July 10, 1945. W. S. DICKERSON 2,380,154

HAIR CURLER

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Fig. 1.

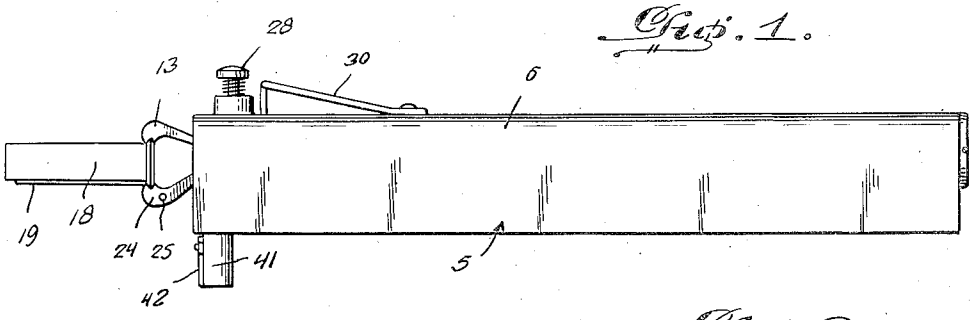


Fig. 2.

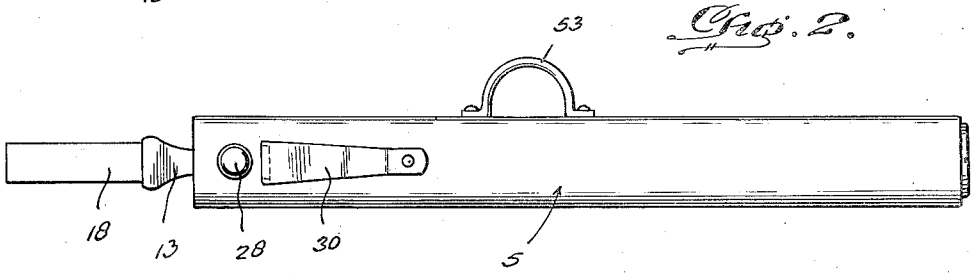


Fig. 3.

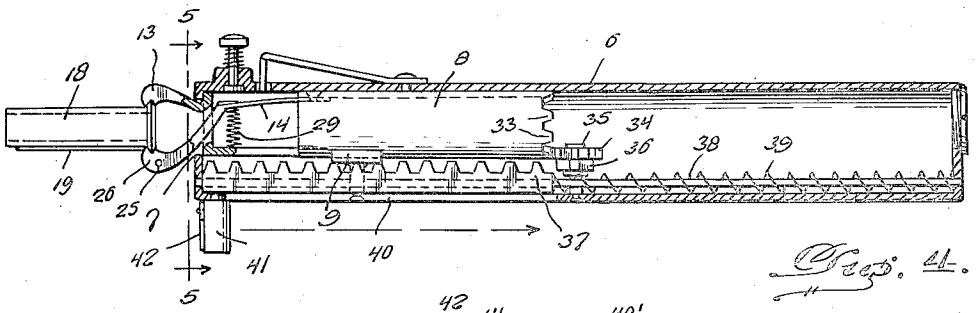


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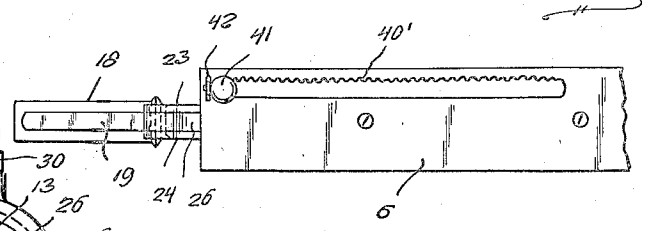
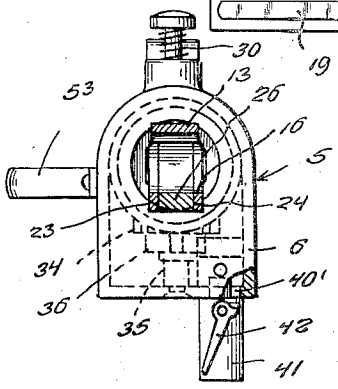


Fig. 5.



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Fig. 6.

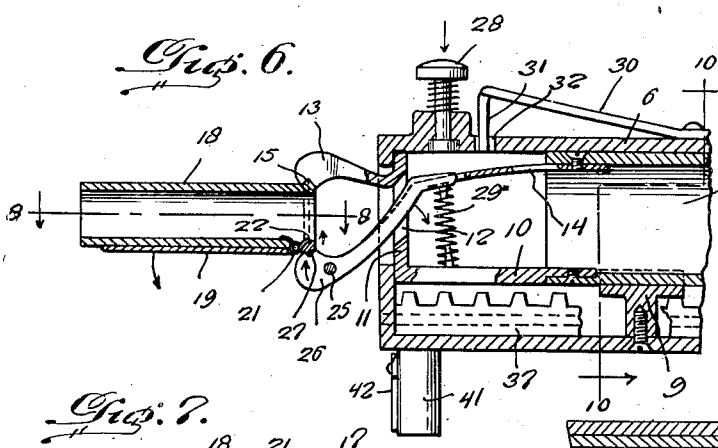


Fig. 10.

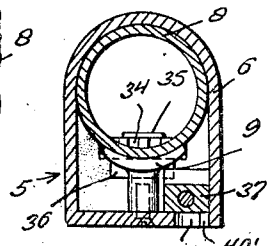


Fig. 7.

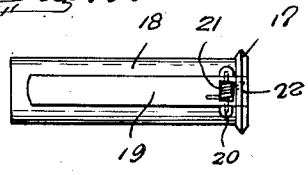


Fig. 9.

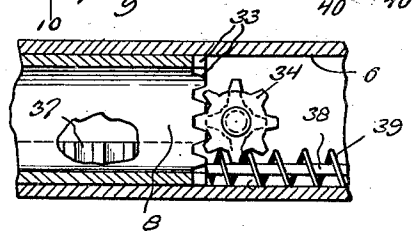


Fig. 8.

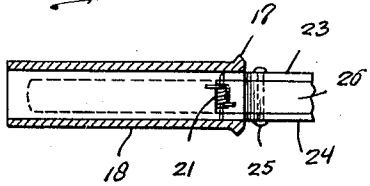


Fig. 12.

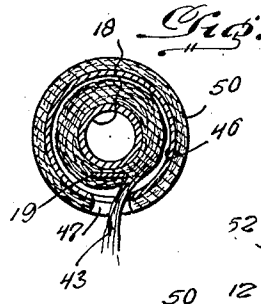


Fig. 13.

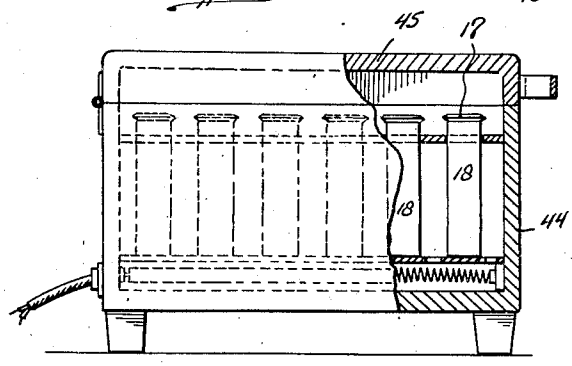
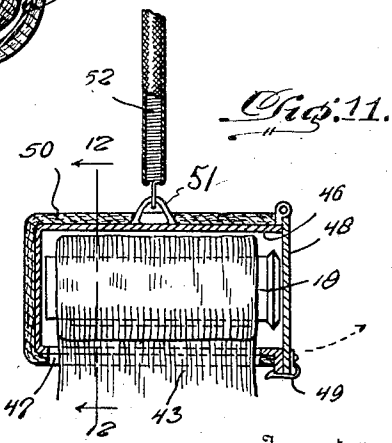


Fig. 11.



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UNITED STATES PATENT OFFICE

2,380,154

HAIR CURLER

Winifred S. Dickerson, Bluefield, W. Va.

Application March 29, 1944, Serial No. 528,583

13 Claims. (Cl. 132—34)

The present invention relates to new and useful improvements in hair curlers of a type embodying a winding mandrel which has been preheated and on which the hair is wound together with an insulated container in which the mandrel, with the hair wound thereon is placed, to protect the scalp of a person from the heat of the mandrel while the enclosed mandrel is supported in a position for a predetermined period while the hair is being curled.

An important object of the present invention is to provide means for rotating the mandrel in order to wind the hair thereon without necessitating the heated mandrel coming into contact with the fingers of the operator.

It is a further object of the invention to provide means carried by the rotating mechanism for opening and closing the clamping member of the mandrel which serves to clamp the hair thereon.

A further object of the invention is to provide a hair curling apparatus of this character by means of which the aforesaid object may be carried out in a simple and practical manner and which at the same time is efficient and reliable in performance and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof wherein like numerals refer to like parts throughout, and in which

Figure 1 is a side elevational view of the spinner or rotating mechanism for the mandrel and with the mandrel shown in position thereon,

Figure 2 is a top plan view,

Figure 3 is a longitudinal sectional view,

Figure 4 is a fragmentary bottom plan view,

Figure 5 is a sectional view taken substantially on a line 5—5 of Figure 3,

Figure 6 is an enlarged fragmentary longitudinal sectional view of the front end of the spinner,

Figure 7 is a side elevational view of the mandrel showing the clamp carried thereby,

Figure 8 is a longitudinal sectional view taken substantially on a line 8—8 of Figure 6,

Figure 9 is a fragmentary longitudinal sectional view of the spinner showing the drive connection therefor,

Figure 10 is a sectional view taken substantially on a line 10—10 of Figure 6,

Figure 11 is a longitudinal sectional view through the container for the mandrel and the suspension means therefor while the mandrel and container are in position on the head of a person,

Figure 12 is a sectional view taken substantially on a line 12—12 of Figure 11, and

Figure 13 is a side elevational view of the heater for the mandrel and with parts broken away and shown in section.

Referring now to the drawings in detail, wherein for the purpose of illustration I have disclosed a preferred embodiment of the invention, the numeral 5 designates a spinner generally and which includes a casing 6 of tubular form with an opening 7 at one end and having a tube 8 rotatably supported therein on a bearing 9 which forms a seat for the bottom of the tube and which maintains the tube within the upper portion of the casing.

To the front end of the tube 8 is secured a longitudinally extending bracket 10 having a transverse extension 11 at its front end provided with an opening 12 and on one edge of the opening 12 is formed a stationary jaw 13 which projects outwardly through the opening 7.

A spring jaw 14 has one end attached to the tube 8, adjacent its front end, the jaw 14 extending forwardly through the openings 7 and 12 and the jaws 13 and 14 have notches 15 and 16 in their opposed faces adapted for engaging a flange 17 formed on one end of a tubular mandrel 18.

The mandrel 18 includes a clamping member 19 extending longitudinally of the mandrel, the clamping member being pivotally mounted adjacent one end on a pin 20 carried by the mandrel and on which a coil spring 21 is also carried for urging the clamping member into a closed position against the mandrel.

The flange 17 is interrupted to receive a flange segment 22 adjacent the pivoted end of the clamping member 19, the segment 22 forming a continuation of the flange 17.

The outer end of the jaw 14 is bifurcated to form spaced parallel arms 23 and 24 at its outer end as shown to advantage in Figure 5 of the drawings, between which a pin 25 extends for pivotally supporting a jaw segment 26 between the arms 23 and 24, the segment 26 likewise having a notch 27 for engagement with the flange segment 22 of the clamping member 19.

The pivoted jaw segment 26 is movable independently of the jaw 14 by means of a manually operable plunger 28 slidably carried in the casing 6 and having its inner end adapted for engaging the rear end of the jaw segment 26 whereby a downward pressure on the plunger, as indicated by the arrow in Figure 6 of the drawings, will

cause a radially inward movement of the flange segment 22 of the mandrel and thus open the clamping member 19. A coil spring 29 held by the extension 10 urges the jaw segment 26 into an opposite direction.

The jaw member 14 together with the pivoted jaw segment 26 is released from the mandrel by means of a spring lever 30 which is attached at one end to the top of the casing 6 and is formed with an inwardly extending plunger 31 working through an opening 32 in the casing for engaging the jaw 14 adjacent its rear end. A downward movement of the lever 30 will move the jaw 14 downwardly to release the mandrel.

The tube 8 is formed with teeth 33 at its rear end operatively engaged with a gear 34 freely rotatable on a pin 35 supported in the casing 6, the gear having a pinion 36 attached thereto for engagement with a rack-bar 37 which is slidably mounted on a bar 38 supported in the opposite end of the casing 6. A coil spring 39 mounted on the bar 38 behind the rack-bar 37 urges the rack-bar into a forward position.

The bottom of the casing 6 is formed with a longitudinal slot 40 adjacent its front end and through which a finger grip 41 projects for attaching to the bar 37. One edge of the slot 40 is formed with teeth 40' adapted for engagement by one edge of a pivoted locking member 42 carried by the finger grip 41 to secure the rack-bar in any desired position of its travel. The pinion 36 is disposed in the path of travel of the rack-bar so that upon a rearward sliding movement of the rack-bar the pinion 36 and gear 34 will be rotated, thus causing a rotation of the tube 8 and a similar rotation of the mandrel 18 carried at the front end of the tube by means of the jaws 13 and 14.

The ratio of the pinion 36 with the gear 34 is preferably arranged so that a single rearward sliding movement of the rack-bar 37 will be sufficient to rotate the mandrel 18 to produce a complete winding movement of the hair 43 thereon.

The mandrels 18 are first preheated in an electric or other heating container 44 having a hinged lid 45 to provide access thereto, with the flanges 17 of the mandrel positioned uppermost so that the same may be gripped by the jaws 13 and 14 and removed from the heater without the mandrel coming into contact with the fingers of the operator. After one of the mandrels has been removed from the heater the pivoted jaw segment 26 is actuated by the plunger 28 to open the clamping member 19 to permit the hair to be clamped to the mandrel, after which the finger-grip 41 is moved rearwardly of the casing which causes a rotation of the tube 8 through the rack-bar 37, pinion 36, gear 34 and the teeth 33 on the tube and since the jaw members 13 and 14 are carried by the tube 8 the mandrel will be rotated so as to wind the hair thereon.

After the winding of the hair on the mandrel has been completed the mandrel is then placed within a container 46 having a slotted opening 47 to accommodate the hair adjacent the scalp, the end of the container being closed by a hinged door 48 and secured in a closed position by a catch 49. The container 46 is enclosed within a felt or other cover 50 to act as an insulator to protect the scalp from the heat of the mandrel.

An eye 51 is carried by the container 46 to which a spring suspension device 52 is attached and by means of which the mandrel and container may be supported out of direct contact with the scalp, the member 52 being supported from a suitable overhead structure (not shown).

One side of the casing 6 is provided with a finger-grip 53, preferably engageable by the middle finger of the operator to assist in holding the casing during the manipulation of the finger-grip 41 for rotating the spinner during the winding of the hair on the mandrel.

It is believed the details of construction, manner of operation and advantages of the device will be readily understood from the foregoing without further detailed explanation.

Having thus described the invention what I claim is:

1. In combination a hair winding mandrel including a hair clamping member, and a spinner for rotating the mandrel and embodying means for gripping the mandrel and means carried by the gripping means for actuating the clamping member.

2. In combination a hair winding mandrel including a pivoted hair clamping member, and a spinner for rotating the mandrel and embodying means for gripping the mandrel and means carried by the gripping means for actuating the clamping member.

3. In combination a hair winding mandrel including a pivoted hair clamping member, and a spinner for rotating the mandrel and embodying mandrel gripping jaws carried by the spinner and a jaw carried by the mandrel gripping jaws for actuating the clamping member.

4. In combination a hair winding mandrel including a pivoted hair clamping member, and a spinner for rotating the mandrel and embodying mandrel gripping jaws carried by the spinner, a jaw carried by the mandrel gripping jaws for actuating the clamping member and means for independently actuating the last-named jaw.

5. In combination a hair winding mandrel including a pivoted hair clamping member, a spinner for rotating the mandrel and embodying mandrel gripping jaws carried by the spinner, a jaw carried by the mandrel gripping jaws for actuating the clamping member and means for independently moving the mandrel gripping jaws and the clamping member actuating jaw.

6. A device of the class described comprising a spinner including a casing, a member rotatably mounted in the casing, means at one end of the member for attaching a hair winding mandrel thereto, a manually operable rack-bar slidably carried by the casing, and means operatively connecting the rack-bar to the rotatable member for actuating the latter.

7. A device of the class described comprising a spinner including a casing, a member rotatably mounted in the casing, means at one end of the member for attaching a hair winding mandrel thereto, a manually operable rack-bar slidably carried by the casing, means operatively connecting the rack-bar to the rotatable member for actuating the latter, and means for securing the rack-bar in a fixed position of its travel.

8. A device of the class described comprising a spinner including a casing, a member rotatably mounted in the casing, means at one end of the member for attaching a hair winding mandrel thereto, a manually operable rack-bar slidably carried by the casing, means operatively connecting the rack-bar to the rotatable member for actuating the latter, and means for locking the rack-bar against movement at a selected point of its travel.

9. A device of the class described comprising a spinner including a casing, a tube rotatably

mounted in the casing, means at one end of the tube for attaching a hair winding mandrel thereto, a manually operable reciprocating member carried by the casing, and means operatively connecting said member to the other end of the tube for rotatably actuating the latter.

10. A device of the class described comprising a spinner including a casing, a tube rotatably mounted in the casing, means at one end of the tube for attaching a hair winding mandrel thereto, a manually operable reciprocating member carried by the casing, means operatively connecting said member to the other end of the tube for rotatably actuating the latter, said first-named means comprising a pair of mandrel gripping jaws and including a pivoted jaw, and means carried by the casing for actuating said pivoted jaw.

11. In combination a hair curling mandrel and a spinner therefor, said mandrel including a pivoted hair clamping member, and said spinner including a rotatable tube, a fixed jaw carried at one end of the tube, a spring influenced jaw carried at said end of the tube and cooperating with the fixed jaw to engage the mandrel, and a pivoted member carried by one of the jaws adapted to actuate the clamping member.

12. In combination a hair curling mandrel and a spinner therefor, said mandrel including a pivoted hair clamping member, and said spinner including a rotatable tube, a fixed jaw carried at one end of the tube, a spring influenced jaw carried at said end of the tube and cooperating with the fixed jaw to engage the mandrel, and a pivoted member carried by the pivoted jaw adapted to actuate the clamping member.

13. In combination a hair curling mandrel and a spinner therefor, said mandrel including a pivoted hair clamping member, and said spinner including a rotatable tube, a fixed jaw and a movable jaw carried at one end of the tube, a jaw segment pivotally carried by the movable jaw for actuating the clamping member, and means for independently actuating the movable jaw and said jaw segment.

WINIFRED S. DICKERSON.