Feb. 25, 1941. M. DUNNER 2,232,776

HAIR CURLER

Filed March 8, 1939 2 Sheets-Sheet 1

Fig. 1

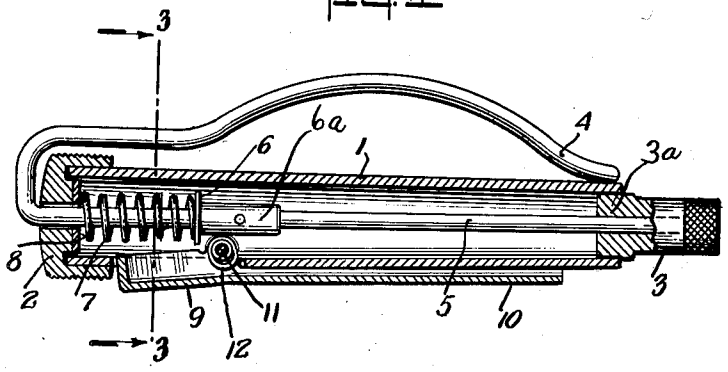


Fig. 2

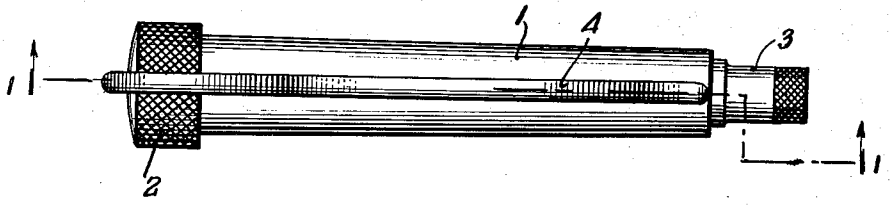


Fig. 3

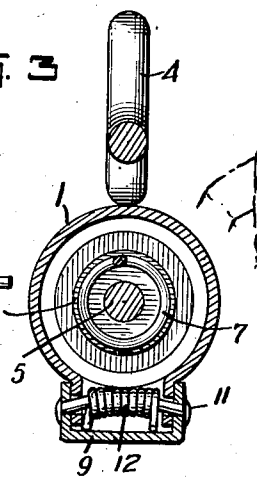


Fig. 4

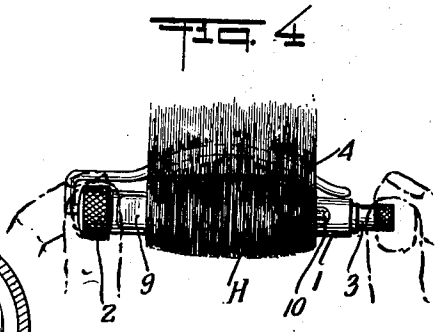
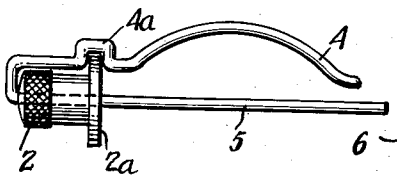


Fig. 5



INVENTOR.
Max Dunner

BY Mocks Blum

ATTORNEYS

Feb. 25, 1941. M. DUNNER 2,232,776

HAIR CURLER

Filed March 8, 1939 2 Sheets-Sheet 2

FIG. 6

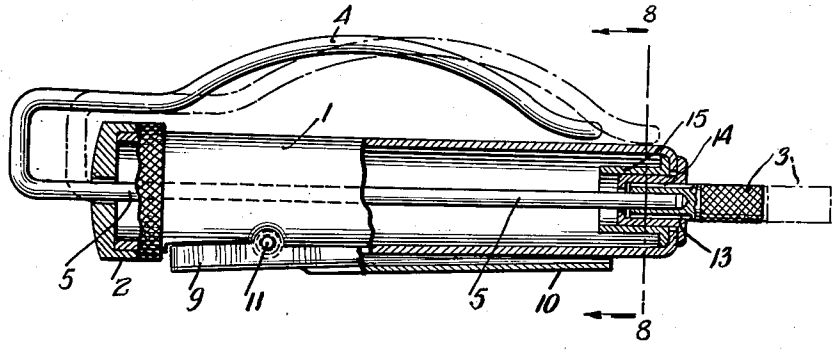


FIG. 7

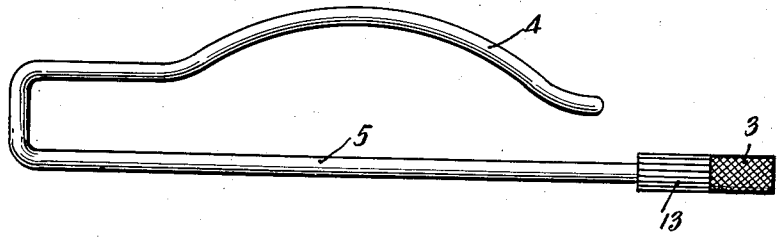
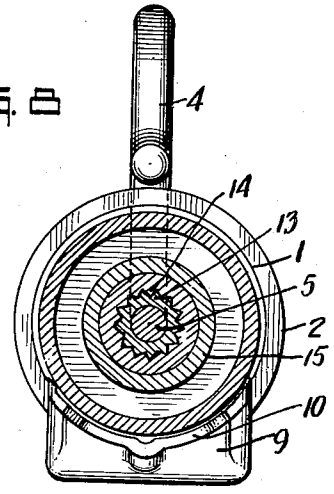


FIG. 8



INVENTOR.
Max Dunner

BY Mocks & Plum

ATTORNEYS

Patented Feb. 25, 1941 2,232,776

UNITED STATES PATENT OFFICE

2,232,776

HAIR CURLER

Max Dunner, New York, N. Y., assignor to William Finkelstein, New York, N. Y.

Application March 8, 1939, Serial No. 260,507

4 Claims. (Cl. 132—33)

My invention relates to a new and improved hair curler.

One of the objects of the invention is to provide an improved hair curler of the type which is allowed to remain on the hair, until the curl has set.

Another object of the invention is to provide a curler of this type which shall eliminate the usual pivoted band, so that it will not be necessary to close such a band on the curler when the hair has been wound upon the device. Likewise, after the curl has been set, the curl can be removed from the curler by a longitudinal sliding movement.

Another object is to provide a device which can be easily manufactured and assembled and in which the hair will not be caught in the clamp or in the external bar.

Other objects will be stated in the annexed description and drawings which illustrate preferred embodiments thereof, it being understood that the above statement of the objects of my invention is intended generally to explain the same without limiting it in any manner.

Fig. 1 is a section, partially in elevation, on the line 1—1 of Fig. 2.

Fig. 2 is a top plan view of the improved device.

Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

Fig. 4 is an elevation which illustrates the use of the device.

Fig. 5 is a side elevation which shows a modification of Fig. 1.

Fig. 6 is a view similar to Fig. 1, showing a third embodiment of the invention.

Fig. 7 is a side elevation showing the holding bar of Fig. 6.

Fig. 8 is a sectional view on the line 8—8 of Fig. 6.

The device illustrated in Figs. 1–4 has a tubular or tapered hollow body 1, which can be made of aluminum or other suitable metal. A clamping bar 10 is connected to lugs of the body 1, by means of a pivot pin 11. The usual torsion spring 12 holds the clamping bar 10 in its operative position. In said position the end of the clamping bar 10 abuts the body 1. This clamping bar 10 is of concavo-convex cross-section so that only the longitudinal edges of said clamping bar 10 contact with the outer periphery of the body 1.

A holding member or holding bar has an inner shank 5 and an outer shank 4. This holding member is preferably made of aluminum or of an aluminum alloy and it is flexible and resilient. It has the normal shape shown in Fig. 1, in which the free tip of the outer curved shank 4 either abuts or is very close to the periphery of the tube 1. The inner shank 5 passes loosely through a longitudinal bore of a cap 2. This cap 2 has a tight fit upon the adjacent end of the body 1. Said cap has a lateral end-wall which, in effect, is a lateral end-wall of the mandrel and its bore serves as a bearing for the shank 5. The inner shank 5 is longitudinally movable relative to the cap 2 and the member 1. The friction or tight fit of the cap 2 on the member 1 is sufficient to retain these elements in assembled position, although they can be detached by using suitable force. A collar 6a having a flange 6, is fixed to the inner shank 5. A compression spring 7 has one end abutting the flange 6. The other end of the compression spring 7 abuts a washer 8 which can be made of brass or other metal which is harder than aluminum. The washer 8 serves as an abutment washer to take up the thrust of the spring 7. The shank 5 can be inserted through the bore of the cap 2, and the washer 8 and spring 7 and the collar 6a can then be mounted on the shank 5, and the collar 6a is then fixed to the shank 5 in any suitable manner. The shank 5 can then be inserted through the member 1. The parts can thus be very easily assembled. A ferrule 3 has a tight fit upon the shank 5. This ferrule 3 has an inner bearing portion 3a which fits closely but turnably in the member 1. Said ferrule 3 has a knurled end portion. Said ferrule 3 can be slidably assembled with shank 5, after said shank has been pushed through tube 1. A tight or drive fit is sufficient to assemble members 3 and 5.

When the parts are thus assembled, the ferrule 3 can be held fixed by one hand of the operator as shown in Fig. 4, and the tube 1 can be turned freely relative to the ferrule 3. The holding member 4, 5 is also held fixed relative to the member 1 and the head 2, when the ferrule 3 is held in one hand of the operator.

The member 1 has a cut-out portion which the finger-piece 9 of the clamping bar 10 enters when the clamping bar 10 is moved to the inoperative position. This prevents the hair from catching between the finger-piece 9 and the member 1.

In order to use this device, the finger-piece 9 is pressed inwardly and the end of the lock of hair is located between the clamping bar 10

of the member 1. The finger-piece 9 is then released and the spring 12 turns the clamping bar 10 around the pivot pin 11, so as to clamp the end of the lock of hair between the clamping bar 10 and the member 1.

The operator then holds the head 2 in one hand, and the ferrule 3 in the other hand. The head 2 is then turned in unison with the member 1 and the clamping bar 10, while the ferrule 3 and the member 4, 5 are held against turning. The strand of hair is thus wound spirally or helically around the body 1 and the clamping bar 10. The spring 7 forces the washer 8 against the head 2 with sufficient friction so as to prevent the member 1 from turning backwards, when the device is released.

The device is allowed to remain on the lock of hair H until the lock of hair has dried and set into curled form. The clamp 10 is then moved slightly away from its operative position so as to release the tip of the lock of hair and the curled lock of hair is then slid longitudinally off the body 1, as the resilient member 4 yields sufficient to enable this to be done very easily. The hair is wound around tube 1 and clamp 10 with sufficient looseness so that the clamp 10 can be moved to release the tip of the curled lock of hair.

In the embodiment shown in Fig. 5, the cap 2 is integral with an external flange 2*a*. In this embodiment the outer bar 4 has a U-shaped portion 4*a* which closely surrounds a portion of the flange 2*a*. Otherwise the parts are the same as those previously described. The flange 2*a* confines the curled lock of hair H so that it cannot slip over the outer wall of the cap 2.

The embodiment of Figs. 6–8 eliminates the spring 7. In this embodiment, the ferrule 3 is provided with a longitudinal extension 13. This extension 13 is provided with radial teeth, as clearly shown in Fig. 8. The ferrule 3 has the same tight or drive fit on shank 5, as in the previous embodiment. Hence, while the ferrule 3 can be detached longitudinally from the inner shank 5 by using sufficient force, the ferrule 3 and the shank 5 are connected so that shank 5 is held against turning when ferrule 3 is held against turning.

A sleeve 15 is located at the tip of the tube 1 and this sleeve 15 has a flange which abuts the inwardly-turned end wall of the narrow end of the tube or mandrel 1. An outer sleeve 14 has a head or flange which abuts the inwardly-turned end wall of the tube 1. The adjacent longitudinal wall-portions of the members 14 and 15 have a tight or drive fit. The inner longitudinal wall of the sleeve 14 has teeth which mesh with the teeth of the extension 13. The holding bar 4, 5 is longitudinally movable relative to the body 1, in unison with ferrule 3.

In order to assemble the parts, the members 14 and 15 are located and connected to each other and connected to the tip of mandrel 1, while the cap 2 is displaced from the larger end of the mandrel 1. This can be easily done by means of suitable assembly tools. The shank 5 and the cap 2 are then assembled with the body 1 and with the ferrule 3.

When the holding member 4, 5 is in the full-line position shown in Fig. 6, the teeth of the member 13 mesh with the teeth of the member 14, so that the cap 2 and the body 1 cannot turn relative to the ferrule 3 or relative to the holding member 4, 5. When the shank 5 is moved to the broken-line position shown in Fig. 6, the extension 13 is pushed out of the sleeve or eyelet 14. Then, if the operator holds the ferrule 3 with one hand, the cap 2 and the body 1 can be turned in unison freely with the other hand, while the members 4 and 5 are held against turning by ferrule 3. Therefore the lock of hair H can be wound up as previously stated. After the lock of hair has curled, the extension 13 is pushed into the eyelet 14, thus holding the mandrel 1 against backward turning movement. The operation of the second embodiment is therefore the same as the operation of the first embodiment, save that the second embodiment omits the spring and uses two intermeshing members in place of the spring.

The various parts can be made of any suitable metal or other material.

This curler is the first of this particular type which has eliminated a pivoted holding band for preventing the curler from turning backwards so as to unwind the hair.

The invention is not necessarily limited to the use of a ferrule or finger member, because the shank 5 and the inner wall of the mandrel 1 can be provided with any suitable bearing means. Hence whenever I refer to a finger member for the shank 5 in a claim or claims, I include a projection of the member 5 or any means whereby the member 5 can be held stationary while the mandrel 1 is turned relative thereto. The direction in which the mandrel 1 is turned relative to the shank 5, in order to wind up the curl of hair, may be designated as the forward direction. The spring 7 permits the mandrel 1 to turn forwardly, if moderate force is used. The spring 7 and the washer 8 and the collar 6*a* constitute means for preventing the mandrel 1 from turning backwards relative to the shank 5.

In order to avoid limiting the invention to the use of the washer 8, said washer 8 may be considered as forming a part of the wall of the cap 2, against which one end of the holding spring 7 abuts. While the holding member and the mandrel can be separated by using suitable tools or suitable force, the assembly between the parts is permanent for the purposes of the invention. That is, during the use of the device, the holding device and the mandrel 1 are maintained in predetermined relation.

I have shown preferred embodiments of my invention, but it is clear that numerous changes and omissions can be made without departing from its spirit.

I claim:

1. A hair curling device comprising a hollow mandrel, a holding member having a first portion thereof external to said mandrel and having a second portion thereof located within said mandrel, said second portion having a finger member which is external to one end of said mandrel, the other end of said mandrel having a cap, said cap having a bore through which the second portion extends, the second portion having a collar fixed thereto, a compression spring having one end thereof abutting said collar and having the other end thereof abutting the cap, said compression spring exerting sufficient friction to hold the mandrel against turning backwards relative to the second portion, said mandrel having a clamping member movably connected thereto.

2. A hair curling device comprising a hollow mandrel, a holding member having a first por-

tion thereof located external to said mandrel and having a second portion thereof located within said mandrel, said second portion having a finger piece which is external to one end of said mandrel, said second portion being longitudinally movable relative to the mandrel, said mandrel and said second portion having cooperating holding means which are constructed to engage in one longitudinal position of the second portion relative to the mandrel and which are constructed to be inoperative in a second longitudinal position of the second portion relative to the mandrel.

3. A hair curling device comprising a hollow mandrel which has a lateral end-wall, a holding member having a first portion and a second portion, a part of said second portion being located in said mandrel and another part of said second portion projecting through a hole of said lateral end-wall, said holding member being permanently assembled with the mandrel, said second portion being joined to said first portion externally of said end-wall, said first portion being external to said mandrel, said second portion having a finger-member which is external to said mandrel, part of said finger piece fitting turnably in the adjacent part of the bore of the mandrel, said mandrel being turnable relative to said holding member in a predetermined direction, said mandrel and said second portion having cooperating means constructed to hold the mandrel against turning relative to the second portion in a direction reverse to said predetermined direction, and a clamping member connected movably to said mandrel.

4. A hair curling device comprising a hollow mandrel, a holding member permanently assembled with said mandrel and having a first portion thereof external to said mandrel and having a second portion thereof located within said mandrel, a clamping member connected movably to said mandrel, said second portion having a finger member which is external to said mandrel, said mandrel having bearing means for said second portion whereby said second portion is maintained in substantially predetermined lateral position relative to the inner wall of said mandrel, said mandrel being turnable relative to said holding member in a predetermined direction, said mandrel and said second portion having cooperating means constructed to hold the mandrel against turning relative to the second portion in a direction reverse to said predetermined direction.

MAX DUNNER.