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ADJUSTABLE KEEPER

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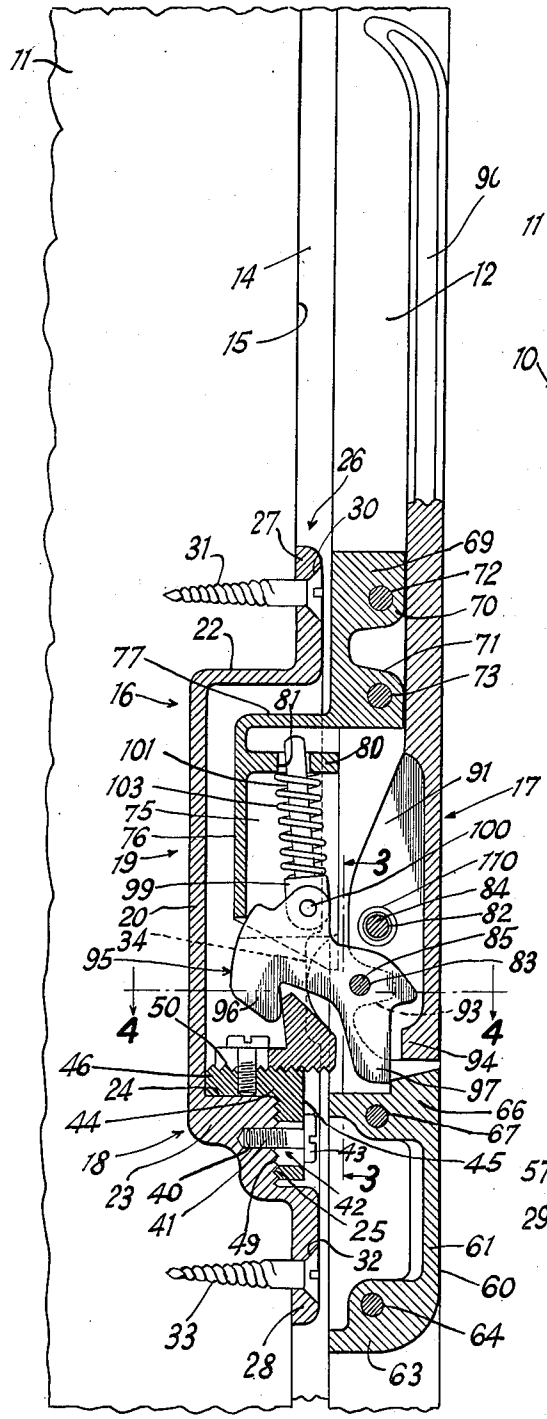


FIG. 2

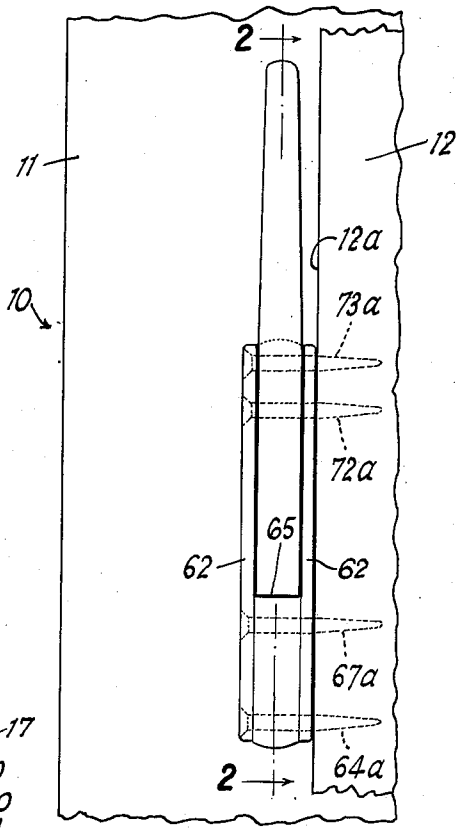


FIG. 1

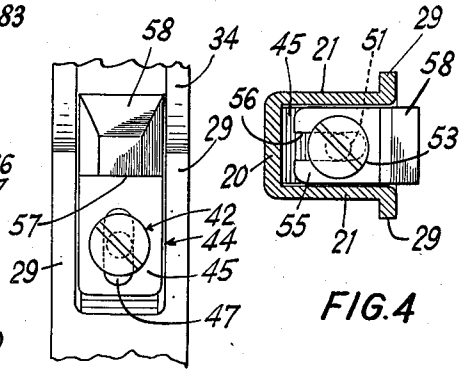


FIG. 3

FIG. 4

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ADJUSTABLE KEEPER

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This invention relates to door locks. It is particularly directed to latches for refrigerator doors and strikes or keepers therefor.

Refrigerator doors of the offset type are usually provided with a rubber like gasket to seal the door opening. Difficulty has been experienced with prior door locks for refrigerators and the like because of the tendency of the gaskets to wear, and also because sometimes the doors sag somewhat, thereby making a bad seal when the door is closed, or preventing the latch from properly operating.

It is therefore an object of the present invention to provide a strike or keeper for a latch of the character described which is adjustable up and down to take care of sagging doors and which is also adjustable in and out to adjust or allow for wear of the door gasket.

Another object of this invention is to provide a strike or keeper of the character described which is so constructed that it permits for vertical adjustment for taking up sag in the door, and for horizontal adjustment to permit perfect alignment of the keeper with the latch.

Yet another object of this invention is to provide in a door latch of the character described a strike of the character described which shall be easy to adjust, which shall be strong and durable in construction, and practical and efficient to a high degree in use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the construction hereinafter described, and of which the scope of invention will be indicated in the following claims.

In the accompanying drawings in which is shown various illustrative embodiments of this invention,

Fig. 1 is a front elevational view of an offset type door and door jamb provided with a latch or lock embodying the invention;

Fig. 2 is a cross-sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a partial vertical view of the strike taken on line 3—3 of Fig. 2; and

Fig. 4 is a cross-sectional view of the strike taken on line 4—4 of Fig. 2.

Referring now in detail to the drawing, 10 designates a refrigerator or other box comprising a door jamb 11 and a door 12 of the offset type, adapted to be closed against the door jamb. Attached to the rim of the flange of the outer

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door is the usual rubber-like gasket 14 which upon closing the door contacts the front edge 15 of the door jamb. Mounted on the front edge 15 of the door jamb is a strike or keeper 16 which cooperates with the latching device 17 on the door.

To this end, the door jamb 11 is formed at the front edge 15 thereof with a socket or opening 18. Fitted within the socket 18 is a strike housing 19. Said strike housing 19 comprises a rear wall 20, from which extend forwardly side walls 21. Extending forwardly from the upper end of wall 20 is a top wall 22. Extending forwardly from the lower end of wall 20 is a thickened wall 23 having an upper horizontal surface or shoulder 24, and a front vertical transversely serrated surface 25. The serrated surface 25 extends downwardly from the front end of the shoulder 24. The teeth or serrations run horizontally.

At the front of the side walls 21, top wall 22 and bottom wall 23 is a front vertical flange 26 extending above wall 22, as at 27, below wall 23, as at 28, and outwardly from the side walls 21, as at 29. It will be noted that the serrated wall 25 is disposed rearwardly of the front surfaces of the flange 26.

The upper flange 27 is formed with a plurality of openings 30 to receive screws 31 for attaching the strike housing 19 to the door jamb. The lower flange portion 28 is also formed with a pair of openings designated by numeral 32, for receiving screws 33 which serve to attach the strike housing to the door jamb. The flange portions 29 may be formed with intermediate notches 34.

The bottom thickened wall 23 is formed with a horizontal screw threaded opening 40 in the serrated surface 25 thereof. Screwed thereto is the shank 41 of a screw 42. Said screw 42 has a head 43 at its front end. The screw 42 serves to attach to the strike housing 19 an angle shaped strike member 44. The strike member 44 has a downwardly extending vertical arm 45 and a horizontal arm 46, extending rearwardly from the upper end of the arm 45. The arm 45 has a smooth front surface and is formed with a vertical slot 47 through which the shank 40 of the screw 42 passes. The head 43 of the screw contacts the smooth surface of arm 45. The rear surface 49 of the arm 45 is serrated to match the serrated surface 25 so as to interengage the same. The upper surface 50 of the arm 46 is formed with horizontal transverse serrations. Said arm 46 is formed with a vertical screw threaded through opening 51 in which is screwed the shank

of a screw 53. Said screw has a head spaced above the serrated surface 50.

Attached to the top surface 50 of the strike arm 46 by means of the screw 53 is a second strike member 54. Said strike member 54 has a horizontal arm 55 formed with a longitudinal slot 56. The shank of the screw 53 passes through the slot 56 and the head of said screw contacts the upper surface of said arm 55. The underside 57 of the arm 55 is serrated to match the serrations of surface 50. Extending upwardly from the front end of the arm 55 is a strike head or tongue 58.

It will now be understood that the strike members 44, 54 may together be adjusted vertically by loosening the screw 42, moving said strike members vertically, and then again tightening the screw. Furthermore, the strike member 54 may be adjusted horizontaly, relative to the strike member 44 and hence relatively to the housing 19 in any vertical position of the member 44 by first loosening the screw 53, adjusting the strike member 44, and then again tightening the screw 53.

The latching device 17 may be of any suitable construction. The particular latching device disclosed in the drawing is shown for the purpose of illustration. Said latching device 17 comprises a latch housing 60 having a front wall 61 and side flanges 62. At the lower end of the wall 61 is a forwardly extending bottom wall 63 formed with a through opening 64. It will be noted that the wall 61 terminates as at 65, below the upper ends of the side walls 62. Extending rearwardly from the upper end of the wall 61 is a wall 66 formed with a through opening 67. The side walls 62 are interconnected by a rear wall 69 having a pair of thickened bosses 70 and 71, formed with through openings 72 and 73. Extending rearwardly from the wall 69 are side walls 75 interconnected by a rear wall 76 and by a top wall 77. Extending forwardly from the wall 76 is a partition 80 formed with a through opening 81. The side walls 62 are formed with two pairs of aligned openings 82 and 83 carrying transverse pivot pins 84 and 85 riveted to said walls. Extending from the openings 64, 67, 72 and 73 are screws 64*a*, 67*a*, 72*a* and 73*a* respectively for attaching the latch housing to an edge 12*a* of the door 12.

Fitted to the rivet 84 and disposed between the side walls 62 is a handle 90 extending upwardly and normally contacting the bosses 70 and 71 when the door is closed, as shown in Fig. 2 of the drawing. The handle 90 has side flanges 91 formed with suitable openings through which pin or rivet 84 passes. The flanges 91 are formed with notches 93 to receive the pivot pin 85 upon pulling the upper end of the handle rearwardly to swing the handle in a clockwise direction, looking at Fig. 1 of the drawing.

At the lower end of the handle is a thickened lip 94. Pivoted to the pivot pin 85 is a latch 95 formed with a tongue 96 adapted to engage the head or tongue 58 of the keeper member 54. Said latch is also formed with a downwardly extending tongue 97 adapted to be engaged by the lip 94 of the handle when the handle is rotated in a clockwise direction for causing rotation with the latch. The latch 95 is formed at its upper end with a slot forming a pair of apertured bifurcated ears 99 carrying a transverse pivot pin 100.

Pivoted to the pivot pin 100 is one end of a toggle spring rod 101, the upper end of which passes through the opening 81. Surrounding the rod 101 and interposed between the partition 80 and a head at the lower end of the rod is a coil compression spring 103. When the door is closed the spring rod 101 is in a line on one side of the pivot pin 85 for retaining the tongue 96 in engagement with the tongue or head 58 of the latch member 54. When the handle 90 however is swung outwardly in a clockwise direction the lip 94 will strike the tongue 97 and rotate the latch 95 in a clockwise direction, thereby disengaging the tongue 96 from the tongue or head 58 and moving the pivot pin 99 to such a position that the spring rod 101 is on the opposite side of the pivot pin 85. The spring 103 thus either retains the latch 95 in latching position or in unlatching position, depending upon to what position the latch is moved.

When the latch is in unlatching position the door is open and while the handle 90 may be released so that it will move back to normal position, the latch will remain in unlatching position. When the door is thereafter slammed shut the forward end or head 58 of the strike member 54 will strike the tongue 97 sharply and cause the latch 95 to rotate in a counterclockwise direction about the pivot pin 85 and thereby swinging the spring rods 101 from one side of the pivot pin 85 to the other side, so that the spring 103 will retain the latch 95 in the position shown in Fig. 1. As the latch is rotated to such position the tongue 96 will engage the head or tongue 58 and the door will be locked.

Should the gasket 14 wear, the latch member 54 may be adjusted horizontally to take up such wear. Should the door sag, the strike member 44 may be adjusted vertically to take care of such sag.

A torsion spring 110, disposed about the pivot pin 84 serves to urge the handle towards vertical or locking position.

It will be thus seen that there is provided a device in which the several objects of this invention are achieved and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention I claim as new and desire to secure by Letters Patent:

1. A strike comprising a strike housing formed with a chamber having an open end into which a latch may project, a strike member in said chamber, means for attaching the strike member to the housing in a plurality of vertically adjusted positions relative to said chamber, a second strike member and means for attaching the second strike member to the first strike member in a plurality of horizontally adjusted positions in a direction perpendicular to the open end of the chamber, said second strike member being formed with means for engaging a latch.

2. In combination, a strike housing having a vertical, horizontally serrated surface, an angular strike member having a downwardly extending arm formed with a serrated surface complementary to the serrated surface on the strike housing, means to attach said arm of said member to said surface in vertically adjusted positions, said strike member having a rearwardly extending horizontal arm formed with an upper serrated surface, a second strike member having

a horizontal arm formed with a serrated undersurface complementary to said upper serrated surface, means for attaching said horizontal arm of the second strike member to said upper surface of said rearwardly extending arm in various horizontally adjusted positions, and said second strike member having an upwardly extending tongue at the front end of said horizontal arm.

3. In combination, a strike housing having a rear wall, side walls and top and bottom walls, said bottom wall having a front horizontally serrated surface formed with screw threaded opening, an angle shaped strike member having a downwardly extending arm formed with a rear serrated surface engaging the serrated surface of the housing, said arm being formed with a longitudinal slot, a screw passing through said slot and screwed within said threaded opening and said screw having a head contacting the front surface of said arm, an arm extending rearwardly from the upper end of said first arm toward the rear wall of the housing, said rearwardly extending arm having an upper serrated surface and being formed with a screw threaded opening, a second strike member having a rearwardly extending horizontal arm having a serrated undersurface engaging the upper serrated surface of said rearwardly extending arm of the first strike member and being formed furthermore with a longitudinal slot, a screw having a shank passing through said last slot and engaging the last mentioned threaded opening and having a head contacting the upper surface of said arm of said second strike member and said second strike member having at its front end an upwardly extending latch engaging tongue.

4. In combination, a strike adapted to be attached on a door jamb, a retractable handle actuated latch device adapted to be attached on a door engageable with said strike, means to adjust said strike horizontally, means to adjust the strike vertically, and spring toggle means for retaining the latch in either strike engaging or strike releasing positions in vertically and horizontally adjusted positions of the strike.

5. A strike comprising a strike housing having a serrated surface comprising transverse serrations, an angle member having an arm formed with a serrated surface complementary to the first serrated surface and being formed with a slot disposed longitudinally of the serrations, means passing through said slot to fix said arm to said serrated surface in various adjusted positions, a second arm on said angle member, said second arm having a transversely serrated surface, and a member having a serrated surface complementary to said last serrated surface and being formed with a slot, and means passing through said last mentioned slot for attaching said second member to said first member in various adjusted positions, and a latch engaging tongue on said second member.

6. A strike comprising a strike housing having a rear wall, a top wall extending forwardly therefrom, a bottom wall extending forwardly therefrom and side walls extending forwardly therefrom, a front flange extending above the top wall, below the bottom wall and outwardly of the side walls, said bottom wall having a front surface spaced rearwardly of the front flange and extending downwardly from the upper surface of the bottom wall, said front surface being formed with horizontal transverse serrations, and said serrated surface being formed with a horizontal, rearwardly extending screw threaded opening, an angle shaped member having a front downwardly extending arm, said arm having a rear horizontally serrated surface complementary to the first serrated surface, said arm being formed with a vertical slot, a screw having a shank passing through the slot and screwed into said screw threaded opening, said screw being provided with a head contacting the front surface of said arm for pressing said arm against said front serrated surface, said angle shaped member having a top rearwardly extending arm overlying the upper surface of said bottom wall of the housing, said rearwardly extending arm being formed with an upper, transversely serrated surface and also being formed with a vertical screw threaded opening, a second member having a horizontal arm formed at its undersurface with transverse serrations complementary to the serrations at the upper surface of the second arm of said angle shaped member, said rearwardly extending arm of said second member being formed with a longitudinal horizontal slot disposed at right angles to the serrations of said arm of the second member, a screw having a shank passing through said last mentioned slot and screwed into the threaded opening of said second arm, said screw having a head contacting the upper surface of said arm of said second member, and said second member being formed at its front end with an upwardly extending, latch engaging tongue.

7. A strike comprising a strike housing having a bottom wall, said bottom wall having a front surface extending downwardly from the upper surface of the bottom wall, said front surface being formed with horizontal transverse serrations, and said serrated surface being formed with a horizontal, rearwardly extending screw threaded opening, an angle shaped member having a front downwardly extending arm, said arm having a rear horizontally serrated surface complementary to the first serrated surface, said arm being formed with a vertical slot, a screw having a shank passing through the slot and screwed into said screw threaded opening, said screw being provided with a head contacting the front surface of said arm for pressing said arm against said front serrated surface, said angle shaped member having a top rearwardly extending arm overlying the upper surface of said bottom wall of the housing, said rearwardly extending arm being formed with an upper, transversely serrated surface and also being formed with a vertical screw threaded opening, a second member having a horizontal arm formed at its undersurface with transverse serrations complementary to the serrations at the upper surface of the second arm of said angle shaped member, said rearwardly extending arm of said second member being formed with a longitudinal horizontal slot disposed at right angles to the serrations of said arm of the second member, a screw having a shank passing through said last mentioned slot and screwed into the threaded opening of said second arm, said screw having a head contacting the upper surface of said arm of said second member, and said second member being formed at its front end with an upwardly extending, latch engaging tongue.

8. A strike comprising a strike housing having a rear wall, a top wall extending forwardly therefrom, a bottom wall extending forwardly therefrom and side walls extending forwardly therefrom, said bottom wall having a front surface extending downwardly from the upper surface

of the bottom wall, said front surface being formed with horizontal transverse serrations, and said serrated surface being formed with a horizontal, rearwardly extending screw threaded opening, an angle shaped member having a front downwardly extending arm, said arm having a rear horizontally serrated surface complementary to the first serrated surface, said arm being formed with a vertical slot, a screw having a shank passing through the slot and screwed into said screw threaded opening, said screw being provided with a head contacting the front surface of said arm for pressing said arm against said front serrated surface, said angle shaped member having a top rearwardly extending arm overlying the upper surface of said bottom wall of the housing, said rearwardly extending arm being formed with an upper, transversely serrated surface and also being formed with a vertical screw threaded opening, a second member having a horizontal arm formed at its undersurface with transverse serrations complementary to the serrations at the upper surface of

the second arm of said angle shaped member, said rearwardly extending arm of said second member being formed with a longitudinal horizontal slot disposed at right angles to the serrations of said arm of the second member, a screw having a shank passing through said last mentioned slot and screwed into the threaded opening of said second arm, said screw having a head contacting the upper surface of said arm of said second member, and said second member being formed at its front end with an upwardly extending, latch engaging tongue.

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