

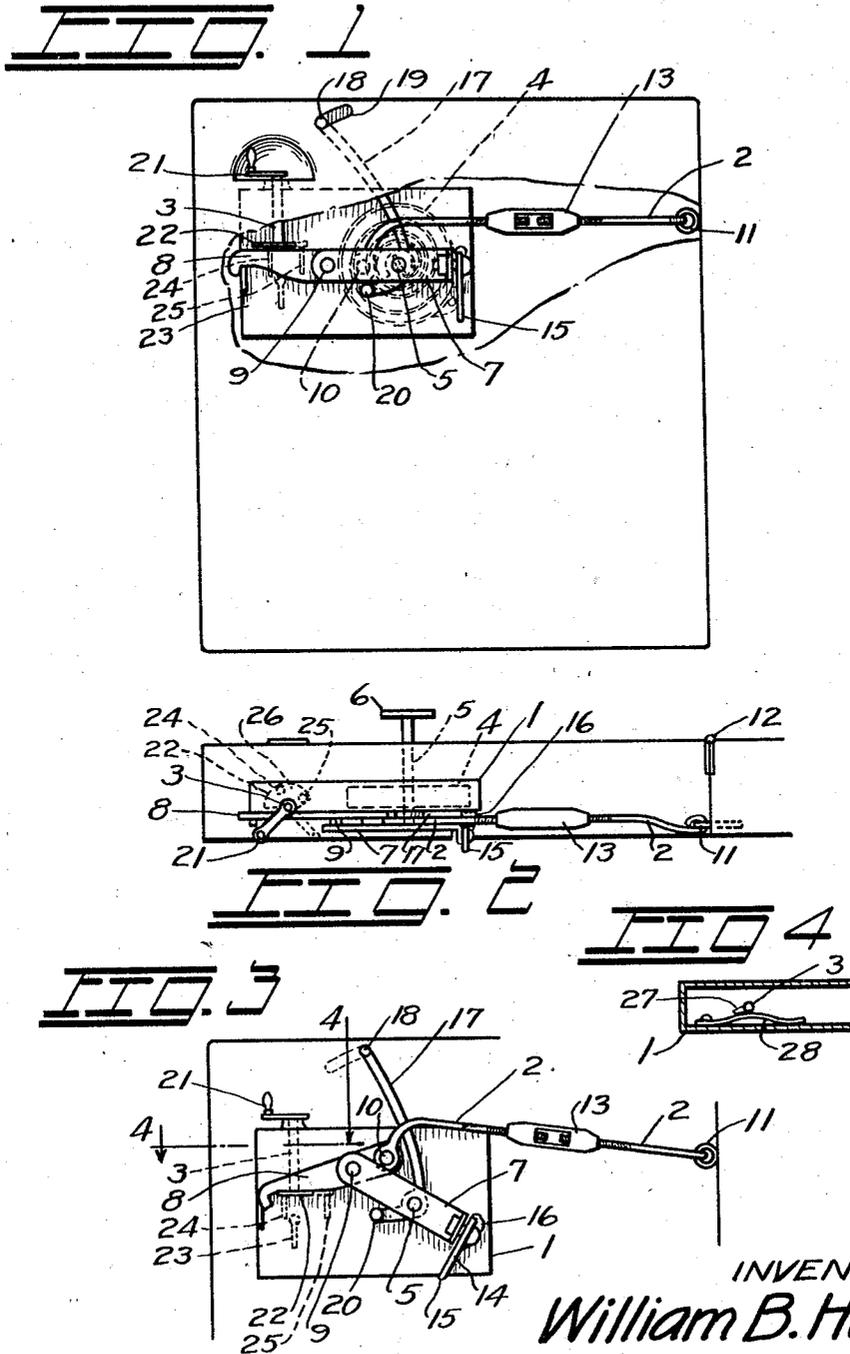
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AUTOMATIC DOOR CLOSER AND LOCK

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AUTOMATIC DOOR CLOSER AND LOCK.

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The invention is a device that may readily be attached to doors or the like which will automatically close the door and then lock it closed.

5 The object of the invention is to provide a positive lock for doors or the like which is entirely concealed within the doors.

Another object of the invention is to provide a lock for doors or the like which will automatically close a door when the door is released.

10 A further object of the invention is to provide a means for locking and closing a door which does not have a latch at the outer edge of the door.

15 And a still further object of the invention is to provide an automatic means for closing and locking a door which may be released by a latch on one side of the door, or by a key, handle, or knob, from either side of the door.

20 And a still further object of the invention is to provide a device for automatically closing and locking doors which is of a simple and economical construction.

25 With these ends in view, the invention embodies a casing that may readily be installed in a door, levers pivotedly mounted on the said casing, a spring within the said casing, a lever pivotedly attached to one of the levers on the said casing and extending to a point at the rear of the inner edge of the door, a lever for operating the said former levers, a means for locking the said former levers in the closed or open position, and means for releasing the said locking means from the exterior of the said door.

30 Other features and advantages of the invention will appear from the following description, taken in connection with the drawings, wherein:—

35 Figure 1 is a view looking at the inside of a door with part broken away to show the lock.

40 Figure 2 is a plan view of the lock showing the outline of the door.

Figure 3 is a view similar to that shown in Figure 1 with the door shown in outline and the lock in the released position.

45 Figure 4 is a sectional plan on line 4—4 of Figure 3.

50 In the drawings I have shown my device as it would be made wherein numeral 1 indicates the casing, numeral 2 the operating rod, and numeral 3 the vertical shaft of the locking mechanism.

The casing 1 may be of any suitable shape or size and may be arranged in any suitable manner. In the design shown the casing 1 is of a rectangular shape and has a coil 60 spring 4 in it which is mounted upon a shaft 5 as shown in Figure 1. The shaft 5 extends through the casing and has a handle 6 on the outer end which extends beyond the outside of the door, and a bar 7 on the inner 65 end which is pivotedly attached to a bar 8 through a pin 9 and to the inner end of which the rod 2 is pivotedly attached by a pin 10. The opposite end of the rod 2 is attached to an eye 11 at the inner corner 70 of the door frame at the rear of the door as shown in Figure 2. It will be noted that as the rod 2 arrives at the normal position shown in Figure 1 the inner end of the rod passes below the center of the pin 5 so that 75 the door is positively and rigidly held in the closed position. The spring 4 acts to close the door and after it is closed, or the inner end of the rod 2 passes below the center of the pin 5, so that the outer end of the bar 80 8 will engage a projection on the side of the casing, as shown, the spring will keep a tension on the levers so that the door will not only be locked, but resiliently held closed, and it will be observed that it will be impos- 85 sible to open the door without raising the inner end of the rod 2 above the center of the pin 5. The rod 2 is provided with a turnbuckle 13 by which its length may be readily adjusted. The outer end of the bar 90 7 is provided with a pivotally attached lever 14 which has a handle 15 that projects beyond the inner face of the door so that it may be gripped by hand and it will be observed that when the handle is raised it will 95 force the clamping member 16 at the inner end of the lever 14 against the face of the casing and thereby lock the bar 7 in any position and the bar 7 will in turn readily hold the door in any position.

100 The device may be operated by a lever 17 which is fixedly mounted upon the pin 5 and which is provided with a handle 18 that extends through an opening 19 in the inner surface of the door. At the lower end of 105 the lever 17 is a pin 20 that engages the under surface of the bar 7 when the bar is in the normal position as shown in Figure 1, and it will be observed that when it is desired to release the lock the handle 18 may 110 be moved to the upper end of the opening 19 so that the pin 20 will move the bar 7 and

the inner end of the lever 2 upward until it is above the center of the pin 5. The device may also be operated by turning the handle 6 at the outer end of the pin 5 which will also move the bar 7 and raise the inner end of the rod 2.

At the inner end of the casing is a means for locking the device with the door in either the open or closed position. This locking means is formed by a vertical shaft 3 having a lever 21 at the upper end by which it may be operated and a plate 22 at the lower end which may be moved to a position above the bar 8 to hold the device locked as shown in Figure 1 or to a position below the bar 8 to hold the device open as shown in Figure 3. This locking device may be operated by the handle 21 from the interior of the door or by a key to an opening 23 in the exterior of the door. As the key is rotated it will engage pins 24 and 25 extending downward from a plate 26 and thereby rotate the pin 3 which will in turn operate the plate 22 to lock or release the said bar 8. The pin 3 is provided with a lug 27 which engages a spring 28 as shown in Figure 4 to resiliently hold it in either position.

It will be understood that changes may be made in the construction without departing from the spirit of the invention. One of which changes may be in the position of the device on the door; another may be in the use of other means for operating the operating levers; and still another may be in the use of other means for locking the device in the open or closed position.

The construction will be readily understood from the foregoing description. To use the device it may readily be installed in a door or the like as described and it will be observed that as the device is released the door may readily be swung open and when the door is released it will automatically close and the device will automatically lock it in the closed position. It will also be observed that by turning the handle 21 the device may be locked from the interior so that it will be impossible to open it from the exterior without the use of a key. It will also be observed that although the device is particularly adaptable for motor vehicle doors, it may be used on any type of door where it is desirable to have the door swing to the closed position and automatically lock.

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

1. In a device for closing and locking doors or the like, a plurality of levers mounted on a suitable casing, a rod attached to one of the said levers and also to the interior of a frame in which the door may be mounted, said levers being arranged

so that inner end of the said rod will pass below a center as the door closes to positively lock the said door until the inner end of the said rod is moved above the center, resilient means for operating the levers to close the said door and means for locking the said operating levers in either the open or closed positions.

2. In a device of the class described, a plurality of levers pivotally supported, a door to which the levers are attached, said door being hinged at its outer corners, an adjustable rod attached to one of the said levers and also to the inner edge of the side of the frame to which the door is hinged, said levers being arranged so that the inner end of the said rod will pass below the point at which it is pivotally supported as the door closes, resilient means for closing the said door and other means operable from the interior or exterior of the said door for locking the said levers in the closed or released position.

3. In a device of the class described, a door, hinges for supporting the door at its rear outer edge, a plurality of levers pivotally mounted in the said door, an adjustable rod extending from the said levers to a point at the inner edge of the side of the frame to which the door is hinged, means for operating the said levers, resilient means for operating the said levers to close the door and move the inner end of the said adjustable rod to a point below that at which it is pivotally mounted, and other means for locking the said levers.

4. In a device of the class described, a door hinged at its outer edge, a rod extending through the said door and attached to the inner edge of the side of the frame to which the door is hinged, means in the door for pivotally mounting the inner end of the said rod, resilient means for bringing the inner end of the said rod to a point below the center at which the said means is pivotally attached to the door, means for engaging the said holding means to move the inner end of the said rod above the said center and other means for causing the said levers to be inoperable.

5. In a lock, a door, a frame to which the door is hinged, a rod extending into the door and attached to the said frame, means for engaging the inner end of the said rod to automatically close the said door, said means being also adaptable to lock the said door when it is closed, means for locking the said holding means with the door in the closed or open position and means for operating the said holding means from the exterior of the said door.

In testimony whereof I hereby affix my signature.

WILLIAM B. HURD.