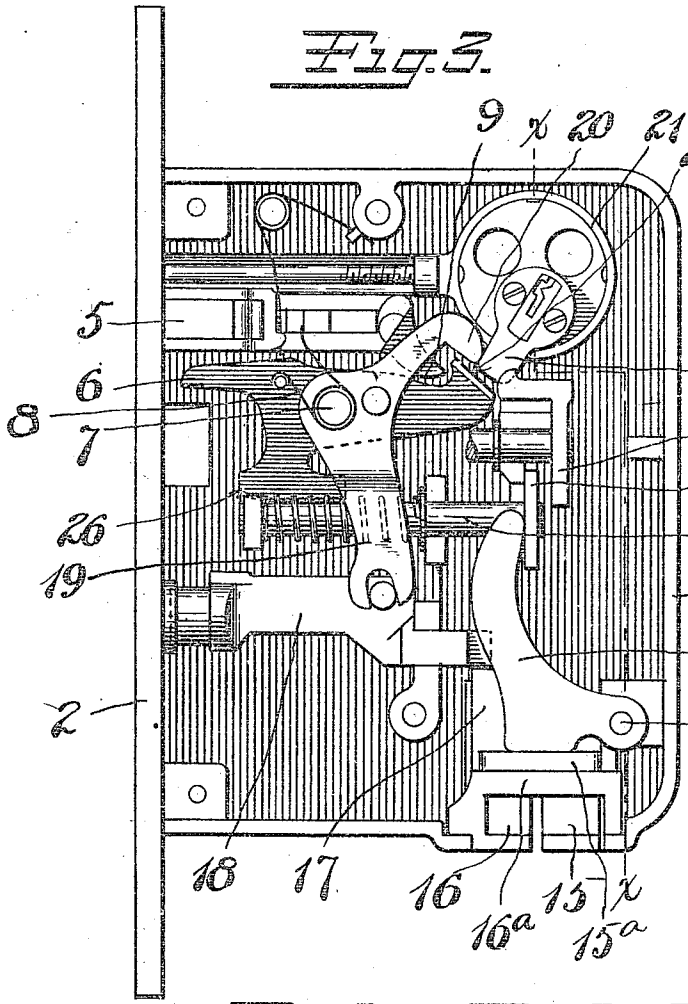


Fig. 4.

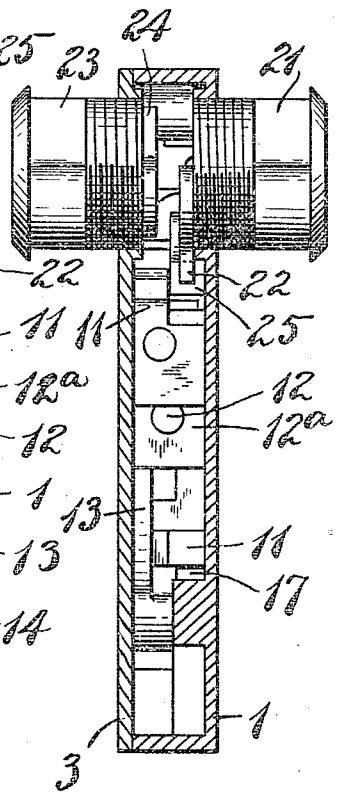


Fig. 8.

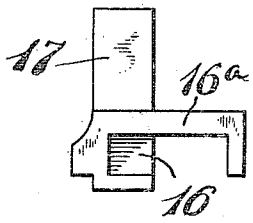


Fig. 9.

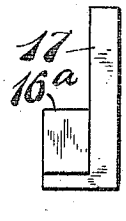


Fig. 10.

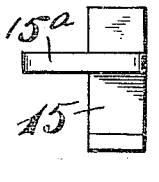
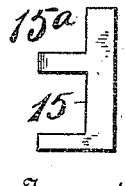


Fig. 11.



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ENTRANCE-DOOR LOCK.

959,834. Specification of Letters Patent. Patented May 31, 1910.

Application filed December 20, 1909. Serial No. 534,058.

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 Entrance-Door Locks, of which the following is a full, clear, and exact description.

My invention relates to improvements in entrance door locks, the object being to provide means for deadlocking the lock against admission from the outside.

Other advantages of my invention will be apparent to the mechanic skilled in the art from a reading of the following specification and an examination of the accompanying drawings, in which,—

Figure 1 is a front view of my invention as applied to a mortise lock, the cap of the case being removed; Fig. 2 is a view of a portion of the cap for the case shown in Fig. 1; Fig. 3 is a view similar to Fig. 1 but showing certain parts in a different position, certain other parts being removed; Fig. 4 is a section of the lock on substantially the plane of the line *x*—*x* Fig. 3, showing the parts as they appear in said figure; Fig. 5 is a side elevation of a certain detail; Figs. 6 and 7 are different views of another detail. Figs. 8 and 9 are different views of still another detail; Figs. 10 and 11 are different views of still another detail.

1 represents the case of a mortise lock; 2 is the face plate; 3 is the cap or cover for the case 1; 4 is a latch-bolt projecting through the face plate 2; 5 is an actuator for a latch dog.

6 is a latch dog pivoted at 7.

8 is a spring which normally tends to move the latch dog into the position indicated in Fig. 3 wherein its front end will stand to the rear of latch 4 and block or "dog" it against repression. At the rear of the actuator 5 is a depending arm 9 which bears against a cam surface 10 on the rear of the latch dog 6.

11 is a cross-head on the rear end of the tail of the latch-bolt 4.

12 is a slide having a head 12^a arranged to engage and retract the cross head 11 of the latch-bolt when the slide 12 is retracted.

13 is a lever pivoted at 14 and arranged to be operated by manual operating devices such as knobs or thumb levers. In the present instance the lever 13 is designed to be operated by a manually controlled thumb lever.

15 is a lifter which coöperates with lever 13 and is operable from the inner side of the door. This lifter is always free to be lifted for the purpose of swinging back the lever 13 and withdrawing the latch-bolt 4 through the medium of the slide 12.

16 is another lifter also coöperating with the lever 13 and which is arranged to be operated from the outside of the door. This lifter 16 has an extension 17. 18 is a "dog" slidable to and fro, being mounted entirely within case 1 and in suitable guideways. As shown in Fig. 1, the stop 18 is in the "off" position or free of the extension 17 so as to permit the lifter 16 to be operated. As shown in Fig. 3, said stop is in the "on" position, serving to block the extension 17 and lifter 16 against operation.

19 is a lever pivoted at 7 and having a hooked upper end 20.

21 represents the case of a cylinder lock which is designed to be secured in a threaded opening in the side of case 1. This cylinder lock 21 has a roll-back 22, the arm of said roll-back being so placed and of such length as to engage only the extension 20 of the lever 19 as it is rotated. This roll-back 22 is operated by means of a key suitable to the lock 21 and may be turned so as to engage the extension 20 on one side or the other, as the case may be and rock the lever 19 to advance or retract the "dog" 18. Directly opposite the cylinder lock 21 and located in an opening in the cap 3 of the lock case is another cylinder lock 23 having a roll-back 24. This roll-back, when revolved by a key from the outside of the door, swings freely past the end extension 20 and engages the incline 25 of the stop 6, so as to first tilt said stop to the position indicated in Fig. 1 against the influence of spring 8, freeing the latch 4. Continued rotation brings roll-back 24 against cross head 11 and retracts the same, withdrawing latch 4.

The latch stop 6 has an incline 26, which is arranged to be engaged by a head 27 on the slide 12 when the latter is retracted. This engagement of head 27 against incline

26 also shifts the stop 6 from the latch dogging position shown in Fig. 3 to the free position shown in Fig. 1.

Operation: If, for any reason, it becomes desirable to dead-lock the door against entrance from the outside by the usual manual means (excepting by a key) the one in charge inserts a key from the inner side of the lock into the cylinder lock 21 and turns the roll-back 22 to the position shown in Fig. 2; this act shifting the stop 18 to the position shown in the last mentioned figure so as to block the lifter 16. As this lifter 16 is operable only from the outside of a door by a knob or latch-bolt, it follows that entrance from the outside can not now be effected in this manner. Anyone on the inside can, however, pass out freely through the medium of the lifter 15, which is free at all times. When said lifter 15 is lifted it rocks lever 13, draws back slide 12, which latter first frees stop 6 and then draws back latch 4 through the engagement of the slide head 12^a with the cross head 11. The usual springs restore these parts to their normal position. If, while the lifter 16 is blocked, anyone desires to enter from the outside, he may do so by means of a suitable key inserted in the lock 23 and turned in the manner above described to retract latch 4.

It will be observed that the roll-back 22 is shorter than the roll-back 24, this being so designed that it will not encounter the offset incline 25 of the stop 6 during the operation of throwing the stop 18 to the "on" position, even though when this act is being performed the door is closed and said stop stands in a position to block the repression (as distinguished from retraction) of the latch-bolt 4. There is a clearance space back of the cross head 11 to permit the roll-back 22 to pass freely.

The advantages of this construction are manifold. In many buildings it is desirable at certain times to dog the latch operating device located at the outer side of the door, and to do this so effectively as to prevent accidental or unauthorized releasing of the dogging mechanism. Take, for example, in a school building. When the assembly hour occurs, the janitor of the building throws "on" the dog 18. It is then beyond the power of anyone save the janitor to release said "dog" since the same is controlled solely by his key. Where "dogs" are provided controlled either by a thumb turn at the inside of a door, or by the well known buttons at the edge of the door projecting through the face plate, it is always within the power of a confederate to release the stop work. Not alone is there danger that the "dog" may be released by a confederate but it not infrequently happens that the dog is unintentionally and accidentally released, thus defeating the purpose and value of dogging mechanism as applied to locks intended for this use. Not alone is this invention applicable to entrance doors for school buildings but it will be found of great value in connection with factories, stores and public buildings, where at certain times it is desirable to prevent admission from the outside save by the use of a suitable key, leaving the latch mechanism, however, free to be operated from the inside should any occasion (such as a panic or otherwise) arise demanding the opening of the door. It is possible, of course, in this arrangement to provide only one key for controlling the dogging mechanism or, if desired, the same key adapted to operate the cylinder lock 22 may be adapted to control the "dog" from the inside of the door.

In Figs. 8 to 11 I have shown different views of the details 15—16. It will be observed that when these parts are assembled, the lifter 16 can not be lifted without lifting the lifter 15, whereas the lifter 15 can be lifted without effect on the lifter 16. This action is due to the fact that the lifter 16 has a shoulder 16^a bearing under a shoulder 15^a on the lifter 15.

What I claim is:

1. In a latch mechanism, a latch-bolt, an automatic stop therefor, an actuator cooperating with said stop, said stop engaging the latch when said actuator is repressed, two separate latch retracting devices for operation respectively from opposite sides of the door, a dogging device for one of said latch retracting devices, two independent key-controlled devices operable from opposite sides of the door, one of said devices being arranged to operate said dogging device, the other device being arranged to operate said latch stop to release the same and said latch to retract the same.

2. In a latch mechanism, a latch-bolt, an automatic stop therefor, an actuator cooperating with said stop, said stop engaging the latch when said actuator is repressed, two separate latch retracting devices for operation respectively from opposite sides of the door, a dogging device for one of said latch retracting devices, two independent key-controlled devices operable from opposite sides of the door, one of said devices being arranged to operate said dogging device, the other device being arranged to operate said latch stop to release the same and then retract the latch, said key-operated devices being arranged directly opposite to one another.

3. In a latch, a case and cap, a latch-bolt, a stop therefor, two independent means for operating said latch-bolt, a dog for one of said operating means, said dog being inclosed in said case, two cylinder locks carried by said case and cap arranged oppositely, a key-controlled roll-back for each

cylinder lock, one of said roll-backs being shorter than the other and arranged to operate said dog, the longer of said roll-backs being arranged to operate said stop and withdraw said latch.

4. In a latch, a case and cap, a latch-bolt, a stop therefor, two independent means for operating said latch-bolt, a dog for one of said operating means, said dog being inclosed in said case, two cylinder locks carried by said case and cap arranged oppositely, a key-controlled roll-back for each cylinder lock, one of said roll-backs being shorter than the other and arranged to operate said dog, the longer of said roll-backs being arranged to operate said stop and withdraw said latch, and means independent of the key-operated means for operating said stop by one of the two independent means for operating the latch-bolt.

5. In a lock, a case including a removable cap, two oppositely positioned lock-receiving openings in said case and cap, two cylinder locks carried therein, a roll-back carried by each of said cylinder locks, one of said roll-backs being shorter than the other, latch mechanism, stop mechanism for said latch mechanism, the longer of said arms being arranged to operate said stop and latch to retract the same, independent latch-operating mechanism, dogging mechanism therefor, the shorter roll-back being adapted to operate said dogging mechanism.

6. In a lock, latch mechanism, automatic stop mechanism for said latch operative to stop the latch when the door is closed, two independent means for retracting the latch connection between one of said means and said stop mechanism to operate the latter in advance of the retraction of the latch dogging mechanism for the other latch-operating means, said dogging mechanism being contained wholly within the case and operable by a key only, oppositely arranged key-controlled mechanism, independent roll-backs carried thereby, one roll-back being arranged to operate the latch, the other being arranged to operate said dog.

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