

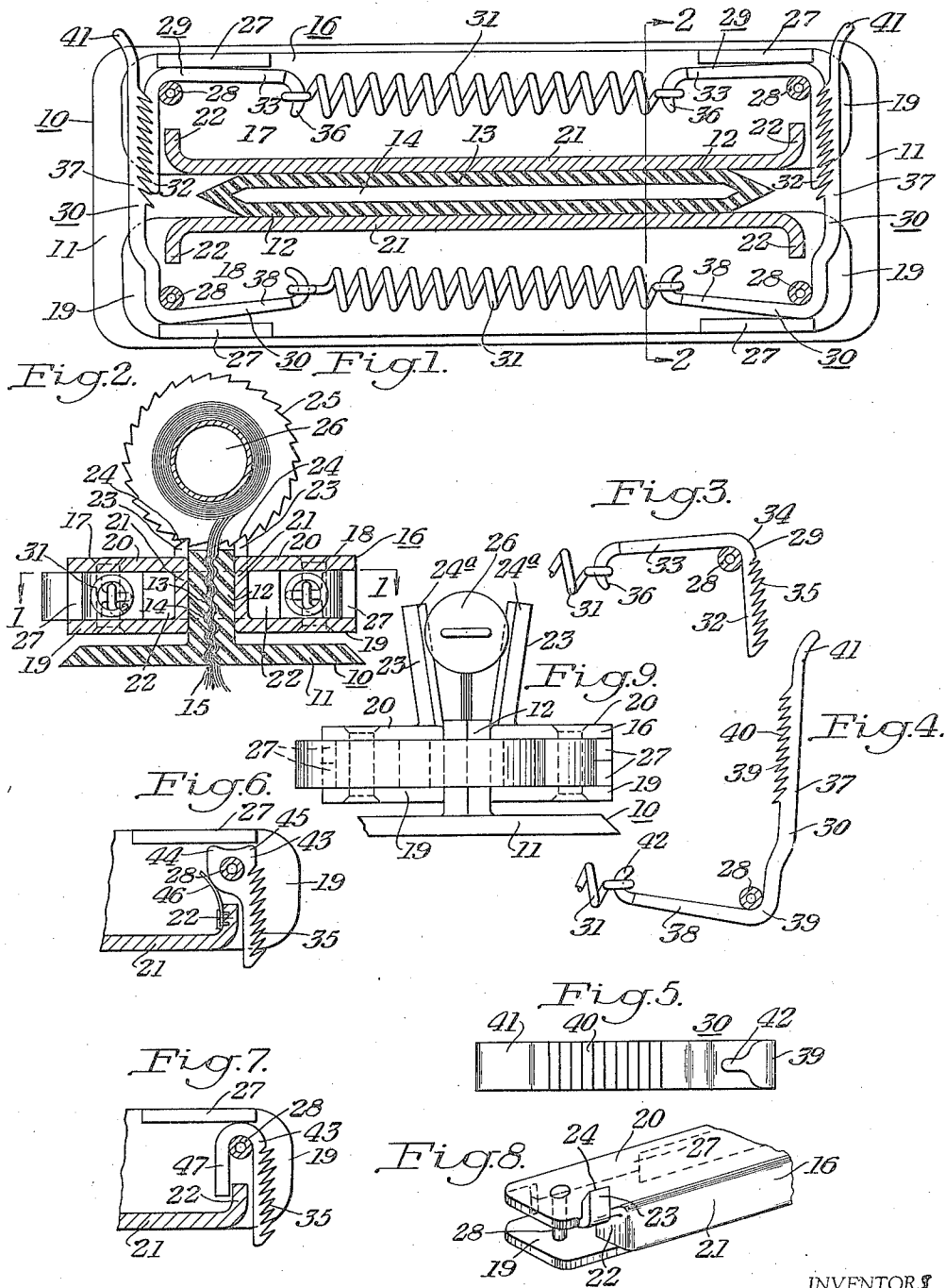
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HAIR CLAMP

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HAIR CLAMP

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Our invention relates to clamps to be employed in the waving of human hair.

In preparing the hair for waving, as by either the steam, the electric or other method, it is first divided into locks and each of the same is drawn through the aperture or neck of a flexible scalp protector and a clamp is then applied to the neck for the purposes of sealing the lock of hair against the access of moisture to the scalp, avoiding tension on the hair roots and also for the application of the waving means to the lock. Thus in croquignole waving the mandrel upon which the hair is wound is sometimes supported on the clamp.

Such clamps usually comprise a pair of co-acting jaw members pivotally connected together.

In one known type of clamp the jaw members are pivotally attached at one end and in closing the clamp on a lock of hair, the free ends are caused to converge and are then attached together. Thus the clamping action is progressive from the pivotally connected end and the hair adjacent the other ends of the jaw members is less securely held. Again if a flattened lock is of ununiform thickness the thinner portions of the lock are less securely held.

In another type of clamp both ends of the jaw members are pivotally connected together on an axis substantially parallel with their hair-contacting surfaces so that in closing the jaw members approach in parallelism and thus if the flattened lock of hair is of ununiform thickness the jaw members do not close snugly on the thinner portions of the lock of hair.

The principal object which we have in view is the provision of an improved clamp which will be free from the faults attending the use of either of the above mentioned type of clamp.

Thus in our improved clamp the jaw members do not close with a movement similar to that of shear blades nor are they confined to parallel movement as they converge.

Thus as the jaws converge on a lock of hair flattened out to a substantially uniform thickness, they assume a substantially parallel relation, while where the lock is of uneven thickness, the jaw members move in closing into a somewhat angular relation, thus snugly gripping both the thicker and the thinner portions of the flattened lock.

We provide for this novel and advantageous method of closing by making the jaw members functionally free elements provided adjacent to each end with coacting means which interengage

as the jaw members converge and hold the jaw members into the closed relation whereunto they have been moved, such coacting means being so arranged that at either end the members may converge more closely than they are able to converge at their other end owing to lack of uniformity in the thickness of the flattened lock of hair.

These coacting means are arranged for convenient interengagement and disengagement so that the clamps may be rapidly put into use and removed by the operator.

Other novel features of construction and also of arrangement of parts will appear from the following description.

In the accompanying drawing, wherein we have illustrated the principles of our invention embodied in a hair clamp designed for use with a scalp protector in producing a croquignol wave in a flattened lock of hair, Fig. 1 is an enlarged horizontal sectional view taken along the line 1—1 in Fig. 2.

Fig. 2 is a cross sectional view of the same taken along the line 2—2 in Fig. 1 and also illustrating the mandrel and the lock of hair wound thereon.

Figs. 3 and 4 are detail views showing the means which coact to lock the jaw members in their closed relation.

Fig. 5 is an elevation of the securing means shown in Fig. 4 looking from the left in the latter view.

Figs. 6 and 7 are sectional details illustrating modified forms of such securing means.

Fig. 8 is a broken perspective of one of the jaw members illustrating the means for supporting the mandrel and preventing its accidental rotation, and

Fig. 9 is a broken view similar to Fig. 2 but illustrating a modified form of means for supporting the mandrel.

Referring to the drawing, 10 represents a scalp protector, preferably formed of flexible moisture proof material such as rubber and having an elongated base 11 which is intended to fit against the scalp. The protector is provided with an upwardly extending neck 12 which is spaced inwardly from the side and end edges of the base and is provided with a slotted throat 13 whose inner walls are preferably horizontally ribbed as at 14, the opposing ribs preferably being in staggered relation as illustrated in Fig. 2 to better grip the lock of hair illustrated at 15. In applying the protector, the lock of hair is gathered and flat-

tened out and thrust up through the throat 13 and the protector pressed down against the scalp.

16 represents the clamp comprising the jaw members 17 and 18 which may be formed of any suitable material having the necessary strength and rigidity. These members are preferably of box-like form. Thus 19 represents their bottom walls and 20 their top walls which are connected by the vertical walls or surfaces 21 which form the gripping edges of the jaw members.

At the ends of the surfaces 21 the material is turned inwardly to protect interior parts of the members and to form guides 22 as will later appear.

Adjacent either end the jaw members are provided with upwardly extending brackets 23 between which the corresponding end of the hair mandrel is supported. The upper ends of the brackets are beveled as at 24 to engage the teeth 25 arranged in an annular series on the end of the mandrel 26 to prevent such accidental rotation of the mandrel as would tend to loosen the hair wound around the same.

In Fig. 9 we have shown the brackets 23 provided with outwardly diverging or flaring extremities 24a between which the end of the mandrel may be frictionally held against rotation.

The outer side edges of the jaw members are provided with lugs or webs 27 which space apart the walls 19 and 20 and also provide grasping surfaces for the fingers of the operator.

28 represents pivot pins, which are preferably tubular, and which extend between the walls 19 and 20 adjacent the ends of the jaw members and the lugs 27. The pins are slightly nearer the ends of the jaw members than are the guides 22, as illustrated in Fig. 1.

One of the jaw members, the upper one as shown in Fig. 1, is provided with two oppositely disposed angular locking members 29 which are pivoted at their angles about the pins 28 and between said pins and the adjacent lugs 27. These locking members are also shown in Fig. 3.

The other jaw member is provided with two oppositely disposed locking levers 30 which are also illustrated in Fig. 4.

The outer arms 32 of the levers 29 extend outwardly past the guides 22 beyond the surface 21 of the locking member and their outer faces are provided with engaging or locking means, such as the teeth 35, which are directed rearwardly or toward the angle 34 of the lever. The other arms 33 of the lever extend inwardly within the box and substantially longitudinally thereof and have their extremities provided with hooks 36.

31 represents a helically coiled spring which connects said hooks and tends to swing the levers on the pins 28 as axes and urge their outer arms 32 outwardly. This swinging movement of the levers is limited by the lugs 27. The arrangement is such that the levers 29, when not in use, will assume substantially the position illustrated in Fig. 3.

The locking levers 30 are likewise arranged to pivot about the pins 28 in the other jaw member, their outer arms 37 extending forwardly past the gripping edge 21 of the jaw member, while their inner arms 38 extend longitudinally within the jaw member and are provided with terminal hooks which are connected by a helical spring 31.

The arms 37 are provided with engaging or locking means arranged to coact with those of the levers 29 when the jaw members are caused to converge. Thus we have shown the inner face of the arms 37 provided with a series of teeth 39

which are directed in the opposite direction to the teeth 35.

The extremities 41 of the arms 37 are curved outwardly to form fingers which may be pressed to swing the levers 30 as to disengage the teeth of the two sets of levers and thus unlock the jaw members so that the latter may be separated to release the lock of hair after curling. These curved ends are also used as guides to direct the levers into proper coacting relation as the jaw members converge, thus assuming proper inter-engagement of the toothed portions of the lever. To insure proper engagement between the toothed portions of the coacting levers the toothed portions of one of the levers as shown in the case of the lever 29 in Fig. 3 may be made arcuate.

In the use of the device, after the flattened lock of hair has been drawn through the throat of the protector 10, the two jaw members are caused to converge from either side of the throat 13 and are pressed together snugly, the arms 37 of the levers 30 engaging the outer surfaces of the arms 32 of the levers 29, the two series of teeth trailing over each other until the desired degree of clamping pressure has been obtained and the neck 12 is so tightly squeezed against the lock of hair as to seal the same against the travel of moisture to the scalp. The lock of hair is then snugly wound on the mandrel and the latter is seated in place on the clamp.

After the operation of waving the lock has been completed, the mandrel is rotated to unwind the hair therefrom, and the operator then spreads the arms 37 of the levers 30, thus releasing the toothed engagement between the jaw members and permitting the latter to be removed from about the neck of the protector. The protector is then removed.

It will be understood that where the wave to be given is of the spiral type, the lock being for instance wound in a helical coil about the pin or mandrel, the protector usually has a cylindrical neck to accommodate the shape of the lock of hair, and in such case the gripping edges of the jaw members would be arcuate or substantially semi-circular to properly fit and compress the neck of the protector.

In Fig. 6 we have illustrated another form of locking lever which may be substituted for the levers 29. In this modification the lever 43 is in the form of a pivoted pawl mounted on the pin 28 and having its movement limited as by the shoulders 44 and 45 arranged to contact with the lug 27. The pawl extends past the guide 22 and is provided with teeth 35 to be engaged by the teeth of the levers 30. To positively assure proper engagement the pawl may be urged outwardly as by a leaf spring 46. Thus the pawls swing in an arc in engaging the levers 30 and thus the teeth properly and securely engage.

In Fig. 7 the pawl 43 is provided with a curved tail 47 which enables the pawl to be pivotally mounted on the pin 28. In this case the swing of the pawl is limited by the engagement of the opposite ends of the bent pawl with the opposite faces of the guide 22.

It is evident from the foregoing description that our improved hair clamp possesses marked advantages.

Among them may be mentioned the following.

The clamping jaws are so arranged that they will exert a uniform pressure about the lock of hair, thus firmly grasping the same and preventing the leakage of moisture or liquids or any

character past the clamp or through the throat of the protector.

In the case of flat locks of hair which are of uneven thickness, the seal is efficient throughout the width of the lock, a result which is impossible with the use of other types of hair clamps.

Our clamp is readily and quickly put in place and as readily and quickly removed, thus saving the time of the operator. The construction of the clamp is simple and durable, and thus is not likely to get out of order, but it may be easily repaired. It is sanitary, as all the parts are accessible for ready cleaning.

Furthermore the clamp may be closed lightly against the neck of the protector and thus hold the hair in proper relation to the protector until the hair is treated with a suitable preparation and the outer ends started about the mandrel. Then the clamp is closed tightly to seal the hair in the neck of the protector to prevent the access of such preparation or moisture to the scalp and to prevent pulling on the roots as the hair is wound tightly on the mandrel. The winding operation is then accomplished and the mandrel seated on the clamp.

Another advantageous feature of our improved clamp is the fact that it requires but little clearance for its application. The type of clamp in which the members are pivotally connected at one end and which close with a scissor-like movement require considerable lateral clearance for their application and removal, and in the case of clamps in which the jaw members are pivotally connected on an axis parallel with and above the contact edges of the jaw members considerable clearance is necessary to provide for the swinging movements of the jaw members. Thus the question of clearance is important because a plurality of these clamps are used, sometimes as many as thirty-six at one time, and therefore they are closely adjacent when in position on the head.

We claim:—

1. A hair clamp comprising structurally independent jaw members arranged to be interengaged when assembled and having complemen-

tary clamping surfaces, guiding members on the ends of one jaw member disposed intermediate of the upper and lower edges of the clamping surface and extending therebeyond, and means on said guiding members arranged to detachably engage the ends of the other jaw member to secure said jaw members together.

2. A hair clamp comprising structurally independent jaw members arranged to be interengaged when assembled and having complementary clamping surfaces, members on the ends of one jaw member disposed intermediate of the upper and lower edges of the clamping surface and extending therebeyond for guiding said jaw members into assembled relation, and means on said members for detachably engaging the ends of the other jaw member to hold the jaw members in clamped relation.

3. A hair clamp comprising structurally independent jaw members arranged to be interengaged when assembled and having complementary clamping surfaces, means extending from the ends of one jaw member, said means disposed intermediate of the upper and lower edges of the clamping surface and extending therebeyond for guiding said jaw members into assembled relation, said guiding means being spring pressed toward one another, and means on said guiding means for engaging the other jaw member to hold the jaw members in assembled relation.

4. A hair clamp comprising structurally independent jaw members arranged to be interengaged when assembled and having complementary clamping surfaces, means on the ends of one jaw member disposed intermediate of the upper and lower edges of the clamping surface and extending therebeyond for guiding said jaw members into assembled relation, said means being spring pressed toward one another, and teeth on said guiding means for detachably engaging teeth on the ends of the other jaw member to hold said jaw members in clamped relation.

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