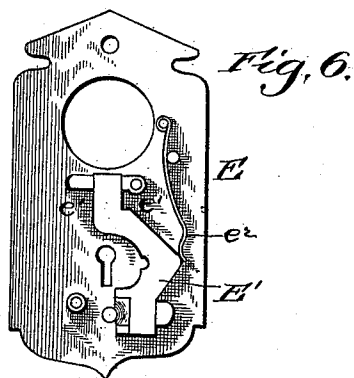
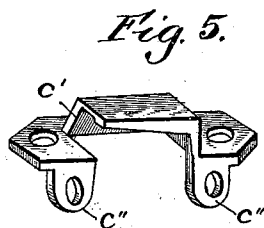
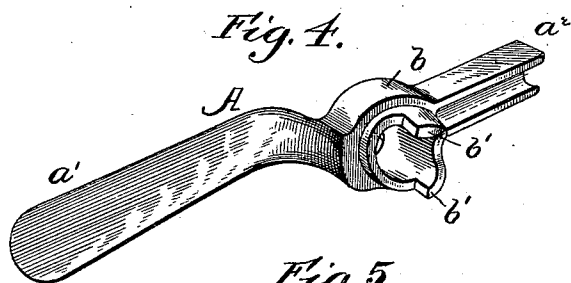
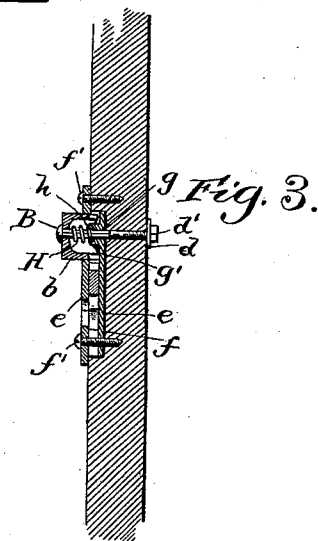
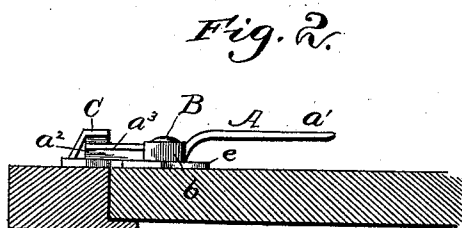
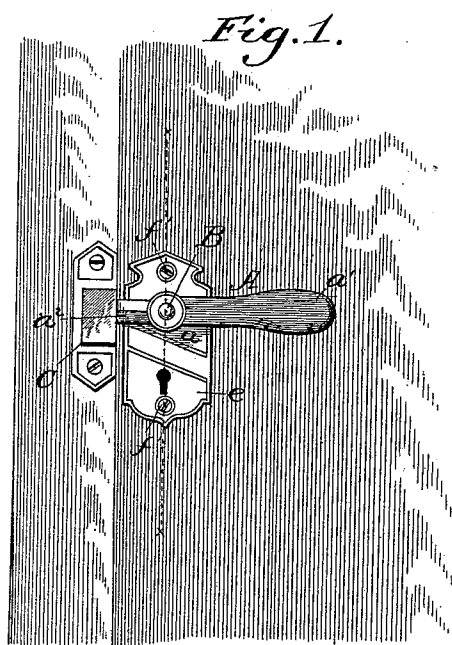


(No Model.)

S. M. ATHERTON.
LEVER LATCH FOR REFRIGERATORS.

No. 472,938.

Patented Apr. 12, 1892.



Witnesses:

J. B. McGirr.
H. D. Beruhar

Inventor:

S. M. Atherton
By his Attorneys
Edson Bros.

UNITED STATES PATENT OFFICE.

STILLMAN M. ATHERTON, OF BURLINGTON, VERMONT, ASSIGNOR TO THE
BALDWIN REFRIGERATOR COMPANY, OF SAME PLACE.

LEVER-LATCH FOR REFRIGERATORS.

SPECIFICATION forming part of Letters Patent No. 472,938, dated April 12, 1892.

Application filed October 1, 1891. Serial No. 407,440. (No model.)

To all whom it may concern:

Be it known that I, STILLMAN M. ATHERTON, a citizen of the United States, and a resident of Burlington, in the county of Chittenden and State of Vermont, have invented certain new and useful Improvements in a Combined Wedge-Lever and Lock for Refrigerators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improved lock and wedge-fastening especially useful on the doors of refrigerators and other cold-storage structures, in which it is desirable to tightly wedge the door in the jamb to exclude warm air from entering at the joints, as well as to lock the door from unwarrantable access to the interior of the refrigerator or other structure.

Experience has proven that an ordinary mortise-lock is of very little avail in a refrigerator, as it does not effect the tight jamming or wedging of the door, and hence it is necessary to use a wedge-fastening for this purpose, thereby employing two different devices on one door to secure the two ends named. Attempts have also been made to combine a wedge-like operating-handle with a surface lock to be applied on the outside of the door; but so far as I am aware such prior devices embody somewhat complex devices in their structure, and they can be readily removed from the door by simply taking out a few screws, thereby effecting very easy access to the interior of the refrigerator.

It is the object of my invention to combine in a simple and inexpensive contrivance a wedging-lever with a locking mechanism capable of application to the outside face of a refrigerator-door, and at the same time prevent both the combined wedge-lever and lock and the keeper from being removed from the outside or surface of the door.

With these ends in view the first part of my invention consists in the combination, with a surface casing having a locking-bolt, of a wedging-lever arranged exteriorly of the casing and provided with a shouldered hub, which

is fitted in the lock-casing so as to turn a limited distance therein, and a pivot-bolt passing through the lever and fastened on the inside of the door by a nut, the locking-bolt being arranged to project into the path of the shoulder on the hub of the wedge-lever.

In practice I fit the pivot-bolt in the lock-casing so that it cannot turn therein, and around this bolt is arranged a coiled spring, which tends to keep the parts together, any loose play or slack in the lock being taken up by tightening the nut on the inner end of the bolt. The keeper for the wedge end of the lever or handle is secured in place on the jamb by screws, which pass through the body of the keeper and through flanges let into the inside face of the door-jamb, so that the keeper cannot be taken off, when the door is closed, by removing the surface screws.

My invention further consists of the construction and arrangement of parts, which will be hereinafter described, and pointed out in the claims.

The accompanying drawings fully illustrate my improvements, in which—

Figure 1 is an elevation showing my combined wedge-lever and lock applied to the surface of the door of a refrigerator, a part of the door and jamb being also shown. Fig. 2 is an edge view showing the wedge lever or handle in its keeper. Fig. 3 is a vertical sectional view through the device on the plane indicated by the dotted line $x x$ of Fig. 1. Fig. 4 is a detail view in perspective of the wedge-lever detached. Fig. 5 is a similar view of the keeper; and Fig. 6 is a view showing the interior mechanism of one form of the lock, the back plate of the casing being removed.

Like letters of reference denote corresponding parts in the several figures of the drawings.

A designates the wedge lever or handle, which is cast or formed in a single piece with the boss a between its handle end a' and the wedge end a'' . The boss is formed on the inside of the wedge-lever with an integral hub b , and a part of this hub is cut away to form the shoulders $b' b'$. The wedge-shaped end a'' of the lever has its outer surface inclined

at a^3 , and these inclines converge toward the central line of the lever to form a longitudinal ridge, as shown. This inclined ridged end of the lever is adapted to fit in the keeper 5 C, the lower end of which is open at c and the inner surface of which is inclined at c' to form a bearing-surface for the inclined ridged surface a^3 of the lever, whereby the lever is enabled to tightly wedge the door when the 10 latter is closed and the lever turned to bring its inclined surface to ride against the inclined bearing-surface c' of the keeper. The base of the keeper is provided with screw-holes above and below the part or socket that 15 receives the lever, and the keeper is cast in a single piece of metal with the right-angled flanges c' , that are adapted to fit in recesses in the inside face of the jamb, the keeper being fastened on the jamb by means of screws 20 or nails driven through the holes and the flanges therein. In the boss of the lever is formed an opening for the passage of the transverse pivot-bolt B, which extends centrally through the hub b and clear through 25 the door, as shown in Fig. 2, the inner end of the pivot-bolt receiving a washer d and a nut d' on the inner face of the door to prevent the bolt from being withdrawn and the wedge-lever from detachment when the door is closed 30 and locked.

I will now proceed to a detailed description of one form of locking mechanism which may be used in connection with the wedge-lever; but it is to be understood that I do not strictly 35 confine myself to this particular form of lock, as I am aware that other locking mechanisms for preventing the wedge-lever from having movement on the pivot-bolt can be used without departing from the gist of my invention. 40 The surface lock E shown in Figs. 3 and 6 has a casing consisting of the front and back plates $e e$, secured together by screws, as is usual, a sliding bolt E' , fitted and held in place between guide-posts $e' e'$, and a spring 45 e^2 , secured between the two plates and bearing on the bowed edge of the locking-bolt in a manner to hold the same in the position to which it is moved by the key either to confine the wedge-lever in place or retracted to 50 release the wedge-lever and permit it to be turned. A recess f is cut in the outside face of the door, leaving the edge of the latter solid and intact, and in this recess is fitted the lock, which is housed entirely therein, 55 as the front plate of the casing wholly conceals the recess, the lock being fastened to the door by screws f' , passing through the front plate, as shown. The front plate of the lock has a large circular opening, in which 60 snugly fits the circular hub b of the wedge-lever, and the opening affords a bearing for the wedge-lever, which is secured in place and turns freely on the transverse pivot-bolt B, the latter being polygonal in form and 65 passing through a polygonal opening g in a circular stud g' , integral with the back plate

e , the stud being in line to receive a portion of the hub b and serving to prevent the pivot-bolt from turning, and thereby holding said pivot-bolt fixed or stationary. 70

In the outer face of the circular stud is formed a groove or seat h , and in this seat fits the inner end of a coiled spring H, which encircles the pivot-bolt and has its outer end fitted in the hollow boss of the wedge-lever. 75 This spring is thus confined in place between the back plate e and the wedge-lever, and by tightening the nut d on the inner face of the door the bolt is adjusted to compress the spring and thus take up any looseness or play 80 in the parts.

This being the construction of my combined wedge-lever and lock, the operation may be briefly described as follows: After the door is closed the wedge-lever is turned to a horizontal position to cause the inclined ridged 85 end to ride against the inclined surface of the keeper, thus tightly wedging the door in the jamb, and the key is now turned in the lock to project the bolt into the path of one 90 of the shoulders b' on the hub b of the wedge-lever, which is prevented from downward movement by the bolt and from upward movement by the closed end of the keeper. The bolt can be readily retracted and the wedge- 95 lever turned upward to release the same from the keeper, after which the door can be pulled open by the wedge-lever. The spring H is quite important in a combined wedge-lever and lock, as it serves to keep the wedge-lever 100 from having idle movement on its center and from getting in the path of the keeper when closing the door. In the ordinary wedge-lever used on refrigerator-doors it is annoying to have it slip out of position and strike the 105 keeper while the door is being closed, which requires the lever to be adjusted to clear the keeper, then to close the door tight, and again adjust the lever to engage the keeper; but with my improvement the wedge-lever is held 110 in the position to which it is turned, so that the door can be closed without interference, and then confined in place by a single turn of the lever and the locking mechanism.

The advantages of my improved lock will 115 readily commend themselves to any one skilled in the art to which the invention relates.

It is evident that changes in the form and proportion of parts, as well as in the details 120 of construction of the mechanism herein shown and described as an embodiment of my invention, can be made without sacrificing the advantages of the invention.

In most of the so-called "lever-locks" it is 125 necessary to provide two separate locks and corresponding keepers for right and left hand doors; but my invention obviates this objection, as the lever-lock is applicable to either style of door by simply reversing the handle 130 or lever, which necessitates the use of only one form of lock.

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

1. A surface lock adapted to be let into the face of a door and having a suitable locking-bolt, combined with a keeper, a wedge-lever having a bearing in the lock to oscillate or turn therein, a compression-spring acting on the wedge-lever, and a draw-bolt passing through the wedge-lever and door, substantially as and for the purpose described.

2. The combination, with a lock provided with a suitable bolt and a fixed keeper on the door-jamb, of a wedge-lever having a bearing in said lock and a draw-bolt which passes through the wedge-lever and a door, substantially as and for the purpose set forth.

3. A surface lock adapted to be applied to the face of a door and having suitable bolt-works and a bearing for a wedge-lever, combined with a keeper, the wedge-lever provided with a cylindrical shouldered hub, which fits snugly in the bearing, a spring arranged within the cylindrical hub of said wedge-lever, and a draw-bolt passing through the wedge-lever and door, substantially as described.

4. A surface lock adapted to be applied to the face of a door and having suitable locking mechanism and a bearing, combined with the wedge-lever having a cylindrical shouldered hub fitting snugly in the bearing, a stationary bolt passing through the wedge-lever and lock, a spring confined between the lock and wedge-lever and bearing against the latter, and a keeper, substantially as described.

5. The combination, with a suitable lock-

casing having a bolt and a fixed keeper, of a wedge-lever, a draw-bolt passing through said wedge-lever, and a spring bearing against the lever and adapted to be compressed by adjusting the draw-bolt, substantially as and for the purpose set forth.

6. The combination of a movable wedge-lever, a single fastening-bolt therefor, and a spring bearing against said wedge-lever and adapted to be compressed by endwise adjustment of the bolt, substantially as described.

7. The combination of a surface lock having an aligned bearing and polygonal spring-seat, the wedge-shaped lever having a hub fitting in the bearing, the spring resting within the hub and the spring-seat, and a single bolt passing through the wedge-lever and polygonal spring-seat, substantially as described.

8. A surface lock adapted to be applied to the face of a door and having the bearing, the stud formed with a polygonal opening and the groove or seat, and a locking mechanism, combined with a wedge-lever having its shouldered hub fitting in the bearing, a single bolt passing through the wedge-lever and the stud and fastened on the inside of the door by a nut, a spiral spring seated in the hub and the seat of the stud, and a keeper, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

STILLMAN M. ATHERTON.

Witnesses:

H. E. WOODBURY,
G. J. SMITH.