June 27, 1950 E. KLOTKOWSKI 2,513,097

HAIR CURLER FOR MAKING SCULPTURE CURLS

Filed April 6, 1948 2 Sheets-Sheet 1

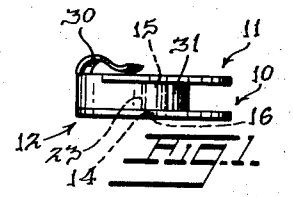


FIG. 1.

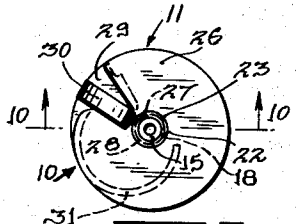


FIG. 2.

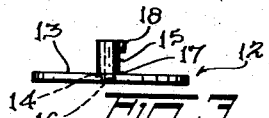


FIG. 3.

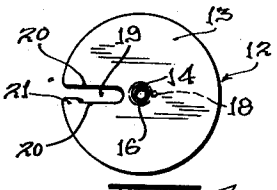


FIG. 4.

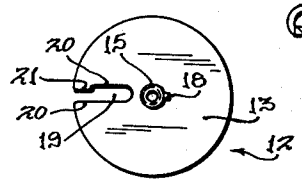


FIG. 5.

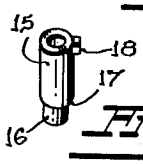


FIG. 6.

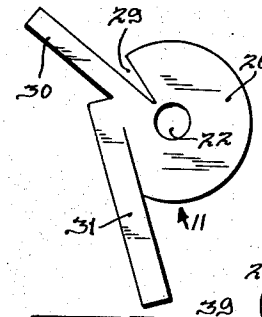


FIG. 7.

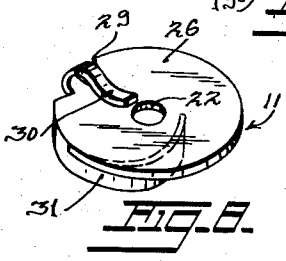


FIG. 8.

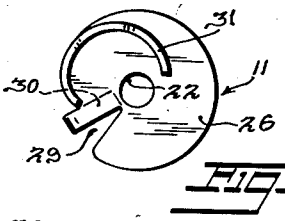


FIG. 9.

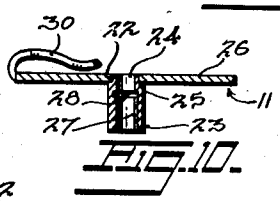


FIG. 10.

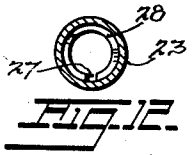


FIG. 12.

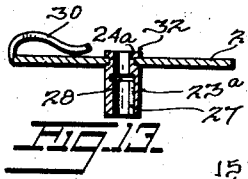


FIG. 13.

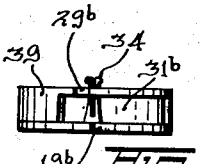


FIG. 16.

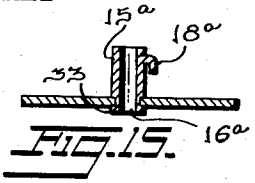


FIG. 15.

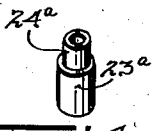


FIG. 14.

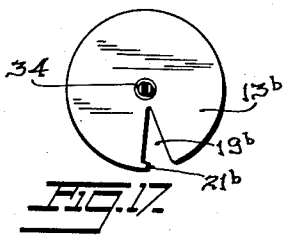


FIG. 17.

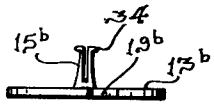


FIG. 18.

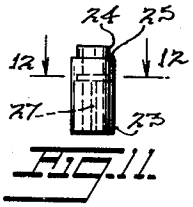


FIG. 11.

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June 27, 1950 E. KLOTKOWSKI 2,513,097

HAIR CURLER FOR MAKING SCULPTURE CURLS

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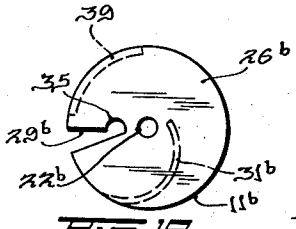


FIG. 19.

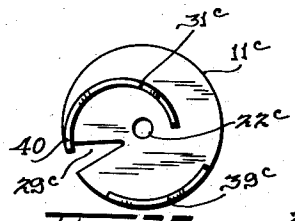


FIG. 20.

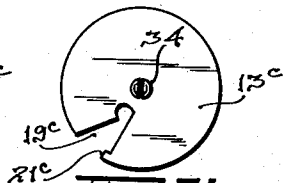


FIG. 21.

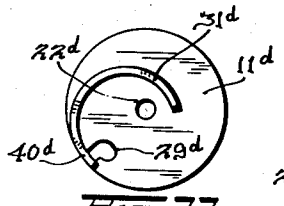


FIG. 22.

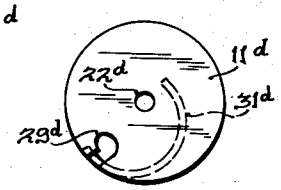


FIG. 23.

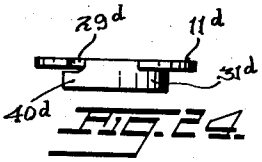


FIG. 24.

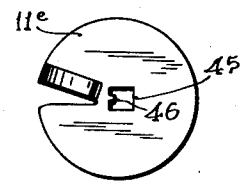


FIG. 25.

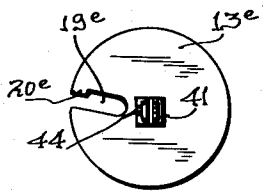


FIG. 26.

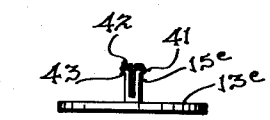


FIG. 27.

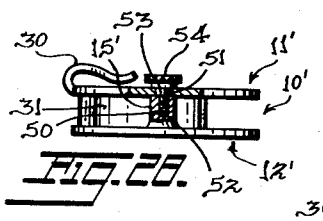


FIG. 28.

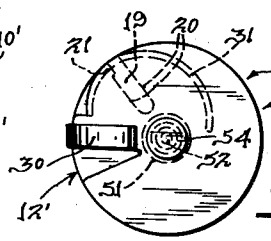


FIG. 29.

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Patented June 27, 1950 2,513,097

UNITED STATES PATENT OFFICE

2,513,097

HAIR CURLER FOR MAKING SCULPTURE CURLS

Edward Klotkowski, Brooklyn, N. Y.

Application April 6, 1948, Serial No. 19,371

9 Claims. (Cl. 132—40)

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This invention relates to a hair curler.

More particularly, the invention relates to an automatic hair curler for making home sculpture curls.

The invention relates to that type of hair curler which may be used at home by a woman to provide curls in her hair, and in which a separate curler is employed for each curl. The hair curler may be made in several different ways, of several different materials and of several different types of construction. It may also be made in several different sizes so that different size curls can be made, to the end that the curls made on one head of hair may vary in size, the smallest curls being at the top of the head, for instance, and the longer curls at the side. With these curlers, a woman can give her hair a "cold wave" or a "home permanent".

The curl can be set automatically in place by the curler and allowed to dry before the curler is removed, and in this way, perfect sculpture curls can be made and a perfect "permanent" obtained, and the curls will be characterized in that they will not have "frizzy" ends such as are usually obtained by the use of existing "permanent wave" machinery.

The curlers can be made of metal, plastic, or a combination of the two.

An object of the present invention is to provide a hair curler which can be used at home by a woman to make a curl in her hair, which hair curler has two relatively rotatable parts provided with portions for engaging the hair and rolling it into a curl.

Another object is to provide a hair curler as aforesaid having means for holding the two parts together under normal usage while permitting their ready separation after a curl has set.

A further object is to provide a curler as aforesaid in which the two parts have mating cylindrical portons for uniting them, one of the cylindrical portions having a notched square head and the other having a notched square recess whereby they may be aligned and assembled at one rotary position thereof only.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a side view of a curler constructed in accordance with this invention.

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Fig. 2 is a plan of Fig. 1.

Fig. 3 is a side view of the bottom portion of the curler.

Fig. 4 is a bottom plan view of Fig. 3.

Fig. 5 is a plan view of Fig. 3.

Fig. 6 is a perspective view of the male post of Fig. 3.

Fig. 7 is a plan of the blank from which the top portion of the curler is made.

Fig. 8 is a perspective of the top portion, with its socket member removed.

Fig. 9 is a bottom plan view of Fig. 8.

Fig. 10 is a vertical sectional view taken on the line 10—10 of Fig. 2.

Fig. 11 is a side view of the socket portion of the top portion of the curler.

Fig. 12 is a horizontal sectional view taken on the line 12—12 of Fig. 11.

Fig. 13 is a vertical sectional view similar to Fig. 10 of a top portion having a metal socket member.

Fig. 14 is a perspective of the metal socket member before attachment.

Fig. 15 is a vertical sectional view through the bottom portion of a curler having a metal male post.

Fig. 16 is a side view of a curler constructed in accordance with a modification of this invention.

Fig. 17 is a top plan view of the bottom member of Fig. 16.

Fig. 18 is a side elevational view of Fig. 17.

Fig. 19 is a top plan view of the top member of Fig. 16.

Fig. 20 is a bottom plan view of the top member of a curler constructed in accordance with another modification of this invention.

Fig. 21 is a top plan view of the bottom member adapted to be used with the top member of Fig. 20.

Fig. 22 is a bottom plan view of the top member of a curler constructed in accordance with still another modification of this invention.

Fig. 23 is a top plan view of Fig. 22.

Fig. 24 is a side elevational view of Fig. 23.

Fig. 25 is a bottom plan view of the top member of a curler constructed in accordance with still another modification of the invention.

Fig. 26 is a top plan view of the bottom member for use with the top member of Fig. 25.

Fig. 27 is a side elevational view of Fig. 26.

Fig. 28 is a side elevational view of the curler constructed in accordance with a still further modification of the invention and having a portion broken away to reveal interior construction.

Fig. 29 is a top plan view of Fig. 28.

Referring to Figs. 1–12, wherein there is shown

the first embodiment of a curler constructed in accordance with this invention, it will be seen that the curler, indicated generally by the reference numeral 10, has a top member 11 and a bottom member 12.

The bottom member 12 consists of a circular disc 13 having a center hole 14. In this hole is secured a male post 15. The male post is tubular and has a reduced portion 16 fitting in the hole 14 and a shoulder 17 seated against the disc 13. If the post and disc are plastic, the portion 16 may be cemented in the hole. If they are metal, they may have a force fit, or be soldered. If one member is plastic and the other metal, they may be glued or cemented. The male post 15 also has a tongue 18 extending laterally at the top thereof. The disc further has a slot 19 extending inwardly substantially radially from one side thereof toward the male post 15. The slot 19 has parallel sides 20, one of which is provided, at its outer end portion, with a claw 21.

The top member 11 is made in part from the blank shown in Fig. 7. It has a center hole 22 in which is fitted a socket member 23, see Fig. 11. This socket member has a neck 24 at its top of the same diameter as and fitting in the hole 22. The blank and the socket member may be made of plastic, metal or a combination of both and the remarks made above as to the bottom member equally apply to the top member. At the bottom of the neck 24 is a shoulder 25 which engages the circular disc-like top 26 of the top member in which the hole 22 is centrally disposed.

The socket member 23 is tubular and has an inside diameter of a size to receive, with working fit, the male post 15. It has a vertical groove 27 in which the tongue 18 can slide, and at the top of the vertical groove 27 it has a horizontal annular groove 28 so that when the tongue 18 is in the groove 28, the two members can be rotated relative to each other.

The blank has a V-shaped slot 29 in the disc 26 opening through one edge thereof. Also the blank has a lateral extension at one side of the slot which is folded back over the disc to form a clip 30 which is reversely curved so that at its free end it is above the disc, then curves toward the disc and then away again until it reaches the edge of the disc, as shown in Fig. 10. The blank further has a tangential extension which is folded down vertically and then curled to provide a volute vertical wall 31 for the top member which starts at the outer periphery and terminates at the socket member 23 in slightly spaced relation relative thereto.

In Figs. 13–15, a slight modification of the invention is shown illustrating how metal male and female members may be made for the bottom and top members of the curler respectively. The female socket member 23^a is exactly like the member 23 but has a longer neck 24^a, which is flanged over the disc 26 to provide a retaining flange 32. Similarly, the male post 15^a has a longer reduced portion 16^a providing a retaining flange 33, and the tongue 18^a is formed by making two parallel vertical cuts in the tube and bending the metal downwardly and outwardly, as shown in Fig. 15. Other parts of Figs. 13–15 corresponding to like parts of the construction shown in Figs. 1–12 are indicated by like references.

In the embodiments of the invention, shown in Figs. 1–12 and 13–15, the tongue 18 or 18^a sliding in the groove 28 retains the top and bottom members together. In the embodiment of the invention shown in Figs. 16–19, a simpler device is employed. Here the bottom member disc 13^b has a center post 15^b which is slit vertically into two parts and which has, at its top, a spherical head 34 which is also slit. The top member 11^b has merely a center hole 22^b which is small enough so that when it is forced over the head 34, the two parts of the head move together, the slit contracting. After the head passes through the hole 22^b, the slit expands and the head retains the top member 11^b on the bottom member 13^b.

This embodiment of the invention further distinguishes from the foregoing embodiments in that the bottom member disc 13^b has a V-shaped slot 19^b provided with a rectangular claw 21^b and the top member disc 26^b has a V-shaped slot 29^b provided at one side of its inner end with a semi-circular recess 35. Substantially opposite the volute wall 31^b is a curved wall 39.

In the embodiment of the invention shown in Figs. 20 and 21, the bottom member 13^c has an inverted R-shaped slot 19^c, and the top member 11^c is like the top member 11^b of Fig. 19 but has only one V-shaped slot 29^c, the forward end portion of wall 31^c overlapping the slot 29^c to provide a claw 40. Substantially opposite the volute wall 31^c is a curved wall 39^c.

In the embodiment of Figs. 22–24, the top member 11^d has only the volute wall 31^d which provides a claw 40^d which completely crosses slot 29^d, this slot being short and consisting mainly of a circular part opening through a short radial portion through the side of the disc. It may be used with the bottom member of Fig. 21 or of Fig. 17.

Instead of the spherical head 34, a square head may be employed, see Figs. 25–27, wherein the male post has a square head 41. This male head is split as is the post 15^e so that it can be expanded and contracted. It also has a bevelled top margin 42 and a bevelled bottom margin 43 so that it can find the hole that it fits in for assemblage and disassemblage. Furthermore, one side of the square head has a rectangular notch 44, see Fig. 26. The top member 11^e has a square center hole 45, from one side of which juts a tongue 46 for fitting in notch 44. Thus the top and bottom members can only be assembled when the tongue 46 is aligned with notch 44. This is also true in disassemblage.

In other respects, this form of the invention is similar to those previously shown and, like reference numerals, identify like parts in each of the several views.

In the modification of the invention disclosed in Fig. 28, the construction of the curler 10′ is similar to that described in connection with the first form of the invention, except that the bottom member 12′ is formed with an integral post 15′ formed with a threaded opening 50. The top member 11′ is formed with a central opening 51, and a screw 52 extends through the opening 51 and is threadedly received in the threaded opening 50 for rotatively supporting the top member 11′ in position upon the post 15′. The screw 52 is formed with a shouldered portion 53, which is adapted to be tightened against the top end of the post 15′ and about which the top member 11′ can be rotated. The shouldered portion 53 continues into an enlarged head 54, so that the top member 11′ will rotate on the shouldered portion 53 between the top end of the post 15′ and the enlarged head 54.

In other respects, this form of the invention is

similar to that disclosed in Figs. 1 to 12 and like reference numerals identify like parts in each of the several views.

The operation of the hair curler is as follows:

Care must be taken not to try to curl too large a hank of hair, since the larger the hank, the more pressure will be caused forcing the two members apart. The embodiment of the invention shown in Fig. 25 is especially adapted to prevent the members from moving apart under such a strain, such movement being possible only when tongue **46** is aligned with notch **44**.

The hank of hair is slipped into the slot **19** with the disc **13** as close to the scalp as possible. The claw **21** helps to hold the hank in place. The hank extends through the top member slot **29**. Rotation of the top member relative to the bottom member winds the hank into a curl around the socket member **15**. The hank should be wet and after the curl is formed, all of the hair will be enclosed between the two discs. The curler is left on until the hank is dry and set, whereupon the two members are pulled apart to remove them from the formed curl.

The hank is passed under the clip **30** prior to the curling operation. If any hair is left after the curl is formed, it may be locked under the clip. Also, the clip forms a handle for rotating the top member relative to the bottom member. The volute wall **31** acts as a guide forming the curl. Where the wall **39** is employed, this confines the curl from bulging outwardly beyond the curler. The claw **40**, where used, helps to keep the hair in the slots during curling.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. A hair curler comprising a bottom disc, a post extended from one face of said bottom disc, said bottom disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said bottom disc, a top disc rotatively mounted on said post, said top disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said top disc, a flexible volute wall between said discs and integral at its outer end with said top disc and having its inner end terminating closely adjacent said post, and a clip on the top face of said top disc extended along one side of the slot of said top disc.

2. A hair curler comprising a bottom disc, a post extended from one face of said bottom disc, said bottom disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said bottom disc, a top disc rotatively mounted on said post, said top disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said top disc, a flexible volute wall between said discs and integral at its outer end with said top disc and having its inner end terminating closely adjacent said post, and a clip on the top face of said top disc extended along one side of the slot of said top disc, said clip comprising a radial extension of said top disc bent into the form of said clip along the top face of said top disc.

3. A hair curler comprising a bottom disc, a post extended from one face of said bottom disc, said bottom disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said bottom disc, a top disc rotatively mounted on said post, said top disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said top disc, a flexible volute wall between said discs and integral at its outer end with said top disc and having its inner end terminating closely adjacent said post, and a clip on the top face of said top disc extended along one side of the slot of said top disc, said rotative mounting of said top disc comprising a tubular socket member projecting from the inner face of said top disc and engaged rotatively over said post with its free end abutting the inner face of said bottom disc.

4. A hair curler comprising a bottom disc, a post extended from one face of said bottom disc, said bottom disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said bottom disc, a top disc rotatively mounted on said post, said top disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said top disc, a flexible volute wall between said discs and integral at its outer end with said top disc and having its inner end terminating closely adjacent said post, and a clip on the top face of said top disc extended along one side of the slot of said top disc, said rotative mounting of said top disc comprising a tubular socket member projecting from the inner face of said top disc and engaged rotatively over said post with its free end abutting the inner face of said bottom disc, and means rotatively connecting said post and socket member while leaving them free for complete separation in one rotative position thereof.

5. A hair curler comprising a bottom disc, a post extended from one face of said bottom disc, said bottom disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said bottom disc, a top disc rotatively mounted on said post, said top disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said top disc, a flexible volute wall between said discs and integral at its outer end with said top disc and having its inner end terminating closely adjacent said post, and a clip on the top face of said top disc extended along one side of the slot of said top disc, said rotative mounting of said top disc comprising a tubular socket member projecting from the inner face of said top disc and engaged rotatively over said post with its free end abutting the inner face of said bottom disc, a tongue extending radially from one side of said post, said socket member being formed with an internal annular groove engaged by said tongue rotatively connecting said post and socket member, and means permitting disengagement of said tongue from said annular groove in one rotative position of said discs.

6. A hair curler comprising a bottom disc, a post extended from one face of said bottom disc, said bottom disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said bottom disc, a top disc rotatively mounted on said post, said top disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said top disc, a flexible volute wall between said discs and integral at its outer end with said top disc

and having its inner end terminating closely adjacent said post, and a clip on the top face of said top disc extended along one side of the slot of said top disc, said rotative mounting of said top disc comprising a tubular socket member projecting from the inner face of said top disc and engaged rotatively over said post with its free end abutting the inner face of said bottom disc, a tongue extending radially from one side of said post, said socket member being formed with an internal annular groove engaged by said tongue rotatively connecting said post and socket member, and means permitting disengagement of said tongue from said annular groove in one rotative position of said discs, said disengagement permitting means comprising a second groove formed within said socket member and extended between said annular groove and the free end of said socket member.

7. A hair curler comprising a bottom disc, a post extended from one face of said bottom disc, said bottom disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said bottom disc, a top disc rotatively mounted on said post, said top disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said top disc, a flexible volute wall between said discs and integral at its outer end with said top disc and having its inner end terminating closely adjacent said post, and a clip on the top face of said top disc extended along one side of the slot of said top disc, said post being formed at its free end with a threaded opening, said top disc being formed with a concentric opening aligned with said threaded opening and of a diameter slightly greater than said threaded opening but smaller than the diameter of said post, said rotative mounting of said top disc comprising a screw having a threaded shank received in said threaded opening of said post, a shouldered portion at the outer end of said shank received in the opening of said disc and abutting the outer end of said post when said shank is tightened in said threaded opening, and an enlarged head at the outer end of said shouldered portion.

8. A hair curler comprising a bottom disc, a post extended from one face of said bottom disc, said bottom disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said bottom disc, a top disc rotatively mounted on said post, said top disc being formed with a slot extending radially from a point adjacent said post to the outer edge of

said top disc, a flexible volute wall between said discs and integral at its outer end with said top disc and having its inner end terminating closely adjacent said post, and a clip on the top face of said top disc extended along one side of the slot of said top disc, said post being formed at its free end with a threaded opening, said top disc being formed with a concentric opening aligned with said threaded opening and of a diameter slightly greater than said threaded opening but smaller than the diameter of said post, said rotative mounting of said top disc comprising a screw having a threaded shank received in said threaded opening of said post, a shouldered portion at the outer end of said shank received in the opening of said disc and abutting the outer end of said post when said shank is tightened in said threaded opening, and an enlarged head at the outer end of said shouldered portion, said shouldered portion being of a thickness slightly greater than the thickness of said top disc so that said top disc is free to rotate on said shouldered portion between the adjacent faces of said post and said enlarged head.

9. A hair curler comprising a bottom disc, a post extended from one face of said bottom disc, said bottom disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said bottom disc, a top disc rotatively mounted on said post, said top disc being formed with a slot extending radially from a point adjacent said post to the outer edge of said top disc, a flexible volute wall between said discs and integral at its outer end with said top disc and having its inner end terminating closely adjacent said post, and a clip on the top face of said top disc extended along one side of the slot of said top disc, and a claw formed of the material of said bottom disc and extended partially across the slot of said bottom disc from one side of that slot at the outer end thereof.

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