Sept. 20, 1955 H. HARIU 2,718,584

BODY-HEATING DEVICES

Filed Aug. 27, 1952

FIG. 1.

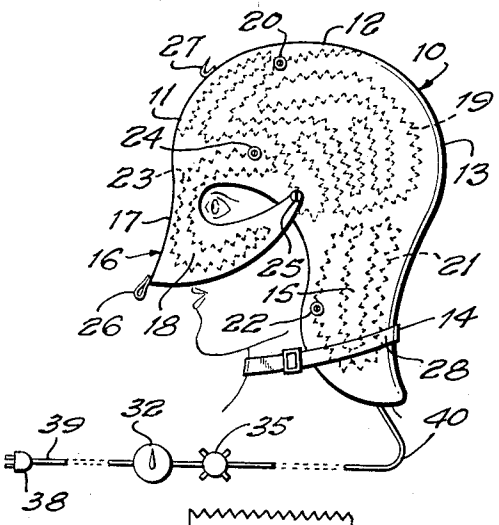


FIG. 2.

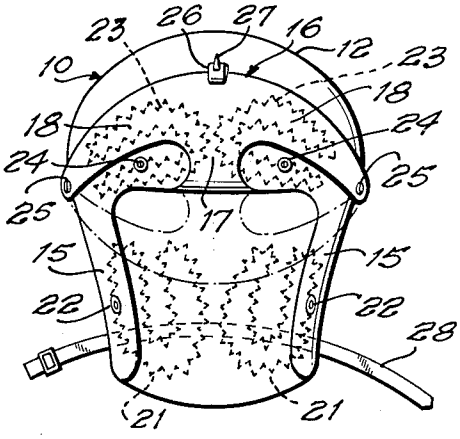
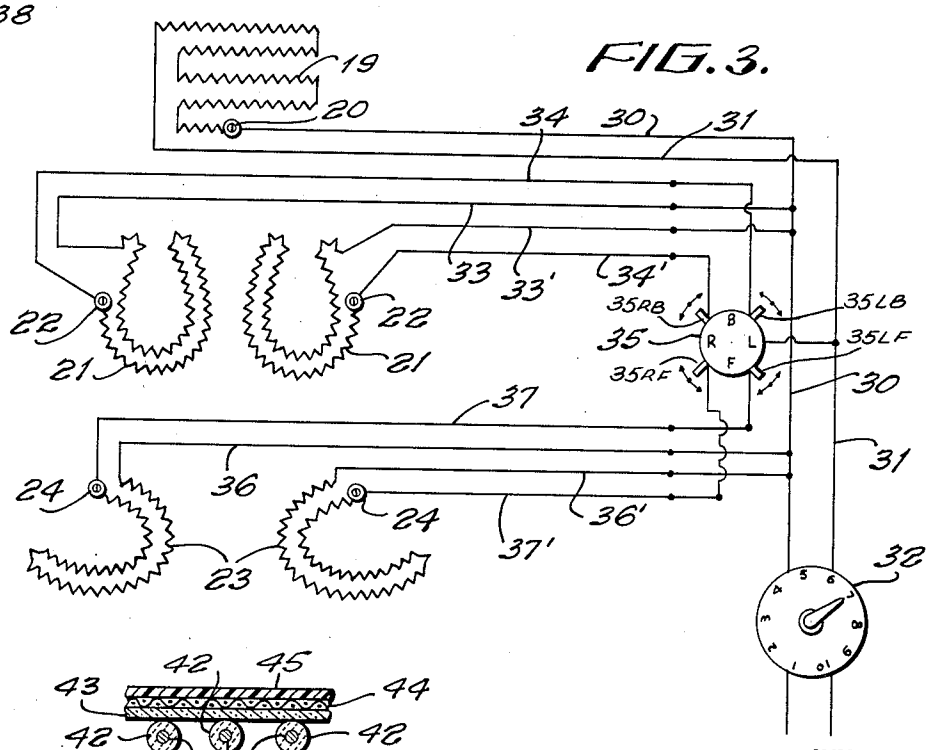


FIG. 3.



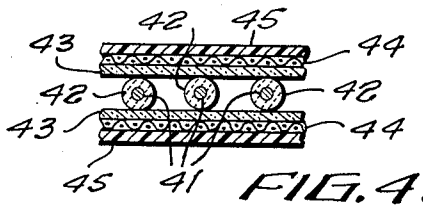


FIG. 4.

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BODY-HEATING DEVICES

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4 Claims. (Cl. 219—46)

This invention relates to body-heating devices in general and particularly to a heated head-gear especially adapted for relieving colds, headaches, sinus aches and other similar ailments.

While electrically heated hoods, electrically heated face masks and allied devices are known in the art, the present device comprises a combination head-gear composed of two distinct, interconnected or integral cooperating members, one constituting a skull and neck covering cap representing a relatively fixed or major member of the device, and a nose and cheek covering mobile member, the latter being so arranged that it can be placed in two different positions, that is an operative nose and cheek covering position and an inoperative position at which both the nose and the cheeks are freed, there being provided with the fixed member and the mobile member suitable coacting means for facilitating the change of position of the mobile member and for holding it in either of its two intended positions.

Furthermore, the present device includes a specific arrangement of heating elements for those parts of the head which often require the application of a relatively high degree of heat, as compared with other parts of the head to which considerably less heat should be applied.

The principal object of this invention therefore is the provision of a combination head-gear composed of a major fixed member and a mobile member, the former being adapted to cover the forehead, the skull, the nape area and the cervical gland areas at both sides of the nape, while the mobile element is adapted, while in its operative position, to cover the nose and cheeks areas, and wherein certain parts of the mobile member are designed to be attachable and detachable in respect to the major member, and wherein means are provided for holding the mobile member in either its operative, nose and cheek-covering position or in inoperative position at which both the nose and the cheeks are exposed.

Another object of this invention is to provide a relatively inexpensive but highly effective and practical electrically heated head-gear for the purpose indicated, comprising a major or fixed member, provided with a continuous heating element which is adapted to supply relatively low heat to certain head portions, such as the forehead, the cranium and the back of the head, and wherein in addition two independent, individually operable heating elements are arranged in the major member for supplying a greater amount of heat to the nape and cervical gland areas, one on each side of the neck, and wherein a mobile member, operatively associated with the major member, has similar independent heating elements for supplying relatively high heat to the brow, nose and cheek-bone areas, and wherein the heating elements of the major member as well as the individual heating elements for the cervical glands and the brow, nose and cheek areas have individual adjustable thermostatic heat controls for maintaining the heat supplied by said elements fairly constant and preventing their overheating, and wherein the individual heating elements for the cervical gland areas and

the brow, nose and cheek areas are additionally controllable by hand through a switch arranged in the supply line, and wherein in addition to all the foregoing controls there is a general current regulating rheostat by means of which the main supply to all of the heating elements is controllable simultaneously by hand.

A still further object of this invention is to provide in a device of the class specified, a heating elements-retaining structure wherein the heating elements which are held or are encased in refractory material, and which latter is placed between two dielectric, heat resistant layers, and to the outer faces of which layers is applied a relatively soft and pliable fabric, and the outer face of the fabric being provided with a plastic covering adapted to protect the entire device both from within and without against moisture and also to render it readily cleansible.

The foregoing and numerous other important objects and additional advantages of this invention will become more fully apparent from the ensuing description in conjunction with the accompanying drawings showing the presently preferred structure in a more or less diagrammatical manner, and wherein:

Fig. 1 represents a side elevation of the device as applied to a head and with the mobile member in operative position;

Fig. 2 is a front elevation thereof with the mobile member in elevated, nose and cheek area freeing position;

Fig. 3 is the electric diagram showing the arrangement of the different heating elements and their controls; and

Fig. 4 is a typical cross section through the structure of the head-gear.

It will be observed from Fig. 1 that the headgear of the present invention comprises a major member **10** which is adapted to cover the forehead portion **11**, the cranium **12**, the back portion of the head **13**, the nape **14** and the cervical gland areas **15**. Integral with member **10** and operative relative thereto is the movable member **16**, which comprises a nose area **17** and cheek areas **18**. Particular attention is invited to the back and neck structure of the major member, the rear portion of which extends quite low toward the shoulders so that the nape is completely covered to below the upper four or five cervical vertebrae, while the sides of major member **10** extend toward the jaw bones so that they fully cover the cervical gland areas. It will be also seen that both the temple and ear areas are fully covered.

The upper portion of member **10** is preferably heated by a single continuous heating element indicated at **19**, controlled automatically by an adjustable thermostat **20**, although more than one of such elements may be employed, each equipped with individual thermostats. The cervical gland areas are heated by independent elements **21** and each of these elements have individual, adjustable thermostatic controls **22**. Mobile member **16** of the device is heated along its nose-covering portion, above the sinus and brow areas and the cheekbone areas portions by two independent heating elements **23**, one at each side of the face, each of the elements having individual, adjustable thermostatic controls **24**.

Mobile member **16** is shown in Fig. 1 in its operative, nose and face-covering position, the arrangement of the major and mobile members being such that when the triangular cheek-covering portions **18** of the mobile member are applied over major member **10**, openings for the eyes are formed between the members. At the reduced ends of cheek-covering areas **18** are provided two-way snap fastener elements or similar devices **25** which have female receptacles at both of their faces. Adapted to cooperate with snap fastener elements **25** are male snap fastener elements, not shown, extending from the outer covering of major member **10** and located approximately over or above the temple areas. Thus when mobile

member 16 is held in its operative, face-covering position shown in Fig. 1, female snap fastener elements 25 engage the cooperating male fasteners with one set of their receptacles and when mobile member 16 is swung up to the position shown in Fig. 2, they again can be attached to these male fastener elements by way of their other set of receptacles. In addition the end of the nose-covering portion 17 is provided with a perforated loop 26 adapted to engage a hook or similar element 27 when mobile member 16 is swung to its inoperative position.

It is preferred that at the nape area the major member 10 is provided with an adjustable strap 28 whereby the nape portion and incidentally the entire major member 10 may be adjusted to different sizes of heads.

In Fig. 3 it will be noted that heating element 19 for the upper portion of major member 10 is shown to comprise one continuous resistance wire connected through adjustable thermostat 20 directly by leads 30 and 31 to rheostat 32. Resistance elements 21 for heating the cervical gland areas are provided with individual thermostats 22 and are independently connected by leads 33 and 33' with main lead 30 and by leads 34 and 34' with the upper end of hand control switch 35. Similarly individual heating elements 23 for the forehead, sinus, nose and cheek areas, have also individually adjustable thermostatic controls 24, and are connected by means of leads 36 and 36' to main lead 30 and by leads 37 and 37' with the lower end of switch control 35. The latter control is preferably marked by letters "R" and "L" indicating right and left, and letters "B" and "F" indicating back and front. Extending from control 35 are four switch levers 35RB, 35RF at the left and 35LB and 35LF at the right.

All of these levers are shown in their central inoperative or "off" position. When these levers are moved in either of the directions indicated by the double arrows adjacent to these levers they are placed to their "on" position and will close their respective circuits controlled by them. Thus, for instance, when lever 35RB is operated in either direction to its "on" position, it will close the circuit to energize the right back or rear heating element 21. When lever 35LF is placed to its "on" position, it will close the circuit to energize the left frontal element 23. Each of the elements 21 and 23 are independently controllable by their respective switch levers. Electric energy to the head-gear is supplied by way of plug 38 through double conduit 39 to rheostat 32, and from there through hand switch 35 and multiple cable 40 (see Fig. 1).

A typical cross section through the head-gear structure is clearly shown in Fig. 4, wherein are indicated resistance wires 41 supported by refractory beads or elements 42 which in turn are disposed between two sheets of dielectric material 43. These sheets are covered with heat-resistant fabric 44, and over the latter are applied thermoplastic outer layers 45. All of the layers are intimately united with each other and form with the wire, a pliable structure. Obviously the illustration in Fig. 4 is exaggerated as to the size of the sheet material layers, and as to the dimension of refractory elements 42 and resistance wire 41.

Summarizing, the structure of the head-gear discloses that major member 10 extends from the nose bridge over the cranium to and beyond the nape in the direction of the vertical center plane of a head, and that its sides cover the temporal and ear areas and particularly the cervical gland areas at both sides of the neck. Mobile member 16, integral with, but adjustable relative to member 10, extends from the nose bridge area downwardly over the end of the wearer's nose and sidewisely toward and over the temple areas, by forming angular, substantially wedge shaped, arcuate cheek-covering flaps. Nose-covering portion 17 and cheek-covering portions 18 can be placed into either their face-covering, operative, or their face-freeing, inoperative positions, at which they are held by the fastening means provided with the major and mobile members. In addition, the individually controllable resistance elements at different areas of the device render the head-gear most efficient for its intended purpose.

Application and use

For persons suffering from simple head colds, beneficial results will be obtained by securing the head-gear to the head, elevating mobile member 16 to its inoperative position, indicated in Fig. 2, and applying heat to just the upper portion of the head by means of resistance element or elements 19 and shutting off both pairs of elements 21 and 23.

When there is indication of a head cold and congested nasal passages, mobile member 16 is placed in its operative position shown in Fig. 1, and elements 23 are energized in addition to element 19 of fixed member 10. In some cases only one side of the nose is affected, in which event the heating element on that side is energized by placing the corresponding frontal lever on switch member 35 to its "on" position, whereas the side not affected can be left unheated in that the controlling switch lever is placed to its "off" position. The "on" and "off" positions are not shown in the drawings as superfluous.

In the event of a severe head cold, the entire head is usually affected, including the sinus, the nape and the cervical gland areas. In such case all of the heating elements of the head-gear are preferably energized. If a person using the head-gear rests with one side of the head against a pillow, it is sometimes advisable to discontinue the supply of current to that side of the device, while leaving the exposed side heated.

As has been explained in connection with each of the heating elements shown in the diagram, these elements are provided individually with automatic and adjustable thermostatic controls 20, 22 and 24. These thermostats are arranged in series with their respective resistance elements and are advantageously adjusted to the desired heat applicable to particular individuals so as to prevent excessive heating of the device, thus rendering it uncomfortable to the wearer. For this purpose not only the adjustment of the individual thermostats should be made prior to applying the device, but after applying it the main rheostat 32 should be adjusted before the patient retires, or falls asleep. By the use of rheostat 32, the individual thermostats for the several heating elements, and switch 35 controlling the two units of the mobile member 16 and the two units for the cervical gland areas, any suitable heat adjustment for every contingency can be effected.

While in the foregoing a specific structure of the device is described in connection with the accompanying drawings, it will be understood that obvious changes may be required in the production of the device on a large scale, without affecting the principle of this invention, that is the combination with a major head-gear member, of a mobile nose and cheek-covering member integral with the major member, both being equipped with independently controllable heating units, such obvious changes being deemed to reside within the scope of this disclosure.

What is claimed as new is:

1. In a heatable head-gear, the combination with a fixed major member extending from the nose bridge area over the cranium to and beyond the nape and covering the forehead, the temple and ear areas and the cervical gland areas of the neck, of a mobile member fixedly associated with the fixed member in the vicinity of the nose bridge area and comprising a central nose-covering portion and two cheek-covering portions extending from the latter toward the temple areas; a continuous independent heating element for providing relatively low heat to the major member; a pair of individual heating elements provided at the areas of the cervical glands; and another pair of individual heating elements arranged in the nose-covering portion and the two cheek-covering portions, said latter

heating elements extending from above the brow areas over the nose bridge area to and over the cheek areas; each of the heating elements for the major and mobile members having individual, automatically adjustable heat controls; said individual heating elements for the cervical gland areas and the brow, nose and cheek areas having in addition individual manually operable controls, and a manually operable rheostat serving jointly all of the heating elements.

2. In a heatable head-gear according to claim 1, and wherein the heating elements for the cervical gland areas and for the brow, nose and cheek areas are designed to provide heat to their respective areas at a substantially higher degree than that supplied by said continuous independent heating element of the major member.

3. In a heatable head-gear according to claim 1, and wherein all of the heating elements are held in refractory guides between sheets of dielectric material, the latter being covered with heat-resistant fabric sheets to which

are applied outer, thermoplastic layers, said sheets and layers being sufficiently pliable to facilitate intimate application of the head-gear to all parts of the head intended to be covered by the latter.

4. In a heatable head-gear according to claim 1, and wherein said major member is provided with means for facilitating its adjustment to heads of different sizes.

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