Dec. 16, 1969 R. D. HOOK 3,484,126

MITER JOINT FOR TRIM MEMBER

Filed Feb. 27, 1968 2 Sheets-Sheet 1

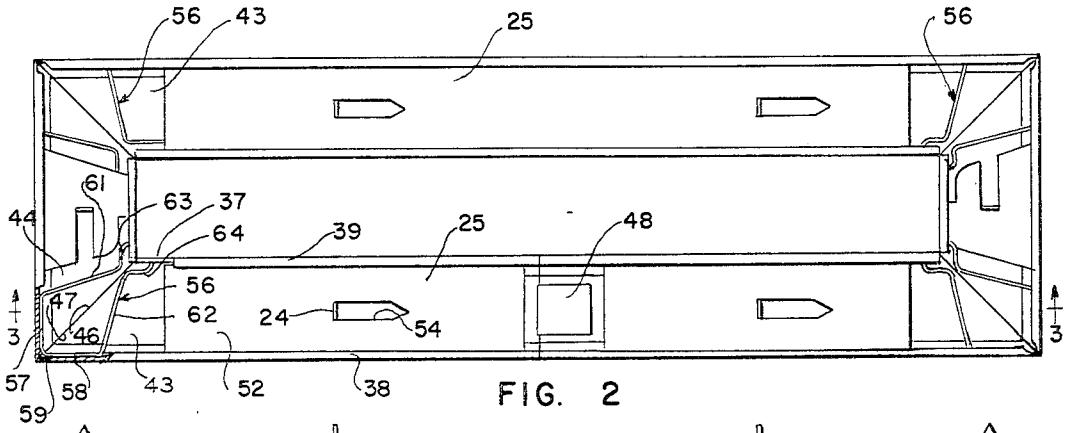


FIG. 2

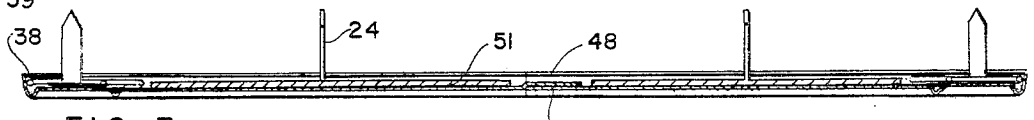


FIG. 3

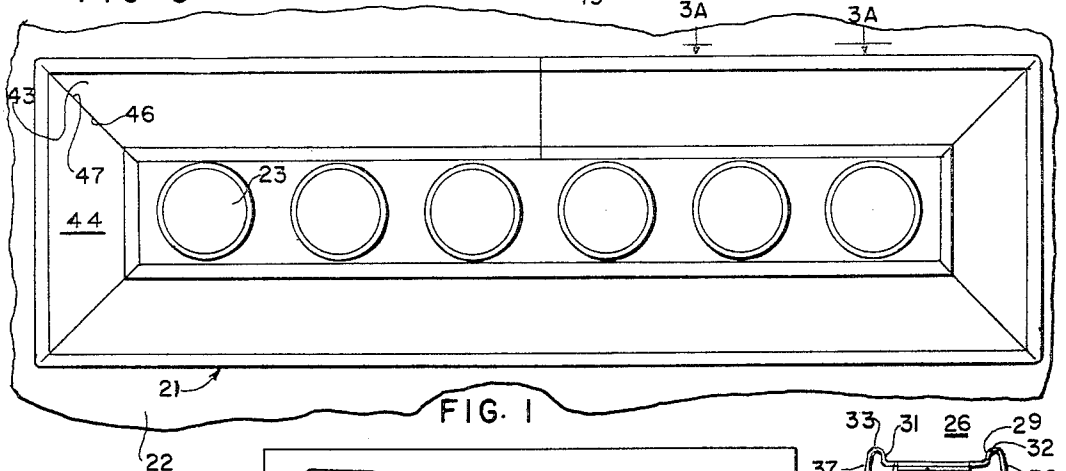


FIG. 1

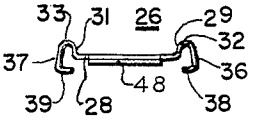


FIG. 5

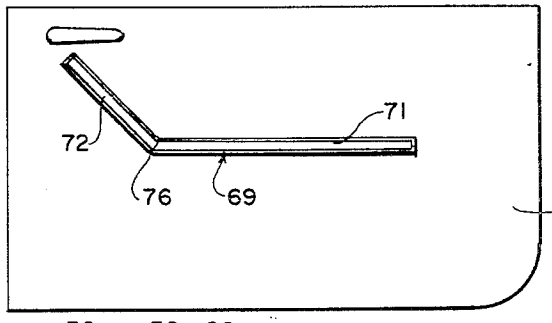


FIG. 7

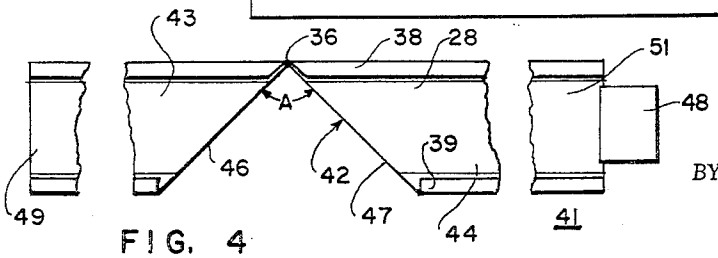


FIG. 4

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MITER JOINT FOR TRIM MEMBER

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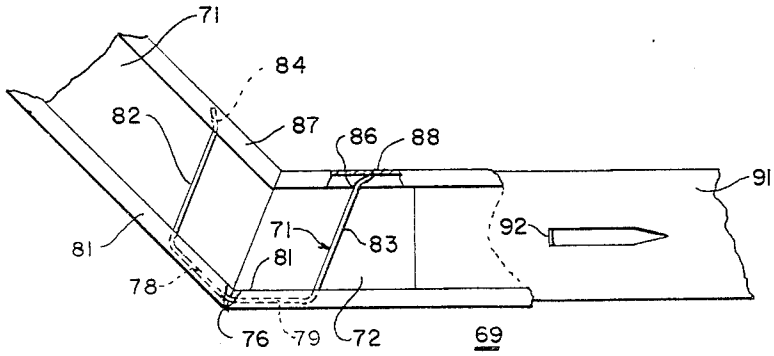


FIG. 8

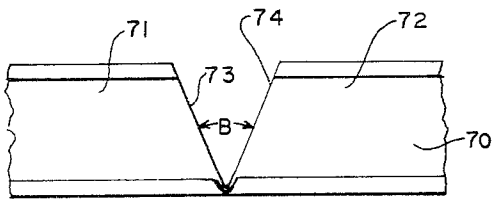


FIG. 10

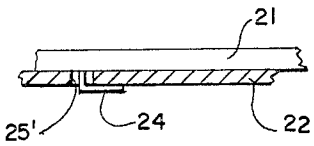


FIG. 3A

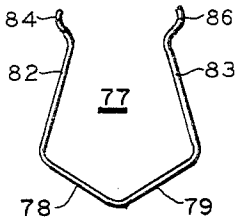


FIG. 9

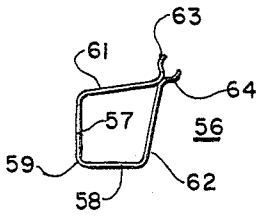


FIG. 6

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United States Patent Office 3,484,126 Patented Dec. 16, 1969

3,484,126

MITER JOINT FOR TRIM MEMBER

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Int. Cl. F16b 1/00, 5/00, 7/00
U.S. Cl. 287—189.36 4 Claims

ABSTRACT OF THE DISCLOSURE

A trim member formed from an elongated metal strip, there being a notch extending transversely of the strip with there being a minor foldable portion of the strip at an edge at the notch, the notch dividing the strip into sections which are folded at said portion to form a corner, there being a spring clip at the corner resiliently urging the sections in a direction to hold faces of the notch in engagement to stabilize the corner.

This invention relates to trim strips. More particularly, this invention relates to decorative metal trim having an angled configuration.

Such decorative metal trim is stable once it has been mounted in place because fasteners cooperate with a backing member on which the trim is mounted to anchor and stabilize the corners. However, such trim is ordinarily difficult to handle and ship before it is mounted because of the weakness at corners where material of the strip is severed to permit bending to form an angled or miter corner.

An object of this invention is to provide means for limiting relative swinging of sections of trim which meet at an angled or miter corner.

A further object of this invention is to provide a spring clip which resiliently holds a corner of a trim strip in folded or angled position during shipping and handling.

Briefly, this invention provides an angle or miter joint construction in which two sections of trim, formed from a single strip meet at a notch cut crosswise of the strip, with the notch extending to an edge portion of the strip. The sections are folded inwardly to bring faces of the notch into engagement to form the miter corner or joint with the edge portion of the strip being bent as the sections are folded. A spring clip is mounted at the corner to urge the notch faces at the corner into face-to-face engaging relation. The strip can be formed with grooves or slots along lengthwise edges thereof in which portions of the spring clip can be received. Fasteners can be received between the slots for attaching the folded strip on a backing member.

The above and other objects and features of the invention will be apparent to those skilled in the art to which this invention pertains from the following detailed description and the drawings, in which:

FIG. 1 is a view in side elevation of a trim member constructed in accordance with an embodiment of this invention, the trim member being shown in association with a fragmentary portion of a panel on which the trim member is mounted;

FIG. 2 is a view in rear elevation of the trim member shown in FIG. 1 removed from the panel, parts being broken away to reveal interior construction;

FIG. 3 is a view in section taken on the line 3—3 in FIG. 2;

FIG. 3A is a fragmentary view in section taken on the line 3A—3A in FIG. 1;

FIG. 4 is a fragmentary view in rear elevation of a length of trim strip from which the trim member shown in FIGS. 1–3 inclusive is formed;

FIG. 5 is a view in end elevation of the length of trim strip shown in FIG. 4;

FIG. 6 is a view in front elevation of a spring clip which forms a part of the trim member shown in FIGS. 1–3 inclusive, the spring clip being removed therefrom;

FIG. 7 is a view in side elevation of a vehicle door panel equipped with a trim member formed in accordance with another embodiment of this invention;

FIG. 8 is a fragmentary view in rear elevation of the trim member shown in FIG. 7 removed from the door panel;

FIG. 9 is a view in front elevation of a spring clip which forms a part of the trim member shown in FIGS. 7 and 8; and

FIG. 10 is a fragmentary view in rear elevation of a body portion of the trim member shown in FIG. 7 before forming but after notching.

In the following detailed description and the drawings, like reference characters indicate like parts.

In FIG. 1 is shown a trim member **21** of generally rectangular shape which is mounted on a panel **22** surrounding buttons **23**, which can be control buttons or the like. Fastener prongs **24** (FIGS. 2 and 3), which are portions of inserts **25** carried by the trim member, can extend through openings **25'** (FIG. 3A) in the panel **22** and can be bent into position behind the panel in the usual manner to mount the trim member on the panel.

The trim member is formed from an elongated metal strip **26** having the cross sectional shape shown in FIG. 5 including a main portion **28**, upwardly extending flanges **29** and **31** at opposite edges of the main portion **28**, arched portions **32** and **33** at upper edges of the flanges **29** and **31**, respectively, downwardly and outwardly directed sloping flange portions **36** and **37** at outer edges of the arched portions **32** and **33** respectively, and inwardly extending flanges **38** and **39** at lower edges of the sloping portions **36** and **37**, respectively.

In the forming of the trim member, a length **41** (FIG. 4) of the strip **26** is cut therefrom, and a plurality of angle shaped notches **42** are formed therein, one of which is shown in FIG. 4, the notch extending through all the portions of the strip with the exception of the downwardly and outwardly extending flange portion **36**. Four notches are required to form the trim member **21**, and the included angle A of each notc his a ninety degree angle so that, when sections **43** and **44** of the strip on opposite sides of the notch are folded to bring edge faces **46** and **47** of the notch into face-to-face engagement, the sections meet at right angles as shown in FIGS. 1 and 2. A tab **48** is formed at one end of the strip and, when the strip has been formed to the shape shown in FIG. 2, the tab **48** can be soldered or welded to an opposite end portion **49** of the strip. As shown in FIG. 3, the tab **48** can be formed slightly out of the plane of the end portion **49** of the strip so that, when the tab is in place, end portions **49** and **51** of the strip are aligned.

Before the sections of the strip are folded into position, the inserts **25** are disposed in the sections, as shown in FIG. 2. Each insert includes a flat body **52** of sufficient width that opposite edges thereof are received under the inwardly extending flanges **38** and **39**. The prongs **24** are punched from the body, there being slots **54** formed in the body from which the material is displaced to form the prongs.

When the inserts have been mounted in place and the sections have been bent into angled position, as shown in FIG. 1, spring clips **56** are mounted at the corners, the insert plates being spaced from each corner sufficiently to make room for the clip at the corner. Each spring clip **56**, as shown in FIG. 6, includes arms **57** and **58** which

meet at an angle 59, which normally is an acute angle of slightly less than a right angle. Arms 61 and 62 extend from the free ends of the arms 57 and 58, respectively, and terminate in arched end portions 63 and 64, respectively. As shown in FIG. 2, each spring clip is mounted at one of the corners with the angle 59 at the corner and the arms 57 and 58 received in slots formed inside portions of the inwardly extending flange 38. The arms 61 and 62 extend crosswise of the strip, and ends of the arched end portions 63 and 64 engage the sloping portion 37 spaced from the corner sufficiently to stress the spring clip so that the clip resiliently urges the sections to hold the notch faces 46 and 47 in face-to-face engagement. The spring clips also limit swinging of the sections out of alignment with one another. Thus the spring clips stabilize the corners so that the metal at the corners is not weakened or fatigued by unnecessary bending or twisting. The trim member can be handled and shipped in the form and condition shown in FIGS. 2 and 3. It can be mounted on the panel 22 (FIG. 1) with the prongs 24 extending through the openings 25' (FIG. 3A) in the panel 22 and being bent or crimped into position behind the panel 22 to hold the trim member in position on the panel 22.

In FIG. 7 is shown a vehicle door panel 68 provided with a decorative trim member 69 constructed in accordance with another embodiment of this invention. The trim member 69 can be formed from a length 70 (FIG. 10) of the same strip as the trim member heretofore described but is provided with a notch B having an acute angle, here shown to be 45 degrees, and, when sections 71 and 72 of the strip on opposite sides of the notch B are bent to bring notch faces 73 and 74 into engagement as the trim member is shaped, an obtuse angle or corner 76 (FIG. 8) is formed. A spring clip 77 is mounted at the angle 76 with arms 78 and 79 thereof received inside an inwardly directed flange 81, arms 82 and 83 thereof extending crosswise of the sections 71 and 72, and end portions 84 and 86 thereof received inside flange portions 87 and ends of the end portions engaging downwardly and outwardly extending flange portions 88. As shown in FIG. 9, the angle between arms 82 and 83 of the spring clip 77 normally is less than the angle between the sections 71 and 72 so that, when the spring clip 77 is positioned as shown in FIG. 8, the spring clip is stressed. Inserts 91, one of which is shown in FIG. 8, can be mounted in the sections of the trim member for mounting same on the door panel. Prongs 92 (only one of which is shown) formed in the inserts serve for mounting same.

The trim members illustrated in the drawings and described above are subject to structural modification without departing from the spirit and scope of the invention.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A trim member which comprises an elongated metal strip, there being a notch extending transversely of the strip with there being a minor foldable portion of the strip at an edge at the notch, the notch dividing the strip into sections, each section having transversely spaced clip holding means, the strip being folded at said foldable portion to form a corner, and a spring clip mounted at the corner in cooperating relation to said clip holding means on each section adjacent said notch and resiliently urging the sections in a direction to hold faces of the notch in engagement.

2. A trim member as in claim 1 wherein said clip holding means comprise inwardly directed grooves along lengthwise edges of the sections, and the clip includes a first pair of diverging arms mounted in the grooves adjacent the foldable portion and a second pair of arms extending transversely of the sections, end portions of the arms of the second pair engaging grooves opposite the foldable portion and spaced from the corner.

3. A trim member as in claim 1 wherein said clip holding means comprise inwardly directed grooves along opposite lengthwise edges of the sections, insert plates are mounted in and supported between opposite grooves and there is fastener means on the insert plates for attaching the trim member to a backing member.

4. A trim member as in claim 1 wherein said clip holding means comprise inwardly directed grooves along lengthwise edges of the sections, the clip includes first arms mounted in the grooves adjacent the foldable portion and second arms extending transversely of the sections, end portions of the second arms engaging grooves opposite the foldable portion and spaced from the corner, and an insert plate is mounted in each section outboard of the clip and supported between opposite grooves and there is fastener means on each insert plate for attaching the trim member to a backing member.

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RAMON S. BRITTS, Primary Examiner

U.S. Cl. X.R.

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