

April 6, 1937.

W. G. SHELTON

2,076,050

HEATING PAD

Filed June 30, 1932

Fig. 1.

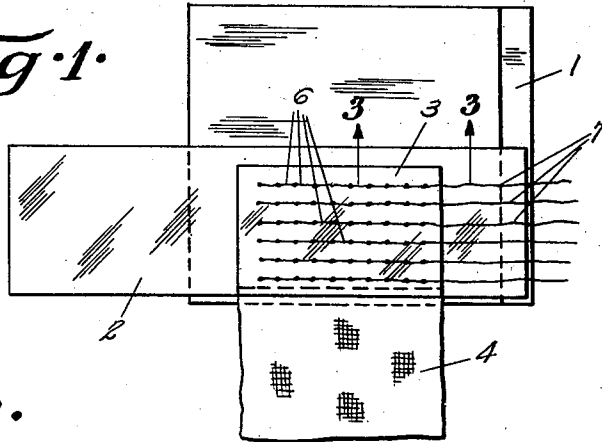


Fig. 3.

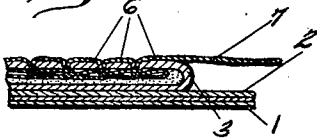


Fig. 6.

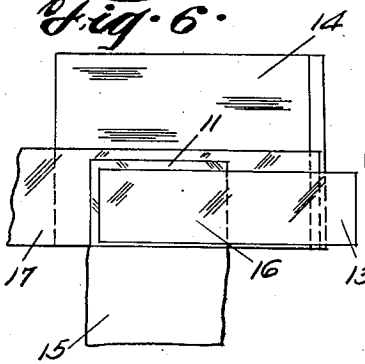


Fig. 2.

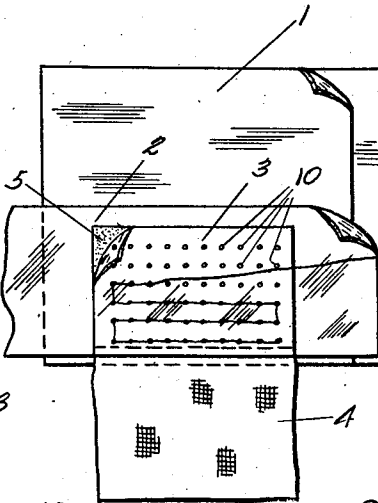


Fig. 4.

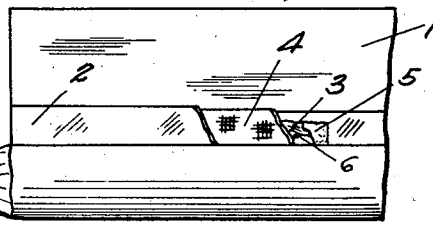


Fig. 7.

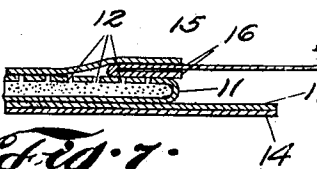
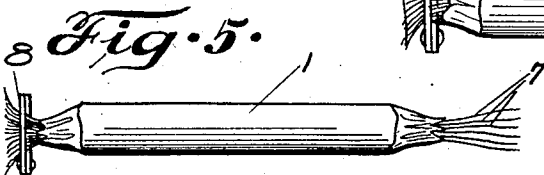


Fig. 5.



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2,076,050

HEATING PAD

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Application June 30, 1932, Serial No. 620,276

9 Claims. (Cl. 132—36.2)

This invention relates to heating pads of the type utilizing heat produced by exothermic reaction between suitable substances, and the invention consists in a novel compact container for one or more of the substances and associated means for starting and controlling the exothermic action.

The main object of the present invention is to provide a heater pad in which the exothermic reaction can be delayed after application of the pad to an article to be heated although the pad at such time includes all the elements necessary for its functioning.

Another object is to provide for varying the quantity of heat produced by the pad.

Another object is to provide a pad of the type referred to containing a quantity of exothermic powder which will retain the powder in a substantially sealed condition during the application of the article to be heated irrespective of substantial manipulation of the pad during such application thereby avoiding the sifting or leakage of the powder from the container into the hands, eyes, or mouth of the operator, or any other adjacent person, or into any other undesired place where it may contact with moisture, for example, and create heat which is undesirable and dangerous.

While the present invention may be utilized in various ways, the particular problems solved by the applicant and the attending advantages of the present structure are well illustrated in the use of the invention in the hair waving art, and the accompanying drawing and the following description refer to such embodiment of the invention.

It has been proposed heretofore to use an envelope containing a dry exothermic substance for wrapping about a curled strand of hair and moistening the pad as it is applied to the strand of hair to create the necessary heat for effecting the so-called permanent waving of the hair. Previously in using such pads it has been necessary to perforate the container for the exothermic substance before its application to the hair and to apply a moistened member over the perforations in order to supply water to the exothermic substance while it is on the hair. The handling of the pad after the perforations have been made serves to distribute a quantity of the unslaked lime, chloride of ammonia, or other substance to places where it is not wanted and may, indeed, be dangerous. The application of the moistened member to the perforations has resulted in the immediate starting of the heat-

ing operation which is undesirable and may be very disadvantageous since the application of one pad to the head of the customer will result in immediate heating of one strand while the operator is applying successive pads to the other strands of hair. Furthermore, with devices such as have been used hitherto there is little or no possibility of controlling the quantity of heat applied to the hair although it is recognized that different grades of hair require substantially different heat treatment. These disadvantages are avoided by the use of the present device as illustrated in the accompanying drawing, in which—

Figure 1 is a view of a stitched pad in open position.

Figure 2 is a similar view illustrating a modified form of stitching.

Figure 3 is an enlarged detail section taken substantially on the line 3—3 of Figure 1.

Figure 4 is a view of the pad being applied to a curl.

Figure 5 is a view of the pad wound about the curl and ready for use.

Figures 6 and 7 are views corresponding to Figures 1 and 3, respectively, but illustrating another modification.

The pad illustrated in Figures 1 and 3 includes an outer moisture and heat retaining layer 1, preferably of paper, parchment, or similar material and folded over, a layer 2 of non-porous heat transmitting material such as aluminum foil secured to the outer layer, a sack or envelope 3 mounted in the center of the lower part of layer 2, and an absorbent sheet or flap 4 which is stitched or glued to the lower edge of the pad adjacent the edge of envelope 3. The flap 4 may be conveniently made of flannel or other similar material and is of a size to cover the envelope 3 when folded inwardly.

The envelope 3 contains a quantity of powdered exothermic substance 5, such as lime compound or other material as referred to above. In order to permit the application of moisture to the powdered compound, the outer sheet or wall of the envelope is provided with a series of longitudinal rows of stitches 6, the threads having loose ends 7 extending beyond the end portion of the paper layer 1 intended to be positioned away from the scalp. The envelope is chain-stitched or basted, or otherwise sewed in a manner to permit ready withdrawal of the threads when the ends 7 are pulled, so as to leave thread holes in the outer wall of the en-

velope. The number and size of the thread holes obviously depend upon the number of stitches and the size of the threads used. If desired, the stitches may extend through both walls of the envelope, in which case the threads will assist in maintaining the chemical evenly distributed when the pad is being moved about.

In applying the pad to the hair, a segregated strand, preferably moistened with curling lotion, is first wound about a curling rod in the usual manner and a protector clamp 8 applied near the scalp. The absorbent strip 4 is dipped in water and folded over the envelope 3 and the left-hand portion of foil layer 2 (Figure 1) is then folded over the moistened absorbent layer. The pad is wound about the coiled tress, as illustrated in Figure 4, with the thread ends away from the scalp S, and both ends of the pad are crimped about the coil to hold the heat within the roll. The loose ends of one or more of the threads 7 are then gripped by the operator and pulled, withdrawing the threads and leaving thread holes in the envelope 3 which permit moisture from the absorbent strip 4 to reach the exothermic substance within the envelope. Thus the exothermic reaction in all the pads may be started in rapid succession after all the pads have been applied. Heat in substantial quantities will be generated in each pad which is transmitted through the folded over portion of foil 2 to all parts of the hair strand. The foil layer 2 will be next to the hair and will prevent the reaction water from the strip 4 from reaching the curl.

In Figure 3, the formation of the chain stitches 6 in the outer wall of envelope 3 is illustrated, the thickness of the various layers being exaggerated for clarity of disclosure. It will be apparent that when the loose end 7 is pulled the stitches 6 will be successively withdrawn, leaving a series of aligned thread holes in the envelope. Chain-stitching is used as this type of sewing is readily made by machine and the threads may be easily withdrawn.

The envelope, if desired, may be stitched by means of a single thread 9, as in Figure 2, in which case the thread will be stitched back and forth over substantially the entire surface of the envelope. Where a plurality of threads are used, as in Figure 1, all of the loose ends must be gripped to withdraw all of the stitches, whereas with the use of a single thread, as in Figure 2, only one end need be drawn. In Figure 2 the thread 9 is illustrated as only partially withdrawn in order to expose a portion only of the chemical through the thread holes 10 to the exothermic reaction, with the result that less heat will be produced. This feature is desirable in that various types of hair require different amounts of heat for proper setting. The rows of stitches in Figure 1 may be similarly only partially withdrawn, if desired.

Other means of opening perforations in the pad after application to the hair may be substituted, if desired. In Figures 6 and 7, a thin strip 16 of non-porous flexible material, such as paper or cellophane, is folded and its lower face pasted to the outer wall of envelope 11, which is perforated as at 12. The free end 13 of strip 16 extends beyond the end of parchment layer 14. In applying the pad to a curl, the moistened fabric 15 is laid upon the folded strip 16. The pad is then wrapped about the curl and the ends crimped. The free end 13 of the strip 16 may then be pulled to withdraw as much of the pasted strip as is desired, permitting the moistened fab-

ric to contact with the perforated envelope. In this form it is desirable that the edges of the envelope do not overlap when the pad is wrapped about the hair so that flexible strip 16 may be readily removed.

A non-porous sheet, similar to that at 16 in Figure 6, may be otherwise secured to the perforated envelope, as by chain-stitching or basting around the edges, the stitches being removed, as in Figure 1, to permit removal of the cover sheet.

The broad feature of the invention, that is, means of admitting an actuating substance, such as moisture, to the chemical containing envelope of an exothermic heater pad after moisture is applied to the pad, may be embodied in devices other than those intended for permanent waving, and the particular exothermic material used is not essential. Other similar means of preventing spilling of the powdered chemical during handling of the pad and of removing said means to inaugurate the exothermic reaction will occur to those skilled in making heating pads. While the above description refers to the preferred way of using the invention in a hair waving pad, it will be noted that the chain-stitched arrangement is also a convenient method of perforating the powder container even though it is desired to open the perforations prior to the application of the pad to the hair. In other words, the pad may be perforated by means of the chain stitches in the same manner as pads heretofore in use have been perforated by suitable tools which necessitated the opening of the perforations prior to the application of the pad to an article to be heated. The details of the pad illustrated are not essential. I claim the exclusive use of all such variations and applications of the invention as come within the scope of the appended claims.

What is claimed is:

1. In a heating pad, a closed container for exothermic substance, a member for retaining an actuating material, and means arranged to be operated to admit said material to the interior of said container to contact with said substance after the pad has been applied to an article to be heated, said container being capable of separating said substance and said material until operation of said means.

2. A heater device comprising an envelope containing an exothermic substance, and a thread stitched through the wall of said envelope, said thread being readily removable when the pad is ready for use to expose said substance through the thread holes to adjacent matter.

3. A heating pad including a layer of exothermic substance, a layer of absorbent material, and an intervening layer of non-porous material, there being a thread stitched through said intervening layer and having a projecting end, said thread being readily removable when the pad is ready for use to expose said substance through the thread holes to said absorbent layer.

4. A heating pad including a non-porous envelope containing a substance capable of reacting exothermically with a liquid, a layer of absorbent material for distributing the liquid, and a thread stitched through the wall of said envelope and having a loose end, said envelope and thread confining said substance, and said thread being readily removable when the pad is ready for use to expose said substance through the thread holes to said absorbent layer and liquid absorbed thereby.

5. In a hair waving heater pad, an outer layer of moisture retaining material, a non-porous en-

velope containing a substance capable of reacting exothermically with a liquid, a layer of absorbent material for distributing the liquid, and a thread chain-stitched through the wall of said envelope adjacent said absorbent layer and having a loose end, said thread and envelope maintaining said substance confined and separate from said absorbent layer during storage, and said loose end facilitating withdrawal of said thread when the pad is ready for use to expose said substance to said absorbent layer.

6. A hair waving heater pad for encircling a wound tress of hair and including an envelope containing a substance capable of reacting exothermically with a liquid, a layer of absorbent material for distributing the liquid, and a thread stitched through the wall of said envelope adjacent said absorbent layer and having a loose end, said thread being readily removable, when the pad encloses a wrapped strand of hair by pulling said loose end, to expose said substance through the thread holes to said absorbent layer.

7. A hair waving heater pad for encircling a wound tress of hair and including an envelope containing a substance capable of reacting exothermically with a liquid, an outer moisture retaining layer having end portions adapted to be crimped around the tress, an inner layer of absorbent material for distributing the above-mentioned liquid, and a thread stitched through the wall of said envelope adjacent said absorbent layer and having a free end long enough to extend beyond the crimped end of said outer layer

when the pad is applied to a wound tress, said thread being readily withdrawn when said free end is pulled to expose said substance through the thread holes to said absorbent layer.

8. A hair waving heater pad for encircling a wound tress of hair and including an envelope containing a substance capable of reacting exothermically with a liquid, a layer of absorbent material for distributing the liquid, an outer moisture retaining layer, and a plurality of threads stitched through the wall of said envelope adjacent said absorbent layer and having loose ends extending beyond the end of said outer layer, said threads being readily withdrawn singly or together when their respective ends are pulled to expose said substance through the thread holes to said absorbent layer.

9. A hair waving heater pad for encircling a wound tress of hair and including an envelope containing a substance capable of reacting exothermically with a liquid, a layer of absorbent material for distributing the liquid, and stitches in the wall of said envelope adjacent said absorbent pad, all or part of said stitches being readily removable when the pad is ready for use to expose said substance through the thread holes to said absorbent pad and the absorbed liquid and thereby effect the exothermic reaction, the quantity of heat released depending upon the number of stitches removed.

WILLIAM G. SHELTON.