Aug. 17, 1965 L. F. BUESCHER ETAL 3,201,073

SUPPORT BRACKET

Filed March 18, 1964

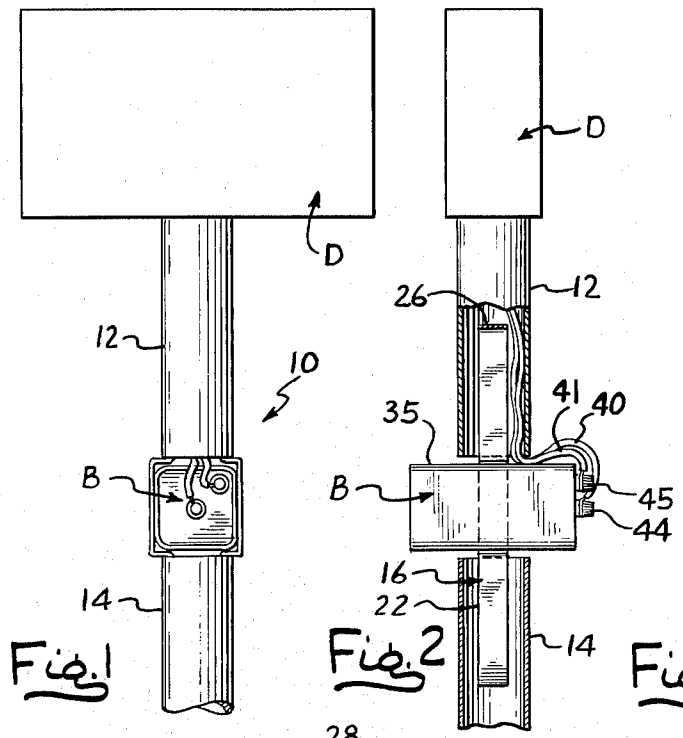


Fig. 1 Fig. 2

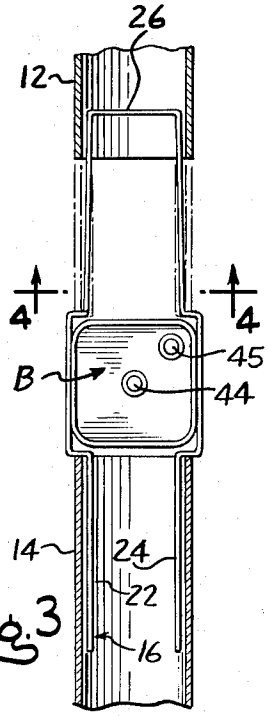


Fig. 3

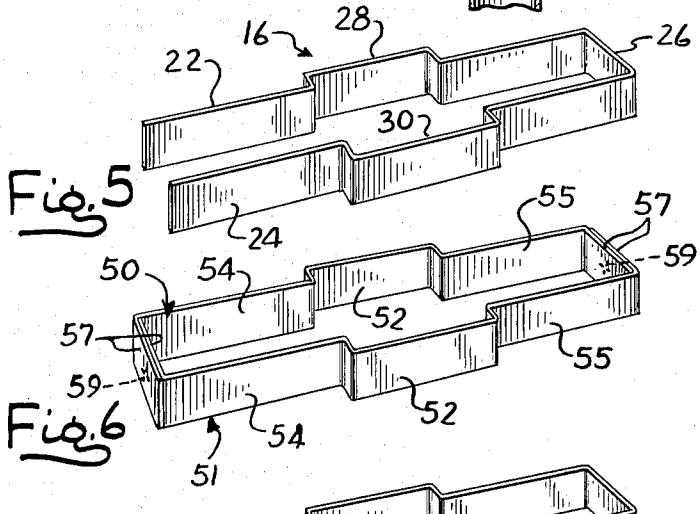


Fig. 5 Fig. 6

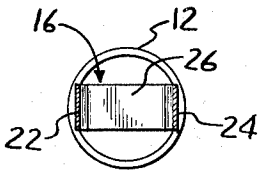


Fig. 4

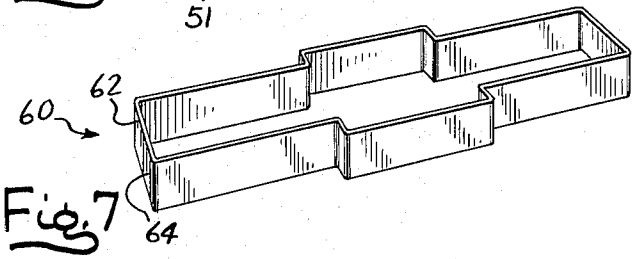


Fig. 7

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SUPPORT BRACKET

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6 Claims. (Cl. 248—121)

This invention relates generally to battery powered display arrangements, and more particularly to display supports which may be made of any desired length or height and include batteries or the like as a source of electrical power for such displays.

It is an objective of the present invention to provide a battery powered display in which the battery is conveniently located and accessibly mounted as a component of the display support for easy connection and replacement in the power circuit.

It is another object to provide an arrangement whereby the battery is conveniently integrated into the display support so as to permit rotation, oscillation, or other movement of the display while affording continuing access to the battery for repair, replacement, and for making electrical connections to the display. It is a related objective to provide the above arrangements with display support elements which are cut to desired length and connected together to form the display support assembly, the means for connection also serving as a means for battery mounting and clamping.

The foregoing objects and advantages, as well as others will become apparent from the following detailed description taken in conjunction with the appended drawings, wherein:

FIGURE 1 is a front elevation of a battery powered display and support therefor constructed in accordance with the present invention;

FIG. 2 is a side elevation of the display arrangement of FIG. 1 shown in fragmentary section;

FIG. 3 is a portion of the display support of FIG. 1 in vertical section;

FiG. 4 is a section of FIG. 3 taken along lines 4—4 thereof;

FIG. 5 is a bracket for a battery to be incorporated in the display arrangement of the present invention shown in perspective; and

FIGS. 6 and 7 are alternative embodiments of a battery bracket constructed in accordance with the present invention.

While the invention has been described in connection with certain preferred embodiments, it will be understood by one skilled in the art that the invention is not intended to be limited to the embodiments shown, but on the contrary, contemplates all alternative and equivalent constructions falling within the spirit and scope of the appended claims.

With particular reference now to the drawings, FIGS. 1 and 2 illustrate a battery powered display and associated support constructed in accordance with the invention. It will be understood that the showing herein is intended to be exemplary only and no effort has been made to illustrate in detail the variety of display and support arrangements which might usefully employ the invention disclosed herein.

For purposes of description, the present invention has utility in conjunction with a battery powered display indicated generally by the letter D which may include as a part thereof, mechanical movement for attraction of the eye, an attractive use of lights, or a combination of both. The display D secured in any suitable fashion to a support 10, has been shown here in depending fashion from the display. However, the display D might just as easily be hung from, or supported laterally by, the support 10 without departing from the invention herein.

As indicated, the display is battery powered. The invention contemplates those displays in which it is desired to mount the battery which supplies power to the display in the support therefor rather than in the display proper. According to this invention, the display support is formed of tubular sections 12, 14 which are cut to length on the job to provide any desired display height. Such sections are rigidly and securely connected to form a support assembly by means of a bracket 16 which telescopes within the opposing ends of the tubular sections 12, 14. Further in keeping with the invention, the battery supply is mounted as part of the display support. To this end, turning to the FIGURES 1, 2 and 3, a battery generally indicated by the letter B is mounted between the tubular sections 12 and 14 by means of the bracket 16. Thus, the display, or a part thereof, may be rotated, oscillated or otherwise moved with respect to the support 12 without the necessity of the battery B also being moved, rotated, or alternatively disposed in a manner which would make it inaccessible during operation of the display.

One form of bracket 16 suitable for this purpose is shown in FIG. 5. This bracket 16 is indicated generally, in its simplest form, and comprises a U-shaped member having legs 22 and 24 joined at one end by a transverse web 26. The bracket is suitably formed of a strap of resilient sheet metal which can be easily bent into the shape indicated. The web 26 is slightly shorter than the inside diameter of the tube 12 so as to be slidably receivable on the tube accounting for the circular shape of the inside of the tube, and the sides 22, 24 diverge somewhat from the web 26, but are sufficiently resilient so as to permit their being urged together.

For the purposes of receiving and securing the battery B, the legs 22, 24 are formed with outwardly extending, intermediate portions 28 and 30 which when taken together, closely approximate the cross sectional area of the casing 35 of the battery B. In use, the bracket provides a convenient receptacle for the battery with an absolute minimum of additional parts and labor in securing the same within the support 10. Thus, by placing the battery casing 35 in position between the portions 28 and 30 of the legs 22, 24, the closed end of the bracket 16 is telescoped into the end of the tubular member 12. Because the sides 22, 24 diverge from the web 26, the inner wall of the tube 12 engages the side adjacent the web 26, urging them toward one another with a squeezing effect. The pressure applied against the walls 22, 24 to urge them together is sufficient to bring the portions 28, 30 into engagement with the battery casing 35 so as to frictionally grip the same, thereby holding the battery in position within the bracket. The free ends of the legs 22, 24 are likewise inserted into the tube 14 and the pressure of the inner wall of the tubes on the walls urge the free ends together in a manner similar to

that previously described. This additional force helps to secure the battery in position.

Because of the resiliency of the walls 22, 24 a reaction force is exerted against the inner wall of the tubes 12, 14 which provides sufficient frictional engagement to hold the tubes 12, 14 together to form the single support 10 without additional apparatus such as locking screws or the like being required to hold the pieces together. Thus, the bracket serves a dual function of holding the battery in a convenient position while at the same time holding the tubular members 12, 14 together to form suitable support for the display D.

It is an additional attribute of the invention, that electrical leads from the battery source may be passed to the display from within the tubular sections which form the support thereof. Thus, electrical leads 40, 41 are provided attached to posts 44, 45 of the battery. The leads are passed between the battery casing 35 and the edge of the tubular member 12 and upward to the display sign D as shown in FIG. 2. It will be appreciated that a single lead may be used and the support and display serve as a ground path without use of an additional lead where such an arrangement will prove functional.

FIG. 6 illustrates an alternative embodiment of the bracket of the present invention, which in this case comprises a two piece structure suitable for somewhat heavier applications. Thus, pieces 50, 51 are illustrated, each having an outwardly extending intermediate portion 52 flanked by legs 54, 55 on either side thereof. The portions 54, 55 which terminate in transverse flanged end portions 57 are so constructed that when the pieces 50, 51 are fitted together the end portions 57 each overlap to provide a closed bracket structure. In operation, the bracket serves essentially in the same manner as previously described. The end portions 57 are of a length so as to fit inside the tubes 12, 14 and with the side portions 54, 55 diverging respectively from their associated end portions 57 so that they will engage the inner wall of the tubes 12, 14 when rammed into them, thus causing the intermediate portion 52 to engage a battery casing 35 for securing the battery in the manner described with respect to the FIG. 5 embodiment. The pieces 50, 51 may be separate, as shown, or fastened to each other as by adding weldments 59 (shown as dashed lines) joining the overlapping end portions 57.

FIG. 7 represents still another bracket construction in which a single piece is formed into a closed bracket, as distinguished from the open ended bracket of FIG. 5. As illustrated in FIG. 7, a closed end 60 is provided by inturned portions 62, 64. While in the present instance the inturned portions 62, 64 are shown in abutting relation, it will be appreciated that they may also be formed in overlapping relation without departing from the invention.

Thus, in the manner described, a battery bracket is provided which is not only suitable to construct new display arrangements, but may easily be employed to modify existing display supports formed of a fiber tube or the like, by cutting the existing tube to form sections 12 and 14, and inserting a bracket 16 for connection and mounting the battery.

We claim as our invention:

1. A two-piece support for a battery powered display comprising a pair of aligned tubular members and a bracket for joining the two, said bracket comprising a U-shaped piece of springable strap material, having a pair of leg portions extending in diverging relation from a web which is of a length slightly less than the inside diameter of one said tubular member so as to be slidably receivable therein, said bracket being adapted to receive and secure a battery to said support when the tubular members comprising the same are joined by said bracket, said leg portions of said bracket having intermediate oppositely bowed portions which together conform substantially to the cross section of said battery, so that with said web of said bracket received in said one of said tubular members, and with the ends of said leg portions inserted in said other tubular member to join said tubular members, said intermediate portions simultaneously squeeze about said battery for securing the same to said support.

2. A bracket for joining a two-piece support for a battery powered display formed by a pair of aligned tubular members, said bracket comprising a U-shaped piece of springable strap material, having a pair of leg portions extending in diverging relation from a web which is of a length slightly less than the inside diameter of one said tubular member so as to be slidably receivable therein, said bracket being adapted to receive and secure a battery to said support when the tubular members comprising the same are joined by said bracket, said leg portions of said bracket having intermediate oppositely bowed portions which together conform substantially to the cross section of said battery, so that with said web of said bracket received in said one of said tubular members, and with the ends of said leg portions inserted in said other tubular member to join said tubular members, said intermediate portions simultaneously squeeze about said battery for securing the same to said support.

3. A support for a battery powered display, comprising in combination, a pair of aligned tubes, a battery for supplying power to said display, a bracket for connecting said tubes and supporting said battery therebetween, said bracket comprising a generally U-shaped member of springable strap material, the legs of said U-shaped member having an intermediate portion of a shape substantially conforming to the cross section of said battery, the ends of said bracket being adapted to be press-fitted in said tubes so as to join the two forming said support, the intermediate portion of said bracket being squeezed about said battery positioned therein when said ends are press-fitted in said tubes thereby clamping said battery in place between said tubes.

4. A bracket for joining a pair of aligned tubular members to form a support for a battery powered display, and to simultaneously support a battery for said display, said bracket being formed of springable strap material, and having a pair of diverging side-by-side members, and an enlarged portion defined by outwardly bowed intermediate sections formed in said side-by-side members, said enlarged portion conforming substantially to the cross section of a battery to be used for powering said display, the ends of said bracket members being adapted to be press-fitted in said tubes thereby joining the same, said intermediate portion being squeezed about a battery inserted therein with said legs press-fitted in said tubes, so that said legs clamp said battery in position intermediate said tubes in position for use with said battery powered display.

5. A two-piece support for a battery powered display comprising a pair of aligned tubular members and a bracket for joining the two, said bracket comprising a generally U-shaped piece of springable strap material, having a pair of leg portions extending in diverging relation from a web which is of a length slightly less than the inside diameter of one said tubular member so as to be slidably receivable therein, said legs having inwardly projecting fingers at the free ends thereof which overlap one another, said bracket being adapted to receive and secure a battery to said support when the tubular members comprising the same are joined by said bracket, said leg portions of said bracket having intermediate oppositely bowed portions which together conform substantially to the cross section of said battery, so that with said web of said bracket received in said one of said tubular members, and with the ends of said leg portions inserted in said other tubular member to join said tubular members, said intermediate portions simultaneously

clamp said battery therebetween for securing the same to said support.

6. A two-piece support for a battery powered display comprising a pair of aligned tubular members and a bracket for joining the two, said bracket comprising a pair of C-shaped pieces of springable strap material, having overlapping end portions, and being formed with elongated central portions which bow outwardly from the end portions, said end portions having a length slightly less than the inside diameter of one said tubular member so as to be slidably receivable therein, said bracket being adapted to receive and secure a battery to said support when the tubular members comprising the same are joined by said bracket, said central portions of said

bracket together defining an intermediate portion conforming substantially to the cross section of said battery, so that with the respective end portions of said bracket received respectively in said tubular members, said intermediate portion simultaneously squeezes about said battery for securing the same to said support.

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