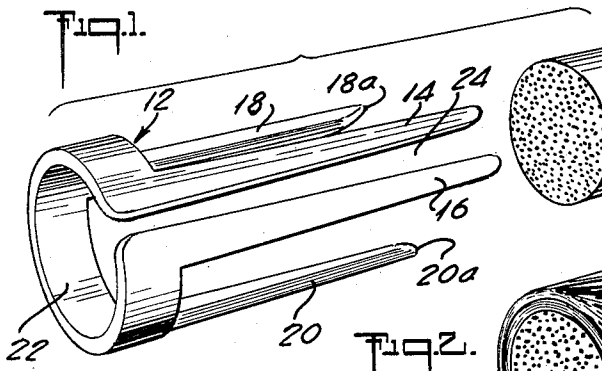
July 8, 1958 C. L. OTTO ET AL 2,842,140

HAIR CURLERS

Filed Sept. 16, 1954

Fig. 1.



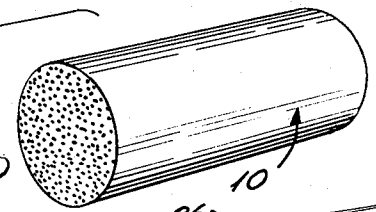


Fig. 2.

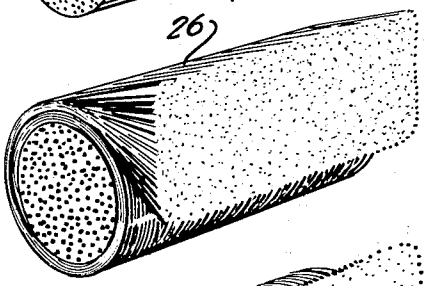


Fig. 3.

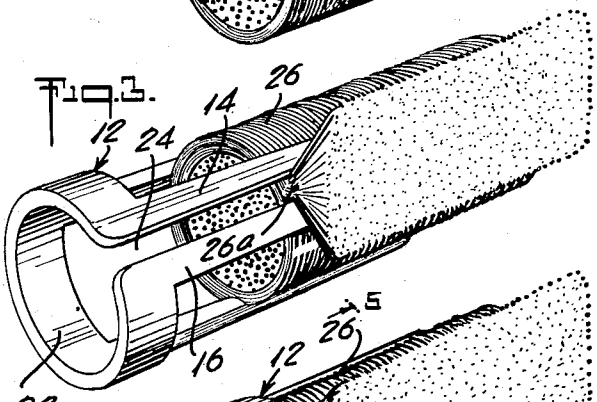


Fig. 5.

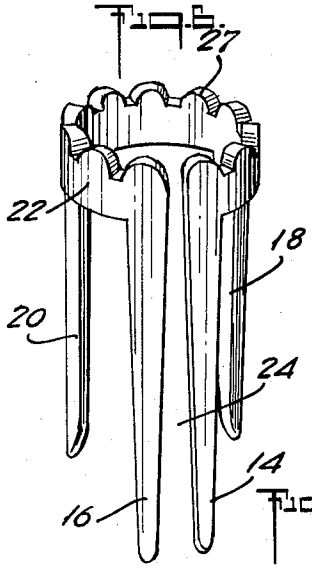


Fig. 4.

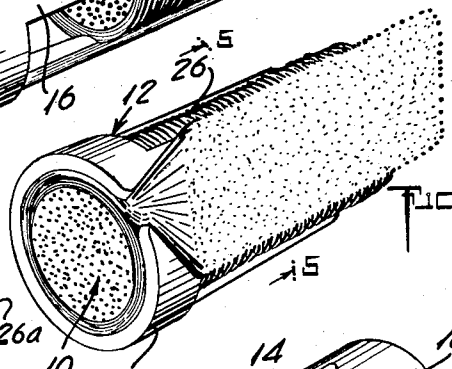
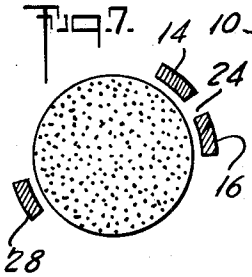
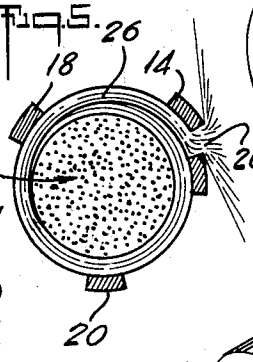


Fig. 7.





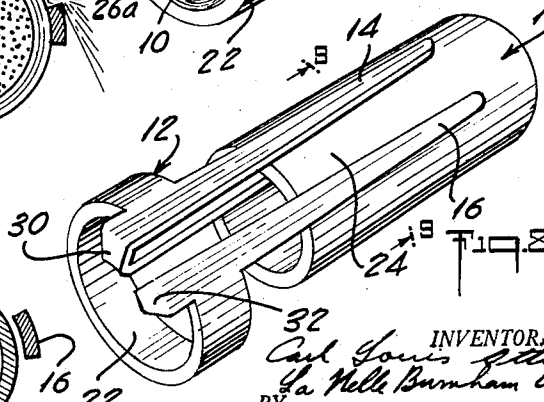
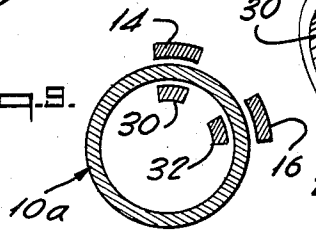


Fig. 8.

Fig. 9.



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HAIR CURLERS

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Application September 16, 1954, Serial No. 456,485

21 Claims. (Cl. 132—40)

The present invention relates to hair curlers and has particular reference to that type of curler adapted to be self-applied by the wearer.

Amongst the general objects of the invention are: to provide a novel and improved form of curler which will enable the hair to be curled to be applied to the curler and held in a position such as to be curled closely to the head of the wearer; to provide a curler which may easily and readily be self-applied by the wearer; to provide a curler which affords ample ventilation for the hair curled thereon to facilitate the drying thereof, and to provide a device which is not only simple but relatively inexpensive to manufacture.

For a better understanding of the manner in which the above and other and more detailed objects hereinafter appearing may be obtained and of the advantages to be derived from the invention, reference may best be had to the ensuing portion of this specification, taken in conjunction with the accompanying drawings forming a part hereof, which discloses different embodiments of structure for carrying the invention into effect.

In the drawings, Fig. 1 is an exploded perspective view showing the two components of one embodiment of the invention.

Fig. 2 is a perspective view of one of the components with a tress of hair wound thereon.

Fig. 3 is a perspective view of the components shown in Fig. 1 partially assembled with a tress of hair wound on one of the components as shown in Fig. 2.

Fig. 4 is a perspective view of the fully assembled device comprised of the components shown in Fig. 1 and retaining in place a tress of hair wound on one of the components.

Fig. 5 is a section taken on the line 5—5 of Fig. 4.

Fig. 6 is a perspective view of a different form of one of the components shown in Fig. 1.

Fig. 7 is a section similar to Fig. 5, showing another form of one of the components illustrated in Fig. 1.

Fig. 8 is a perspective of another form of device embodying the invention, and

Fig. 9 is a section taken on the line 9—9 of Fig. 8.

Referring now more particularly to Figs. 1 to 4, the device comprises a component 10 in the form of a core or supporting member, which in the embodiment illustrated is of cylindrical form. In accordance with the principles of the invention, the core is elastically resilient and preferably of a porous material of sponge-like form such as natural or artificial sponge rubber, expanded cellulose or suitable expanded forms of known plastics of the vinyl family, etc.

A component 12 in the form of a clamping or retaining member comprises a plurality of elongated fingers 14, 16, 18 and 20 extending substantially in parallelism from a connecting collar or ring portion 22 at one end of the member, the latter being cylindrical in form and of a diameter adapted to slide over one end of the core member 10.

The member 12 may be formed of any suitable elastically resilient material, which may be of metal but which preferably is formed of an elastic type of thermoplastic material, such as the group of cellulose derivatives such as cellulose acetate, methyl methacrylate and other such materials having appropriate elastic physical properties.

If made of metal, the member 12 is advantageously of some form of light-weight non-corrodible metal or provided with some form of non-corroding finish, since in its normal use the member will be subjected to moisture for substantial periods of time.

As will be observed from Fig. 1, the fingers 14 and 16 of the retaining member 12 provide between themselves a relatively narrow elongated slot or gap 24 which advantageously tapers along its length from a wider portion at the free ends of the fingers 14 and 16 to a narrower portion at the end of the member where the fingers join the collar 22.

The application of the device will be more or less evident from consideration of Figs. 1 to 5. The desired tress of hair to be curled, which is sometimes referred to as a "section" of hair and which is indicated at 26 in Fig. 2, is first wound around the core member as shown in Fig. 2. Thereafter the retaining member or component 12 is forced longitudinally over the core member and its wound tress of hair, as indicated in Fig. 3, the base portions 26*a* of the tress of hair being firmly retained in the gap 24 between the fingers 14 and 16.

It will be understood that the diameter of the ring portion 22 of the retaining member will be so related to the diameter of the core 10 that when the retaining member is forced over the core and its wound tress of hair, the core member will be compressed and/or the retaining member will be elastically expanded so as to firmly grip and retain in place the tress which is wound on the core.

As previously noted, the core is preferably made of yieldable material and in addition to the elastic nature of the material of the retaining member, the fingers of the latter are advantageously beveled as indicated, for example, at 18*a* and 20*a* in Fig. 1, to aid in assembling the parts.

The fully assembled device with a tress of hair held thereby is shown in Figs. 4 and 5, and from the latter, one of the important features of the invention will be apparent. From Fig. 5 it will be seen that, due to the narrow gap 24, it is possible to wind the tress of hair on the core 10 and to clamp the base portions 26*a* of the hair of the tress close to the scalp so that the curl produced as a result of the curling operation extends to a point very close to the roots of the hair, or, in other words, close to the scalp of the wearer. This is a highly desirable objective since, while many forms of apparatus and methods used by professional hair dressers are able to achieve this result, the ordinary home hair curling appliance is incapable of effecting a curl close to the scalp of the wearer and is a self-advertisement of a home or amateur operation.

In the embodiment shown in Fig. 1, the ring portion 22 of the retaining member 12 is shown as being of plain cylindrical contour. However, from the standpoint of convenience of manipulation, it will be desirable in some instances to provide the member with a serrated or similarly contoured end surface as indicated at 27 in Fig. 6, the protuberances on the end surfaces facilitating grasping of the element by the fingers of the user.

Also, while in the embodiments shown in Figs. 1 and 6 the retaining member includes retaining fingers 18 and 20 which are preferably shorter than the fingers 14 and 16 between which the gap 24 is formed, this particular

configuration need not be adhered to and in Fig. 7 a further form is shown in which in addition to the fingers **14** and **16** defining the gap **24**, only a single additional finger **28** is employed.

When in accordance with the principles of the invention a porous substance such as that previously noted is used for a core member, sufficient ventilation for the required purposes may be obtained with core members in the form of solid cylinders, but within the scope of the invention other forms of core members may be employed, such, for example, as the annular form shown in Figs. 8 and 9 in which the core member **10***a* is in the form of a cylindrical annulus. In this form of the device, the retaining member **12** may comprise, in addition to the fingers **14** and **16** between which the gap **24** is defined, retaining fingers **30** and **32** formed to engage the inner wall or bore of the annular core member **10***a* to retain the member in place. The forms of retaining members shown in Figs. 1, 6 and 7 may be used with an annular core member rather than the form of retaining member embodying fingers engaging the inner wall of the annulus, and it will be equally apparent that the particular configuration of the end portion or collar of the retaining member may, quite independently of the number and arrangement of the fingers, have any desired and/or outer surface contour to facilitate manipulation.

While in all of the embodiments illustrated the end ring portion **22** of the retaining member is split so as to be readily expansible to accommodate itself over a core and a tress of hair wound thereon, and such construction is preferred, it is not essential to the exercise of the invention, since even with a circumferentially continuous end ring, the resilient or yieldable nature of the core member contemplated by the invention in conjunction with the flexibility of the fingers would enable the parts to be assembled in the manner intended in order to carry out the objects of the invention.

From the foregoing it will be apparent that the invention may be carried out with numerous different specific forms and designs of apparatus and it is accordingly to be understood as embracing all forms of article falling within the scope of the appended claims.

What we claim:

1. A hair curling device comprising an annular core member for supporting a tress of hair wound externally thereon and a retaining member for holding the hair wound on the core member, at least one of said members being resiliently yieldable and said retaining member comprising at least two finger portions located to externally engage the hair wound on said core member, said finger portions being substantially parallel and peripherally spaced to provide between them a narrow elongated gap for clamping the base portions of the hair wound on the core member.

2. A hair curling device comprising a core member for supporting a tress of hair thereon, said core member having a longitudinally extending opening therein, and a retaining member for holding the hair wound on said core member, at least one of said members being resiliently yieldable and said retaining member comprising at least two substantially parallel finger portions in circumferentially spaced relation for engaging hair wound on said core member and an elongated retaining portion connected at one end of the retaining member to each of said finger portions and located to be inserted in the opening in said core member to hold said finger portions in pressure engagement with the hair wound on said core member.

3. A device as defined in claim 2 in which said finger portions are peripherally spaced to provide between them an elongated gap narrower than half the circumference of the core member.

4. A hair curling device comprising a substantially cylindrical core member of elastically resilient sponge-like material for supporting a tress of hair wound thereon and a separable retaining member having substantially parallel extending finger portions formed to externally engage a tress of hair wound on said core member, said finger portions being joined at one end of said retaining member and said retaining member including an additional portion for engaging said core member to hold the retaining member and the externally engaging finger portions thereof in pressure engagement with the external surface of said core member.

5. A device as defined in claim 4 in which said core member is annular in form and said additional portion consists of at least one finger portion substantially parallel with the aforesaid finger portions and located to engage the core member internally of the bore thereof to provide engagement between the parts of the device.

6. A hair curling device comprising a substantially cylindrical core member for supporting a tress of hair wound thereon and a separable retaining member for holding the hair wound upon the core, one of said members being resiliently elastic and the retaining member comprising a plurality of longitudinally extending fingers connected by a collar portion at one end thereof, the diameter of said collar portion being related to the diameter of the core member to enable the retaining member to be slipped longitudinally over the core member and a tress of hair wound thereon and said fingers comprising two relatively closely spaced fingers providing between them an elongated narrow gap for substantially clamping between them the base portions of the hair wound on the core member, said retaining member consisting of elastic material and said collar portion being split at said gap to permit enlargement of the diameter of the retaining member to compensate for different quantities of hair wound on the core member.

7. A device as defined in claim 6 in which said collar portion is provided with depressions and protuberances to facilitate gripping the same by the user.

8. A device as defined in claim 6 in which one or more additional fingers are provided, circumferentially spaced with respect to the fingers between which said gap is formed.

9. A device as defined in claim 8 in which said additional fingrs are shorter than the fingers between which said gap is provided.

10. A hair curling device comprising an annular core member for supporting a tress of hair wound externally thereon and a retaining member for holding the hair on the core member, at least one of said members being resiliently yieldable and said retaining member comprising portions providing between them a narrow elongated gap for clamping the base portions of the hair wound on the core member, said retaining member comprising a plurality of fingers connected at one end by a circular collar portion, said fingers including two fingers closely spaced circumferentially relative to each other and located externally of said core member when the core and retaining members are assembled to provide the aforesaid narrow elongated clamp gap externally of said core member.

11. A device as defined in claim 10 in which said retaining member includes additional fingers located to engage the bore of the core member.

12. A hair curling device comprising a core member for supporting a tress of hair wound externally thereon and a retaining member for holding the hair wound on the core member in relatively firmly fixed position relative to the head of the wearer, said retaining member comprising two elongated substantially parallel and relatively closely spaced finger portions and a collar portion connected to the same ends of said finger portions for retaining said finger portions in external pressure engage-

ment with the outer surface of the core member when the core and retaining members are assembled, said finger portions providing a relatively narrow gap therebetween extending axially and externally of the core member, through which the base portion of the hair wound on the core member passes in relatively close confinement circumferentially of the core member.

13. A device as defined in claim 12 in which said core member consists of a porous sponge-like organic plastic material.

14. A device as defined in claim 13 in which the core member is annular.

15. A hair curling device comprising a core member for supporting a tress of hair wound thereon and a retaining member for holding the hair while on the core member in relatively firmly fixed position relative to the head of the wearer, said retaining member comprising two elongated substantially parallel and relatively spaced finger portions and a collar portion connected to the same ends of said finger portions for retaining the latter in external pressure engagement with the outer surface of the core member when the core and retaining members are assembled, said finger portions providing a relatively narrow gap therebetween extending axially of the core member, through which the base portion of the hair wound on the core member passes in relatively close confinement circumferentially of the core member, the aforesaid collar portion of said retaining member being split between the finger portions defining therebetween the aforesaid gap.

16. A device as defined in claim 15 in which said retaining member consists of an elastically resilient thermoplastic material.

17. A hair curling device embodying a substantially cylindrical core member comprising elastically resilient porous, sponge-like, non-metallic plastic material adapted to have a tress of hair wound therearound and to be radially compressed by the tress of hair so wound thereabout, and a retaining member associated with said core member and having a portion comprising separate substantially parallel fingers adapted to extend longitudinally of the length of said core member and exteriorly thereof and over the tress of hair wound thereon to retain the latter in place and at least one additional longitudinally extending finger adapted to locate it to engage said core member to hold the first mentioned fingers in place, and an end portion for joining the aforesaid several finger portions together at the end of the device.

18. A device as defined in claim 17 in which said core member is annular and in which said retaining member includes a plurality of fingers for externally engaging said core member and at least one finger for extending into the bore of the annular core member for holding the core and retaining members in assembled relation.

19. A hair curling device comprising a core member for supporting a tress of hair wound externally thereon and a separable retaining member formed to be longitudinally applied to said core member to hold in place

the hair wound on the core, at least one of said members being resiliently yieldable and said retaining member comprising substantially parallel fingers extending longitudinally and externally of the core member and of the hair wound thereon and providing between said fingers an elongated narrow gap for egress from the external surface of the core member in peripherally relatively confined space of the base portions of the hair wound on the core member.

20. A hair curling device comprising a substantially cylindrical core member for supporting a tress of hair wound externally thereon and a separable retaining member formed to externally engage a tress of hair wound on the core member, said core member being formed of elastic material of porous sponge-like nature to provide for ventilation of the hair wound thereon, and said retaining member comprising substantially parallel finger portions for externally engaging the hair wound on said core member and providing between them an elongated narrow gap extending longitudinally of the core member for closely confining between said finger portions the base portions of the hair wound on the core member.

21. A hair curling device comprising a substantially cylindrical core member for supporting a tress of hair wound externally thereon and a separable retaining member for holding the hair on the core, one of said members being resiliently elastic and the retaining member comprising a plurality of longitudinally extending substantially parallel finger portions located to externally engage the hair wound on said core, said finger portions being connected by a collar portion at one end thereof and the diameter of said collar portion being related to the diameter of the core member to enable the finger portions of the retaining members to be slipped longitudinally over the core member and a tress of hair wound thereon and said finger portions comprising two relatively closely spaced fingers providing between them an elongated narrow gap for substantially clamping between them the base portions of the hair externally wound on the core member.

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