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C. E. HENSLEY.

LOCKING OR BOLTING DOORS AND THE LIKE.

APPLICATION FILED MAY 13, 1904.

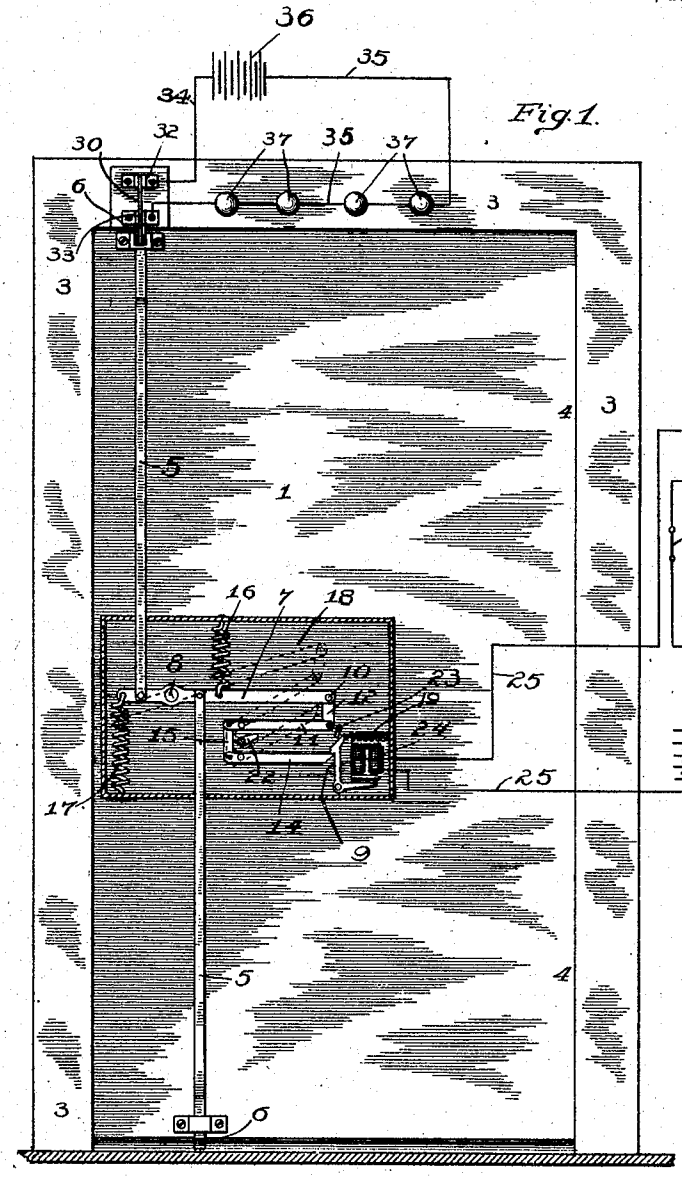


Fig. 1.

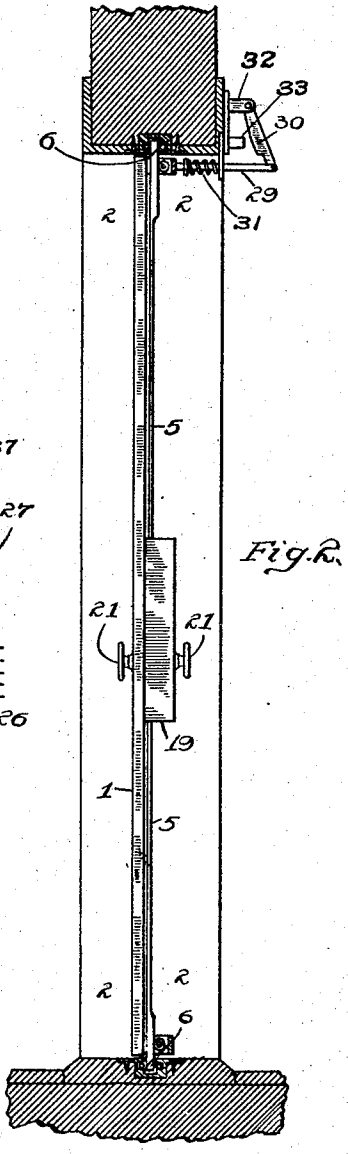


Fig. 2.

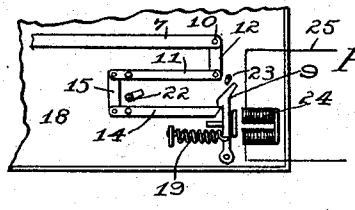


Fig. 4.

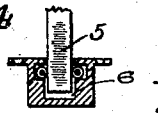


Fig. 3.

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LOCKING OR BOLTING DOORS AND THE LIKE.

No. 806,542. Specification of Letters Patent. Patented Dec. 5, 1905.

Application filed May 13, 1904. Serial No. 207,806.

To all whom it may concern:

Be it known that I, CLAUDE E. HENSLEY, a citizen of the United States of America, and a resident of Elreno, in the county of Canadian and Territory of Oklahoma, have invented certain new and useful Improvements in Means for Locking or Bolting Doors and the Like, of which the following is a description.

My invention relates to means for locking or bolting a door or shutter, whereby the same may be unlocked by means of a key or knob at the door or shutter, but which may be instantly unlocked by the movement of an electric switch situated at a point distant from the door or shutter and which may be arranged so that a plurality of doors may be simultaneously unlocked by the movement of said switch.

The object of my invention is to produce a device of the kind described which will be strong, durable, and positive in its action, especial care being taken to insure absolute certainty of operation; and to this end it consists in the novel construction, arrangement, and combination of parts herein shown and described, and more particularly pointed out in the claims.

In the accompanying drawings, wherein like or similar reference characters indicate like or corresponding parts, Figure 1 is a front elevation of my device arranged to be operated on a "closed circuit" as applied to a door, with the cover of the chamber inclosing the bolt-operating mechanism removed. Fig. 2 is an edge elevation of my device as applied to a door and frame, also a device for partially opening the door when unlocked and lighting one or more electric lamps. Fig. 3 is a detail of the door-sill, showing antifriction-rollers in bolt-sockets, which, while not essential, are preferred. Fig. 4 is a partial view of my device arranged to be operated on an "open circuit."

In the preferred form of my device shown in the drawings, 1 is a door arranged within an opening 2, provided with the usual frame 3, the door 1 being hinged to the frame 3 at 4 in the usual or any preferred manner. The bolts 5 5 are arranged to engage in the recesses 6 6 in the walls of the opening to prevent any movement of the door 1. The adjacent ends of the bolts 5 5 are pivotally attached to the lever 7, which in turn is pivotally attached to the door 1 at 8. A catch similar to 9 may be arranged to engage the end 10 of the lever 7 to prevent withdrawal of the bolts 5 5 from the recesses 6 6, or a system of connected levers may be arranged to accomplish this. As shown, one end of the lever 11 is connected to the end 10 of the lever 7 by the link 12, the opposite end of the lever 11 is connected to one end of lever 14 by the link 15, and the movable catch 9 engages the opposite end of the lever 14, preventing the lever 7 from moving to withdraw the bolts 5 5 from the recesses 6 6. The springs 16 and 17 or equivalent means are provided to move the lever 7 with the parts attached thereto when the catch 9 is disengaged to the position shown in broken lines at 18, withdrawing the bolts 5 5 from the recesses 6 6 and permitting the door 1 to swing upon its hinges 4 4 to clear the opening 2.

As shown in Fig. 1, in which the lock is electrically operated by what is known as a "closed circuit," the catch 9 is arranged with a bell-crank extension upon which is mounted an armature for the electromagnet 24, which when connected to a suitable source of electric energy 26 by conductors 25 25 will attract the armature and hold the catch in position to engage the lever 14. A spring 19 is attached to the catch 9, as shown, to move the same out of engagement with the lever 14 and unlock the door at any time that the magnet 24 is not energized for any cause, either from opening of the circuit or failure of the battery or other source of energy. In the preferred arrangement the switch 27 or any number of such switches arranged in series is provided to conveniently open the circuit to unlock the door, or in places where fire is liable to occur an exposed fusible section may be inserted in the conductor which would break or fuse in case of fire, and thus automatically unlock the doors. The door may be unlocked by means of a key or an equivalent inserted at the opening 23 and engaging the projecting end of the catch 9, adjacent to said opening, pushing the same backward out of engagement with the lever 14. A single circuit may be arranged to communicate with any number of doors. With such an arrangement all of the doors would be unlocked simultaneously. This latter arrangement is particularly desirable for fire-escape doors or exits from theaters or other places where large numbers of people are assembled. It is nec-

essary that such doors be locked securely to prevent their improper use; but it is more important that they be arranged to be unlocked instantly in times of danger or excitement without the necessity of an attendant being stationed at each door for that purpose. If preferred, the electromagnet 24 and the spring 19 may be transposed, as shown in Fig. 4. In this construction, known as an "open circuit," the closing of a switch 27 would energize the magnet 24 and release the catch.

If preferred, a portion of the cover-plate of the chamber inclosing the bolt-operating mechanism may be made of glass or other suitable fragile material to enable any one at the door to readily gain access to the interior of the lock to break the electric circuit or move the parts in case they should fail to operate from any cause.

To lock the door, a shaft 20 is provided with handles 21 21 upon either side of the door and an arm or tongue 22, adapted to be pressed against the lever 14. By employing either of the handles 21 21 to partially rotate the shaft 20 the tongue 22 would operate to move the lever 14 into engagement with the catch 9 and cause the bolts 5 5 to engage with the recesses 6 6.

If desired, a rod 29 may be attached to the switch 30 and provided with the spring 31, arranged to press the rod against the door when closed with sufficient force to partially open the same as soon as the bolts 5 5 are withdrawn from the recesses 6 6. When this occurs, the rod moving in the direction of the door causes the switch 30 to close the circuit between the points 32 and 33, attached, respectively, to the conductors 34 and 35 from the generator 36 or other source of electric energy and having the lights 37 37 arranged as preferred and connected in the circuit. The closing of the switch 30 completes the circuit, causing the lamps to burn, and may show by their arrangement or color, or both, the location of the exit.

Having thus described my invention, it is obvious that various immaterial modifications may be made in my device without departing from the spirit of my invention. Hence I do not wish to be understood as limiting myself to the exact form and construction shown.

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

1. A device of the kind described, comprising the combination of a door, one or more bolts upon said door adapted to engage with means to hold said door closed, a lever attached to said bolts to operate the same, means constantly tending to disengage said bolt and release said door, a movable catch adapted to engage said lever to prevent the disengagement of said bolts and means for moving said catch to release said door.

2. A device of the kind described, comprising the combination of a door, one or more bolts upon said door adapted to engage with means to hold said door closed, a lever attached to said bolts to control the movements thereof, means constantly tending to disengage said bolts and release said door, a movable catch adapted to engage said lever to prevent the disengagement of said bolts, and means at the door, and independent means adapted to be operated at a point or points distant from said door for moving said catch to release said lever.

3. A device of the kind described, comprising the combination of a door, one or more bolts upon said door adapted to engage with means to hold said door closed, a lever directly attached to said bolts to operate the same, means constantly tending to disengage said bolts and release said door, a movable catch adapted to engage said lever to prevent the disengagement of said bolts, means at the door for moving said catch to release said door.

4. A device of the kind described, comprising the combination of a door, one or more bolts upon said door adapted to engage with means to hold said door closed, a lever attached to said bolts to operate the same, means constantly tending to disengage said bolts and release said door, a movable catch adapted to engage said lever and prevent the disengagement of said bolts, an electromagnet and opposing means adapted respectively to move said catch in opposite directions, one or more switches arranged to open or close the electric circuit to said magnet at will to move said catch and release said door.

5. A device of the kind described, comprising the combination of a door, one or more bolts upon said door adapted to engage with means to hold said door closed, a lever attached to said bolts to operate the same, means constantly tending to disengage said bolt and release said door, a movable catch adapted to engage said lever to prevent the disengagement of said bolts, said catch being normally held out of engagement with said lever, an electromagnet arranged to hold said catch in position to engage said lever when said magnet is energized, and one or more switches arranged in the circuit to said magnet, whereby said circuit may be broken to release said door.

6. A device of the kind described, comprising the combination of a door, one or more bolts upon said door adapted to engage with means to hold said door closed, a lever attached to said bolts to operate the same, means constantly tending to disengage said bolts and release said door, a catch arranged to engage said lever to prevent the disengagement of said bolts, said catch being normally held out of disengagement with said lever, an electromagnet arranged to hold said catch in position to engage said lever when said magnet is

energized, and a portion of the conductor in the electric circuit to said magnet adapted to be fused or broken to automatically open said circuit and release said door.

7. A device of the kind described, comprising the combination of a door, one or more bolts upon said door adapted to engage with means to hold said door closed a plurality of connected levers, one of which is directly attached to said bolts, controlling the movements thereof, means constantly tending to disengage said bolts and release said door, a movable catch adapted to engage one of said levers to prevent the disengagement of said bolts, an electromagnet and opposing means adapted respectively to move said catch in opposite directions, one or more switches arranged to control said electromagnet at will to move said catch to release said door.

8. A device of the kind described, comprising the combination of a door, one or more bolts upon said door adapted to engage with means to hold said door closed, a lever attached to said bolts to operate the same, means constantly tending to disengage said bolt and release said door, a movable catch adapted to engage said lever to prevent the disengagement of said bolts, said catch being normally held out of its engaging position, an electromagnet arranged when energized to hold said catch in position to engage said lever, and one or more switches adapted to break the circuit to said magnet, and a portion of the conductor in the said circuit arranged to be fused or broken to automatically open said circuit and release said door.

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

CLAUDE E. HENSLEY.

Witnesses:
C. W. HILL,
CHAS. G. WATTSON.