Oct. 28, 1924. 1,512,997

C. V. MORRIS

LEADING-IN CONNECTER FOR AERIAL WIRES AND THE LIKE

Filed Feb. 21, 1924

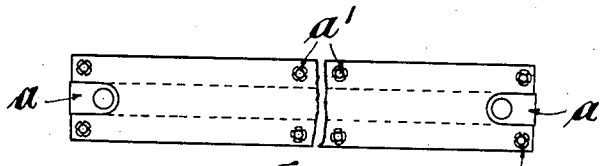


Fig. 1.



Fig. 2.

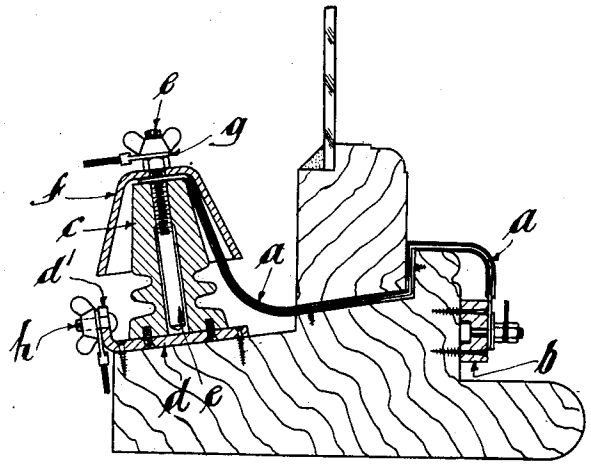


Fig. 3.

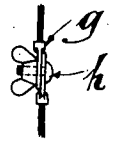


Fig. 4.



Fig. 5.

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UNITED STATES PATENT OFFICE.

CHARLES VERNON MORRIS, OF DAVENPORT, STOCKPORT, ENGLAND.

LEADING-IN CONNECTER FOR AERIAL WIRES AND THE LIKE.

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To all whom it may concern:

Be it known that I, CHARLES VERNON MORRIS, a subject of the King of Great Britain and Ireland, residing at Davenport, Stockport, England, have invented new and useful Improvements in Leading-in Connecters for Aerial Wires and the like, of which the following is a specification.

This invention relates to improved means for connecting an outdoor aerial to wireless receiving apparatus situated inside a private house, building or like station, one object of the invention being to enable the connecting means to be led into the building in which the receiving apparatus is situated without having to bore a hole in the frame of a window or door, or in the outer wall of the building, while another object of the invention is to provide a form of terminal connecter which will also act as a lightning conductor at that end of the conductor outside the building and also serves to take the strain of the aerial off the conductor.

According to the invention, a "leading-in" conductor is provided consisting of an insulated strip of copper or other suitable and flexible conducting material, of thin and flat section. The conductor is of a length such as to be more than sufficient to extend through a window or door opening and to follow the contour of the window or door casing with the window or door shut. The conductor proper i. e. the copper or like strip is longer than the insulation and at each end is provided with a terminal connecter.

In one example, the terminal connecter for the end of the conductor inside the building, comprises a small block of insulating material and a screw and nut or nuts, the block having holes and adapted to be screwed by screws to a window or doorway casing.

An example of terminal connecter for the end of the conductor outside the building, comprises a larger and conical block of insulating material, a screwed rod or conductor passing longitudinally through the block, and at one end projecting beyond the block where it is furnished with a nut or nuts. Said connecter also comprises an "earthing" plate, to which said block is secured, the near end of the screwed rod stopping short of the plate and leaving a short air gap. By means of holes in the earthing plate and screws, the connecter block may be secured to the sill of a window, or to a doorway casing.

At one end the conductor is connected to the aerial outside of the house or station, and at the other end is connected to the receiving instrument. The conductor and its insulation are bent where they pass between the window or door and its casing, and being comparatively thin do not interfere with the closing of the window or door. In the edges of the insulation which is wider than the conductor, may be holes or eyelets for brads or screws to pass through and fix the conductor to the window or doorway casing.

Upon the accompanying drawing,

Fig. 1 illustrates a plan view, and

Fig. 2 an edge view of the flexible leading-in conductor constructed according to the invention and separate from the terminal connecters.

Fig. 3 illustrates the leading-in conductor (slightly modified) and its terminal connecters applied to a window.

Figs. 4 and 5 illustrate side and edge views of details.

Referring to Figs. 1, 2 and 3, *a* is the "leading-in" conductor made of thin sheet copper or the like in strip form and sandwiched between two thin strips of insulating material such as fibre, the two thicknesses of insulating material being held together along their edges and clear of the copper strip by metal eyelets *a'*. The length of the conductor is more than sufficient to allow it to extend through the window opening and follow the contour of the window casing with the window shut, see Fig. 3, its ends projecting sufficiently far beyond each side of the window to allow of the required connections. The copper strip is also slightly longer than its insulation and is provided with a hole at each end. In Figs. 1 and 2 the ends of the copper strip are shown folded back on to the insulation and both the insulation and the copper strip are provided with holes through which a terminal screw passes. In Fig. 3 the ends of the copper strip are shown not folded back on to the insulation.

At the end of the conductor inside the building the terminal screw passes through an insulating block *b* fixed to the window casing by screws. At the other end of the

conductor outside the building the terminal screw passes partly through an insulated block *c*. Said block *c*, which may be of ebonite or porcelain, is mounted on an "earthing" plate *d* and is secured by such plate and screws to the sill of the window frame. The block *c* is substantially conical in shape and is preferably corrugated on its exterior as shown. Extending centrally through the block *c* is the long brass or like terminal screw *e*, which at its lower end is pointed and lies at a slight distance away from the plate *d* to form a small air gap. The screw *e* is preferably screwed into the block in order to be adjustable and at its upper end carries terminal connecting nuts. Between said nuts and the block may be fitted the conical shield *f*, made of any suitable insulating and water-proof material. The aerial wire and the conductor *a* are both connected to the screw *e*. When the shield *f* is used, the end of the conductor will lie between the shield and the block, as shown.

By employing the block *c* the strain of the aerial is taken off the conductor, and by providing the block *c* with the long screw *e*, and plate *d*, said block also acts as a lightning conductor. Further, with the block *c* corrugated and covered with a shield, leakage of radio current is reduced to a minimum and the conductor is protected from the weather, the gap between the screw *e* and the plate *d* being also protected from moisture and dirt.

In addition to serving for connecting the layers of insulating material, the eyelets *a'* may serve for enabling the conductor *a* to be secured to the woodwork of the window or doorway casing by brads or screws.

To allow of rapid disconnection of the aerial wire and earthing wire from the screw *e* and plate *d*, the aerial wire may be furnished with a forked terminal member *g*, see Fig. 5, likewise, the plate *d* may be provided with a turned-up forked projection *d'* so that by lifting the screw *h* out of the forked projection while still carrying the ring *j* of the earthing wire and passing the member *g* on to such screw (after detaching it from the screw *e*), the aerial wire and earthing wire may be connected directly one to the other, see Figs. 4 and 5, this being an advantageous change in the case of a heavy thunder storm.

What I claim is:—

An electrical conductor comprising in combination, a thin flat insulated strip of copper, the insulation being slightly shorter than the copper strip, a terminal connecter for each end of the strip, the connecter at one end comprising a small block of insulating material, a small bolt passing through the block and a nut on the bolt, the connecter at the other end of the copper strip comprising an elongated block of insulating material, a screwed spindle in said block extending beyond one end of the block, means on said screw for clamping the copper strip thereto, and "earthing" means adjacent the other end of said spindle but leaving a "gap" between, and means for fixing the blocks to rigid supports, as set forth.

In testimony whereof I have signed my name to this specification.

CHARLES VERNON MORRIS.