

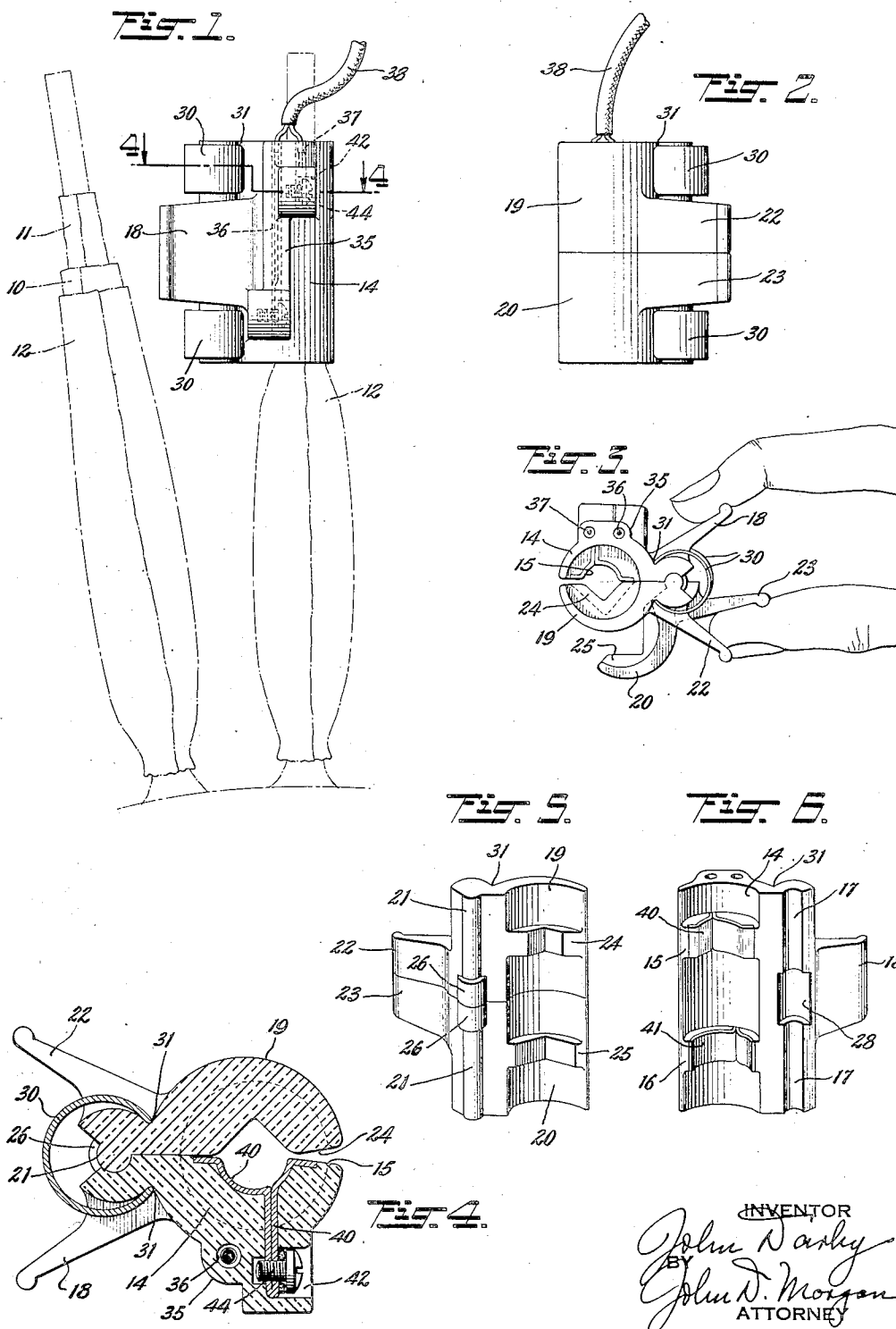
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PERMANENT WAVING APPARATUS

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PERMANENT WAVING APPARATUS

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The present invention relates to permanent waving and more particularly to a novel and improved contacting clip for making the necessary electrical connections with a permanent waving heating pad.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

The invention consists in the novel parts, construction, arrangements, combinations and improvements herein shown and described.

The accompanying drawing, referred to herein and constituting a part hereof, illustrates one embodiment of the invention, and together with the description, serves to explain the principles of the invention.

Of the drawing:—

Figure 1 is a side elevation of an illustrative embodiment of the present invention showing the manner in which the contacting clip may be applied to a typical permanent waving heating pad;

Figure 2 is an elevation of the other side of the embodiment shown in Figure 1;

Figure 3 is a plan view, with the leads removed, of the embodiment shown in Figure 1, one of the clamping jaws being sprung out of its normal position;

Figure 4 is a sectional view taken on the line 4—4 of Figure 1; and

Figures 5 and 6 are perspective views of the two halves of the clamping members constituting the contactor as shown in the other figures.

The present invention has for its object the provision of a novel and improved contactor adapted to be positioned over a permanent waving heating pad and make the necessary electrical connections therewith. Another object of the invention is the provision of such a contactor in which both contacts are simultaneously established by a single operation on the part of the operator. Still another object is the provision of an improved contactor having individual resiliently mounted clamping jaws or members cooperating with each of its contacts.

As embodied, the contactor comprises two concave clamping members of insulating material pivoted on each other and resiliently urged towards each other with their concave faces facing each other. One of the clamping members preferably is provided with a pair of contacts

spaced a considerable distance apart, and one, preferably the other, of said clamping members is divided into two halves so that pressure is exerted to press the heating pad terminals into contact with the contacts with a firm pressure regardless of the different diameters of the pad adjacent its terminals. The clamping members are preferably provided with suitable extensions which may be grasped by the fingers of the operator to spread them apart, and these extensions are preferably so positioned that the two halves of the one member may be opened simultaneously or either half independently of the other. The contacts are preferably mounted in outwardly projecting slots which are intersected by recesses registering with a threaded hole in the contacts, which hole is adapted to receive a binding screw to serve not only to connect the wire to the contact but also serves to secure the contact in position. As stated above, the two clamping sections are pivoted on each other, and the section divided into halves is preferably divided with an enlarged portion engaging with a cooperating recess in the other section to prevent accidental axial displacement of the sections relative to each other. On the exterior of the contact-carrying member is preferably formed a boss having two relatively long narrow tubular openings therein adapted to receive the wires and to protect them between the end of the contactor and the contact binding screws.

It will be understood that the foregoing general description and the following detailed description as well, are exemplary and explanatory of the invention but are not restrictive thereof.

Referring now in detail to the illustrative embodiment of the invention as shown in the accompanying drawing, the invention is illustrated in connection with a permanent wave heating pad of the general type shown and described in the patent to Durham and Finnegan, No. 1,926,987 of September 12, 1933, although it is applicable to other types of heating pads and to those having their terminals differently located.

As shown in said patent, the permanent waving heating pad comprises a layer of absorbent material 10 adapted to be positioned between an inner electrode 11 and an outer electrode 12, the absorbent member being moistened with a suitable electrolytically conducting lotion so as to generate hot, moist, hair waving vapors when current is passed through the lotion and between the electrodes 11 and 12.

Preferably, the ends of these electrodes and the absorbent layer project beyond each other

as shown in Figure 1, and electrical contact is made with the upper exposed ends of the electrodes 11 and 12.

In the present embodiment of this invention, the contactor comprises a pair of clamping sections, one of these sections being shown in Figure 5 while the other is shown in Figure 6. That section shown in Figure 6 comprises a substantially semi-cylindrical clamping jaw 14 which is relatively long and is provided with a pair of spaced-apart raised surfaces 15 and 16 on its inner or concave face. At one edge, jaw 14 is integrally connected with the grooved portion 17 extending axially of the jaw which in turn is integrally connected with the handle portion 18 which projects rearwardly therefrom.

The other section, shown in Figure 5, is of substantially the same general size and shape, but is divided into upper and lower halves 19 and 20 respectively, and instead of being provided with a grooved portion is formed with a longitudinally extending rib 21 to fit into the groove 17. Each of the halves 19 and 20 is provided with rearwardly extending handle portions 22, 23 respectively, positioned closely together and together constituting a portion substantially similar to handle 18. On the inner or concave face of the members 19 and 20 are provided the raised portions 24 and 25 which are positioned directly opposite raised portions 15 and 16 in the other section. These sections shown in Figs. 5 and 6 are preferably formed of molded insulating material, such as Bakelite.

Means are provided for preventing axial displacement of either or both of the half sections 19 and 20 with respect to section 14, and for this purpose rib 21 is enlarged for a short distance on either side of the line dividing the half sections 19 and 20, and these enlarged portions 26 are adapted to be received within a correspondingly shaped recess 28 positioned medianly of the groove 17.

The sections 14, 19 and 20 are assembled and pivoted on each other as shown in Figures 3 and 4, and sections 19 and 20 are resiliently urged towards section 14 by means of the C-shaped springs 30 having their ends seated in grooves 31 in advance of the rib 21, thereby tending to hold parts together in pivoted relation and exerting a considerable spring force to hold them closed. One spring 30 is provided at each end of the section 14, and these springs on either side of the handles 18 and 22, 23 provide individual resiliency and permit individual pivotal movement of the half sections 19 and 20, thereby to accommodate different diameters of the heating pad along its length and at the terminal portions 11 and 12.

On the exterior of section 14, and extending longitudinally thereof, is an integral boss 35 provided with a relatively long tubular opening 36 of relatively small bore, and a similar but shorter opening 37 parallel therewith. These openings are adapted to receive the ends of the flexible conductors 38 by which current is supplied to the contact points. The contacts 40 and 41 are preferably formed of strip metal bent upon itself for a short distance with the ends of the strip extending outwardly and away from each other to provide a concave contacting surface.

For mounting the contacts, the ribs 15 and 16 are provided with slots which extend outwardly through these ribs and into the boss 35 communicating with an intersecting recess 42. In register with the recess 42, the contact 40 or 41

is provided with a threaded aperture to receive a binding screw 44 having its head seated in the recess, this binding screw serving to connect and hold the end of a conductor 38 in contact with the contact 40, and also serving to prevent displacement of the contact from its normal position as shown in the figures of the drawing.

In the use of the device described in the foregoing paragraphs, the operator need only grasp the handle 18 with his forefinger and the handles 22 and 23 with his thumb, and by pressing these towards each other can open the contactor and position it about the upper end of the permanent waving heating pad. In so positioning it, the absorbent member 10 should have its exposed end positioned approximately in line with the separating line between the halves 19 and 20, and on releasing the handles the springs 30 will securely press the terminals 11 and 12 against their respective contacts 15 and 16.

As will be clear from the drawing, the bosses 15 and 24 for the upper contact 40 are thicker than the corresponding bosses 16 and 25 for the lower contact 41. Thus the lower contact clamp is of greater effective diameter for surrounding the thicker portion of the sachet formed by the thicknesses of the sheets 11 and 12 and the pad 10, as well as hair in the case of long curls. This arrangement further facilitates the maintenance of proper polarity in applying the contacting devices to the sachets inasmuch as the smaller, upper contact 40 would have difficulty in embracing the thicker lower portion including the electrode 12, while the greater clamp diameter at the contact 41 would fit only loosely about the small diameter of the contact area of the electrode 11.

The invention in its broader aspects is not limited to the specific mechanisms shown and described but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

What I claim is:—

1. A permanent waving contact clamp including in combination clamping members resiliently urged towards each other, a pair of contacts spaced from each other positioned between said members and mounted on one member, said other member being divided into two halves one of which is opposite either contact, and means for independently pivoting said halves on said first member.

2. A permanent waving contact clamp including in combination clamping members, a pair of contacts spaced from each other positioned between them and mounted on one member, said other member being divided into two halves, a projection on each half extending inwardly towards the corresponding contact and means for independently resiliently urging said members towards each other.

3. A permanent waving contact clamp including in combination clamping members, a pair of contacts spaced from each other positioned between them and mounted on one member, said other member being divided into two halves, a projection on each half extending inwardly towards the corresponding contact and means for independently resiliently urging said members towards each other, said contact mounting member being slotted to receive said contacts, an aperture intersecting said slot and through which a wire clamping screw may be threaded into the

contact whereby the connection is made and said contact is held against displacement.

4. A permanent waving contact clamp including in combination a pair of pivotally mounted independently movable contacts, clamp means engaging the opposite side of an electrolytic sachet wrapped about a curl, devices for independently resiliently urging the clamp and said clamp means toward the inclosed sachet and at different points therealong and finger grip means for opening the clamp against the resilient devices.

5. In permanent waving apparatus, in combination a curling rod about which a curl is wrapped, an electrolytic sachet wrapped about the curl having an inner electrode sheet, an outer electrode sheet, with an interposed electrolyte carrying sheet, and a contact clamp comprising independently resiliently pressed contacts aligned one to engage the inner electrode sheet and the other the outer electrode sheet, and electric circuit connections from the clamps.

6. In permanent waving apparatus, in combination a curling rod about which a curl is wrapped, an electrolytic sachet wrapped about the curl having an inner electrode sheet projecting farther out along the rod, an interposed electrolyte carrying sheet, an outer electrode sheet, and a contact clamp having spaced apart contacts longitudinally arranged one to engage the inner electrode sheet and the other the outer electrode sheet, cooperating clamp means engaging the opposite side of the electrolytic sachet, and resilient means for independently urging the contacts against their respective electrodes.

7. In permanent waving apparatus, in combination a curling rod about which a curl is wrapped, an electrolytic sachet wrapped about the curl having an inner electrode sheet projecting farther out along the rod, an interposed electrolyte carrying sheet, an outer electrode sheet,

and a contact clamp having spaced apart contacts longitudinally arranged so that the outer contact engages the inner electrode sheet against the curling rod and the inner contact engages the outer electrode sheet, cooperating clamp means engaging the opposite side of the electrolytic sachet, and resilient means for independently urging the contacts against their respective electrodes.

8. In permanent waving apparatus, in combination a curling rod about which a curl is wrapped, a tubular electrolytic curl heating device comprising an inner electrode sheet adjacent and surrounding the rod, an electrolyte-carrying member surrounding a portion of said inner sheet, an outer electrode sheet surrounding at least a portion of said electrolyte-carrying member and contact means for the electrode comprising independently pivotally movable contact clamps with resilient actuating means for independently engaging the inner and outer electrode sheets, the clamp for the outer electrode sheet being of greater diameter when closed than that for the inner electrode sheet.

9. In permanent waving apparatus, in combination a curling rod about which a curl is wrapped, a tubular electrolytic curl heating device comprising an inner electrode sheet adjacent and surrounding the rod, an electrolyte-carrying member surrounding a portion of said inner sheet, an outer electrode sheet surrounding at least a portion of said electrolyte-carrying member and contact means for the electrode comprising independently pivotally movable contact clamps with resilient actuating means for independently engaging the inner and outer electrode sheets, the clamp for the outer electrode sheet being of greater diameter when closed than that for the inner electrode sheet, and means for spacing said clamps axially of the rod.

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