Aug. 2, 1938. W. H. BLEUEL 2,125,421

APPARATUS FOR WAVING HAIR

Filed Jan. 18, 1937

Fig. 1.

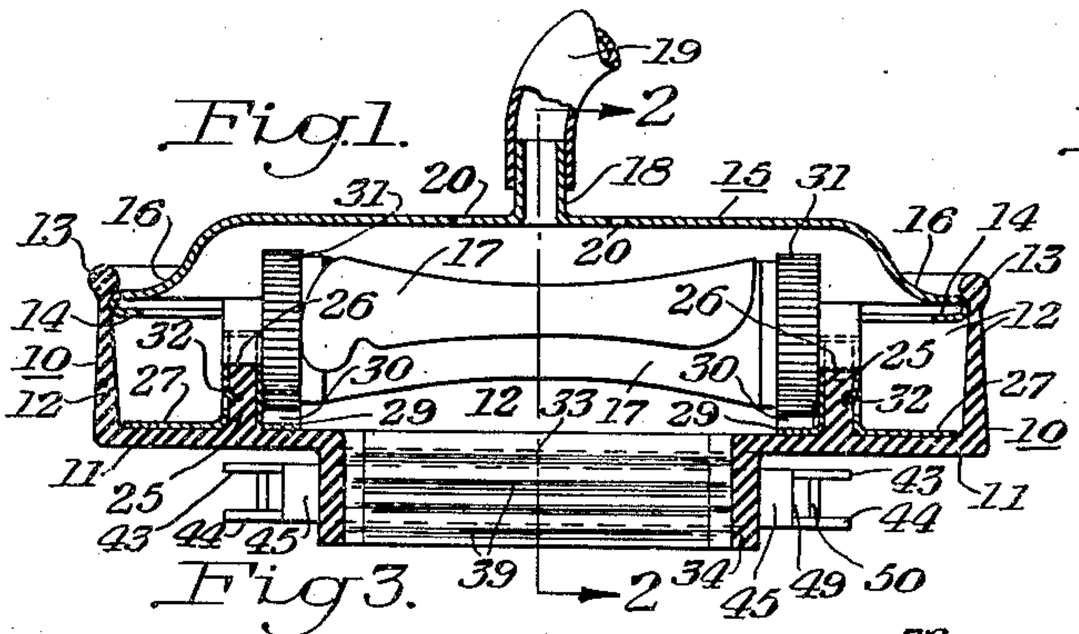


Fig. 2.

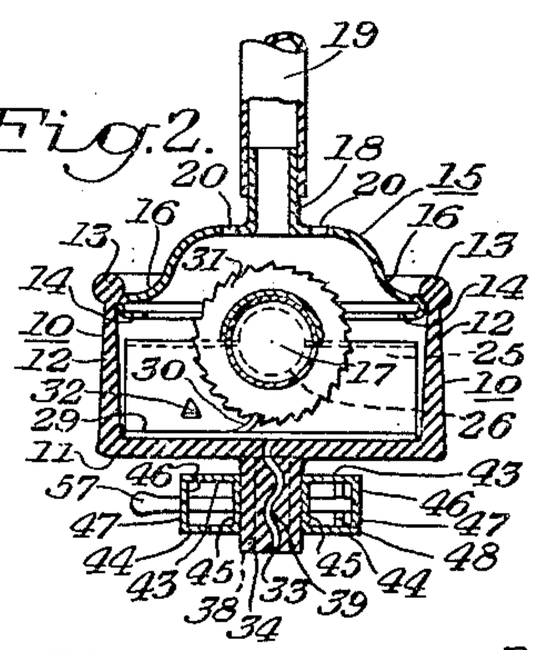


Fig. 3.

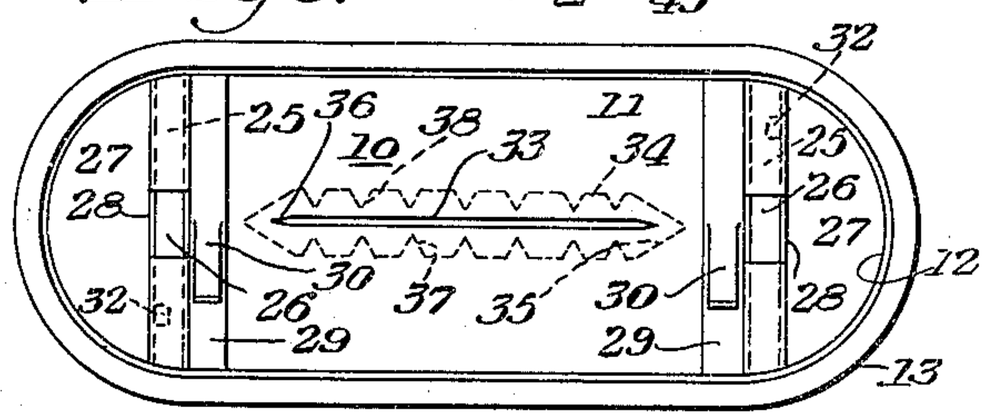


Fig. 4.

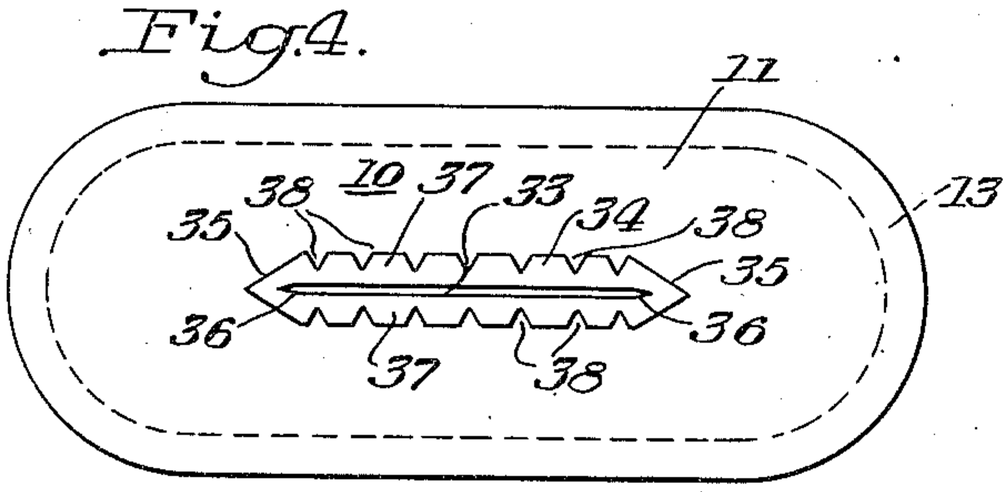


Fig. 5.

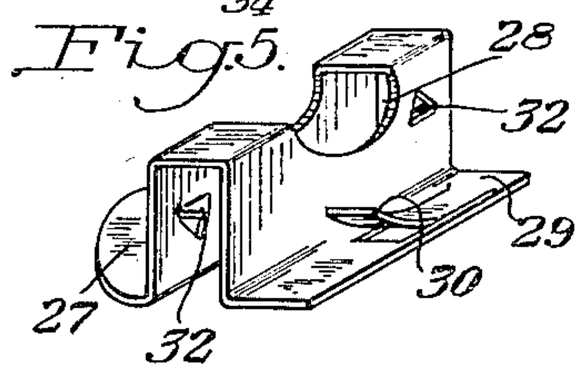


Fig. 6.

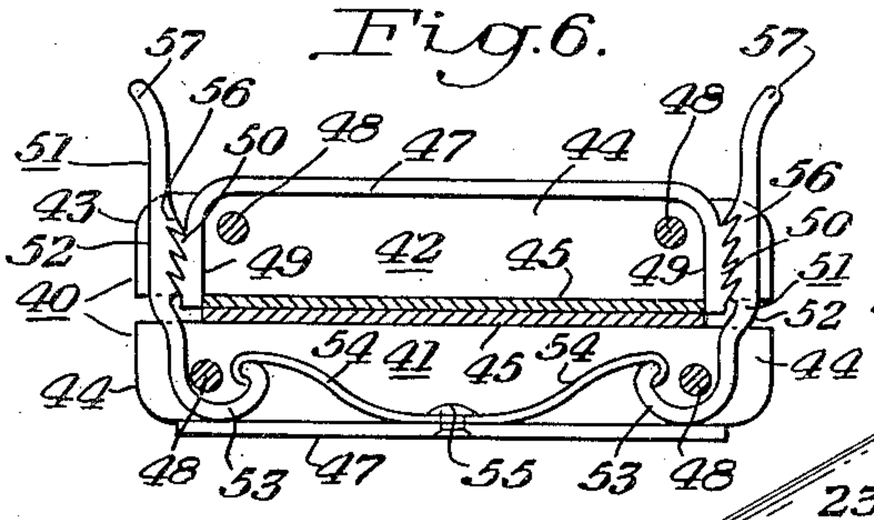


Fig. 7.

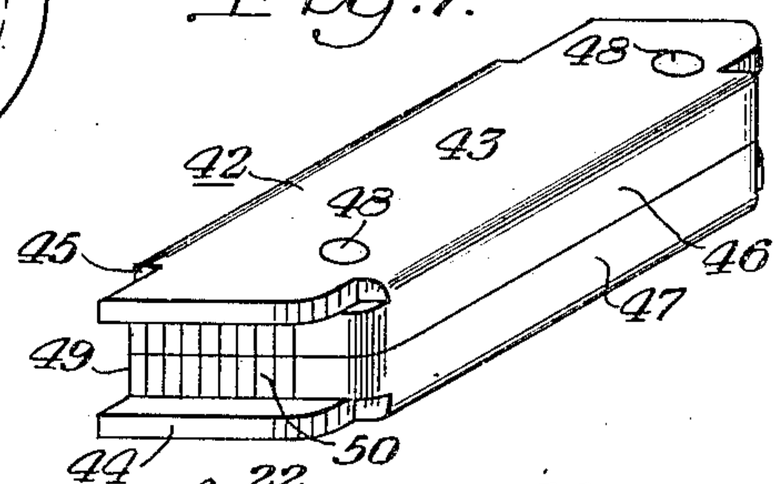
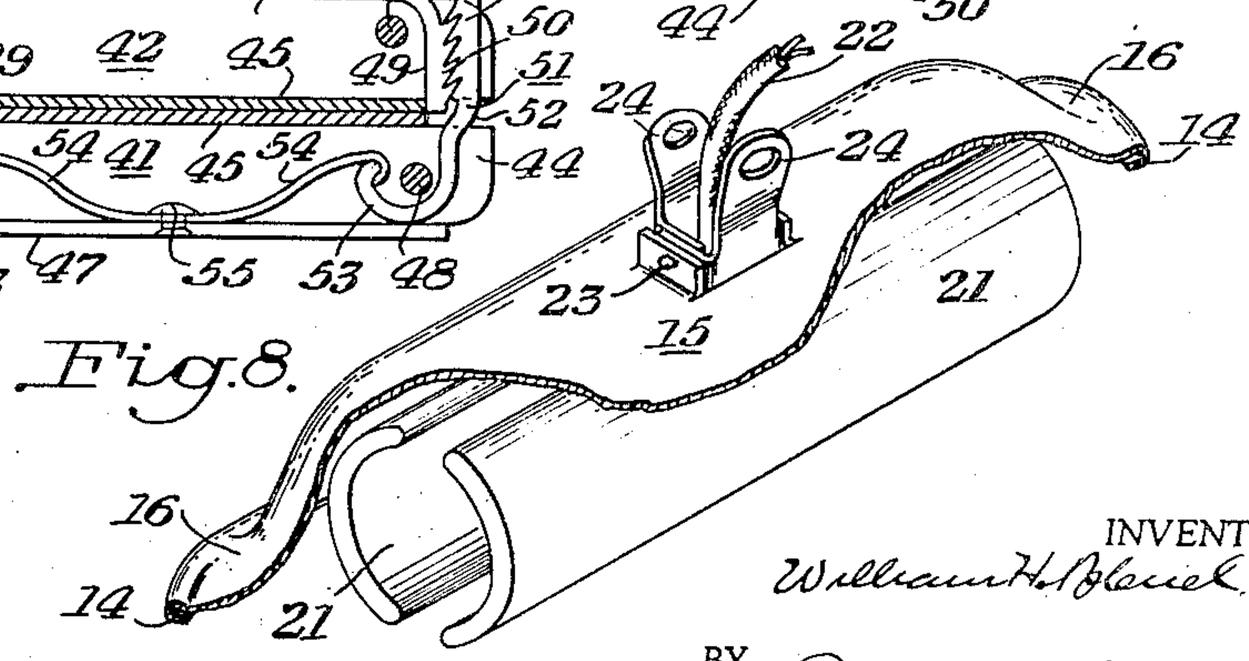


Fig. 8.



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APPARATUS FOR WAVING HAIR

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Application January 18, 1937, Serial No. 121,112

6 Claims. (Cl. 132—36)

This invention relates generally to improvements in apparatus for waving hair and more particularly to the apparatus for waving hair by the Croquignole method.

The principal object of this invention is the provision of an improved scalp protector in which the wound strands of hair are placed during the curling process.

Another object is the provision of a new and improved neck on the scalp protector and through which a strand of hair passes and is clamped.

Another object of this invention is the provision of new and improved means for supporting and locking a wound strand of hair within a scalp protector.

Another object is the provision of an improved clamp structure for clamping a strand of hair within the neck of a scalp protector.

Other objects and advantages will appear hereinafter.

In the accompanying drawing a practical embodiment of the principles of this invention is illustrated.

Fig. 1 is an enlarged sectional view taken longitudinally of a scalp protector with its closure member and hair clamp in place.

Fig. 2 is a sectional view taken along the line 2—2 of Fig. 1.

Fig. 3 is a top plan view of the protector with closure member removed.

Fig. 4 is a bottom plan view of the protector.

Fig. 5 is an enlarged perspective view of one of the bearing members for use in the scalp protector.

Fig. 6 is an enlarged horizontal sectional view of the hair clamp showing the improved detail parts.

Fig. 7 is a perspective view of one of the clamping jaws.

Fig. 8 is a perspective view of a portion of the hair waving apparatus adapted for using electricity as the source of heat.

Referring to the drawing, 10 represents a scalp protector which is preferably made of flexible material such as rubber. The rubber material should have sufficient body to maintain its shape and should be capable of withstanding a considerable amount of heat without endangering its elastic gripping qualities. The protector comprises the base 11 and the integral upstanding peripheral flange or wall 12 forming an open box-like structure. The ends of the scalp protector are preferably made semi-circular as indicated on the drawing and the up-standing wall 12 tapers from the base to the upper rim on which the reenforcing rim or bead 13 is molded. The perimetral length of the bead 13 is shorter than the rim 14 on the lid or closure member 15, which is preferably made of rigid material and has the general shape of the protector to enable the bead to grip the lid when the latter is inserted as shown. The resiliency of the bead mechanically holds the lid in its proper position and prevents steam and/or vapor from escaping therearound.

It will be noted that the rim 14 may be made by turning back the edge of the material if it is made of a workable material such as metal; or by molding a lip thereon if made of hard rubber, Bakelite, or the like. The lid extends inwardly as shown at 16 and then upwardly to provide clearance for the bead 13 and also to provide a trough for catching any condensate that may happen to collect or form on the top of the box when lying in a horizontal position.

The lid 15 is dished to provide clearance for the mandrel 17, shown in Fig. 1.

There are several methods of waving hair on the human head. Generally speaking these methods may be divided into three general classes, the electric method which employs an electric current as the source of heat, the chemical process wherein a chemical pad, which when wetted with the proper liquids, will produce the prescribed amount of heat, and thirdly, the steam process wherein steam and/or vapor are used to heat the hair for waving. Of these embodiments the latter is illustrated in Fig. 1. Thus the lid 15 is equipped with the tubular extension 18 arranged to be connected to a source of steam and/or vapor by the hose 19. The vents 20 are provided in the lid 15 to permit a continuous flow of the steam and/or vapor through the container during the waving process.

In the present practice of waving hair by the steam process the hose 19 is ordinarily detached from the steam-box when not in use. In this case the hose 19 may be permanently attached to the lid 15, which feature will eliminate one operation of the present practice and forms one of the advantages of this invention.

If the apparatus is to be used with the electric process the lid 15 may be adapted to carry the electric heaters 21 as shown in Fig. 8 and the wires 22 are for the purpose of conducting the electric current thereto. The heaters 21 may be hingedly secured to the lid 15 as shown at 23, and the handles 24, which are integral with the heater sections 21, may be drawn together to separate the heaters and permit them to be inserted over a wound strand of hair within the scalp pro-

tector. The clamping action of these heating elements may be obtained by a spring (not shown) acting with the handles and the pivot bar.

If the apparatus is to be used with the chemical process the lid shown in Fig. 1 may be employed. The tubular extension, which is not necessary in this process, may be converted into a handle or eliminated entirely, as some operators believe that no cover or lid is necessary.

Referring again to the protector, **25** represents a pair of ribs within the box-like structure of the protector. Each of these ribs extend transversely of the protector and are spaced inwardly of the ends thereof. They are preferably made integral with the bottom **11** and the side walls **12**. Aligned semi-circular notches **26** are cut in the upper edges of these ribs as indicated for supporting the ends of the mandrel or spool **17** upon which the hair is wound.

A bearing bracket, which is preferably made of suitable metallic material and is illustrated in Fig. 5, is inserted down over the ribs **25** to provide a rigid bearing for the ends of the mandrel **17** and to maintain shape of the ends of the protector.

The brackets are provided with the semi-circular aprons **27** which fit the ends of the protector, and the part which slips over the ribs **25** is provided with the semi-circular slots **28**, which match the notches **26**. The edges of these slots thus act as bearings for the mandrel **17**. The other side of the bracket is provided with the lip **29** arranged to rest on the bottom of the protector in the same manner as the apron **27**. The lip **29** is provided with the spring pawl **30** which may be made by striking up a portion of the lip **29** or by securing a separate piece thereto. The spring pawl **30** extends upwardly toward the slot and its edge is arranged to engage the toothed section **31** on the end of the mandrel **17** and prevent it from turning. The hair wound upon the mandrel holds the latter in the bearing of the bracket, thus permitting a locking device of this character.

The sides of the bracket have the sharp projections **32** struck inwardly thereof for entering the ribs **25** and holding the brackets in place, as indicated in Fig. 1.

The base **11** of the protector is provided with the slot **33** extending between the ends of the lips **29** of the brackets. This slot extends down through the neck **34** which depends from the under side of the base **11** and normal thereto. The ends of the neck **34** and the slot **33** are pointed, as indicated at **35** and **36**, to prevent the formation of a pin hole when the neck is compressed between the jaws of a clamp.

The walls **37** of the neck are made thick, as indicated in the drawing. Walls of this character are better able to withstand repeated use without impairing their gripping quality. In order to maintain flexibility the neck **34** is grooved or serrated, as indicated at **38**. These grooves also aid in distributing the pressure, imposed by the clamping jaws, on the hair strand passing therethrough. As the protector is made of soft rubber the lands between the grooves **38** may flow under the pressure of the clamp.

The sides of the walls forming the slot **33** in the neck **34** are provided with the large ribs **39** in staggered relation as shown in Fig. 2. When the walls of the neck are compressed these ribs form a wave or kink in the hair strand and prevent it from being dislodged.

40 represents a clamp comprising the jaw members **41** and **42** which may be formed of any suitable material having the necessary strength and rigidity. These members are preferably made up in box-like form from a single piece of material. **43** and **44** represent the upper and lower sides of the clamping jaws which are integrally connected by the clamping edge plate **45**. The sides of the jaw members are spaced apart at their outer edge by the inturned flanges **46** and **47**, which are integral with the sides **43** and **44** respectively. **48** represents pins or rivets for maintaining the sides in their proper relation.

The ends of the flanges **46** and **47** in the jaw members **42** are extended, as shown at **49** and are turned inwardly of the box-like structure between the upper and lower sides.

The outer surfaces of these extensions are formed with teeth **50**, the points of which extend toward the rear of the jaw members.

These extensions may be made as a separate rather than an integral part of the jaw member if the material from which the jaw members is made is not suitable for forming teeth thereon.

The flanges **46** and **47** on the jaw member **41** are not provided with extensions. This jaw member is provided with two oppositely disposed locking levers **51**. These arms comprise outwardly extending portions **52** and arcuate inner portions **53** arranged to ride on the inner surface of the flanges **46** and **47**. The ends of the arcuate portions are formed in the shape of a hook and arranged to receive the hook-shaped ends of the leaf spring **54** which is secured intermediate of its ends to the flanges **46** and **47** as by the rivet **55**. The leaf spring holds the arcuate sections **53** tightly against the pins **48** and forces the outwardly extending portions toward one another or toward the center of the clamp by pressing the arcuate ends toward the outer edge of the clamp. The outwardly extending portions **52** are provided with the teeth **56** complementary to and arranged to engage the teeth **50** on the outer surface of the extensions **49** of the clamp jaw member **42**.

The extremities of the outwardly extending portions **52** are curved outwardly, as indicated at **57**, to form fingers which may be grasped to swing the levers away from their toothed engagement, permitting the clamping jaws to become unlocked and separated. These curved ends are also employed as guides to direct the levers into proper locking engagement when the jaw members are brought together in clamping relation. The upper and lower sides **43** and **44** of the jaw member **42** are purposely extended beyond the clamping face **45** to keep the levers **51** from sliding out of their toothed engagement.

One of the particular advantages of this clamp lies in the use of the leaf spring **54**. In order to obtain different degrees of spring tension on the levers **51** the leaf spring may be made different gauges of material and initially shaped to produce the results desired. If a coil spring were employed for this purpose it would be limited in its flexibility because of the internal dimensions of the clamping jaw.

I claim:—

1. In means for sealing a strand of hair which comprises a sealing neck disposed longitudinally of a scalp protector, a throat in said neck through which a strand of hair may be passed, alternate grooves and lands in parallelism with said throat on the outer surface of said neck for distributing the clamping pressure on the strand of hair passing through said neck.

2. A scalp protector formed of a single piece of resilient material comprising a base, a wall extending upwardly from the perimeter thereof, a throated hair strand sealing neck depending from the under side of the base, laterally disposed ribs integral with said base and side walls for supporting the ends of a mandrel within said protector, the hair passed through said neck being wound about said mandrel.

3. A scalp protector formed of a single piece of resilient material comprising a base, a wall extending upwardly from the perimeter thereof, a throated hair strand sealing neck depending from the under side of the base, laterally disposed ribs integral with said base and side walls at each end of the throat of the sealing neck, and bearing means on said ribs for supporting the ends of a mandrel around which the hair passing through said neck is wound.

4. A scalp protector formed of a single piece of resilient material comprising a base, a wall extending upwardly from the perimeter thereof, a throated hair strand sealing neck depending from the under side of the base, laterally disposed ribs integral with said base and side walls at each end of the throat of the sealing neck, bearing means on said ribs for supporting the ends of a mandrel around which the hair passing through said neck is wound, and means for locking said mandrel in place.

5. A member for enclosing a wound strand of hair in a scalp protector comprising a lid having an edge over which the walls of the protector are snapped, said lid having an upwardly dished portion to provide clearance for the wound strand of hair in the protector and spaced inwardly of said edge to form a continuous trough, and means on said lid for connecting it to a source of steam.

6. A member for enclosing a wound strand of hair in a scalp protector comprising a lid having an edge over which the walls of the protector are snapped, said lid having an upwardly dished portion spaced inwardly of said edge to form a continuous trough, and electric heating elements secured to said lid and disposed within said dished portion for engaging a wound strand of hair within the protector to heat the same.

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