

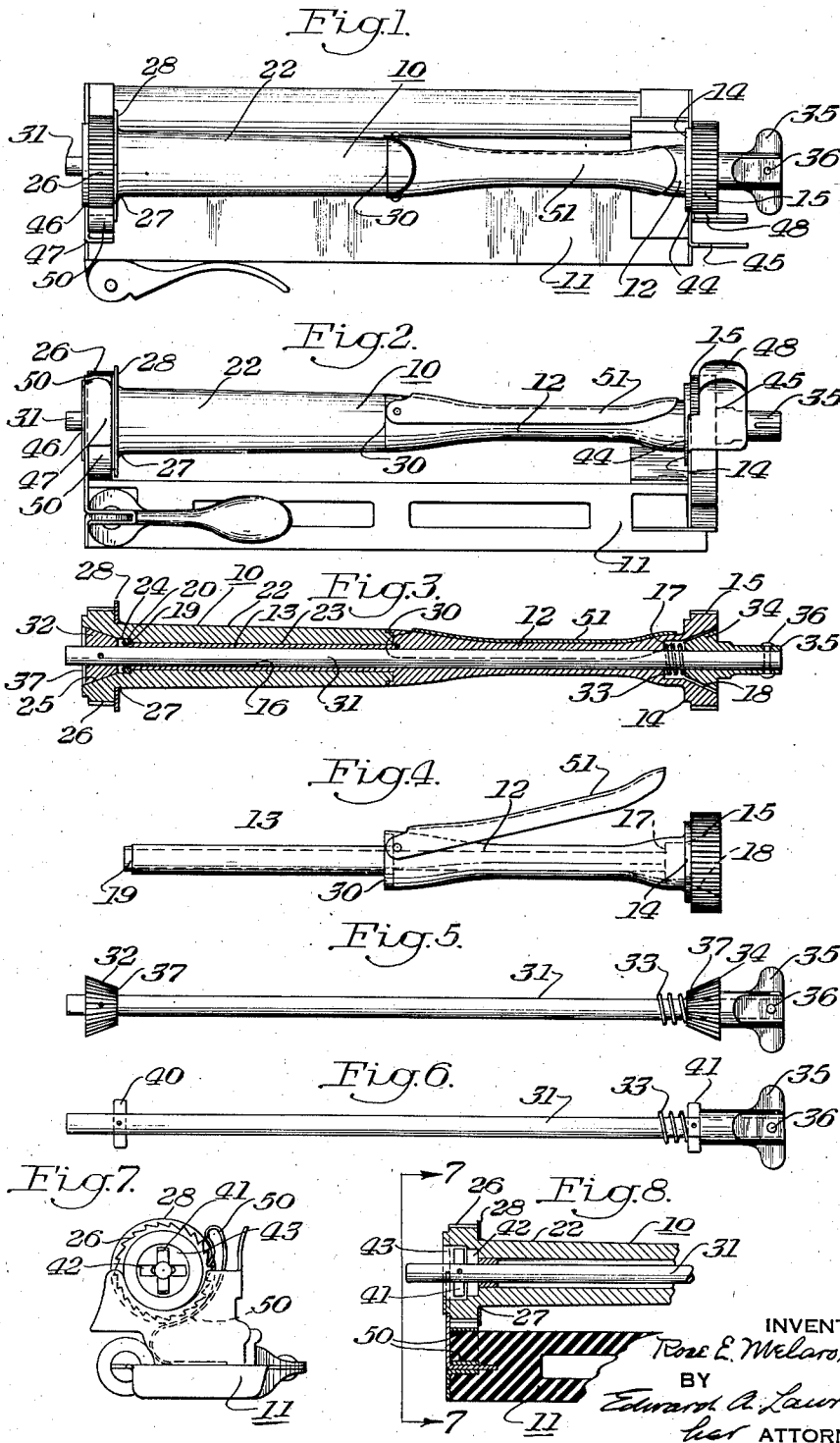
July 14, 1942.

R. E. MELARO

2,289,446

HAIR WAVING ROD

Filed Dec. 27, 1941



UNITED STATES PATENT OFFICE

2,289,446

HAIR-WAVING ROD

Rose E. Melaro, Oakmont, Pa.

Application December 27, 1941, Serial No. 424,607

8 Claims. (Cl. 132—33)

This invention relates generally to apparatus for waving human hair and more particularly to improvements of a rod for simultaneously producing a Croquignole and a spiral wave on a long strand of hair.

The principal object of this invention is the provision of a hair waving rod having independent sections for producing Croquignole and spiral wave forms on a single strand of hair at the same time and wherein the rod sections are permanently secured in assembled relation but are independently revolvable and each section may be locked against turning independently of the other.

Another object is the provision of a single control for selectively rotating one of the rod sections.

Another object is the provision for maintaining the operating mechanism in constant engagement with one of the rod sections.

Other objects and advantages appear in the following description and claims.

In the accompanying drawing a practical embodiment illustrating the principles of this invention is shown wherein:

Fig. 1 is an enlarged plan view of the hair waving rod comprising this invention mounted on a conventional hair clamp.

Fig. 2 is a side elevation of the rod and clamp shown in Fig. 1.

Fig. 3 is an enlarged sectional view of the hair waving rod showing the parts in assembled relation.

Fig. 4 is a view illustrating the Croquignole rod section of the rod with an integral extending sleeve which supports the spiral rod section.

Fig. 5 is a view illustrating the operating mechanism for independently rotating the Croquignole and spiral rod sections.

Fig. 6 is a view illustrating a modification of the rod section operating mechanism.

Fig. 7 is a transverse sectional view of the hair clamp and the rod structure equipped to receive the modified form of the rod section operating mechanism taken on the line 7—7 of Fig. 8.

Fig. 8 is a longitudinal sectional view of the structure illustrated in Fig. 7 with parts broken away.

Referring to the drawing, 10 represents the hair waving rod assembly the parts of which are preferably made of a strong light metal such as aluminum or other suitable material. The length of this rod assembly is the same as that of a standard Croquignole rod and it is construct-

ed to fit the same character of hair strand clamp 11 and heating apparatus.

The hair waving rod assembly 10 is made up of the Croquignole or spool section 12 having an integral sleeve 13 extending from one end thereof. The other end of the spool is provided with a narrow cylindrical bearing 14 and a ratchet gear 15 larger in diameter and outwardly adjacent thereto. The spool section and the sleeve are bored out as indicated at 16. Immediately adjacent the bearing the bore 16 is provided with the cylindrical enlargement 17 which terminates in an outwardly expanding frusto-conical bore 18. The outer end of the sleeve 13 is reduced in diameter as indicated at 19 to receive the washer 20.

The spiral section 22 of the rod is provided with the bore 23 so that it may be rotatably supported on the sleeve 13. The outer end of the bore 23 is enlarged as indicated at 24 to receive the washer 20 which is preferably slightly smaller in diameter than the bore 24. From the outer end of the enlargement 24 the bore is frusto-conical as shown at 25. Thus the extreme ends of the hair waving rod sections are provided with frusto-conical bores 18 and 25 which are employed as the driven clutch faces for the separate rod sections.

The perimetral surface of the spiral rod section 22 should be the same diameter as the adjacent end of the spool section and it may taper or be made up of a series of tapered and cylindrical surfaces as disclosed in Letters Patent 2,232,009. The outer end of the rod section is provided with the ratchet gear 26. The teeth of this gear are preferably pointed in the same direction as that of the ratchet gear 15 on the spool section. A small fillet 27 terminating in a shielding flange 28 is formed between the ratchet gear 26 and the perimetral surface of the spiral rod section to prevent the hair from being caught in the gear teeth.

In assembling the rod sections the spiral section 22 is slipped over the sleeve 13 and the washer 20 is placed over the shoulder 19. An expanding tool is then used to flare out and peen over the end of the sleeve 13, thereby securely holding the washer 24 against the shoulder of the reduced portion 19. This shoulder is cut at the proper spacing from the end of the spool to allow a slight clearance between the washer 20 and the shoulder formed by the bore enlargement 24 to permit the spool section to freely rotate. This clearance must not be too great or hair may become entangled between the rod

sections. To prevent the hair from entering between the rod sections and from entwining around the sleeve 13 an annular flange 30 may be formed on the inner end of the spool section as illustrated in Fig. 3. The end of the spiral rod section is reduced to receive this longitudinally disposed flange. If a hair gets between the end of the flange and the shoulder on the spiral rod section it will not become lodged as readily as it would if permitted to wind around the small diameter of the sleeve 13.

The operating mechanism for rotating the rod sections independently of one another is shown in Fig. 5, wherein the shaft 31 is arranged to be slid through the bore 16 of the spool 12 and the sleeve 13. The frusto-conical clutch member 32 is secured to one end of the shaft 31. This clutch member is arranged to engage and mate with the frusto-conical bore 25. The other end of the shaft then protrudes beyond the outer end of the spool section 22. A coil spring 33 of a diameter less than the cylindrical bore 17 is slid over the end of the shaft. The second frusto-conical clutch element 34 is preferably formed integral with the thumb handle 35. This element is bored to receive the shaft 31 and may be secured thereto by the pin 36. The clutch 34 is positioned on the shaft 31 to prevent both clutch elements from engaging their respective counterparts at the same time, and the spring 33 is compressed sufficiently to maintain the clutch member 32 in engagement with the spiral section normally but may be compressed to disengage this clutch and engage the clutch element 34 with the spool section of the rod.

The complementary clutch faces may be provided with small longitudinally disposed teeth 37. The movement of the shaft 31 axially should be just sufficient to clear the teeth on the opposite clutch. With this arrangement driving or rotary force of the operating mechanism may be quickly transferred from one section of the rod to the other and it will not be necessary to hunt for engagement of the clutch elements as required with the dent clutch elements illustrated in Figs. 6, 7 and 8.

The dent clutch elements 40 and 41 are secured to the shaft 31 in the same manner as that described above. The complementary socket elements 42 in the rod sections illustrated in Figs. 7 and 8 are in the shape of a cross, thereby providing four positions in which the clutch elements 40 and 41 may be inserted. Additional slots may be formed to lessen the degree required to turn the shaft 31 for engaging the clutch elements. In order that both clutch members at opposite ends of the rod may not engage at the same time, an enlarged clearance bore 43 is provided adjacent the slots 42.

The hair waving rod may be mounted on the conventional hair clamp 11 as illustrated in Figs. 1 and 2. The bearing 14 rides in an upwardly open journal 44 in the bracket 45, as does the present Croquignole rod. The opposite end of the shaft 31 lies in the upwardly open journal 46 in the bracket 47.

The ratchet gear 15 is engaged by the ordinary spring pawl 48 that is supplied with these hair clamps. An additional spring pawl 50 must be added to the other end of the hair clamp to engage the ratchet gear 26. Thus each ratchet gear is engaged by a separate pawl which aids in holding the rod in position on the journals of the hair clamp and prevents their respective rod sections from becoming unwound. By push-

ing the spring pawls back from the ratchet gears the rod assembly may be readily removed from the clamp.

The finger 51 which is shaped to fit the Croquignole spool section for holding the tip of the hair strand may be hinged at either end of the spool form, depending upon which position is best suited to the operator.

It is obvious that the thumb handle 35 may, if desired, be attached to the other end of the shaft 31, the left end in Fig. 5.

I claim:

1. A mandrel for simultaneously imparting a Croquignole and a spiral wave to a strand of human hair, comprising a Croquignole winding section and a spiral winding section mounted for rotation on a common support, and means for independently rotating the individual sections.

2. A mandrel for simultaneously imparting a Croquignole and a spiral wave to a strand of human hair, comprising a Croquignole winding section and a spiral winding section mounted for rotation on a common axis, and means for independently rotating the individual sections.

3. A mandrel for simultaneously imparting a Croquignole and a spiral wave to a strand of human hair, comprising a Croquignole winding section and a spiral winding section mounted for rotation on a common axis, and means including opposed clutch members for independently rotating the sections.

4. A mandrel for simultaneously imparting a Croquignole and a spiral wave to a strand of human hair, comprising a Croquignole winding section and a spiral winding section mounted for rotation on a common axis, said sections provided with aligned axial bores, a rod extending through said bores and arranged for manual rotation and for limited axial movement, and opposed clutch members carried by said rod and arranged for selective engagement with the individual sections whereby to independently rotate the sections.

5. A mandrel for simultaneously imparting a Croquignole and a spiral wave to a strand of human hair, comprising a Croquignole winding section and a spiral winding section mounted for rotation on a common axis, said sections provided with aligned axial bores, a rod extending through said bores and arranged for manual rotation and for limited axial movement, female clutch surfaces formed on the sections, and male clutch surfaces carried by the rod and arranged to be selectively engaged with the corresponding clutch surfaces of the sections whereby to rotate an individual section by the rotation of the rod.

6. A mandrel for simultaneously imparting a Croquignole and a spiral wave to a strand of human hair, comprising a Croquignole winding section and a spiral winding section mounted for rotation on a common axis, means including opposed clutch members for independently rotating the sections, and spring means for normally maintaining one of said clutch members in operative engagement.

7. A mandrel for simultaneously imparting a Croquignole and a spiral wave to a strand of human hair, comprising a Croquignole winding section and a spiral winding section mounted for rotation on a common axis, said sections provided with aligned axial bores, a rod extending through said bores and arranged for manual rotation and for limited axial movement, opposed

clutch members carried by said rod and arranged for selective engagement with the individual sections whereby to independently rotate the sections, and spring means for normally maintaining one of said clutch members in operative engagement.

8. A mandrel for simultaneously imparting a Croquignole and a spiral wave to a strand of human hair, comprising a Croquignole winding section and a spiral winding section mounted for rotation on a common axis, a tubular portion extending axially from one of said sections, said

last named section provided with a bore aligned with a bore of the tubular portion, the other section being rotatably mounted on said tubular portion, a rod extending through said tubular portion and its associated section, said rod arranged for manual rotation and for limited axial movement, and opposed clutch members carried by said rod and arranged for selective engagement with the individual sections whereby to independently rotate the sections.

ROSE E. MELARO.