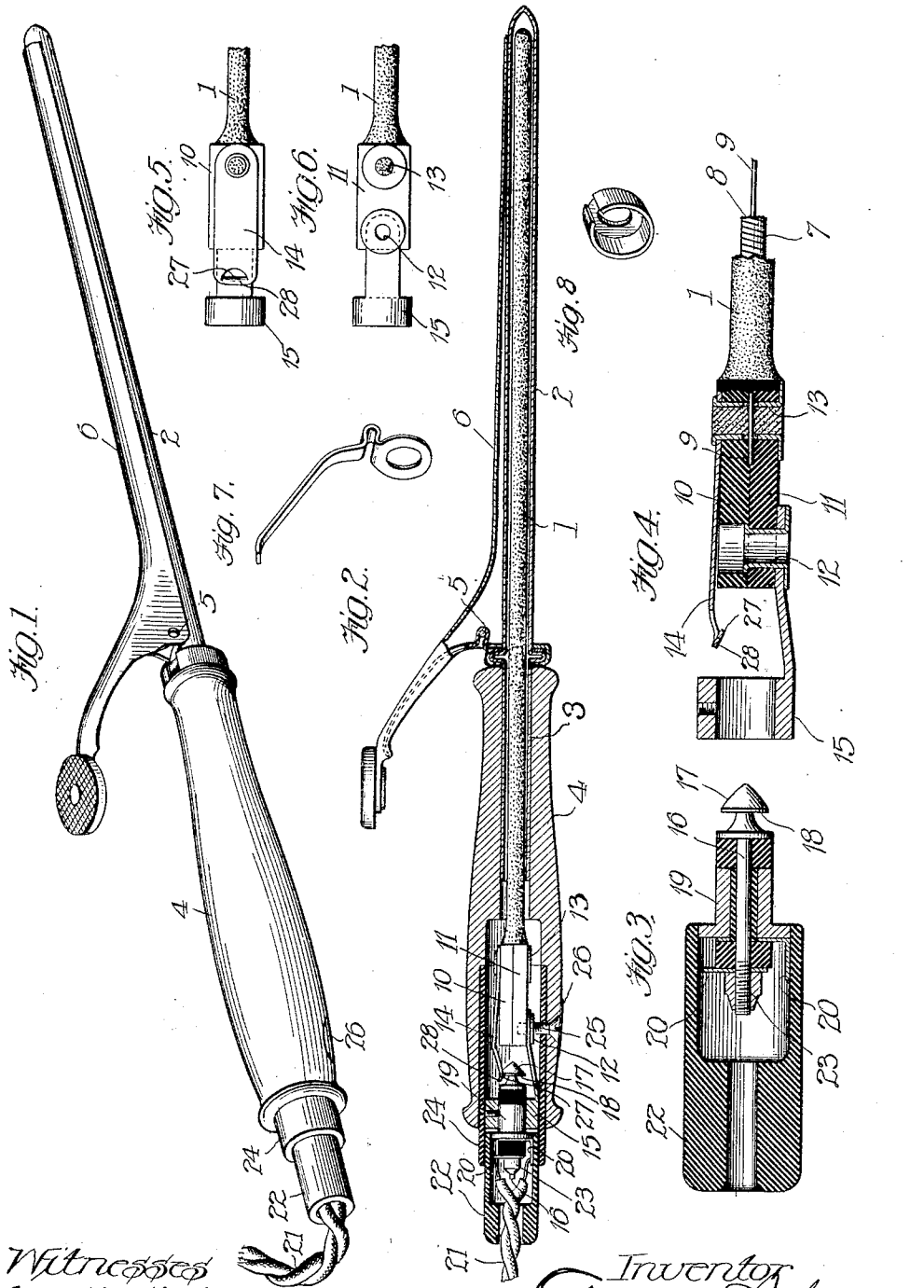
E. SCHWARTZ.

ELECTRIC CURLER AND THE LIKE.

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ELECTRIC CURLER AND THE LIKE.

1,090,238. Specification of Letters Patent. Patented Mar. 17, 1914.

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To all whom it may concern:

Be it known that I, EDWARD SCHWARTZ, a citizen of the United States of America, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Electric Curlers and the like, of which the following is a specification.

The main objects of this invention are to provide an improved construction for electrically heated devices such as curling irons, hair drying combs, etc., and particularly to provide an improved construction for the contact terminals of such devices whereby the current supplying conductors may be readily attached and detached, and whereby the coacting contact terminals will be free to rotate relative to each other so as to avoid twisting of the conductor cord when the implement is rotated.

A specific embodiment of this invention is illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view. Fig. 2 is a longitudinal section of the same illustrating particularly the internal construction of the handle and the electric contact devices. Fig. 3 is an enlarged sectional detail of the plug contact member which is connected to the conductor cord. Fig. 4 is a similar detail of the stationary contact terminal of the heating element. Figs. 5 and 6 are details showing opposite side elevations of the same. Fig. 7 is a view of the jaw closing spring. Fig. 8 is a view of the joint ferrule at the front end of the handle.

In the form shown in the drawings, the implement comprises a rod shaped heating element 1 housed in a tubular metal casing 2 which has telescoping engagement within a tubular opening 3 in the handle 4. Pivotally mounted at 5 at the front end of the tube 3 is the usual semi-cylindrical jaw 6.

The heating element 1 comprises the usual coil 7 of high resistance wire wound on a tube 8 of insulating material, which in the form shown is reinforced by a metal rod 9 which extends longitudinally through it. The rearward end of the rod 9 is clamped between the opposed faces of a pair of terminal blocks 10 and 11, which are secured together by rivets 12 and 13 preferably in the form of eyelets. The eyelet 13 is transversely perforated to permit the rod 9 to extend through it as shown in Fig. 4. These eyelets also secure a pair of contact terminals 14 and 15 to the respective blocks 10 and 11. The contact member 14 is in the form of a spring tongue, and in order that it will not make electrical contact with the rivet 12 the adjacent end of the latter is seated in a counterbore in the block 10. The terminal 15 is also in the form of a tongue but terminates in a contact ring which is substantially in axial alinement with the heating element 1.

The contact device which connects the inleading conductor cord with the contact terminals 14 and 15 comprises a pair of concentrically arranged contact members which in their assembled relation are in the form of a plug, the inner of these being in the form of a pin 16 having an enlarged head 17 at its outer end, said head being shaped to provide a conical tip with an abrupt shoulder 18 behind it. The outer contact member 19 is in the form of a tube or sleeve surrounding the pin 16 and suitably insulated therefrom. The contact members 16 and 19 are respectively provided with suitable ears 20 to which the inleading conductors of the cord 21 are respectively connected. The joint between the conductor cord and the terminals 16 and 19 is housed within a hollow cylindrical block 22 of insulating material, which serves as a finger-hold when the contact plug is inserted or removed from the handle 4. The contact members 16 and 19 and their insulation are held together by means of a nut 23 on the inner threaded end of the pin 16.

In order to provide for the convenient insertion and removal of the heating element into the handle, the terminal blocks 10 and 11 and the contact member 15 are shaped to fit snugly within a tube 24 of insulating material, which is seated in a counterbore in the handle 4 and which preferably extends a short distance rearward of the handle to provide a finger-hold for the insertion and removal of the tube 24. In the form shown friction is relied upon for holding these parts in their assembled relation when removed from the handle, but when in place in the handle they are held in fixed relation to each other by means of a screw 25 which extends through the adjacent wall of the handle 4 into the tube 24 and its inner end

is seated in the tubular rivet 12. The head of the screw 25 may, if desired, be covered by a paper or cloth label 26 on the handle.

An important feature of the construction illustrated is the relative formation of the head 17 and the coacting portion of the spring contact 14. The latter is perforated near its rearward end to provide a shoulder 27 which is preferably straight and faces toward the front, and the portion 28 of the tongue 14 which lies rearward of the shoulder 27 is bent to stand in the inclined position in which it is shown in Fig. 4, thus providing an inclined face which coacts with the conical tip of the head 17 to lift the spring contact 14 when the plug is inserted into the socket in the handle.

By reason of the fact that the shoulder 18 makes an angle of ninety degrees, or nearly so, with the axis of the plug, and that the shoulder 27 is correspondingly abrupt these shoulders coact in such manner as to prevent the plug from being withdrawn from the socket by a direct pull. If, however, the plug is pulled outward and at the same time rotated the effect is to cause the spring tongue to shift radially outward until the shoulder 27 releases the head 18.

Although but one specific embodiment of this invention has been herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention as defined by the following claims.

I claim:

1. In a device of the class described, the combination of a handle and a readily detachable connector, one of which members is provided with a socket having a pair of terminal contacts, and the other of which is provided with a plug formed to fit within said socket and having a corresponding pair of terminal contacts adapted for rotary engagement with the socket contacts respectively, one of the contacts of a coacting pair being axially disposed and having a backwardly inclined front surface and a substantially perpendicular radial shoulder on the back side, and the contact coacting therewith being arranged to yieldingly bear inwardly upon and to reach longitudinally past the axially disposed contact and having a shoulder formed to engage the first mentioned shoulder and adapted to prevent separation by direct longitudinal pull.

2. In a device of the class described, the combination of a handle having a socket, a heating appliance carried by said handle and having terminal contacts in said socket, and a plug rotatably fitting within said socket and having contacts adapted to have rotatable engagement with said terminal contacts, one pair of said contacts comprising an annularly shouldered conically pointed plug and a spring-shouldered member coacting therewith, the shoulders on said last named pair of contacts being adapted to abut and prevent separation of said contacts by a direct pull and being adapted to retract said spring contact member through the simultaneous pulling and rotation of said plug.

3. In a device of the class described, the combination of a handle having a socket, a heating appliance carried by said handle and having terminal contacts in said socket, and a plug rotatably fitting within said socket and having contacts adapted to have rotatable engagement with said terminal contacts, one pair of said contacts comprising an annularly shouldered conically pointed plug and a spring-shouldered member coacting therewith, the shoulders on said last named pair of contacts being disposed at substantially right angles to the axis of said plug and symmetrical thereto, whereby said spring contact will secure said plug against a direct pull but may be caused to retract by tilting said plug sidewise and pulling same.

4. In a device of the class described, the combination of a terminal block comprising a pair of blocks of insulating material, a reinforcing rod clamped between said blocks, a tube of insulating material mounted concentrically on said rod, a resistance wire coiled on said tube and having one end extending axially therethrough in contact with said reinforcing rod, a pair of fastening devices connecting said blocks, and terminal contact members respectively connected with said fastening devices and respectively connected with the terminal ends of said resistance wire.

5. A device of the class described, comprising a tube of insulating material, a coil of resistance wire wound on the exterior of said tube, an air tight coating of insulating material covering said resistance coil, a reinforcing rod extending through said tube and projecting therefrom at one end, a pair of terminal blocks of insulating material secured together on opposite sides of said rod for supporting the same, a pair of contact terminals respectively connected to said blocks, and a pair of connecting devices extending between said blocks and respectively connecting said contact terminals thereto, the ends of said coil being respectively connected to said contact terminals.

6. In a device of the class described, the combination of a terminal block having connected therewith a pair of contact terminals, one of said terminals being tubular and the other comprising a spring tongue, a plug terminal comprising a cylindrical contact member fitting said tubular contact, and a headed contact member insulated from said cylindrical contact member, said headed contact member being of substantially coni-

cal form and adapted to be readily passed into engagement with said spring tongue, said tongue and headed contact member being shaped to provide abrupt shoulders adapted to prevent the direct withdrawal of said plug contact member from engagement with the contacts on said terminal block, the shoulder on said plug being annular and substantially at right angles to the axis of the plug, and the shoulder on said spring contact being substantially straight and substantially at right angles to the axis of said tubular contact, whereby, when said plug contact is tilted sidewise and simultaneously rotated and pulled, said spring tongue will be retracted by frictional engagement with said plug and release said head.

Signed at Chicago this 29th day of January, 1913.

EDWARD SCHWARTZ.

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."