N. L. SCHLOSS.

LOCKING DEVICE AND RELEASING MECHANISM FOR DOOR CHECKS.

APPLICATION FILED DEC. 27, 1920.

1,430,192. Patented Sept. 26, 1922.

Fig. 1.

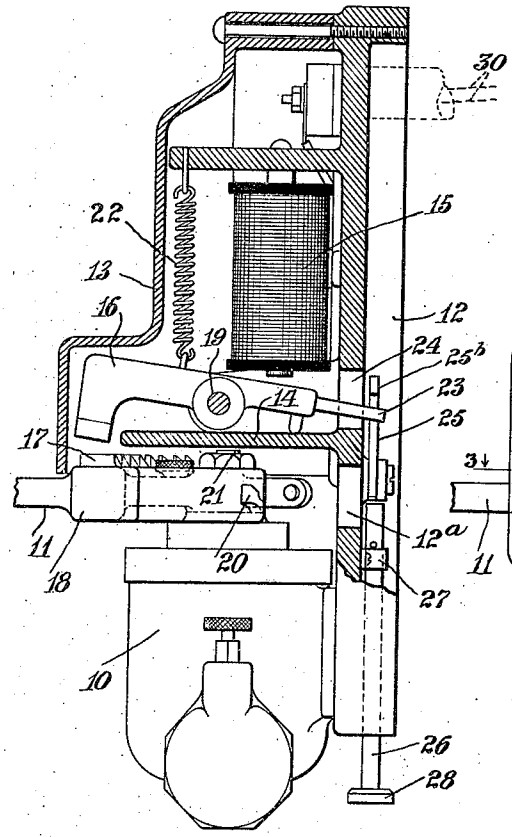


Fig. 2.

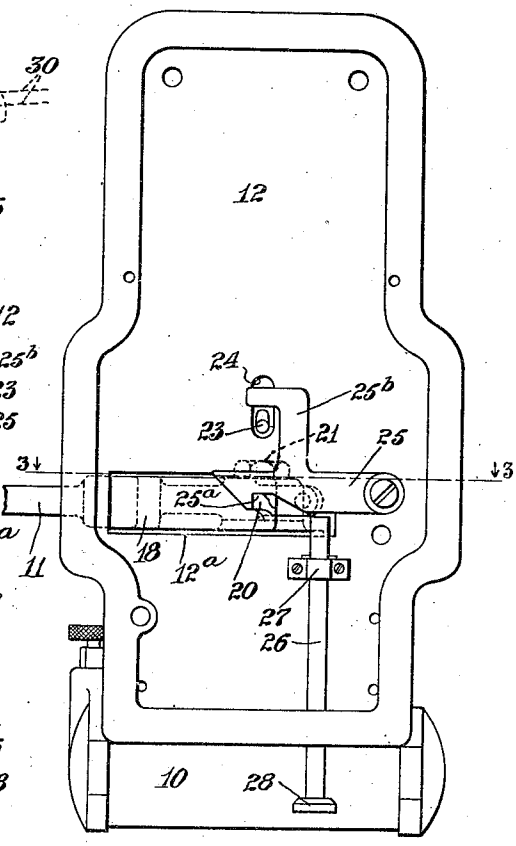


Fig. 3.

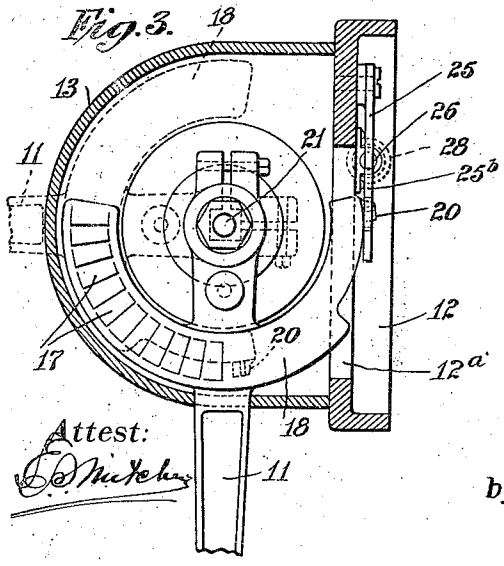
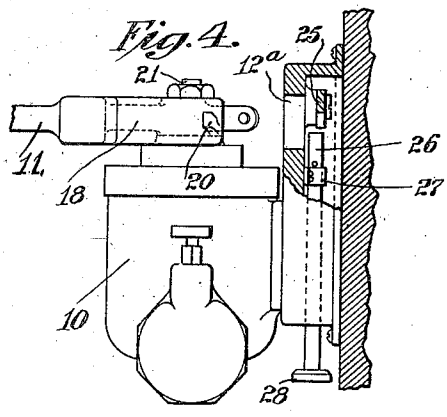


Fig. 4.



Attest:

by

Inventor:
Newton L. Schloss

his Atty

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UNITED STATES PATENT OFFICE.

NEWTON L. SCHLOSS, OF NEW YORK, N. Y.

LOCKING DEVICE AND RELEASING MECHANISM FOR DOOR CHECKS.

Application filed December 27, 1920. Serial No. 433,209.

To all whom it may concern:

Be it known that I, NEWTON L. SCHLOSS, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Locking Devices and Releasing Mechanism for Door Checks, of which the following is a specification.

The present invention relates to improvements in door check locking and releasing devices and more particularly to door checks having electrically controlled locking devices and alarm systems provided to cooperate therewith.

The present invention is a development of that disclosed in my copending application for Letters Patent, filed November 8th, 1920, Serial No. 422,559, and contemplates the incorporation of said locking and releasing devices in the construction of a particular type of electrically controlled door locking device which is applicable to any of the well-known door checks now in use to automatically close the door of offices, stores and bank entrances.

The object of this invention is to provide locking mechanism which can be attached to any of the well-known types of door checks, to cooperate with the main arm of the latter, to hold a door in its open position against the normal action of the check, and to provide releasing means which may be manually operated to effectuate the release of the main arm of the check and the consequent movement of the door to its closed position.

It has been found that, in many establishments not equipped with the electrically controlled locking device in connection with the ordinary door check, the advantage of being able to hold a door in its open position against the normal action of the check, is very desirable, especially in warm weather, when a circulation of air may be encouraged by an open door. For this reason the locking and releasing device hereinafter described, may be used independently of any other mechanism, if so desired.

Another object of the invention is to provide a releasing and locking device which may be used in connection with the mechanism set forth in the above mentioned application and which may be acted upon by the movement of the locking pawl simultaneously with the energizing of the magnet. This is accomplished by an extension at one end of the pawl to automatically disengage the locking element from its hold upon the main arm of the check.

This device is especially, although not necessarily solely designed, for use with the electrically controlled door locking device of my said earlier application, but if so desired the invention may be used in connection with the ordinary door check, providing the latter is equipped with a main arm having a stud to engage the locking hook of the invention. This stud may be of any form and may be an independent element attached to the main arm. The locking device may be located at any convenient position either upon the check or the door frame.

The invention consists in the structural features and combination of parts hereinafter described with reference to the accompanying drawing, wherein—

Fig. 1 is a substantially vertical section of the door check locking device as applied to a door check and showing the hand releasing mechanism attached thereto.

Fig. 2 is a rear elevational view of the door check locking device showing the stud in engagement with the releasing hook;

Fig. 3 is a sectional plan view taken on the line 3—3 of Fig. 2 showing the main arm in normally closed position in dotted lines; and the main arm in open position with the stud engaged in the hook release as shown in full lines; and

Fig. 4 is a side elevational view of a door check provided with the locking and releasing device, with the electrically controlled door locking mechanism omitted.

Referring to the drawings, 10 denotes the standard door check provided with a main arm 11 of a particular design required

for use with the electrically controlled locking device referred to in my copending application. The door check 10 is mounted upon a frame 12 having a cover member 13 adapted to inclose the electrical mechanism for locking the door check against movement in one direction. The frame 12 is provided with an inwardly extending guard 14 to prevent tampering with the electrical mechanism. Mounted upon the standard 12 above the guard 14 are the electromagnetic coils 15 provided to operate the pawl 16. The outer or free end of the pawl 16 is provided with a tapered tooth adapted to engage a series of ratchet teeth 17 formed upon an arcuate portion 18 of the main arm 11. The pawl 16 is pivoted on a transverse rod 19 carried by the frame 12. The outer edge of the arcuate portion 18, of the main arm 11, is provided with a stud 20 adapted to engage a locking device hereinafter described. The main arm 11 is pivoted at 21 to the vertically extending shaft of the check proper. A spring 22 is provided at the forward side of the pivot 19, to lift the free end of the pawl 16. A suitable opening 12^a in the frame 12 affords access to the locking device of the stud 20 and portion 18 of the main arm 11 as the latter moves arcuately.

The pawl 16 is provided with an extension 23 in the form of a release rod which extends through a suitable opening 24 in the rear wall of the frame 12. A pivoted hook member 25 is mounted upon the outer surface of the rear wall of the frame 12, closely adjacent the opening 12^a. The free end of the hook 25 is notched at 25^a to provide an engaging surface to receive the stud 20 before referred to. The angular vertical extension 25^b of the hook 25 overlies the outer end of the release rod 23. The outer edge of the hook 25 is tapered causing the latter to be raised to clear the advancing stud 20.

To facilitate the release of the main arm 11 from the hook 25 without disturbing the electrical mechanism, I provide a hand release rod 26 movable in a vertical strap 27 secured to the frame 12. A knob or button 28 is attached to the depending end of the rod 26.

The usual terminals 29 and circuit wires 30 are indicated in accordance with the electrical mechanism of my said earlier application.

In the operation of the device, I shall not describe the operation disclosed in my copending application of the electrically controlled locking device, but will limit the following description of the operation to the specific locking device and release mechanism, forming my invention. However, I might add that the electromagnetic coils 15, which attract the armature or pawl 16, receive their energy from an electric circuit 30 having a switch or button located at a point some distance from the door and preferably beneath a counter or desk and within convenient reach of the clerk or cashier.

When it is desired to permit the door to rest in its open position the movement of the main arm 11 will be approximately 90°, and it will be apparent that the arcuate portion 18 of the latter will have moved a relative distance which will bring the stud 20 beneath the bifurcated end 25^a of the hook 25. The door in this position is prevented from being closed through the normal action of the check 10, by the overlying bifurcated portion 25^a of the hook 25. In case of an emergency, and the electrical apparatus is excited by the closing of the switch concealed in the room, the pawl 16 with its extension release rod 23 will rock, and inasmuch as the release extension rod 23 is normally beneath the hook 25, it will raise the free end of the latter until the bifurcation 25^a is clear of the stud 20. This will permit the door to freely swing to its closed position.

For obvious reasons it may be desirable to close the door without affecting the electrical elements and with this in view the hand release rod 26 is provided. The operation of the latter consists in merely pressing upwardly upon the knob 28, which will cause a relative movement of the release rod 26 in its guideway 27; and the upper end of the former will compel an upward arcuate movement of the hook 25, thereby lifting the bifurcated portion 25^a of the latter out of engagement with the stud 20. The door will thus, through the action of the door check 10, move to its closed position. This hand release, it will be observed, may be used with any of the door checks now in use by simply providing the stud 20 in a position upon the main arm 11 so that it will engage the hook member 25, as shown in Fig. 4.

I claim:—

1. In means for controlling an electrically operated locking and releasing mechanism for a door check, the combination with an arcuately movable main arm having ratchet teeth and a cam surface, of a pivotally mounted pawl having one end movable into the path of the said ratchet teeth and the opposite end being provided with a projecting portion movable through a vertical plane in which the said cam is adapted to pass, and a pivotally mounted hook member movable longitudinally through the said vertical plane and provided with a forked free end, one arm of said fork being provided with a notch to receive the cam on the main arm and the other arm of the fork having an angular projection above the projecting por-

tion of the pawl, whereby movement of the said pawl to engage with the ratchet teeth of the main arm will operate the hook member to disengage the notch from the said cam.

2. A means for controlling an electrically operated locking and releasing mechanism for a door check according to claim 1, having a vertically and axially movable releasing rod adapted to engage said hook member to operate the latter and release the notch from engagement with the cam substantially as described.

In testimony whereof I have affixed my signature.

NEWTON L. SCHLOSS.