FORM 1
COMMONWEALTH OF AUSTRALIA
PATENTS ACT 1952
APPLICATION FOR A STANDARD PATENT

We DOWELL AUSTRALIA LIMITED

of
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PRESTON 3072
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AUSTRALIA

hereby apply for the grant of a standard patent for an invention entitled:

DOOR FRAME AND BUFFER

which is described in the accompanying provisional specification

Details of basic application(s):

<table>
<thead>
<tr>
<th>Number of basic application</th>
<th>Name of Convention country in which basic application was filed</th>
<th>Date of basic application which basic application was filed</th>
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DATED this 28th day of March 1990

DOWELL AUSTRALIA LIMITED

GRIFFITH HACK & CO.

TO: The Commissioner of Patents.
DOOR FRAME AND BUFFER

1. A frame member for a door panel said frame member having at a leading face, a pair of groove means extending longitudinally of said frame member, each said groove means having an outermost side wall and an innermost side wall relative to a direction across said leading face, said outermost side wall having under-cut shoulder means internally of said groove means, whereby a strip like resilient buffer member having shoulder means extending along opposite sides and one face can be held to said frame member by the shoulder means at one side locating in one of said groove means in said frame member, and the shoulder means in the other side locating in the other of said groove means in the frame member so that said buffer is bowed outwardly forwardly of said leading face, and whereby if forces are applied to said buffer member in a direction transverse to the longitudinal extent of said groove means, a relevant one of said innermost side wall will provide a fulcrum surface about which said buffer member will tend to swing to, in turn, force said shoulder means of said buffer member into engagement with said under-cut shoulder means in said outermost side wall, thereby inhibiting against removal of said buffer from said groove means.
2. A buffer member of resilient material, being strip like and having shoulder means extending along opposite side edges.
Complete Specification for the invention entitled:

DOOR FRAME AND BUFFER

The following statement is a full description of this invention including the best method of performing it known to me:-
DOOR FRAME AND BUFFER

This invention relates to an improved door frame and buffer combination suitable for use in wardrobes and/or other installation where sliding doors are used.

Hitherto it has been common to provide doors for wardrobes manufactured from a panel member such as glass and/or wood or other material which is framed by a metal peripheral frame and to which frame there is provided a buffer at the leading edge of the door so that if the door is slammed accidentally there will be cushioning as the leading edge strikes the jamb of the door frame in which the door moves. Typically the frame around the panel of the door itself has a pair of spaced apart forwardly directed but inwardly inclined arms. A synthetic rubber material is placed in the space between the arms and bulges outwardly forwardly of the leading edge so as to
act like a buffer to absorb some of the impact of closing. In addition the buffer can flex somewhat so as to accommodate for closing of the door without leaving any unsightly gaps which may occur if the jamb of the door frame is not parallel with the leading edge of the frame around the door panel. Buffers of the above type have proved generally satisfactory in relation to the required buffering properties however, the buffer can be easily dislodged from the frame around the door panel by applying a force in a direction generally transverse to the plane of the panel. This can occur by simple cleaning operations of the door itself as a person engages with the buffer and unintentionally applies a force to the buffer in a direction generally perpendicular to the plane of the door panel.

The present invention has been devised in an attempt to overcome the aforementioned problem.

According to a first broad aspect of the present invention there may be provided a frame member for a door panel said frame member having at a leading face, a pair of groove means extending longitudinally of said frame member, each said groove means having an outermost side wall and an innermost side wall relative to a direction across said leading face, said outermost side wall having under-cut shoulder means internally of said groove means, whereby a strip like resilient buffer member having shoulder means extending along opposite sides and one face can be held to said frame member by the shoulder means at one side locating in one of said groove means in said frame member, and the shoulder means in the other side locating in the other of said groove means in the frame member so that said buffer is bowed outwardly forwardly of said leading face, and whereby if forces are applied to said buffer member in a direction transverse to the longitudinal extent of said groove means, a relevant one of said innermost side wall will provide a fulcrum surface about which said buffer member will tend to swing
to, in turn, force said shoulder means of said buffer member into engagement with said under-cut shoulder means in said outermost side wall, thereby inhibiting against removal of said buffer from said groove means.

A buffer member of the above type is included within the broad scope of the invention.

A combination of said frame member and said buffer member assembled thereto are also included within the broad scope of the invention.

In order that the invention can be more clearly ascertained an example of a preferred embodiment for use in wardrobes will now be made with reference to the accompanying drawings wherein:

Figure 1 shows a transverse cross sectional view of a door member having a prior art frame member and buffer fitted thereto,

Figure 2 is a view of the frame member and buffer shown in Figure 1 but wherein a transverse force is applied to the buffer member which causes it to disengage from the frame member,

Figure 3 is a perspective view showing a preferred embodiment of the present invention,

Figure 4 is a transverse cross sectional view of the embodiment shown in Figure 3,

Figure 5 is a perspective view of the frame member shown in Figure 3,

Figure 6 is a transverse cross sectional view of the frame member shown in Figure 5,

Figure 7 is a perspective view of the buffer member shown in Figure 3, and

Figure 8 is a transverse cross sectional view of the buffer member shown in Figure 7.

Referring now to Figures 1 and 2 there is shown a prior art frame member 1 for use with doors such as wardrobe doors which slide between the open and closed positions. The frame member 1 is produced from extruded aluminium and has a cross sectional shape generally as
shown. A synthetic rubber bead or glazing strip 3 is placed between jaws 5 and enables a panel 7 such as a glass panel or other panel to be received within the jaws 5. The bead or glazing strip 3 locates under shoulders 9 in the rear of the frame member 1. The frame member 1 may extend completely around the peripheral edges of the panel 7. Usually, mitre joints are provided between the top and bottom and side members which comprise the frame produced by the frame member 1. The frame member 1 is held together by screw means and/or by other means known in the art. This does not form any part of the invention herein. The front face or leading face 11 of the frame member 1 carries a buffer 13. Typically the buffer 13 is made from a thin strip of synthetic plastics material. The frame member 1 has a pair of forwardly directed arms 15 which define under-cut shoulders 17. The buffer 13, being strip like is of a width which is greater than the width defined by the arms 15 and the under-cut shoulders 17. Thus, in order to fit the buffer 13 to the frame member 1, the buffer 13 is flexed so that the free edges can locate under the under-cut shoulders 17 as shown in Figure 1. The buffer 13 accordingly bows outwardly forwardly of the leading face 11.

A problem with the prior art frame member and buffer shown in Figures 1 and 2 is that when a force 19 is applied transverse to the longitudinal extent of the arms 15, i.e. the plane of the door panel - the force causes the buffer 13 to retract from at least one of the arms 15 as shown in Figure 2. Thus, the buffer 13 is no longer securely held to the frame member 1 which not only presents an unsightly appearance but also inhibits the buffer 13 properly acting as a buffer against the corresponding jamb member in the frame in which the door panel 7 is arranged to slide. Thus, impact of the door panel 7 striking the jamb is not absorbed. In the case of a glass panel 7 or a mirror panel 7 it breaks or cracks the panel.
In the preferred embodiment shown in Figures 3 through 8 the frame member 1 and the corresponding buffer 13 are arranged to inhibit against withdrawal of the buffer 13 from the frame member 1. Throughout Figures 3 through 8 like components to those shown in Figures 1 and 2 will be provided with the same numerical designations.

Here it can be seen that the frame member 1 is generally of the same transverse cross sectional shape as shown in Figures 1 and 2 but has a different front face or leading face 11. Here it can be seen that instead of providing arms 15 with under-cut shoulders 17 there is provided a pair of groove means 21 extending longitudinally of the frame member 1 along each side thereof. The frame member 1 includes a side extension 23 which acts like a handle so that a person can grip the frame member 1 to open and/or close the door panel 7. The frame member 1 is preferably produced from extruded aluminium although production from other material is included within the scope of the invention.

The frame member 1 has a leading face 25 and two groove means 21 are disposed on opposite side edges thereof. Each of the groove means 21 has an outermost side wall 27 and an innermost side wall 29 relative to a direction across said leading face 25. The outermost side walls 27 each carry an under-cut shoulder means 31.

Figures 7 and 8 show the structure of the buffer 13. Here it can be seen that the buffer 13 comprises a strip of suitable material such as synthetic plastics material. A pair of barbs 33 is provided along each side edge of the buffer 13. Thus, the buffer is strip like with a pair of longitudinally extending barbs at each side edge. The outermost barb 33 in each side edge provides shoulder means 35 which, in use, cooperates with the respective under-cut shoulder means 31 in the outermost side walls 27 of each of the groove means 21. Thus, each of the shoulder means 35 is disposed along opposite sides and on one face of the buffer 13.
In use, the buffer 13 is fitted to the frame member 1 by locating the outermost barb 33 at each side edge within respective ones of the groove means 21. The shoulder means 35 will, in turn, locate behind the under-cut shoulder means 31 in the groove means 21. A forward surface 37 (see Figure 6) on the innermost side wall 29 will then engage with the innermost surface of the buffer 13 as shown in Figure 4. Because the width of the buffer 13 is greater than the spacing of the pair of groove means 21, the buffer 13 will bow outwardly from the frame member 1 as shown.

Should a force be applied to the buffer 13 in a direction transverse to the longitudinally extending groove means - in a direction shown by numeral 19 in Figure 2 - then the buffer 13 will tend to swing about the forward surface 37 on the respective innermost face of the groove 21 to, in turn, force the shoulder means 35 into tight mating engagement with the under-cut shoulder means 31 which will inhibit against removal of the buffer 13 from the groove means 21. Thus, the buffer 13 will remain intact with the frame member 1. The width of each of the groove means 21 is sufficient to allow the barbs 33 to force fit therein. Thus, dislodgement of the buffer 13 from the groove means 21 is substantially inhibited by application of force 19. If for some reason the buffer 13 is required to be removed from the frame member 1, then the buffer 13 can be slid longitudinally relative to the frame member 1. A fresh buffer 13 can be replaced by either sliding it in a reverse direction or by force fitting the barbs 33 into the groove means 21. Second shoulder means 39 are provided behind the innermost barbs 33 so that any space which may otherwise be displayed across the groove means 21 appears closed or filled with the buffer 13. In the embodiment shown in Figures 3 through 8 the frame member 1 has the groove means 21 formed in forwardly projecting arms 41 and 43.

Instead of producing the groove means 21 in
forwardly projecting arms 41 and 43 they need be provided internally of the frame member 1 by suitable modification of the leading face 25.

Modifications may be made to the present invention as would be apparent to persons skilled in the art of producing extrusions and/or strip like materials and/or in the art of providing frames for panels such as frames for wardrobe units or the like.

These and other modifications may be made without departing from the ambit of the invention, the nature of which is to be determined from the foregoing description.
THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A frame member for a door panel said frame member having at a leading face, a pair of groove means extending longitudinally of said frame member, each said groove means having an outermost side wall and an innermost side wall relative to a direction across said leading face, said outermost side wall having under-cut shoulder means internally of said groove means, whereby a strip like resilient buffer member having shoulder means extending along opposite sides and one face can be held to said frame member by the shoulder means at one side locating in one of said groove means in said frame member, and the shoulder means in the other side locating in the other of said groove means in the frame member so that said buffer is bowed outwardly forwardly of said leading face, and whereby if forces are applied to said buffer member in a direction transverse to the longitudinal extent of said groove means, a relevant one of said innermost side wall will provide a fulcrum surface about which said buffer member will tend to swing to, in turn, force said shoulder means of said buffer member into engagement with said under-cut shoulder means in said outermost side wall, thereby inhibiting against removal of said buffer from said groove means.

2. A buffer member of resilient material, being strip like and having shoulder means extending along opposite side edges.

3. A combination of a frame member as claimed in claim 1 and a buffer member as claimed in claim 2.

4. A frame member substantially as herein described with reference to the accompanying drawings.

5. A buffer member substantially as herein described with reference to the accompanying drawings.

Dated this 10th Day of December, 1990.

DOWELL AUSTRALIA LIMITED
By Its Patent Attorneys

GRIFFITH HACK & CO.
Fellows Institute of Patent Attorneys of Australia
engagement with said under-cut shoulder means in said outermost side wall, thereby inhibiting against removal of said buffer from said groove means.