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CLIP FASTENER

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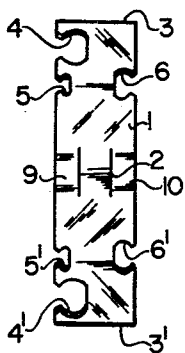


FIG 1

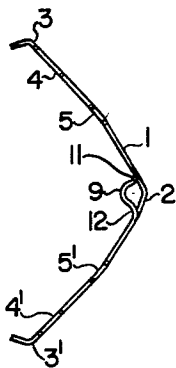


FIG 2

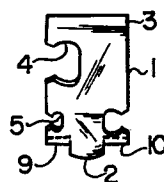


FIG 3

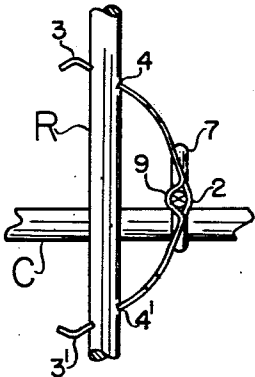


FIG 4

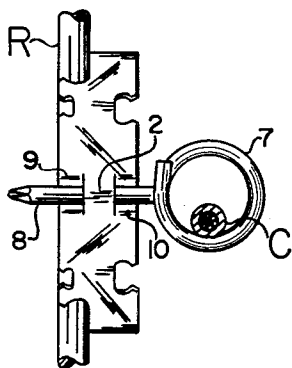


FIG 5

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CLIP FASTENER

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5 Claims. (Cl. 248—73)

This invention relates as indicated to a clip fastener adapted for use in the construction industry, and more particularly to a fastener for suspending low voltage electric wire and cable from vertically depending rods such as are commonly employed above false ceilings. There has been increasing need in the construction industry for convenient and inexpensive suspension means for the low voltage wires and cables commonly employed leading to telephones, public address systems, etc., through false ceilings and the like which will facilitate and expedite the wiring of such units and at the same time afford secure support for such wires and cables. It is accordingly a principal object of this invention to provide a clip fastener adapted to be adjustably secured to vertically extending rods and gripping a wire loop or the like through which the electric wire or cable may conveniently be passed.

Another object is to provide such clip which will securely grip the vertically extending rod in any selected position therealong.

Still another object is to provide such clip which may readily be released and repositioned along the rod.

A further object is to provide such clip which when deformed for mounting on the rod thereupon still more firmly grips the electric wire supporting component.

Other objects of the invention will appear as the description proceeds.

To the accomplishment of the foregoing and related ends, said invention then comprises the features herein-after fully described and particularly pointed out in the claims, the following description and the annexed drawing setting forth in detail certain illustrative embodiments of the invention, these being indicative, however, of but a few of the various ways in which the principle of the invention may be employed.

In said annexed drawing:

FIG. 1 is a plan view of the clip of this invention prior to insertion of the wire supporting component;

FIG. 2 is a side elevation of the clip of FIG. 1;

FIG. 3 is an end view of such clip;

FIG. 4 is a side elevation of such clip showing the same mounted upon a vertically extending rod with the electric wire supporting loop inserted and gripped thereby; and

FIG. 5 is a front elevation of the assembly of FIG. 4.

Now referring more particularly to said drawing and especially FIGS. 1, 2 and 3 thereof, the clip proper is of resilient sheet material such as spring steel strip 1 formed to general wide V-shape as shown in FIG. 2 by bending in a central region 2. The respective extreme end portions of the strip may desirably be further bent toward each other at 3 and 3' to afford finger grips whereby such end portions may be manually squeezed toward one another. The respective portions of the clip between mid-point 2 and points 3 and 3' may be slightly curved or arched as shown.

Pairs of notches of different sizes such as 4, 4', 5, 5', and 6, 6' may be formed in the side edges of the strip spaced substantially from the mid-point 2 toward the respective ends of the clip. The notches of each of these pairs are, of course, angularly related to each other (at an angle of approximately 90°) and are adapted to receive suspension rods of different diameters; thus, the larger notches 4, 4' are adapted to receive the relatively

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large vertically depending rod R (FIG. 4) when the clip is manually compressed as by thumb and forefinger bearing on portions 3 and 3' respectively and then released after insertion of rod R into the upper and lower notches so that the tendency of the clip to expand to its former extent affords an active gripping hold upon the rod.

As shown in FIGS. 4 and 5, a drive ring 7 may be secured to the clip proper by forcibly inserting the shank 8 through the opening formed by the bend 2 and the inwardly deformed portions 9 and 10. A low voltage cable C or the like is adapted to be inserted through such ring 7 and supported thereby. As best shown in FIG. 3, central portion 2 may be desirably slightly curved or arched transversely of the clip to afford a better bite on shank 8, tending to wear two circumferential grooves in the latter at the side edges of such central portion. Portions 9 and 10 are sharply bent at 11 and 12 (FIG. 2) and desirably formed with a slight taper from the respective sides of the central portion 2 toward the corresponding sides of the clip as indicated in dotted line in FIG. 3 to facilitate driving tight-fitting shank 8 into FIG. 5 position. When the clip is squeezed for attachment to suspension rod R, for example, or to a flange of a formed sheet metal member, this exerts an enhanced clamping action on shank 8 of the drive ring which is, of course, already in place.

The clip of this invention may readily be attached to a vertically extending suspension rod by first hooking an appropriate upper notch of the clip onto the rod and then pushing upwardly on the lower end of the clip to compress the latter so that a corresponding notch in the lower clip portion may receive the rod, whereupon the clip may be released and will firmly grip the rod in both its upper and lower portions. Clips in accordance with this invention are very easily assembled with the drive rings or bridle rings which are then securely held by the clip, especially after the clip has been mounted upon an appropriate support such as a depending support rod. Due to the resilient nature of the clip, it actively grips such support rod and in its somewhat compressed condition still more firmly grips the shank of the drive ring or like work supporting means. The fasteners may be very quickly and easily installed with a minimum of labor and expense.

In view of the transversely arched contour of central portion 2 at the apex of the V and the fact that the side portions 9 and 10 taper slightly toward the respective sides of the clip, it will be seen that shank 8 will be engaged principally by the extreme side edges of the resilient sheet material strip and by the respective side edges of such central portion 2, affording a very secure grip.

Other modes of applying the principle of the invention may be employed, change being made as regards the details described, provided the features stated in any of the following claims or the equivalent of such be employed.

I therefore particularly point out and distinctly claim as my invention:

1. A clip type fastener comprising a generally V-shape spring steel strip having notches in the same side edge thereof adjacent the respective ends thereof adapted to receive and grip a suspension rod or the like, the respective extreme end portions being bent toward each other to afford finger grips whereby said end portions may be squeezed toward one another to facilitate entry of such rod into such notches, such rod thereupon being actively resiliently gripped by said clip when the squeezing pressure is released, respective side portions of said clip being sharply inwardly deformed at the apex of such V leaving an oppositely bent central portion adapted to

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define therewith a central transverse opening, a drive ring having a pointed shank tightly inserted through such opening, said central portion being slightly arched transversely of said clip with its side edges engaging and biting into said shank and said side portions being slightly tapered toward the respective sides of said clip to facilitate insertion of said pointed shank beneath said central portion.

2. A clip type fastener for supporting low voltage electric cables and the like comprising a generally V-shape strip of resilient sheet material having notches in the same side edge thereof spaced substantially to opposite sides of the apex of such V and adapted to receive and grip a suspension rod or the like, respective side portions of said clip being sharply inwardly deformed at the apex of such V leaving a central portion adapted to define therewith a central transverse opening, and a work supporting member having a shank portion tightly inserted through such opening.

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3. The fastener of claim 2, wherein said work supporting member includes a loop portion adapted to receive and support a low voltage electric cable.

4. The fastener of claim 2, wherein said central portion at the apex of such V is slightly arched transversely of said clip with its side edges engaging and biting into said shank.

5. The fastener of claim 2, wherein said side portions are slightly tapered toward the respective sides of said clip to facilitate insertion of said shank beneath said central portion.

References Cited in the file of this patent

UNITED STATES PATENTS

15	1,818,099	Rapalje	Aug. 11, 1931
	2,216,886	Langelier	Oct. 8, 1940
	2,522,223	Hardin	Sept. 12, 1950
	2,959,668	Andrews	Nov. 8, 1960
	2,961,479	Bertling	Nov. 22, 1960