

July 17, 1962

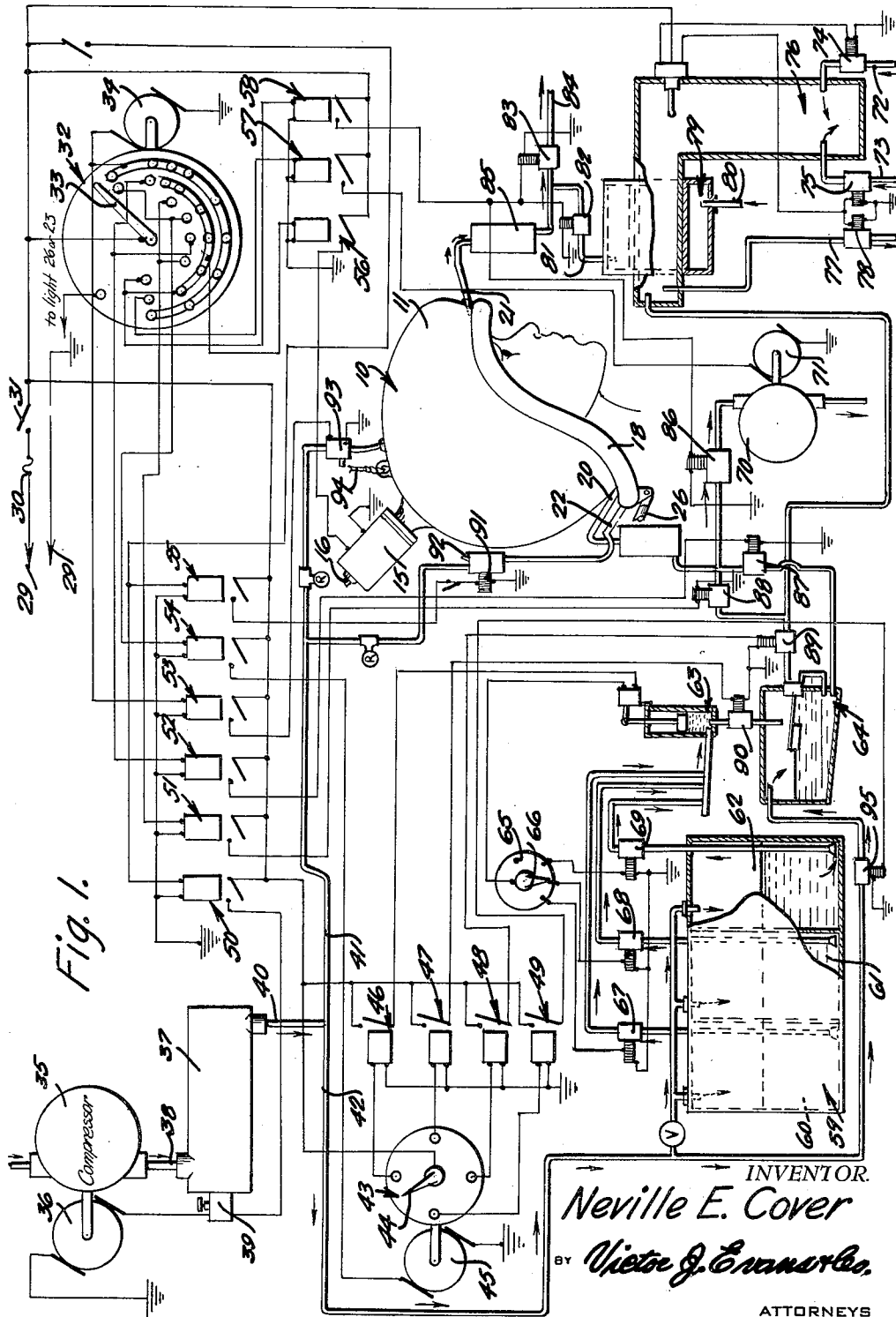
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HAIR TREATING DEVICE

Filed Nov. 14, 1958

2 Sheets-Sheet 1



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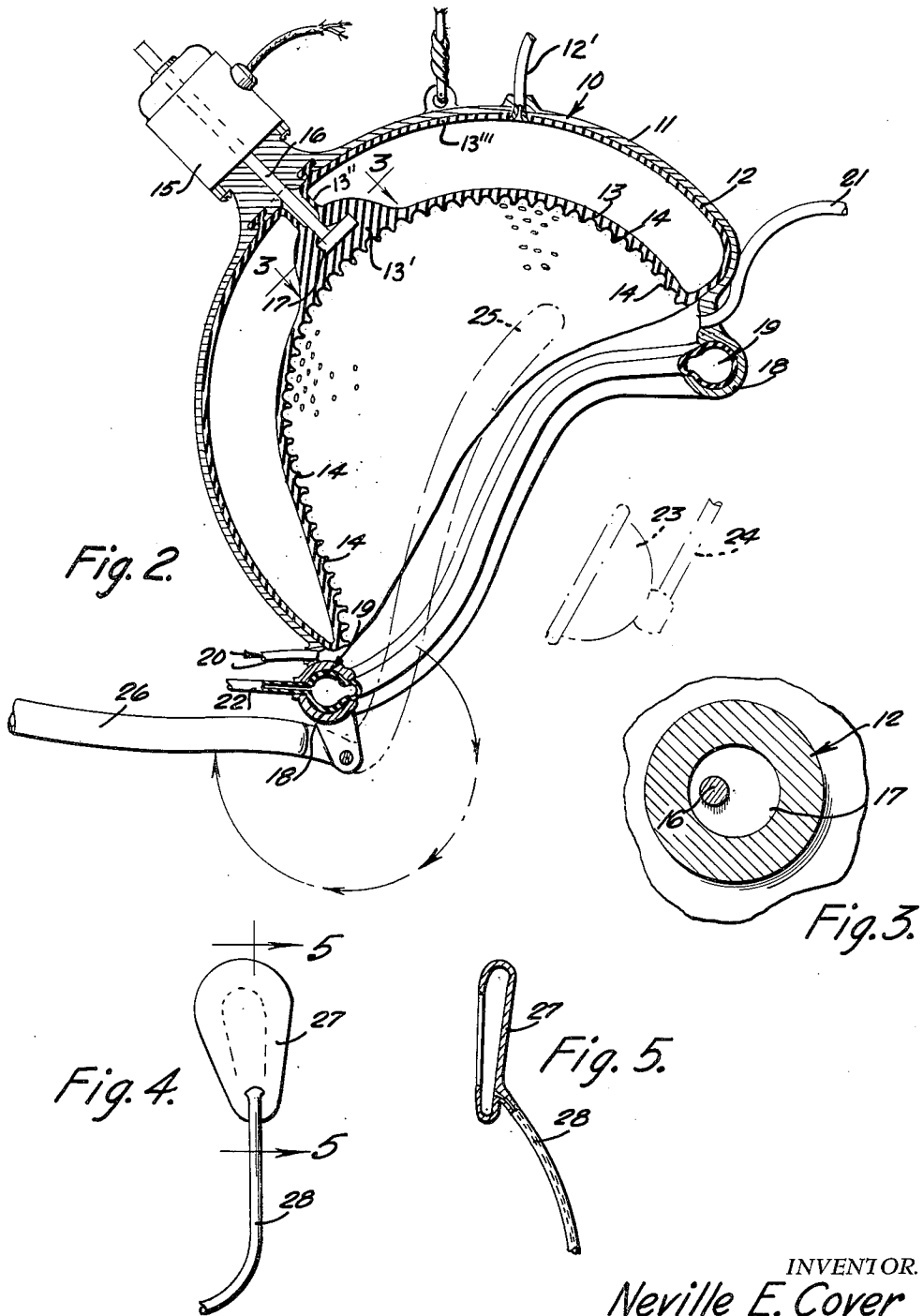
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2 Sheets-Sheet 2



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HAIR TREATING DEVICE

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This invention relates to a hair treating device, and more particularly to a device for treating the hair of a person such as a woman.

The object of the invention is to provide a device which can be used for automatically performing various types of work on a person's hair, as for example the device can be operated to shampoo and massage, rinse, dry or otherwise work on or treat a person's hair.

Another object of the invention is to provide a hair treating device for use in beauty parlors or the like, whereby a woman's hair can be readily and conveniently washed or cleaned or otherwise treated with suitable liquids or fluids and wherein a means is provided for effecting sterilization of the parts so that subsequent users of the equipment will always have fresh and clean equipment to be used.

A further object of the invention is to provide a hair treating device which is extremely simple and inexpensive to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are used to designate like parts throughout the same.

FIGURE 1 is a schematic view illustrating the present invention.

FIGURE 2 is a fragmentary sectional view illustrating the head engaging member.

FIGURE 3 is a sectional view taken on the line 3-3 of FIGURE 2.

FIGURE 4 is an elevational view illustrating one of the ear protectors.

FIGURE 5 is a sectional view taken on the line 5-5 of FIGURE 4.

Referring in detail to the drawings, the numeral 10 indicates a head engaging member which includes an arcuate support member 11, and arranged in the support member 11 is a flexible hollow casing 12, and the casing 12 is adapted to be inflated with air and is supplied from a tube 12', FIGURE 2. The casing 12 includes an inner portion 13 which is provided with a plurality of spaced apart head or hair engaging projections 14, FIGURE 2.

Supported by the member 11 is a motor 15 which serves to drive a shaft 16, the shaft 16 being arranged for sliding movement through the motor 15, and the shaft 16 has a cam 17 connected thereto, and the cam 17 is connected to or embedded in an enlarged section 13' on the inner portion 13 of the casing 12. The enlarged section 13' is integrally joined as at 13'' to the outer portion 13''' of the casing 12. Thus, when the motor 15 is actuated, the shaft 16 will rotate and this will cause the cam 17 to vibrate the casing 12 so that the projections 14 will effectively act on or work on the hair or scalp being treated.

Arranged contiguous to the support member 11 is a member 18 which serves to support a hollow flexible tube 19.

The numeral 20 and the numeral 21 indicate fluid inlet and fluid outlet conduits which are connected to the support member 11 whereby suitable rinsing or shampooing or treating fluids can be introduced into the interior of the device 10 so as to properly treat the hair of the lady or woman or man being worked on. The tube 19 has a conduit 22 connected thereto, and the conduit 22

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is adapted to have air pass therethrough as later described in this application.

There is further provided a means for sterilizing the interior of the device 10 so that each subsequent user of the device can be treated with a sterilized or germ free apparatus. This sterilization means may include an ultra violet lamp 23 which may be supported by means of a suitable arm 24, FIGURE 2, or a movable ultra violet lamp 25 may be provided and which lamp 25 may be connected to a suitable arm or member 26.

The person being treated in the apparatus of the present invention is adapted to be fitted with or provided with ear protectors or guards 27, FIGURES 4 and 5, and tubes 28 are connected to the ear protectors 27.

Referring now to FIGURE 1 of the drawings, it will be seen that the numeral 29 indicates the power input wires or lines which may have fuses 30 therein, and a switch 31 may be provided for making or braking the circuit. The numeral 32 indicates a control switch which includes a movable arm 33, and a motor 34 is associated with the switch 32.

There is further provided a conventional air compressor 35 which is operated by a motor 36, and air from the compressor 35 is adapted to be supplied to a tank 37 through a conduit 38, there being a pressure switch 39 connected to the tank 37. A conduit 40 serves to convey compressed air from the tank 37 to branch lines 41 and 42.

The numeral 43 indicates a timer which includes a movable contact arm 44 and a motor 45, and relays 46, 47, 48, and 49 are operatably connected to the timer 43. The numerals 50, 51, 52, 53, 54, and 55 designate other relays which are electrically connected in the circuit to the control switch 32. There is further provided a group of relays 56, 57, and 58, as shown in FIGURE 1 for example.

The numeral 59 indicates a fluid holding tank which includes a plurality of compartments 60, 61, and 62, and there is further provided fluid holding tanks 63 and 64.

The numeral 65 indicates a selector switch which includes a movable contact arm 66. The numerals 67, 68, 69 indicate solenoid valves which are provided for controlling the flow of fluid from the compartments 60, 61, and 62.

The numeral 70 indicates a vacuum pump which may be operated by a suitable motor 71.

The numerals 72, and 73 indicate inlet fluid conduits such as conduits which are adapted to convey cold and hot water from a suitable source of supply to a tank 76, and solenoid valves 74 and 75 are mounted in the lines 72 and 73. The numeral 77 indicates a discharge line which may lead to a suitable conduit that extends to a sewer or other disposal area, and a solenoid valve 78 is provided for controlling the flow of fluid through the conduit 77. The numeral 79 indicates a tank or compartment which has an air inlet pipe 80 connected thereto, and a conduit 81 leads from the tank 79 and has a solenoid valve 82 therein. The line 81 leads to a line 84 which has a solenoid valve 83 therein, and the line or conduit 84 may extend to a suitable sewer connection or the like, there being a tank 85 connected to the conduit 84. Other solenoid valves 86, 87, 88, 89, and 90 are provided for controlling the flow of fluid through various conduits as shown in the drawings. The numeral 91 indicates a solenoid valve which is connected to the conduit 22, and a manually operable switch 92 may be associated with the solenoid valve 91. The numeral 93 indicates a control mechanism, and the numeral 94 indicates a cable which has one end connected to the assembly 10, while the other end of the cable 94 may be connected to a suitable pulley mechanism whereby the assembly 10 can be conveniently raised and lowered as desired. The nu-

meral 95 indicates a solenoid valve which is adapted to be used for controlling flow of liquid into the tank 64.

From the foregoing, it is apparent that there has been provided a hair treating device which can be used for treating women's or ladies' hair and in use the assembly 10 is adapted to lowered in position on the lady's head to be treated. The rinsing or shampooing fluid is adapted to be introduced into the interior of the assembly 10 by means of the conduit 20, and after the liquid has served its useful purpose, it can be discharged out through the conduit 21. As the motor 15 is actuated, it rotates the shaft 16 which turns the cam 17 and this sets up vibrations in the flexible casing 12 so that the plurality of projections 14 will engage the lady's head or scalp or hair so as to massage this hair. It is to be noted that air can be introduced into the flexible casing 19 through the conduit 22 so that an effective seal will be provided around the person's head so that leakage of fluid or the like will be prevented. A shoulder rest may be used if desired or required.

The ear protectors 27 are adapted to be arranged over the person's ears so as to prevent liquid from entering the ear drums or the like, and the ultra violet lamps 23 and 25 can be used for sterilizing the interior of the assembly 10. The air for inflating the casing 19 can be supplied from the compressor 35 which is adapted to be actuated by the motor 36, and the tanks such as the tanks 59, 63, and 64 may hold a suitable treating fluid such as a shampoo material, rinse liquid or the like, and this liquid can be supplied to the interior of the assembly 10 through the conduit 20 so as to permit the desired treatment to be made on the person's head or hair. The control switch 32 as well as the timer 43 and selector 65 can be set so as to operate the various relays such as the relays 50—55 or 56—68 whereby the various solenoid valves will be properly actuated or energized to automatically control the flow of fluid or air or rinse material through the various conduits whereby the entire operation is substantially automatic. After completion of the treatment, the assembly 10 can be raised by means of the cable 94.

The parts can be made of any suitable material and in different shapes or sizes.

Certain of the conduits may be used for conveying warm air and other conduits can be used for conveying a liquid such as a liquid shampoo to the desired treatment section. It is to be understood that the entire unit can be incorporated in an attractive machine which may be made portable if desired, and suitable valves and regulatory implements can be used for controlling the temperature of the liquids where desired or required. Also, the apparatus may be operated by a suitable coin control mechanism and if desired a neutralizing solution can be used as for example when giving a permanent, shampoo or the like. The used liquid can be drained off and conveyed to a suitable locality and dry air which is warm can be used for drying the person's head or hair, and the temperature may be maintained at the desired degree by means of automatic thermostats or the like. The timing mechanism can be used for controlling the length of time that the treatment is being used or given and measured amounts of liquid are adapted to be dispensed or used. A suitable filter arrangement can be provided for preventing foreign matter such as loose hair from clogging up the apparatus. As previously stated, the casing 19 forms a fluid tight seal about the head. The tubes 28 of the ear protectors 27 serve as safety fea-

tures so as to prevent an air lock in the ear and the protectors serve to prevent irritation to the skin.

Some of the uses of the hair treating device are as follows. It can be used for shampooing the head and scalp, it can be used for rinsing with rinses of all types, and it can also be used for neutralization of permanents, and for application of waving lotions. The machine can also be used for scalp treatments, and various types of liquid can be applied or used, and a high frequency device may be used in connection therewith and it can also be used as a dryer, or for giving a color bath or the like.

The important aspect of the present invention is the hood as for example as shown in FIGURE 2 which makes it possible to perform all of the desired operations or processes. This hood will fit any size head and a water-tight joint is provided and the hood will also permit any size head to be massaged and different amounts of hair can be simply and safely treated so that the hood will function in a very efficient manner.

The hood consists of a shell which can be made of any suitable material and one or more inflatable members are arranged in association with the hood. As previously stated, a germicidal lamp can be used for sterilization and ear protectors can also be used.

Minor changes in shape, size and rearrangement of details coming within the field of invention claimed may be resorted to in actual practice, if desired.

I claim:

1. In a hair treating device, an arcuate support member, a hollow flexible air inflatable casing positioned in said support member and said casing embodying an outer portion and an inner portion, said inner portion having an enlarged section in which is embedded a cam, said enlarged section being integrally joined with said outer portion, said inner portion having a plurality of spaced apart projections, a tube for supplying air to inflate said casing, a motor supported by said support member, a shaft driven by said motor, said shaft being arranged for sliding movement through said motor, said cam secured to said shaft and connected to said casing so that when the motor is actuated, the shaft will rotate and this will cause the cam to vibrate the casing so that the projections will effectively act on or work on the hair or scalp being treated, a bracket arranged contiguous to said support member, a hollow flexible tube mounted in said bracket, fluid inlet and outlet tubes connected to said support member whereby suitable rinsing or shampooing or treating fluids can be introduced into the interior of the device so as to properly treat the hair of the person being worked on, and a conduit connected to said hollow flexible tube for the passage therethrough of air whereby an effective seal will be provided around the person's head so that leakage of fluid or the like will be prevented.

2. The structure as defined in claim 1, and further including ear protectors.

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