ABSTRACT

A door having intermediate the ends thereof a pair of resilient bumpers fixedly located opposite each other on each side of the door, each of said bumpers including at least one threaded first recess extending partially therethrough from the face thereof in contact with the door and receiving the threaded end of a bolt extending through the door and at least one second recess extending partially therethrough from the face thereof in contact with the door and dimensioned to accommodate the head of said bolt, the thickness of material between each second recess and the face of the bumper remote from the door being such as to allow penetration therethrough of a driving tool for causing said bolt to enter a first threaded recess in the other of said bumpers.

6 Claims, 4 Drawing Figures
BUMPER MOUNTING FOR FLEXIBLE TRAFFIC DOOR

The present invention relates to doors particularly flexible traffic doors. In particular the present invention relates to the mounting of bumpers on such doors.

Doors, particularly flexible traffic doors, which are used, for example, between a warehouse and a loading platform or between an air conditioned room and a room with normal temperature, and are normally opened as a result of physical contact, by moving goods and are self closing by virtue of being mounted in the door frame on rising hinges which cause the door to rise as it is opened and thus be biased to the closed position, are usually provided with bumpers formed of a flexible resilient material, such as rubber. Such bumpers are normally located on both sides of the door opposite each other and intermediate the ends thereof suitably about 4 feet from the bottom of the door thus allowing for impact on the door by the goods being moved therethrough. Heretofore it has been necessary in mounting the bumpers on the door by means of bolts to provide the bumpers with holes in the outer surface in order to provide access to the bolts for a driving tool which tools are undesirable.

The present invention provides a novel bumper which may be mounted on doors such as flexible traffic doors by means of bolts and at the same time provide bumper surfaces without observable holes.

According to the present invention therefore there is provided a door having intermediate the ends thereof a pair of resilient bumpers fixedly located opposite each other on each side of the door each of said bumpers including at least one threaded first recess extending partially therethrough from the face in contact with the door, each first recess receiving the threaded end of a bolt extending through said door and at least one second recess extending partially therethrough from the face thereof in contact with the door and dimensioned to accommodate the head of said bolt, the thickness of material between each second recess and the face of the bumper remote from the door being such as to allow penetration therethrough with a driving tool causing said bolt to enter a first threaded recess in the other of said bumpers.

The present invention also provides a bumper for use in the aforesaid door including at least one first recess extending partially therethrough from the face thereof for contact with the door, each first recess being threaded to receive the threaded end of a bolt and at least one second recess extending partially therethrough from the face thereof for contacting the door and dimensioned to accommodate the head of said bolt, the thickness of material between each second recess and the face of the bumper opposite to said contact face being such as to allow penetration therethrough of a driving tool for said bolt.

Preferably, each bumper is provided with a plurality of said first and second recesses to provide for complete rigid and safe attachment of the bumpers to the door.

The bumpers are made of a flexible resilient material, preferably a flexible resilient plastics material such as rubber.

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 a section taken along the line 2—2 in FIG. 1;

FIG. 3 is a detail section through bumpers on the doors in FIG. 1 showing the attachment of the bumpers to the door, and FIG. 4 is an exploded detail view showing the attachment of the bumpers to the door in 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 jambs 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 formed together at bumpers 4. 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, a steel gusset 10 and a side steel frame 11 all of which are bolted to the upper and lower portions 2 and 3 by bolts 5. 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 within about ¾ inch of the header door jamb 16. The shaft 13 is vertically slideable in an upper V-cam gravity hinge with an orlite bushing bolted to the door jamb 12. The shaft 13 has fixedly attached thereto a V-cam follower 22 at the hinge 17. On opening, the door 1 rises due to the interaction between the hinges 17 and the cam follower 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 washer 26. Up to the present the door as described in the drawings is a conventional door.

In accordance with the present invention and referring specifically to FIGS. 3 and 4 a bumper 4 is attached to either side of the door 1. In assembly, a first bumper 4 which is made of rubber is attached to one side of the door 1 by bolts 18 which extend through the door 1 and are received in threaded socket 19 in the first bumper 4. A second similar bumper 4 is then attached to the other side of the door 1 by bolts 20 which also extend through the door 1 and are received in threaded sockets 21, in the second bumper 4. The second bumper 4 has recesses 24 therein to accommodate the heads of the bolts 18 and the first bumper 4 has a recess 28 therein to accommodate the head of the bolts 20. In the first bumper 4 the recess 28 has sufficient depth that the rubber 29 is sufficiently thin as to provide easy access to a driving tool 30 for tightening the bolts 20.

I claim:

1. A door having intermediate the ends thereof a pair of resilient bumpers fixedly located opposite each other on each side of the door, each of said bumpers including at least one threaded first recess extending partially
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3. A door as claimed in claim 2 in which at least one of the bumpers is made of rubber.

4. A resilient bumper for attachment to a door including at least one first recess extending partially therethrough from the face thereof for contacting the door and being threaded to receive the threaded end of a first bolt, and at least one second recess extending partially therethrough from the face thereof for contacting the door and dimensioned to accommodate the head of a second bolt, the thickness of material between each second recess and the respective faces of the bumpers remote from the door being such as to allow penetration therethrough of a driving tool for causing said bolts to enter said threaded recesses in the respective other of said bumpers.

2. A door as claimed in claim 1 in which each bumper includes a plurality of said first and second recesses.

3. A door as claimed in claim 2 in which at least one of the bumpers is made of rubber.

4. A resilient bumper for attachment to a door including at least one first recess extending partially therethrough from the face thereof for contacting the door and being threaded to receive the threaded end of a first bolt, and at least one second recess extending partially therethrough from the face thereof for contacting the door and dimensioned to accommodate the head of a second bolt, the thickness of material between each second recess and the face of the bumper opposite said contact face being such as to allow penetration therethrough of a driving tool for the head of said second bolt.

5. A bumper as claimed in claim 4 including a plurality of said first and second recesses.

6. A bumper as claimed in claim 4 formed of rubber.

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