April 23, 1929. S. C. HEADINGTON 1,709,981

PROCESS OF AND APPARATUS FOR WAVING HAIR

Filed Dec. 14, 1927 2 Sheets-Sheet 1

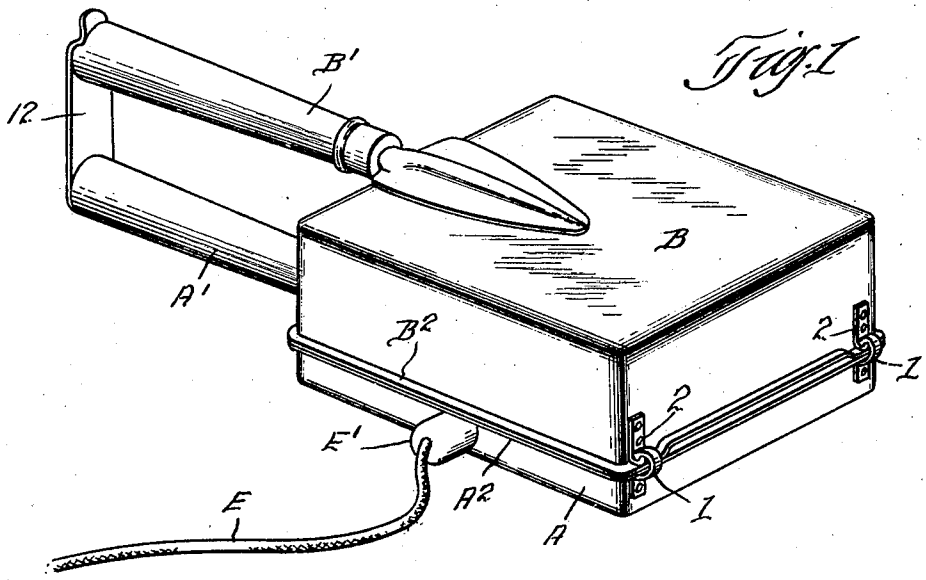


Fig. 1

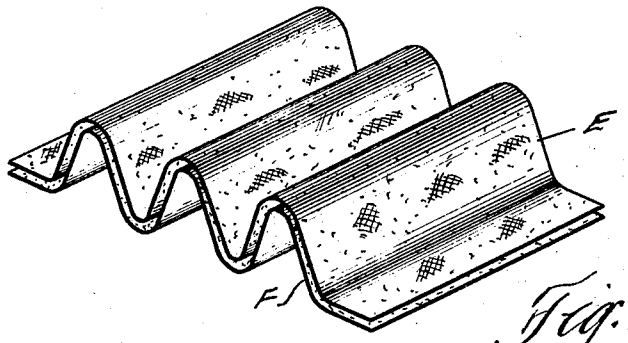


Fig. 2

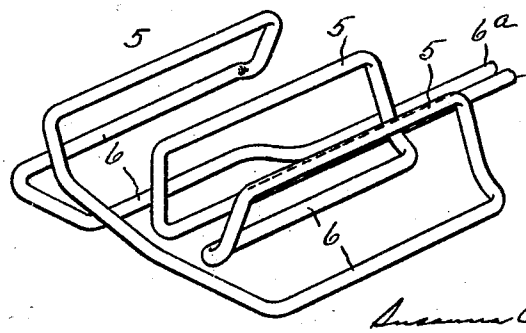


Fig. 3

Inventor

Susanna Courtz Headington,

By Hull, Brock & Fleet.

Attorneys

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PROCESS OF AND APPARATUS FOR WAVING HAIR

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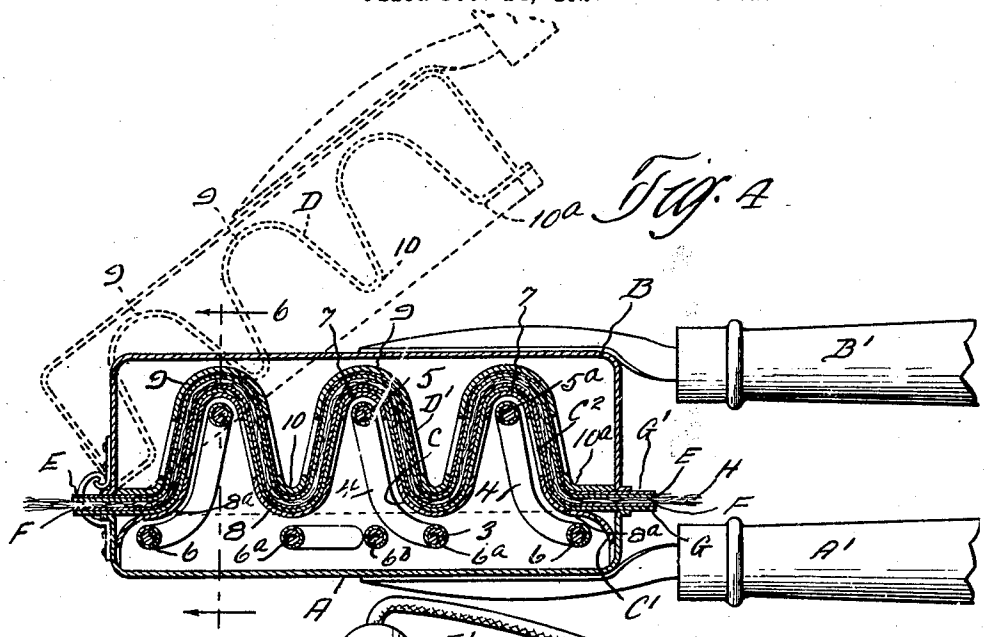


Fig. 4

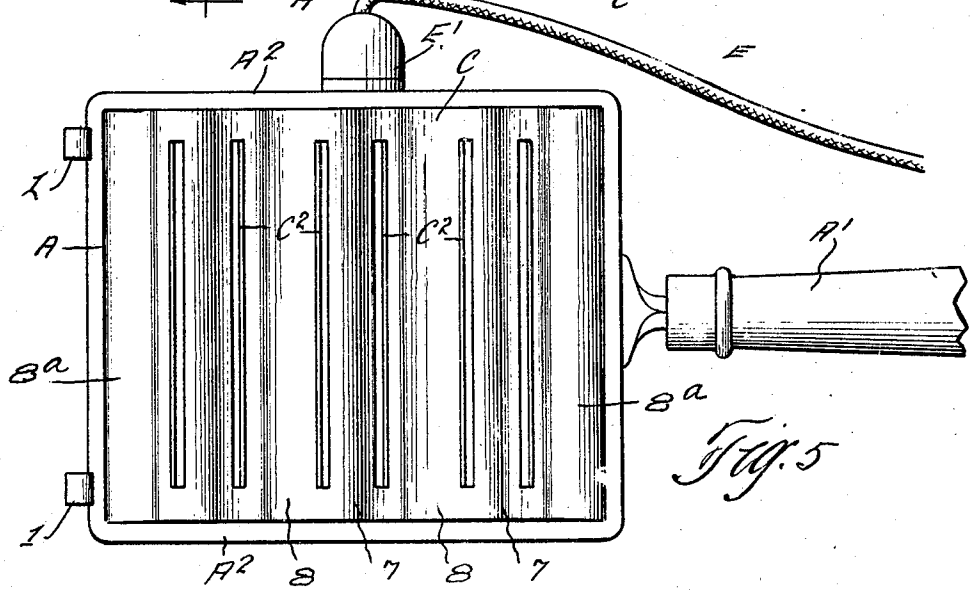


Fig. 5

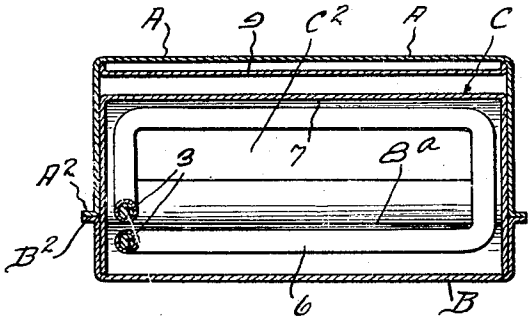


Fig. 6

INVENTOR.

Samuel Crosfor Headington,

BY Hull, Brock & West.

ATTORNEY.

Patented Apr. 23, 1929. 1,709,981

UNITED STATES PATENT OFFICE.

SUSANNA COCROFT HEADINGTON, OF NEW YORK, N. Y.

PROCESS OF AND APPARATUS FOR WAVING HAIR.

Application filed December 14, 1927. Serial No. 239,881.

This invention relates to the production of a wave in hair, and has for its general object to provide a process and an apparatus, or device, which will enable hair to be given what is known to the trade as a permanent wave, or a Marcel wave, or a set after having been washed or shampooed following a permanent wave.

In the practice of my invention as set forth herein for the production of a permanent wave, the hair is given a wave-like form and is stretched to a degree necessary to accomplish such elongation of the cells thereof as will contribute to the permanent effect of the wave, but without breaking the hair; the hair being heated between pads saturated with a suitable chemical reagent, while held in such stretched and wave-like form.

I accomplish the foregoing object and other and more limited objects which will appear hereinafter in and through the construction and arrangement of parts shown in the drawings, wherein Fig. 1 represents a perspective view of my hair-waving device, showing the parts in the positions which they occupy when the said device is closed; Fig. 2 a view in perspective of the absorbent pads which are used with the said device; Fig. 3 a perspective view of the heater assembly; Fig. 4 a sectional view through the device shown in Fig. 1, the parts being shown in full lines in their closed positions and illustrating the manner in which the hair is clamped between the wave-forming members of the device, the cover being shown in broken lines in its open position; Fig. 5 a plan view of the lower member or base of my said device; and Fig. 6 a transverse sectional view corresponding to the line 6—6 of Fig. 4.

The hair-waving device shown herein consists generally of a base A having a handle A′ and a cover B having a handle B′. The base and cover are shown each in the form of a pan rectangular in outline and are adapted to be connected at their rear meeting edges by means of upwardly projecting spring hooks 1, located at each side of the back of the base, the upper ends of which hooks are adapted to engage hooks 2 riveted or otherwise suitably secured to the back of the cover B. The upper edge of the base A is provided with a peripheral flange A^2 and the bottom edge of the cover B is provided with a similar peripheral flange B^2. The base A contains the electrical heating elements which are employed for heating the hair while it is clamped in wave-like formation between the base and the cover as well as one of the forms by which the hair is given its wave-like formation and clamped in such formation. The heating elements are carried entirely by the base and comprise part of the assembly shown more particularly in Figs. 3 and 4. This assembly comprises a resistance 3 which is provided with a suitable protecting cover 4. The resistance and its cover are bent so as to provide an upper series of heater elements 5, 5^a located above the base A and a lower series of heating elements 6, 6^a and 6^b located within the base. The elements 6 and 6^a are staggered with respect to the elements 5, 5^a, the elements 6 being located beyond the two outermost elements 5^a and adjacent to the ends of the base, while the two elements 6^a are located on opposite sides of and below the intermediate element 5 and between such element and the end elements 5^a. The element 6^b is shown as located below the middle element 5. While three elements 5, 5^a are shown in the upper series and five elements 6, 6^a and 6^b are shown in the lower series, this number may be increased or diminished as desired, without departing from the spirit of my invention.

Movably mounted in the base A is a combined shield and wave-former, indicated generally at C. This wave-former is of such width and length as to be received within the base A, having end flanges C′ fitting within the ends of the said base. It is corrugated, thereby providing a plurality of wave-forming members, the upwardly extending corrugations being indicated at 7 and the downwardly extending corrugations being indicated at 8 and the bottoms of said corrugations being approximately in the plane of the top of the base, the ends being bent downwardly at 8^a to form semi-corrugations. The corrugations 7 provide shields for the heating elements 5, 5^a, while the corrugations and semi-corrugations 8, 8^a are located above the heating elements 6 and 6^a. The corrugations are provided with slots C^2 in the sides thereof.

The cover B has secured therewithin a wave-former, indicated generally at D and comprising upwardly extending corrugations 9 and downwardly extending corrugations 10, 10^a which are complementary to the corrugations 7, 8 and 8^a, respectively, the said corrugations providing wave-forming members. The wave-former D is also provided with slots D′ in the sides thereof corresponding to the slots C^2 in the wave-former C.

The cover is so shaped that, when my device is closed, a continuous space of uniform width will be provided between the corrugations in the members C and D. It will be understood that the number of corrugations or wave-forming members on the wave-formers C and D may be increased or diminished, as desired.

Current for the heating elements is supplied by a cord E which is connected to the base A by any suitable form of connector, such as E′.

In practicing my invention for the production of a permanent wave, it is necessary that the hair should be subjected to the action of a suitable chemical reagent while it is being held to shape and subjected to heat. For this purpose, absorbent fabric pads are used, which pads are saturated with the said reagent, the hair lying between the pads during the treatment. I have found that, where pads are not pre-formed to correspond approximately to the curvature of the corrugations 7—10ª, too much frictional drag is created in closing the parts A and B. To obviate this objection, the pads, indicated at E and F, are pre-formed to approximately the curvature of the corrugations, the said pads preferably containing a reagent for the purpose specified, which reagent can be dissolved by moistening the pads with water or other suitable solvent at the time of use. The pads having been saturated in the manner described, a sheet of asbestos G is applied to the lower member C and the pad F is then applied to said member upon the asbestos sheet. A strand or lock of hair indicated at H is then drawn across the pad F. The pad E is then applied to the hair and to the pad F and a sheet of paper G′ is then placed over the pad E and the cover B is applied to the base by means of the hooks 1 and 2, after which the cover is closed, it being noted that the pads and sheets are of a width to enable their rear portions to pass between said hooks. This closing operation results in clamping the rear edges of the pads E and F, with the interposed hair, between the rear parts of the base and cover flanges A^2 and B^2. Through this closing action, the hair will be stretched to an extent which will result in the desired elongation of the cells thereof in the direction of its length but, owing to the pre-forming of the pads and to the arrangement of the other cooperating parts, the hair will not be stretched to such an extent as to result in breaking the same. The parts being closed and the handles being secured in closed position by means of the spring latch 11, the hair will be heated while confined between the moistened pads in its stretched wave-like form. The construction and arrangement of the heating elements and cooperating parts are such that the pads and hair will be properly heated, but without any danger of burning the hair; and, at the end of the heating operation, the device may be opened up and the pads and hair removed, with the production of a wave of a high degree of permanency in the hair. After this operation, the hair will be washed or shampooed, after which it may be set by use of my device in the manner hereinbefore described but without the pads and without the application of heat thereto.

When it is desired to use my device for treating or waving hair which has once been given a so-called permanent wave, it is necessary that the part of the hair which has been so waved shall not be treated with the chemical reagent used for that purpose in the first instance. In such case, only the hair next to the scalp and which has not been previously so waved will be treated with the said chemical reagent. To accomplish this result, I may use pads of a length corresponding to the length of the unwaved hair and saturate these pads with the chemical reagent, using other pads saturated with water or other liquid having no chemical reaction on the hair for the waving of the hair which has been previously waved; or I may use a pair of continuous pads such as the pads E and F for the unwaved and the previously waved hair, in which case only so much of the pads as will be applied to the unwaved hair will be treated with the chemical reagent while the balance of the pads (which are to operate upon the previously waved hair) will be moistened with such water or neutral liquid. With the parts prepared in this manner, the operation will be carried out as described hereinbefore.

The devices shown herein may also be used for the purpose of marcelling hair, in which case the pads E and F will not be used, but a pad of protective material, as asbestos, will be interposed between the hair and the waver C, to prevent overheating or burning the hair.

While I have shown and described my device in detail I do not propose thereby to limit my invention to details of construction except in so far as such limitations may be imposed thereon by the state of the prior art.

Having thus described my invention, what I claim is:—

1. The process of imparting a wavy appearance to hair which consists in stretching the hair between pads having a wave-like formation and moistened with a suitable reagent, clamping the hair and the pads between members which hold the hair and the pads in the desired wave-like form, and then heating the pads and the interposed hair.

2. The process of imparting a wavy appearance to hair which consists in placing the hair between pads having a wave-like formation and moistened with a suitable reagent, clamping the pads between members arranged to stretch the hair without breaking it and to hold it and the pads in the desired

wave-like formation, and heating the pads and the interposed hair.

3. The process of imparting a wavy appearance to hair which consists in placing the hair between pads having a wave-like formation and moistened with a suitable reagent, stretching the hair while holding it and the pads in the desired wave-like formation, and heating the pads and the interposed hair.

4. The process of imparting a wavy appearance to hair which consists in placing the hair between pads having a wave-like formation and moistened with a suitable reagent, clamping the pads and the interposed hair by drawing the hair successively over and under members arranged to stretch the hair and to hold the same and the pads in such wave-like formation, and drying the pads and the interposed hair.

5. The process of imparting a wavy appearance to hair which consists in placing the hair between pads moistened with a suitable reagent, stretching the hair while holding it and the pads in the desired wave-like formation, and drying the pads and the interposed hair.

6. The process of waving hair, a portion of which has been previously subjected to a permanent waving operation, which process consists in placing the portion of the hair adjacent the scalp and which was not previously waved between absorbent pads moistened with a suitable hair-waving chemical reagent, placing the portion of the hair which has been so previously waved between pads moistened with a liquid having no chemical action upon the hair, clamping the pads and the hair in wave-forming position, and heating the pads and the hair.

7. The process of waving hair, a portion of which has been previously subjected to a permanent waving operation, which process consists in placing the portion of the hair adjacent the scalp and which was not previously waved between portions of absorbent pads which are moistened with a suitable chemical reagent, placing the portion of the hair which has been so previously waved between other portions of said pads which are moistened with a liquid having no chemical action upon the hair, clamping the pads and the hair in wave-forming position, and heating the pads and the hair.

8. A device for the purpose specified comprising a base, the said base having an upper spaced series of heating elements and a lower spaced series of heating elements, elements in the lower series being staggered with respect to elements in the upper series, a wave-former arranged above the said heating elements, a cover hingedly connectible to the base, and a wave-former carried by the cover and cooperating with the wave-former of the base.

9. A device for the purpose specified comprising a base, the said base having an upper spaced series of heating elements and a lower spaced series of heating elements, elements in the lower series being staggered with respect to elements in the upper series, wave-forming members carried by said base and heated by said elements, a wave-formed pad cooperating with such members, a cover detachably and hingedly connected to the base, wave-forming members carried by the cover and cooperating with the wave-forming members on the base, and a wave-formed pad cooperating with the wave-forming members of the cover and with the first mentioned pad.

10. A device for the purpose specified comprising a base having an upper series of heating elements, a lower series of elements staggered with respect to heating elements in the upper series, shields for the upper series of heating elements, a wave-formed pad for the shields and for the heating elements of such upper series, a cover, wave-forming members staggered with respect to the said shields and carried by said cover, and a wave-formed pad cooperating with the wave-forming members of the cover and with the first mentioned pad.

11. A device for the purpose specified comprising a base having a series of heating elements, shields for the said heating elements, a wave-formed pad for the shields and heating elements, a cover, wave-forming members staggered with respect to the said shields and carried by said cover and a wave-formed pad cooperating with the wave-forming members of the cover and with the first mentioned pad.

12. A device for the purpose specified comprising a base formed as an open-top receptacle. a wave-former comprising upwardly and downwardly extending corrugations and carried by said base, heating elements located below and shielded by the tops of said corrugations, a pad pre-formed to approximately the shape of the said wave-former, a cover arranged to cooperate with said base and comprising an open-bottom receptacle, wave-forming members carried by said cover and arranged complementarily to the corrugations of the wave-former carried by the base, and a wave-formed pad cooperating with the members on the cover and with the first mentioned pad.

13. A device for the purpose specified comprising a base formed as an open-top receptacle, a wave-former carried by said base and comprising upwardly and downwardly extending corrugations, the bottoms of the downwardly extending corrugations being in substantially the plane of the top of said base, heating elements in said base below said wave-former, a cover for said base, a wave-former cooperating with said cover and with the wave-former of said base, and wave-formed pads adapted to be inserted between the said wave-formers.

14. A device for the purpose specified com-

prising a base formed as an open-top receptacle, a wave-former carried by said base and comprising upwardly and downwardly extending corrugations, the bottoms of the downwardly extending corrugations being in substantially the plane of the top of said base, heating elements in said base below said wave former, a cover for said base, and a wave-former cooperating with said cover and with the wave-former of said base.

15. A device for the purpose specified comprising an open-top receptacle, a wave-former carried by said base and comprising upwardly and downwardly extending corrugations, the bottoms of the downwardly extending corrugations being in substantially the plane of the top of said base, heating means comprising an upper series of heating elements extending beneath and adjacent to the tops of the upper corrugations and heating elements arranged below the bottoms of the downwardly extending corrugations, a cover for said base, and wave-forming members carried by said cover and adapted to cooperate with the wave-former carried by said base.

16. A device for the purpose specified comprising a base, a wave-former carried by said base and comprising alternating upwardly and downwardly extending corrugations having openings in the sides thereof, a heater in said base, a cover for said base, and a wave-former carried by said cover and comprising alternating upwardly and downwardly extending corrugations also provided with openings in their sides.

17. A device for the purpose specified comprising a base, a wave-former carried by the base and comprising alternating upwardly and downwardly extending corrugations, a continuous heater for said base formed into an upper and a lower series of heating elements extending transversely with respect to said base, the upper heating elements being located adjacent to and below the tops of the upper corrugations respectively and the lower series of heating elements being arranged in the lower portion of said wave former, a cover for said base, and wave-forming members carried by said cover and cooperating with the wave-forming corrugations on the said wave-former.

18. A device for the purpose specified comprising a base, an upper series of heating elements supported by said base, a lower series of heating elements supported by the said base, and a cover for said base having wave-forming members carried thereby and staggered with respect to the upper heating elements of said base and adapted to be projected below said elements by the movement of the cover toward the base.

19. A device for the purpose specified comprising a base and a cover each having wave-forming members, the members on the cover and base being staggered, a wave-formed pad for the wave-forming members of the base, a wave-formed pad adapted to be engaged by the wave-forming members of the cover, spaced hinged connections between the rear ends of the base and cover permitting the insertion of the rear ends of the pads therebetween, the rear ends of the base and cover having means for engaging the portions of the pads therebetween as the cover is closed toward the base, and means in said device for heating said pads and the hair interposed therebetween.

20. A self-heated hair-waving device having opposed relatively movable members each having hair-waving elements arranged in staggered relation to the element or elements on the other member, and a pair of pads each having a wave-like form and adapted to be applied to the elements of the two members respectively.

21. A hair waving apparatus comprising a base in the form of an open top receptacle, a wave former carried by said base, a wave former carried by said cover and comprising upwardly and downwardly extending corrugations which cooperate with the wave former carried by said base, said wave former having slots therein.

22. A hair waving apparatus comprising a base, a wave former carried by said base and comprising alternate upwardly and downwardly extending corrugations, a continuous heater for said base formed into an upper and a lower series of heater elements extending transversely with respect to said base, the upper heating elements being disposed adjacent to and below the tops of the corrugations, a cover for said base and wave forming members carried by said cover and cooperating with the wave forming corrugations carried by the base.

23. A hair waving apparatus comprising a base, an upper series of heating elements supported by said base, a lower series of heating elements supported by said base, a cover for said base and wave forming members carried by said base and cover respectively and having cooperating upwardly and downwardly extending corrugations therein, said wave forming members having transversely extending slots therein.

In testimony whereof, I hereunto affix my signature.

SUSANNA COCROFT HEADINGTON.