July 21, 1942. E. R. BOALS 2,290,578

EXPANSIBLE HAIR CURLING DEVICE

Filed Sept. 6, 1941

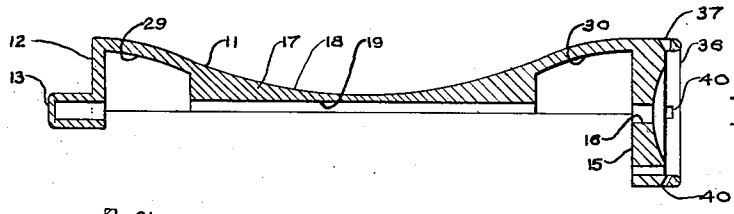


Fig. 1

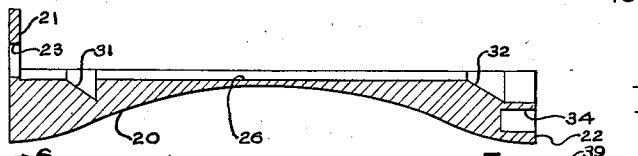


Fig. 2

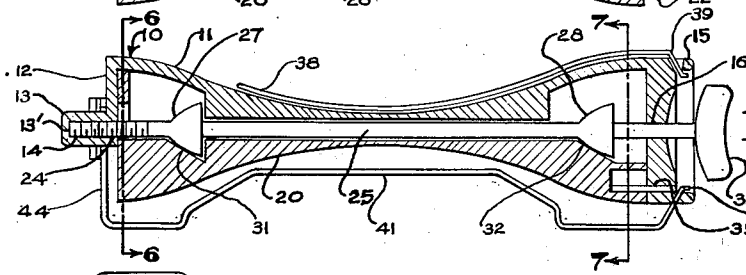


Fig. 3

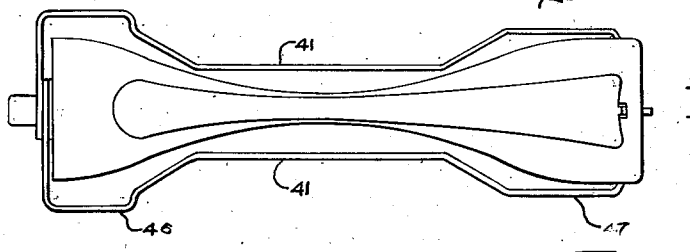


Fig. 4

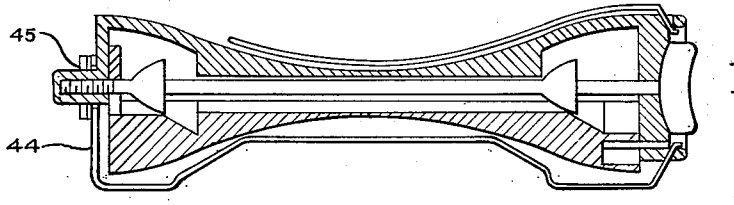


Fig. 5

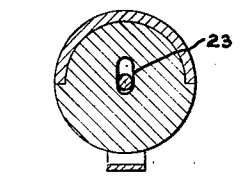


Fig. 6

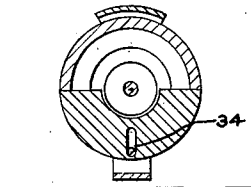


Fig. 7

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EXPANSIBLE HAIR CURLING DEVICE

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7 Claims. (Cl. 132—33)

This invention relates to expansible hair curling device.

The general object of the invention is to provide a hair curling device wherein the ends of a strand of hair are secured to and wrapped about a hair curling device after which the device is expanded to place the hair under tension so that a better curl is secured.

An additional object of the invention is to provide a hair curling device including a pair of relatively slidable members having means thereon for causing the members to separate.

A further object of the invention is to provide a hair curling device including means for engaging the ends of a strand of hair and having clamping means thereon for producing tension in the hair after it is clamped in place.

Other objects and advantages of my invention will be apparent from the following description taken in connection with the accompanying drawing, wherein:

Fig. 1 is a longitudinal sectional view of the upper or relative stationary part of the hair curler.

Fig. 2 is a longitudinal sectional view of the lower or movable part of the curler.

Fig. 3 is a longitudinal sectional view with parts in elevation showing the assembled curler.

Fig. 4 is a plan view of the curler.

Fig. 5 is a view similar to Fig. 3 showing the curler expanded.

Fig. 6 is a section taken on line 6—6 of Fig. 3, and

Fig. 7 is a section taken on line 7—7 of Fig. 3.

Referring to the drawing by reference characters, I have shown my invention as embodied in an expansible hair curling device which is indicated generally at 10. As shown the device includes a body member 11 which is adapted to engage the head of the person whose hair is being curled. The body 11 includes a front end flange 12 from which a boss 13 projects. The boss 13 includes a cylindrical hole 13' which is threaded as at 14. The rear end of the body 11 includes an end 15 which has an axial hole 16 therein. The intermediate portion 17 of the body is arcuately curved as at 18 about its periphery and adjacent the curved portion 18 the body is provided with a semi-cylindrical recess 19 which aligns with the holes 13' and 16. Mounted on the body I show a hair clamping body member 20 which includes an end 21 slidable along the inner surface of the end 12 and includes the end portion 22 slidable along the inner surface of the end 15.

The end 21 is slotted as at 23 to receive the threaded tip 24 of an operating member 25. The member 20 includes a semi-cylindrical recess 26 in which the operating member 25 is arranged. The recess 26 is in substantial alignment with the recess 19 previously mentioned. The operating member 25 includes a pair of cam members 27 and 28 with the cam member 27 disposed partly in a recess 29 in the member 11 and with the cam member 28 partly disposed in a recess 30 in the member 11. The cam member 27 is adapted to engage a cam surface 31 and the cam member 28 is adapted to engage a cam surface 32, the cam surfaces 31 and 32 being on the member 20 previously mentioned.

At its rear end the rod 25 includes an operating handle 33 and the construction is such that as the handle 33 is rotated the threaded end 24 advances in the threaded hole 13' to cause the cam members 27 and 28 to advance engaging the cam surfaces 31 and 32 and thus causing the member 20 to be moved outwardly with the tip 24 moving relatively to the slot 23. The rear end of the member 20 is provided with an end opening slot 34 in which a pin 35 which has a tight driving fit in the end 15 is mounted. The end of the slot 23 engages the tip 24 and the pin 35 engages the wall of the slot 34 limiting the outward movement or expansive action of the device.

The end 15 includes a cylindrical, rearwardly extending flange 36 which is provided with a hole 37 in which a resilient hair engaging clamping arm 38 is mounted. The clamping arm 38 includes a bent end portion 39 and the construction is such that the arm, due to its resiliency, normally moves to engage a strand of hair wrapped about the body members 11 and 20.

The flange 36 is also provided with a plurality of holes 40 which are shown as three in number, and in each of the holes I arrange a finger 41. Each of the fingers 41 includes an end portion 42 arranged in the associated hole 40 and also includes an intermediate portion 44 which has an aperture 45 which is mounted on the boss 13. The fingers are made of resilient material and include loop portions 46 and 47 which are of such nature that the end 44 can be sprung outwardly and away from the boss 13 permitting the clamping fingers to be moved so that the hair strand can be wrapped about the body members 11 and 20. The end 42 is preferably of such construction that this end may be moved outwardly from the slot 40 so that the clamping finger may be entirely removed.

In use the clamping fingers 41 are removed and the end of the strand of hair which is to be curled is inserted under the clamping arm and afterwards the arm is released thus holding the free end of the strand.

The curler is then rotated winding the hair upon the body members 11 and 20. When the hair is sufficiently wrapped on the body members, the clamping fingers 41 are mounted in place and then the handle 33 is rotated causing the cam members 27 and 28 to engage their respective cam surfaces and causing a separating

movement between the members 11 and 20. This stretches the hair and it is allowed to remain in this position until it is thoroughly dried after which the curler is removed.

From the foregoing description it will be apparent that I have invented a novel hair curler which can be economically manufactured and which is highly efficient for its intended purpose.

Having thus described my invention, I claim:

1. In an expansible hair clamping device, a pair of body members mounted for relative sliding movement towards and from each other, a rod mounted for rotation on one of the members, said rod and one of the members having interengaging threaded portions, spaced cam portions mounted on said rod for rotation with the rod and for axial movement with the rod, and cam portions on the other member engageable with said first mentioned cam portions.

2. In an expansible hair clamping device, a pair of elongated body members mounted to move towards and from each other, a rod mounted for rotation on one of the members, one of said members and said rod having inter-engaging threaded portions and cam surfaces fixedly mounted on the rod and coacting cam surfaces on one of the members and operable to spread the members when the rod is shifted axially, a plurality of hair clamping fingers pivotally mounted on one end of the members, and means at the other end of the members releasibly engaging the free ends of the fingers and means to rotate said rod.

3. In an expansible hair curling device, a body member having a hair engaging arm pivotally mounted thereon, a second body member, means to mount the second body member on the first body member for sliding movement towards and from the first member, a rod mounted for rotation on the first body member, said rod and said first body member having inter-engaging threaded portions, spaced cam members mounted on said rod, said second body member having cam surfaces engageable with said cam members rigidly, a plurality of engaging fingers pivotally mounted on the first body member at one end thereof, means on the other end of the first body member releasibly engaging the free end of the fingers and means to rotate said rod.

4. In an expansible hair curling device, a body member, a second body member, means to mount the second body member on the first body member for sliding movement towards and from each other, a rod mounted for rotation on the first body member, said rod and said first body member having inter-engaging threaded portions, spaced cam members rigidly mounted on said rod, said second body member having cam surfaces engageable with said cam members, a clamping arm mounted on one of said members, a plurality of spaced engaging fingers pivotally mounted on the first body member at one end thereof, means on the other end of the first body member releasibly engaging the free end of the fingers and means to rotate said rod.

5. In an expansible hair clamping device, a pair of elongated complemental members, one of said members including a body having a flange at the front end thereof, a hollow boss on said flange, the interior of said boss being threaded, the rear end of said one member having an end thereon, said end having a hole therethrough, said hole being coaxial with said boss, the intermediate portion of said body having an arcuate exterior, said body having a recess on the inner surface, the second member having an arcuate exterior surface and having an inner recess, said first and said second members being in sliding engagement, and an operating member having a threaded front end engaging said boss threads and having a hand engaging portion at the rear end thereof, said operating member being disposed in said recesses, said operating member having an integral cam member adjacent each end portion thereof, both of said cam members facing in the same direction, said second member having cam surfaces engageable with said cam members, said first member end having a pin thereon and projecting inwardly therefrom, said second member having a slot receiving said pin.

6. In an expansible hair clamping device, a pair of elongated complemental members, one of said members including a body having a flange at the front end thereof, a hollow boss on said flange, the interior of said boss being threaded, the rear end of said one member having an end thereon, said end having a hole therethrough, said hole being coaxial with said boss, the intermediate portion of said body having an arcuate exterior, said second member having an arcuate exterior surface, said second member having a flange at one end, said flanges being in sliding engagement, said first member having a recess in which said second member flange slides, said second member flange having a slot therethrough, and an operating member having a threaded front end engaging said boss threads and having a handle portion at the rear end thereof, said operating member being disposed in said slot, said operating member having an integral cam member adjacent each end portion thereof, both of said cam members facing in the same direction, said second member having cam surfaces engageable with said cam members.

7. In an expansible hair clamping device, a pair of elongated complemental members, one of said members including a body having a flange at the front end thereof, a hollow boss on said flange, the interior of said boss being threaded, the rear end of said one member having an end thereon, said end having a hole therethrough, said hole being coaxial with said boss, the intermediate portion of said body having an arcuate exterior, said body having a semi-cylindrical recess on the inner surface, said semi-cylindrical recess being coaxial with said boss and said end hole, the second member having an arcuate exterior surface and having a semi-cylindrical inner recess complemental to the first mentioned semi-cylindrical recess, said second member having a flange at one end, said flanges being in sliding engagement, said first member having a recess in which said second member flange slides, said second member flange having a slot therethrough, an operating member having a threaded front end engaging said boss threads and having a handle portion at the rear end thereof, said operating member being disposed in said semi-cylindrical recesses and in said slot, said operating member having an integral cam member adjacent each end portion thereof, both of said cam members facing in the same direction, said second member having cam surfaces engageable with said cam members, said first member end having a pin thereon and projecting inwardly therefrom, said second member having a slot receiving said pin, and a hair clamping finger movably mounted on said boss portion.

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