March 11, 1924. 1,486,691

E. SCHWARTZ

ELECTRIC CONNECTER

Filed Sept. 7, 1918

Fig. 1.

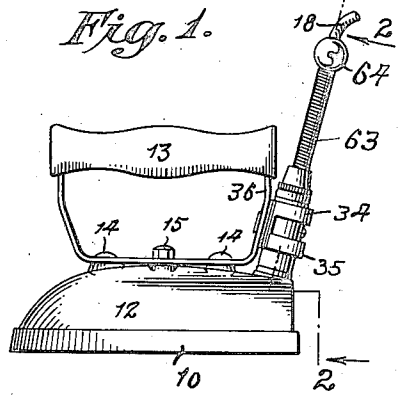


Fig. 2.

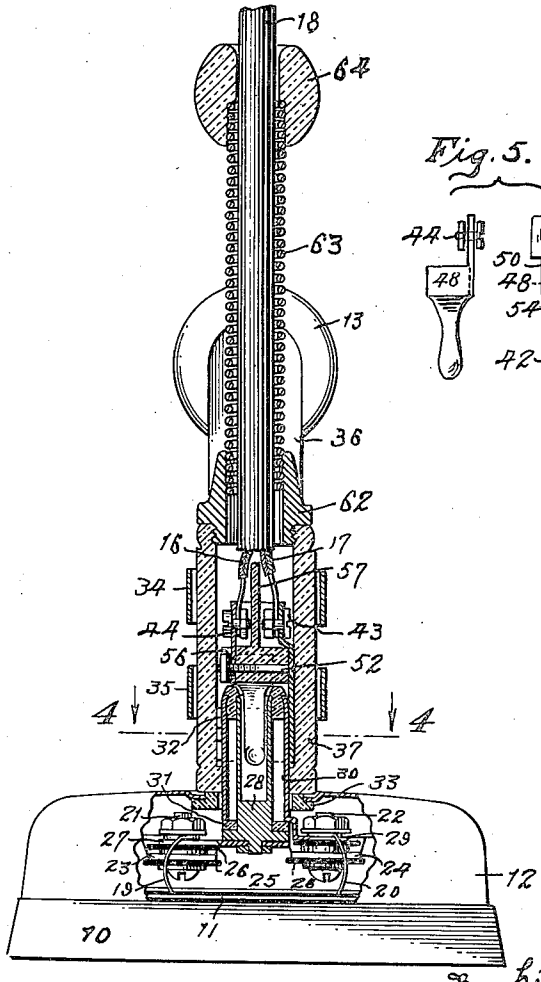


Fig. 3.

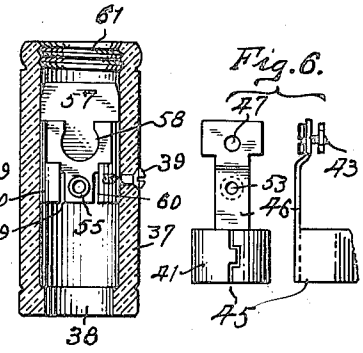
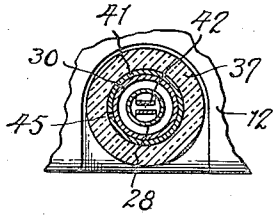


Fig. 5.

Fig. 6.

Fig. 4.



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By his Attorneys

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UNITED STATES PATENT OFFICE.

EDWARD SCHWARTZ, OF NEW YORK, N. Y., ASSIGNOR TO MANHATTAN ELECTRICAL SUPPLY COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION OF MASSACHUSETTS.

ELECTRIC CONNECTER.

Application filed September 7, 1918. Serial No. 253,076.

To all whom it may concern:

Be it known that I, EDWARD SCHWARTZ, a citizen of the United States of America, residing in the city, county, and State of New York, have invented a certain new and useful Improvement in Electric Connecters, of which the following is a specification.

My invention relates to electric flat irons and particularly to a detachable connection device for establishing the power circuit through the resistance unit of the iron, the object of my invention being to provide a safe, rugged connection which can be quickly and easily made or broken and possessing certain features of advantage and novelty hereinafter described or shown in the accompanying drawings in which—

Fig. 1 is a side elevation of a flat iron showing my invention applied thereto;

Fig. 2 is a section on the line 2—2, Fig. 1, but drawn to an enlarged scale;

Fig. 3 is a vertical section through the plug casing showing, in elevation, the terminal carrying body within the same, but with the terminals detached;

Fig. 4 is a cross section on the line 4—4, Fig. 2;

Fig. 5 shows the center contact of the plug element in side elevations at right angles to each other; and

Fig. 6 shows the side contact in similar views.

The main features of the flat iron are of customary construction and comprise a heavy metal base 10 and an associated heating element 11, enclosed by the cover 12, to which the handle 13 is attached by screw bolts 14 and a central holding screw 15 which also secures the cover to the base. At the heel of the iron is located a detachable connection device by which the resistance element 11 is brought into the circuit of the power wires 16 and 17 of the cable 18. The present invention relates to this connection device.

In the form here shown the leads 19 and 20, from the resistance element 11, are respectively secured to the binding posts 21 and 22, mounted on lugs 23 and 24 which are secured to the heavy metal weight-block 25 between which and the base 10 the resistance element is confined. Washers 26 of mica or the like insulate the binding posts 19 and 20 from the lugs 23 and 24. A strap 27 between which and the head of the binding post 21 wire lead 19 is confined, extends laterally therefrom and carries a tubular post 28 which forms a center terminal for the connecting device. A strap 29 between which and the head of the binding post 22 the resistance lead 20 is confined, extends laterally in opposite direction, but at a higher level than the strap 27, and carries a metal shell 30 forming the side terminal of the connecting device. This shell surrounds the post 28 and is separated therefrom, as well as centered with relation thereto, by an insulating washer 31 at its base and an insulating ring bushing 32 at its top. It will be noted that the bushing 32 extends beyond the upper ends of both the post 28 and shell 32 and forms a barrier which not only separates the contacts at this point, but is oppositely bevelled to guide the cooperating contacts of the plug element into engagement with the post and shell respectively. Both post and shell contacts 28 and 30 project upward through the cover 12 of the iron and are insulated from the latter at the point at which they pass therethrough by a washer 33. Guide rings 34 and 35, secured to the frame 36 of the handle 13, not only protect these contacts against accidental injury, but are centered with relation thereto to form a guiding support for the plug member of the connection.

This plug is secured to the end of the cable 18 and has a tubular casing 37 of insulating material, the opening 38 at one end of which is of substantially the same diameter as the shell 30, above referred to, so that it sleeves over the latter. Within the casing 37 is mounted, by a set screw 39, an insulating body which carries the plug contacts 41 and 42 projecting toward the opening 38, and at its opposite end the binding screws 43 and 44, by which electric connection is established between the contacts 41 and 42 and the leads 16 and 17. The contact 41 comprises a spring band split at 45 and integral with the strap 46, and pierced at 47 to receive the stem of the binding screw 43. The cooperating contact 42 comprises a pair of spring arms rounded at their free ends and forming extensions of wings 48 and 49, offset at right angles to the strap 50, which is pierced at 51 to receive the stem of the

binding screw 44. The two contacts are mounted on opposite sides of the insulating body 40 and are held in position by a single bolt 52, piercing the body 40 and the holes 53 and 54 in the contacts. The head of the screw bears against the strap 46 of the terminal 41, but is insulated from the strap 50 of the terminal 42 by a collar 55 formed on the insulating body 40 and fitting within the hole 54 of the strap 50, while the nut 56 is spaced from the strap 50 by an insulating washer. The body 40 is provided with a web 57 which separates the power wires 16 and 17 and is also recessed on opposite sides at 58 to accommodate the nuts on the inner ends of the binding screws 43 and 44 and to form recesses within which the wire ends are confined. The insulating body 40 is also slotted at 59 and 60 to receive the wings 48 and 49, on the contact 42, which is thus held rigidly in central position with relation to the ring contact 41.

The casing 37 is tapped at its cable end 61 to receive a thimble 62 secured to one end of the coil spring 63 which surrounds the cable 18 and carries, at its other end, a ring ball 64 by which the plug may be handled.

When it is desired to establish the connection between the power cable 18 and the resistance element of the iron, the plug is inserted through the guide rings 34 and 35 into engagement with the terminals 28 and 30 on the iron. The construction of the terminals on the iron and of the contacts of the plug is such that they sleeve into engagement without regard to the relative rotary positions of the parts, and no care need be taken to accurately position the plug with relation to the terminals on the iron. Their engagement with the contacts of the plug is rendered particularly effective by the frictional contact incidental to the expansion of the ring contact 41 as it is pushed down over the shell 30, and by the compression of the arms 42 as they enter the tubular center contact 28. The friction grip thus secured between the plug contacts and receptacle terminals not only insures good electrical connection, but a sufficient mechanical engagement between the parts to prevent accidental removal of the plug. When it is desired to remove the plug, the ball 64 is pulled upward thus placing the spring 63 under tension and insuring a quick break between the engaging contacts as the plug is withdrawn.

Various modifications in detail of construction will readily occur to those skilled in the art, which do not depart from what I claim as my invention.

I claim:—

An electrical connecter comprising an insulating tubular casing, an insulating button adapted to enter said casing and be secured within the same, together with contacts carried by said button and comprising a cylindrical contact of spring metal having projecting from one edge thereof a combined securing strap and binding screw terminal, and a second contact comprising a pair of spring fingers adapted to be arranged substantially axially within said cylindrical contact and spaced therefrom, said spring fingers being integral with a sheet metal strap arranged in extension thereof and forming a combined attaching strap and binding screw terminal, said straps being arranged on opposite sides of the insulating button and secured thereto, the contacts projecting in the same direction from said button and being housed within the surrounding insulating casing.

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

EDW. SCHWARTZ.