Aug. 25, 1936. F. KISS 2,052,353

HAIR WAVING APPARATUS

Original Filed Aug. 24, 1934

Fig. 1

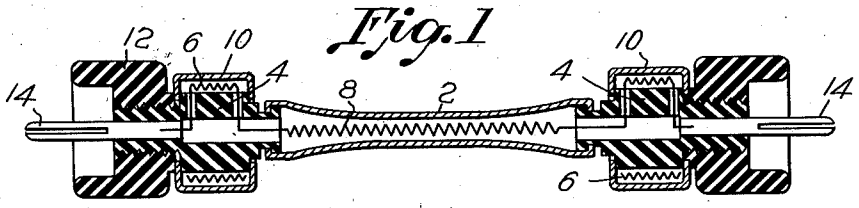


Fig. 2

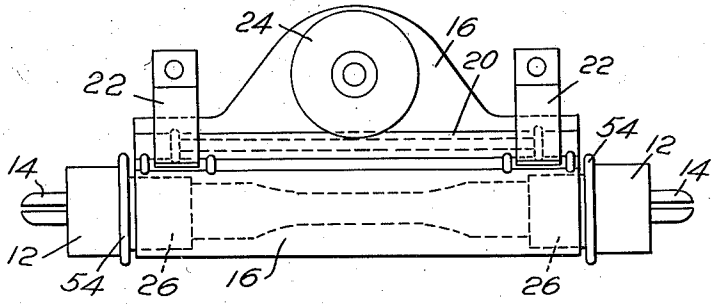


Fig. 3

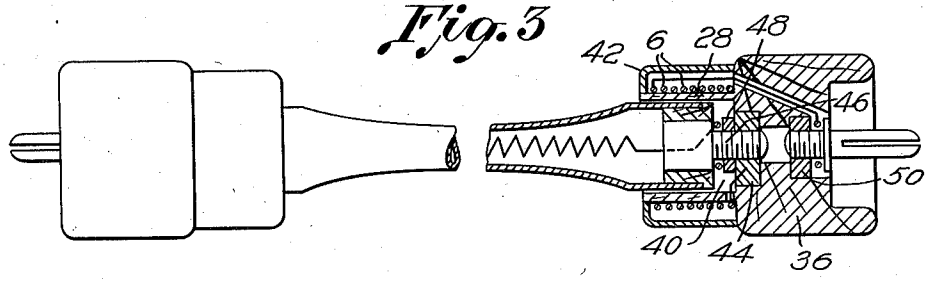


Fig. 4

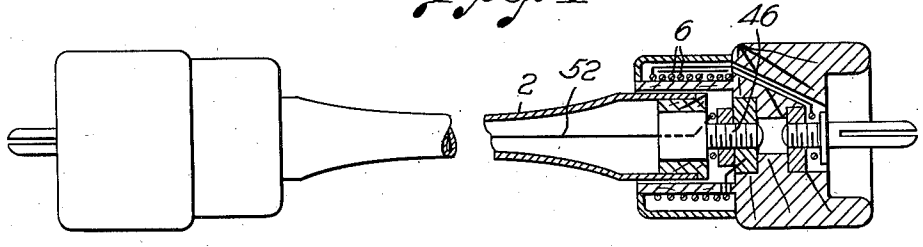
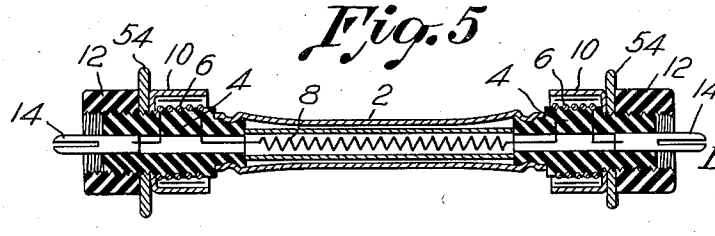


Fig. 5



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HAIR WAVING APPARATUS

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Original application August 24, 1934, Serial No. 741,287. Divided and this application July 26, 1935, Serial No. 33,254. In Germany August 25, 1933

5 Claims. (Cl. 219—24)

This invention relates to apparatus for hair curling and waving, and more particularly for permanent hair waving, and the present application is a divisional application of application Serial Number 741,287, filed August 24, 1934, and relates more particularly to the spindle or other means upon which the hair is wound for treatment in said apparatus.

The invention and its aims and objects will be readily understood from the following description, taken in connection with the accompanying drawing, of illustrative apparatus embodying the features of the invention, the true scope of the invention being more particularly pointed out in the appended claims.

In the drawing:

Fig. 1 is a longitudinal section of a spindle with interior and exterior heating means for the hair;

Fig. 2 is a side elevation of one illustrative form of casing with a spindle in place therein;

Fig. 3 is a lateral view of a spindle, one side in elevation and the other in longitudinal section and showing resistances for heating the hair from the outside, mounted in readily removable caps;

Fig. 4 is a view similar to Fig. 3 of a spindle without means for heating the hair from the inside;

Fig. 5 shows illustrative means for protecting the operator from contact with the heated parts.

Referring to Fig. 1, the illustrative embodiment of spindle therein shown is illustrated at 2 and is provided at each end with insulating members 4 about which are wound heating wires or resistances 6, preferably in series with a resistance 8 provided within said spindle 2. The resistances 6 are covered by metal sleeves 10 which are insulated from the outer covering of said spindle by said insulating members 4. Insulating caps 12, preferably of somewhat greater diameter than said insulating members, are carried by the latter from which project contact pins 14.

It will be apparent that the resistances 6 could be connected in parallel with said interior resistance 8 instead of in series, but the latter arrangement is preferred.

In the illustative embodiment of casing shown in Fig. 2, the heating chamber comprises two sections 16, 16 of the same shape, each preferably formed from a single piece of sheet metal. Each section is provided with a longitudinal, semi-cylindrical recess 18 for the reception of a pin 20 shown in dotted lines. Springs 22, 22 at either end of said casing clamp said sections in closed position upon said pin 20. To open said chamber for the introduction or removal of said spindle 2, the two handles 24, 24, one of which is carried by each of said sections, are pressed together, thus causing said sections to pivot outwardly about said pin 20 against the action of said springs 22, 22.

When said spindle 2 is placed in said casing and handles 24, 24 are released, the cylindrical end portions 26, 26 of said sections are firmly clamped upon said metal sleeves 10, 10 of said spindle which are thus completely embraced by the cylindrical sleeves thus formed, the heat generated by said resistances 6, 6 being thus communicated through said sleeves 10, 10 and portions 26, 26 of said casing to the latter, thus heating the heating chamber and the hair upon said spindle from without, the hair being heated from within by said resistance 8. The end portions 26, 26 of said casing and the metal sleeves 10, 10 at the ends of said spindle will preferably present extended contact surfaces, so that when said semi-cylindrical end portions 26, 26 of said two sections are clamped about said sleeves 10, 10, the surfaces in contact will be of sufficient longitudinal extent to provide a tight closure of said heating chamber at both ends. By making the radius of said portions 26, 26 slightly less than that of said metal sleeves 10, 10, the spindle 2 will be so tightly clamped that rotation thereof in said casing and unwinding of the hair from the spindle will be precluded.

For a more detailed description of the casing and its mode of operation reference may be had to said earlier application Serial No. 741,287 already referred to.

In accordance with the invention, the means for heating the hair on the outside will preferably be made removable. This may be conveniently effected as illustrated in Fig. 3, by mounting said resistances 6, 6 on removable caps 36. Each cap 36, of insulating material, wood for example, is herein provided with a cylindrical projecting portion 28 of reduced diameter and recessed at 40 to fit over the cylindrical end of the metal spindle 2. Said resistances 6, 6 are wound upon said cylindrical portions 28 and are covered by metal sleeves 42 carried by said caps, said resistances being electrically insulated in any suitable manner from said sleeves 42. In the bottom wall of said recess 40 there is countersunk a nut 44. By turning said cap 36 in placing it upon the end of said spindle, said nut will be screwed on a screw threaded pin 46 projecting from the end of said spindle, whereby said cap and resistance 6 carried thereby will be firmly but readily re-

movably secured to the end of said spindle. Each end of the interior resistance 8 is clamped between one end of said spindle and a nut 48 screwed onto said pin 46. One end of each resistance 6 is connected to a nut 50, its other end being connected to said nut 44. Resistances 6, 6 are thus connected in series to said resistance 8 in the order of resistance 6, resistance 8, resistance 6.

The resistance within the spindle may be omitted so that the hair may be heated only from the outside, as illustrated in Fig. 4 for example, wherein the resistance 8 is replaced by a simple copper wire 52.

Fig. 5 illustrates protective means such as disks 54 provided at the inner ends of said caps 12 to protect the operator from accidental contact with heated portions of the apparatus when taking hold of said caps.

It will be apparent that it would be within the scope of the invention to provide a resistance at only one end of the spindle for heating the hair from the outside.

The invention possesses many advantages over similar apparatus heretofore used. The double heating, that is to say, heating the hair both from the inside and the outside is greatly simplified by associating with the spindle upon which the hair is wound, the heating resistances serving to heat the hair from the outside, preferably by placing said resistances at one or both ends of said spindle. This represents a material saving in material as it eliminates a special exterior heating resistance. It also eliminates the special contact for connecting the interior heating resistance with the exterior heating resistance. The manufacture is thus greatly simplified and the general cost of production reduced. The reliability of the operation is also increased by the resultant elimination of more or less unreliable contacts. Associating the resistances for exterior heating of the hair with the spindle also makes for greater lightness and improves the balance of the entire apparatus by lowering the center of gravity of the latter which is thus located practically in the spindle. Danger of the apparatus tipping on the head is thus avoided. The increased cross section and length of the end portions of the spindle, due to placing therein the resistances for heating the hair exteriorly provides contact surfaces of large area for the clamping members 26 at the ends of the casing with their longitudinally extended clamping surfaces. This makes for a tight closure at both ends of the heating chamber and increases the heat conductivity between the resistances at the ends of the spindle and the casing. This tight closure at both ends of the chamber coupled with the equally tight closure by the usual rubber clamp of the slot provided in the bottom of the casing for the passage of the hair, prevents the escape of steam from the heating chamber, thus increasing within the chamber the pressure of the vapors generated by the liquids with which the hair has been moistened and retaining the moisture within said chamber. This results in a thorough softening of each separate hair and enables a good and lasting permanent wave to be produced very quickly, without the use of the cumbersome cloth or wrappings of other materials heretofore used to cover the hair upon the spindle. For a more detailed description of the operation of the slot in the bottom of the casing and of the usual rubber clamp, reference may be had to the above referred to earlier application Serial Number 741,287.

In accordance with the present invention the end portions 26 of the casing may be of the same diameter or cross section as that of the heating chamber itself, thus greatly simplifying the construction.

The large frictional area of the surfaces on the spindle which are clamped by the longitudinally extended clamping portions 26 prevents rotation of the spindle and unwinding of the hair thereon while the apparatus is in use. Making the resistances 6, 6 removable facilitates replacing and changing of spindles, replacing a spindle with interior resistance for one without such resistance, for example, or exchanging a spindle of one form for one of another form being easily effected while retaining the resistances at the ends of the spindle for exterior heating of the hair.

I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

I claim:

1. As an article of manufacture, a spindle for hair waving apparatus comprising an elongated body; and heating means mounted on at least one end of said body principally beyond the hair receiving portion thereof, said means having a good heat-transferring surface for thermal cooperation with a spindle-surrounding casing to heat the chamber formed thereby.

2. As an article of manufacture, a spindle for hair waving apparatus comprising an elongated body; a heating resistance mounted externally of the body at each end; means removably securing said resistances to said body; and electrical insulation between said resistances and the surface of said body.

3. As an article of manufacture, a spindle for hair waving apparatus comprising an elongated body; separate heating resistances on the outside of the body at each end; electrical insulating means securing said resistances to said body; and a further heating resistance within said body, all of said resistances being connected in series.

4. As an article of manufacture, a spindle for hair waving apparatus comprising an elongated body; a heating resistance externally of the body at one end; and a metal sleeve enclosing said heating resistance serving to transfer heat therefrom, said sleeve being electrically insulated from the surface of said body.

5. As an article of manufacture, a spindle for hair waving apparatus comprising an elongated body having a screw threaded extension at each end; removable containers connected to said screw threaded extensions; and a heating resistance in each of said containers arranged to transfer heat externally to hair wound about said spindle when the spindle is inserted in a casing.

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