March 15, 1960 A. O. JANSSON 2,928,637

WIRING CLIP

Filed Dec. 31, 1957

FIG. 1.

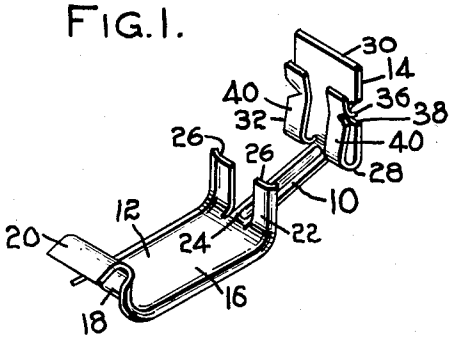


FIG. 5.

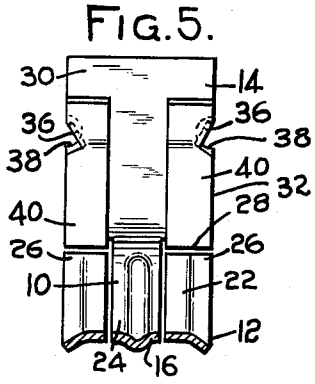


FIG. 2.

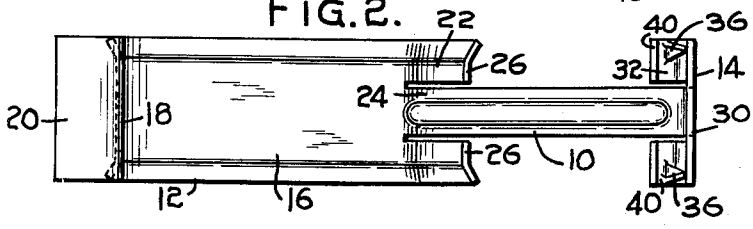


FIG. 3.

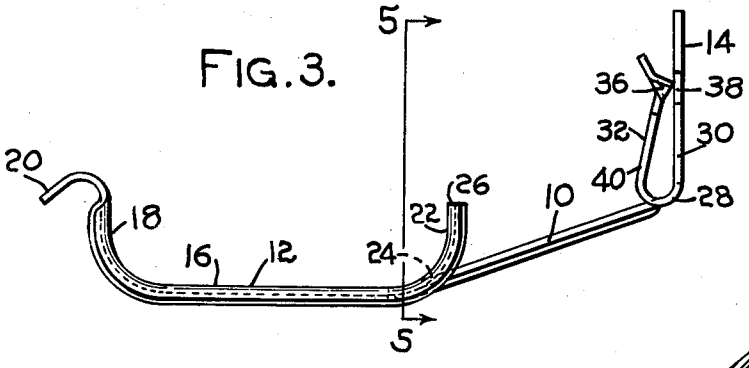
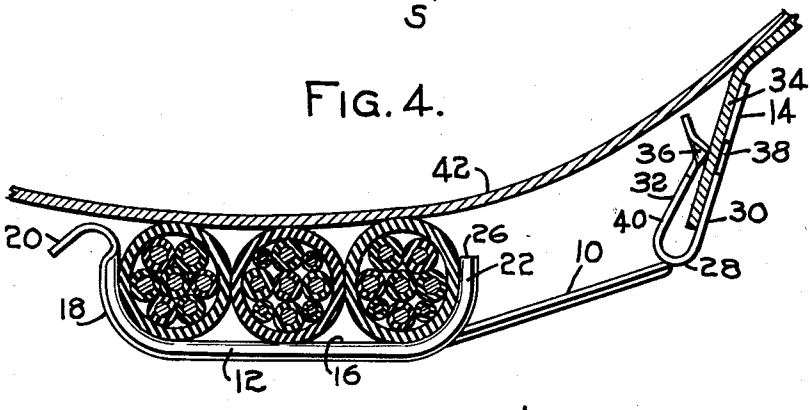


FIG. 4.



INVENTOR:
ARNOLD O. JANSSON,
BY Walter S. Jones
ATTORNEY.

United States Patent Office 2,928,637
Patented Mar. 15, 1960

2,928,637

WIRING CLIP

Arnold O. Jansson, Arlington, Mass., assignor to United-Carr Fastener Corporation, Cambridge, Mass., a corporation of Delaware

Application December 31, 1957, Serial No. 706,409

1 Claim. (Cl. 248—68)

This invention relates generally to fastening devices and has particular reference to a fastener for retaining one or more wires or the like onto a support.

The object of the invention is to provide a fastener for retaining a wire or the like onto a support which has means at one end for engaging a support, means at the other end for retaining the articles to be held against the support and intermediate means for applying holding forces to the retaining means.

A further object of the invention is to provide a simple one-piece fastener for retaining wire or the like against a support, only when the fastener is in place.

A still further object of the invention is to have an intermediate means between a support engaging means and an article retaining means which will allow the retaining means to be adjustable to various sizes and numbers of articles while applying holding forces to the retaining means.

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

In the drawing:

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

Fig. 2 is a plan view of the fastening device shown in Fig. 1;

Fig. 3 is a view in side elevation of the fastener shown in Fig. 2;

Fig. 4 is a view in side elevation, and partly in section, showing the application of the fastener.

Fig. 5 is a view in section taken on line 5—5 of Fig. 3 looking in the direction of the arrows.

Referring to the drawing, there is illustrated a fastening device formed from a single strip of resilient metal and which comprises a straight resilient connecting portion **10** having a broad U-shaped holding portion or cover member **12** at one end and an acute U-shaped fastening portion **14** at the other end. The U-shaped holding portion comprises a base portion **16**, a first leg **18** which extends in an arc from the base portion **16**, to a reverse bend portion **20** forming the terminal end of the U-shaped fastener **14** and a second leg **22** which extends from the opposite side of the base portion **16** in an arc from the base portion **16**. The said second leg **22** has an intermediate portion **24** formed by laterally cutting the leg **22** into three equal parts from its end **26** to the base portion **16** as illustrated in Fig. 2 and then bending the said intermediate portion **24** to form an acute angle with the plane of the base portion **16**. The edges of the base are curved outward to prevent cutting of articles to be held. The intermediate portion **24** forms a segment of the resilient connecting portion **10**.

The U-shaped fastening portion **14** comprises a bight portion **28**, a flat first arm **30** extending tangentially from the bight portion **28** and a second arm **32** extending chordally from the opposite end of the bight portion **28** as shown in Fig. 3, in spaced relation to the first arm **30**. The second arm **32** is slotted longitudinally to form three equal portions, the intermediate portion forming

the remaining segment of the resilient connecting portion **10**. The two remaining outside portions **40** have their terminal ends flared away from the first arm **30** to facilitate slipping the clip over the edge of the support flange **34**. The second arm **32** may be additionally provided with support engaging prongs **36** bent toward the first arm **30** to grip the support flange **34**, if the said prongs **36** are used, semicircular, portions **38** should be cut from the first arm **30** to prevent the prongs **36** from engaging the first arm **30** when they are formed in manufacture.

When the fastening portion **14** is engaged to a flange **34** of a support **42**, as illustrated in Fig 4, cable, conduit or the like whose diameter is greater than the distance between the support and the base portion **16** will be held firmly in place through the spring action of the resilient connecting portion **10**. The reverse bend portion **20** of the holding portion **12** allows convenient removal and engagement of cable, conduit or the like with the fastener while it is in position on the flange.

Although I have shown my preferred embodiment of the fastener portion to be of the type described, any method of fastening may be used as another form of clip or a nut and a bolt arrangement. It is also possible to use many different forms of holding portions beside the one shown in the preferred embodiment. Naturally, the holding portion can be shaped to hold more than one article and the base of the holding portion may be formed to vary in distance from the support to hold cable or the like of different diameters.

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

I claim:

A fastener installation comprising an article having a surface to support wires, tubes and the like and a flange disposed at an angle to said surface, a plurality of wires, tubes and the like supported upon said surface and a fastener device comprising two U-shaped fastener portions facing in the same general direction and being spaced a substantial distance apart laterally, said U-shaped fastener portions being integrally connected by a connecting portion, one of said U-shaped fastener portions being in biting engagement with opposite sides of said flange, said connecting portion being disposed at a pre-determined angle to said surface to urge the other of said U-shaped portions into a position holding the wires, tubes and the like in place, said connecting portion being of substantial length and formed from material taken from the two U-shaped portions and being relatively rigid so as to exert a strong tension on the said other U-shaped fastener portion toward said surface and the said other U-shaped fastener portion having opposed retaining arms, thereby securing said elongated wires, tubes and the like between them.

References Cited in the file of this patent

UNITED STATES PATENTS

2,109,213	Fearing	Feb. 22, 1938
2,231,153	Camiener	Feb. 11, 1941
2,247,975	Tinnerman	July 1, 1941
2,517,411	Patterson	Aug. 1, 1950
2,560,486	Shears	July 10, 1951
2,618,033	Tinnerman et al.	Nov. 18, 1952
2,659,951	Tinnerman	Nov. 24, 1953
2,723,432	Flora	Nov. 15, 1955
2,739,022	Hinz	Mar. 20, 1956

FOREIGN PATENTS

377,889	Great Britain	Aug. 4, 1932