

[54] APPARATUS FOR ISOLATING AND TREATING SELECTED HAIR STRANDS

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[51] Int. Cl.² A45D 2/12

[58] Field of Search 132/9, 46, 48, 50; 24/259 HC

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[57] ABSTRACT

Apparatus to chemically treat selected bundles of hair comprises a clamping platform and a clip slidable thereon. The platform includes a pair of jaws and a planar surface with the surface being disposed substantially orthogonal to the jaws. The selected hair is captured in the jaws allowing the planar surface to press against the hair directly immediately thereunder and the scalp. Preferably a foil sheet is interposed between and held by action of the planar surface and the scalp thereby achieving isolation of the selected bundle from adjacent hair.

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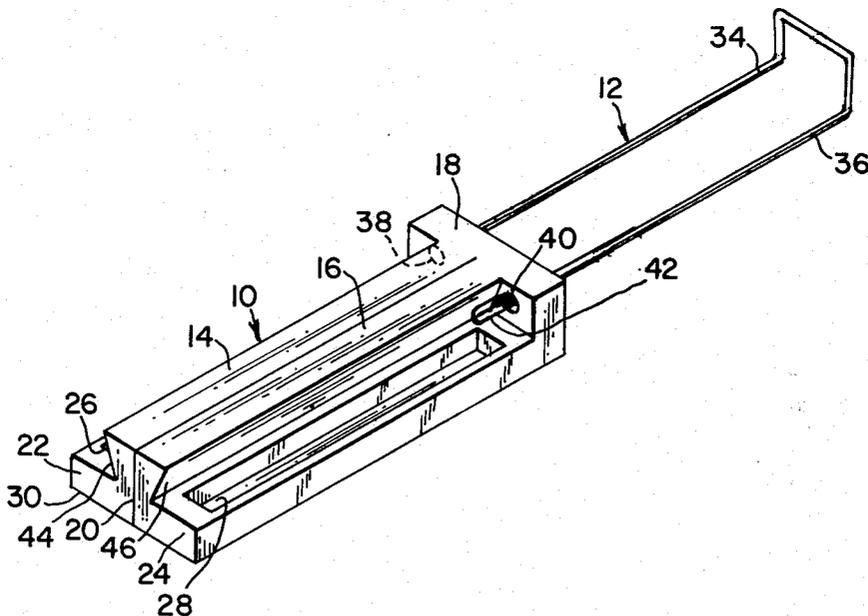
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6 Claims, 9 Drawing Figures



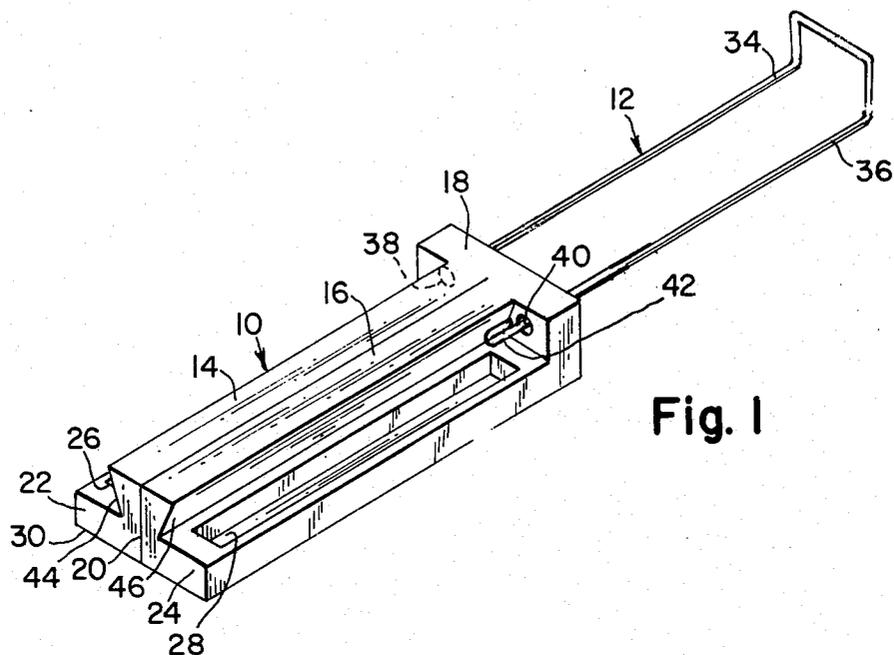


Fig. 1

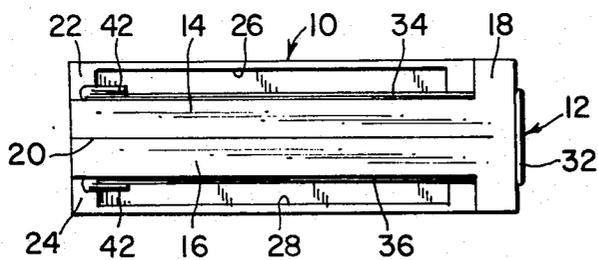


Fig. 2

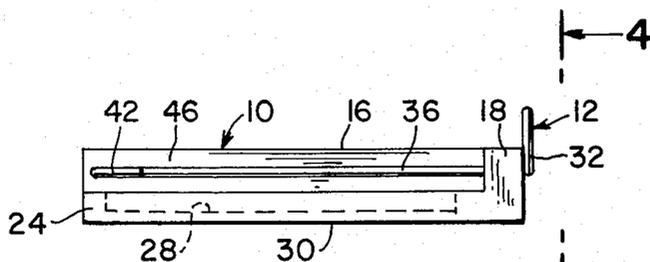


Fig. 3

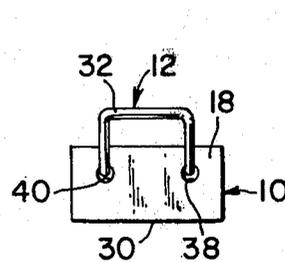


Fig. 4

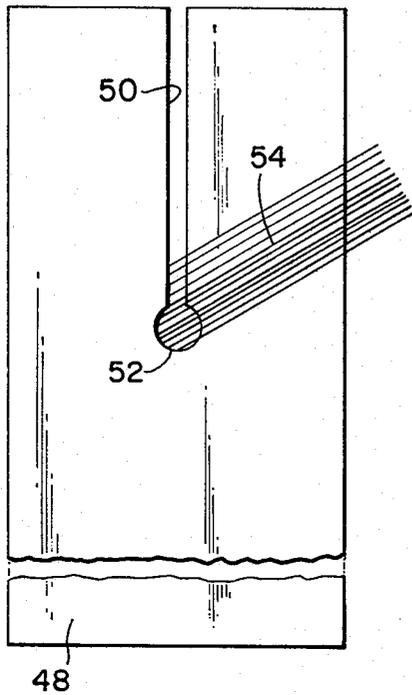


Fig. 5

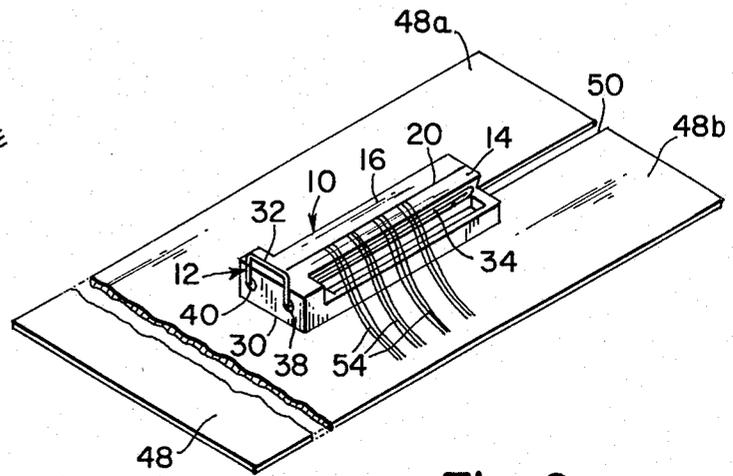


Fig. 6

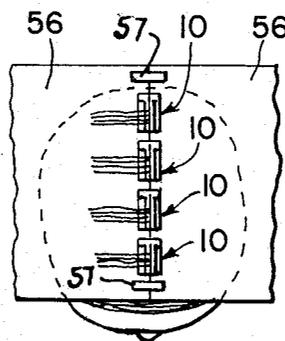


Fig. 9

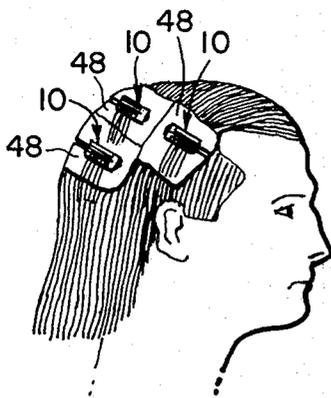


Fig. 7

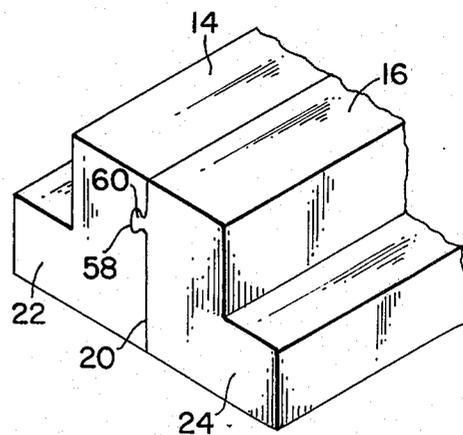


Fig. 8

APPARATUS FOR ISOLATING AND TREATING SELECTED HAIR STRANDS

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a hair coloring device and more particularly to a coloring device adapted to isolate preselected hair strands.

Often times it is necessary to apply treatment to a selected lock of hair. Or, it may be desirable to simultaneously treat a plurality of such locks. Selective treatment is particularly the case when it is desired to "frost" or "streak" the hair. At first impression such a task might not appear unduly difficult, but, in practice and with prior apparatus, it is inordinately difficult to accurately streak.

Streaking or frosting involves selective application of chemicals to a pre-selected shank or lock of hair. To isolate the selected hair bundles from the adjacent hair, various prior devices are used. For example, it is suggested to use aluminum foil. With this approach, the selected hair is wrapped in the foil along with the bleaching or dyeing agents. Use of this procedure leaves much to be desired since the foil jacket is not a particularly good container for the chemical solution. Hence with the foil approach, it is found that regardless of skill of the hairdresser or beautician, some of the chemicals find their way to unselected hairs, treating them and unintentionally coloring, if that be the case, other hair regions. Then, too, in making the foil container, the foil is usually folded back on itself one or several times. This causes localized bends in the hair that in turn causes opposite sides of individual hair follicles to respectively experience tension and compression. Since the hair "takes" the dye or bleach differently when compressed or stretched, an undesirable hair shading may appear when the foil is sharply bent or crimped.

Another approach takes a selected hair bundle and places it in a member designed to lock around the hair. The member is a closure cap for and fits into one end of a cylindrical container. The opposite other end of the cylinder is open and into which the chemicals or agents are poured. In use, the hairs are stuffed into the container with the end cap closing and sealing the container bottom. The treating chemical, for example, bleach or dye is poured in allowing the hair to wash in the chemical and react therewith. During the operation, however, the beautician is unable to "work" with the hair since the selected bundle remains in the container. Indeed, care must be taken during filling the container lest some chemical spill to adjacent hair region.

A different approach has been devised wherein an elongated pin having an upper and a lower jaw holds the isolates the selected hair bundle. The appliance is complicated and needs use of both hands when being attached.

A still further device is particularly suited for dyeing root regions of selected hair. To do this, a cylindrical jacket fitted with absorbent material wraps column like around a portion of a selected hair bundle. A plurality of such jackets are used until an entire region of the hair is separated into discrete hair bundles with each of the bundles being defined by and captured in a cylindrical jacket. While the device is useful for root dyeing, it is particularly ill suited for isolating and dyeing the end

regions of the hair since no means is disclosed for isolating one hair packet from the other.

The present invention overcomes the disadvantage of prior devices and appliances.

Generally, the present invention comprises a clamp and in particular the clamp consists of two members, one being a molded clamp platform and the other being a resilient clip. The molded platform comprises a central region defined by abutting surfaces to act as jaws for the hair that is placed therein, and a bottom planar surface substantially orthogal to the jaws. One of the two lateral ends of the platform is defined by a wall in which the clip slides and remains captured therein. In the clip "in" position, the jaws are tensioned between the clip limbs, and in the clip "out" position, the clip limbs slide a predetermined distance through the wall allowing the clip to remain attached to the platform yet untensioning the jaws. Since the clip remains attached to the platform the inventive device has the effect of being one piece and can be operated by one hand.

An aluminum foil strip is designed to be used with the platform. The foil strip is placed underneath the planar surface and is frictionally held thereby. The hair clamped in the jaws can then be worked upon and treated while at the same time the hair remains isolated from adjacent hair by imposition of the foil strip.

It is therefore an object of the present invention to provide an appliance that allows treating of selected hair regions.

It is another object of the present invention to provide a device for treating selected portions of the hair and that permits the doing of this without unintentionally treating adjacent hair regions.

It is a further object of the present invention to provide a hair clamp for treating selected bundles of hair wherein the clamp can be operated with one hand.

It is yet another object of the present invention to provide an apparatus for selective hair dyeing that provides a high degree of isolation between the selected and unselected hairs and that allows the beautician to work with the hair during the treating process.

It is still a further object of the present invention to provide a hair clamp that is simple in design and easy to manufacture.

Other objects and features of the present invention will become apparent from the following detailed description considered in connection with the accompanying drawings. It is to be understood, however, that the drawings are designed for purposes of illustration only and not as a definition of the limits of the invention for which reference should be made to the appending claims.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings wherein the same reference numeral denotes the same element throughout the several views:

FIG. 1 is a perspective view of the present invention with the clip shown as an unlocked configuration;

FIG. 2 is a plan view of that seen in FIG. 1 but with the clip shown pushed in locking and tensioning the jaws;

FIG. 3 is an elevational view of that seen in FIG. 2;

FIG. 4 is an end view along the line 4-4 of FIG. 3 and seen in the direction of the arrows;

FIG. 5 is a plan view of a foil strip adapted for use with the clamp of FIG. 1;

FIG. 6 shows operation of the device seen in FIG. 1 and showing how it is used with a foil strip;

FIG. 7 shows use being made of several of the devices seen in FIGS. 1-4;

FIG. 8 is a partial perspective view somewhat similar to that seen of FIG. 1 but, instead of using the resilient clip thereof, showing use of a snap coupling to provide the locking action; and

FIG. 9 is a top plan view of the invention as applied to the head of a person.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings and particularly FIGS. 1-4 there is shown the inventive clamp. The clamp comprises a clamp platform, the platform generally indicated by reference numeral 10, and a resilient clip generally indicated by reference numeral 12 slidable thereon. Platform 10 is a molded one piece unit and includes a pair of opposed jaws 14 and 16 that extend from a rearward wall 18. The jaws are defined by a cut or slot 20 in which the hair is clamped as described herein. As seen, the opposed portion of jaws 14 and 16 are in facial relation along slot 20 and present planar gripping surfaces to press against and clamp the hair. Jaws 14 and 16 include respective skirt portions 22 and 24 with each skirt merging into a respective region of wall 18. The top side of skirts 22 and 24 will preferably include respective wells 26 and 28 with the wells running substantially the length of its associates skirt. The underside of each skirt align to form a flat planar surface 30. In the preferred structure planar surface 30 will be orthogonal to slit 20 but this need not necessarily be the case since the disposition of surface 30 with respect to jaw slit 20 may assume other angularities.

Resilient clip 12 is defined by a cross piece 32 and a pair of complimentary clip limbs 34 and 36 extending from the respective ends of cross piece 32. Wall 18 is formed with apertures 38 and 40 in which respective clip limbs 34 and 36 slide. The ends of each clip limb folds back upon itself to form reentrant portion 42 so that portions 42 interfere with the apertures thereby slidably capturing clip 12 in wall 18. To facilitate grasping the clip, cross piece 32 is angularly disposed from the plane defined by the longitudinal axis of the limbs and, as seen clearly in FIG. 4, cross piece 32 extends above wall 18 so it can easily be grasped. Jaws 14 and 16 are defined by respective outboard faces 44 and 46 and, preferably each outboard face 44 and 46 will be angled inwardly as shown in FIG. 1 to facilitate guiding the clip limbs. However, other means can be used to guide or lead the limbs. For example, faces 44 and 46 can be parallel to the plane of slot 20 and if this be the case might contain small protrusions or a guide channel to lead the limbs as they slide thereon.

The spacing between the clip limbs in conjunction with apertures 38 and 40 mandates that as the clip slides into the aperture and assumes the position of FIG. 3, the clip acts on and presses against faces 44 and 46 to thereby compress the jaws.

Turning to FIG. 5 there is shown the preferred form of the foil piece used in the present invention. Foil piece 48 is formed with a channel or slot 50 that on one end communicates with an aperture 52 and on the other communicates with one edge of the foil piece.

Operation of the inventive device can best be understood with reference to FIGS. 6 and 7 and referring back to FIGS. 1-5. The beautician selects the desired

hair bundle for example, hair strands 54. The beautician extends clip 12 from platform 10 until the clip assumes the approximate open or out position of FIG. 1. Jaws 14 and 16 of platform 10 are minutely separated and into which separation he slides hair bundle 54. The hair is then spread along slot 20 and clip 12 slid towards platform 10 to provide some degree of jaw compression. Foil piece 48 is brought up to both the platform and hair bundle captured therein. The foil is oriented so that the longitudinal axis of channel 50 is parallel to and aligned with the longitudinal axis of jaw slot 20 allowing the foil to slip out and around the selected hair bundle at a position intermediate of planar surface 30 and the adjacent unselected hair. At this stage either of two modes of operation can occur. In one mode, and when at the stage immediately referred to, clip 12 is slid fully onto platform 10 locking the hair in the jaws. In this mode, the foil is loosely coupled around the hair shaft by moderately interengaging foil portion 48a and 48b seen in FIG. 6.

In the other and preferred mode, clip 12 is pushed onto the platform and, as mentioned, lightly compresses hair strands 54. The foil is then positioned around the strands, as likewise mentioned, but now platform 10 is pushed to slide down on the strands until planar surface 30 lightly compresses foil piece 48 between itself and the adjacent hair and scalp. The clip is then driven into the fully "in" position of FIG. 3 and 6 which causes the limbs to compress jaws 14 and 16 clamping the hair in slot 20 and locking the platform. In this mode, that portion of hair bundle 54 between the roots and planar surface 30 act to provide a small degree of resiliency acting to urge surface 30 towards the scalp. This increases the frictional force experienced by that portion of foil piece 48 directly under planar surface 30. It will be appreciated that in either mode the beautician is above to drive clamp 12 towards platform 10 with one hand while at the same time and with the other hand, he is able to hold and direct hair bundle 54 in slot 20. After the clamp is pushed in apertures 38 and 40 so that the limbs thereof lock or squeeze jaws 14 and 16, the hair can be directed to lie in any convenient position on the remaining portion of foil piece 48 where application of the desired treatment occurs. As seen in FIG. 6 the hair is free flowing and unconstrained allowing it to be manipulated while being treated. The construction of the present invention affords nearly complete isolation between selected and unselected hairs.

FIG. 7 shows a plurality of devices 10 being used employing several overlapping, aluminum foil sheets. Thus it is possible to simultaneously treat several discrete hair packets or bundles.

Turning to FIG. 8, there is shown a partial perspective of another embodiment of the present invention. Clamp 12 of FIGS. 1-7 has been replaced by other clamping or attaching means, these means being shown in the form of a snap coupling. The coupling comprises a snap aperture 58 and a snap button 60. The button detachably, yet securely, snaps into aperture 58 when the jaws are squeezed. Operation of this device remains essentially similar to that referred to above.

FIG. 9 shows the head of a subject with a plurality of the devices 10 aligned with two sheets of a protective barrier 56 such as aluminum foil, paper or plastic film laid under the devices 10. The sheets 56 may be secured by adhesive tape 57.

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The spacing between the jaws, that is the width of slot 20 is not critical since clamp 12 will urge the jaws together. Yet the slot should not be too large for if so when the jaws are clamped, that portion of the slot 20 near wall 18 will remain open possibly allowing the chemical to seep in.

Clamp platform 10 can be molded one piece from a wide variety of plastic such as high density polyethylene, polypropylene, polyvinylchloride or one of the polyamides. The only criteria for the composition of platform 10 is that it remain inert to the treating chemical and be sufficiently deformable so that jaws 14 and 16 separate easily on application of finger pressure. Clip 12 can be any suitable elastically deformable material such as stainless steel, aluminum or indeed even some of the hard plastics.

While only a few embodiments of the present invention have been shown and described it is to be understood that many changes and modifications can be made hereto without departing from the spirit and scope thereof.

What I claim as new and desire to secure by Letters Patent is:

1. Apparatus for application of chemicals to selected hair strands comprising a clamp platform, the platform including:
a pair of opposed jaws;

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a planar surface operable with said jaws so that when the selected hair is positioned between and held by the jaws, said planar surface presses against the scalp and adjacent and unselected hair immediately thereunder; and,

clip means in the form of a U-shaped resilient clip slidable on the platform and acting to compress said jaws.

2. The apparatus of claim 1 wherein the platform includes a pair of apertures operably placed to receive said resilient clip and wherein said resilient clip is captured in the apertures.

3. The apparatus of claim 1 wherein the platform is molded of synthetic material.

4. The apparatus of claim 1 wherein said clip means is a U-shaped resilient clip defined by a pair of parallel limbs and wherein each one of said limbs slides in a respective one of said apertures, said clip adapted to so slide while remaining attached to the platform.

5. The apparatus of claim 1 further including a foil piece adapted for imposition intermediate of said planar surface and the adjacent hair.

6. The apparatus of claim 5 wherein said foil piece includes a channel into which the selected hair strands slide.

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