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A. ARENS & E. L. TEICH.

ELECTRICALLY OPERATED KEEPER PLATE FOR DOOR LOCKS.

APPLICATION FILED FEB. 20, 1905.

Fig. 1.

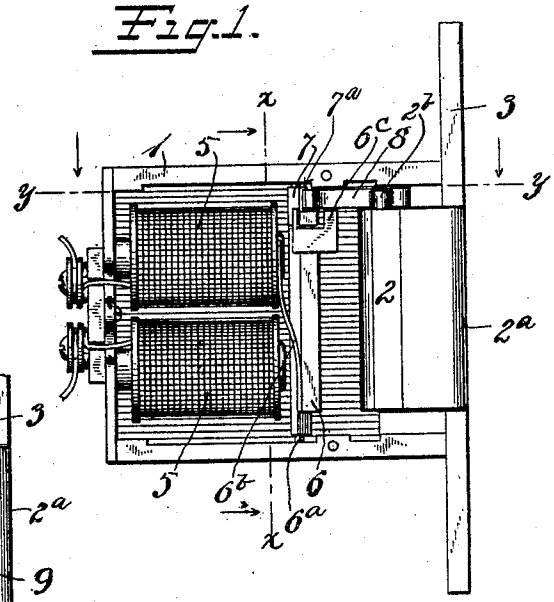


Fig. 2.

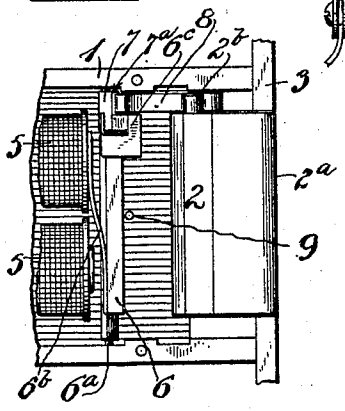


Fig. 3.

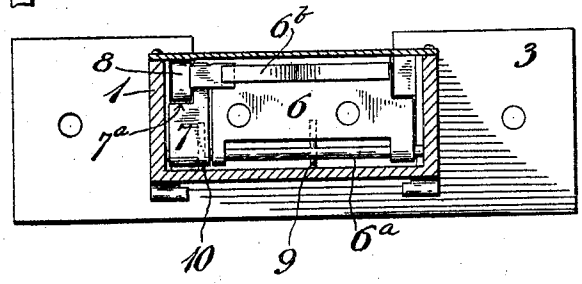


Fig. 4.

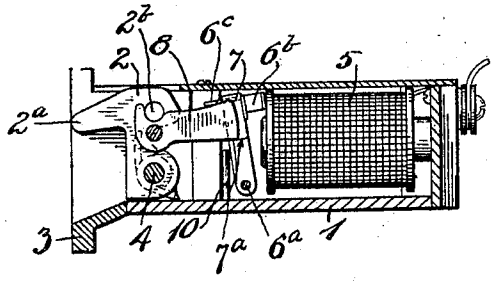
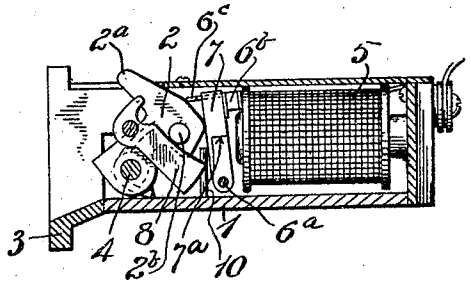


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

AUGUST ARENS AND ERNEST L. TEICH, OF NEW BRITAIN, CONNECTICUT, ASSIGNORS TO P. & F. CORBIN, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

ELECTRICALLY-OPERATED KEEPER-PLATE FOR DOOR-LOCKS.

SPECIFICATION forming part of Letters Patent No. 794,768, dated July 18, 1905.

Application filed February 20, 1905. Serial No. 246,434.

To all whom it may concern:

Be it known that we, AUGUST ARENS and ERNEST L. TEICH, citizens of the United States, residing at New Britain, county of Hartford, and State of Connecticut, have invented certain new and useful Improvements in Electrically-Operated Keeper-Plates for Door-Locks, of which the following is a full, clear, and exact description.

This invention relates to keeper-plates for use with locks and latches, and particularly to an electrically-controlled keeper-plate which may be released at will, so as to allow the door to open.

The object of the invention is to so improve the construction of such a device that even though the latch-bolt of the door-lock is pressing tightly against the swinging portion of the keeper in such a manner as to cause the various parts to bind it will nevertheless operate freely and with certainty.

In the drawings, Figure 1 is a side elevation of the apparatus with the cover-plate removed. Fig. 2 is a similar view, partly broken away, showing one of the parts in a slightly-different position. Fig. 3 is a section on the line $x\,x$, Fig. 1, looking in the direction of the arrows. Fig. 4 is a section on the line $y\,y$, Fig. 1, looking in the direction of the arrows. Fig. 5 is a similar view, certain parts being in different position.

1 is a case carrying a swinging keeper member 2 and the various parts by which the latter is controlled.

3 is a face-plate.

The keeper-plate 2 is mounted on a pivot 4, and when in the position indicated in Figs. 1 to 4, inclusive, the edge 2^a will engage with the latch bolt or head of the door-lock (not shown) and hold the door in its closed position. When, however, the member 2 is released, it may swing back into the position shown in Fig. 5, freeing said latch bolt or head and whereupon the door may be opened.

5 is an electro magnet or magnets which may be energized at will in the well-known manner when it is desired to free the keeper-plate 2.

6 is an armature pivotally mounted at 6^a.

6^b is a spring by which said armature is normally held away from the magnet ends.

7 is a dogging device, preferably located at the end of the armature 6 and mounted upon the same pivot 6^a.

6^c is an extension or hammer carried by the armature and arranged to strike the dog 7. This hammer 6^c is normally spaced away from the upper end of the dog 7. (See Fig. 1.)

7^a is a ledge or shoulder upon the dog, and this shoulder normally supports one end of a tripping device 8, pivoted at its other end on the case 1. This trip 8 is notched to receive a pin 2^b, located at one end of the keeper member 2. When the parts are in the position shown in Fig. 4, the pin 2^b rests in said notch and the keeper 2 cannot swing back. When, however, the dog 7 is cast off and the trip 8 drops, the door to which the apparatus is applied may be freely opened, since the keeper 2 may then swing freely back into the position indicated in Fig. 5, disengaging the latch bolt or head. Any well-known means may be provided to cause the keeper to normally assume the position shown in Fig. 4. For example, in Fig. 4 we have indicated in dotted lines a spring mounted on the pivot 4, so arranged as to press the said keeper into said normal position.

9 is a pin to limit the backward swing of the armature 6.

10 is a pin to limit the backward swing of the dog 7.

From the foregoing it will be seen that when the magnet is energized the amature 6 will start to move before the dog 7 will be engaged by the hammer 6^c. By reason of this fact it matters not if the latch is pressing tightly against the holding edge 2^a of the keeper, so as to cause binding of the free end of the trip 8 upon the shoulder 7^a, the said dog will be cast off, because the hammer 6^c will impart to it a sharp quick blow, dislodging it, and thus insuring the release of said keeper member 2 with corresponding certainty.

We are aware that electrical door-releases are by no means novel; but heretofore such devices have been unreliable in this above re-

spect, excepting as they have been provided with magnets of such large power as to overcome the frictional resistance caused by the binding of the releasing apparatus. By the present arrangement not only will the apparatus work with certainty, but a much smaller magnet may be employed.

In Fig. 1 the various parts are shown in their normal position, the hammer 6^c of the armature being away from the dogging device 7. In Fig. 2 the armature has started to move toward the magnets and the hammer 6^c is impinging against the upper end of the dogging device 7; but the latter has not yet been cast off. The continued movement of the armature will swing the dog 7, and the trip 8 will be released, whereupon the keeper 2 will assume the position indicated in Fig. 5. In this view the current is off the magnet and the armature has been moved back to its normal position. Obviously various modifications may be made without departure from the spirit or scope of this invention.

What we claim is—

1. In a device of the character described, a movable keeper member, a support therefor, a trip therefor, a dogging device for said trip, a means to impart at will a hammer-blow to said dogging device to move the same and release said trip and in turn said keeper member.

2. In a device of the character described, a movable keeper member, a support therefor, a trip normally engaging said member, a dogging device normally engaging said trip, and an armature and means to impart to said dogging device a hammer-blow to release said trip and in turn said keeper member.

3. In a device of the character described, a swinging keeper member, a support therefor, a trip for said keeper, a swinging dogging device for said trip, an electromagnet, an armature, and means carried on and operable by said armature to impart to said trip a hammer-blow to free the same from said trip.

4. In a device of the character described, a swinging keeper member, a swinging trip normally engaging said keeper member, a swinging dog engaging said trip, a swinging armature, concentric with said dog, a hammer on said armature arranged to engage said dogging device, and an electromagnet arranged to cöoperate with said armature.

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