

May 4, 1954

E. N. JACOBI
DOOR HANDLE LOCK

2,677,261

Filed Jan. 16, 1948

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Fig. 1

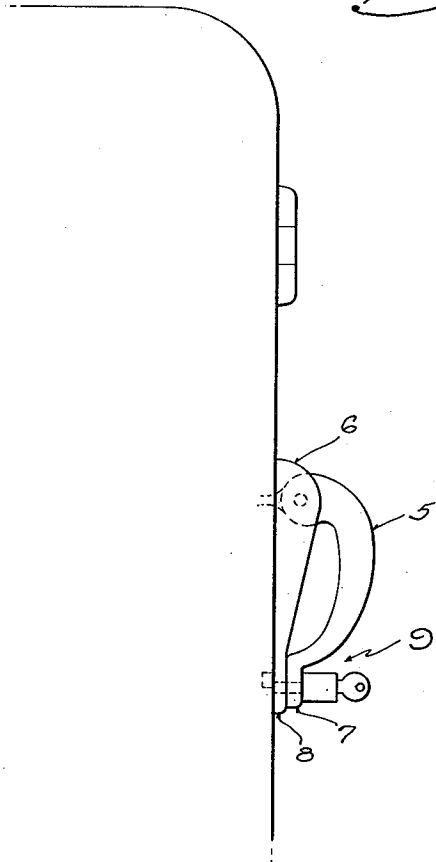


Fig. 2

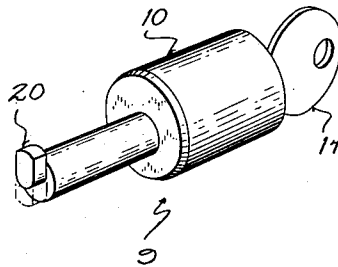
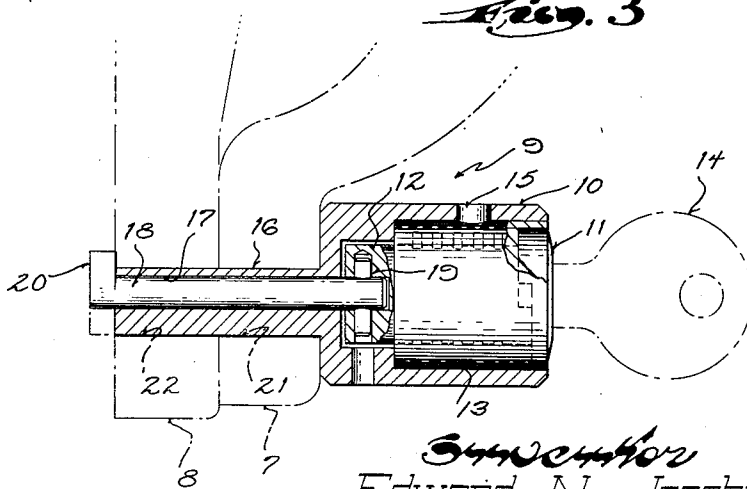


Fig. 3



Inventor
Edward N. Jacobi
By Ira Milton Jones
Attorney

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Fig. 4

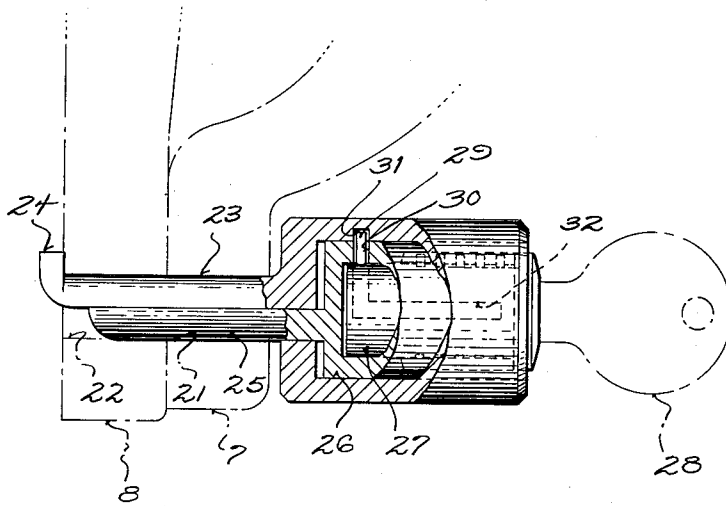
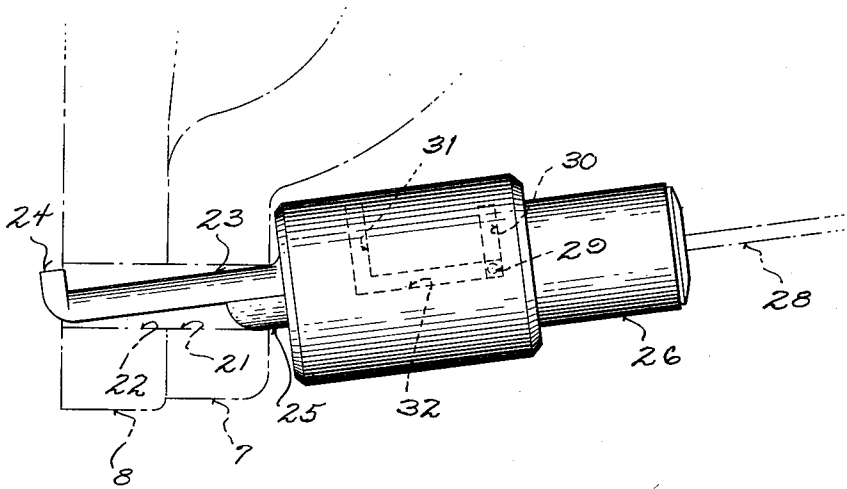


Fig. 5



Inventor
Edward N. Jacobi
By *Dr. Miller Jones*
Attorney

UNITED STATES PATENT OFFICE

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DOOR HANDLE LOCK

Edward N. Jacobi, Milwaukee, Wis., assignor to
Briggs & Stratton Corporation, Milwaukee,
Wis., a corporation of Delaware

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4 Claims. (Cl. 70-14)

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This invention relates to locks and refers more particularly to a lock device for locking a pivoted door handle, as for instance the handle of a refrigerator door, against actuation.

It is frequently desirable to provide locks for the doors of refrigerators and cold storage cabinets, especially where they are located in restaurants and hotels. The doors of such refrigerators and cold storage cabinets are commonly equipped with a latch mechanism of the type actuated by a handle pivoted at one end and free at its other end to swing outwardly away from the door, it being necessary only to pull the handle toward oneself in order to retract the latch and open the door.

A common padlock cannot be used on a door of this type since even if it were possible to install a suitable hasp, its presence would mar the appearance of the door.

It is, therefore, an object of this invention to provide a simple and compact lock which will secure a door of the type described against unauthorized opening and which will harmonize with the lines of the door handle so as to avoid creating an unpleasing appearance.

Another object of this invention resides in the provision of a refrigerator door lock of the character described which is readily removable from the door handle at times when it is not desired to have the lock in place.

Another object of this invention resides in the provision of a lock of the character described which will require very little modification of the handle structure of the cabinet or refrigerator door to accommodate the lock so that the appearance of the door will not be marred if it is not desired to install the lock thereon.

Still another object of this invention resides in the provision of a lock of the character described which may be constructed around a simple and inexpensive type of cylinder lock mechanism.

With the above and other objects in view, which will appear as the description proceeds, this invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the hereindisclosed invention may be made as come within the scope of the claims.

The accompanying drawings illustrate two complete examples of the physical embodiment of the invention constructed according to the best modes so far devised for the practical application of the principles thereof, and in which:

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Figure 1 is a side view of a portion of a refrigerator having a handle of the type to which this lock is particularly applicable, with the lock of this invention in place thereon;

Figure 2 is a perspective view of the lock device per se;

Figure 3 is a longitudinal sectional view of the lock of this invention illustrating the way in which it secures the door handle against actuation;

Figure 4 is a side view of a modified embodiment of this invention installed on a refrigerator door, portions thereof being broken away and shown in section; and

Figure 5 is a view similar to Figure 4 but showing the manner of removing the lock shown therein to release the door handle for actuation.

Referring now particularly to the accompanying drawings in which like numerals designate like parts, the numeral 5 designates the handle of a refrigerator door which, as is customary, is pivoted at its upper end within an escutcheon plate 6 and upon being pulled actuates the latch mechanism (not shown) to release the door for opening. The lower end of the handle has an extension 7 which lies flat against the lower end portion 8 of the escutcheon plate when the handle is in its normal position and when the door is fully closed. It is secured in this position to lock the door, when desired, by the lock device of this invention designated generally by the numeral 9.

The lock device 9 comprises a barrel-like body 10 containing a tumbler type lock mechanism 11. This lock mechanism consists of the usual key controlled cylinder 12 rotatable within a cylindrical casing 13 upon insertion of a proper key 14. Rotation of the cylinder is limited to one hundred eighty degrees (180°) by suitable stop abutments. The casing 13 is secured in position within the body by a pin 15.

Projecting rearwardly from the rear end of the barrel-like lock body is a round stem 16 having an eccentric bore 17 extending longitudinally therethrough to receive a shaft 18. The shaft 18 is fixed to the rear end of the cylinder as at 19, and at its outer end has a hook 20 adapted to be swung from a locked position shown in full lines in Figure 3 to an unlocked position indicated in dotted lines upon rotation of the cylinder through the permitted one hundred eighty degrees (180°).

As will be readily apparent from Figure 3, when the lock device is in place it stem 16 projects through aligned holes 21 and 22 in the handle extension 7 and the escutcheon plate

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respectively, the length of the stem being such that the rear end of the body 10 bears against the outer face of the handle 7 when the hook 20 engages behind the escutcheon plate. In this way the lock device secures the handle against unauthorized actuation. Rotation of the cylinder to swing the hook 20 to its unlocked position disposes the hook 20 within the diameter of the stem 16 to permit withdrawal of the stem from the holes 21 and 22.

In the modified embodiment of the invention shown in Figures 4 and 5, the stem 23 which projects from the rear of the lock body is semi-circular in cross section and has the locking hook 24 formed directly thereon. Thus, in order to permit insertion and withdrawal of this stem it must be tilted as shown in Figure 5 and in its locked position must be secured against such tilting.

To this end a longitudinally movable member 25 is provided which, like the stem 23, is semi-circular in cross section and complements the stem 23 to fill the round holes 21 and 22. This longitudinally or axially movable member 25 is fixed to the inner end of the casing 26 which, in this instance, is closed and cooperates with the stem to preclude rotation of the casing relative to the lock body. Thus, the longitudinally movable member 25 partakes of any motion of the lock casing 26.

The casing 26 has the cylinder 27 rotatably mounted therein to be released for rotation upon insertion of a proper key 28 which acts upon the tumblers in the customary manner. Upon rotation of the cylinder 27 a pin 29 projecting radially therefrom and passing through a circumferential slot 30 in the wall of the casing is moved along the transverse leg 31 of an L-shaped slot or groove in the wall of the bore of the lock body. Upon alignment of the pin 29 with the longitudinal leg 32 of this L-shaped slot or groove, the cylinder 27 and its casing 26 may be axially retracted to the position shown in Figure 5. Such retraction of the cylinder and its casing withdraws the member 25 sufficiently to permit the stem to be tilted for removal from the aligned holes 21 and 22.

From the foregoing description taken in connection with the accompanying drawings, it will be readily apparent that the refrigerator door and handle with which the lock of this invention is employed need not be marred or disfigured and that the application and the removal of the lock device is a simple matter and when in position securely locks the door of the refrigerator against unauthorized opening.

What I claim as my invention is:

1. A lock of the type described, for locking together two objects having aligning holes there-through, comprising: an elongated lock body having a cylindrical bore opening to one end thereof, and a reduced stem projecting from its opposite end longitudinally of the body; a laterally projecting hook on the outer extremity of said stem adapted to engage one of said objects at the far end of said holes when passed through the holes so that said objects are substantially clamped between the hook and the end of the body from which the stem projects, and the body completely covers the entrance to said holes; key controlled lock mechanism in said body including a sleeve slidably fitting the bore in the body and a cylinder rotatable in said sleeve; a longitudinally movable member fixed to the sleeve and projecting through a hole in

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the body to have its outer end portion in juxtaposition to said stem and together with the stem substantially filling the hole when the lock is in place upon said objects to block disengaging motion of the hook from the object at the far end of the hole; and cooperating guide means on the lock cylinder, the sleeve and the body constraining the cylinder to rotary motion between locked and unlocked positions relative to the sleeve and guiding the sleeve for axial motion relative to the body in the unlocked position of the cylinder, to effect retraction of said longitudinally movable member to a position at which disengaging motion of the hook from behind the object at the end of the hole may be effected.

2. Means for locking together two members having axially aligned relatively small holes therethrough, comprising: a lock body; a member slidably axially in said body; a key controlled cylinder for locking said member against axial sliding motion in the body; cooperating complementary latch elements having a combined cross sectional size to fit the hole in said pierced objects and substantially smaller than the cross sectional area of the body; a connection between one end of one of said latch elements and the lock body disposing said latch element lengthwise of the direction of sliding motion of said slidable member; a connection between one end of the other latch element and said slidable member holding said other latch element lengthwise of the direction of sliding motion of said slidable member and in juxtaposition to the first designated latch element so that said two complementary latch elements cooperate with each other to fill said holes and to hold said slidable member against rotation relative to the lock body, sliding motion of said member outwardly of the body away from the said pierced objects retracting said other latch element to a position at which the first designated latch element is tiltable laterally in said holes; and a hook on the outer extremity of the first designated latch element held engaged over the shoulder at the end of the hole opposite the lock body by said second designated latch element in the projected position thereof.

3. A lock of the type described, for locking together two objects having aligning holes there-through, comprising: a key controlled cylinder lock including a lock body and a cylinder lock mechanism rotatable in and slidably with respect to the lock body by means of a key; a stem having one end fastened to the lock body; a hook projecting from the other end of the stem to engage behind one of the objects, adjacent to the hole therein, and thus hold the lock body in a position covering the entrance to the holes; a longitudinally movable member in juxtaposition to said stem and having a thickness substantially to fill said holes with the stem; and a connection between one end of said longitudinally movable member and the cylinder lock mechanism constraining the longitudinally movable member to endwise sliding movement with the cylinder lock mechanism but permitting the cylinder lock mechanism to rotate relative to the longitudinally movable member so that upon outward sliding motion of the cylinder lock mechanism with respect to the lock body in the unlocked position of rotation of the cylinder lock mechanism the longitudinally movable member is moved to a retracted position at which the hook

on the stem may be withdrawn from behind said one object.

4. A lock of the type described for locking together two objects having aligning holes there-through, comprising: a key controlled cylinder lock including a lock body member and a cylinder member rotatable in said lock body member by its key between locked and unlocked positions and slidable axially in said lock body member in its unlocked position of rotation, said lock body member being engageable with the shoulder at the front edge of the hole in one of the objects to cover the same; a stem fastened at one end to the lock body member to project through said holes when the lock body member is in position covering the front edge thereof; a hook on the outer extremity of the stem projecting laterally therefrom to engage the shoulder at the rear of the holes; a longitudinally movable element; a connection between one end of the longitudinally movable element and the cylinder member constraining the longitudinally movable element to endwise motion with the cylinder member but permitting relative rotation between the longitudinally movable element and the cylinder member, and disposing the longitudinally movable element alongside the stem to project into the holes in the objects when the lock body member is in position over the front edge of the holes to block disengagement of the hook from the shoul-

der at the rear of the holes; and cooperating guide means on the lock body member and the cylinder member for controlling motion of the cylinder member in the lock body member including a circumferential groove on one of said members and a projection on the other of said members entering the groove, and a longitudinal groove on said first designated member communicating with the circumferential groove and with which the projection aligns in the unlocked position of rotation of the cylinder member to guide the cylinder member for axial sliding motion in the lock body member, away from the front edges of the holes, such sliding motion of the cylinder member carrying the longitudinally movable element to a retracted position with respect to the stem at which disengagement of the hook from the shoulder at the rear of the holes may be effected.

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