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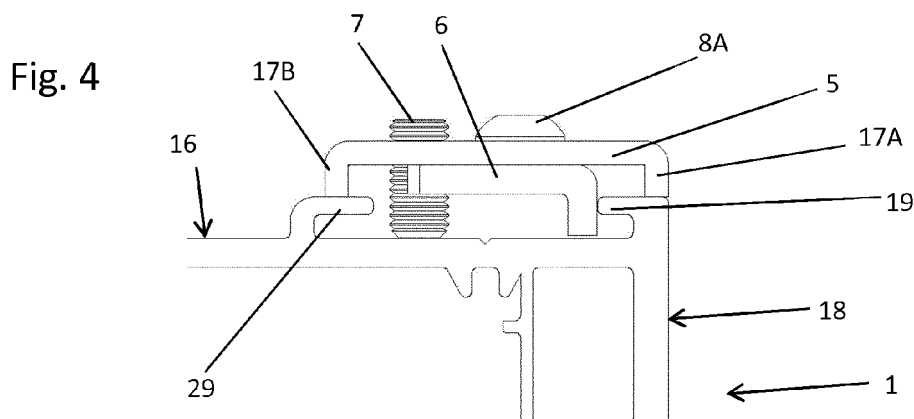
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(54) **Adjustable strike or keep assembly**

(57) A strike or keep assembly comprises a faceplate (5), a backplate (6) including a body portion having a planar front face butting up against a planar back face of the faceplate and one or more projecting portions (12) extending rearwardly from the body portion of the backplate into contact with a face (16) of a supporting frame (11), a screw-threaded member (7) in screw threaded

engagement with a threaded hole in the faceplate and extending rearwardly for contacting the planar face (16) of the supporting frame, the faceplate including one or more slots for allowing the passage of one or more fasteners (8A) for engaging one or more fastener locations in the backplate to fasten the backplate (6) to the faceplate (5).



Description

[0001] This invention relates to adjustable strike or keep assemblies and to frame assemblies on which such strike or keep assemblies are mounted. Where reference is made to a "strike or keep" it should be understood that the item referred to may be both a strike and a keep or may be either a strike or a keep.

[0002] It has been standard practice for a long time to provide a strike or keep on a frame in which an openable member such as a door or window is provided. That strike or keep interacts with a latching or locking member of some kind on the openable member to secure the openable member in a closed condition. The position of the strike or keep is often critical to the correct functioning of the latching or locking and there have been many proposals for enabling the position of the strike or keep to be adjusted.

[0003] It is, however, challenging to provide a strike or keep assembly which is of simple and economical design whilst providing for easy and varied adjustment of the strike or keep in a wide variety of door or window frames of different designs and employing different materials.

[0004] It is an object of the present invention to provide an adjustable strike or keep assembly.

[0005] According to the invention a strike or keep assembly comprises a faceplate, a backplate including a body portion having a planar front face butting up against a planar back face of the faceplate and one or more projecting portions for extending rearwardly from the body portion of the backplate into contact with a face of a supporting frame, a screw-threaded member in screw threaded engagement with a threaded hole in the faceplate and extending rearwardly for contacting the face of the supporting frame, the faceplate including one or more slots for allowing the passage of one or more fasteners for engaging one or more fastener locations in the backplate to fasten the backplate to the faceplate.

[0006] By providing such an arrangement the screw-threaded member can be used to level the faceplate while the slots in the faceplate provide a facility for lateral adjustment of the faceplate relative to the backplate; that enables a reasonably comprehensive and easy adjustment of the faceplate to be achieved simply, without special tools, and economically on a wide range of frame profiles which vary widely in terms of their shapes, dimensions and materials.

[0007] A strike or keep assembly is, in use, mounted on a support frame which may define a door or window opening. Such a support frame has a longitudinal axis extending parallel to the edge of the opening; in the case of a door, the longitudinal axis will normally be a vertical axis; in the case of a window, that may also be the case or the longitudinal axis may be a horizontal axis. Where reference is made herein to a longitudinal axis of the strike or keep assembly, or a component thereof, it should be understood that the axis referred to is one parallel to the longitudinal axis of the support frame referred to

above. Commonly the faceplate will be of longest dimension along that axis, substantially shorter in an orthogonal direction across the width of the front face of the faceplate, and substantially shorter again in the orthogonal direction perpendicular to the front face of the faceplate, the precise details of the faceplate depending upon the particular application. In contrast, the backplate may often be of square or almost square shape with the length and width of the backplate of comparable magnitude and substantially greater than its thickness. If desired, one faceplate may be provided with more than one backplate, the backplates being spaced along the longitudinal axis of the faceplate.

[0008] The one or more projecting portions may be provided by one or more separate parts fixed to the body portion or adjustably mounted on the body portion; for example, the one or more separate parts could be grub screws adjustably or non-adjustably fitted to the backplate; more preferably, however, the one or more projecting portions are integral with the body portion of the backplate. That reduces the total number of parts required. The one or more projecting portions may be formed by bending of one or more portions of the backplate to form one or more wall portions, or they may be formed in other ways, for example by casting of the backplate with the one or more projections formed during the casting. Preferably each of the one or more wall portions is arranged for contacting the support frame along the length of a distal edge portion. In an embodiment of the invention described below the one or more wall portions comprise a single wall formed by bending a longitudinal edge portion of the backplate; that is a particularly simple, reliable and economical way of providing the one or more projecting portions. In the embodiment described below, the edge portion is bent through about ninety degrees but other angles of bending may also be adopted.

[0009] The screw-threaded member is preferably a grub screw.

[0010] As already indicated, the screw threaded member passes through the faceplate and extends rearwardly to the face of a supporting frame; the body portion of the backplate may include an opening through which the screw-threaded member may pass with clearance. The opening may be open at an edge of the backplate or be enclosed. It may be of circular shape but in a preferred embodiment it is a slot shape. That is the arrangement adopted in an embodiment of the invention described below; it is, however, also within the scope of the invention for the screw-threaded member to pass to one side of the backplate. Also more than one screw-threaded member may be provided if desired.

[0011] In an especially preferred arrangement where the backplate includes a single wall formed by bending a longitudinal edge portion of the backplate, an opposite longitudinal edge portion of the backplate is preferably provided with an open-ended slot for accommodating the screw-threaded member.

[0012] Each of the one or more slots in the faceplate

is preferably elongate and is preferably longer in a direction transverse to its longitudinal axis; that facilitates transverse adjustment of the faceplate relative to the backplate.

[0013] Preferably the faceplate has two slots for allowing the passage of two fasteners for engaging two fastener locations in the backplate to fasten the backplate to the faceplate. Preferably the two slots are longitudinally spaced along the faceplate.

[0014] Usually the faceplate is provided with other openings by which it can be secured to the supporting frame, and also other openings for receiving a locking or latching member of an openable unit, which may be, for example, a door or a window.

[0015] The faceplate is preferably provided with longitudinally extending lips along its opposite side edges, the lips extending rearwardly from the front face of the faceplate. Such lips may be formed by bending over the opposite side edges of a planar blank.

[0016] The invention also provides a frame assembly including a supporting frame member and a strike or keep assembly as defined above mounted on the supporting frame member, the one or more projecting portions of the backplate extending rearwardly from the body portion of the backplate into contact with a planar face of the supporting frame member, the screw-threaded member extending rearwardly from the faceplate through or past the backplate into contact with the planar face of the supporting frame member, and one or more fasteners passing through the one or more slots and engaging one or more fastener locations in the backplate to fasten the backplate to the faceplate.

[0017] The supporting frame member may be solid but will more often be in the form of a metal and/or plastics extruded profile. For example the member may be an extruded UPVC member which may be metal reinforced. The member may have a longitudinally extending edge against which the backplate may be placed to facilitate alignment of the backplate in a desired position laterally. In the case where the backplate has one or more wall portions, the one or more wall portions are preferably placed against the edge.

[0018] In the case where the faceplate is provided with lips, the lips may rest on portions of the frame member that are positioned forwardly of its planar face. Such an arrangement is shown in the embodiment of the invention described below with reference to the drawings.

[0019] The keep or strike assembly according to the invention can also be provided as a kit of parts to be assembled. Accordingly, the invention further provides a faceplate, a backplate and a screw-threaded member for assembling into a strike or keep assembly as defined above.

[0020] By way of example certain embodiments of the invention will now be described with reference to the accompanying schematic drawings, of which:

Fig. 1 is a front view of an adjustable keep assembly

mounted on a door frame;

Fig. 2 is an exploded view of part of the adjustable keep assembly shown in Fig. 1;

Fig. 3 is a sectional end view of the keep assembly of Fig. 1 also showing in section a frame member on which the keep assembly is mounted;

Fig. 4 is a sectional end view similar to Fig. 3 but to a larger scale and showing only part of the frame member; and

Fig. 5 is a sectional end view similar to Fig.3 of the keep assembly of Fig. 1 mounted on a different frame member.

[0021] Fig. 1 shows part of one side of a door frame. The door frame shown is in this example part of a UPVC door frame and the drawing shows a small length of a frame profile 1, which may be found as a single extrusion or a plurality of interengaging extrusions. The profile 1 extends vertically along the entire length of the doorway and Fig. 1 shows just a small portion of the vertical extent of the profile 1. Along that small portion, an adjustable keep assembly 2 is fitted. In the particular example shown, the keep assembly 2 is part of a multipoint locking system, and includes recesses 3 and 4 for receiving respective locking members of a multipoint lock.

[0022] The keep assembly 2 has end portions 2A and 2B and Fig. 2 is an exploded view of the end portion 2A of the keep assembly. Referring now to Fig. 2, there is shown a faceplate 5, a backplate 6, a grub screw 7 and two button head screws 8A and 8B. The face of the faceplate 5 has various apertures for different purposes such as for fixing with screws (not shown) to the frame profile 1 and for defining the recesses 3 and 4 (not visible in Fig. 2); the apertures in the faceplate 5 include a screw-threaded opening 9 for receiving the grub screw 7 and a pair of slots 10A and 10B through which the stems of the screws 8A and 8B can pass.

[0023] The backplate 6 shown in Fig. 2 has a pair of threaded openings 11A and 11B in which the button head screws 8A and 8B are able to engage. One longitudinal edge portion 12 of the backplate 6 is bent through an angle of ninety degrees to form what may be regarded as a wall upstanding from the edge of the backplate 6. Midway along the opposite edge of the backplate 6 an open-ended slot 14 is formed. When the backplate 6 is fixed to the faceplate 5, the button head screws 8A and 8B pass through the slots 10A and 10B in the faceplate 5 and engage in the threaded openings 11A and 11B drawing a planar front face of the backplate 6 against a planar back face of the faceplate 5. The grub screw 7 engages the opening 9 in the faceplate 5 and is screwed through that opening passing with clearance through the open-ended slot 14 to engage the surface of the frame.

[0024] The loose engagement of the button head screws 8A and 8B in the slots 10A and 10B in the faceplate allows the faceplate 5 to be adjusted laterally relative to the backplate 6 and then, after tightening, to hold the faceplate in that fixed position relative to the back-

plate. The open-ended slot 14 provides adequate freedom of lateral movement of the grub screw 7 during such lateral adjustment.

[0025] Whilst Fig. 2 shows one end portion 2A of the keep assembly, in the described embodiment the other end portion 2B is of substantially the same construction and there are therefore two backplates 6, with their associated screw fixings for the faceplate 5 shown in Fig. 1.

[0026] Referring now also to Figs. 3 and 4 of the drawings, it can be seen that the profile 1 is of a fairly complicated cross-section, of a kind known *per se*. The profile has a front face 16 on which the keep assembly is mounted. Each of the opposite longitudinal edges of the faceplate 5 is bent through a right angle to define a pair of lips 17A and 17B extending along the longitudinal edges of the faceplate. The outer lip 17A is flush with a side face 18 of the profile 1, whilst the inner lip 17B rests on a forwardly projecting wall 29 partway across the width of the profile. The wall 12 of the backplate 6 extends rearwards into contact with the front face 16 of the profile 1 and also butts against a rib 19 projecting inwardly from the side face 18 at the front of the profile 1. The end of the rib 19 provides an edge for the lateral positioning of the keep assembly, whilst the wall 12 of the backplate 6 controls the amount of the forward projection of the front face of the faceplate 5 with the grub screw 7 being able to be adjusted to level the front face of the faceplate 5. By slackening the button head screws 8A and 8B, the screws can be moved in the slots 10A and 10B to adjust the lateral position of the faceplate 5 relative to the backplate 6. In that way, it can be ensured that, when the wall 12 of the backplate 6 is butted up against the rib 19, the edge of the faceplate 5 is flush with the side face 18 of the profile 1.

[0027] The faceplate 5 is pressed against the profile 1 via the backplate 6 and the grub screw 7 by screws passing through other openings in the faceplate 5 and into the profile 1. By adjusting the grub screw 7, the inclination of the faceplate 5 relative to the front face 16 of the profile 1 can be adjusted, usually to a zero inclination. The grub screw 7 and the wall 12 provide what may be regarded as a three point contact between the keep assembly and the front of the profile 1.

[0028] An adjustable keep assembly embodying the invention may of course be fitted to a wide variety of frames. By way of example, Fig. 5 is a view similar to Fig. 3 showing the same adjustable keep assembly 2 fitted on a different frame profile 31. In the example shown in Fig. 5, the frame profile 31 has no equivalent to the forwardly projecting wall 29 and the lip 17B of the keep assembly 2 is therefore unsupported and the grub screw 7 is relied upon for the support of the inner side of the faceplate. The profile 31 does have a rib 32, equivalent to the rib 19 of Fig. 3, providing an edge for the wall 12 of the backplate 6 to be butted up against as described previously with reference to Fig. 3.

[0029] Whilst in the embodiments shown in both Fig. 3 and Fig. 5, a longitudinally extending edge of a rib is

provided for the wall 12 to butt up against it is also within the scope of the invention for the adjustable keep assembly to be used where there is no such edge.

[0030] From the description above, it can be seen how a very simple arrangement for adjusting the position of a keep assembly on a frame member can be provided. The adjustment can be carried out without special tools. In the illustrated embodiment, the keep assembly has just three main parts (the faceplate 5 and the two backplates 6) and for each backplate 6 one grub screw 7 and two button head screws 8. The arrangement nonetheless allows a considerable degree of adjustment of the faceplate 5. We have found that the keep assembly shown in the drawings can be employed on a majority of the many frame profiles that are in use, even though the profiles vary considerably in shape, dimensions and materials.

Claims

1. A strike or keep assembly comprises a faceplate, a backplate including a body portion having a planar front face butting up against a planar back face of the faceplate and one or more projecting portions for extending rearwardly from the body portion of the backplate into contact with a face of a supporting frame, a screw-threaded member in screw threaded engagement with a threaded hole in the faceplate and extending rearwardly for contacting the face of the supporting frame, the faceplate including one or more slots for allowing the passage of one or more fasteners for engaging one or more fastener locations in the backplate to fasten the backplate to the faceplate.
2. An assembly according to claim 1, in which there is more than one backplate, the backplates being spaced along the longitudinal axis of the faceplate.
3. An assembly according to claim 1 or 2, in which the one or more projecting portions are integral with the body portion of the backplate.
4. An assembly according to claim 3, in which the one or more projecting portions are formed by bending of one or more portions of the backplate to form one or more wall portions, optionally each of the one or more wall portions being arranged for contacting the support frame along the length of a distal edge portion.
5. An assembly according to claim 4, in which the one or more wall portions comprise a single wall formed by bending a longitudinal edge portion of the backplate.
6. An assembly according to any preceding claim, in

which the body portion of the backplate includes a slot, through which the screw-threaded member passes.

7. An assembly according to claim 6, in which the slot in the body portion of the backplate is open-ended, and in which the backplate includes a single wall formed by bending a longitudinal edge portion of the backplate, an opposite longitudinal edge portion of the backplate being provided with an open-ended slot for accommodating the screw-threaded member. 5
8. An assembly according to any preceding claim, in which each of the one or more slots in the faceplate is longer in a direction transverse to the longitudinal axis of the faceplate. 10
9. An assembly according to any preceding claim, in which the faceplate has two slots, optionally longitudinally spaced along the faceplate, for allowing the passage of two fasteners for engaging two fastener locations in the backplate to fasten the backplate to the faceplate. 15
10. An assembly according to any preceding claim, in which the faceplate is provided with longitudinally extending lips along its opposite side edges, the lips extending rearwardly from the front face of the faceplate, the lips being optionally formed by bending over the opposite side edges of a planar blank 20
11. A frame assembly including a supporting frame member, optionally in the form of a metal and/or plastics extruded profile, and a strike or keep assembly according to any preceding claim mounted on the supporting frame member, the one or more projecting portions of the backplate extending rearwardly from the body portion of the backplate into contact with a planar face of the supporting frame member, the screw-threaded member extending rearwardly from the faceplate through or past the backplate into contact with the planar face of the supporting frame member, and one or more fasteners passing through the one or more slots and engaging one or more fastener locations in the backplate to fasten the backplate to the faceplate. 25
12. A frame assembly according to claim 11, in which the supporting frame member has a longitudinally extending edge against which the backplate may be placed to facilitate alignment of the backplate in a desired position laterally. 30
13. A frame assembly according to claim 12, in which the backplate has one or more wall portions and the one or more wall portions are placed against the edge. 35
14. A frame assembly according to any of claims 11 to 13, in which the strike or keep assembly is as claimed in claim 10, the lips resting on portions of the frame member that are positioned forwardly of its planar face. 40
15. A faceplate, a backplate and a screw-threaded member for assembling into a strike or keep assembly according to any of claims 1 to 10. 45
- 50
- 55

Fig. 1

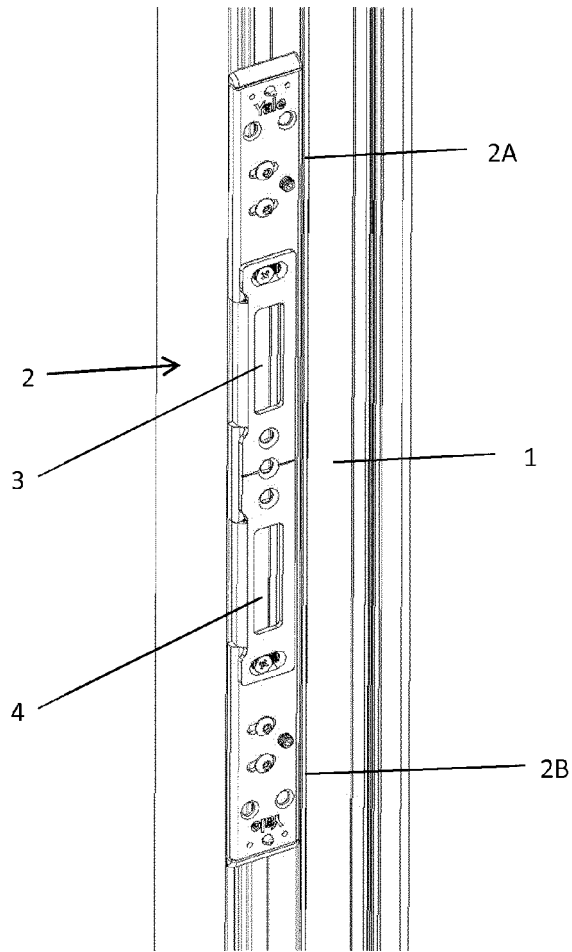


Fig. 2

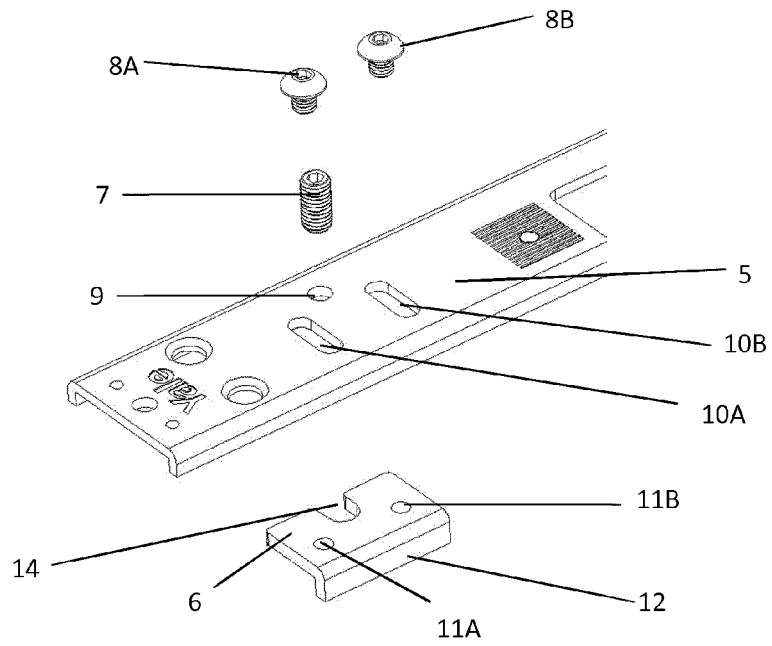


Fig. 3

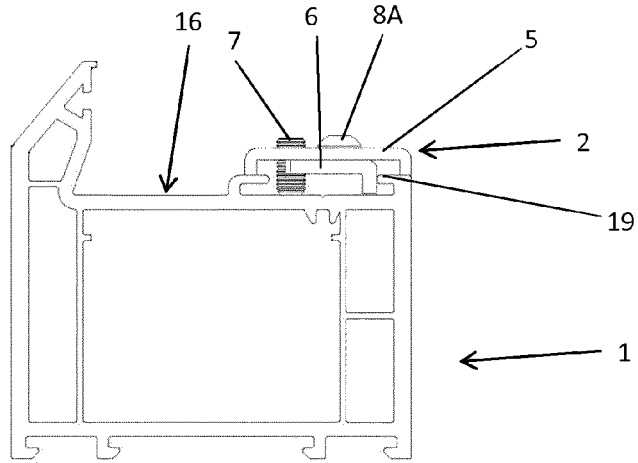


Fig. 4

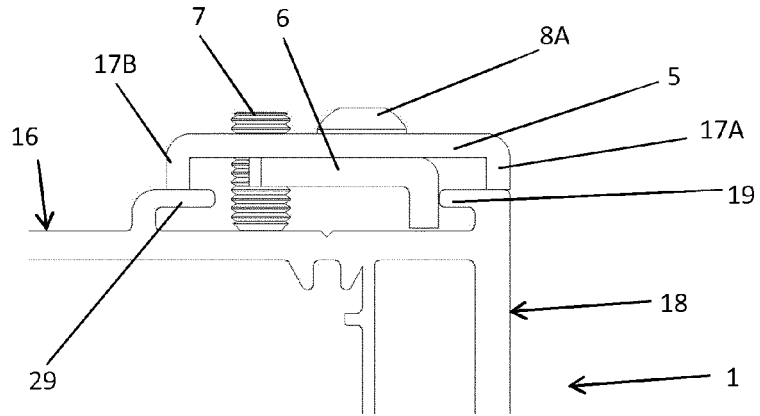


Fig. 5

