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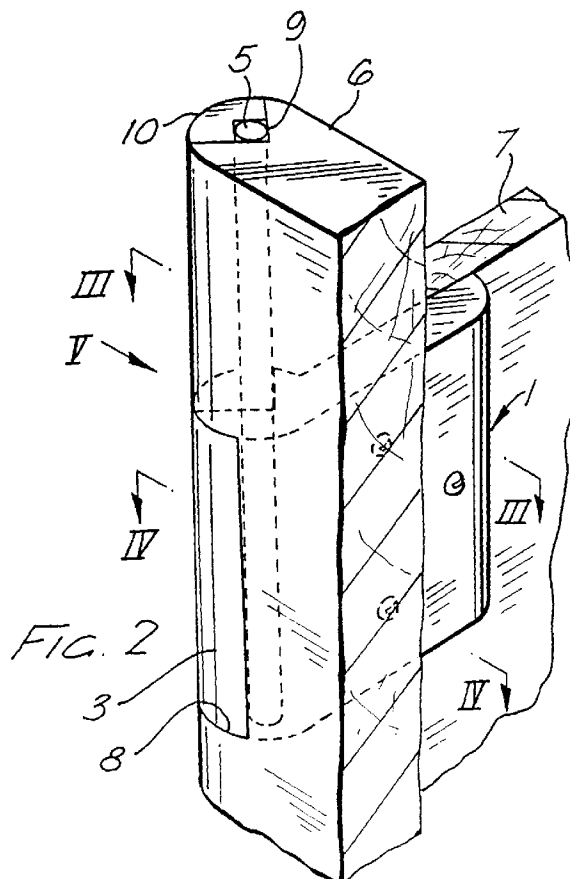
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(54) Hinge

(57) The present invention provides a method of pivotally attaching a member such as a door (6) to a frame (7), via a hinge (1) having a plate portion (2) and a nose portion (3) for receiving at least one hinge pin (5), comprising forming an aperture (8) in an edge region of the

door (6) for receiving the nose portion (3) of the hinge (1), attaching the plate portion (2) of the hinge (1) to the frame (7), and connecting together the door (6) and the nose portion (3) of the hinge by placing the nose portion (3) in the aperture (8) of the door (6) and securing the door to the hinge via at least one hinge pin (5).



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Description

The present invention relates to a method of pivotally attaching a member such as a door to a frame, a hinge usable in the method of the present invention and a final product comprising a member such as a door hingedly attached to a frame.

Numerous methods have been used to attach doors to frames via hinges. Generally, the methods require screwing, gluing or attached in some way a first plate to the door and a second plate, pivotally connected to the first plate, to the frame.

Problems with the prior art methods include the need to attach both a plate onto the door and a plate onto the frame. This can be difficult, especially if either the door or the frame is thin, as screwing and other methods of attachment of the plates may not be possible without damaging the door or frame.

Furthermore, prior art hinges generally comprise two plates pivotally connected together. Accurate construction of the two plates is therefore necessary for the hinge to work. Normally hinges are manufactured from metal and periodic lubrication of the moving parts is generally necessary.

A further problem with prior art hinges is that an elbow portion of the hinge generally protrudes from the door and the frame. Using prior art hinges it is difficult to produce a hinge which is flush with the outside of the door and the frame. To overcome, this problem, special metal hinges which fit on the insides of the door and which allow the door to open within the width of the frame to which it is fitted have been developed, but these are of a complicated design, and hence expensive.

The present invention overcomes a number of problems associated with the prior art hinges and provides a relatively simple and quick method to pivotally attach a member, such as a door, to a frame.

The present invention provides a method of pivotally attaching a door or the like to a frame via a hinge having a plate portion and a nose portion for receiving at least one hinge pin, comprising the steps of:

forming an aperture in an edge region of the door for receiving the nose portion of the hinge;

attaching the plate portion of the hinge to the frame; and

connecting together the door and the nose portion of the hinge by placing the nose portion in the aperture of the door and securing the door to the hinge via at least one hinge pin.

It is also envisaged that the present invention could provide a method of pivotally attaching a door or the like to a frame via a hinge having a plate portion and a nose portion for receiving at least one hinge pin, comprising the steps of:

forming an aperture in an edge region of the frame for receiving the nose portion of the hinge;

attaching the plate portion of the hinge to the door; and

connecting together the frame and the nose portion of the hinge by placing the nose portion in the aperture of the frame and securing the frame to the hinge via at least one hinge pin.

Preferably, the method also includes the step of forming a recess in the edge region of the door (or frame) to receive at least one hinge pin, said recess communicating with the aperture, and passing the at least one hinge pin through a passageway in the nose portion of the hinge so that it extends into the recess.

Preferably, the recess extends from the top of the door (or frame) through the aperture and into an edge region of the door (or frame) below the aperture so that said at least one, or a pair of hinge pins can be inserted into the recess and into the passageway within the nose portion of the hinge thereby connecting together the nose portion to the door (or frame).

In a preferred embodiment, in order to secure in place the or each hinge pin, a segment of the top of the door or the frame directly overlying the aperture is removed to allow the insertion of the or each hinge pin. The segment is then replaced in order to secure the or each hinge pin in position and has had a portion removed in order to provide room for the hinge pin. In a further embodiment of the present invention, a segment is also removed from the door directly underlying the aperture to allow the insertion of the or each hinge pin. The segment is then replaced in order to secure the or each hinge pin in position and has had a portion removed in order to provide room for the hinge pin.

The method of the present invention therefore provides a simple way to attach a door to a frame avoiding the need to use a two part hinge and the necessity of attaching plates to both the door and to the frame.

The plate portion of the hinge used in the present invention may be attached to the door or frame by any method including, screwing, nailing, gluing or welding (when the frame or door and hinge are made of metal or plastics material). Preferably, the plate portion of the hinge is attached to the door or frame by screws.

The door used in the method of the present invention may be any body which it is desired hingedly to attach to a frame. The door can be of any size or shape and may comprise panels and/or windows. Preferably, the door is a cupboard door. The door can be made out of wood, metal, or plastics material any may incorporate one or more windows therein. Preferably, the door is made of wood.

The frame used in the method of the present invention may be any body to which it is desired hingedly to attach to a door. The frame may be of any size or shape.

Preferably, the frame is a carcass of a cupboard. The frame may be made of any material such as metal, wood or plastics material. Preferably, the frame is made of wood.

The hinge used in the present invention may be made from any material such as wood, metal or plastics material. Preferably, the hinge is made of wood or of the same material as the door or frame.

In a preferred embodiment, the nose portion of the hinge is shaped so that on attaching the door to the frame, the nose portion is substantially flush with the edge portion of the door (or frame). In other words the nose portion of the hinge is preferably so shaped that it corresponds with the shape of the edge region of the door (or frame) and is sized to correspond with the size of the aperture in the edge region of the door (or frame) and to form a snug fit in the aperture.

Also according to the present invention we provide a hinge comprising only a single plate portion and having a nose portion, the nose portion having a passageway therein, and at least one hinge pin for location in the passageway.

The hinge of the present invention can be made from any material including wood, metal or plastics material. Preferably, the hinge is made from wood or of the same material as the door.

The present invention further provides a door hingedly attached to a frame by the method of the present invention. The present invention is now further described by way of example with reference to the following drawings, in which:-

Figure 1 is a perspective view of a hinge,

Figure 2 is a perspective view of a door pivotally attached to a frame via a hinge,

Figure 3 is a cross sectional view through the line III of Figure 2 showing an attached hinge,

Figure 4 is a cross sectional view through the line IV of Figure 2 showing an attached hinge, and

Figure 5 is a perspective view of the edge region of a door showing a removed segment, a recess and an aperture.

Referring to the drawings, these show the invention in use as part of a kitchen unit. A hinge (1) comprises a plate portion (2) and a nose portion (3) having a hollow central passageway (4) for receiving a hinge pin (5) which is used to attach a door (6) to a frame (7). The plate portion (2) of the hinge is apertured at 2a so that it can be screwed onto the frame (7) so that the nose portion (3) of the hinge (1) protrudes from frame (7). The door (6) normally has two apertures (8) formed in its edge region, each for receiving the nose portion (3) of a hinge and for each aperture (8) a recess (9) is formed

in the door, normally one at the bottom and one at the top of the door, which passes through the respective aperture (8), for receiving a hinge pin (5). In the preferred arrangement, the cross sectional shape of the edge region of the door (6) corresponds to that of the nose portion (3) of the hinge (1), and the dimensions of each aperture (8) in the door edge region corresponds with that of the nose portion (3) of the hinge (1), so that, in use, the nose portion (3) fits snugly with its aperture (8).

The door (6) also has a removable segment (10) associated with each aperture (8) which normally extends just from the aperture (8) to the top and bottom edges, respectively of the door (6). This segment allows each hinge to be fitted to the door (8).

To use the hinges of the present invention, each segment (10) is removed from the door (6), and the nose portion (3) of the hinge is then located within the aperture (8) of the door (6). A hinge pin (5) is then inserted from the end of the door into the recess (9) and through the passageway (4) of the hinge, with the leading end of the hinge pin locating in the lower part of the recess (9a) to hold the door (6) and the hinge together. To secure the hinge on the door, the removable segment (10), which has a portion removed to provide room for the hinge pin (5), is then secured, e.g. glued back in place and covers the trailing end of the hinge pin (5) in recess (9), thereby securing the hinge (1) in place.

After both hinges have been fitted to the door (6), the door (6) is attached to the frame (7) by locating it correctly in place, placing the plate portions (2) against the face of the frame (7), and securing it in place, e.g. with screws which are passed through the aperture (2a) or in another known manner. Due to the nature of the hinges, the plate portions (2) need not be recessed into the frame (7).

The above embodiment has been described for the purposes of illustration only. Many other embodiments within the scope of the accompanying claims will be apparent to the skilled reader.

Claims

1. A method of pivotally attaching a door (6) or the like to a carcass cheek (7) via a hinge (1) having a plate portion (2) and a nose portion (3) for receiving at least one hinge pin (5), comprising the steps of:

forming an aperture (8) in an edge region of the door (6) for receiving the nose portion (3) of the hinge (1);

attaching the plate portion (2) of the hinge (1) to carcass cheek (7) (or door (6)); and

connecting together the door (6) (carcass cheek) and the nose portion (3) of the hinge by placing the nose portion (3) in the aperture (8)

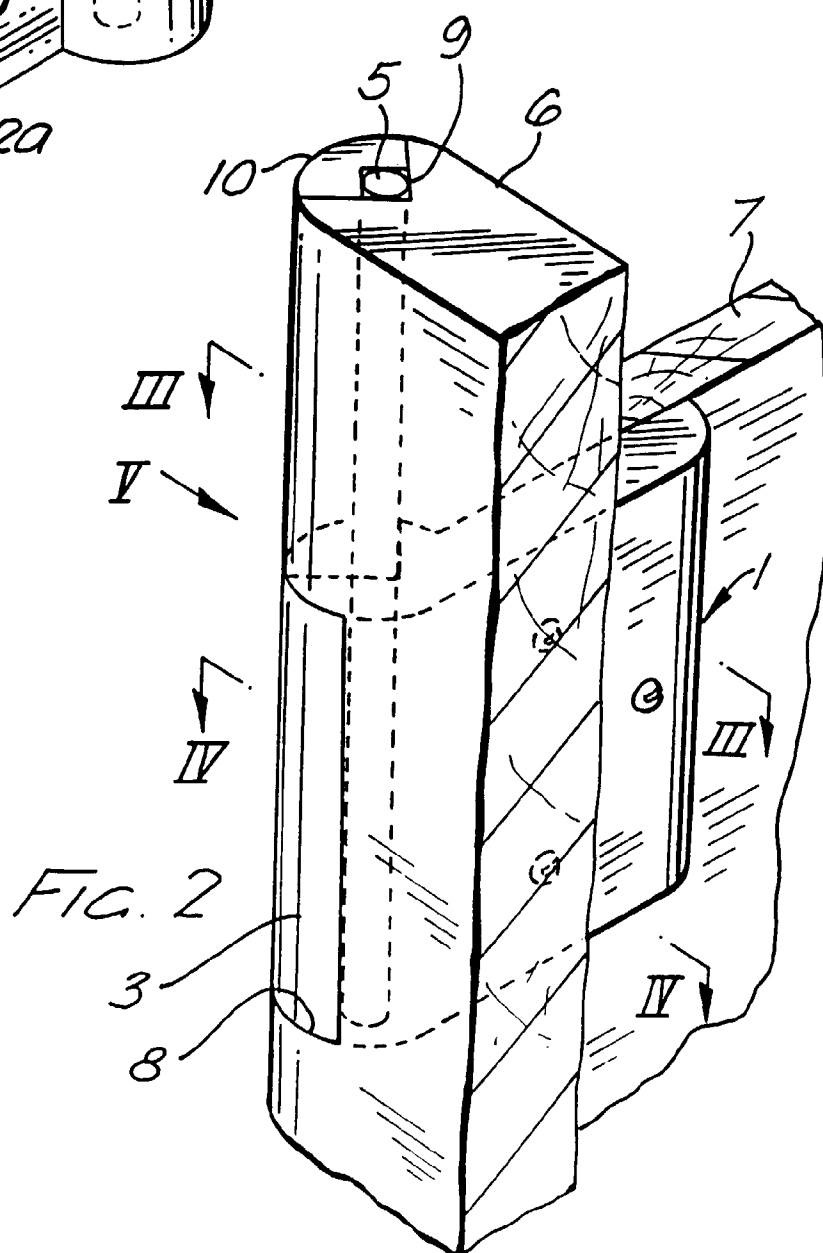
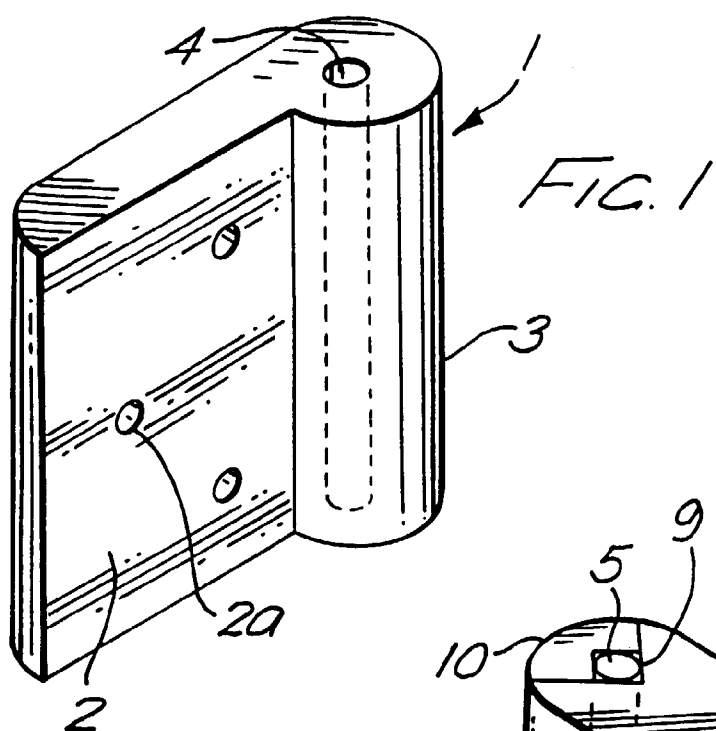
of the door (6) (or carcass cheek (7)) and securing the door (6) (or carcass cheek) to the hinge (1) via at least one hinge pin (5) comprising the steps of;

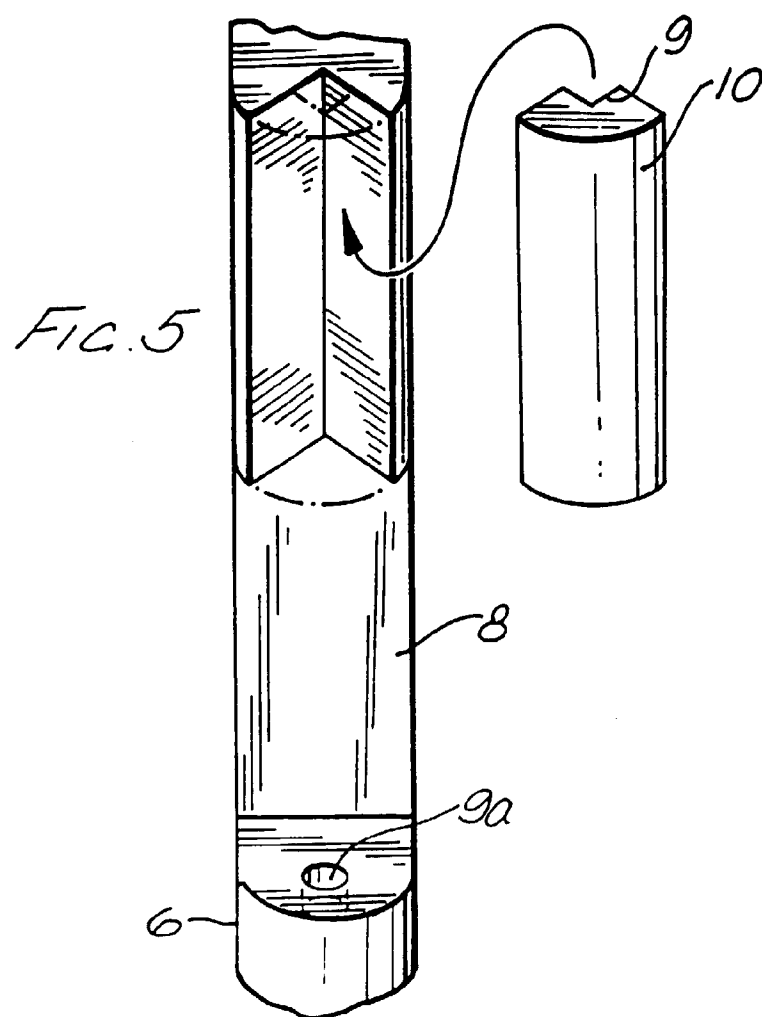
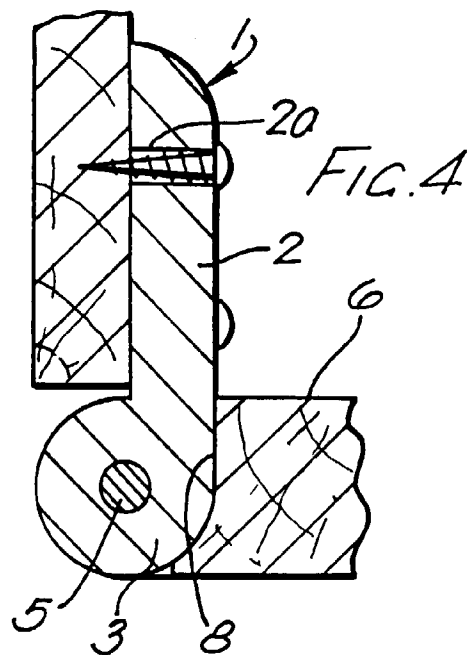
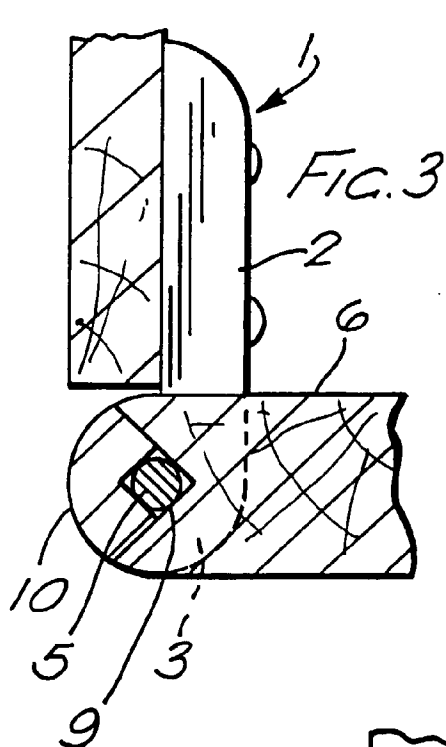
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forming a recess (9) in the edge region of the door (6) to receive at least one hinge pin (5), said recess (9) communicating with the aperture (8); and beyond (recess runs down the length of the door style) 10

passing the at least one hinge pin (5) through a passageway (4) in the nose portion (3) of the hinge (1) so that it extends into the recess (9); and 15

wherein, a segment (10) of the top of the door (6) (or carcass cheek (7)) directly overlying the aperture (8) is removed to allow insertion of the at least one hinge pin (5) and then replaced in order to secure the at least one hinge pin (5) in position. 20

2. The method of claim 1 wherein, a segment of the door (6) (or frame (7)) directly underlying the aperture (8) is additionally removed to allow insertion of at least one hinge pin (5) and then replaced in order to secure at least one hinge pin (5) in position. 25
3. The method of any one of the previous claims wherein the plate portion (2) of the hinge (1) is attached to the carcass side cheek (7) by screws. 30
4. The method of any one of the previous claims wherein the door (6) is made of wood. 35
5. The method of any one of the previous claims where the carcass side cheek is made of wood.
6. The method of any one of the previous claims wherein the hinge (1) is made of wood. 40
7. The method of any one of the previous claims wherein, the nose portion of the hinge (1) is shaped so that on attaching the door (6) to the carcass cheek (7) the nose portion (3) is substantially flush with the edge portion of the door (6) or carcass cheek (7). 45
8. A hinge (1) for use in the method of any one of the previous claims. 50
9. A door (6) attached to a carcass cheek (7) by the method of any one of claims 1 to 7. 55
10. A method for attaching a door (6) to a carcass cheek (7) substantially as herein described with reference to the figures.







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EUROPEAN SEARCH REPORT

Application Number
EP 97 30 1570

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	EP 0 199 692 A (AB VOLVO) * abstract * -----	1	E05D7/10 E05D5/14 E06B3/88
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			E05D E06B
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		6 June 1997	Van Kessel, J
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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