

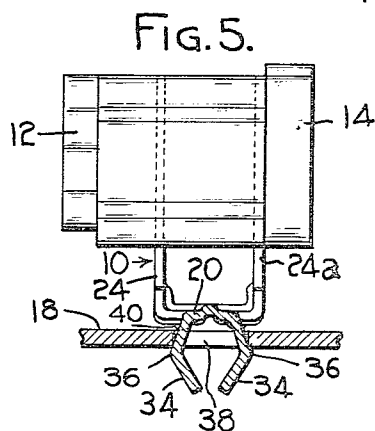
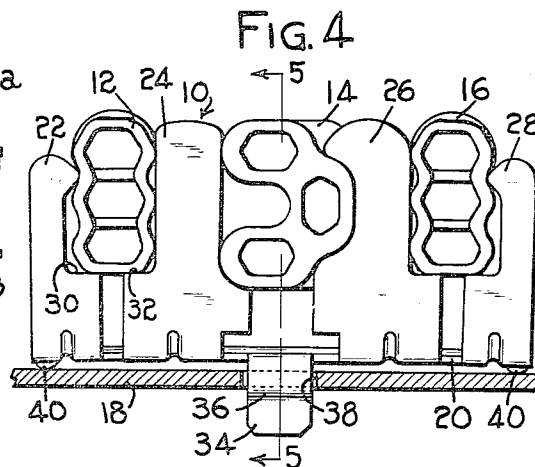
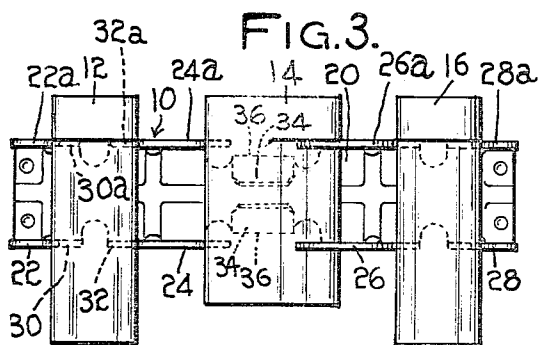
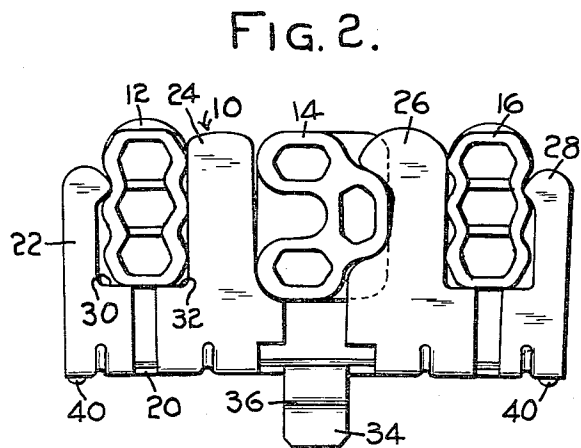
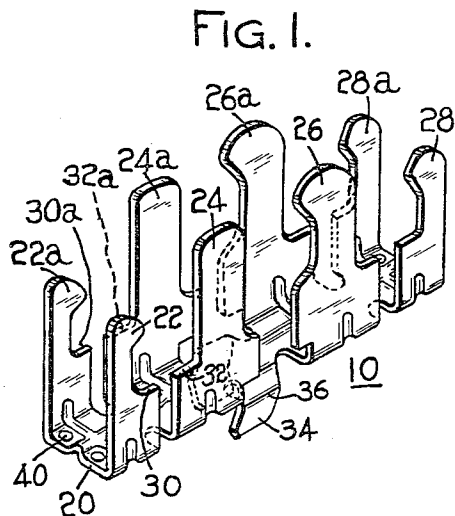
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2,746,110

PANEL ENGAGING FASTENING DEVICE

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1

2,746,110

PANEL ENGAGING FASTENING DEVICE

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4 Claims. (Cl. 24—73)

This invention relates generally to fastening devices, and has particular reference to a fastening device for securing articles to a support.

The object of the invention is to provide a fastening device for securing a plurality of objects of irregular shape to a support.

A further object of the invention is to provide a device for attaching articles to a support which is provided with a series of pairs of arms spaced longitudinally on a flexible base, in which adjacent pairs of arms have adjacent portions formed to receive said articles therebetween.

Another object of the invention is to provide a device for attaching articles to a support in which a flexible base is provided with a series of flat arms extending upwardly from opposite sides thereof having opposing edges adapted to receive an article therebetween.

Other objects of the invention will, in part, appear hereinafter, and will, in part, be obvious.

In the drawing:

Fig. 1 is a perspective view of a fastening device embodying the features of the invention;

Fig. 2 is a view in side elevation of the device of Fig. 1 having a group of articles to be retained assembled therewith;

Fig. 3 is a top plan view of the assembly of Fig. 2;

Fig. 4 is a view in side elevation of the assembly of Fig. 2 assembled with a support panel; and

Fig. 5 is a view in section taken on line 5—5 of Fig. 4.

Referring to the drawing, there is illustrated a fastening device 10, which is adapted to receive a group of irregularly shaped articles such as electrical connectors 12, 14, and 16, and retain them on a support panel 18.

The fastening device 10 is preferably formed of a single piece of sheet material and comprises an elongated flexible base 20, having a series of longitudinally spaced flat arms 22, 22a, 24, 24a, 26, 26a, and 28, 28a arranged in pairs thereon. The arms of each pair, such as 22 and 22a are disposed in lateral spaced relation and extend upwardly from opposite sides of the base. The arms of each pair are substantially identical in size and shape, and adjacent pairs of arms have adjacent edge portions shaped to receive an article therebetween. In the illustrated embodiment, the arms are provided with shoulder portions, such as 30, 30a, and 32, 32a on arms 22, 22a, and 24, 24a respectively so that the article 12 retained therein will be maintained in spaced relation to the base.

To provide means for engagement with the base, a pair of resilient arms 34 extend downwardly from the base and are provided with shoulders 36 for snapping engagement into a support opening 38.

To insure that the articles disposed between the adjacent pairs of arms are securely retained against shock and vibration, the relative size of the articles and the space between the arms to receive them is such that insertion of the articles causes the base to become longitudinally bowed. The base is also provided with downwardly projecting embossments 40 at the ends for bearing

2

against the panel. Hence, when the articles 12, 14, and 16 are assembled into place between appropriate adjacent pairs of arms and the resilient arms 34 are snapped into the aperture 38 in the support panel, the medial portion of the base is flexed downwardly, thereby causing the edge portions of adjacent pairs of arms to tend to move toward each other and tightly grip the articles disposed therebetween.

Gripping the articles by means of the edges of the arms provides high contact pressures to firmly retain the articles against axial movement during assembly and disassembly of electrical connectors, yet the method of joining the arms to the base allows the flexing of the base necessary to permit assembly of the articles and to enable the resilient legs to be attached to the support.

The base may be attached to the support by means other than snap fastener legs, such as by the use of a sheet metal screw or the like.

Since certain other obvious changes may be made without departing from the scope of the invention, it is intended that all matter contained herein be interpreted in an illustrative and not in a limiting sense.

I claim:

1. A fastening device for securing articles to a support panel, said device being formed of a single piece of sheet metal and comprising an elongated base, said base being longitudinally bowed with the ends of said base being below the medial portion thereof for engaging the surface of the support panel, a series of longitudinally spaced pairs of article gripping arms extending upwardly from the base, the arms of each pair being joined to the base in lateral spaced relation, adjacent pairs of arms having adjacent portions shaped to receive an article therebetween, and means extending downwardly from the medial portion of said base for engagement with said support panel whereby the securing of the fastening device to the support panel by the engagement means causes downward flexing of the medial portion of said base to cause said pairs of arms to be urged laterally inwardly toward one another to grip the articles disposed therebetween more tightly.

2. A fastening device for securing articles to a support panel, said device being formed of a single piece of sheet metal and comprising an elongated base, the outer ends of said base having downwardly projecting means extending from the under surface thereof for engaging the surface of the support panel, a series of longitudinally spaced pairs of article gripping arms extending upwardly from the base, the arms of each pair being joined to the base in lateral spaced relation, adjacent pairs of arms having adjacent portions shaped to receive an article therebetween, and means extending downwardly from the base for engagement with said support panel whereby the securing of the fastening device to the support panel by the engagement means causes longitudinal flexing of the base to cause said pairs of arms to be urged laterally inwardly toward one another to grip the articles disposed therebetween more tightly.

3. A fastening device for securing articles to a support panel, said device being formed of a single piece of sheet metal and comprising an elongated base, said base being longitudinally bowed with the medial portion thereof spaced above the ends, the outer ends of said base having downwardly projecting means extending from the under surface thereof for engaging the surface of the support panel, a series of longitudinally spaced pairs of article gripping arms extending upwardly from the base, the arms of each pair being joined to the base in lateral spaced relation, adjacent pairs of arms having adjacent portions shaped to receive an article therebetween, and means extending downwardly from the medial portion of said base

3

for engagement with said support panel whereby the securing of the fastening device to the support panel by the engagement means causes downward flexing of the medial portion of said base to cause said pairs of arms to be urged laterally inwardly toward one another to grip the articles disposed therebetween more tightly.

4. A fastening device for securing articles to a support panel, said device being formed of a single piece of sheet metal and comprising an elongated base, the outer ends of said base having downwardly projecting means extending from the under surface thereof for engaging the surface of the support panel, a series of longitudinally spaced pairs of article gripping flat arms extending upwardly from the base, the arms of each pair being joined to the base in lateral spaced relation and having their flat sides extending generally longitudinally of the base, adjacent pairs of

4

arms having adjacent portions shaped to receive an article therebetween, and means extending downwardly from the base for engagement with said support panel whereby the securing of the fastening device to the support panel by the engagement means causes longitudinal flexing of the base to cause said pairs of arms to be urged laterally inwardly toward one another to grip the articles disposed therebetween along their respective narrow vertical edges more tightly.

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