May 4, 1948. W. O. BURKE 2,440,734

LIFT AND LATCH FOR DEEP-FREEZE CABINET LIDS

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Fig. 1.

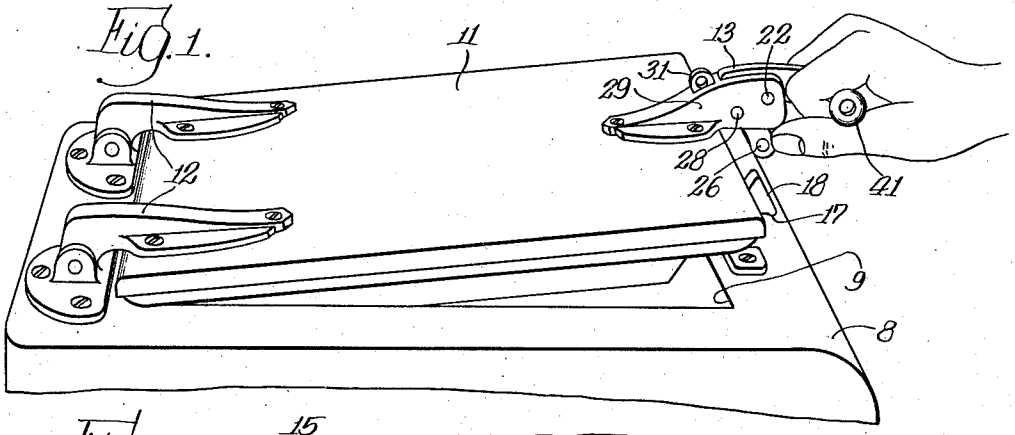


Fig. 2.

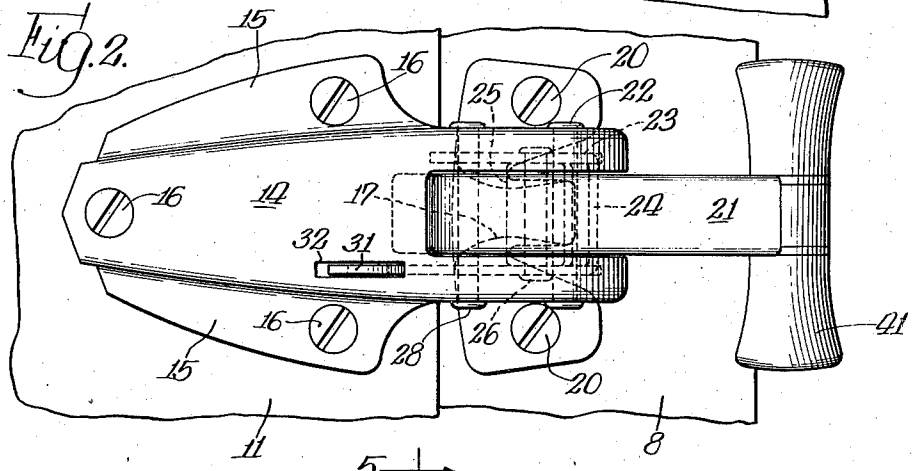
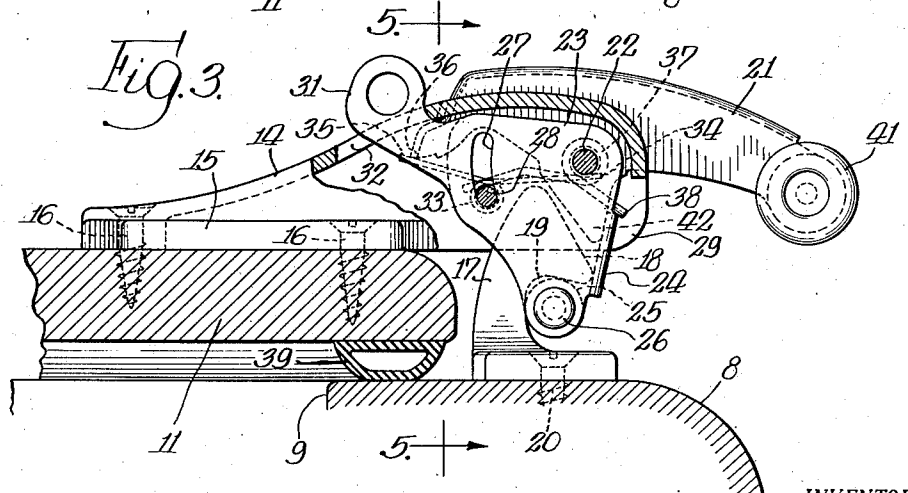


Fig. 3.



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Fig. 4.

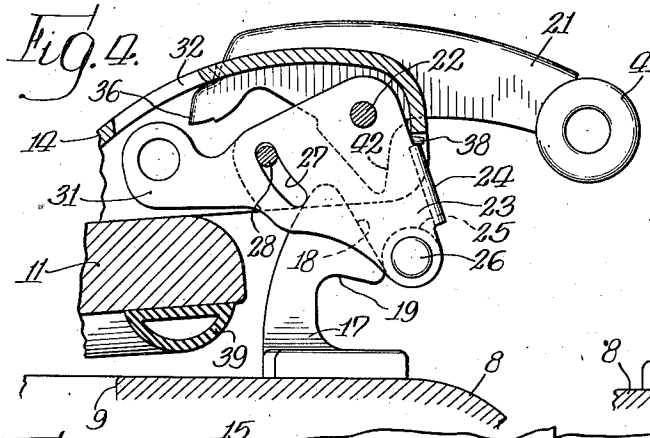


Fig. 5.

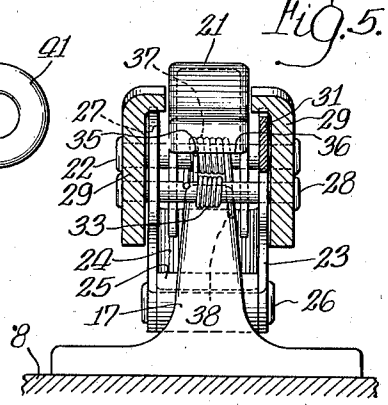


Fig. 6.

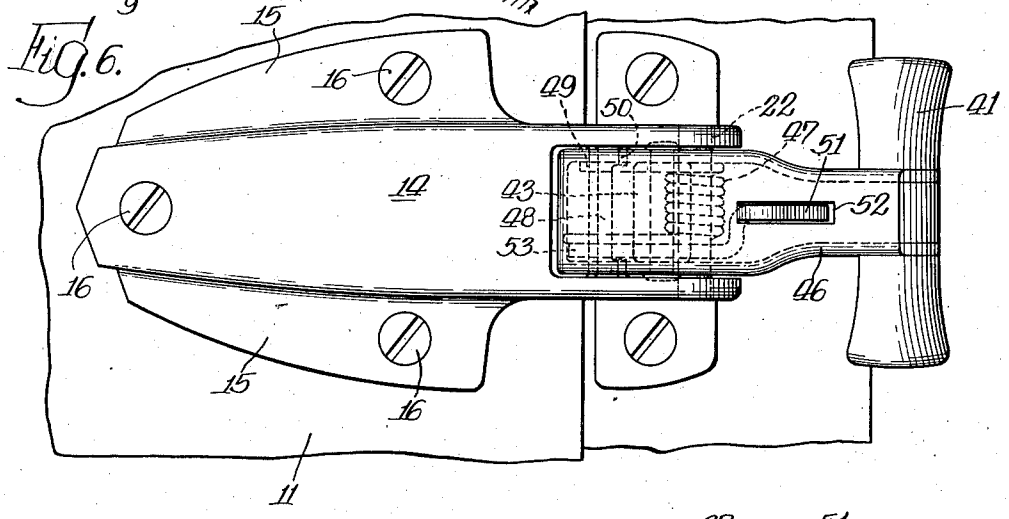
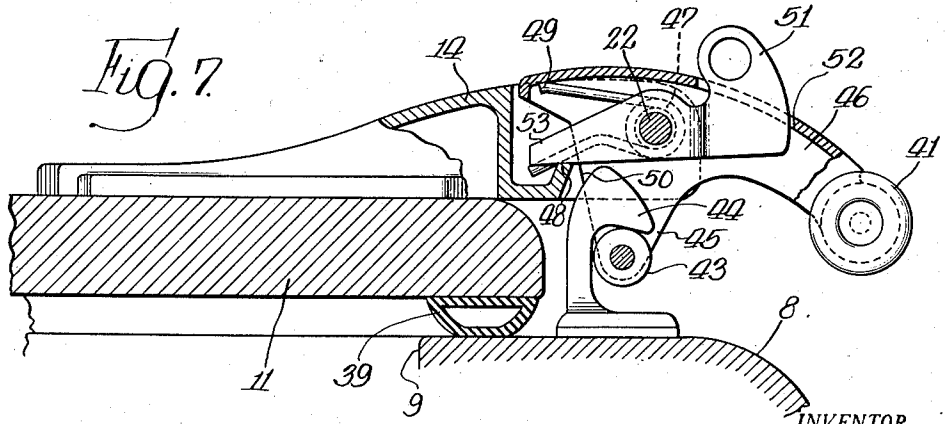


Fig. 7



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LIFT AND LATCH FOR DEEP-FREEZE CABINET LID

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Application April 10, 1944, Serial No. 530,249

2 Claims. (Cl. 292—226)

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This invention relates in a general way to latches for cabinets, but is more particularly concerned with a latch which will also serve as a means whereby a horizontal lid or cover on a cabinet may be lifted to afford access to the interior of the cabinet.

Deep-freeze units designed for the storage of frozen food products are for practical reasons of the top-opening type, that is, access to the interior of the unit cabinet is had through a top opening which is normally closed by a horizontally disposed hinged lid or cover. It has been found that the weight of such a lid is insufficient to effectively seal the lid so as to prevent heat transference, consequently, I have devised a latch herein disclosed which is adapted, when the lid is moved to closed position, to automatically engage itself with a strike or keeper and draw the lid snugly against the margin around the cabinet opening, thereby producing a hermetic seal which prevents heat transference around the lid.

One of the primary purposes, therefore, of my present invention is the provision of a latch which will exert a substantial closing pull upon the lid to hold it snugly against the opposed cabinet face. Another purpose is the provision of a latch of this character which will also serve as a lift by presenting a handle in accessible position which can be readily grasped for the exertion of an upward pull thereon. Such an upward pull produces two effects. First, it releases the latch member from the strike or keeper, thus freeing the lid for movement, and second a continuation of the pull serves to lift or swing the forward portion of the lid upwardly about the hinges by which its rear portion is connected to the cabinet.

Another purpose of my invention is to provide a latch which can be locked so as to prevent release of the latching member from the keeper and thereby preclude access to the interior of the cabinet.

For the purpose of facilitating an understanding of the structural features of my invention, I have illustrated on the accompanying drawings preferred embodiments thereof.

Referring to the drawings:

Fig. 1 is a fragmentary perspective view of a cabinet equipped with my novel lift and latch;

Fig. 2 is a plan view of the latch;

Fig. 3 is a sectional view illustrating the normally concealed parts in latching position;

Fig. 4 is a view similar to Fig. 3 showing these parts in unlatched position;

Fig. 5 is a sectional view on the line 5—5 of Fig. 3;

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Fig. 6 is a plan view similar to Fig. 2 of a modified form of latch; and

Fig. 7 is a view similar to Fig. 3 of the latch shown in Fig. 6.

Referring to the drawings more in detail, reference character 8 indicates generally a cabinet of the deep-freeze type provided with a top opening 9 for access to the interior of the cabinet, which opening is normally closed by a horizontal lid 11 mounted on the cabinet by the hinges 12 and provided at its forward edge with the lift and latch contemplated by my invention and designated generally by reference character 13.

The latch comprises a housing 14 diminishing in height toward its rear end and provided with lateral flanges 15 by which the housing is secured upon the upper face of the lid by a plurality of screws 16. The housing is mounted upon the lid so that the forward portion of the housing projects a substantial distance beyond the front edge of the lid and overlies the strike or keeper 17 mounted by screws 20 or other means upon the upper face of the cabinet forwardly of the opening 9. The keeper is shaped to provide the inclined or cam portion 18 and a latching shoulder 19 with which the latching member of the latch engages to draw the lid into snug relation with the cabinet.

The projecting portion of the latch housing is of channel-shape and the top wall which forms the base of the channel is cut away to accommodate a lever arm 21 of channel-shape construction pivotally mounted between the side walls of the housing upon a fulcrum pin 22. Upon the fulcrum pin 22 and straddling the handle lever 21 is also pivotally mounted a latch member 23 consisting of a pair of spaced apart side walls joined by a front wall 24 and having a latching roller 25 mounted upon a pin 26 extending between the side walls. The side walls near their rear ends are provided with arcuate slots 27 through which projects a guide pin 28 anchored in the side walls 29 of the housing. One of the walls of the latch member is extended rearwardly and upwardly to provide an eye 31 adapted to be projected through an opening 32 in the top wall of the housing when the latch member is in latching position, as shown in Fig. 3. A padlock or the like positioned in the eye 31 will preclude swinging of the latch member in a counter-clockwise direction, viewing Fig. 3, to release it from the keeper 17. Provision is thus afforded for preventing the latch from being released so as to permit access to the interior of the cabinet.

A spring 33 coiled around the pin 28 has one end

34 abutted against the pin 22 and its opposite end 35 abutted against the depending rear end 36 of the handle lever 21 so as to normally bias said lever in a clockwise direction into the position shown in Fig. 3. A similar but heavier spring 37 surrounding the fulcrum pin 22 has one end resting against the pin 28 and its other end 38 resting against the upper edge of the front wall 24 of the latch member, so as to bias said member in a clockwise direction into the position shown in Fig. 3.

Assuming the parts to be in the position shown in Fig. 3, the roller 25 of the latching member engaged beneath the shoulder 19 of the keeper will hold the lid down so as to maintain the sealing member 39 carried by the lid under compression to maintain a hermetic seal between the lid and the cabinet. The hasp of a padlock or the like inserted through the eye 31 will prevent counter-clockwise movement of the latch member 23 and thus preclude release of the latch.

In order to open the lid, it is only necessary for the user to grasp the handle 41 carried by the handle lever 21, in the manner shown in Fig. 1, and exert an upward pull thereon. The handle lever 21 will thereby be swung in a counter-clockwise direction to cause the short arms 42 of the handle lever to exert a thrust toward the right, viewing Fig. 3, upon the front wall 24 of the latch member, thereby swinging said latch member in a counter-clockwise direction to withdraw the latching roller 25 from beneath the shoulder 19 of the keeper. Continued upward pull upon the handle will lift the lid, thereby affording access to the interior of the cabinet through the opening 9.

Upon closing movement of the lid the latching roller 25, as the lid approaches closed position illustrated in Fig. 4, will ride down the incline 18 upon the strike, swinging the latching member 23 into the position shown in Fig. 4, against the force of spring 37, until the roller 25 rides below the end of cam 18, whereupon the roller will snap beneath the shoulder 19 and thereby draw the lid snugly against the top of the cabinet. These latching movements of the latch member 23 on its fulcrum pin 22 are produced without affecting the position of the lever 21 and handle, which during these movements of the latching member are held stationary in the position shown in Figs. 3 and 4 by the spring 33. A tight seal between the cabinet and the lid is thus produced and maintained by the latch member until an upward pull is again exerted upon the handle to release the latch and lift the lid.

In the form of the invention illustrated in Figs. 6 and 7 the latching roller 43, which cooperates with the strike 44, is carried by arms 45 formed integrally with the handle lever 46. This lever, as in the previous instance, is pivoted upon a fulcrum pin 22 carried by the housing 14. A coiled spring 47 surrounding the fulcrum pin 22, with one end engaged with an abutment 48 on the housing and the other engaged at 49 with the rear end of the handle lever, serves to maintain the lever in the position shown in Fig. 7. Rotation of the lever in a clockwise direction is limited by engagement of the rear faces of arms 45 with the abutments 50 on the housing 14. When during the closing movements, however, the roller 43 rides down the cam surface of the strike 44, the lever 46 and the handle carried thereby are rocked in a counter-clockwise direction about the fulcrum 22. This movement of the lever, which is transmitted to the hand of the operator, makes this form of latch apparently less smooth in its operation. The simplicity of its structure, however, resulting from employment of fewer parts and the resultant economy in manufacture, commend its use in many installations.

In this form of latch the locking eye 51 adapted to receive the hasp of a padlock or the like is fulcrumed upon the fulcrum pin 22 and projects upwardly through the opening 52 in the forward arm of the lever. The tail 53 of the eye member, resting against the abutment 48, limits the upward movement of the eye and, consequently, prevents unlatching movement of the lever 46.

The shape, proportion and structural details of the various parts illustrated and described may obviously be varied within considerable limits without departing from the spirit of the invention as defined in the following claims.

I claim:

1. A latching device for a vertically swinging closure of a cabinet having a strike positioned outside the confines of the closure, comprising; a housing mounted upon the closure and having a portion projecting outwardly over said strike, said strike having a downwardly facing shoulder, a latch pivoted to said housing and having holding means thereon below its pivot to engage said shoulder, spring means constantly urging said latch in one direction about its pivot into position to engage said holding means under said shoulder, a handle lever pivoted to said housing and extending outwardly thereof and terminating in a handle portion, means on said lever below the pivot thereof positively engaging said latch below its pivot whereby lifting said handle portion will swing said latch outwardly to be disengaged from said shoulder and lift said closure to open position.

2. A device as set forth in claim 1 in which said housing and latch are provided with interengaging stop means to limit the swinging of said latch relative to said housing.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
Re. 15,908	Copeman	Sept. 2, 1924
1,391,114	Huber	Sept. 20, 1921
1,575,493	Lang	Mar. 2, 1926
1,656,159	Anderson	Jan. 17, 1928
2,087,143	Geske et al.	July 13, 1937