Feb. 11, 1941. W. S. THOMAS 2,231,038

ELECTRIC PLUG

Filed March 17, 1938

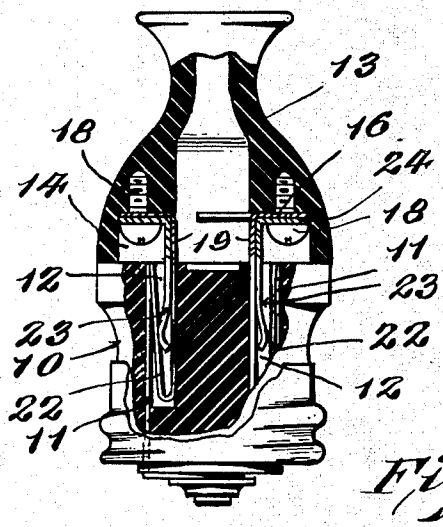

Fig. 1.

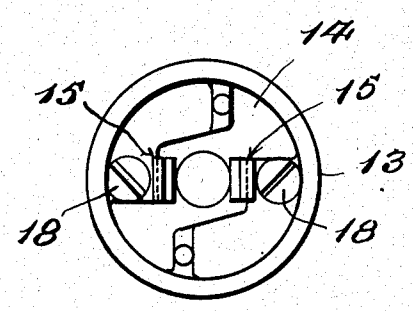

Fig. 2.

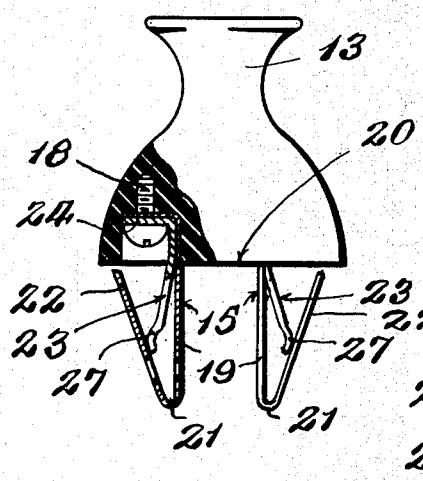

Fig. 3.

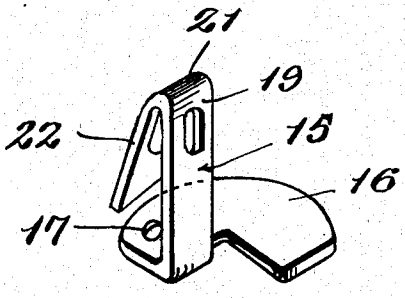

Fig. 4.

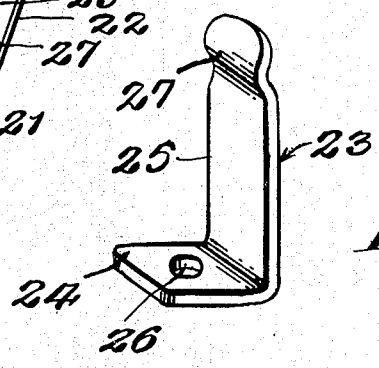

Fig. 5.

Inventor

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Patented Feb. 11, 1941 2,231,038

UNITED STATES PATENT OFFICE

2,231,038

ELECTRIC PLUG

William S. Thomas, Montoursville, Pa., assignor, by direct and mesne assignments, of thirty-one and two-thirds per cent to Herbert T. Flook, and thirty-one and two-thirds per cent to Hughes G. Meaker, both of Mansfield, Pa., and five per cent to Christian R. Nielsen, Washington, D. C.

Application March 17, 1938, Serial No. 196,557

1 Claim. (Cl. 173—361)

This invention relates to electric socket plugs for effecting firm and positive electrical contact between the prongs of the plug and the contact plates of a socket, and it consists in the constructions, arrangements and combinations herein described and claimed.

It is an object of the invention to provide a plug having a novel construction of resilient contact blades for effecting positive engagement with the contact plates of a socket.

It is a further important object of the invention to provide a contact blade embodying a pair of resilient leg or blade members which normally are divergent with respect to one another, but movable to a substantially parallel relation when engaged within a socket, thereby insuring contact with the blades throughout their lengths.

It is a still further object of the invention to provide a novel spring means interposed between the legs of the blades imparting further resilience to the legs and insuring a positive, yet releasable engagement between the legs and the contact plates of a socket.

Additional objects, advantages and features of invention will be apparent from the following description, considered in conjunction with the accompanying drawing, wherein—

Figure 1 is a vertical sectional view of the plug, engaged in a socket member,

Figure 2 is a plan view of the plug,

Figure 3 is a side elevation of the plug, partly in section,

Figure 4 is a perspective view of one of the contact blades.

Figure 5 is a perspective view of one of the spring members.

Referring to the drawing, a conventional form of socket is indicated by the reference character 10, and as well understood, the socket 10 includes contact plates 11. In some constructions of sockets the plates 11 are positioned upon the outer walls of the recesses 12, while in other forms of the socket, the plates are located upon the inner walls of the recesses 12, as shown in Figure 1, and my plug is applicable to either construction, as will be apparent as the description proceeds.

The plug comprises a body 13 of insulating material of any approved shape, recessed as at 14 for accommodation of contact members generally indicated at 15. The contact members each embody a base portion 16 shaped to fit within the recess 14 of the body and is apertured as at 17 for reception of a screw 18 whereby the contact member will be firmly secured to the body.

Formed integrally with the base 16, extending outwardly at right angles thereto, a flat contact 19 is formed, the blade being of a length to project a distance from the face 20 of the body 13, whence it is bent upon itself at 21 to form a branched free blade 22. The free blade 22 extends divergent to the blade 19 and stops short approximately on a line with the face 20 of the body.

The contact members 15 are formed of copper in order to provide proper conduction of electrical energy, and while such metal will have a certain inherent resilience for effecting contact with the plates 11 of the socket, it has been found that the resilience of the blades soon become so reduced as to prevent proper contact, and in order to insure the required resilience in the blades at all times, I provide a spring 23 interposed between the blades 19 and 22.

The spring 23 will be formed from any suitable spring steel of proper gauge, and includes a foot 24, at right angles to the body 25 thereof. The foot 24 snugly rests upon the base 16 and is apertured as at 26 to receive the screw 18. It will be noted that the screw mounts the spring and base to the body of the plug.

The major portion of the body 25 of the spring abuts the blade 19 for a short distance and is then bowed outwardly in the direction of and contacting the free blade 22, tending to force the free blade away from the blade 19. The contacting portion 27 of the spring is slightly arced forming a heel, thus providing a sliding contact upon the blade 22 when the blades are flexed. Preferably the spring 23 is of a length so as to contact the free blade 22 at a point slightly above the medial portion of its length and by reason of this, resilience to the major portion of the leg 22 will be imparted.

In use, the plug is presented to the socket, the blades 15 being aligned with respective recesses of the socket and forced thereinto, which action presents the blades 19 against the inner walls of the recesses 12 and the free blades 22 against the contact plates 11. The normal divergence of the blades 22 is such that they will be flexed toward respective blades 19, against the inherent resilience of the blades and the spring, thereby effecting a tight frictional engagement between the sides of the recesses and the contact plates 11 of the socket. When the contact members 15 are fully engaged within a socket member they assume substantially a parallel relation, reducing strain upon the plastic material of the body.

While I have shown and described a preferred construction of plug, this is by way of illustration only and I consider as my own all such modifications in structure as fairly fall within the scope of the appended claim.

I claim:

An attachment plug comprising a body member of insulating material, a pair of spaced flat contact blades, each blade having a right angular base fixed within the body member, said blade being formed of resilient conducting material and of a length projecting from the body, each blade having an integral extension divergent thereto and of a length stopping short of the body member, the juncture of respective blades and extensions forming an open bight, a flat leaf spring interposed between respective blades and extensions, said springs having right angular bases complemental to respective bases of the blades for securement thereto, said springs being of a length slightly greater than half the length of the contact blades, the springs being bowed outwardly in the direction of respective extensions tending to maintain the divergent relation of the extensions, and said springs each terminating in arced heel portions for slidable contacting engagement with respective extensions of the blades at points inwardly of the bight defined by the blades and extensions.

WILLIAM S. THOMAS.