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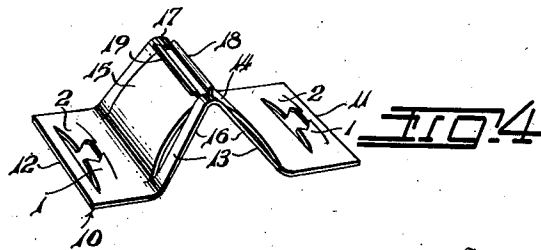
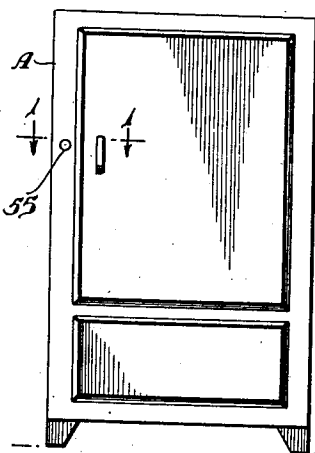
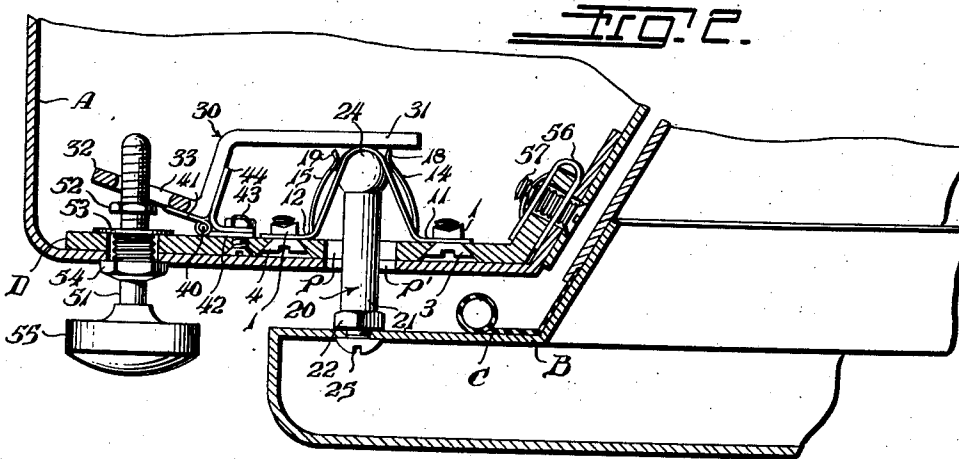
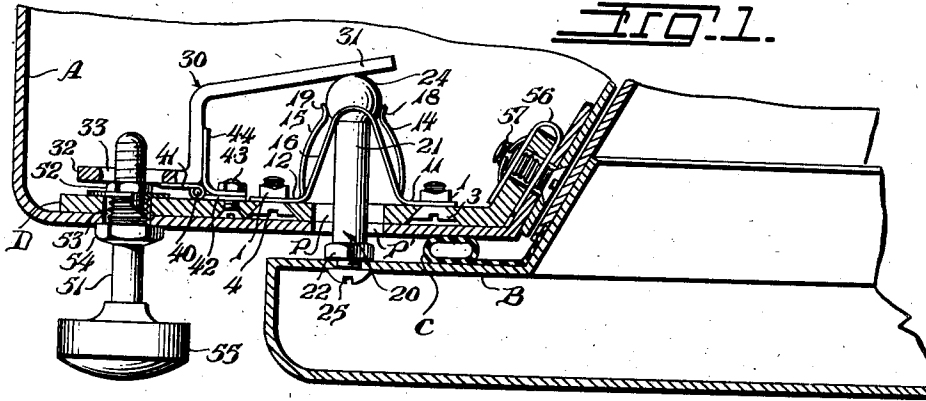
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2,185,161

SPRING CATCH RELEASE

Filed Dec. 10, 1938

2 Sheets-Sheet 1



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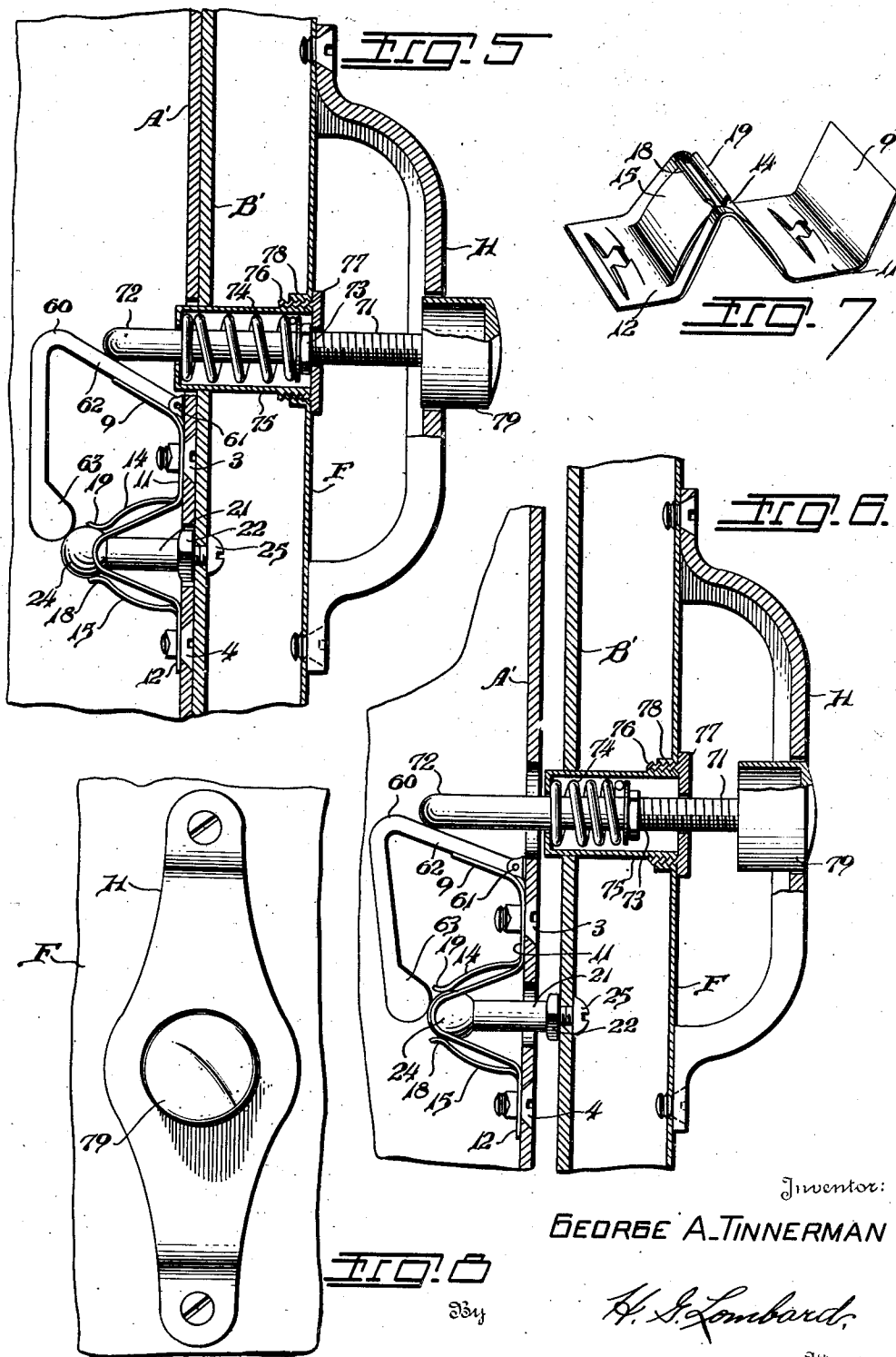
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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

2,185,161

SPRING CATCH RELEASE

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14 Claims. (Cl. 292—254)

This invention deals in general with a combined spring catch and release mechanism therefor and relates more particularly, to an improved means for releasing a spring catch employed as the latch or locking device for doors, drawers and similar swinging or sliding closures of refrigerators and similar casing and cabinet structures.

The present application is a continuation in part of a prior copending application Serial Number 222,893, filed August 3, 1938, and which has since issued as United States Patent No. 2,151,284, March 21, 1939.

In the said copending application there is disclosed a preferred form of spring catch construction of general utility and the present invention has for its principal purpose the provision of a release mechanism, also of general utility, which may be readily embodied in any installation of such a spring catch or similar latching mechanism.

A further primary object is to provide a simple, inexpensive and practical form of device for releasing such a spring catch mechanism or the like as embodied in the door latch of a refrigerator or similar cabinet structure, and one which may be easily and quickly actuated by the user in opening the door in a minimum of effort.

Another object and purpose of the present invention is to provide a compact, relatively simple, inexpensively constructed, durable and serviceable spring catch release mechanism which may be readily actuated by simple pressure of the elbow, wrist or the like in addition to the usual operation by hand in the manner of a substantial push-button operating device.

Still another object of the invention is to provide a spring catch and releasing device of this character which may be embodied in a unitary plate attachment and readily mounted in a refrigerator cabinet construction or the like without marring or in any way detracting from the finish and exterior appearance thereof.

Further objects and advantages of the invention and other new and useful features in the construction, arrangement, and general combination of parts will be readily apparent to those skilled in the art as a description thereof proceeds with reference to the accompanying drawings in which like reference characters designate like parts throughout, the same and in which:

Fig. 1 is a horizontal sectional view as on line I—I of Fig. 3, of a door and cabinet body of a refrigerator or the like, showing the improved spring catch and release mechanism in the normal operative position of the parts thereof when the door is closed;

Fig. 2 is a similar view showing the release mechanism as actuated, the parts of the spring catch being shown in the position they assume on opening of the door;

Fig. 3 is a front view in elevation of a refrigerator cabinet or the like illustrating the mounted position of the push-button operating means for the spring catch release;

Fig. 4 is a perspective of the keeper member of the spring catch device;

Fig. 5 is a vertical sectional view of a door and door frame structure showing a further embodiment of the invention with the parts of the spring catch and release mechanism in the position they occupy on closing of the door;

Fig. 6 is a similar view showing the push-button release mechanism as actuated to disengage the cooperating parts of the spring catch on opening of the door;

Fig. 7 is a perspective of an alternate form of spring keeper employed in the embodiment of the invention shown in Figs. 5 and 6; and,

Fig. 8 is a front elevational view of a cabinet door section showing the combined push-button and handle arrangement employed in this form of the invention.

Referring now more particularly to the drawings, Fig. 1 shows an installation embodying a preferred form of spring catch comprising a pair of substantial snap fastening members, namely, spring keeper 10, and cooperating strike 20, mounted on the opposed, abutting wall members A, B, of the usual cabinet casing and hinged door or similar closure in a refrigerator or the like, a typical form of which is illustrated in Fig. 3. Usually there is a compressible rubber sealing strip C between the door and door frame or casing and the fastening members comprising the catch are so mounted in a completed installation that on closing of the door, they are practically concealed within the casing to provide a uniform, substantially unbroken exterior appearance to the cabinet or other structure. An important advantage of this preferred form of spring catch resides in the fact that the door or other closure may be fully and tightly closed and under more than the usual amount of spring tension whereby looseness of the door in closed position is eliminated and squeaks, rattling and other objectionable noises are prevented.

It will be understood that the cooperating fastening members of the spring catch may be mounted as desired on any pair of separable,

abutting wall surfaces but where employed as a door catch, they are of course, preferably mounted adjacent the superposed free edges of the door and casing. As shown in Fig. 1, however, the spring keeper 10 and the release mechanism, presently to be described, are more advantageously secured to a mounting plate D to provide a unitary attachment which may be readily installed in a refrigerator cabinet structure or the like in a minimum of time and effort which of course is most important on assembly line systems in present day methods of mass production.

As shown in Fig. 4, the spring keeper is simple in construction and thereby may be cheaply produced from an inexpensive section of sheet metal preferably tempered spring steel for most effective toughness and durability but, of course, may be provided from any other suitable material such as cold rolled steel and the like. The strip or section of metal is suitably bent into a substantial, inverted V-shape providing between the base flanges 11, 12, an intermediate, foreshortened base portion 13 comprising a pair of resilient spring arms 14, 15. It will be understood that the spring arms are provided from the strip by suitable longitudinal slits extending on either side of a transverse slit in the center area thereof such that when the strip is bent into the inverted V-shape aforesaid, the said spring arms extend free from the base flanges 11, 12 intermediate supporting elbows 16, 17. The spring arms are therefore disposed in substantial face-to-face relation and being resilient are readily adapted to receive therebetween a cooperating strike element 20, designed to gradually spread the spring arms apart and permit the same to spring into holding position with a headed portion provided thereon, as presently to be described.

A resilient keeper of the type referred to is preferably formed with the spring arms 14, 15, thereof inclined toward each other and slightly bowed as shown, with the extremities thereof spaced a suitable distance apart and curved or rounded, as at 18, 19, presenting substantial camming lip elements adapted to permit the head of the strike to readily enter and seat therebetween on being applied thereto in one direction and be easily withdrawn therefrom upon movement in an opposite direction. The spring arms are supported in their inclined relation to each other by the elbows 16, 17, and also by the base flanges 11, 12 which fixedly secure the entire keeper to the supporting surface and thereby maintain the spring arms at all times in operative position to receive and effectively engage the cooperating strike.

Inasmuch as the keeper is constructed entirely of sheet metal, the base flanges 11, 12 are admirably suited for the provision of integral bolt or screw engaging means in the form of cooperating tongues 1, 2, or the like, which may be struck and formed therefrom and designed for engaging a securing bolt or screw substantially in the manner of a self locking nut. Such integral bolt receiving means in the base flanges may, of course, be provided in any other suitable form or construction depending on the strength required and the use to which the device is put, so long as the elements thereof threadedly engage the bolts as they are driven home. However, it has been found that such bolt receiving means prepared in the form of cooperating tongues, as shown, are the most efficient and most practical in that they are possessed of unusual inherent strength

and will not collapse or pull through on tightening of the bolt nor loosen from fastening engagement under constant strain, heavy usage and rough handling of an installation in which they are employed. This takes place by reason of the fact that such tongues tend, more effectively, to move toward each other and dig into the grooves intermediate adjacent threads on tightening of the bolt or screw and thereby become embedded in the root diameter of such threaded member in locked, frictional fastening engagement therewith. Thus, any vibration, jarring or strain taking place in a completed mounting cannot cause displacement, reverse rotation or tend toward unscrewing of the threaded fastening member from applied fastening position. It will therefore be appreciated that in the provision of such integral bolt receiving means, the use of individual threaded nuts or lock washers of any kind is entirely dispensed with thereby making for a considerable saving not only in the cost of such nuts and lock washers, but also materially reducing the expense and labor involved in the tedious, time-consuming assembling operations which such fastenings require. Naturally the keeper may be mounted by its base flanges 11, 12 in any other expedient manner as by spot-welding, riveting or conventional nuts and bolts and it is therefore to be understood that the present invention is not in any way limited to the type of fastening means shown comprising the preferred integral bolt engaging tongues 1, 2.

In any event, referring to Fig. 1, it will be seen that the resilient keeper thus provided is readily mounted to the plate member D through its base flanges 11, 12 by such bolt engaging means 1, 2, in threaded fastening engagement with securing bolts or screws 3, 4. The heads of the securing bolts are preferably countersunk such that the exterior of said plate member is a substantial plane surface and may be brought into flush engagement with the adjacent wall member A in a completed installation as shown. In mounting the keeper, a passage P, for the cooperating strike is provided in the plate member D and aligned with a similar passage P' in the wall member A of the cabinet body, the keeper being suitably adjusted to dispose the spring arms 14, 15 thereof in substantial alignment with such passages in position to receive evenly and uniformly therebetween the head of the cooperating strike mounted on the abutting wall member B comprising the door of the refrigerator.

The strike 20, may be provided in any suitable form for cooperative engagement with the spring arms of the keeper and naturally may be constructed from either resilient or non-resilient material. A preferred form of strike is illustrated and comprises a solid body portion 21 provided with a tool engaging surface 22 at one end and a substantial annular or ball-type head element 24 at the other. The said body portion of the strike being solid, is readily tapped to provide a recess for receiving a bolt 25 mounting the same in desired position on the wall member B, but of course may be secured by any other suitable fastening means.

With the resilient keeper and cooperating strike mounted on their respective wall members in the manner aforesaid, it will be understood that such latching members are thereby arranged to be moved into and out of substantial snap fastening engagement by straight longitudinal or axial movement. During this movement, by reason of the annular or ball configuration of the striker

head 24, the spring arms of the keeper are caused to gradually spread apart and permit the striker head to pass therebetween and seat the rounded undersurfaces thereof on the curved lip elements 18, 19 of the spring arms in the abutting relation of the wall members in the fully closed position of the door as shown in Fig. 1.

As best seen in Fig. 4, the actual contact elements of the improved catch consist of the curved, rounded lip elements 18, 19 of the spring arms of the keeper and the rounded surfaces of the annular or ball-type striker head 24. Thus the strike is adapted to effectively engage the spring arms from any of several angles if necessary in what may be termed a universal contact and accordingly, the keeper and strike may be mounted in various relative positions to have a wide range of use on different types of cabinets and similar structures. A further advantage of this construction resides in the fact that should the keeper and strike be somewhat misaligned such that the striker head moves one of the spring arms more than the other, such inaccuracy is readily compensated for by the engagement of the rounded surfaces of the striker head in universal, close contact with the curved, rounded cam surfaces of the lips 18, 19 of the spring arms. This arrangement together with the foreshortened base construction of the keeper providing for relatively long spring arms, prevents undue distortion and strain in the spring arms and otherwise minimizes danger of fracture of the same by reason of crystallization incident to continuous wear over an extended period of use.

In releasing the members of the catch from the fastening position shown in Fig. 1, a substantial axial pull exerted on the strike causes the rounded undersurfaces of the ball-type head portion 24 thereof to cam the rounded surfaces of the curved lips 18, 19 of the spring arms to spread the same apart and thereby permit the strike to be disassociated from the keeper and easily and quickly withdrawn to the open position of the door or other closure. Ordinarily, the catch is readily released by such axial pull exerted on the strike by means of a suitable handle mounted on the door of the refrigerator cabinet or similar casing as illustrated in Fig. 3. The operation of such a handle is often inconvenient, particularly with the hands full as frequently is the case in carrying objects to the refrigerator, and as previously set forth one of the primary objects of the present invention is to provide a conveniently located release device which may be readily operated as by simple arm pressure of the elbow or the like to cause the door or other closure to swing automatically to open position.

It will be noted that in the fully engaged position of the strike with the spring arms of the keeper a substantial portion of the annular or ball-head 24 of the strike projects beyond the extremities of the spring arms 14, 15, in which relation a suitable form of lever mechanism may be employed to operatively engage the projecting portion of the ball head strike and otherwise exert a camming action thereon when actuated to force the strike in an axial direction toward disengagement from the spring arms of the keeper.

It is to be understood that such a lever mechanism may assume any of a number of forms and may embody either a lever type handle mechanism or a push-button plunger operating means. Thus as shown in Fig. 1, the releasing device may comprise a pivotally mounted lever 30, one end

of which is suitably formed to provide a cam surface 31 adapted to bear against the projecting head 24 of the strike with the other end thereof fashioned into a substantial crank 32 designed to be actuated by a push button arrangement as presently to be described. The lever is suitably formed intermediate its length to include a flange surface to which one section 41 of a hinge may be secured in any suitable manner as by spot welding. The opposite section 42 of the hinge is secured to the plate D by means of a suitable bolt and nut fastening 43 such that the lever is pivotally mounted relative to said plate by a fixed connection.

In order to maintain the lever 30 in its normal retracted position relative to the projecting portion of the striker head 24, suitable spring means may be employed to bias the lever and urge the same in a counter-clockwise direction out of engagement with the strike. Preferably a flat spring 44 as shown is employed and fastened at one end to the plate D by the same bolt and nut fastening 43 securing the section 42 of the hinge pivotally mounting said lever 30 as aforesaid. Thus, by this arrangement the crank portion 32 of the lever extends normally in a position to be readily engaged by any suitable operating member to actuate the lever 30 about its pivot 40 against the force of said spring 44.

A preferred type of such operating member may assume the form of a substantial push-button arrangement comprising a shaft or a spindle 51 provided with suitable threads carrying a stop nut 52 permitting axial adjustment thereof with respect to the wall member A on which it is mounted. The spindle is mounted for axial sliding movement with respect to plate D by means of a ferrule 53 having a flange at one end seating against said plate and an exteriorly threaded sleeve onto which is secured an ornamental escutcheon cover plate 54 serving also as a fastening means for mounting the plate in a completed installation. Thus said spindle is mounted for axial sliding movement relative to the mounting plate D and in this relation has one end extending to the front of the cabinet casing where it is provided with suitable knob or push-button 55 in any desired manner. The opposite end thereof projects to the rear of the casing body in operative engagement with the bell crank portion 32 of the actuating lever; this involves the provision of an elongated slot 33 in said crank portion into which the inner end of the spindle is disposed with the stop nut carried thereby positioned in abutting relation with the adjacent underface of the crank. The spindle is freely movable in said slot of the crank and as shown in Fig. 2 when the spindle is pushed inwardly said stop nut 52 becomes effective to actuate the lever 30 about its pivot mounting 40 in the operation for releasing the spring catch as presently to be described.

From the foregoing it is to be appreciated that the instant construction involves a relatively simple arrangement for mounting the respective parts of the spring keeper and release mechanism in a refrigerator construction or the like inasmuch as only the bolts 3, 4 are required for securing the keeper in desired position on the mounting plate D, while bolt and nut fastening 43 together with the ferrule 53 are all that is required to secure the release mechanism thereto in providing the desired unitary plate attachment. In this respect, it will be understood that in assembling the unitary plate attachment, the ferrule, spindle and stop nut carried thereby are

all held in operative position by the crank portion 32 of the lever under the force of said flat spring 44. The plate assembly is in turn secured to the door frame body or casing A by the escutcheon cover plate 54 and suitable U-shaped clip devices 56 clasp an edge of the plate and providing bolt engaging means for threadedly engaging a bolt fastenings 57 securing the same to the adjacent vertical face of said casing. A suitable form of housing (not shown) may be employed with the mounting plate D or secured to the cabinet structure to fully encase the parts of the spring catch and release mechanism in protecting the same against moisture and otherwise preventing the entrance of heat into the refrigerator cabinet.

In the closed position of the door the respective parts of the spring catch and release mechanism occupy substantially the relation shown in Fig. 1. To open the door, the plunger-like spindle is pushed inwardly by means of the knob or push button 55 whereupon the stop nut 52 carried thereby engages the crank 32 of the lever to actuate the same as shown in Fig. 2, to move said lever about its pivot mounting 40 against the force of the flat spring 44. Thus the cam face extremity 31 of the lever bearing against the projecting head of the strike, acts to force said strike axially toward disengagement from the spring arms of the keeper. It will be understood that relatively little force is required for this operation inasmuch as the lips 18, 19 of the spring arms are preferably fashioned in the manner of rounded cam surfaces for engagement with the rounded surfaces of the ball type striker head thus reducing friction therebetween and enabling each to have substantial camming action over the other. In the further movement of the strike toward full release from the keeper, this camming action is most important as will be clear from Fig. 2 wherein the lips of the spring arms are shown as just passing the widest point of camming action with the rounded surfaces of the striker head, and are thereafter effective to cam against the top surfaces of the striker head to thrust the strike outward by a substantial kick in the door opening direction. This camming action of the striker head with the cam engaging lips 18, 19 of the spring arms may be increased or diminished by varying the position of the strike and the shape of the striker head, but in any event it will be understood that when the striker head is forced back to a point out of effective holding engagement with the spring arms, said cam lips 18, 19 are effective to engage the outer rounded surfaces of the ball head 24 of the strike in forcing the same in a direction to swing the door open, aided substantially by the expansion of the rubber sealing strip C or other packing forming the seal between the door and door frame structure. As a consequence, only a relatively light force is required on the push button 55 to open the door such that there is no necessity whatsoever for special spring pressed plunger devices and the like for forcing the door open upon release of the lock or latch as in similar structures heretofore employed.

By modifying as necessary or desirable the shape and disposition of the parts, the invention may be adapted to various refrigerator constructions, cabinet casings and other box structures of general utility; furthermore, since the releasing device fully unlocks the door as aforesaid, the invention makes it quite practical to dispense with the usual door opening handle, thus

simplifying and reducing the cost of the latch or catch to that extent. And inasmuch as the releasing of the strike is effected in this invention by a simple, pushing movement of the hand, arm or elbow, opening of the door can be effected with a minimum of effort without reaching around or standing in front of the door, such that the door is unimpeded and may swing freely open.

Figs. 5-8 inclusive show a further embodiment of the invention comprising a number of features directed to a simplified form of release mechanism together with a combined push-button handle arrangement mounted entirely on the door such that the respective abutting wall members A', B' may be brought into close, flush engagement in the closed position of the door and casing. As illustrated in Figs. 5 and 6 the spring keeper and strike mechanism are substantially similar in operation and use to that shown in the preferred embodiment of the invention of Figs. 1 to 4 inclusive. The spring keeper however is formed with an integral tail section 9, Fig. 7, which serves as a substantial spring for maintaining the actuating lever in its normally retracted relation with respect to the strike in position to be actuated by the special form of push-button plunger device as presently to be described.

In this form of the invention the actuating lever for releasing the spring catch assumes the form of a substantial bell crank 60 one end of which is pivotally mounted as at 61, to the wall member A', and the other end formed in the manner of a substantial cam element 63 designed to bear against the projecting head 24 of the striker head and otherwise exert an axial backward force on said strike to disengage the same from the spring arms of the keeper.

The operating means for the actuating lever 60, as in the previously described form of the invention, comprises a substantial plunger device but is preferably provided in the manner of a combined push-button and handle attachment which may be mounted onto the outer facing of the door structure by an operation taking place entirely from the front side of the door. Accordingly in providing the push button operating means in the manner of a separate attachment, a spindle 71 is provided of sufficient length to extend from a point without the casing into the interior thereof with its extremity 72 in substantial abutting relation with the adjacent cam face 62 of the bell crank 60. Threadedly mounted on said spindle is a stop nut 73 holding a coil spring 74 in assembled relation in an elongated ferrule 75. The said ferrule has a threaded extremity for threadedly engaging the internal threads of sleeve 76 of an escutcheon cover plate 77 in completing the housing for the coil spring 74 and stop nut 73. Thus, the ferrule 75 with the shank 60 of the spindle 71 extending therethrough as shown, provides a separate plunger unit which may be readily attached to the front finish panel F of the door by threadedly engaging the exterior threads of sleeve 76 of the escutcheon cover plate 77 with a threaded hub member 78 provided on said finish panel and projecting inwardly thereof.

The spindle is provided on its outer end with a push button 79 extending through an opening in the central portion of a handle H, Fig. 8, and otherwise disposed in normal projecting relation thereto as shown in Fig. 5, the handle being secured to the front panel of the door by any suit-

able fastening means such as self-tapping screws or the like.

Referring to Fig. 6 it will be understood that in the operation for opening the door, the push button 79 is depressed as necessary to cause the inner extremity 72 of the spindle to engage the cam surface 62 of the pivotally mounted lever 60. The cam element 63 of the lever thereby becomes effective to cam against the projecting head 24 of the strike to force the same from engagement with the spring arms of the keeper in the direction of opening of the door, the rounded cam surfaces 18, 19 of the spring arms thereupon serving to cam against the outer rounded surfaces of the striker head 24 to exert a kick on the strike and thrust the door automatically open substantially in the manner described with reference to the preferred form of the invention shown in Figs. 1-4 inclusive.

And while the invention has been described in detail with specific examples, such examples are intended as illustrations only, since it will be apparent to those skilled in the art that other modifications in the construction, arrangement and general combination of parts may be devised without departing from the spirit and scope of the invention. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, with all changes falling within the scope, meaning and range of equivalency of the claims intended to be embraced therein.

What is claimed is:

1. A release device for a spring catch comprising a cooperating strike and keeper mounted on abutting wall members forming the closure and frame of a cabinet structure or the like, said keeper comprising cooperating spring arms frictionally engaging the strike to hold said wall members in latched relation, said release device for said spring catch comprising a lever mounted in position to disengage said strike from said spring arms of the keeper, said lever when actuated exerting an axial force on said strike toward disengagement from said spring arms of the keeper and separation of said wall members from latched relation, and means for actuating said lever.

2. A release device for a spring catch comprising a cooperating strike and keeper mounted on abutting wall members forming the closure and frame of a cabinet structure or the like to hold said wall members in latched abutting relation, said release device for said spring catch comprising a pivotally mounted lever having a cam surface adapted for camming engagement with said strike, said lever when actuated exerting a substantial axial force on said strike toward disengagement from said keeper and separation of said wall members from latched relation, and means for actuating said lever comprising an operating member engaging said lever to cause movement thereof on its pivot mounting.

3. A release device for a spring catch comprising a cooperating strike and keeper mounted on abutting wall members forming the closure and frame of a cabinet structure or the like, said keeper comprising cooperating spring arms engaging the strike to hold said wall members in latched abutting relation, said release device for said spring catch comprising a lever having a cam surface and pivoted for camming engagement with said strike, said lever when actuated

exerting a substantial axial force on said strike toward disengagement from said spring arms of the keeper and separation of said wall members from latched relation, and means for actuating said lever comprising an operating member projecting at the face of said cabinet structure or the like and adapted to effect movement of said lever on its pivot mounting.

4. A release device for a spring catch comprising a cooperating strike and keeper mounted on abutting wall members forming the closure and frame of a cabinet structure or the like, said keeper comprising cooperating spring arms having camming lip elements frictionally engaging the strike to hold said wall members in latched relation, said release device for said spring catch comprising a pivotally mounted lever adapted for directly engaging said strike, said lever when actuated exerting a substantial axial force on said strike toward disengagement from said spring arms of the keeper and separation of said wall members from latched relation, and means for actuating said lever comprising an operating member projecting at the face of said cabinet structure or the like and engaging said lever to cause movement thereof on its pivot mounting.

5. A release device for a spring catch comprising a cooperating strike and keeper mounted on abutting wall members forming the closure and frame of a cabinet structure or the like, said keeper comprising cooperating spring arms having camming lip elements frictionally engaging a projecting head on the strike to hold said wall members in latched abutting relation, said release device for said spring catch comprising a lever pivoted to directly engage the strike in forcing said strike toward disengagement from said camming lip elements of the spring arms in the separation of said wall members from latched relation, said camming lip elements of the spring arms being adapted to exert a substantial kick on said strike in the separation of said wall members from latched relation, and means for actuating said lever.

6. A release device for a spring catch comprising a cooperating strike and keeper mounted on abutting wall members forming the closure and frame of a cabinet structure or the like, said keeper comprising cooperating spring arms having camming lip elements frictionally engaging a projecting head on the strike to hold said wall members in latched abutting relation, said release device for said spring catch comprising a pivotally mounted lever having a cam surface adapted for camming engagement with the projecting head of said strike, said lever when actuated exerting a substantial axial force on said strike toward disengagement from said spring arms of the keeper and separation of said wall members from latched relation, said camming lip elements of the spring arms being adapted to exert a substantial kick on the projecting head of said strike in the separation of said wall members from latched relation, and means for actuating said lever comprising an operating member projecting at the face of said cabinet structure or the like and adapted to effect movement of said lever on its pivot mounting.

7. A release device for a spring catch in which a strike carried by the door of a cabinet structure or the like is engaged by the spring arms of a cooperating keeper mounted in said cabinet structure to hold the door in closed position, said release device comprising a lever pivoted to engage said strike in opening the door, said lever having

a cam surface adapted for camming action with said strike to force the same from engagement with the spring arms of the keeper, and operating means projecting at the face of said cabinet structure or the like for actuating said lever.

8. A release device for a spring catch in which a strike carried by the door of a cabinet structure or the like is engaged by camming lip elements provided on the spring arms of a cooperating keeper mounted in said cabinet structure to hold the door in closed position, said release device comprising a pivotally mounted lever having a cam surface adapted to directly engage said strike to force said strike from engagement with said camming lip elements of the spring arms of the keeper in opening the door, and means mounted on said cabinet structure or the like for actuating said lever.

9. A release device for a spring catch in which the projecting head of a strike carried by the door of a cabinet structure or the like is engaged by camming lip elements provided on the spring arms of a cooperating keeper mounted in said cabinet structure to hold the door in closed position, said release device comprising a lever pivoted to engage said strike in order to force said strike from engagement with the camming lip elements of the spring arms of the keeper in opening the door, said camming lip elements being adapted to exert a substantial kick on said strike to thrust the same in the door opening direction incident to the action of said lever, and means for actuating said lever comprising an operating member projecting at the face of the cabinet structure or the like.

10. A release device for a spring catch in which the projecting head of a strike carried by the door of a cabinet structure or the like is engaged by camming lip elements provided on the spring arms of a cooperating keeper mounted in said cabinet structure to hold the door in closed position, said release device comprising a pivotally mounted lever having a cam surface adapted to engage the head of said strike when held by the keeper in the closed position of the door to force said strike from engagement with the camming lip elements of the spring arms of the keeper in opening the door, said camming lip elements being adapted to cam the projecting head of the strike and exert a substantial kick thereon to thrust the same in the door opening direction incident to the movement of said lever, and means for actuating said lever comprising an operating member adapted to move said lever on its pivot mounting to engage the strike.

11. A release device for a spring catch in which a strike carried by the door of a cabinet structure or the like is engaged by the spring arms of a cooperating keeper in the cabinet structure to hold the door in closed position, said release device comprising a unitary plate attachment mounted in said cabinet structure and having secured thereto said keeper and a lever pivoted to engage said strike and force the same from holding relation with the spring arms in opening the door, and means for actuating said lever comprising an operating member projecting at the face of said cabinet structure.

12. A release device for a spring catch in which the projecting head of a strike carried by the door of a cabinet structure or the like is engaged by camming lip elements provided on the spring arms of a cooperating keeper mounted in said cabinet structure to hold the door in closed posi-

tion, said release device comprising a unitary plate attachment mounted in said cabinet structure and having secured thereto the keeper, a spring, and a pivoted lever having a cam surface adapted to engage the strike to force the same from engagement with the camming lip elements of the spring arms of the keeper in opening the door, said spring maintaining said lever in normal operative relation to said strike, said camming lip elements of the keeper being adapted to cam the projecting head of the strike and exert a substantial kick thereon to thrust the same in the door opening direction incident to the movement of said lever, and means for actuating said lever to move the same on its pivot mounting to engage the strike, said actuating means comprising a substantial push-button plunger mechanism disposed normally in projecting relation at the face of the cabinet structure in position to be readily operated by the user.

13. A release device for a spring catch in which the projecting head of a strike carried by the door of a cabinet structure or the like is engaged by camming lip elements provided on the spring arms of a cooperating keeper mounted in said cabinet structure to hold the door in closed position, said release device comprising a pivotally mounted lever having a crank portion and a cam surface adapted to engage the strike to force the same from engagement with the camming lip elements of the spring arms of the keeper in opening the door, a spring maintaining said lever in normal operative relation to said strike, said camming lip elements of the keeper being adapted to cam the projecting head of the strike and exert a substantial kick thereon to thrust the same in the door opening direction incident to the movement of said lever, and means for actuating said lever to move the same on its pivot mounting to engage the strike, said actuating means comprising a substantial plunger mechanism having a spindle in operative engagement with the crank portion of said lever and a push-button operating device disposed normally in projecting relation at the face of the cabinet structure to be readily operated by the user.

14. A release device for a spring catch in which the projecting head of a strike carried by the door of a cabinet structure or the like is engaged by camming lip elements provided on the spring arms of a cooperating keeper mounted in said cabinet structure to hold the door in closed position, said release device comprising a substantial bell crank lever pivotally mounted at one end and provided on its other end with a cam surface adapted to engage the strike to force the same from engagement with the camming lip elements of the spring arms of the keeper in opening the door, said keeper including a spring element maintaining said lever in normal operative relation to said strike, said camming lip elements of the keeper being adapted to cam the projecting head of the strike and exert a substantial kick thereon to thrust the same in the door opening direction incident to the movement of said lever, and means for actuating said bell crank lever to move the same on its pivot mounting to engage the strike, said actuating means comprising a combined handle and push-button plunger mechanism disposed normally in projecting relation at the face of the cabinet structure in position to be readily operated by the user.