FLEXIBLE TRAFFIC DOOR

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ABSTRACT

A flexible traffic door comprising a rigid frame by which said door is hingedly mounted in a door frame and a sheet of flexible material mounted in said frame and forming a panel of said door, said sheet being attached to said frame by a connecting means which allows a relative movement between said sheet and said frame.

3 Claims, 2 Drawing Figures
The present invention relates to a flexible door such as flexible traffic doors and in particular relates to the mounting of the flexible panel in the frame of such doors.

Flexible traffic doors, i.e., doors of the type which are used between a warehouse and a loading platform or between an air conditioned room and a room at normal temperature which are opened as the result of physical contact by moving goods generally comprise an inverted substantially L-shaped frame by which the doors are hingedly mounted in a door frame and a panel comprising at least one sheet of flexible material particularly plastic material, such as rubber, which is fixedly attached to the frame. The door is mounted in the door frame by means of rising hinges connected to the leg portion of the L-frame which renders the door self closing, this self closing being enhanced by means of a spring means in the hinge means which is compressed when the door is open. The door panel may be formed of a single sheet of plastics material, such as a rubber sheet, or a pair of sheets of plastic material, the upper one being transparent so that one can see through the door and the lower one being for example rubber.

It is found however that with such a flexible traffic door there is a tendency for the panel of the door to warp during use due to the high impacts it receives as goods pass therethrough.

The present invention provides for the mounting of the panel within the frame of the doors such that the warping of the door during use is substantially reduced. It has now been found that by providing for relative movement between the panel and the frame that the aforesaid warpage may be substantially reduced.

According to the present invention therefore there is provided a flexible traffic door comprising a rigid frame by which said door is hingedly mounted in a door frame and a sheet of flexible material mounted in said frame to form a panel of said door, said sheets being attached to the frame by a connecting means which allows relative movement between said sheet and said frame.

In a particular embodiment of the present invention the frame is of a generally inverted L-shaped configuration as in a conventional flexible traffic door, the sheet being attached to the leg portion of the frame by a connecting means which allows relative movement between said sheet and said leg portion. In such conventional flexible doors the frame normally includes recesses extending longitudinally of the inside edges of both the leg and foot portions of the L-shaped frame which accommodate peripheral portions of the sheet. The peripheral portions being retained in said recesses by a plurality of spaced locking members, such as bolts, extending through apertures in said frame and said sheet.

In accordance with a preferred embodiment of the present invention each locking member extending through the leg portion of said frame includes a spacer member extending through the aperture in the sheet and dimensioned to prevent said frame from fixedly gripping said sheet, the aperture in said sheet through which said spacer member extends being dimensioned to be substantially larger than the cross sectional dimensions of the spacer member to provide for relative movement between the frame and the sheet. The spacer member is suitable a cylindrical spacer and a nut and bolt is used as the locking member.

The present invention will be further illustrated by way of the accompanying drawings in which:

FIG. 1 is a front elevation partially broken away of a door assembly in accordance with a preferred embodiment of the present invention;

FIG. 2 is an exploded detail of the mounting of the upper and lower portions of the door and the side frame in the door assembly of FIG. 1.

Referring to the drawings the door assembly comprises a pair of impact traffic doors 1. The doors 1 are identical in structure and mounting within the door jams and as such only one door 1 has been shown completely. Each door 1 comprises a clear plastics upper portion 2 and a flexible rubber lower portion 3 which portions 2 and 3 are joined together by a splicing strip 4 rivetted thereto by rivets 5. The doors 1 in their closed position have an overlap 6 and are held closed by the magnet assembly 7.

Each door 1 includes a door frame 8 comprising a top steel frame 9, and a steel gusset 10 and a side steel frame 11. The upper and lower portions 2 and 3 are riveted to the top steel frame 9 and steel gusset 10 but are mounted in side steel frame 11 as shown in FIG. 2.

Referring to FIG. 2, the side frame 11 comprises a pair of side frame members 11a and 11b which accommodate door shaft 13. The door portions 2 and 3 of the door are mounted with the side frame members 11a and 11b by a bolt 50, nut 51 and lock washers 52. The side frame washers 11a and 11b are spaced from one another a greater distance than the thickness of the door portions 2 and 3 by a cylindrical hollow space. Member 53 which extends through the portion of the door via an oversized aperture 54. The bolt 50 thus passes through lock washers 52, apertures 55 in the side frame members 11a and 11b and spacer 53 and is locked by nut 51 to provide for relative movement between the door and the side frame 11.

The door 1 is mounted on the door jamb 12 by a door shaft 13 to which shaft 13 the frame 11 is bolted by bolts 14. A reinforced rubber seal 15 extends between the longitudinal edge of the side steel frame 11 and the door jamb 12. The upper end of the upper portion 2 comes into substantial abutment with the header door jamb 16. The shaft 13 is vertically slideable in an upper V-cam gravity hinge with an orlite bushing 17, a central V-cam gravity hinge with an orlite bushing 18 and bottom bearing with orlite bushing 19 each being bolted to the door jamb 12. The shaft 13 has fixedly attached thereto, by expansion pin 20 and set screw 21, a V-cam follower 22 at the hinge 17 and a V-cam follower 23 at the hinge 18 and each hinge is provided with a rubber seal 24. On opening, the door 1 rises due to the interaction between the hinges 17 and 18 and the cam followers 21 and 22 and as such the door 1 will close under the action of gravity. To facilitate faster closing of the door 1 the shaft 13 is provided at the lower end thereof with a compression spring 25 having a washer 26 at the upper end thereof and an adjustable collar 27 at the lower end thereof which is releasably fixedly held on the shaft 13 by set screws. When the door 1 is opened the spring 25 is compressed against the bottom bearing 19.

To allow opening of the door 1 the upper portion 2 has a recess 28 therein in that portion of the upper edge thereof which lies beneath the lower edge of the header.
3. A door as claimed in claim 1 in which the sheet is of flexible plastic material.