

Aug. 18, 1964

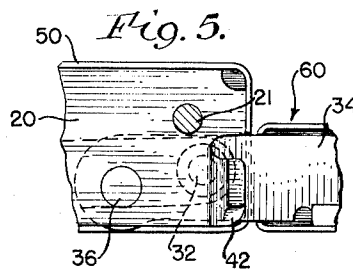
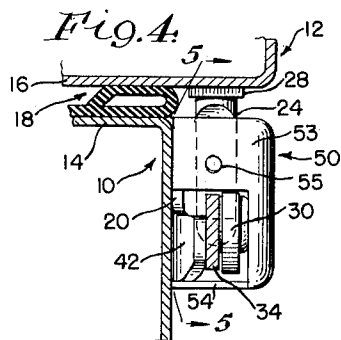
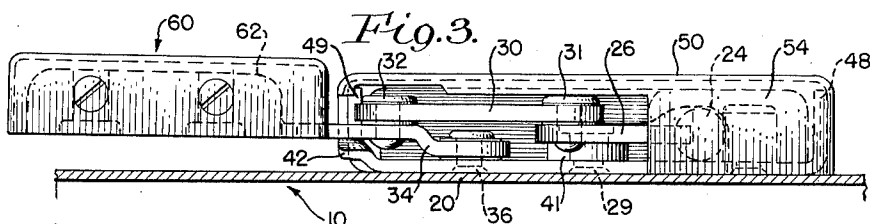
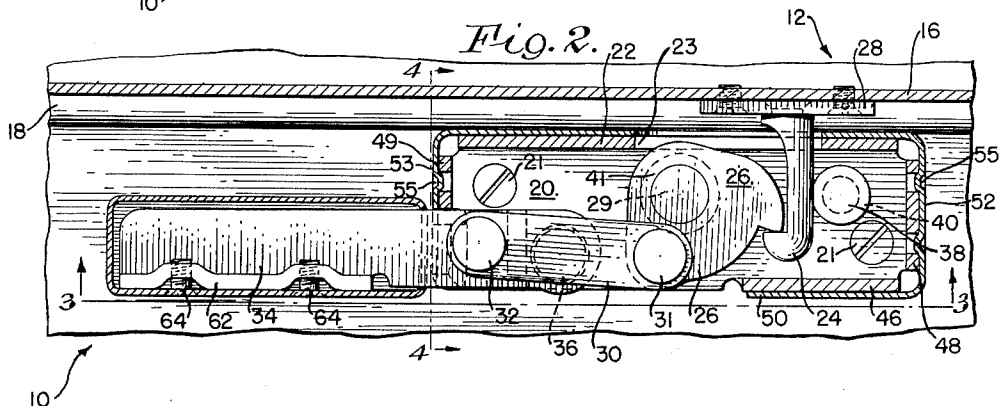
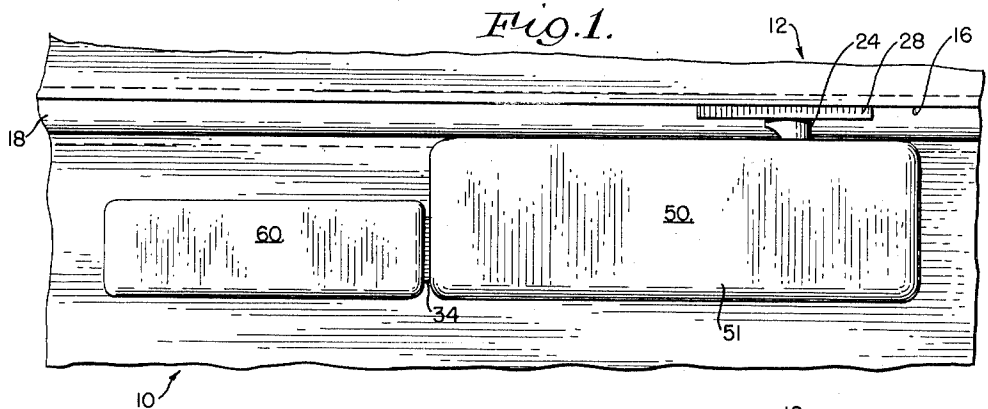
M. T. PHELPS

3,145,040

LATCH MECHANISM

Filed Sept. 16, 1963

2 Sheets-Sheet 1



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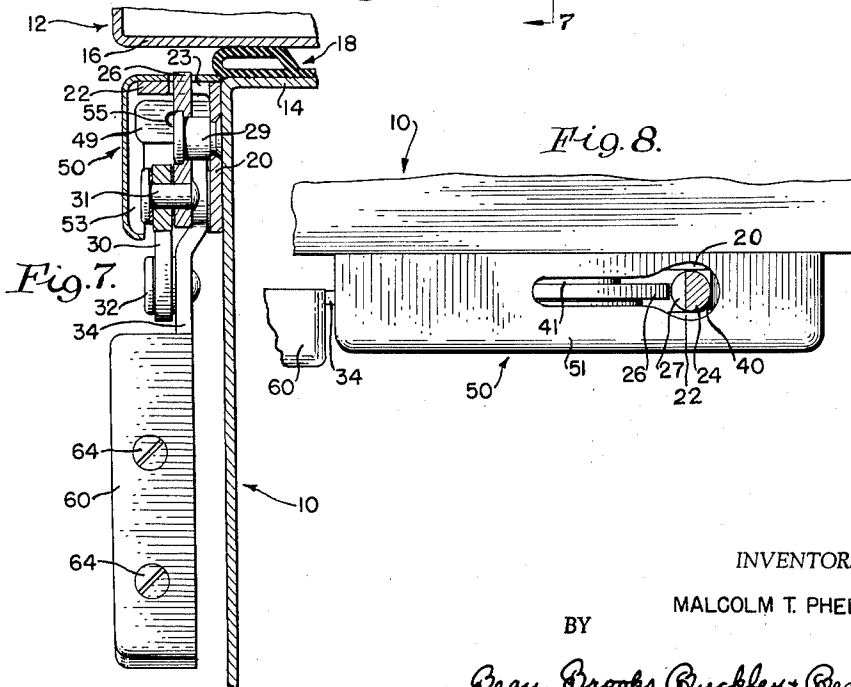
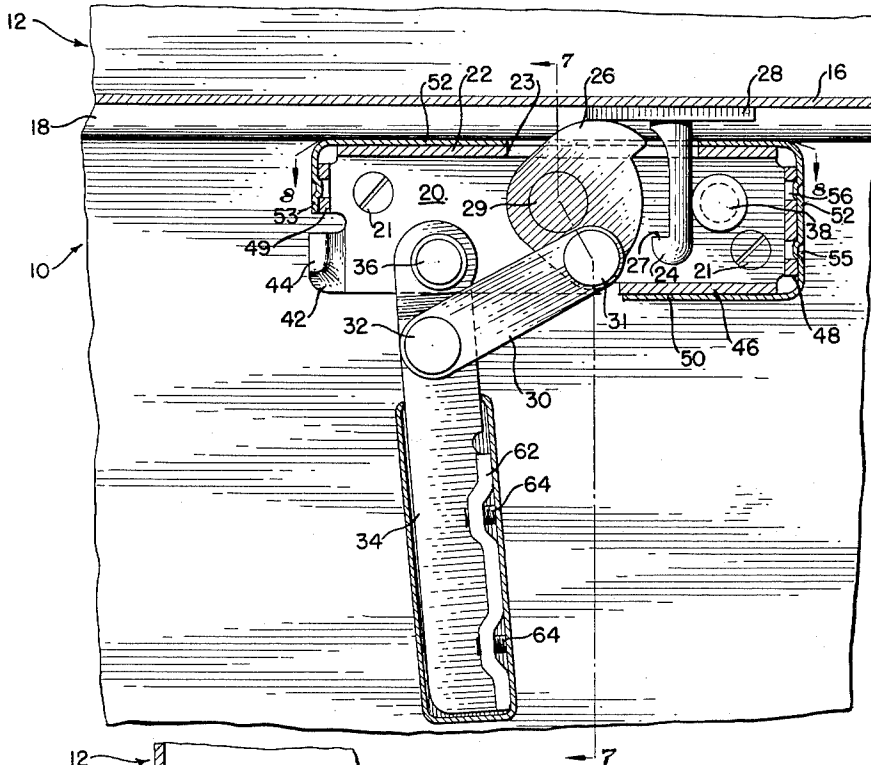
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2 Sheets-Sheet 2

Fig. 6.



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3,145,040

LATCH MECHANISM

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8 Claims. (Cl. 292-304)

This invention relates to pull-down and hold-down latches for cabinet covers, such as in the case of burial caskets of the so called sealer type, and more particularly to an improved latch for closing and securing the cover on a casket having an air-sealing gasket of substantial thickness. Specifically, the present invention relates to further improvements in latches of the type referred to in my earlier Patent No. 3,035,862.

As in the case of my prior patent aforesaid, it is a primary object of the present invention to provide a latch that is of simple construction; easily manufactured; and that may be assembled on a casket or the like as and when desired with utmost facility; and which when mounted will occupy a protected and inconspicuous position beneath the overhanging edge of the casket cover when the cover is in closed position.

Another object of the present invention is to provide an improved latch device as aforesaid which will have a greater "pull-down" range than prior latches for similar purposes, and which is therefore operable with improved facility in conjunction with thicker gasket devices than heretofore.

Another object is to provide in a latch as aforesaid improved means to hold it against inadvertently being released.

Another object is to provide an improved latch device as aforesaid which avoids any tendency to cam the casket cover horizontally when the latch is being operated to lever the cover down into casket closing and gasket compressing position.

Other objects and advantages of the invention will be apparent from the following specification, and the accompanying drawing wherein:

FIG. 1 is a side elevational view of a latch of the present invention; the latch being shown in operative position on a casket, and holding the cover thereof in closed position;

FIG. 2 is a vertical longitudinal sectional view through the device of FIG. 1;

FIG. 3 is a bottom plan view of the latch, taken as along line 3-3 of FIG. 2;

FIG. 4 is a fragmentary sectional view taken substantially along line 4-4 of FIG. 2;

FIG. 5 is a fragmentary section taken along line 5-5 of FIG. 4;

FIG. 6 is a view similar to FIG. 2 but showing the positions of the operative parts when the latch is in fully released condition; and

FIGS. 7 and 8 are fragmentary sectional views, taken substantially along lines 7-7 and 8-8, respectively, of FIG. 6.

Referring by way of example to the drawing herewith, the invention is illustrated in conjunction with a casket 10 having a cover 12, and it will of course be understood that the cover 12 will usually be hinged thereto along one side of the casket. As best shown in FIGS. 4 and 7, the side walls of the conventionally constructed metal casket terminate at their upper edges in inturned flange portions 14; and the cover member 12 also includes an inturned horizontal flange 16 which overlaps the casket flange 14 and preferably extends beyond the casket side wall profile to approximately the extent shown in FIGS. 4 and 7.

To provide for air-sealing the casket, the inturned flange 14 mounts a sealing device as indicated at 18. As

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shown herein, the sealing member 18 may, for example, be formed tubular in cross section, or of sponge-like resilient material, or the like, so as to be adapted to be compressed between the flanges 14, 16 when the cover 12 is pulled down in tight closing position. Thus, an air protective seal is provided between the casket and its cover when the cover is drawn downwardly by the latches of the present invention and into fully closed position. Whereas the casket side wall and the cover and the intermediate sealing devices are all shown only fragmentarily herein, it will be appreciated that the front end rear walls and the end walls of the receptacle, as well as the cover and the sealing material, will all be continued uninterrupted perimetally of the casket, to provide the desired casket closing and sealing effect.

The present invention relates to the latch device by which the cover 12 may be properly secured to the receptacle 10. It will of course be appreciated that any desired number of latches will be employed, but as illustrated herein only one latch of the invention is shown by way of example to include a base plate portion 20 which is of generally rectangular form and adapted to be secured as by screws 21 to the front wall of the casket with the upper edge of the base plate 20 disposed substantially flush with the top surface of the casket flange 14. The base plate 20 includes a top flange 22 which is apertured as indicated at 23 to accommodate movements therethrough of the latch mechanism keeper 24 and the latch mechanism cam 26. As shown herein, the keeper 24 is of generally cylindrical form, rounded at its bottom end and notched to provide a step 27 against which the hold-down nose of the cam 26 operates; and as shown herein, for example, is mounted by means of a base plate 28 to the underside of the flange 16 of the cover 12. However, it should be understood that the keeper may be attached to the cover in any other suitable manner. The cam 26 is rotatably mounted upon the base plate 20 by means of a pivot pin 29, and is controlled to rotate upon the pin 29 by means of a link 30 which pivotally connects at one end by means of a pin 31 to the cam 26 and at its other end by means of a pin 32 to the latch control lever 34 which is pivotally mounted at 36 on the base plate 20.

The base plate 20 also mounts an abutment 38 which, as shown herein, may be of cylindrical form and encircled by an annular sleeve 40 of nylon or other suitable low-friction, wear-resistant material; the parts being so proportioned and arranged that when the latch handle is rotated in clockwise direction from the position of FIG. 6 to the position of FIG. 2, the nose portion of the cam 26 will engage the land 27 of the keeper 24 and pull it downwardly into cover closing and gasket compressing position while the keeper 24 rides against the side wall of the guide member 40. Thus, the cam action against the keeper is reacted against by the abutment 40, and there is no tendency to displace the cover 12 horizontally relative to the container 10 during the cover-latching operation. A spacing washer as indicated at 41 (FIGS. 2, 3, 8) is furnished between the cam 26 and the base plate 20 so as to dispose the nose of the cam in accurately centered relation to the land portion 27 of the keeper 24. Also, the parts are so arranged that the keeper 24 slides against the inner face of the base plate 20 and is furthermore guided by the aperture through the top flange 22; whereby the keeper is guided in and out of the latch mechanism and maintained against displacements in any horizontal direction.

The base plate member 20 also includes at one end a laterally deflected end portion 42 thereby disposing a flat land surface 44 (FIG. 6) in friction-bearing relation with the control lever 34 when the latter is moved up into its upper position as shown in FIG. 2. Thus, the

latch handle is frictionally held in its relatively inconspicuous, horizontal position such as when the casket is on display in a funeral home or the like with the cover open.

Also, the base member 20 includes a partial bottom flange portion 46 and opposite end flange portions 48, 49; thus completing a generally open front box-shaped formation substantially enclosing therewithin the latch cam and link and control lever members. A cover device 50 for the latch mechanism is provided of generally open box-like form to comprise a solid front wall portion 51, a top wall portion 52 apertured in registry with the aperture 23 through the top plate flange end walls 52, 53 and a partial bottom wall 54. The end walls 52, 53 of the cover are dimpled as indicated at 55 to co-operate with apertures 56 drilled through the end flanges 52, 53 when the cover is snap-fitted into position upon the base plate flanges as shown in the drawing herewith. Thus, the cover 50 is easily assembled upon the base plate to substantially enclose the operative mechanism by simply press-fitting it into position as shown in the drawing, whereupon the dimpled portions of the cover member firmly lock the cover in place.

A somewhat similar type cover device as illustrated at 60 is provided for the operating level 34, to provide a smooth surface handle for actuating the lever. For this purpose the actuating lever 34 is formed with a bottom flange 62, and the cover device is in the form of an open sided box-like formation being cut away at one end thereof so as to readily slip-fit over the flanged end of the lever 34 into lever covering position as shown in the drawing herewith. Machine screws 64 are then employed to lock the cover 60 upon the flange 62, to complete the assembly of the latch handle mechanism. It is a particular feature of the device of the invention that the bottom edge of flange portion 49 acts as a stop to limit the upward movement of the control lever to such position as to cause the handle device to stop parallel to but spaced below the edge of the cover. Thus, the handle is stopped in an inconspicuous position parallel to the plane of the cover, while leaving therebetween sufficient space to provide thumb access room whereby to facilitate manual actuation of the handle.

It will be observed that during the last phase of the latch handle movement toward locking position the ratio of cam to handle displacement decreases with a consequent increase in mechanical advantage coinciding with the last phases of gasket compression when resistance to keeper displacement is greatest. It will also be seen that, as shown in FIG. 2 of the drawing herewith, when the latch control handle is in its fully closed position, the center line of pull between the pivot pins 31, 32 is slightly above the center of the pivot 36, whereby the control handle is self-locking when in its fully closed position. The latch parts are assembled by means of simple pin riveting processes thereby providing further inherent frictional-drag effects against any unintended movements of the latch parts. Also, the friction brake action is augmented by reason of the snug bearing contact of the lever arm 34 against the abutment land 44 when the latch control handle is moved into fully latched position. Hence any possibility of accidental release of the latch or downward falling of the latch handle is precluded, whenever the latch handle is in its upward, horizontally disposed position.

Thus, it will be appreciated that the pull-down and hold-down latch of the present invention provides a particularly compact nesting of operating parts within smoothly streamlined and unobtrusive appearing cover devices of minimum overall dimensions, while at the same time providing an increased range of pull-down travel while the cam dog is in operative contact with the keeper. Therefore the latch operates with improved facility in connection with installations employing relatively thick gaskets.

It will of course be understood that whereas only one specific form of the invention has been illustrated and described in detail herein, various changes may be made therein without departing from the spirit of the invention or the scope of the following claims.

I claim:

1. A latch cover for detachably interconnecting adjacent edge portions of a container and cover therefor, said container and cover having opposed horizontal flange portions and a compressible gasket therebetween, said latch device comprising

a base plate secured to the edge of said container, a cam rotatably mounted on said base plate and having a downwardly directed nose portion,

a keeper extending downwardly from said cover and extending therefrom when said cover is in closed position alongside said base plate and being guided thereby, said keeper having a land portion in alignment with downward movement of the nose portion of said cam,

a link member pivotally connected at one end to said cam,

a latch control lever pivotally connected at one end to said base plate at a position offset from the center of rotation of said cam, and pivotally connected at a position offset from the axis of its connection to said base plate, to the other end of said link, said base plate having extending flange portions and a cover member snap-fitted thereon thereby substantially enclosing said cam and link member.

and said lever member being formed with a lateral flange and having a box-shaped cover member attached thereto thereby providing a smooth surfaced handle device for said control lever simulating in appearance the cover device for said back plate, the parts being so dimensioned and arranged that when said handle member is pulled upwardly into horizontal alignment beneath the edge of said cover member, the nose portion of said cam draws said keeper downwardly into gasket compressing position while said link assumes a "past-center" position relative to the axis of pivoting of said control lever on said base plate, thereby locking said latch device in holding position.

2. A latch device for detachably interconnecting adjacent edge portions of a container and cover therefor, said container and cover having opposed horizontal flange portions and a compressible gasket therebetween, said latch device comprising

a first base plate secured to the edge of said container, a cam rotatably mounted on said first base plate and having a downwardly directed nose portion,

a keeper pin extending downwardly from a second base plate attached to the flange portion of said cover and extending therefrom when said cover is in closed position alongside said first base plate, said keeper pin having a horizontally disposed flat land portion in alignment with downward movement of the nose portion of said cam,

a link member pivotally connected at one end to said cam,

a latch control lever pivotally connected at one end to said base plate at a position offset from the center of rotation of said cam, and pivotally connected at a position offset from the axis of its connection to said base plate, to the other end of said base plate, said first base plate having laterally extending flange portions and a cover member snap-fitted thereon thereby substantially enclosing said cam and link member,

and said lever member being formed with a lateral flange and having a box-shaped cover member attached thereto thereby providing a smooth surfaced handle device for said control lever simulating in appearance the cover device for said back plate,

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the parts being so dimensioned and arranged that when said handle member is pulled upwardly into horizontal alignment beneath the edge of said cover member, the nose portion of said cam draws said keeper downwardly into gasket compressing position while said link assumes a "past-center" position relative to the axis of pivoting of said control lever on said base plate, thereby locking said latch device in holding position.

3. A latch device for detachably interconnecting adjacent edge portions of a container and cover therefor, said latch device comprising

a base plate secured to the edge of said container, a cam rotatably mounted on said base plate and having a downwardly directed nose portion,

a keeper extending downwardly from said cover and disposed when said cover is in closed position alongside said base plate, said keeper having a land portion in alignment with downward movement of the nose portion of said cam,

a link member pivotally connected at one end to said cam,

a latch control lever pivotally connected at one end to said base plate, and pivotally connected to the other end of said link,

said base plate having a cover member snap-fitted thereon thereby substantially enclosing said cam and link member,

and said lever member having a box-shaped cover member attached thereto thereby providing a smooth surfaced handle device for said control lever simulating in appearance the cover device for said back plate,

the parts being so dimensioned and arranged that when said handle member is pulled upwardly into horizontal alignment beneath the edge of said cover member, the nose portion of said cam draws said keeper downwardly into cover holding position while said link assumes a "past-center" position relative to the axis of pivoting of said control lever on said base plate, thereby locking said latch device in holding position.

4. A latch device for detachably interconnecting adjacent edge portions of a container and a cover therefor, said container and cover each having opposed horizontal flange portions and a compressible gasket therebetween, said latch device comprising,

a base plate secured to the edge of said container, a cam rotatably mounted on said base plate and having a downwardly directed nose portion,

a keeper extending downwardly from said cover and extending therefrom when said cover is in closed position alongside said base plate and being guided thereby, said keeper having a land portion in alignment with downward movement of the nose portion of said cam,

a wear-resistant abutment device extending from said base plate in opposition to said cam and providing therebetween a space for passage of said keeper while guiding said keeper against horizontal displacement,

a link member pivotally connected at one end to said cam,

a latch control lever pivotally connected at one end to said base plate at a position offset from the center of rotation of said cam, and pivotally connected at a position offset from the axis of its connection to said base plate to the other end of said link,

said base plate having a top flange portion and a cover member snap-fitted thereon thereby substantially enclosing said cam and link member,

said base plate top flange being apertured to permit sliding passage therethrough of said keeper while cooperating with said cam and said abutment device to guide said keeper to move only vertically,

the parts being so dimensioned and arranged that when

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said handle member is pulled upwardly into horizontal alignment beneath the edge of said cover member, the nose portion of said cam draws said keeper downwardly into gasket compressing position while said link assumes a "past-center" position relative to the axis of pivoting of said control lever on said base plate, thereby locking said latch device in holding position.

5. A latch device for detachably interconnecting adjacent edge portions of a container and a lid therefor, said container and lid each having opposed horizontal flange portions and a compressible gasket therebetween, said latch device comprising,

a base plate secured to the edge of said container, a cam rotatably mounted on said base plate and having a downwardly directed nose portion,

a keeper extending downwardly from said lid and having a land portion in alignment with downward movement of the nose portion of said cam,

a link member pivotally connected at one end to said cam,

a latch control lever pivotally connected at one end to said base plate at a position offset from the center of rotation of said cam, and pivotally connected at a position offset from the axis of its connection to said base plate, to the other end of said base plate,

said base plate having a generally rectangular shaped cover member snap-fitted thereon thereby substantially enclosing said cam and link member with the top edge of said cover member disposed substantially flush with and parallel to the bottom edge portion of said container lid when the latter is in closed position,

and said lever member having a generally rectangular shaped cover member attached thereto thereby providing a smooth surfaced handle device for said control lever simulating in appearance the cover device for said back plate but being of lesser height and thereby leaving a thumb access space between said lever cover and said container lid,

the parts being so dimensioned and arranged that when said handle member is pulled upwardly into horizontal alignment beneath the edge of said lid member, the nose portion of said cam draws said keeper downwardly into gasket compressing position while said link assumes a "past-center" position relative to the axis of pivoting of said control lever on said base plate, thereby locking said latch device in holding position.

6. A latch device for detachably interconnecting adjacent edge portions of a container and a cover therefor, said latch device comprising,

a base plate secured to the edge of said container, a cam rotatably mounted on said base plate and having a downwardly directed nose portion,

a fixed abutment extending from said base plate and spaced from said cam to provide a passageway therebetween,

a keeper extending downwardly from said cover and disposed when said cover is in closed position within said passageway and alongside said base plate, said keeper having a land portion in alignment with downward movement of the nose portion of said cam,

a link member pivotally connected at one end to said cam,

a latch control lever pivotally connected at one end to said base plate, and pivotally connected to the other of said link,

said base plate having a box-shaped cover member snap-fitted thereon thereby substantially enclosing said cam and link member,

and said lever member having a box-shaped cover member of lesser height attached thereto thereby providing a smooth surfaced handle device for said

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control lever simulating in appearance the cover device for said back plate, the parts being so dimensioned and arranged that when said handle member is pulled upwardly into horizontal alignment beneath the edge of said container cover member, the nose portion of said cam draws said keeper downwardly into cover holding position while said link assumes a "past-center" position relative to the axis of pivoting of said control lever on said base plate, thereby locking said latch device in holding position while said handle member assumes a position parallel to the adjacent edge portion of said container cover but spaced therefrom when the cover is in closed position to provide a thumb access space therebetween.

7. A latch device for detachably interconnecting adjacent edge portions of a container and a cover therefor, said latch device comprising,

- a base plate secured to the edge of said container,
- a cam rotatably mounted on said base plate and having a downwardly directed nose portion,
- a keeper extending downwardly from said cover and having a land portion in alignment with downward movement of the nose portion of said cam,
- a link member pivotally connected at one end to said cam,
- a latch control lever pivotally connected at one end to said base plate, and pivotally connected to the other end of said link,
- said base plate having a flange portion extending therefrom into friction-bearing relation with said control lever when the latter is swung upwardly into horizontal attitude parallel to the top edge of said container for holding said lever in horizontal attitude against accidental swinging downward therefrom,
- the parts being so dimensioned and arranged that when said cam and said keeper are engaged and when said handle member is pulled upwardly into horizontal alignment beneath the edge of said cover member, the nose portion of said cam draws said keeper downwardly into cover holding position while said link assumes a "past-center" position relative to the axis of pivoting of said control lever on said base plate, thereby locking said latch device in holding position.

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8. A latch device for detachably interconnecting adjacent edge portions of a container and cover therefor, said container and cover having opposed horizontal flange portions and a compressible gasket therebetween, said latch device comprising,

- a base plate secured to the edge of said container,
- a cam rotatably mounted on said plate and having a downwardly directed nose portion,
- a fixed abutment extending from said base plate,
- a keeper extending downwardly from said cover and extending therefrom when said cover is in closed position alongside said base plate and between said cam and said abutment and being guided thereby, said keeper having a land portion in alignment with downward movement of the nose portion of said cam,
- a link member pivotally connected at one end to said cam,
- a latch control lever pivotally connected at one end to said base plate at a position offset from the center of rotation of said cam, and pivotally connected at a position offset from the axis of its connection to said base plate to the other end of said link,
- said base plate having a flange portion at one end thereof extending into the path of movement of said control lever to limit its upward movement to a horizontal attitude,
- the parts being so dimensioned and arranged that when said handle member is pulled upwardly into horizontal alignment beneath the edge of said cover member, the nose portion of said cam draws said keeper downwardly into gasket compressing position while said link assumes a "past-center" position relative to the axis of pivoting of said control lever on said base plate, thereby locking said latch device in holding position.

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