

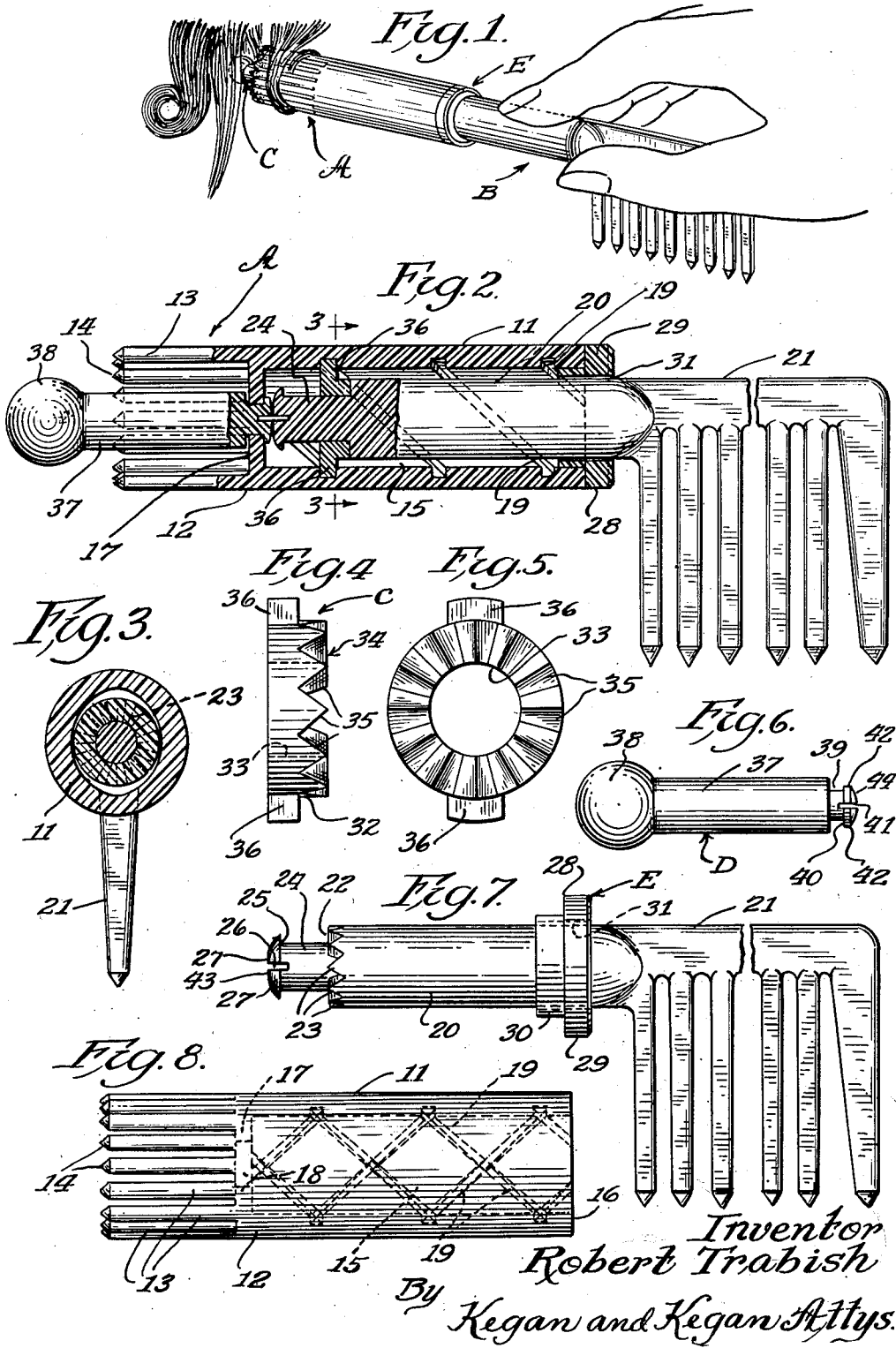
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HAIR CURLING DEVICE

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HAIR CURLING DEVICE

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This invention relates to hair curling devices, and more particularly to a novel device which curls the hair automatically, quickly, and in a simplified manner.

In the past, the usual method of forming curls has been by subjecting the locks of hair to countless finger manipulations to wind the hair in spiral curls or ringlets. In contrast, the present invention contemplates the use of a device which readily grips a lock of hair and by simple reciprocating strokes winds the lock into a curl. Moreover, because of its ease and simplicity of use, the device is adaptable not only to professional use, but also to individual operation. Use and operation of the curling device is so simple that it may be done entirely by feel rather than requiring any visual aid.

Known devices for curling the hair are expensive to manufacture, and, more often than not, require a great deal of time and specialized skill, while producing inferior results. Present day demands for curling devices, contrastingly, call for a device which employs a minimum number of working parts, in order to facilitate its ease of manufacture and enable anyone to use it with only a minimum of instruction.

It is, therefore, a principal object of this invention to overcome the failings of prior known hair curling devices.

Broadly, it is an object of this invention to provide a curling device which is simple to use, produces attractive curls, and is operable with a minimum of effort and time.

Another object of this invention is to provide a curling device which is adaptable to mass production manufacture, requires a minimum number of working parts, and may be economically priced to meet the demands of everyone.

A specific feature of this invention is the provision of a hair curling head which readily grips the hair to be curled, and to further provide a one-way drive whereby a simple reciprocating motion turns the head when the drive is moved in one direction, and allows the head to remain stationary when the drive is moved in an opposite direction.

The foregoing and other objects, advantages, and features of construction will become apparent from a consideration of the following description and the appended drawing.

In the drawing:

Figure 1 is a perspective view of the invention in operative position;

Figure 2 is a cross-sectional view of the invention;

Figure 3 is a sectional view, taken on line 3—3 in Figure 2;

Figure 4 is a side elevation view of the drive ratchet member;

Figure 5 is a front view of the drive ratchet;

Figure 6 is a side elevation view of an idler support stem;

Figure 7 is a side elevation view of the actuating piston and handle; and

Figure 8 is a side elevation view of the curling comb and body.

Briefly, the invention includes only three essential parts; namely, a curling head A for gripping and curling the hair, a reciprocable actuating assembly and handle B for turning the curling head, and a one-way ratchet drive member C whereby the curling head is turned during only the power stroke of the actuating assembly B. Additionally, the curling device has an idler stem D to facilitate handling and operation, and a fifth member E to provide a shield for the working parts. Spinning of curling head A is accomplished by the inter-cooperation of actuating assembly B and ratchet drive C with the curling head, which has its own actuating steep screw track engraved in the walls of its inner core.

All parts readily adapt themselves to the use of any of the well-known plastics, and molding operations therewith, thereby eliminating the need of any metal working parts. Moreover, by providing the steep pitched screw arrangement in the curling head itself, there is no need to employ any form of separate metal steep pitched screw drive member for turning the curling head. The small number of parts, and ability to use lightweight materials, particularly facilitate ease of manipulation of the curling device.

Referring to the drawings in detail, curling head A comprises a tubular cylindrical body 11 terminating at one end 12 in a series of teeth 13 continuous with the body portion and extending parallel thereto to form an annular comb structure 14 for engaging and holding the hair during the curling operation. The body is formed with a central core 15 to open at one end 16 and terminating, adjacent the area of the root of annular comb 14, in a wall 17 having an opening 18 along the axis of comb 14. Steep pitched spiral tracks 19—19 are inscribed or engraved on the wall forming core 15 for guiding the curler actuating mechanism. By providing these tracks 19—19 on the core wall it has been found that the usual steep pitched metal screw may be eliminated, while greatly simplifying the drive actuating members and one-way control therefor.

The curler handle and actuating assembly B comprises a cylindrical piston 20 of smaller diameter than core 15 and terminating at its outer end as a handle in the form of a straight comb structure 21. Adjacent its other end, piston 20 is formed with a shoulder 22 having an annular band of wedge-shaped teeth 23 facing in the direction of the piston axis. An integral support shaft 24 extends concentrically from the inner end of piston 20. The extreme end of shaft 24 has a retention shoulder 25, and also a lateral slot 26 which permits a certain amount of deformation of shaft ends 27—27 towards each other.

The sealing or cover member E includes a capping member 28 slidably mountable upon piston 20, and having a peripheral lid portion 29 for covering the open end 16 of cylindrical body 11 and of such diameter as to form a surface continuous therewith. An annular ledge 30, integral with cover 29, and of such outside diameter as to allow it to be press fitted into core 15 at opening 16, provides means for the support of lid 29. Capping member 28 further is provided with a circular opening 31 of such diameter as to allow piston 20 to slide easily there-through, yet act as a guide means whereby the piston is guided concentrically into core 15.

Ratchet drive C comprises a member 32, generally circular in elevation, and having a concentric circular opening 33 whereby it is rotatably mounted on shaft 24. On one face 34 there is provided an annular array of wedge-shaped teeth 35, similar in number to, and engageable with, teeth 23. Diametrically opposed lobes or fingers 36—36 project laterally from member 32 and are adapted

to enter and be guided by tracks 19—19. As is apparent from the drawings, the length of shaft 24 is sufficiently long to allow member 32 to slide therealong and disengage teeth 35 from teeth 23, as explained hereinafter.

The curling device further is provided with an idler support D which includes a stem 37 to facilitate ease of handling during the curling operation and to provide a comfortable base for engaging the head. For this purpose stem 37 has a spherical portion 38 at its outer end. Adjacent its inner end stem 37 includes a portion 39 of reduced diameter and of such length as to span the width of wall 17 when it is inserted into opening 18. At its extreme inner end, stem 37 is provided with a shoulder 40 for preventing its removal, and further has a lateral slot 41 which allows end portions 42—42 to be pinched towards each other.

It is preferred to construct the improved hair curling device of any of the well-known synthetic plastics, since such materials are readily adaptable to mass production using known processes. These materials further are pleasing in appearance, easy to clean, and inexpensive to produce.

Manufacture and assembly of the improved hair curling device is both easy and economical. All parts are readily moldable when using synthetic plastics. To assemble the parts, capping member 28 is inserted in place over piston 20, after which drive ratchet member 32 is placed on shaft 24 by applying pressure on it to slip it over the rounded face 43 of shaft 24, thus pinching ends 27—27 slightly together. Once in position on the shaft, ends 27—27 are permitted to spring apart and drive member 32 is held in position by shoulder 25.

The fingers 36—36 on drive member 32 thereafter are engaged in tracks 19—19 and piston 20 is directed into core 15 until it reaches its extreme position, as shown in Figure 2. With piston 20 in position within the core, capping member 28 is press fitted into the open end 16, where it acts to seal the tracks 19—19 and drive mechanism and also as a stop engageable by drive ratchet 32 to limit the outward movement of piston 20.

Idler stem 37 is positioned through opening 18, similarly, by applying pressure on it to slip the rounded face 44 of the stem through opening 18, thereby pinching ends 42—42 together. After the stem portion 39 completely spans walls 17, ends 42—42 are allowed to spring apart so that shoulder 40 prevents stem removal. As seen in Figure 2, face 44 further acts as a stop to limit the inward movement of piston 20 into core 15 to thereby prevent stripping of fingers 36—36 and tracks 19—19.

The herein disclosed improved hair curling device may, if desired, be used together with any of the well-known heating, steaming, or other means for softening the hair, or with water or any hair waving lotion. The annular curling comb 14 is first brought to a position adjacent the head, and the end of a lock of hair is engaged in teeth 13. Pressure then is applied to the handle portion, whereupon teeth 23, 35 are caused to engage each other and lock ratchet member 32 to piston 20. Continued pressure thereafter is transferred through fingers 36—36 to the tracks 19—19, causing body 11 and annular comb 14 to spin and wind the hair therearound. When the lock of hair to be curled is long, the handle is used to withdraw piston 20 which first disengages its teeth 23 from the teeth 35 of drive ratchet 32. Thereafter as piston 20 is withdrawn, drive ratchet 32 spins freely on shaft 24, and the hair curled about body 11 and annular comb 14 is in no way disturbed. Piston 20 again is directed into core 15, this action being repeated until the entire lock of hair is curled. At the end of the hair winding operation, the curl is stripped from body 11 and annular comb 14, and secured in place by any of the well-known used clips or hairpins. After sufficient time elapses to get the desired setting, straight comb 21 may be conveniently used to comb out the hair.

While the structure described forms a satisfactory hair

curling device, it is to be understood that other forms may be utilized, and that the embodiment herein enumerated and described is for the purpose of illustration and not intended to limit and define the invention. Other forms readily suggest themselves; namely, means may be provided for the interchanging of different size annular combs to thus achieve curls of various sizes, and a spring may be provided in core 15 for yieldably retaining piston 20 in a normal outwardly extended position.

What is claimed is:

1. A hair curling device, comprising: a cylindrical spindle which is provided with an annular comb having teeth extending substantially parallel to the spindle axis, the said spindle having an inner bore and a steep pitched screw track described on the wall forming a portion thereof, a piston axially movable within said bore, a spindle one-way drive member rotatably and axially movable on said piston, means on said member engageable with said track and cooperable therewith for compelling relative rotation between said spindle and said member as said piston is axially moved, structure for limiting axial movement of said member on said spindle, said structure including an annular array of teeth carried by said piston; and a comparable annular array of teeth carried by said member and lockably engageable with the teeth on said piston upon axial movement thereof in a first direction, thereby to effect turning of said spindle, said teeth being disengaged during piston movement axially in a direction opposed to said first direction, thereby to allow said member to spin freely on said piston and permit reset of the curling device.

2. A hair curling device, comprising: a cylindrical spindle which is provided with an annular comb having teeth extending substantially parallel to the spindle axis, the said spindle having an inner bore and a steep pitched screw track described on the wall forming a portion thereof, a piston axially movable within said bore, a spindle one-way drive member rotatably and axially movable on said piston, means on said member engageable with said track and cooperable therewith for compelling relative rotation between said spindle and said member as said piston is axially moved, structure for limiting axial movement of said member on said spindle, said structure including an annular array of teeth carried by said piston; a comparable annular array of teeth carried by said member and lockably engageable with the teeth on said piston upon axial movement thereof in a first direction, thereby to effect turning of said spindle, said teeth being disengaged during piston movement axially in a direction opposed to said first direction, thereby to allow said member to spin freely on said piston and permit reset of the curling device, and an idler stem concentric with said spindle, rotatably attached thereto, and extending beyond said annular comb for supporting the device during hair curling operation.

3. The curling device as described in claim 2, and additionally including a shoulder on said piston and engageable by said member to limit relative movement of said teeth from each other, and cover means at the entrance of said bore for preventing accidental removal of said piston and said member therefrom.

4. A hair curling device, comprising: a cylindrical spindle which is provided with means for gripping and engaging a lock of hair, the said spindle having an inner bore and a steep pitched screw track inscribed in the inner wall forming said bore, a piston axially movable within said bore and having a handle in the form of a straight comb structure extending beyond said spindle, a rotatably and slidably movable member carried by said piston, finger means on said member engageable in said track and cooperable therewith for compelling relative rotation between said spindle and said member as said piston is axially moved, structure for limiting axial movement of said member on said piston, said structure including an annular band of teeth carried by said piston,

a comparable annular band of teeth carried by said member and lockably engageable with the teeth on said piston upon axial piston movement in a first direction, thereby to effect turning of said spindle, and a shoulder carried on said piston and engageable by said member to 5 limit relative movement of said teeth from each other during piston movement axially in a direction opposed to said first direction, thereby to allow said member to spin

freely on said piston and permit reset of the curling device.

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