Oct. 27, 1964 C. H. BECKER 3,154,278

BOWDEN WIRE CLIP

Filed Dec. 26, 1962

Fig. 1.

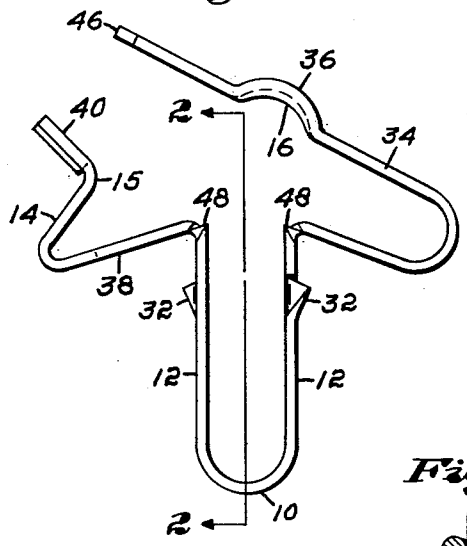


Fig. 2.

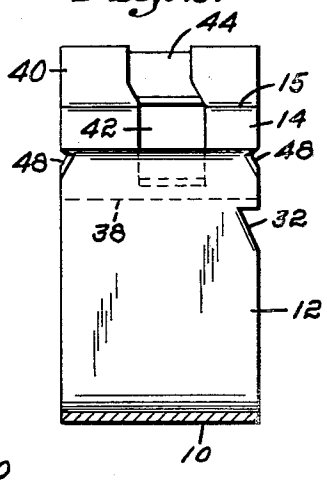


Fig. 3.

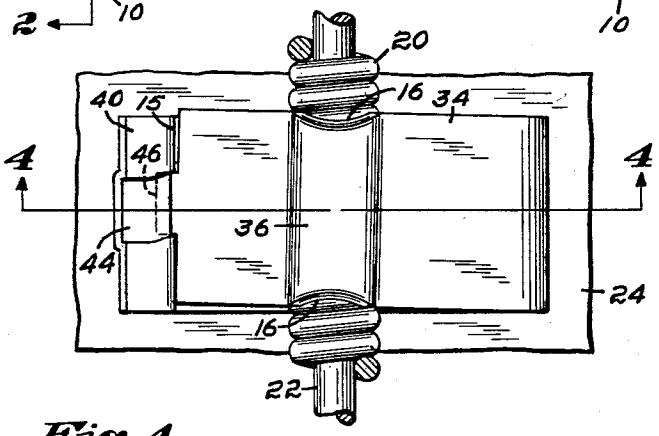
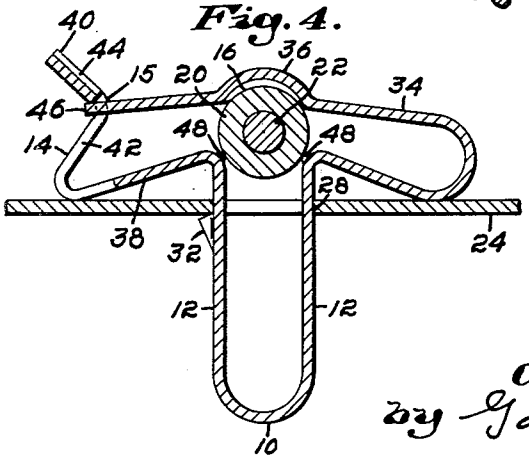


Fig. 4.



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United States Patent Office 3,154,278 Patented Oct. 27, 1964

3,154,278

BOWDEN WIRE CLIP

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Filed Dec. 26, 1962, Ser. No. 247,077
7 Claims. (Cl. 248—73)

This invention relates generally to wire clips and more specifically to Bowden wire clips.

An object of the present invention is to provide a clip which has means of moving an engagement means from an in phase engagement to an out of phase engagement with a Bowden wire or the like.

Another object of the present invention is to provide a clip having a slotted tab wherein the slot is placed in such a way as to place a movable leg originally in opposed relation with the tab into an offset relation with the tab.

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

In the drawings:

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

FIG. 2 is a section taken on line 2—2 of FIG. 1;

FIG. 3 is a top plan view of the clip, a Bowden wire and a support, all the parts being engaged; and

FIG. 4 is a section taken on line 4—4 of FIG. 3.

In the drawings, there is shown a Bowden wire clip comprising a bight portion 10 having a pair of legs 12 extending therefrom in spaced parallel relation to each other. If required, the legs 12 could be in angular relationship to each other. Each of the legs 12 has a pair of tangs 32 formed on the edges thereof, one tang on each side edge. The tangs 32 are angular in configuration and are directed away from the area defined by the legs 12 and the bight portion 10. At a terminal end of one of the legs 12, an arm 34 is formed which extends away from a line drawn midway between the two legs 12 and then is bent back on itself to overlie the area defined by the legs 12. An arcuate engagement portion 36 is formed in the arm 34 having a pair of locking tabs 16 formed from the two sides of the engagement portion 36. The engagement portion 36 is formed a fixed distance from the terminal end of the arm 34 so that on engagement it will exactly overlie the area defined by the legs 12. Another arm 14 is formed on the other leg 12 comprising a base 38 which is bent back on itself in acute angular relation and which has its terminal end or tab 40 bent away from the arm 34 to form a bend area 15. The tab 40 has a rectangular hole 42 formed in the center from slightly below the point of jointure between the tab 40 and the head area 15. A groove 44 is formed from the terminal end 40 to the opening formed by the rectangular hole 42. The groove 44 may be formed with its center line in angular relation with the center line of the tab 40 or it may be formed with the first portion of the groove 44 having a mid-line coincident with the center line of the tab 40 and then angled right or left so that the center line of the groove 44 would then be in angular relationship with the center line of the tab 40. In the embodiment shown in the drawings this angularity would be to the right of the center line of the tab 40 looking at the tab 40 as shown in the view in FIG. 2. The arm 34 has at its extreme end a guide tab 46 extending therefrom having a width slightly less than the width of the groove 44. Although the terminal end of the arm 34 could be utilized, it is advantageous to have the guide tab 46 assist in the engagement of the arm 34 with the groove 44 as will be explained more fully hereinafter.

The engagement of the fastener with a Bowden wire, comprising a shield 20 and a control wire 22, and a support 24 having an aperture 28 is accomplished in the following manner. The legs 12 and the bight portion 10 are passed through the aperture 28 until the external surfaces of the legs 12 engage the sides of the aperture 28. The distance between the legs 12 is greater for a portion of their length than the width of the aperture 28; and, therefore, as pressure is exerted on the fastener the legs 12 will flex toward each other until the edge of the aperture 28 has passed over the tangs 32 whereupon a portion of the arm 34 and the base 38 will rest in superposed abutting relationship on the area of the support 24 adjacent the aperture 28 and the tangs 32 will be locked on the opposite surface of the support 24 adjacent the aperture 28. A Bowden wire, or other suitable article to be held in place, is then laid on top of the support and a portion of the shield 20 rests on top of the area defined by the legs 12. At the juncture between the leg 12 and the arm 34 in one case and the base 38 and the other leg 12 in the other case, a series of four barbs 48 are formed. These barbs 48 are in phase with the coils of the shield 20, and are directed toward the arm 34.

The arm 34 is now pressed toward the base 38 until the guide tab 46 of the arm 34 enters into the groove 44 and it is pushed from its opposed relationship with the base 38 into an offset relationship with the base 38 thereby moving the locking tabs 16 of the engagement portion 36, from an in phase relationship with the coils, or other surface, of the shield 20 to one that is out of phase with the coils of the shield 20 and is engaged with them in that relationship. The barbs 48 remain in phase with the coils of the shield 20 (i.e. fixed between the coils) which prevents the shield from moving transversely of the support 24.

Of course, the utilization of the engagement means, such as the legs 12 to engage the apertured support 24 may be varied. For example, any type of engagement means may be utilized and the base 38 could be extended completely across the opening formed by the parallel legs 12.

As set forth in the drawings at FIGS. 1 and 4 the initial lengths of the arm 34 and the base 38 are in angular relationship to the mid-line drawn between the legs 12. This condition will assist in holding the shield 20 in closer engagement to the support and to the clip.

The clip disclosed in the present application will hold the shield 20 of the Bowden wire in a fixed relationship to the support 24 while allowing movement of the control wire 22 if desired.

While there has been illustrated and described a preferred embodiment of the invention, it should be understood that the invention is best described by the following claims.

I claim:

1. A clip comprising a first portion, a second portion spaced from said first portion, one of said portions having means for engaging an object and said clip having motion providing means for moving one of said portions along its plane relative to a plane of the other and longitudinally relative to an object.

2. A Bowden wire clip comprising a base leg; a second leg spaced from said base leg, said base leg having means therewith for engaging a support, said second leg having means for engaging a helical wound body in phase and said base leg and said second leg having means for moving one of said legs in relation to the other of said legs whereby said engagement means is placed out of phase with said helical wound body.

3. A fastening device comprising a base portion, an arm integral with a side of said base portion and overlying the plane of said base portion, said arm spaced from said base portion and having a free terminal end, a secondary arm formed on the opposite side of said base portion, a

portion of said secondary arm spaced from said base portion and having a reverse bend formed therein to provide a tab portion facing toward the plane of said arm, said tab portion having a terminal edge, means providing a hole in said tab portion, said hole offset from the mid-line of said tab portion and means providing a groove in said tab portion opening into said hole, said arm having means of engaging a Bowden wire of the like and said base portion having means of attaching to a support, said arm offset from said tab portion when said terminal end engages said aperture.

4. A Bowden wire shield clip comprising a base portion having a pair of terminal ends, the first of said terminal ends bent back and over said base portion and the second of said terminal ends having a reverse bend formed therein and having a tab portion directed away from the plane of said base portion, said tab portion having means of engaging said first terminal end in offset relation.

5. A Bowden wire clip as set forth in claim 3 wherein said tab portion has a groove formed from the free terminal end thereof to said aperture, a portion of said groove in angular relation with the mid-line of said tab portion.

6. A Bowden wire clip as set forth in claim 4 wherein said tab portion has an inner wall defining an aperture, said aperture offset from the mid-line of said tab portion.

7. The assembly of an apertured support, a clip and a helical wound body, said clip comprising a base portion

having a pair of terminal ends, the first of said terminal ends bent into spaced relation with said base portion and the second of said terminal ends having a reversed bend formed therein and having a tab portion directed away from the plane of said base portion, said tab portion having an inner wall defining an aperture, said aperture offset from the mid-line of said tab portion and a groove formed from the free terminal end of said tab portion to said aperture and said first terminal end having means of engaging said aperture and having an arced portion spaced from the free terminal end of said first leg, said arced portion having a pair of walls spaced from each other and directed toward the plane of said base portion, each of said walls having a free edge together defining a helix in phase with said helical body, said base having means of engaging said support whereby engagement of said first terminal end with said aperture formed in said tab portion engages said edges of said walls out of phase with said helical body.

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