

G. C. KURZWELLY.
 DOOR LOCK.
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1,057,349.

Patented Mar. 25, 1913.

Fig. 1.

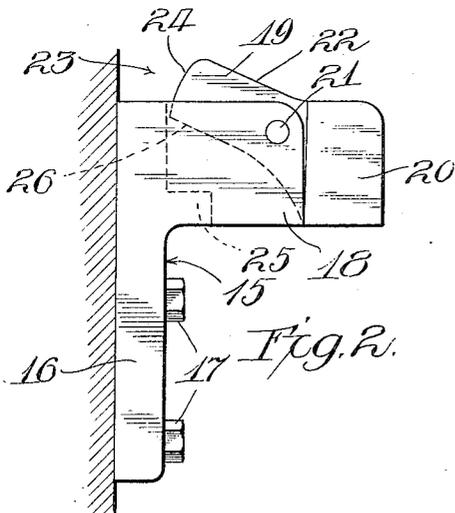
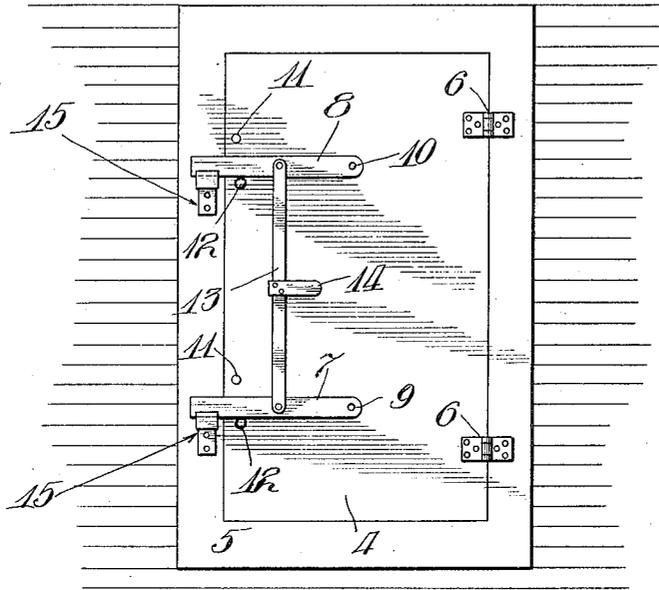
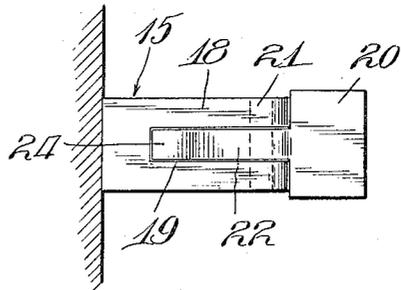


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

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DOOR-LOCK.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE C. KURZWELLY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Door-Locks, of which the following is a specification.

The present invention relates to certain new and useful improvements in door locks, and is especially intended for use in connection with fire doors or windows, such as are frequently placed on buildings of fire-proof construction. In such cases it is desired, that when an emergency arises the fire door may be slammed shut or forcibly closed to lock tight, without the necessity of the operator's giving special attention to insure that the door has locked.

A familiar construction of fire door is that in which one or more latches are pivoted to the door plate, such latches being adapted to slide up over a lock member secured to the casing and thereafter drop down into locking position. In this case the door will not lock unless the latches swing properly on their pivots, because the locking member is not provided with a yielding or swinging catch. For this reason it frequently happens that when the door is given a push for the purpose of closing it, the latches fail to rise with sufficient ease, either on account of the rusty condition of the pivots, or for other reasons, so that the latches fail to drop into locking position and the door is not locked.

The main object of the present invention is to provide a lock having a pivoted member which can swing easily when the door is closed so that the latches on the door can move over into locking position without the necessity of rising on their pivotal points, thus obviating the danger above pointed out, that the door may fail to lock.

Another object of the invention is to provide a lock having a catch which will immediately drop back into locking position after the door latch has passed so that thereafter the door can only be opened by raising each latch on its pivot.

Other objects and uses will appear from a detailed description of the invention which consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 shows a face view of one form of fire door, the casing

thereof being provided with a lock according to my invention; Fig. 2 shows a side view of the lock in enlarged detail; and Fig. 3 shows a plan view corresponding to Fig. 2.

In the drawing, the fire door is designated by the numeral 4. It is hinged to the casing 5 by hinges 6. In the construction shown two latches 7 and 8 are pivoted to the door at the points 9 and 10 respectively, said latches being adapted to rise until arrested by pins 11 and being prevented from falling lower than a predetermined position by means of pins 12. The latches are connected together by a bar 13 having a handle 14, by raising which handle both of the latches will be raised to disengage them from the locks.

The lock of the present invention is shown in Figs. 2 and 3. The same comprises an L-shaped member 15, the vertical leg 16 of which may be attached to the door casing in any suitable manner as by means of nuts 17, and the outstanding arm 18 of which lock is slotted to receive the pivoted locking member. This locking member has a horizontal arm 19 which carries a weight 20, the locking member being supported within the slot by a pivotal connection 21. The weight 20 sustains the locking member with its arm 19 raised, as shown in Fig. 2, but the lower edges of the outstanding arm 18 of the bracket limit the amount of fall of the weight 20, so that the arm 19 will never rise higher than a position similar to that shown in Fig. 2.

The upper face 22 of the arm 19 is so positioned that it will be struck by a door latch when the door is closed so as to momentarily depress the arm 19 to allow the latch to pass by. Thereafter the weight 20 will restore the arm 19 to the position shown in Fig. 2, thus locking the latch in the space 23 behind the edge 24 of the arm 19. In order to insure a rapid operation of the lock I form the edge 24 substantially on the arc of a circle drawn about the pivotal point 21, so that the instant the latch passes the upper corner of said surface 24 the lock can drop back into the position shown in Fig. 2 and thus lock the latch before any rebound of the door can take place.

In order to provide a still more rapid operation of the lock, I provide a shoulder in the lower portion of the slot of the arm 18 so that in case the door is slammed shut

with unusual violence, the lower surface 26 of the arm 19 will strike against said shoulder, thus giving a rebound which will assist the weight 20 in returning the lock to closed position.

I wish particularly to emphasize the fact that by using a lock embodying the features of the present invention it is unnecessary for the latches 7 and 8 to swing upon their pivotal points when the door is closed, so that there is no danger of failure of locking the door such as might be occasioned in other forms of construction, wherein it is necessary for the latches to swing on their pivotal points when the door is closed.

I claim:

In a device of the class described, the combination of a fixed bracket, an abutment on the lower end of the same, a locking member

pivoted for swinging movement with respect to the bracket and being limited in one direction of movement with respect to the bracket by said abutment, a weight secured to the locking member and tending to rock the same to raise a portion thereof away from the abutment, a striking face on the upper portion of said locking member and slanting upwardly and backwardly from the forward portion of the bracket when the locking member is restored by the weight, and having its end surface formed substantially on the arc of a circle drawn about the pivotal point as a center, substantially as described.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
