Dec. 22, 1959 T. O. BRITT 2,918,647

ELECTRICAL CONNECTORS

Filed Dec. 14, 1956

Fig. 1

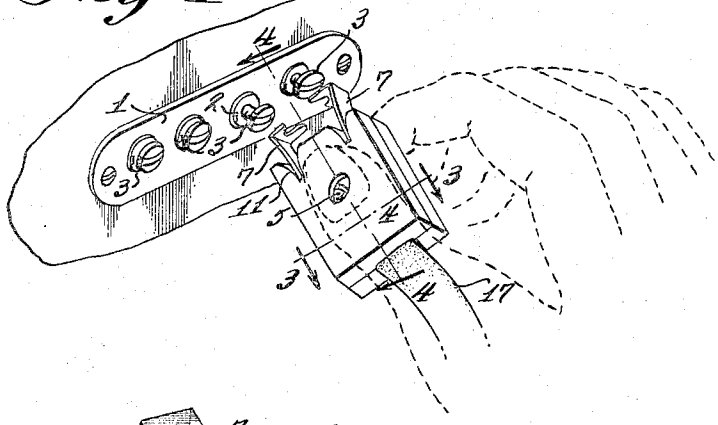


Fig. 2

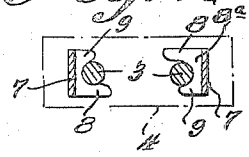


Fig. 3

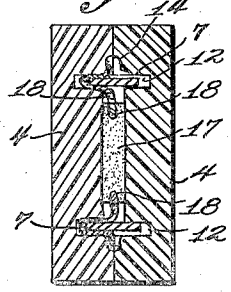


Fig. 5

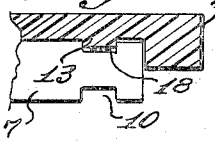
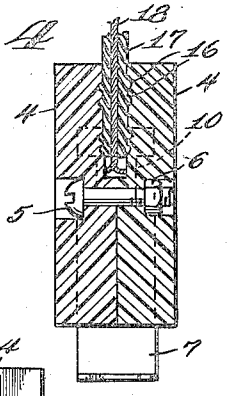


Fig. 4



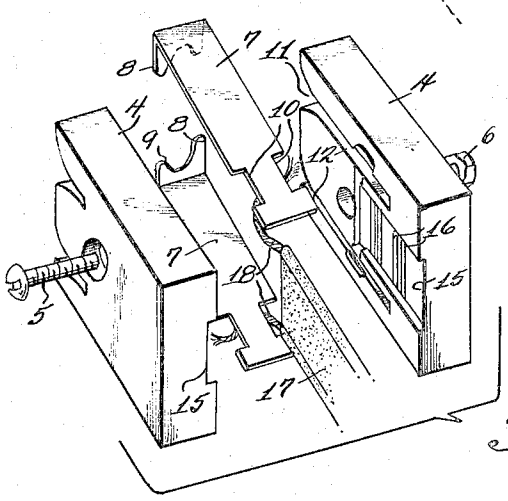


Fig. 6

Fig. 7

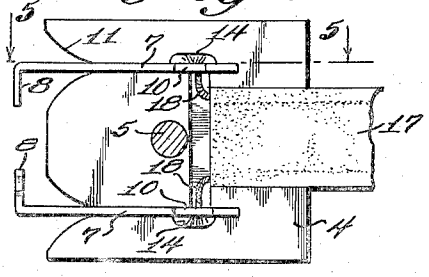
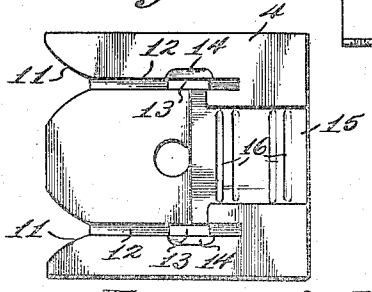


Fig. 8



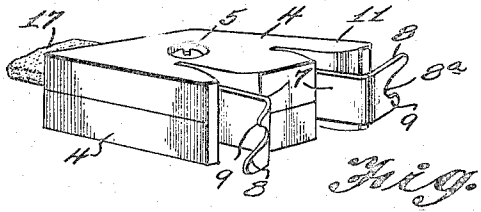


Fig. 9

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United States Patent Office 2,918,647 Patented Dec. 22, 1959

2,918,647

ELECTRICAL CONNECTORS

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Application December 14, 1956, Serial No. 628,255

3 Claims. (Cl. 339—74)

This invention relates to electrical connectors, and more particularly to a connector adapted to engage a pair of binding screws mounted on a panel board.

Although applicable to any apparatus in which there are a pair of spaced binding screws, the invention is designed especially to facilitate the ready connection of an antenna lead-in to a television set.

The invention contemplates the provision of a connector comprising a block of insulating material in which are mounted a pair of parallel terminal strips, and one object is to devise improved means for mounting these strips in the block and for attaching the lead-in conductors to them.

Another object of the invention is to so construct the ends of these terminal strips that, when one is placed in engagement with one binding screw, the connector may be swung around such screw as a pivot so as to bring the other terminal into engagement with the second binding screw.

With the above and other objects in view, the invention consists in the construction, arrangement and combination of parts hereinafter described and claimed and illustrated in the accompanying drawing, forming part of this specification, and in which:

Fig. 1 is a perspective view showing a conventional panel board and illustrating my improved connector;

Fig. 2 is a transverse section through the pair of binding screws and showing my improved terminal strips in engagement therewith, the outline of the connector being illustrated in broken lines;

Fig. 3 is a transverse section substantially on the line 3—3 of Fig. 1 looking in the direction of the arrows;

Fig. 4 is a longitudinal section substantially on the line 4—4 of Fig. 1;

Fig. 5 is a fragmentary longitudinal section substantially on the line 5—5 of Fig. 7 looking in the direction of the arrows;

Fig. 6 is an exploded perspective view showing the various parts of my improved connector and the manner in which they fit together;

Fig. 7 is a plan view of one of the halves of my improved connector, showing the lead-in conductors and terminal strips in position therein;

Fig. 8 is a similar view of the connector body itself the conductors and terminal strips being omitted; and

Fig. 9 is a perspective view of the complete connector showing how the terminal strips may be reversed.

Referring to the drawing in detail, the panel board is indicated at 1 and in this panel board are mounted a plurality of threaded sockets 2 in which are set binding screws 3, as is common practice.

My improved connector comprises a block of insulating material formed of a pair of matching halves 4 held together by a screw 5 working in a nut 6. Clamped between the two halves 4 of the connector are a pair of relatively wide and thin terminal strips 7. These project from the end of the connector as clearly shown in Figs.

1, 7 and 9 and the free ends are bent to provide portions extending at substantial right angles to the body of the strips, and lying in a common transverse plane.

Each of these transversely extending portions has a bifurcated end made up of a pair of prongs with a notch 8^a between them. One of the prongs 8 is relatively long while the other prong 9 is relatively short, as clearly shown in Fig. 2, and, when in position, the notches 8^a are adapted to embrace the binding screws 3, as illustrated.

Each terminal strip 7 is formed on its opposite edges with a pair of notches 10, as best shown in Figs. 5 and 6. Formed in each matching half 4 is a pair of spaced parallel grooves 12, the grooves in one half matching those on the other. The terminal strips 7 are received in these pairs of matching grooves. At the ends of these grooves the matching halves 4 of the block are formed with notches 11 with outwardly flaring walls, as shown in Figs. 6, 7, 8 and 9, the terminal strips extending just beyond these notches. The terminal strips 7 are made of resilient material so that the free ends may flex laterally within the flaring notches 11.

Formed in the bottom of each groove 12 is a lug 13, which lugs are of such size and shape as to enter the notches 10 in the strips 7 when these strips are positioned in the grooves. It will thus be seen that the strips are firmly held against longitudinal movement relative to the block by the engagement of the notches 10 with the lugs 13.

Adjacent the lugs 13 are preferably formed small depressions or recesses 14, for a purpose hereinafter described.

At the end of each half 4, opposite the notches 11, is formed a channel 15, preferably provided with transverse ridges 16, this channel being constructed to receive the end of the insulated lead-in cable 17. This cable, as is usual in television sets, is in the form of a thin flat ribbon having flexible stranded conductors 18 extending along each edge.

In assembling my improved connector, the lead-in cable 17 is placed in the channel 15 of one of the matching halves 4, and the flexible conductors 18 are laid transversely across the grooves 12 at a point just above the lugs 13. The strips 17 are then placed in position in the grooves, with the notches 10 registering with the lugs 13. When the strips are then forced down into the grooves, the conductors 18 are gripped between the sides of the strips and the sides of the grooves as shown in Fig. 3, and also between the top of the lugs 13 and the bottom of the notches 10 as shown in Fig. 5. When the two halves 4 are assembled, and held together by means of the screw 5, the strips 7 with the conductors 18 in contact therewith, as above described, are clamped between the two halves, and this constitutes an effective method of attaching the conductors to the terminal strips without the use of any binding screws or other fastening means. The recesses 14 are for the purpose of receiving the free ends of the conductors 18 as indicated in Fig. 7.

It will be understood that the spacing of the terminal strips 7 is substantially the same as the usual spacing between the binding screws 3. However, my improved connector is constructed so that it may be adapted to binding screws set at different spacings. Thus, if the binding screws are relatively close together, the terminal portions of the strips are arranged to extend toward each other on the outside of such screws as illustrated in Fig. 2, while, if the binding screws are relatively far apart, the strips 7 may be turned over or reversed before being clamped in the block, so that the terminal portions extend outwardly away from each other as shown in Fig. 9, and engage the inside of the binding screws.

In use, my improved connector is first positioned so

that the notch 8a at the free end of one of the terminal strips is brought into engagement with one binding screw. Then the connector is swung or turned about this first binding screw as a pivot, so that the bifurcated end of the other terminal strip 7 is brought into engagement with the second binding screw. As shown in Figs. 1 and 2, the lefthand terminal strip would be engaged with the first binding screw, and then the connector given a clockwise turn or twist so as to bring the other terminal strip in contact with the second binding screw. The short prong 9 of this terminal strip will first engage the second binding screw and, owing to the resilience of the strip 7, will snap past or over this binding screw into the position shown in Fig. 2 so that the notch 8a thereof embraces the screw. It will of course be understood that the binding screws are loosened as shown in Fig. 1 so that the bifurcated ends of the terminal strips may engage under the heads thereof. It will also be noted that, as clearly shown in Fig. 2, the long and short prongs on the two terminal strips 7 are preferably oppositely arranged. This is so that the long prong of the first strip will securely hold the connector in position on one binding screw, while the connector is turned to cause the short prong of the second terminal strip to snap over the other binding screw. The terminal strips 7 are made stiff enough so that having once been engaged over the binding screws, as shown in Fig. 2, and under the heads thereof, the connector will be held in position against any ordinary strains to which the device is subjected.

What I claim is:

1. An electrical connector comprising a block of insulating material made up of a pair of matching halves, and a pair of parallel terminal strips removably clamped between said halves, each of said strips having at its free end a portion bent at right angles thereto, said portions lying in a common plane, and each having a bifurcated end formed of relatively long and short prongs, with a notch between them.

2. An electrical connector comprising a block of insulating material made up of a pair of matching halves, and a pair of parallel terminal strips removably clamped between said halves, each of said strips having at its free end a portion bent at right angles thereto, said portions lying in a common plane, and each having a bifurcated end formed of relatively long and short prongs, with a notch between them, the relative position of said long and short prongs on the two bent portions being reversed, so that the long prong on one portion is opposite the short prong on the other.

3. The combination with a panel having a pair of spaced, screw threaded sockets mounted thereon, the space between said sockets being free and unobstructed, and a pair of binding screws engaging said sockets, of a connector comprising a block of insulating material from which projects a pair of spaced, parallel, resilient terminal strips, each strip having at its end a portion extending at right angles thereto, said portions lying in a common plane, and each such portion having a bifurcated end made up of a relatively long and a relatively short prong forming a notch between them, whereby, when such notch in one of said strips is brought into engagement with one of said binding screws, the connector may be swung about said binding screw as a pivot so as to bring the bifurcated end of the other strip into engagement with the second binding screw, and whereby the short prong of said last mentioned strip, due to the resiliency of the strip, will snap over said second binding screw so as to cause the bifurcated end thereof to embrace said second screw.

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