

APPLICATION FILED MAY 12, 1911. RENEWED MAY 29, 1914.

Patented Jan. 18, 1916.



UNITED STATES PATENT OFFICE.

HARRY W. DYER, OF EAST ORANGE, NEW JERSEY.

EXIT-DOOR LOCK.

1,168,792.

Specification of Letters Patent.

Patented Jan. 18, 1916.

Application filed May 12, 1911, Serial No. 626,809. Renewed May 29, 1914. Serial No. 841,958.

To all whom it may concern:

Be it known that I, HARRY W. DYER, a citizen of the United States, residing in East Orange, county of Essex and State of New Jersey, with post-office address at No. 30 Midland avenue, have invented certain new and useful Improvements in Exit-Door Locks, of which the following is a specification.

10 This invention relates to exit door locks, by which term I refer to locks designed to be opened from the inside of a door only and intended to operate quickly and certainly in case of panic when pressure is exerted
15 against a part on the door by crowding against the inside.

The primary object of the invention is to provide a simple and inexpensive exit door lock which will be certain in operation and
20 not liable to get out of order.

In the accompanying drawings I have illustrated my invention as embodied in an exit door lock for double doors and also in an exit door lock specially adapted to single
25 doors, the principle of operation in both forms of exit door lock being precisely the same.

In the drawings: Figure 1 is a diagram showing the general arrangement of the parts of the exit door lock in front elevation.
30 Fig. 2 is a vertical section on the line A A of Fig. 1. Fig. 3 is a horizontal section on the line B B of Fig. 1. Fig. 4 is a perspective view in detail of the operating mechanism, the pressure plate being indicated in dotted lines.

In the drawings, in which similar letters of reference designate corresponding parts in the several views, 1—1 represent doors
40 swinging outwardly and 2—2 designate pressure plates mounted on the doors as best shown in Figs. 3 and 4. Each pressure plate is hinged to the door by means of a special form of hinge (3), which is provided with a
45 spring (4) to force the hinge leaf (5) normally away from the doors. The hinges (3) are attached to the door adjacent to their hinged edges and the ends of the pressure plates remote from the hinges (3) are secured
50 by means of a bracket (6) to the pivot pin (7) of a toggle joint, the arms (8) of which are pivoted to the adjacent extremities of a pair of sliding locking bolts (9) and disposed vertically on one of the double
55 doors. A spring (10) between the toggle joint and the door forces it and the pressure

plate normally as far away from the door as the length of the toggle joint links (8) will permit. These links are so arranged that pressure of the toggle joint toward the door will cause the bolts to be drawn out of engagement with their sockets (11) and the action of the spring (10) in forcing the toggle joint away from the door is effective in moving the bolts (9) into engagement with
60 their sockets. From this description and an inspection of Figs. 1, 2, 3, and 4 the operation of the exit door lock illustrated in these figures will be obvious. The normal position of the parts is clearly shown in all of these
65 figures and pressure against the plate (2) bearing the legend "Push" will compress the spring (10) and the spring (4), lengthen the toggle joint and disengage the locking bolts from their sockets, thus releasing the door
70 and allowing it to swing outwardly under the pressure from within.

It is obvious that my improved door lock is formed of a minimum number of parts of simple design and which will remain in
75 working order without attention, which is highly essential to an article of this character. It will also be noted that the direct line of pressure of the bolt is horizontal whereby the crowding against the plate will
80 be fully effective and its action cannot be prevented by an obstacle beneath the plate.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. The combination of a door adapted to swing outwardly, a pressure plate yieldably mounted on said door, a locking bolt for locking said door against outward movement, a link pivoted to said bolt and to said
85 pressure plate, and a spring pivoted on the pivot pin on which the outer end of the link is pivoted, whereby force applied to said pressure plate will release said locking bolt and when said force is released said spring
90 will force said locking bolt to its locking position.

2. In combination with a door adapted to swing outwardly, a pair of locking bolts vertically mounted on the door for engagement
95 with the door frame at the upper and lower edges of the door, said bolts having their inner ends adjacent and in overlapping relation, a pressure plate mounted on the inner side of the door and extending horizontally
100 across the same for movement toward and from the door, and links pivotally connected

to the plate and the ends of said bolts respectively adapted to draw said bolts upon movement of the plate toward the door.

3. In combination with a door adapted to
5 swing outwardly, a pressure plate mounted on said door for movement toward and from the same in a horizontal plane, a pair of bolts mounted for vertical movement on said door and having their inner ends underlying
10 said plate, a link pivoted on said plate and downwardly and outwardly inclined from its pivotal point, a pivotal connection between the end of said link and said upper
15 bolt, a similar connection upwardly and outwardly inclined on said plate through said lower bolt, whereby pressure on said plate will straighten said links and draw said bolts.

4. In combination with a door adapted to

swing outwardly, a pair of bolts mounted 20 on said door for engagement with the door frame at the upper and lower edges of said door, said bolts having their inner ends adjacent and in overlapping relation, a pair of toggle links connected at their opposite ends 25 to the ends of said bolts, and a pressure member mounted on said door and extending horizontally across the same and operatively engaging the joint of said links to straighten said toggle on movement of the 30 pressure member toward the door.

In testimony whereof, I have signed my name hereto in the presence of witnesses.

HARRY W. DYER.

Witnesses:

BAXTER MORTON,

LAWRENCE W. ATWATER.

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