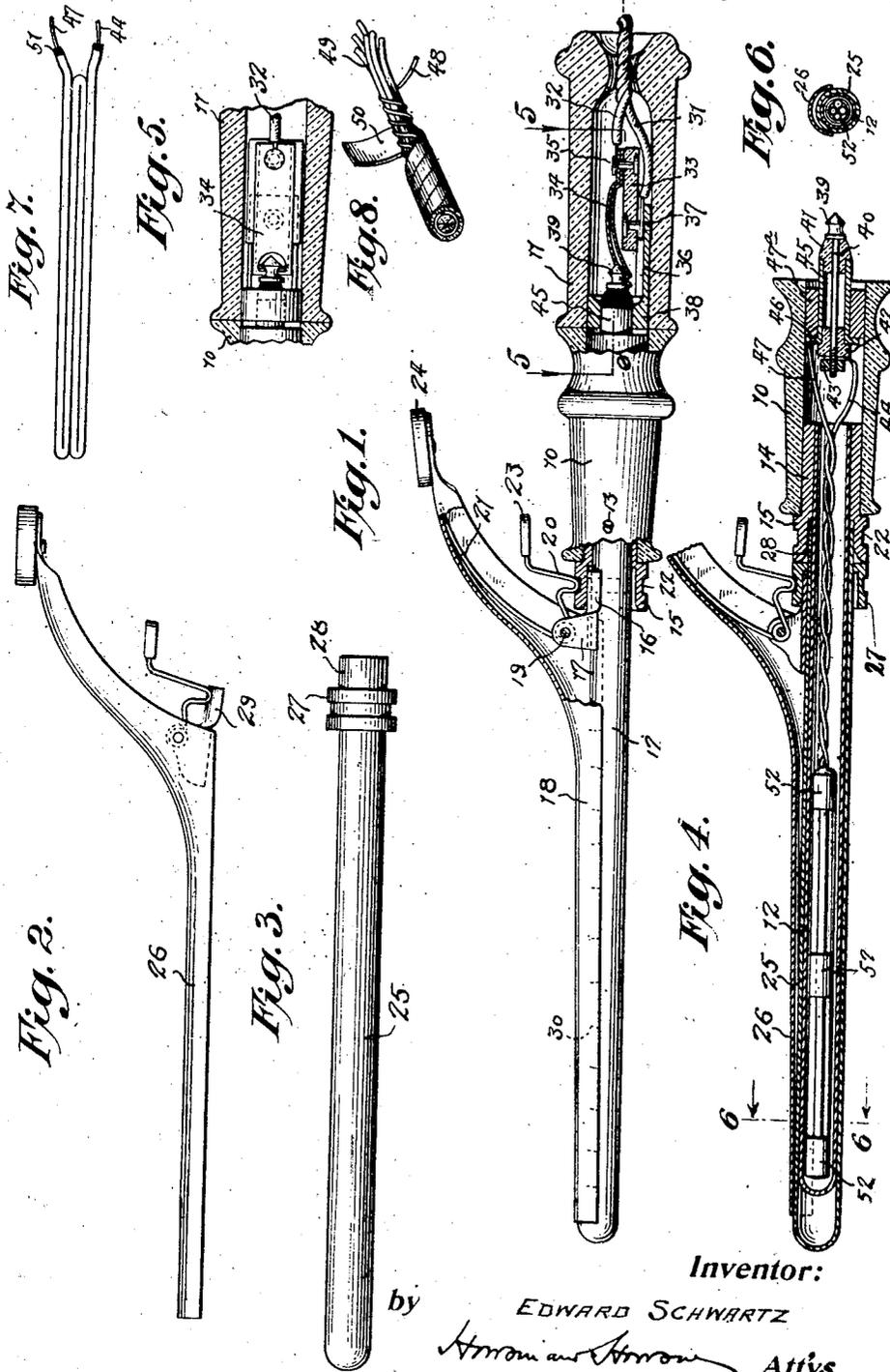


E. SCHWARTZ.
ELECTRIC HAIR CURLER.
APPLICATION FILED APR. 5, 1918.

1,284,792.

Patented Nov. 12, 1918.



Inventor:
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Arrows and Arrows Att'ys.

UNITED STATES PATENT OFFICE.

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PORATION OF MASSACHUSETTS.

ELECTRIC HAIR-CURLER.

1,284,792.

Specification of Letters Patent.

Patented Nov. 12, 1918.

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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, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Electric Hair-Curlers, of which the following is a specification.

My invention relates to electric hair curlers, and the object of my invention is to provide an improved construction having the advantages set forth in the following specification and claims and shown in the accompanying drawings, in which—

Figure 1 is a broken side elevation of an electric hair curler in which my invention is embodied in one form;

Fig. 2 is a side elevation of the shield;

Fig. 3 is a similar view of one of the casing tubes;

Fig. 4 is a longitudinal section through a portion of the curling iron, showing both casings in position;

Fig. 5 is a section on the line 5—5, Fig. 1;

Fig. 6 is a transverse section on the line 6—6, Fig. 4;

Fig. 7 is a schematic view of the resistance element; and

Fig. 8 is a partial perspective, drawn to a much enlarged scale, showing a portion of the resistance element.

The implement here shown is of the general type disclosed in my Patent No. 1,033,122, but differing therefrom in certain particulars. Thus, the handle comprises two sections 10 and 11, the former rigidly attached to the tubular casing 12 by any suitable means, such as the set screw 13, which engages the ferrule 14. As in my previous patent, the outer end of the ferrule is enlarged to form a retaining ring 15, spaced from the casing 12 to receive the arcuate saddle 16 of the bracket 17, to which the shield 18 is pivoted at 19. The shield is held in adjusted position by the band 20 in the spring 21 taking into an annular groove 22 in the retaining ring 15. The bend 20 is released from the groove by a finger piece 23 at one end of the spring wire, the opposite end of which bears against the operating end of the shield on which a button 24 is preferably secured.

It often happens that the user of the implement prefers to crimp or wave, rather than curl, the hair. The tubular casing 12 is

of small diameter, however, to secure this effect satisfactorily, and I have, therefore, in my present improved tool provided a second tubular casing 25 adapted to sleeve over the casing 12. In my preferred form, I provide also a second guard 26 to cooperate with the crimping casing 25, and for this purpose, I furnish the latter with a retaining ring 27 and ferrule 28, the latter sleeving into the retaining ring 15 in the adjusted position of the casing 25, while the saddle 29 of the guard 26 engages the annular groove in the retaining ring 27 in precisely the same way as the saddle 16 of the guard 18 engages the retaining ring 15. In order to adjust the casing 25, it is necessary to remove the guard 18. While I have indicated as my preferred construction a separate guard 26 shaped to the contour of the enlarged casing 25, it is possible to use a single guard for both casings, and for this purpose, the smaller guard 18 may be slit at 30 along its margins to permit the latter to expand and accommodate themselves to the diameter of the casing 25.

In my previous construction, the wire mains 31-32 were directly connected to the lead wires of the resistance element. In my present construction, however, the end portion 11 of the handle is made detachable from the inner portion 10 and carries a terminal block 33 of insulation. To one face of the latter I secure a spring terminal 34 by a rivet 35 which holds beneath its head and in electrical connection with the terminal 34, the bared end of the line wire 32. On the opposite face of the block, I secure an arm 36 by means of a rivet 37, which, in like manner, establishes electrical connection between the bared end of the wire main 31 and the terminal arm 36. The latter is integral with a ring terminal 38, and the free end of the spring terminal 34 is alined with the bore thereof. Projecting from the end of the handle portion 10 is a plug member comprising a center contact 39, the stem 40 of which passes through a pair of insulating bushings 41-42, and is tapered at its inner end to receive a clamping nut 43, which engages the bared end of the resistance lead 44. Spaced from the center contact 39 by the bushing 41 is a sleeve contact 45, the inner end of which is spaced from the clamping nut 43 by the

bushing 42 and provided with a flange 46, to which the bared end of the other resistance lead 47 may be soldered. A block of insulation 47^a holds the plug in position.

5 In the assembled position of the handle parts 10 and 11, the plug contact 39 engages the spring terminal 34, while the sleeve 45 engages the ring 38, so that, obviously, the outer end 11 of the handle may swivel with relation to the inner end 10 while main-

10 taining the circuit connections to the resistance leads 44 and 47. This is a feature of considerable advantage from a practical standpoint, since it enables the user of the

15 implement to rotate the casing 12 to wind the hair thereon without twisting the lead wires 31-32. Furthermore, it permits this operation to be performed without the inconvenience caused by the presence of the

20 lead wires, since the outer portion of the handle 11 may be temporarily detached and then connected when the hair is wound in position on the tubular casing.

In implements of the present character,

25 which are apt to be thrown around rather carelessly or dropped upon the dressing table, there is considerable danger of injury to the delicate resistance wire. The latter is very fine and quite fragile, and injury often

30 results thereto where it is wound, as heretofore customary, upon a rigid tube of insulating material, such as porcelain, bakelite, etc. In the present construction I have provided a novel resistance element compris-

35 ing a flexible strand, in which the resistance wire is embodied and which may be folded to the desired shape. As indicated in Figs. 7 and 8, the resistance wire 48 is spirally wound on a core 49 of flexible insulating

40 material, such as asbestos strands, and is then incased by a spiral winding of asbestos tape 50. Inasmuch as the strands 49 and tape 50 are relatively soft, the resistance wire is readily embedded therein, so that

45 the spires thereof are spaced apart and held in spaced relation by the core 49 and wrapping 50. A strand so constructed may be doubled back upon itself, as indicated in Fig. 7, and the double strand then folded to

50 afford a resistance element comprising four parallel lengths of resistance coil formed from a single continuous strand. The ends of the resistance wire are connected in any way, by soldering or twisting, to the ends of

55 the resistance leads 44 and 47, and the connection rendered secure in any suitable way, as by embedding the same in insulating cement 51, Fig. 7. In order to hold the four

lengths in approximately fixed position. I surround the same by retaining bands of

60 metal 52, preferably sheet copper, which form good conductors of heat and transmit at these points the generated heat to the tubular casing 12. This construction is extremely economical, from a manufacturing

65 standpoint, and extremely durable, from the user's standpoint, and forms an improvement of marked value in the implement. There is practically no danger of breakage of the resistance wires, since the soft flexible

70 core and wrapping form a sort of protective cushion therefor, without, however, lessening in any degree the heating value of the coil.

I do not limit my invention to the precise

75 details of construction shown, since the various features described are not necessarily interdependent, and the various details of construction may be modified in many ways without departing from what I claim as my

80 invention.

I claim:—

1. An electric curling iron comprising a handle, a tubular casing rigid therewith, a resistance element within the casing, a second tubular casing detachably sleeving on the first casing, and a pivoted shield for said second casing.

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2. An electric curling iron comprising a handle, a tubular casing rigid therewith, a resistance element within the casing, a second tubular casing detachably sleeving on the first casing, and a pivoted shield cooperating with either of said first or second casings.

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3. An electric curling iron comprising a handle, a tubular casing rigid therewith, a resistance element within said casing, a retaining ring surrounding said casing but spaced therefrom, a detachable shield having a member engaging between said ring and casing and provided with means to hold the shield in position, in combination with a second casing sleeving on said first casing and engaging between said ring and first casing.

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4. An electric curling iron comprising a handle, a tubular casing rigid therewith, a resistance element within said casing, a second tubular casing detachably sleeving on said first casing, and shield means cooperating with said first and second casings, for the purpose described.

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

EDWARD SCHWARTZ.