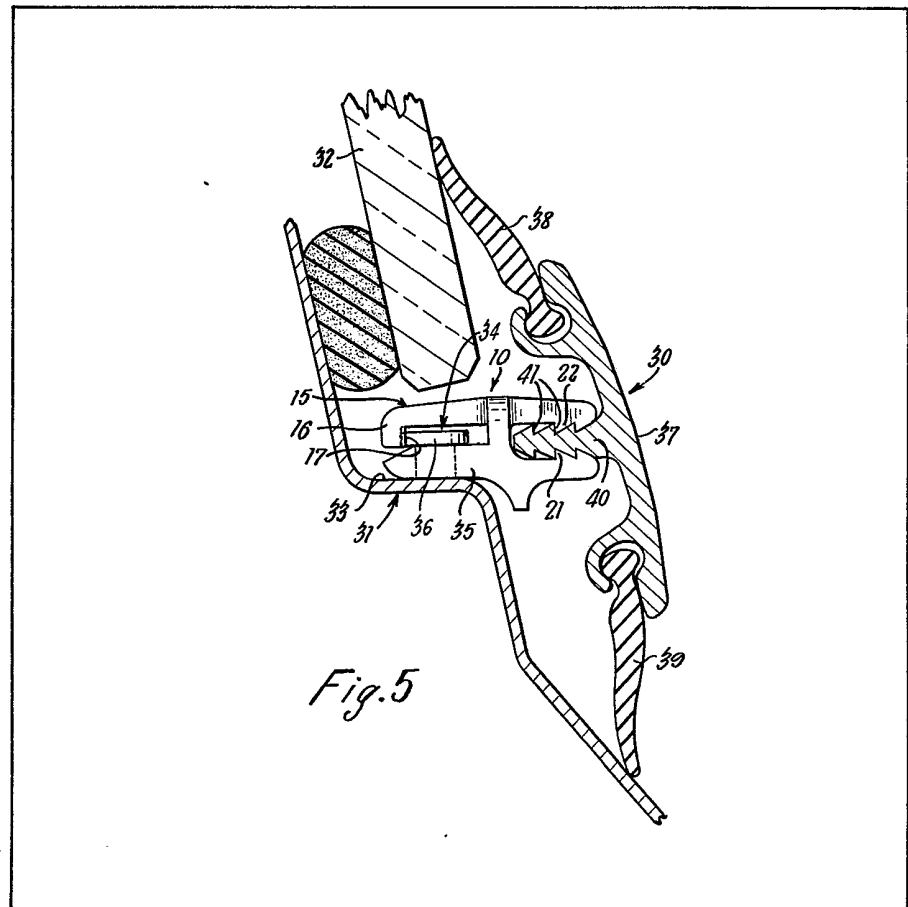


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(54) Windshield moulding clip

(57) A windshield moulding clip 10 comprises a body portion 11 having a surface adapted to rest on a support surface 33 of a vehicle framework 31, latching means 13, 13a and 15 adapted to secure the clip 10 to a projecting element, for example, a headed stud 34 on the vehicle framework and moulding engaging means comprising resilient jaw portions with ratchet teeth 21, 22 extending from the body portion 11 and adapted to resiliently grip a projection 40 on the moulding 30 to secure the moulding to the vehicle.



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Fig. 1

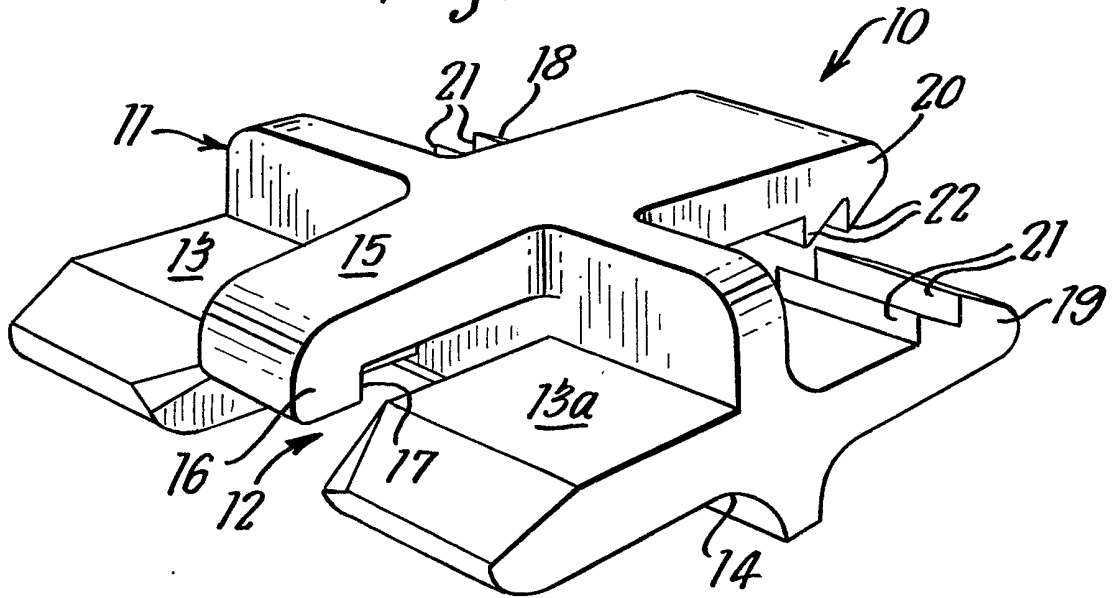


Fig. 2

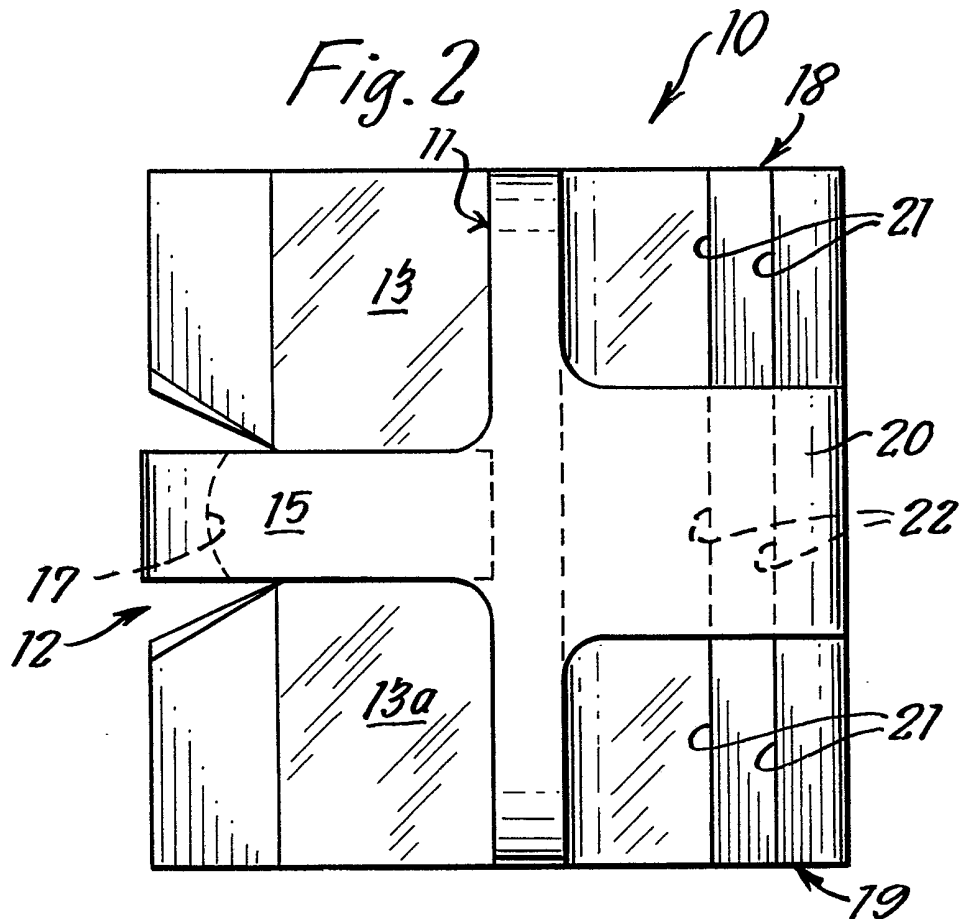


Fig. 3

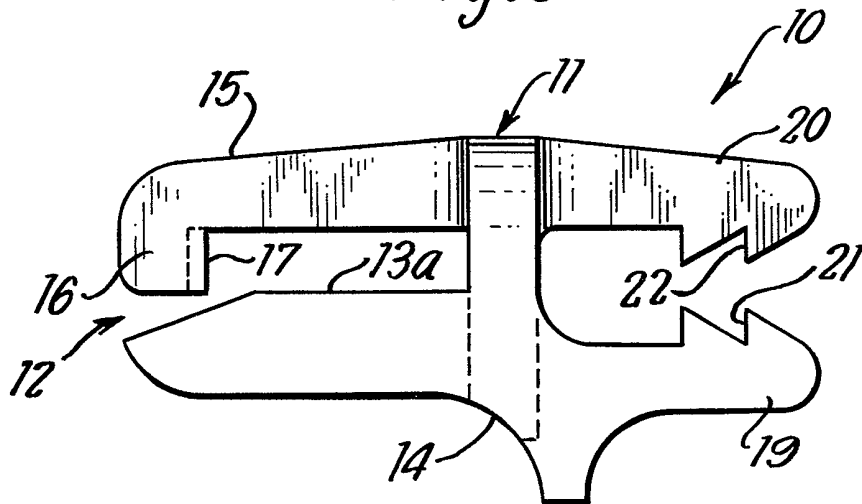
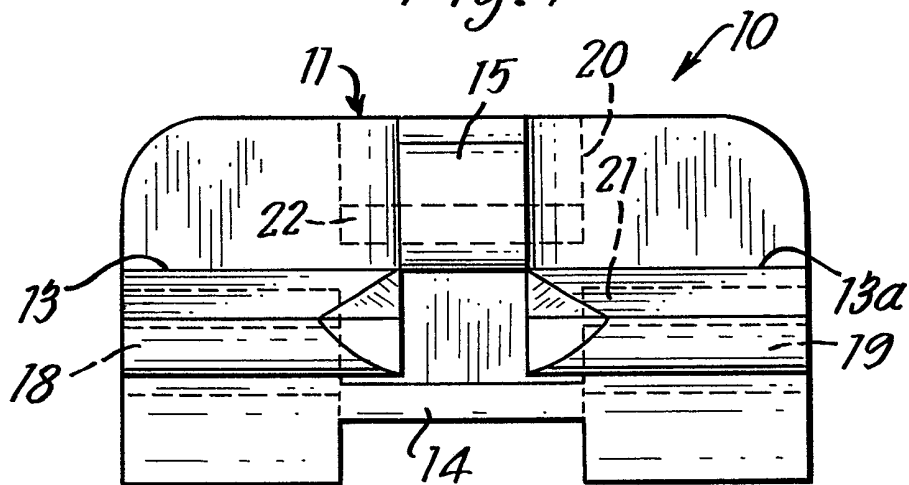


Fig. 4



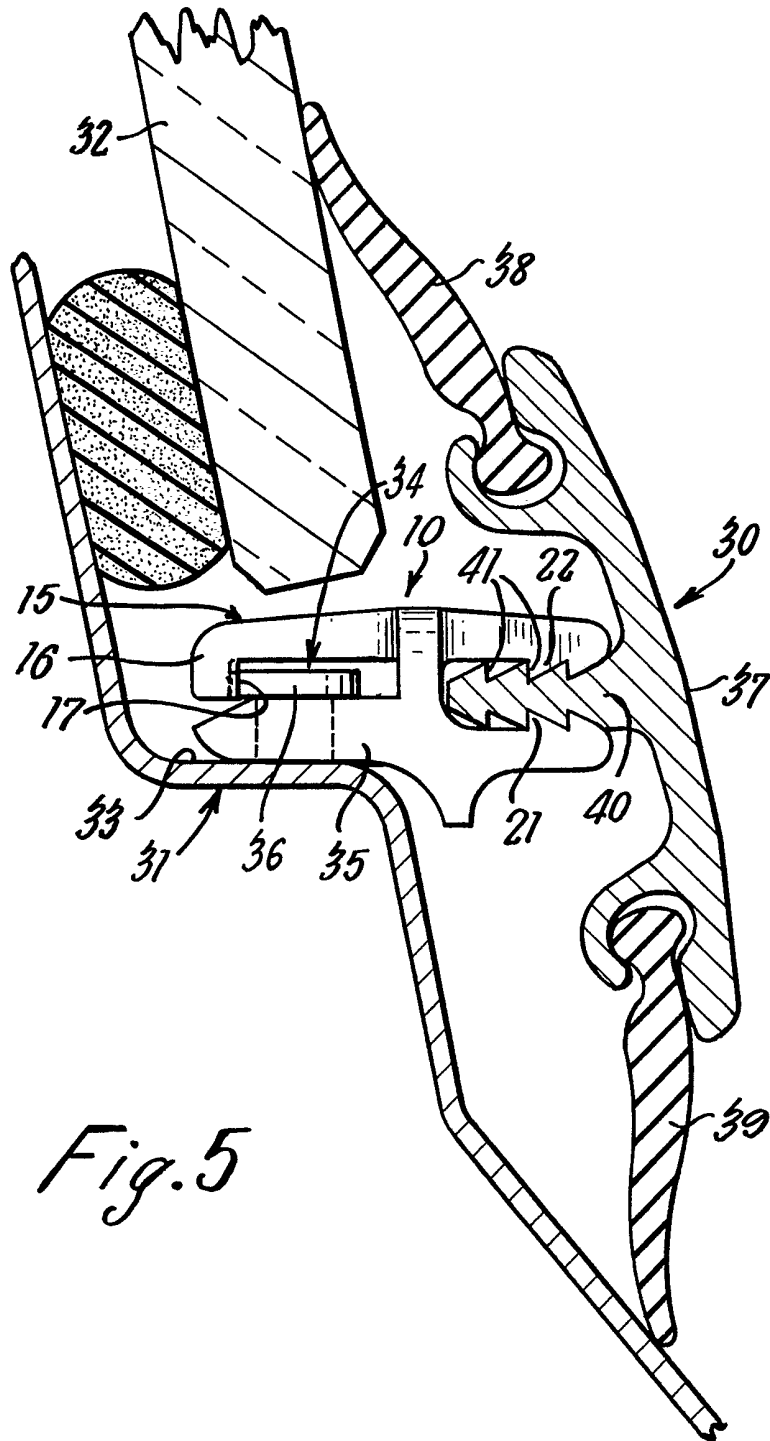


Fig. 5

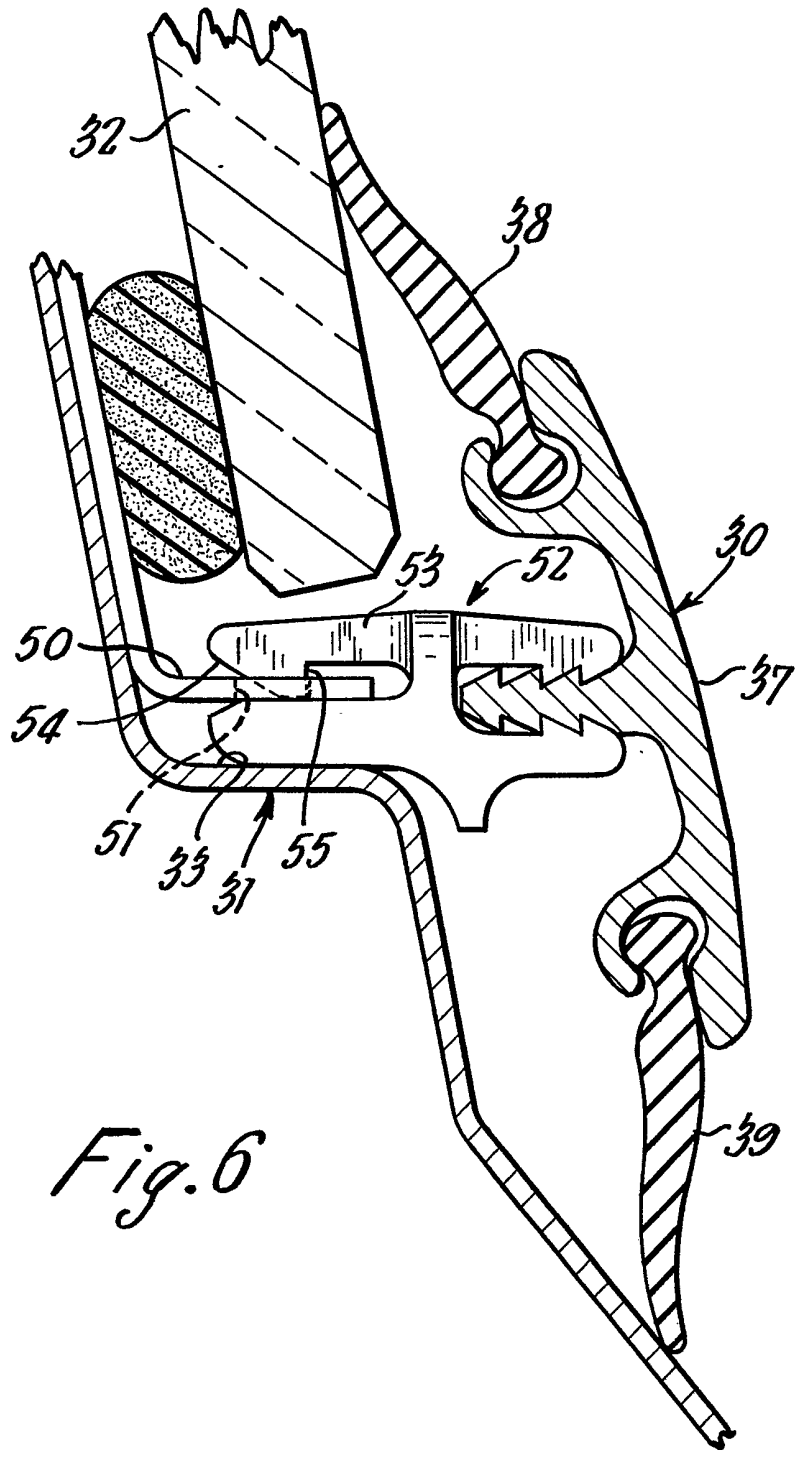


Fig. 6

SPECIFICATION

Windshield moulding clip

5 The present invention relates to a windshield moulding clip.

It is the practice in the automobile industry to attach a windscreen in position in the windscreen opening with the aid of a heat cured bead of adhesive which adheres the windscreen to the vehicle framework and spaces the edge of the windscreen from the framework. It is then necessary to attach a moulding around the windscreen so as to hide and seal the gap between the windscreen and the framework of the vehicle.

There have been many proposals for solving the problem of attaching the moulding which is used for this purpose to the vehicle framework. However none of these proposals have been wholly satisfactory. In some instances the clip or fastener has not accommodated the differences which occur in the spacing of the windscreen from the vehicle framework, in other instances the clip or fastener has not been secure under vibration or has set up rust on the framework of the vehicle. In other instances, the clip or fastener has itself been too complex or too difficult to attach to the framework.

In British Patent Specification No. 1,095,212 it has been proposed to weld a plurality of channel section clips to the vehicle framework and then attach a plurality of support blocks to the clips. The support blocks then serve to position and support the windscreen before it is adhered to the framework. Each block is also found with a slot to receive and grip a moulding projection and secure the moulding projection in position against the windscreen.

A similar proposal has been made in U.S. Patent Specification No. 3,968,613 but in this case the support blocks are bonded directly onto the framework and the moulding is attached to the blocks with the aid of a plurality of intermediate portions each of which has a projection which locates in and is gripped by the sides of a slot in the block.

Both of these proposals have the disadvantage that the support blocks must be permanently attached to the vehicle framework before the windscreen is located in position and because they serve to locate and initially support the windscreen must be accurately and securely bonded in place, thus increasing the time and costs involved in the assembly and mounting operation.

It is an object of the present invention to provide a clip which obviates or substantially reduces all of the above described disadvantages of hitherto known clips and which can be employed to securely and accurately locate and attach a windshield moulding to a vehicle framework after the windscreen has been located and attached in position.

According to one aspect of the present invention we provide a vehicle windshield moulding clip of synthetic plastics material comprising a body portion having a surface adapted to rest on a support

surface of the vehicle framework, resilient latching means adapted to slidably secure the clip to a projecting element on the vehicle framework and moulding engaging means comprising at least two resilient jaw portions extending from the body portion and adapted to resiliently grip a projection on the moulding to secure the moulding to the vehicle.

65 Preferred forms of the present invention will now be described with reference to the accompanying drawings, in which:—

Figure 1 is a perspective view of a windshield moulding clip of the present invention;

70 Figure 2 is a plan view of the clip shown in Figure 1;

Figure 3 is a side view of the clip shown in Figure 1;

80 Figure 4 is a front view of the clip shown in Figure 1;

Figure 5 is a side view partly in section showing a windshield moulding secured to a vehicle framework with the aid of the clip shown in Figures 1 to 4; and

85 Figure 6 is a view similar to Figure 5 showing a modification of the clip of Figures 1 to 4.

In Figures 1 to 5 a clip is indicated generally at 10 which is formed, preferably by injection moulding from any suitable synthetic plastics material such as an acetal resin.

The clip 10 comprises a body portion 11 which is divided on one side by a slot 12 and which is stepped to form an upwardly facing flat surface 13, 13a which is divided by the slot 12 leaving a tapered entry. The body portion 11 has an under surface 14 which is concavely shaped to compliment and rest upon a similarly shaped surface of the vehicle framework.

Projecting from a part of the body portion 11 is a resilient arm 15 which overlies the slot 12 and is spaced upwardly from the flat surfaces 13, 13a. The outer end of the arm 15 is formed with a downwardly extending lip 16 which forms an abutment shoulder 17.

Projecting from the opposite side of the body portion 11 to the arm 15 are two lower jaw portions 18 and 19 respectively and an upper jaw portion 20. The lower jaw portions 18 and 19 are located one on each side of the upper jaw portion 20. The surfaces of the bottom jaws 18 and 19 which face the upper jaw 20 are formed with ratchet teeth 21 which extend across the width of each of the lower jaws. Similarly the upper jaw 20 is formed with ratchet teeth 22 on the surface facing the lower jaws 18 and 19 and extending across the full width of the upper jaw 20.

115 The clip 10 is used as shown in Figure 5 to attach a composite moulding 30 to a vehicle framework 31 so as to cover and close the gap formed between the vehicle framework 31 and the outer edge of the vehicle windshield 32. The vehicle framework 31 is formed with a step surface 33 which faces the edge of the windshield 32. A plurality of headed studs 34 are welded to the step surface 33 at intervals around the windshield opening and a clip 10 is attached to each of the studs 34. Each clip 10 is attached to a

stud 34 by sliding the clip onto the stud 34 so that the shank 35 of the stud enters the slot 12 and the head 36 of the stud engages and lifts the arm 15. When the clip 10 has been pushed fully home so that the concave under surface 14 of the clip seats on the step surface 33, the arm 15 snaps down behind the head 36 of the stud so that the abutment face 17 on the lip 16 of the arm 15 prevents withdrawal of the clip from the stud. The clip is now securely located and mounted on the vehicle framework and the composite moulding 30 can be attached to the clip.

The composite moulding 30 comprises a central portion 37 which may be formed or extruded from rolled aluminium, an upper resilient portion 38 and a lower resilient portion 39. The central portion 37 has a projecting flange 40 which is formed with ratchet teeth 41 on both sides, which will compliment and inter-engage with the ratchet teeth on the jaws 18, 19 and 20 of the clip 10.

In order to attach the moulding 30 to the clip 10, the flange 40 is forced between the upper jaw 20 and the lower jaws 18 and 19 so that the ratchet teeth 21 and 22 on the jaws inter-engage with the ratchet teeth on the flange 41 and lock the central portion 37 of the moulding in position. As the flange 40 is pressed home, the upper resilient portion 38 of the moulding is pressed resiliently against the outer face of the windshield 32 and the lower resilient portion 39 is pressed resiliently against the framework 31 of the vehicle. The moulding is thus placed under permanent tension so as to eliminate any risk of vibration or play and so as to securely attach the moulding to the vehicle framework and effectively close and seal the gap between the windshield and the framework.

It will be appreciated that a plurality of clips will be attached on the framework around the windshield and the flange 40 is continuous so that any need for accurate positioning of the clips in relation to the moulding is eliminated.

In certain applications the vehicle framework 31 may be provided as shown in Figure 6 with a welded lug 50 which projects into the gap between the windshield 32 and the step surface 33, the welded lug being formed with an aperture 51.

In order to attach the moulding 30 to a vehicle framework provided with welded lugs 50 a modification of the clip 10 is provided and illustrated in Figure 6 at 52. The clip 52 is similar to the clip 10 except that it is provided with an upper arm 53 having a relatively long tapered lead-in surface 54 and an abutment shoulder 55 which is spaced from the lead-in surface 54. In all other respects however the clip 52 is similar to the clip 10.

In order to attach the clip 52 to the welded lug 50, the clip 52 is slid onto the projecting lug so that the lug passes between the lower arms of the clip 55 and the upper arm 53 thereby raising the upper arm 53 as the lead-in surface 54 rides across the end of the lug 50, until the shoulder 55 snaps into the aperture 51. Thereafter the abutment shoulder 55 resists withdrawal of the clip 52 from the lug 50 and the moulding 30 can be attached to the clip 52 in the same manner as it is attached to the clip 10.

65 CLAIMS

1. A vehicle windshield moulding clip of plastics material comprising a body portion having a surface adapted to rest on a support surface of the vehicle framework, resilient latching means adapted to slidably secure the clip to a projecting element on the vehicle framework and moulding engaging means comprising at least two resilient jaw portions extending from the body portion and adapted to resiliently grip a projection on the moulding to secure the moulding to the vehicle.

2. A clip as claimed in claim 1 in which the jaw portions have ratchet teeth for engaging with corresponding ratchet teeth on the moulding projection to resist withdrawal of the moulding projection from the jaw portions.

3. A clip as claimed in claim 1 or claim 2 in which the latching means is adapted to engage with a headed stud projecting from the vehicle framework.

4. A clip as claimed in claim 3, in which the latching means has a body portion including a pair of spaced lower portions forming a slot to receive the shank of the stud and an upper resilient arm having a depending lip to engage with the head of the stud.

5. A clip as claimed in claim 1, in which the latching means is adapted to engage with a flat portion of a welded lug projecting from the vehicle framework.

6. A clip as claimed in claim 5, in which the latching means has a body portion including a lower arm for resting on the support surface and an upper arm spaced from the lower arm and forming therewith a recess to receive the flat portion of the lug, the upper arm having a depending lip to engage with an aperture in the flat portion of the lug.

7. A clip as claimed in any preceding claim, in which the plastics material is an acetal resin.

8. A clip as claimed in any preceding claim, in which the clip is formed by injection moulding.

9. A windshield moulding clip substantially as hereinbefore described with reference to Figures 1 to 5 or Figure 6 of the accompanying drawings.

10. An assembly of a vehicle windshield moulding attached across the gap between the windshield and a vehicle framework with the aid of a clip as claimed in any preceding claim, wherein the clip is slidably secured by the latching means on a projecting element on the vehicle framework at a location within the gap and the moulding is located over the gap so as to rest against the windshield and the vehicle framework with a projection on the moulding resiliently gripped between the jaw portions of the clip to retain the moulding in position.

11. An assembly of a vehicle windshield moulding attached across the gap between the windshield and a vehicle framework substantially as described herein with reference to Figure 5 or Figure 6 of the accompanying drawings.