

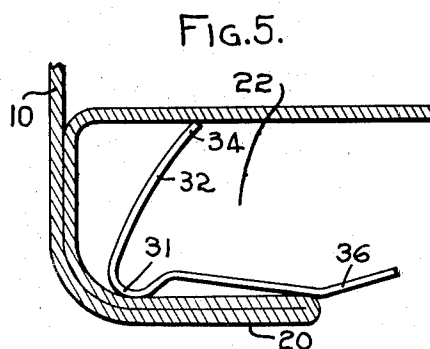
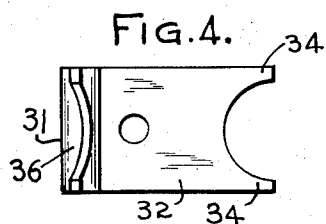
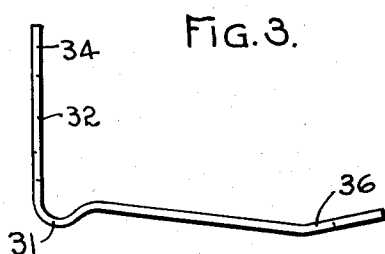
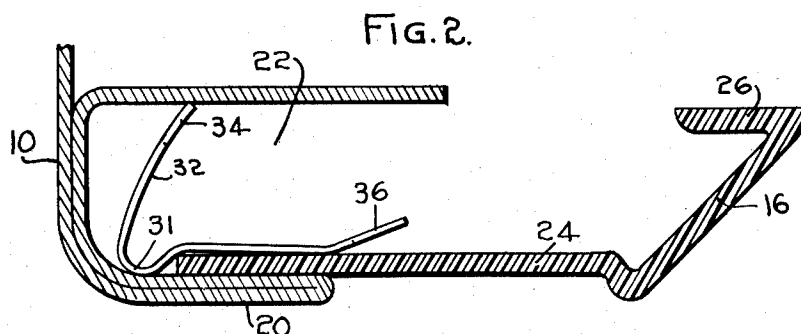
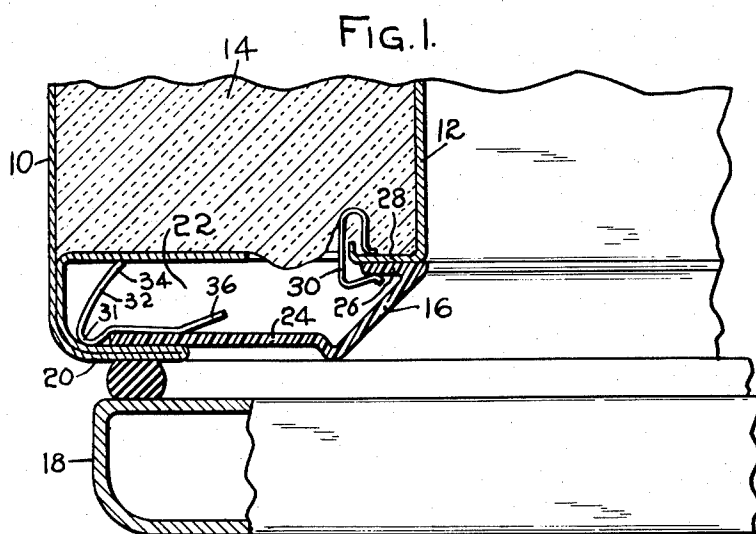
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2,898,653

FASTENING DEVICE

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2,898,653

FASTENING DEVICE

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5 Claims. (Cl. 24-73)

This invention relates to a spring clip securing a member within a channel and against one of the flanges of the channel. The object is to provide a device of this nature, simple and economical to manufacture, which holds securely and may be inserted easily after the member is positioned, and one which after such insertion permits the member to be withdrawn and re-inserted without damage to it or to the fastener. The fastener has a particular application of securing the so-called "breaker strip" which bridges the space between the inner and outer casings of a refrigerator, and for convenience I have herein illustrated such an application.

Fig. 1 is a fragmentary horizontal section through a jamb portion of a refrigerator showing the breaker strip. The cooperating door is shown in plan;

Fig. 2 is an enlarged section of the channel which in Fig. 1 is appurtenant to the outer casing of the refrigerator, the breaker strip and the clip securing the same;

Fig. 3 is a side view of the clip before insertion;

Fig. 4 is a plan view thereof; and

Fig. 5 shows the clip inserted in an empty channel prior to the introduction of the breaker strip.

Referring now to Fig. 1, I there show a section of the refrigerator adjacent the jamb showing an outer casing 10 comparable in form to an open-topped box standing on one of its sides within which is suspended an inner casing 12 the spaces between the casings receiving insulation 14. To close the space between the open, forwardly facing sides of the two casings it is customary to use a so-called breaker strip 16 which may be a complete rectangular frame molded to a suitable contour from plastic, and attached to opposed edge portions of the walls of the two casings respectively. The door 18 of the refrigerator closes against the intumed margin 20 of the exterior casing 10, and this may be turned over as seen in Fig. 2 to provide an inwardly facing channel 22 into which leg 24 of the breaker strip 16 is inserted, while the other leg 26 of the breaker strip may overlie an outwardly turned flange 28 at the margin of the inner box 12 and be secured thereto by clips 30 of any suitable form. The clip of the invention is designed to secure the breaker strip within the channel 22 and hold the forward leg 24 of the breaker strip against the front wall of the channel.

Referring now to Figs. 3 and 4, the clip comprises a narrow strip of spring metal bowed centrally at its middle portion to provide an arcuate portion 31, adapted to be seated in the angle between the flange and the web of the channel 22 and to bear along spaced lines about the curve on said flange and web respectively, as seen in Figs. 5 and 2. One extremity of this cylindrical portion merges into a straight arm 32, having terminal teeth 34 (see Fig. 4), this arm being of such length relatively to the channel that when the cylindrical portion is inserted the arm may be pushed down and will be jammed against the opposed flange of the channel at a low angle, the teeth 34 gripping the wall of the channel and effectually resisting the withdrawal of the clip except by excessive

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force. The curvature of the portion 32 permits the arm 36 of the clip at the other end thereof to be bent forwardly to form a convexed and unitarily supported gripping jaw facing the first flange of the channel to grip the member inserted between the same. This arm 36 of the clip is preferably of such length as to extend above the channel providing a bearing portion by pressure on which this spring jaw member may be bent inwardly to provide space for the insertion of the channel. The rolled up or cylindrical central portion of the clip provides spring tension.

The clips may be inserted in the channel whether the channel is empty or whether a member is in position against a flange thereof by mere finger pressure. It will be noted that in the example shown the fastening for the other end of the breaker strip would not be accessible from the front if the breaker strip were already secured to the outer casing 10. Therefore in this particular use the clips are inserted in the empty channel and the leg 24 of the breaker strip then pushed in with a deflecting pressure exerted on the extreme end of the spring arm, permitting the portion 24 of the breaker strip to be slid into position. While it is held firmly no great force is required to insert it, and there is no danger of tearing the breaker strip.

The strips as described may be narrow strips of uniform width, cut one after another from a long piece of stock without waste. The full spring of the metal is utilized. Inward springing of the holding arm 36 has little or no effect on the strut arm 32, but generally speaking tends to roll it down into the channel. When repairs on the refrigerator of one kind or another require removal of the breaker strip the leg 24 is easily drawn out without tearing or undue distortion of the strip as a whole. The action of the parts is such that the strip or a replacement therefor can be reinserted without removal of the clips. Ordinarily the clips would not be withdrawn from the channel as such or, if they were, would be replaced by new ones.

I claim:

1. A spring clip for securing a member against the inside face of an outer margin wall of a U-shaped channel member of a predetermined width, said channel member having an inner wall and a web portion connecting said inner wall to said outer margin wall, comprising a strip of spring metal having an arcuate middle portion for engagement with substantially the juncture of said web and said outer margin wall, a first arm member of a normal length greater than the height of the web of the channel member integrally secured at one end to one end of the arcuate portion, the free end of the first arm member being provided with teeth to engage the inner wall whereby the first arm member will be in pressing inclined relationship with respect to the inner wall when the clip is inserted in the channel member, and a second arm member normally biased away from the first arm member and secured at one end to the opposite end of said arcuate portion at a point offset above the plane of the margin wall when the clip is inserted in the channel member, said second arm member extending in outwardly declined relationship with respect to the point of jointure of said arcuate portion to engage the outer margin wall when the clip is inserted in the channel member, whereby the second arm portion will form a gripping jaw in conjunction with the inner surface of the margin wall to tightly hold a member inserted therebetween with a major portion of said second arm in substantially surface contact with the inserted member.

2. A clip as set forth in claim 1 which is of substantially uniform width.

3. A fastening construction comprising a frame having an edge portion thereof forming a U-shaped channel

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member having an inner wall and an outer margin wall connected to one another by a web portion, said margin wall being of a longitudinal length less than that of said inner wall, a spring metal clip positioned within said channel member, said clip having an arcuate middle portion which is in engagement with substantially the juncture of said web and said margin wall, a first arm member of a normal length greater than the depth of the channel member integrally secured at one end to one end of said arcuate portion, said first arm member being in pressing inclined relationship with respect to said inner wall with the terminal end thereof provided with teeth to tightly jam against and engage said inner wall, and a second arm member normally biased away from the first arm member and secured at one end to the opposite end of said arcuate portion at a point offset above the plane of said margin wall and extending in declined relationship with respect to the point of jointure with said arcuate portion to engage the margin wall adjacent its terminal end, the free end portion of said second arm extending beyond the terminal end of said margin wall, said second arm portion forming a gripping jaw in conjunction with the inner surfaces of said margin wall to

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tightly hold a member inserted therebetween with a major portion of said second arm member being in substantially surface contact with the inserted member.

4. A construction in accordance with claim 3 wherein a member is positioned in tight engagement between said second arm member and said margin walls.

5. A construction in accordance with claim 3 wherein the free end portion of the second arm member is provided with a convexed, yieldably supported gripping jaw facing the outer margin wall to grip the member inserted therebetween.

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