Feb. 13, 1951 G. V. PECK 2,541,828

CONDENSER MOUNTING CLIP

Filed Aug. 2, 1945

Fig. 1

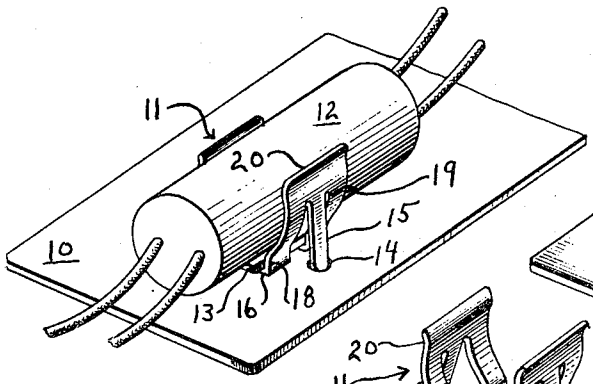
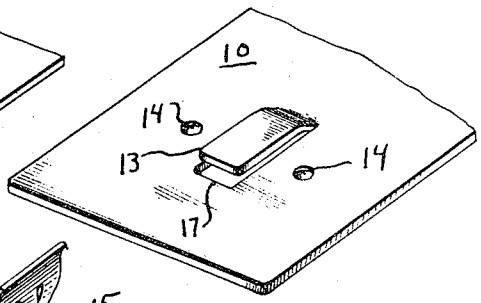


Fig. 2



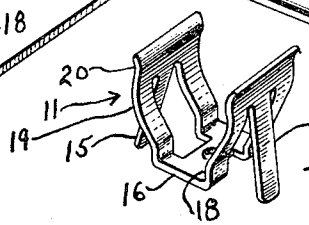


Fig. 3

Fig. 4

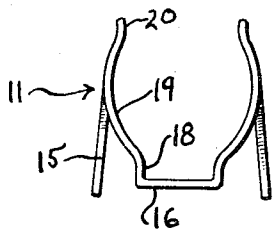


Fig. 5

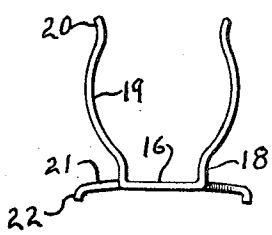


Fig. 6

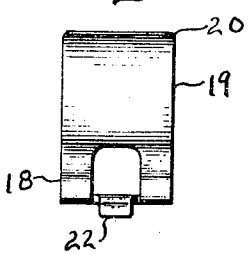


Fig. 7

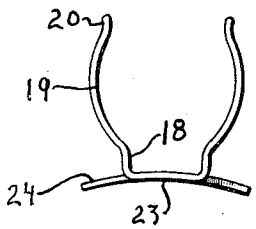
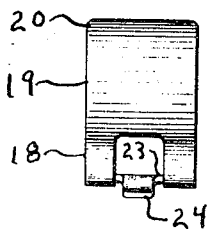


Fig. 8



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CONDENSER MOUNTING CLIP

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15 Claims. (Cl. 248—361)

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This invention relates to holding devices and assemblies.

An object of this invention is to provide an improved holding device and assembly.

Another object is to provide an improved electrical unit holding device and assembly.

Other objects will be apparent from the following specification and claims, taken in conjunction with the accompanying drawings, in which:

Figure 1 is a perspective of an electrical condenser holding assembly, in an illustrative embodiment of this invention;

Figure 2 is a perspective of the support of Figure 1;

Figure 3 is a perspective of the holder clip of Figure 1;

Figure 4 is an end elevation of the holder clip of Figures 1 and 3;

Figure 5 is an end elevation of an alternate holder clip structure;

Figure 6 is a side elevation of the clip of Figure 5;

Figure 7 is an end elevation of another alternate holder clip structure; and

Figure 8 is a side elevation of the clip of Figure 7.

The assembly of units such as electrical condensers, resistors, and other devices having comparable characteristics for assembly, presents problems which this invention meets and solves in a very efficient and satisfactory manner.

For the purpose of illustration, the device shown and described herein is a holder and assembly including an electrical condenser of the fixed type generally formed as a cylindrical body.

In this illustration, a condenser holder clip is formed and mounted, on a support such as a radio or instrument chassis, without the use of assembly means such as screws, bolts or rivets, or welding, soldering, brazing or other comparable means or devices, and in such a manner that the condenser and its holder may be readily and easily manually mounted on or dismounted from the support.

A particular feature is the firm and secure assembly provided by this invention, and the fact that insertion of the condenser in its holder makes the assembly even more firm and secure.

As in Figure 1, the assembly comprises a support body 10, a substantially U-shaped holder clip 11 mounted on the body 10, and a condenser 12 held by the clip 11.

The support body 10, Figures 1 and 2, is formed of sheet aluminum, steel, or any other material from which a tongue may be suitably struck out.

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The tongue is indicated at 13 and is of rectangular form, extending up from the body 10 and then bent to extend along a plane overlying the body 10. The tongue 13 is preferably in substantial parallelism with the body 10, and a sufficient height above it to permit the base of the U-shaped clip 11 to be inserted therebeneath and rest on the top of the support body 10 on both sides of the tongue 13. The tongue 13 may be formed in the same operation that forms the radio or instrument chassis of which it is a part.

Recesses 14 are formed in the support 10, in aligned opposition on each side of the tongue 13 substantially midway of the length of the tongue. These recesses are used to locate, position, and secure the clip 11 with free ends of clip legs 15, see Figure 1, in the recesses 14. The size, shape, and depth of these recesses is determined by the dimensions and form of the free ends of the clip legs 15. If desired, the body 10 may be used without the recesses 14, with the clip legs 15 in resilient holding engagement with the body 10. In this form the ends of the legs 15 are pointed so that they will hold on the surface of the body 10.

As in Figures 1 through 4, one form of the holder clip is indicated by 11. This clip comprises a substantially U-shaped member formed of a relatively thin and wide strip of resilient metal or other material having suitable strength and resiliency characteristics. The clip 11 has a normally flat base 16 for insertion beneath the tongue 13, and the base 16 is of a sufficient dimension laterally with respect to the tongue 13 to extend over the opening 17 in the body 10 as provided by the formation of the tongue 13, so as to rest on the body 10 on both sides of the opening 17. Thus, the clip 11 is held by engagement of the under face of its base 16 with the body 10 and the engagement of the upper face of its base 16 with the under face of the tongue 13. To improve this holding arrangement, the base 16 may be formed with its upper face convex so that the base must be sprung downwardly somewhat to enable it to be assembled beneath the tongue 13.

From the base 16, the sides of the clip 11 extend upwardly at right angles for a short distance, as at 18. They then bulge outwardly as at 19 in a curve designed to substantially fit the curve of the condenser 12 to be held in the clip, and terminate in a slight outward flare 20, providing rounded cam surfaces at the mouth of the clip so that the condenser may be placed at the mouth of the clip and simply pushed to spread

the clip and assemble the condenser therewith. The condenser 12 is thus mounted in the clip 11 between the bulge portions 19 thereof and spaced above the base 16 by the straight side portions 18 of the clip.

A particular feature of this invention is that the insertion of the condenser 12 in the clip 11 spreads the sides of the clip apart and tends to arch the base 16 upwardly against the tongue 13, thus affording an even stronger and more secure assembly of the clip 11 with the tongue 13 and support body 10.

The sides of the clip 11 are struck out to form the depending legs 15 which extend from well up on the clip sides and centrally laterally thereof, somewhat outwardly as well as downwardly to terminate in free ends below the base 16 of the clip 11. In assembly these legs 15 may resiliently engage the surface of the body 10, or may extend into the recesses 14, if they are provided. With the clip legs 15 extending into the recesses 14, the possibility of the clip 11 being accidentally worked off the tongue 13 is reduced to a minimum. The spreading action of the condenser 12 on the clip sides forces the clip legs 15 more strongly into engagement with the support body 10, thus further improving the holding efficiency of the clip 11, both with respect to the condenser 12 and the support body 10.

The alternate clip structure of Figures 5 and 6 is formed just as is the clip 11, except that the side legs 21 extend directly out from and substantially in line with the base 16 in a slight downward curve and then turn sharply down to terminate in short feet 22.

The alternate clip structure of Figures 7 and 8 is also formed like the clips of the previous figures, except that the base 23 is arched upward and the side legs 24 extend directly out from the base 23 in substantial continuance of the curve thereof, to terminate without departing from that curve.

While the sides and legs of each respective clip of this invention are shown as being duplicates in size and form, variations may be used if desired. For example, only one side of a clip may have a leg or the opposing sides or legs of a clip may be of different size or shape to meet particular assembly requirements.

It is to be understood, therefore, that many variations in materials, sizes and forms of the devices herein described are within the scope of this invention as expressed in this specification and the following claims, taken in conjunction with the accompanying drawings.

What is claimed is:

1. A clip for a holder clip assembly, comprising a resilient U-shaped member formed of a relatively thin and wide strip of sheet metal, said member having a base with portions cut therefrom and spaced side arms upstanding therefrom comprising a short line up from said base, continuing in a relatively large outward bulge, and said side arms being struck out to form downwardly extending unbent support legs.

2. A clip for a holder clip assembly, comprising a resilient U-shaped member formed of a relatively thin and wide strip of sheet metal, said member having a base with spaced side arms upstanding therefrom in opposed duplication of form, said form comprising a short line up from said base, continuing in a relatively large outward bulge, and said side arms being struck out to form downwardly extending support legs, said legs each extending outwardly and downwardly from the base of said clip to terminate in a short sharply bent down portion.

3. A clip for a holder clip assembly, comprising a resilient U-shaped member formed of a relatively thin and wide strip of sheet metal, said member having a base with spaced side arms upstanding therefrom in opposed duplication of form, said form comprising a short line up from said base, continuing in a relatively large outward bulge, and said side arms being struck out to form downwardly extending support legs, said legs each extending outwardly and downwardly from the base of said clip in curved formation.

4. In a holder clip assembly, a plate, a substantially U-shaped clip of spring material having a support leg struck out from a side thereof, means for detachably holding the base of said clip in asembled position upon said plate with the free end of said support leg in engagement with said plate, said leg exerting a downward pressure on said plate to anchor the clip in said assembled position.

5. In a holder clip assembly, a support with a tongue struck up therefrom, a substantially U-shaped clip of spring material having a support leg struck out from each side thereof, the base of said clip extending beneath said tongue to detachably secure said clip in assembled position thereon, with the free end of said support legs in engagement with said plate, said legs exerting downward pressure on said plate to anchor the clip in said assembled position.

6. In a holder clip assembly, a chassis plate, a tongue struck up from said chassis thereby leaving an opening beneath said tongue, a recessed portion formed on said chassis on each side of said tongue, and a substantially U-shaped clip of spring material having a downwardly extending support leg struck out from each side thereof, the base of said clip being detachably secured between said tongue and the portions of said plate at the opposite sides of said opening with the free ends of said support leg in engagement with the respective recessed portions in said chassis, said legs exerting downward pressure on the bottom of said recessed portions to anchor the clip in assembled position with respect to said chassis.

7. An article holding device comprising a base portion, means enabling said base portion to be attached to a supporting surface, a pair of resilient, upwardly extending arms rigid with said base and shaped to conform to the contour of the article to be engaged there-between, and fingers inclining outwardly and downwardly from said arms and the free ends of said fingers being adapted for impinging engagement with the supporting surface whereby to resist spreading of said arms.

8. In a holder clip assembly, in combination, a support, a U-shaped clip formed of spring material and having a substantially flat base having portions cut out therefrom adapted to be secured flush to said support, and a pair of arms having unbent termini struck out from the respective sides of said clip and adapted for engagement with said support, the U-shaped portions of said clip defining an area which is smaller than an article to be supported by said clip whereby, upon insertion of an article into the clip, the U-shaped portions are spread apart and the clip is firmly secured to the support by said arms.

9. An article holding device comprising a base portion, means enabling said base portion to be attached to a supporting surface, a pair of re-

silient upwardly extending arms integrally formed with said base and shaped to conform to the contour of the article to be engaged therebetween, and fingers extending outwardly and downwardly from said arms and the free ends of said fingers being adapted for impinging engagement with the supporting surface whereby to resist spreading of said arms.

10. An article holding device comprising a strip of metal, said strip including a mid-portion and a pair of mid-section means enabling said end portion to be attached to a supporting surface, said end sections upwardly extending from said mid-section to conform to the contour of an article held therebetween, and a dependent finger cut from each of said end sections adapted for impinging engagement with the supporting surface whereby to resist spreading of said end sections.

11. An article holding device comprising a strip of metal including a mid-section and a pair of end sections connected thereto, an arm cut from each of said end sections adapted to depend therefrom, and a slot formed in each of said end sections conforming to the contour of said arms, said end sections normally being bent at right angles to said mid-section with said slot of each of said end sections extending into said mid-section.

12. An article holding device comprising a strip of metal including a mid-section and a plurality of end sections connected thereto, an arm cut from each of said end sections adapted to extend therefrom, a slot generally conforming to the contour of said arm in each of said end sections, said grooves in said end sections normally extending at right angles to said mid-section.

13. An article holding device comprising a strip of metal including a mid-section and a plurality of end sections connected thereto, an arm cut from each of said end sections adapted to extend therefrom, a slot formed in each of said end sections conforming to the contour of said arms, each of said end sections including a first

portion having said slot extend at a right angle to said mid-section, a bowed portion connected to said first portion adapted to resiliently conform to an object held therebetween, and said arms of said end sections adapted to bolster said bowed sections to aid in the support of said object therein.

14. A holder clip assembly comprising a support with a flat tongue struck up therefrom, and a substantially U-shaped clip having a slot cut in a portion thereof extending beneath said tongue in holding relation therewith, said clip being detachable by a simple sliding action, the insertion of a body in said clip, when said body is of a size within the holding range of said clip, causing the arms to spread apart thereby increasing the pressure of said clip portion on said tongue and preventing the clip from sliding from its assembled position with respect to said tongue.

15. In a holder clip assembly, a support with a tongue struck therefrom, a recess in said support on one side of said tongue, a resilient substantially U-shaped clip having a portion thereof extending substantially flush with said support beneath said tongue and having slots cut therefrom in holding resilient relation therewith, and a downwardly extending support leg struck out from a side of said clip, said leg having an unbent end portion extending into said recess.

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