F. BEHM.

LATCH.

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1,131,315.

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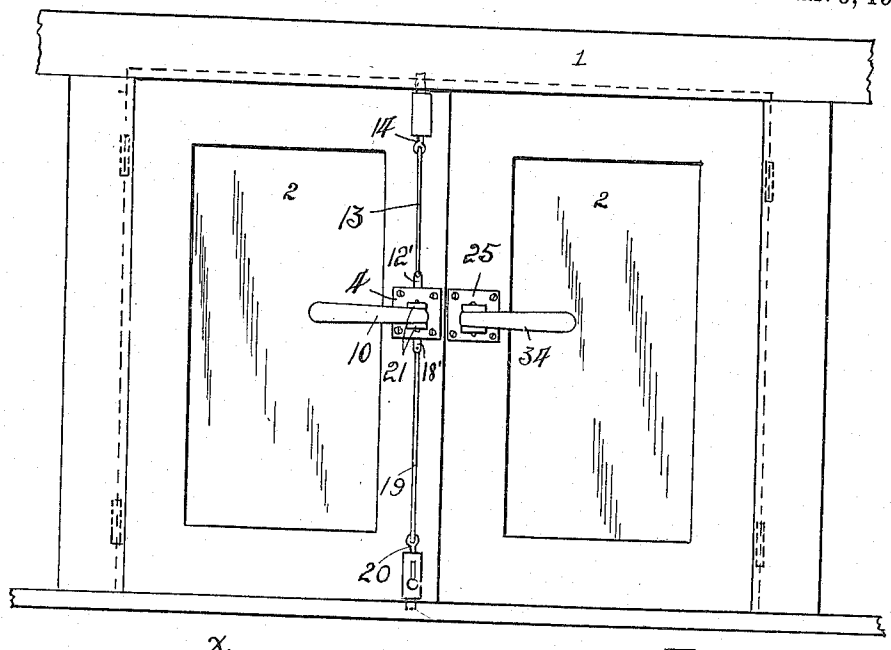
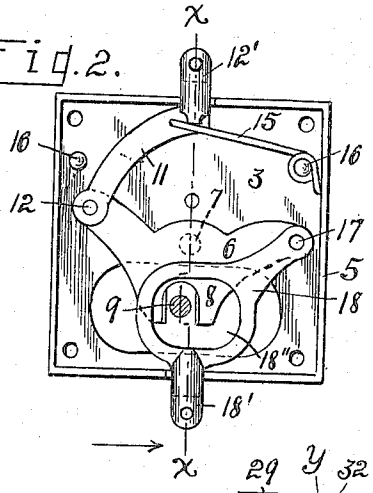


Fig. 1.

Fig. 2.



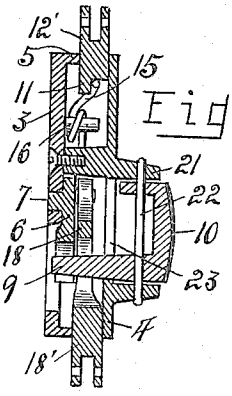


Fig. 3.

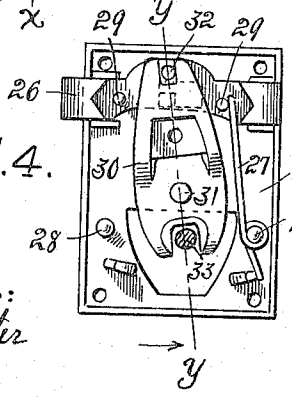


Fig. 4.

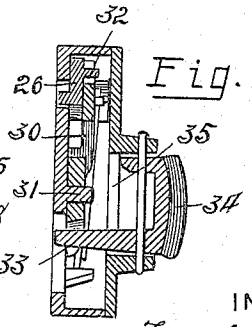


Fig. 5.

WITNESSES:

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LATCH.

1,131,315. Specification of Letters Patent. Patented Mar. 9, 1915.

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To all whom it may concern:

Be it known that I, FRANK BEHM, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Latch; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to locks of the class particularly intended for use on exit or fire doors of theaters, school houses, factories and other buildings, but is not restricted to such use as it may be employed in any connection for which it is adapted or appropriate.

The object of my invention is the provision, in combination with a lock member or members of a door, of improved control means therefor, which is simple and inexpensive in its construction and automatically operable by pressure against a part thereof at the inner side of the door to effect an unlocking movement of the locking member or members, and which is also capable of being easily and quickly changed for use on a right or left swinging door.

The invention is fully described in the following specification, and while, in its broader aspect, it is capable of embodiment in numerous forms, a preferred embodiment thereof is illustrated in the accompanying drawings, in which,—

Figure 1 is an inside view of a door in locked position and equipped with my lock. Fig. 2 is a view of one form of the lock with the face plate and operating lever removed. Fig. 3 is a section of such lock on the line x, x in Fig. 2. Fig. 4 is a view of another form of the lock with the face plate and operating lever removed, and Fig. 5 is a cross-section of such lock on the line y, y in Fig. 4.

Referring to the drawings, 1 designates a door casing, and 2, 2 a pair of doors hinged therein. Secured to the inner side of one door adjacent to the free or swinging edge thereof is a case or housing in which a portion of the operable parts of the lock are mounted, and which is shown, in the present instance, as comprising a back plate 3 and a face plate 4 removably secured together by screws or in any other suitable manner, and one, the back plate 3, in the present instance, having a marginal outstanding flange 5 for spacing the plates apart. Mounted within this casing is a rocker-lever 6, which is pivoted to the back plate, as at 7, and has its arms extending in opposite directions from such pivot. The lever 6 is also provided at one side of its fulcrum with a transversely extending arm 8 which is forked or provided with an opening for receiving the arm 9 of an operating lever 10, as hereinafter more fully described. A link member 11 is pivoted to a stud 12 at one end of the lever 6, and has its outer end portion angled, as shown at 12′, and projecting loosely through a registering opening in the upper side, in the present instance, of the flange 5, the part 12′ thereof being connected without the casing by a draft-rod 13 to the upper bolt 14 of the door. A spring finger 15 is loosely carried at one end by a stud 16 within the lock casing at the opposite side thereof from the end of the lever to which the member 11 is connected, the spring extending inward from such stud and having its free end bearing outward against the inner end portion of the part 12′ of said member to urge an outward movement of such member.

The opposite end of the lever 6 from that to which the link member 11 is attached is provided with a stud 17 to which is pivoted one end of the lower link member 18 of the lock, said member extending downward and inward toward the central bottom portion of the case and having its lower end provided with a part 18′ which projects loosely through a registering opening in the bottom flange 5 of the case. The part 18′ is connected by a draft rod 19 to the lower bolt 20 of the associated door.

The lever member 10 is intended to extend transversely of the door away from the free edge portion thereof and has the end thereof, which is adjacent to the free edge of the door, pivoted between bearing standards 21 provided on the face plate 4 of the lock case, the lever, in the present instance, being fulcrumed to a shaft 22, which is mounted at its ends in the respective standards 21. The face plate 4 is provided with an opening 23 between the standards 21, 21, and the lever arm 9 projects transversely from the fulcrum end of the main

lever arm through said opening and has its free end loosely projected into the opening or notch in the arm 8 of the lever 6. The link member 18 is provided with an opening 18″ for the lever arm 9 to project through, as otherwise the link would interfere with the engaging of the lever 6 by the operating lever. It is evident with this construction that upon a movement of the major or exposed arm of the lever 10 the three-armed lever 6 will be rocked in a direction to retract each of the link members 11 and 18 to impart a consequent releasing pull to the bolts 14 and 20 to withdraw such bolts from their respective sockets and permit the door to swing open. Upon a release of the lever 10 the spring 15 will return the parts to their normal positions.

The lock may be easily and quickly changed to adapt it for use in connection with a right or left swinging door. For such purpose it is only necessary to reverse the positions of the link members 11 and 18 with respect to the ends of the lever 6, so that the member 11 will be engaged to the stud 17 and the member 18 to the stud 12. The spring 15 is also changed from one stud 16 to a similar stud 16 at the opposite side of the case.

The other door 2 of the pair is provided with a case 25 similar to the case 3, 4, and mounted within such case for reciprocatory movements transversely thereof is a latch bar 26, the opposite ends of which are adapted to project from opposite side edges of the case when the bar is reciprocated in one or the other direction. A spring finger 27 is loosely engaged at one end to a stud 28 and has its opposite end bearing against one of a pair of studs 29 on the end portions of the bar 26 to urge such bar in one direction of its movement. The projecting end of the latch bar 26 is intended to engage in the customary notch provided in the edge of the companion door or in the casing side if only one door is provided and is beveled to facilitate such engagement.

A lever 30 is fulcrumed within the lock case, as at 31, and has one end in forked engagement with a stud 32 on the latch-bar 26 and its other end in forked engagement with the short inwardly projecting arm 33 of the control lever 34. The lever 34 is carried by the case in a manner similar to that described for the form shown in Figs. 2 and 3, and has its short arm 33 projecting inwardly through an opening 35 in the case front and into the adjacent forked end of the lever 30.

It is evident that an inward movement of the outer end portion of the lever 34 will cause a rocking of the lever 30 in a direction to retract the projecting end of the bar 26 from its notch-engaging position.

To adapt this form of my lock for use in connection with a left swinging door it is only necessary to reverse the direction of projection of the lever 34 and to shift the spring 27 into engagement with the stud 28 at the opposite side of the case and with the other stud 29 of the pair on the latch-bar, thereby causing the opposite end of the bar 26 to normally project from the case.

It is apparent that I have provided simple and efficient forms of locks of the character described and that either or both may be used, and also that the lock on the normally stationary door of the pair, or that shown at the left in Fig. 1, may be connected both to upper and lower bolts 14 and 20 or to either, as desired. It is also apparent that I have provided a lock which is admirably adapted for use in school buildings, public halls, factories, and the like, and that it can be installed with little expense.

I wish it understood that my invention is not limited to any specific construction or arrangement of the parts except in so far as such limitations are specified in the claims.

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

1. In a lock of the class described, a case, a lever having oppositely projecting arms, links in reversible connection with the opposite ends of said lever, means urging said lever and links to stand in one position of their respective movements, said means being reversible from one side to the other of the case, and an operating lever having a part in engagement with said first lever to impart movement thereto, said operating lever having a part extending transversely of the case.

2. In a lock of the class described, a case having openings in opposite edge portions thereof, and an opening in its front, pivot studs secured interiorly of said case adjacent to opposite side edges thereof, a lever pivoted within the case and having oppositely projecting arms, members having parts projecting through respective edge openings of the case and reversibly connected at their inner ends to respective ends of said lever, a spring for acting against one of said members to influence a movement thereof in one direction and being removably carried by either one of said studs, and control means disposed without the case and having a part projecting through the front opening of the case and having connection with said lever for controlling the movements thereof.

3. In a lock of the class described, a case having an opening therein, a three-arm lever pivoted within said case and having oppositely projecting arms and a third arm which is forked and in register with said opening, a link member pivotally connected to one arm of said lever and having an open-

ing in register with the opening in said case and also having a part projecting without the case, a second link member pivotally connected to another arm of said lever and having a part projecting without said case, means influencing an outward movement of said link members, and a control lever pivoted without the case and having a portion projecting into the case through the case and link member openings and engaging within the forked arm of said first lever whereby rocking movements of the control lever impart rocking movements to said first lever.

In testimony whereof, I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

FRANK BEHM.

Witnesses:
S. T. KLOTZ,
F. E. AUL.

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