

May 19, 1942.

G. EATON

2,283,544

ELECTRIC PLUG

Filed Oct. 6, 1937

FIG. 1.

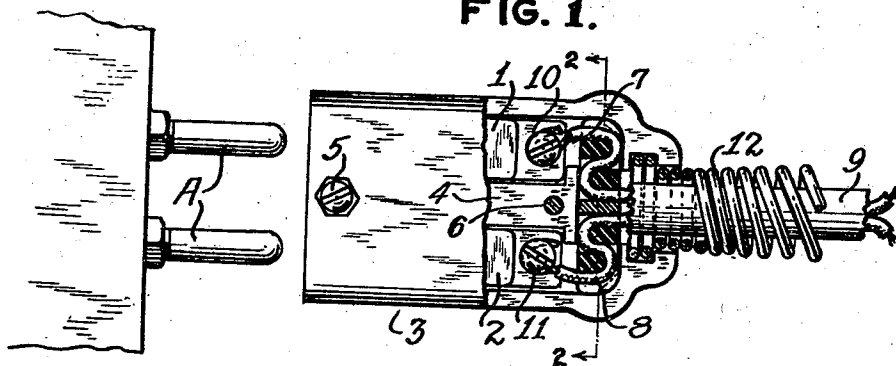


FIG. 2.

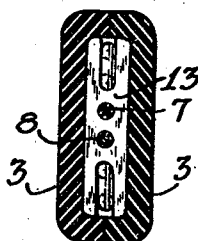


FIG. 5.

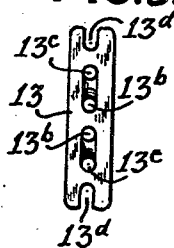


FIG. 4.

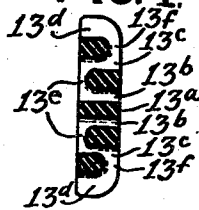


FIG. 6.

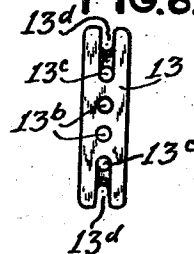
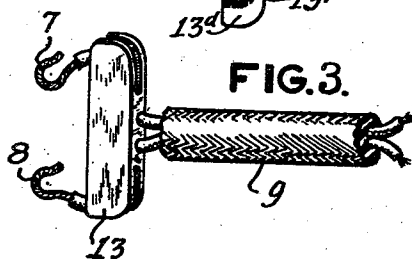


FIG. 3.



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ELECTRIC PLUG

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1 Claim. (Cl. 173—322)

This invention relates to the art of electric plugs.

As is well known to those who are familiar with the art of electric plugs, the points of connection of the electric wire to the plug are subjected to considerable strain and there is always the danger of these wires becoming accidentally disconnected from the plug or at least loosened. As a result, there is danger of sparking.

This situation has long been regarded by the insurance companies as constituting a serious hazard and accordingly they required such connections to withstand a strain of twenty-five (25) pounds. Now it is understood that the underwriters have recently doubled this requirement by specifying fifty (50) pounds instead of twenty-five (25) pounds, as a still further safeguard.

It is therefore the object of the present invention to devise an electric plug embodying means for relieving the binding post connections of the strain to which they would otherwise be subjected.

A further object is to devise such a means that can be readily and cheaply manufactured and applied within the casing of the plug.

A still further object is to so construct such a device that it will also still further improve the insulation of the plug at the point of entrance of the electric wire therein.

Other objects will appear from the following description and claim when considered together with the accompanying drawing.

Fig. 1 is a plan view of my improved device illustrating its intended use and with parts broken away;

Fig. 2 is a view taken on line 2—2 of Fig. 1;

Fig. 3 is a perspective view illustrating the assembly of my anchoring device prior to placing the same in the plug;

Fig. 4 is a sectional view of the anchoring device corresponding with the showing in Fig. 1 but with the wires removed;

Fig. 5 is a front elevation of the anchoring device; and

Fig. 6 is a rear elevation of the same.

It is to be understood that the present form of disclosure is merely for the purpose of illustration and that there may be devised various modifications without departing from the spirit of my invention as herein set forth and claimed.

Referring to the accompanying drawing, the terminals 1 and 2, enclosed within the casing 3, are adapted to be attached to the prongs A of the familiar electric toaster or the like. As in

the conventional type of plug, the sections of the casing 3 are secured together by the bolts 5 and 6.

The wires 7 and 8 of the electric cable are adapted to be connected to the screws 10 and 11 on the rear ends of the terminals. The one end of the coiled wire sheath 12 is engaged between the end portions of the members of the casing, as will be understood.

My invention consists in providing a block or body of fibre or other electric insulating material in which I form tortuous passages for the wires 7 and 8. This block 13 has a seat provided therefor in the companion casing members so as to fit snugly therein without any other means being required for holding the same in place. The companion members of the casing are formed with space between the rear end of the casing and the middle longitudinal rib 4 so as to snugly receive and hold the block 13 against longitudinal dislodgement; and the block is made of proper dimension laterally of the plug so that it fits snugly between the sides of the casing. Thus the block is braced against any serious movement.

The block 13, which in the present instance is designed for two wires, has two duplicate sets of passages longitudinally through the same. Each set comprises an odd number of passages, as will be evident, so that each wire enters the rear of the block and emerges from the front thereof. These two sets of passages may be understood as being separated by the middle partition wall 13a. Each set comprises the inner passage 13b, the intermediate passage 13c and the outer open passage 13d. In each instance, the space 13e between the inner ends of the inner and intermediate passages 13b and 13c is countersunk, as is also the space 13f between the outer ends of the intermediate passage 13c and outer open passage 13d. At those points where the wires are bent about the partitions between the adjacent passages, these partitions have their edges curved so as to afford proper and effective bearing and binding surface engagement for the wires.

As indicated in the drawing, those portions of the wires within the passages of the block 13 are protected by their individual covering of insulation which is removed from only the extreme end portions for connection to the binding posts or screws 10 and 11.

After the individual wires have been extended through the passages of the block 13 in the manner indicated in the drawing, the ends of

the wires will be attached to the terminals, and then the block 13 and terminals 1 and 2 and the sheath are placed in position between the casing members which are then secured together.

As will be seen, the end portions of the wires, as they leave the block 13, are practically in line with the screws 10 and 11; that is the extent of wire which would otherwise extend angularly from the aperture at the middle of the rear end of the casing to the binding screws which are located considerably to the side of the middle of the casing, is arranged neatly in the passages of the block or body 13; and furthermore, this arrangement provides an effective locking of the wires against all possible danger of being pulled loose from their binding screws.

By virtue of the tortuous extent of the wires through the block or body 13 and the close arrangement of the passages, together with abrupt turns therebetween, any pull applied to the cable will merely lock the wires 7 and 8 in the block or body 13. Thus, the points of connection at 10 and 11 are entirely relieved of the strain to which the cable might be subjected outside of the casing. The holding force of the block or body 13 will be the same as the strength of the block or body itself.

If so desired, the passages 13a may be of closed form, like passages 13b and 13c; and, as above stated, there may be various modifications in the form or design of this invention.

Another advantage of my present improved device is that it will prevent the terminal from being accidentally dislodged from their proper position within the casing 3. This is especially important in a certain type of electric plug as herein disclosed.

Not only does the block or body 13 relieve the wire connections of the strain to which they would otherwise be subjected, but the block or body 13 serves also as a means of increased insulation.

This improvement is not costly to manufacture and assemble and yet it is extremely efficient and dependable and easily meets the rigid requirements of the underwriters as above referred to.

What I claim is:

An electric plug comprising a chambered insulation body longitudinally divided into two sections, a plurality of terminals within said body for connection of the electric wires thereto, said body having an aperture for passage of the electric cable therethrough, and anchoring means transversely disposed within said body and between said aperture and terminals, for relieving said wire connections from any strain to which the electric cable might be subjected outside of said body, said anchoring means comprising an insertable block of electric insulation material having two companion sets of passages for the two wires, each set having an odd multiple number of substantially parallel transversely spaced communicating passages each extending in a direction lengthwise of the plug so as to constitute a tortuous combined passage of substantially reversed U-shape through which each wire extends and thereby cause a binding effect thereupon when subjected to tension, said combined passages both occupying substantially the same transverse plane and terminating at their outer ends at fixed points substantially to the rear of their respective terminal connections, said block having polygonal shaped means of body engagement, and said body sections being formed with a recess seat means of corresponding polygonal form and dimensions for receiving the polygonal-shaped means of said block and snugly seating the same therein, said recess seat means being formed in the companion sections of the body so as to hold said block between said body sections and against movement longitudinally of the plug or in any other direction when in assembly.

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