Sept. 2, 1969 M. A. GAGLIANO 3,464,425

HAIR PROCESSING APPARATUS

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FIG. 1

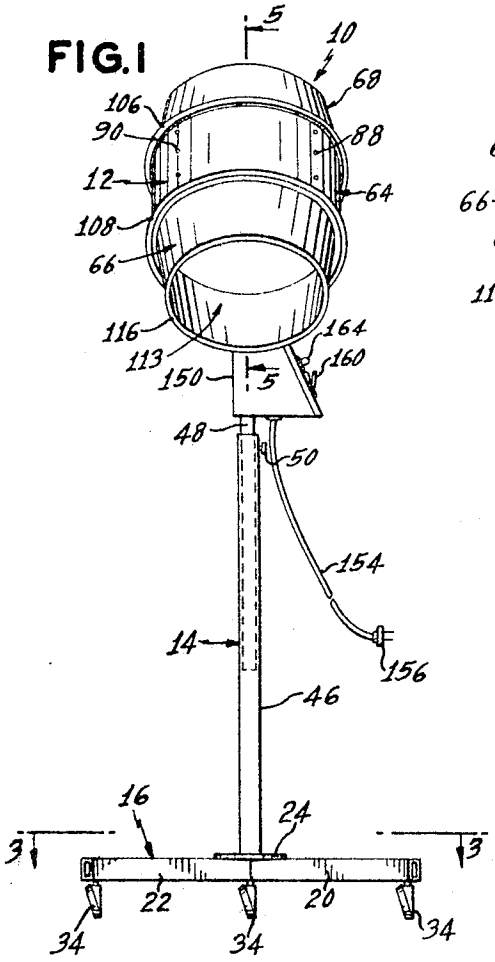


FIG. 2

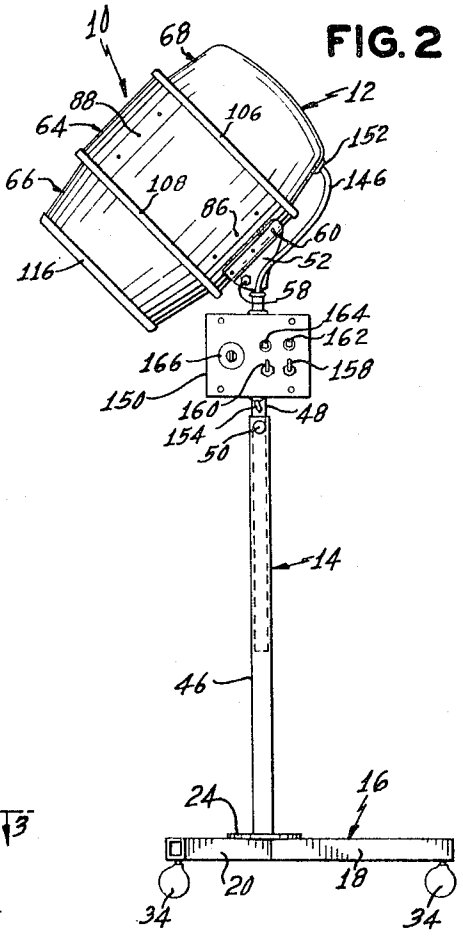


FIG. 3

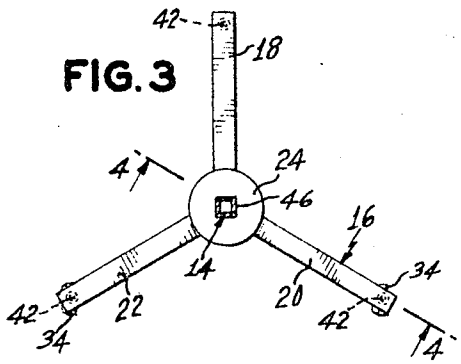
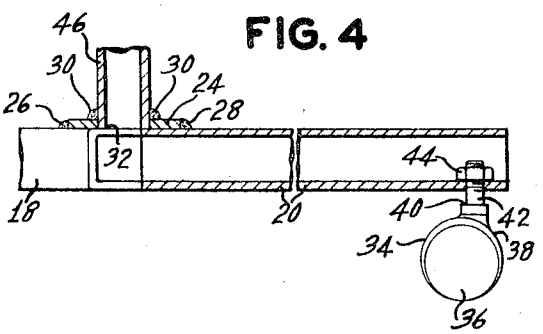


FIG. 4



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FIG. 5

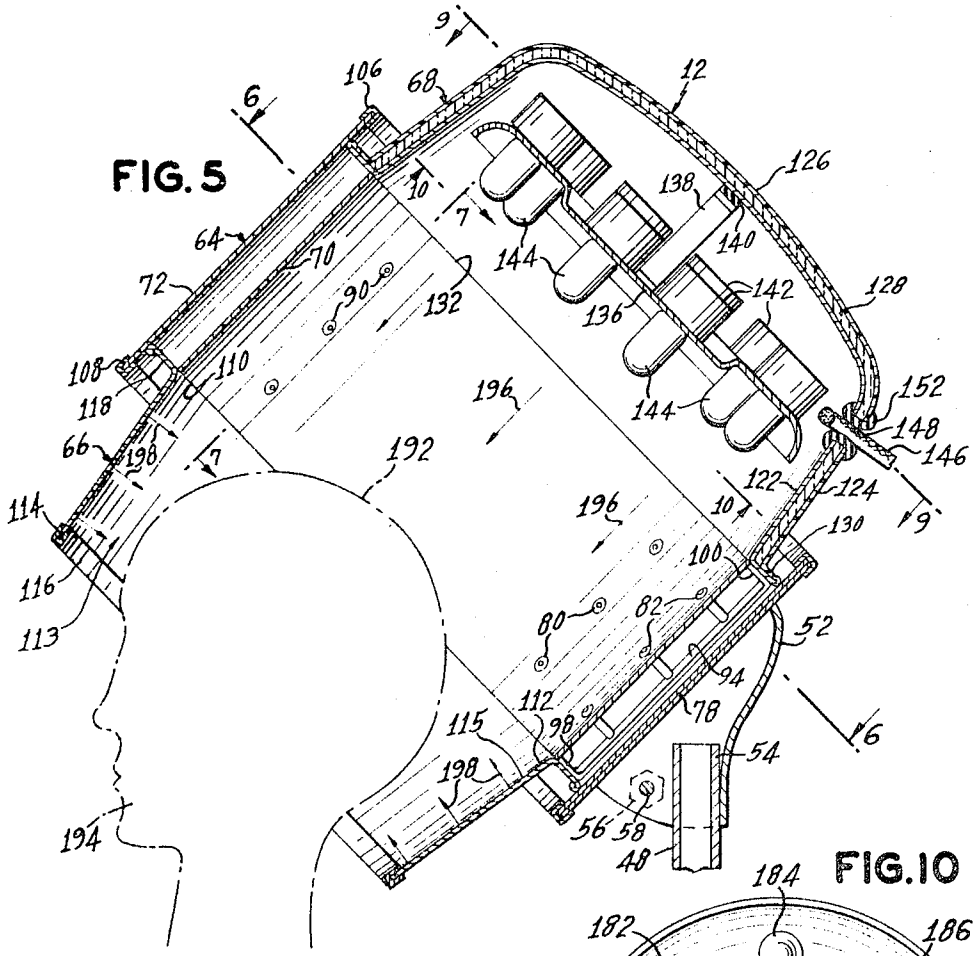


FIG. 10

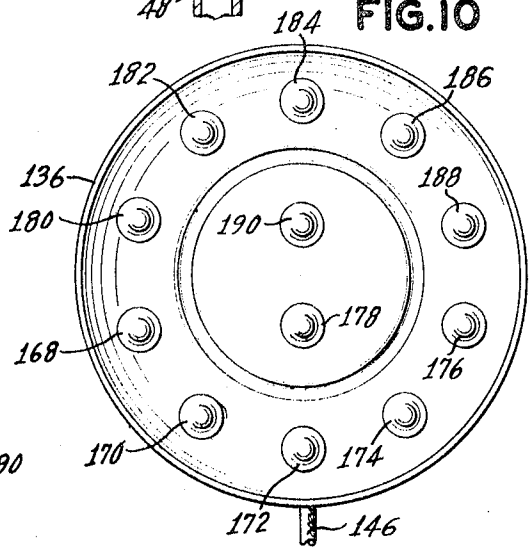
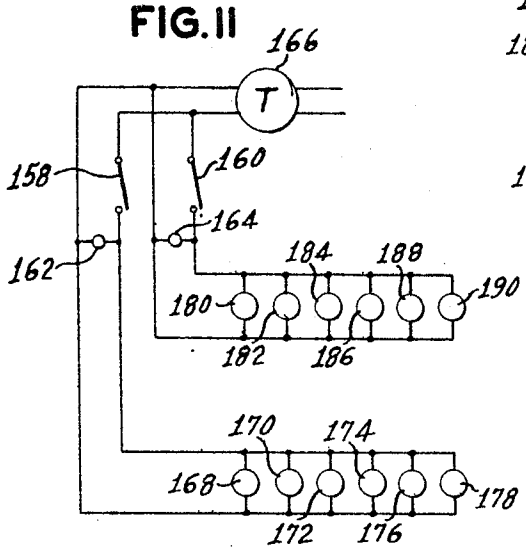


FIG. 11



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FIG.8

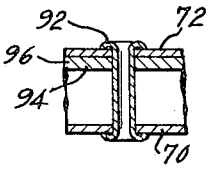
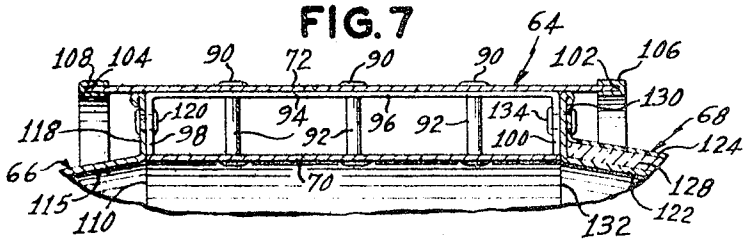


FIG.6

FIG.7



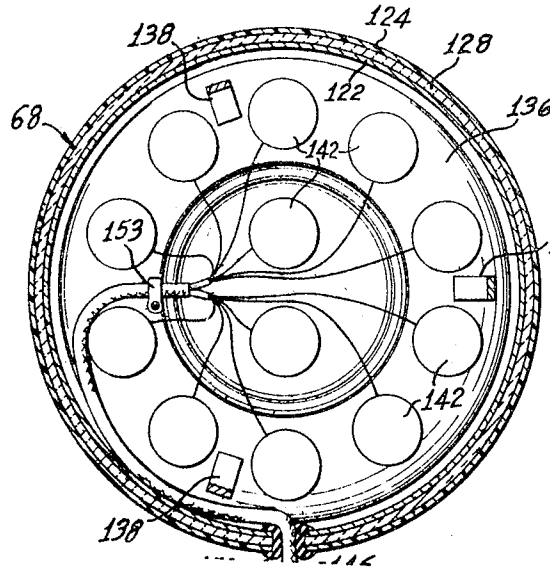


FIG.9

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HAIR PROCESSING APPARATUS

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Int. Cl. A45d 20/20, 20/26, 20/28
U.S. Cl. 132—9 2 Claims

ABSTRACT OF THE DISCLOSURE

A hair treatment apparatus including a hood having a lower portion with an opening to receive the upper portion of the head of a person within the hollow of the hood and being larger than the head to permit the hood to be spaced from the head and hair at all points therearound. The hood further includes an upper closed crown portion spaced upwardly from the normal position of the head within the hollow and a light energy source mounted to the upper crown portion within the hollow. The lower portion of the hood has a highly reflective inner surface which is inclined outwardly and upwardly from the opening to receive and reflect the light energy to the hair on the nape and hairline areas of the head.

This invention relates to an apparatus for treating the human hair; more particularly, the invention pertains to a device for processing a head of human hair which has been given a special treatment, such as for example, bleaching, dyeing, coloring, tinting, toning or the like.

One type of hair processing machine in common use employs infrared lamps or heat bulbs disposed in the upper portion of the dryer casing or housing of the machine, which are directed downward to concentrate the infrared rays or heat on the hair and effect a drying or processing by such procedure. This infrared or heat type of electric hair dryer or processer is an advancement, to a certain extent, over the circulating air type of hair dryer or processing machine, in that the moist air and chemical vapors which are often involved in the drying, setting, tinting, bleaching and coloring processes are not driven off, but instead remain within the casing of the machine to exert an influence on the hair and head of the patron using the same.

It has been found that by employing the new, improved hair processing apparatus of this invention all of the above mentioned treatments, such as drying, bleaching, dyeing, coloring, tinting and the like may be speeded up with consequent savings in time and money, and with equally good and often superior results obtainable than with customary procedures. Briefly the invention as applied to these treatments includes applying a coloring lotion, a bleaching agent, a dyeing preparation or a tinting cream or oil to the hair in the usual manner. Then instead of waiting the necessary time for these materials to function, which may be from about 20 minutes to about an hour and a half, depending on which material is used and depending on the type and condition of the hair being treated, the head is placed within the apparatus herein disclosed and the hair subjected to the mechanisms therein. Surprisingly the application of the device of this invention causes the treating material to function to its full capability in a much shorter time than is usual. By following the teachings of this invention hair treatments may be completed more quickly than heretofore. For example, the treating time for a "bleach touch-up" is reduced from thirty minutes which is the normal time to about six minutes; the processing time for an operation which usually requires 45 minutes is reduced to approximately 9 minutes; and the time for other treatments is similarly reduced.

Accordingly, if the apparatus and methods herein disclosed are properly used, superior hair setting and treating can be accomplished in very much less time than has heretofore been required, and with the utmost comfort and convenience to the patron. What is even more surprising and satisfying to the patron, and regardless of which treatment is employed according to this invention, is that the resultant coiffure is of better sheen, is softer and in many ways more beautiful than coiffures produced by conventional procedures and apparatus.

Besides the advantages already described, use of the invention decreases the cost of air conditioning the shop since high heat-producing drying apparatus is absent. This feature further adds to the comfort of the patron in case air conditioning facilities are inadequate during rush periods at the shop. Moreover space in the beautician shop for chairs, dryers and waiting room are lessened and inconvenience and time required of the patron is minimized, thereby reducing cost to the shop owner.

It is a general object of this invention to provide a novel and improved apparatus for the treatment of human hair.

Another general object of the subject invention is to provide an improved apparatus which accelerates and improves the action of bleaching, coloring, tinting, toning and like materials and agents on a head of human hair.

A further object of the instant invention is to provide an improved method for dyeing, bleaching, coloring, tinting, toning and similar handling of the hair of the head.

Yet another object of this invention is to provide an improved apparatus for accelerating the bleaching, dyeing, coloring, toning and the like of hair by coloring substances applied to the hair.

Still a further object of this invention is to provide an improved hair processing apparatus which is extremely simple in its construction, fool-proof in its operation and economical to fabricate and manufacture.

Yet a further object of the invention is to provide an improved apparatus which effects substantially uniform treatment of the entire head of hair of the user while at the same time retaining to a great extent the moisture and chemical vapors found to be necessary to obtain a complete and satisfactory hair treatment.

The novel features which are believed to be characteristic of this invention are set forth with particularity in the appended claims. The invention itself, however, both as to its organization and method of operation, together with further objects and advantages thereof, may best be understood by reference to the following description taken in connection with the accompanying drawings, in which:

FIG. 1 is a front elevational view of the hair processing apparatus of this invention;

FIG. 2 is a side elevational view of the apparatus;

FIG. 3 is a transverse sectional view through the apparatus taken on line 3—3 of FIG. 1;

FIG. 4 is a partial cross-sectional view through the apparatus along line 4—4 of FIG. 3;

FIG. 5 is a partial cross-sectional view through the apparatus on an enlarged scale taken along line 5—5 of FIG. 1;

FIG. 6 is a cross-sectional view taken along line 6—6 of FIG. 5;

FIG. 7 is a partial cross-sectional view through the device along line 7—7 of FIG. 5;

FIG. 8 is an enlarged cross-sectional view along line 8—8 of FIG. 6;

FIG. 9 is a cross-sectional view along line 9—9 of FIG. 5;

FIG. 10 is a transverse view through the apparatus along line 10—10 of FIG. 5; and

FIG. 11 is a diagrammatic view of the electrical circuit employed in the apparatus of this invention.

With detailed reference to the drawings now, and in particular FIGS. 1 and 2 thereof, the hair processing apparatus of this invention generally designated by reference numeral **10** is seen to include a hood or housing **12**, an adjustable stand **14** and a movable base **16**. Base **16** includes three rectangular members or legs **18**, **20** and **22** disposed at equal angles from one another and extending outward from a central point beneath the connection of adjustable stand **14**. Each of the members **18** through **22** is rigidly disposed with respect to its adjacent members by means of a disk like connecting member **24** which is welded to each of the members by welds, as at **26** on member **18** and **28** on member **20**. Disk member **24** is likewise connected by welds **30** to the base **32** of the adjustable stand **14**. Each of the legs **18** through **22** of the base **16** has connected to its outer end a caster **34** such that the base **16** can be rolled about and also swiveled about its center. Each of casters **34** is provided with a circular section **36** rotatably attached to the body portion **38** of the caster in order that base **16** may be rolled along the floor, the body portion **38** itself can be swiveled at **40** in a horizontal plane about the lower end of shaft **42** connecting caster **34** to the leg member **18**, **20** or **22**. Shaft **42** of the caster extends into the hollow portion of the leg of the base and is secured therein by means of a nut **44** threaded on the top thereof.

The adjustable stand **14** is mounted to the base **16**, being connected thereto at its lower end **32** and extending through disk like member **24** to rest and abut on the upper surfaces of legs **18**, **20** and **22**. Welds **30** connect the lower end of adjustable stand **14** to circular disk member **24**. Adjustable stand **14** includes a lower section **46** which is the section mounted to the base **16** and a smaller upper section **48** which is slidable and telescopable within the lower section **46**. The stand **14** may be adjusted to varying heights by moving telescoping upper section **48** inward and outward of the lower base section **46** and securing upper section **48** in any of a number of desired positions by tightening thumb screw **50** mounted in lower section **46** to the so adjusted upper section **48**. Thus the hood portion **12** of the apparatus may be adjusted to and maintained in varying heights for use with various size patrons and different sizes of chairs which support the patrons while using the apparatus of this invention. The upper end **54** of section **48** of the adjustable stand **14** is connected to the hood portion **12** of the apparatus through a connecting bracket **52**, more clearly depicted in FIG. 5. Upper end **54** fits within mounting bracket **52** and is secured therein by tightening nut **56** on the bolt **58** extending through the mounting bracket **52**. The mounting bracket **52** is secured to the hood portion **12** of the apparatus by appropriate rivets as at **60** and **62**.

The hood portion or housing **12** of the hair processing apparatus of this invention, as best depicted in FIG. 5, is seen to include a center section **64** attached to the mounting bracket **52**, a lower treating or processing section **64** attached to the central section and an upper section **68** attached to section **64** and containing the processing mechanisms of the apparatus. Center section **64** includes an inner circular member **70** mounted within an outer circular member **72**, see FIGS. 5, 6 and 7. The outer member or shell **72** is of a greater length or height than inner member **70** such as to hide or conceal the attachment of upper and lower sections **66** and **68** respectively to the center section **64**, all of which will be explained more fully hereinafter.

Inner member **70** is formed from a thin sheet of metal into its circular shape with the outer edges thereof overlapping as at **74**, and then riveted with rivets **76** through this overlapped portion to maintain the metal in the circular form, see FIG. 6. In like manner outer member or shell **72** is formed in a circular fashion from a thin sheet of metal with its opposed edges overlapping as at **78** and then riveted in this overlapped area **78** by rivets **60** and **62**, which additionally attaches connecting bracket **52** to this outer member **72**. This overlapping at **78** strengthens and rigidifies the structure of the hood in the area where attachment bracket **52** is connected.

When both the inner **70** and outer **72** shells have been formed, they are spacedly connected together by appropriate rows of rivets, as at **80**, **82**, **84**, **86**, **88** and **90**. Each of the rows of spaced connections between the inner **70** and outer **72** members includes appropriate rivets **92** and a spacing bar **94** having an elongated flat portion **96** lying against the inner side of outer member **72** and terminating in inwardly bent depending spacing portions **98** and **100**, the ends of which abut the outer surface of inner member **70** to thereby maintain the inner and outer members **70** and **72** in a spaced relationship with respect to each other, see FIG. 7.

Upper and lower exposed edges **102** and **104** respectively of outer shell or housing **72** are finished with beadlike bands or strips **106** and **108** respectively to give a smooth and finished look to the central portion **64** of the apparatus. Bands **106** and **108** may be fabricated from metal, rubber or plastic as so desired, a fanciful plastic band being preferred.

Lower section **66** of housing or hood portion **12** is attached adjacent the lower edge **110** of inner circular member **70** of the center section **64**. Lower section **66** is formed in the shape of a truncated cone; that is to say, the section has a circular cross-section with a larger diameter adjacent its upper portion or attachment end **112** and a smaller diameter adjacent its lower end **114**, which surrounds opening **113**. The purpose of this tapered shape will be explained more fully hereinafter. The outer edge **114** of section **66** surrounding open end **113** of the hood is provided with a strip or band **116** to give a finished appearance to the same and present a smoother edge to the operator and patron using the device. Strip **116** may be fabricated from metal, rubber or plastic material as desired. The sloping or tapered inner surface **115** of section **66** is highly reflective to aid in the complete and uniform processing and treating of a head of hair. In order to obtain a highly reflective inner surface, section **66** may be fabricated from a metal having a shiny surface which may be further polished for greater reflectivity. The upper or inner edge **112** of lower section **66** is flanged over as at **118** thereby providing a means for attaching section **66** to the middle section **64**. The attachment of these sections **64** and **66** is made by means of suitable rivets as at **120** connecting this flanged portion **118** to depending leg **98** of spacing member **94** at each of the rows of rivets **80** through **90**, as more clearly depicted in FIG. 7.

The upper section **68** of hood portion **12** of the apparatus is a double walled structure having both an inner **122** and an outer **124** wall which have a generally circular cross-section and which have a closed top **126** of a generally domed shape. Suitable heat insulating material **128** is contained between the inner **122** and outer **124** walls to insure that the outside section **68** remains cool should there be any heat build-up within the inner portion of the apparatus. Inner and outer walls **122** and **124** of the upper section **68** meet and are joined at the bottom of the section in a flanged portion **130** adjacent the upper edge **132** of inner circular member **70** of center section **64**. Upper section **68** is attached to middle section **64** through the flange portion **130** by means of rivets **134** extending through flange portion **130** and into the depending leg **100** of spacing members **94**. Appropriate rivets such as rivet **134** are used to further connect upper section **68** to the central sections **64** at the other rows of rivets **80** through **88**, similar to that as depicted in FIG. 7.

The hair processing or treating mechanisms are mounted within upper section **68** of hood portion **12** of the apparatus. Included therein is a support member **136** which is mounted to the domed portion **126** of this upper section

68 by means of suitable brackets 138. A suitable dielectric or insulating material 140 is provided between the outer ends of brackets 138 and their connection to the inner wall 122 of upper section 68. Attached to the upper side of support member 136 are a series of lamp sockets 142 spacedly arranged thereon, see FIG. 9. Mounted within sockets or receptacles 142 and extending through and outward from the lower side of supporting plate 136 are a number of small treating lamps 144 by by whose energy the patron's hair is processed while using this apparatus. Each of the sockets 142 with its engaged treating lamp 144 is electrically connected by conductor 146 extending through an opening 148 in the central rear portion of upper section 68 to a control box 150 which is mounted to telescoping section 48 of the adjustable stand 14. A suitable piece of insulation 152 is provided surrounding electrical conductor 146 where it passes through the opening 148 within the inner and outer walls 122 and 124 of the upper section of the housing 12. Conductor 146 is secured to support plate 136 by means of a connecting clip 153 to prevent undue stress and strain on the connections between the individual sockets 142 and the conductor 146. Control box 150 is electrically connectable to a suitable source of A.C. power through electrical conductor 154 and suitable wall plug 156. Control box 150 contains a pair of "off-on" switches 158 and 160 and respective pilot lights 162 and 164 to indicate when the respective switch is in the on or closed position. Also included within the control box 150 is a timing device 166 by which the length of time that the patron's hair is treated or processed is timed and by which after such treatment the apparatus is turned off thereby stopping the treatment. Switch 158 controls lamps 168, 170, 172, 174, 176 and 178, such that, if only this switch 158 is in the closed position the patron's hair will be processed on only the back portion of the top and the back side portions of the head and the nape of the neck. If it is desired to treat and process only those portions of the patron's hair which are on the front portion of the top, the front side portions, and the hairline of the head only switch 160 will be turned on or placed in the closed position such as to energize and operate lamps 180, 182, 184, 186, 188, and 190 which are located in the front and front center portions of the hood.

To use the apparatus of this invention the patron's head of hair 192 is first treated by applying the appropriate coloring lotion, bleaching agent, dyeing preparation or tinting or toning cream or oil as desired to the hair in the usual and normal manner. Then the patron's head 194 is placed in and under hood portion 12 of the apparatus, entering the same through opening 113 and more particularly, carefully centered within the lower section 66 thereof. Next the normal time for the applied materials to function is determined, and then the number of minutes is divided by 5 to arrive at the approximate treating time to be used employing the apparatus of this invention. The so determined time is then set on timer 166 and switches 158 and 160 are closed or placed in the on positions to energize the treating lamps 144 contained within the upper section 68 of hood portion 12. When the appropriate time has elapsed timer 166 will automatically break the electrical circuit and the lamps 144 will be deenergized. The operator of the apparatus may then examine the patron's head of hair to determine if further processing is warranted or needed to obtain the desired results. If further treatment or processing is indicated to be necessary either or both of switches 158 and 160 may be again closed and timed by timer 166 to further process either the entire head of hair, or if desired, by employing only switch 158 the back and nape may be treated, or by the use of switch 160 only the front and hairline areas may be processed.

When the apparatus of this invention is in use with treating lamps 144 thereof being energized, light energy is emitted therefrom in the direction of arrows 196 such as to hit and strike upon the highly reflective conical shaped inner surface 115 of lower section 66 of hood portion 12. The light energy emitted by treating lamps 144 thus falling and striking upon inner surface 115 is refracted at the surface, reflected in the direction of arrows 198, and diffused in the area adjacent reflective surface 115 to thoroughly and completely reach and process all of the hair of the patron and the materials to be applied thereto. Not only is the hair processed on the top of the head, but by this device the same is thoroughly and completely processed on the sides, back, front, hairline portions and nape of the neck to give a uniform and thorough treatment to the complete head of hair.

While only a certain preferred embodiment of this invention has been shown and described by way of illustration, many modifications will occur to those skilled in the art and it is, therefore, desired that it be understood that it is intended in the appended claims to cover all such modifications as fall within the true spirit and scope of this invention.

What is claimed as new and what it is desired to secure by Letters Patent of the United States is:

1. A hair treatment hood operative to apply radiant heat to the whole of the hair of a person whose head is placed in the hood, said hood comprising a hollow upper generally rounded and upwardly elongated portion having a lower peripheral end adapted to be positioned substantially outwardly around the dome of the head and extending above its said lower end, the lower end of said hood being formed with a depending hollow skirt-like portion having an inverted truncated generally conical shape with its interior surface being inclined upwardly and outwardly from said lower end to said upper portion, the interior surface of said skirt-like portion of said hood being smooth and highly radiant-heat reflective, a radiant heat source within said upper rounded portion above the dome of the head, the lower end of the rounded portion and the upper end of the skirt-like portion being spaced outwardly around the head whereby heat radiated from said source impinges upon said interior reflective surface of said skirt-like portion and is reflected inwardly and generally upwardly therefrom to heat the lower and under parts of the mass of hair which are hidden from direct radiation from said source.

2. In the hair treatment hood as defined in claim 1 wherein the interior surfaces of each of said portions of said hood are radiant-heat reflective, said interior surfaces reflecting the radiant heat to cause same to impinge upon said interior reflective surface of said skirt-like portion and reflect same toward the hair.

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U.S. Cl. X.R.

34—99