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- (71) Applicants
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(54) Channel-shaped finishing or sealing strips

(57) A channel-shaped sealing strip comprises a channel-shaped metal core or carrier 5 completely embedded in flexible plastics or rubber material 6 which additionally defines gripping lips on the two opposite inside wall surfaces of the channel and running longitudinally along the strip.

There are four relatively small lips 10A to 10D on one wall surface which are substantially equidistantly spaced from each other and the first, 10A, of which runs along the distal edge of its wall surface adjacent the mouth of the channel. There are two relatively larger lips 12A, 12B on the opposite wall surface. A soft rubber seal may be attached to the outside surface of the strip.

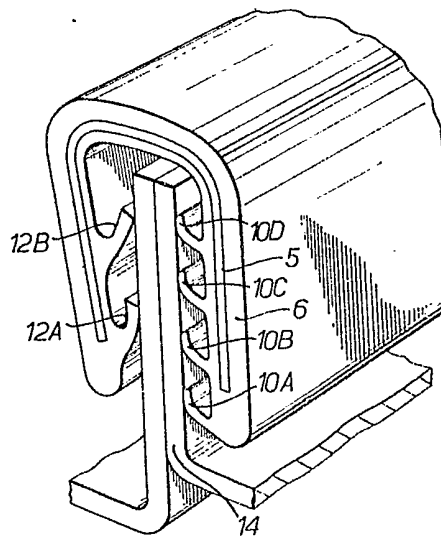


FIG. 2.

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ERRATUM

SPECIFICATION NO 2070116A

Front page, Heading (72) *delete* Robert Granville Bright,

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5 August 1982

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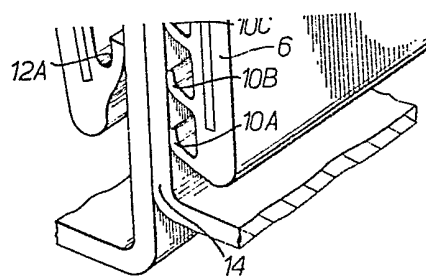


FIG.2.

The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

SEE ERRATA SLIP ATTACHED

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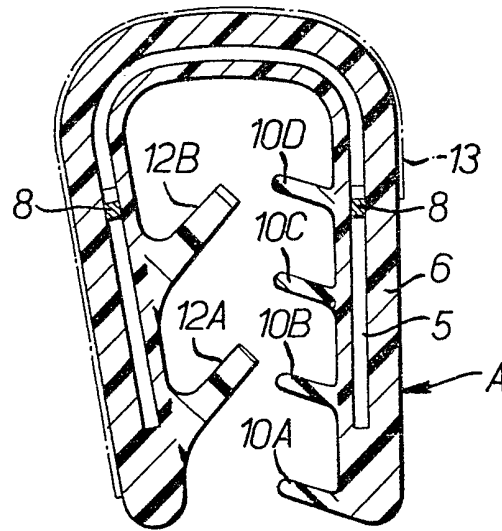


FIG. 1.

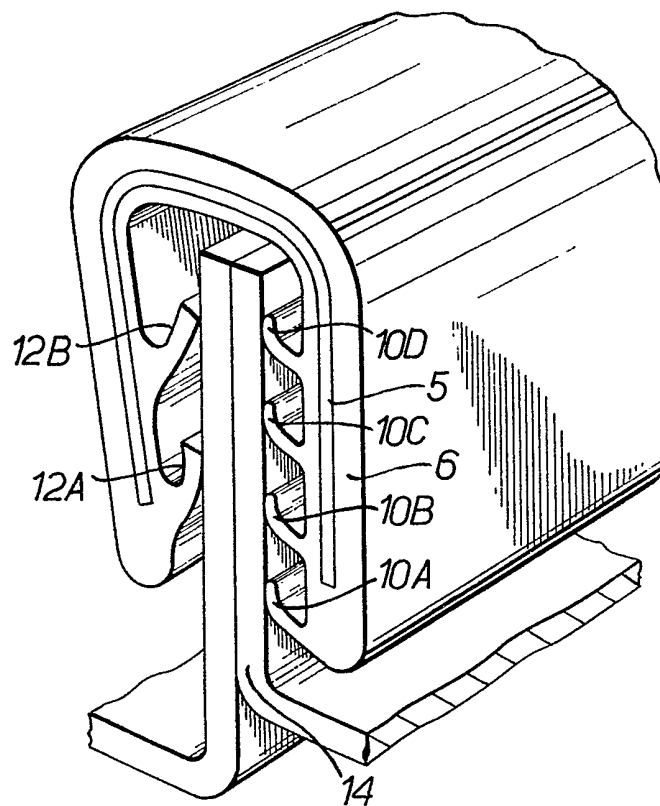


FIG. 2.

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FIG. 3.

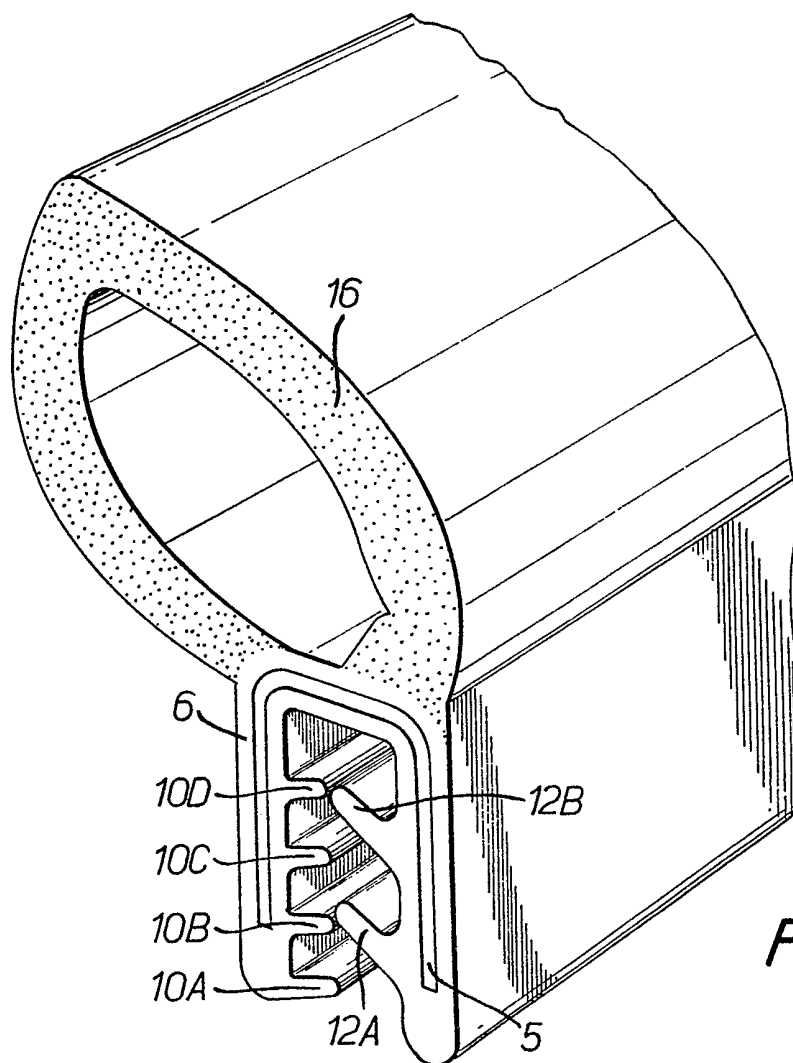
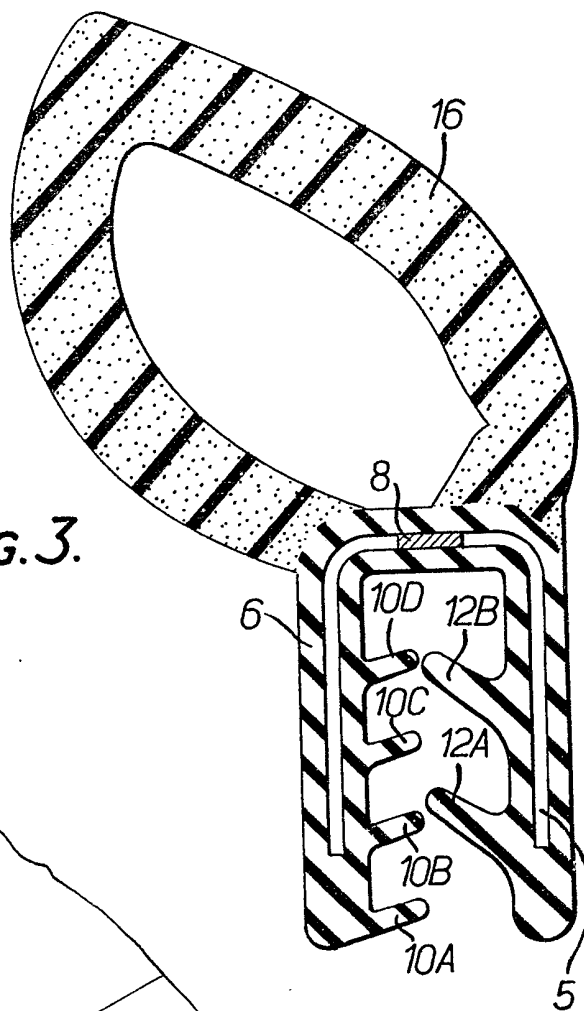


FIG. 4.

SPECIFICATION

Channel-shaped finishing or sealing strips

The invention relates to channel-shaped finishing or sealing strips particularly though not exclusively for use on vehicle bodies such as for covering bodywork flanges running around openings such as door or luggage compartment openings. When used in the latter manner, such a strip may carry a soft seal running along its outside surface and so positioned that, when the strip is mounted on the flange, a door of the body opening closes onto the seal to prevent entry of draughts and water.

Various novel features of the invention will be apparent from the following description, given by way of example only, of finishing and sealing strips embodying the invention, reference being made to the accompanying diagrammatic drawings in which:

Figure 1 is a cross-sectional view through one of the strips;

Figure 2 is a perspective view of the strip of Figure 1;

Figure 3 is a cross-section through another one of the strips; and

Figure 4 is a perspective view of the strip of Figure 3.

More specifically to be described below is a channel-shaped finishing or sealing strip incorporating channel-shaped resilient material from whose two opposite inside wall surfaces project inwardly directed gripping and sealing lips running longitudinally along the strip, there being a plurality of such lips on each of the two opposite wall surfaces and one of the lips on one of the wall surfaces being positioned along the edge of that wall surface adjacent the mouth of the channel.

Advantageously, the lips on the said one wall surface are smaller than the lips on the other wall surface. Preferably, there are four substantially equidistantly spaced lips on the said one wall surface and two on the other wall surface.

Preferably the strip incorporates a channel-shaped flexible metal core or carrier.

The strip may carry a soft sealing member running along its outside surface.

In a more specific sense, there will be disclosed below a channel-shaped sealing strip comprising a channel-shaped metal core or carrier completely embedded in flexible plastics or rubber material which additionally defines gripping lips on the two opposite inside wall surfaces of the channel and running longitudinally along the strip, there being four relatively small such lips on one said wall surface which are substantially equidistantly spaced from each other and the first of which runs along the distal edge of that wall surface adjacent the mouth of the channel and there being two relatively larger such lips on the opposite wall surface, one of the relatively larger lips having its distal edge adjacent the distal edge of the second relatively small lip and the other of the relatively larger lips having its distal edge adjacent the fourth or innermost one of the relatively small lips,

and a soft rubber seal attached to and running along the outside surface of the strip.

The foregoing are exemplary and not exhaustive of the various features of the sealing strips now to be more specifically described.

As shown in Figure 1, the sealing strip comprises a channel-shaped metal core or carrier which is completely embedded in plastics material. The carrier may take any suitable form. For example, it may comprise a series of inverted U-shaped elements arranged side-by-side so as to define a channel and each either connected to the adjacent elements by short flexible connecting links or not connected. By way of example, the carrier in Figure 1 is shown as being of the form in which the U-shaped elements are connected together by short connecting links each of which joins one leg of one of the elements to a corresponding point on the adjacent leg of the next element. The connecting links may be arranged to fracture in use. Other forms of carrier may be used instead; for example, the carrier may comprise loops of wire formed into channel shape.

The plastics material is formed on its inner surface with gripping and sealing lips on one inside wall surface and gripping and sealing lips on the opposite inside wall surface. These lips extend along the full length of the channel. As will be seen, the four lips are of reduced size as compared with the lips and are arranged more nearly perpendicular to the side surface from which they project than are the lips.

It will also be noted that the distal end of the lip is positioned just above the distal end of the second lip, while the distal end of the lip is almost opposite the distal end of the fourth lip.

Additionally, it will be noted that the first or outermost small lip is positioned to run along the edge of the side wall of the channel from which it projects.

The sealing strip may be manufactured by extruding plastics material onto the carrier (e.g. when the carrier is in the form of a flat metal blank, it being subsequently bent up into channel form). Such extrusion may be carried out using a cross-head extruder of known form. The extrusion process may be such as to form the gripping lips and the channel-shaped plastics material simultaneously.

Advantageously, the extrusion process may be such that the plastics material of the gripping lips is softer than the channel-shaped plastics material. Instead, for example, the plastics material of the gripping lips on one side of the channel could be softer than the channel-shaped plastics material while the gripping lips on the opposite side of the channel could be of the same hardness as the plastics material.

At least part of the external surface of the plastics material may be printed or embossed to improve its appearance as indicated at 13.

A soft sealing member, for example a tubular-shaped member made of rubber, may be secured to the outside surface (for example the part of the surface marked A) so as to run along the length of the strip.

In use, the strip is placed onto a mounting flange 14 (see Fig. 2) running around an opening, such as a door opening, in a vehicle body and grips the flange so as to cover and protect it and to provide a sealing surface onto which the door of the opening closes. The sealing process is enhanced by the provision of the soft sealing member referred to above.

When the strip is pushed onto the flange, as shown diagrammatically in Figure 2, the gripping lips 10A to 10D and 12A and 12B press against the opposite side surfaces of the flange 14 and provide a sealing and gripping effect. Thus, they help to prevent water or moisture from entering the inside of the strip through the mouth of the channel, travelling around the inside of the channel, and past the edge of the flange, thus passing from the inside to the outside of the vehicle body. This sealing function is enhanced by the positioning of the small lip 10A along the edge of the channel wall to which it is attached.

Use of the four small lips 10A to 10D on one side of the channel and the two larger lips 12A and 12B on the opposite side is found to be advantageous. It stabilises the strip against wobbling or rocking movement on the flange. The strip is found to be relatively easy to push onto the flange but has a high resistance to removal. The enhanced sealing which is provided by the lips removes or reduces any requirement to place a sealing mastic or the like inside the channel.

Parts in Figure 3 and 4 corresponding to parts in Figures 1 and 2 are correspondingly referenced.

The strip of Figures 3 and 4 is primarily intended for fitting onto a flange running around a luggage compartment opening of a vehicle body. For this reason, the metal carrier 5, which again is shown purely by way of example as comprising a series of U-shaped elements arranged side-by-side, is in the form in which each element is connected to the next by a connecting link 8 positioned, in this case, along the inverted base of the channel. This is because the particular application (for fitting to luggage compartment openings) requires the strip to be readily bendable in a horizontal plane — in contrast to the strip of Figures 1 and 2 where the primary bending is in the vertical plane.

The strip of Figures 3 and 4 also differs in that its channel-shaped flexible covering material 6 is rubber instead of plastics. The arrangement of the four small gripping lips 10A to 10D, and the larger gripping lips 12A and 12B, is similar to that in Figures 1 and 2, but the lips in Figures 3 and 4 are formed in rubber.

The strip of Figures 3 and 4 carries a tubular rubber seal 16 which is shown attached to the inverted base of the strip.

Advantageously, the seal 16 is made of sponge rubber while the channel-shaped rubber 6 and the

lips 10A and 10D and 12A and 12B are solid rubber.

The sealing strip may be manufactured by an extrusion process which involves extruding rubber onto the metal carrier 5, again possibly while it is in the form of a flat metal blank as in the case described above with reference to Figures 1 and 2. Such extrusion may be used to form the seal 16 simultaneously (a duplex extrusion process being used so that the seal is in sponge rubber and the remainder in solid rubber).

The arrangement of the gripping lips 10A to 10D and 12A and 12B produces the same advantages as discussed above with reference to Figures 1 and 2.

The improved weather sealing provided by the first or outermost small lip 10A is such that the strip does not need the outwardly and downwardly projecting additional sealing lips sometimes attached to the outside of sealing strips intended for luggage compartment openings.

CLAIMS

1. A channel-shaped finishing and sealing strip incorporating channel-shaped resilient material from whose two opposite inside wall surfaces project inwardly directed lips running longitudinally along the strip, there being a plurality of such lips on each of the two opposite wall surfaces and one of the lips on one of the wall surfaces being positioned along the edge of that wall surface adjacent the mouth of the channel.

2. A strip according to claim 1, in which the lips on the said one wall surface are smaller than the lips on the other wall surface.

3. A strip according to claim 1 or 2, in which there are four substantially equidistantly spaced lips on the said one wall surface and two on the other wall surface.

4. A strip according to any preceding claim, incorporating a channel-shaped flexible reinforcing carrier.

5. A strip according to any preceding claim, having a soft sealing member running along and attached to its outside surface.

6. A channel-shaped sealing strip, comprising a channel-shaped metal core or carrier completely embedded in flexible plastics or rubber material which additionally defines gripping lips on the two opposite inside wall surfaces of the channel and running longitudinally along the strip, there being four relatively small such lips on one said wall surface which are substantially equidistantly spaced from each other and the first of which runs along the distal edge of that wall surface adjacent the mouth of the channel and there being two relatively larger such lips on the opposite wall surface, one of the relatively larger lips having its distal edge adjacent the distal edge of the second relatively small lip and the other of the relatively larger lips having its distal edge adjacent the fourth or innermost one of the relatively small lips, and a soft rubber seal attached to and running along the outside surface of the strip.

7. A channel-shaped sealing strip, substantially as described with reference to Figures 1 and 2 of the accompanying drawings.

5 8. A channel-shaped sealing strip, substantially as described with reference to Figures 3 and 4 of the accompanying drawings.

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