DESCRIPTION

ELECTRIC STIMULUS MASK

Technical Field

[0001]

The present invention relates to an electric stimulus mask for applying electric stimuli to a living body.

Background Art

[0002]

For the purpose of medical treatment or cosmetic care of a living body, methods for relaxing the muscles of the face to improve blood circulation by applying current to electrodes provided on a mask and methods for introducing active ingredients of a drug solution or serum, for example, into the face by wearing a mask with a nonwoven fabric, for example, impregnated with a drug solution or serum, for example, adhering closely to the face and then applying current to electrodes provided on the mask have been known in the conventional techniques. Various types of electric stimulus masks that have electrodes arranged on the inner surfaces of the masks have been known as masks used in these methods.

[0003]

An electric stimulus mask described in Patent Literature 1 includes two forehead electrodes and two cheek electrodes on the inner surface thereof. Such a mask is used by placing the mask on the face of a person lying on his or her back and applying current to the electrodes. An electric stimulus mask described in Patent

Literature 2 includes 12 pairs of electrodes (24 electrodes in total). Such a mask is used by placing the mask on the face of a person lying on his or her back, further overlaying a hard mask and a gel mask thereon and securing these masks to the face, and then applying current to the electrodes. An electric stimulus mask described in Patent Literature 3 includes conductive fabrics in end sections of the mask. Such a mask is used by securing the mask to the face by hooks provided in a mask body and then applying current to the conductive fabrics.

Citation List

Patent Literature

[0004]

Patent Literature 1: JPY3082187

Patent Literature 2: JPA2007-037657

Patent Literature 3: JPY3078100

Summary of Invention

Technical Problem

[0005]

However, the electric stimulus mask described in Patent Literature 1 is simply placed on the face of a person lying on his or her back, and a gap is thus easily created between the electric stimulus mask and the face. Therefore, with the electric stimulus mask described in Patent Literature 1, current is concentrated on limited contact areas between the electrodes and the face, thus giving discomfort such as pain to the user and failing to provide

effective electric stimuli.

[0006]

According to the electric stimulus mask described in Patent Literature 2, the face wearing the electric stimulus mask is secured to a pillow with the hard mask and the gel mask. Thus, the face is unable to move while the electric stimulus mask is secured to the face. Furthermore, it takes time to secure the hard mask and the gel mask to the face, and the help of an assistant is needed.

[0007]

According to the electric stimulus mask described in Patent Literature 3, the hooks are directly secured to the electric stimulus mask. Thus, when the mask is worn by the face, tension is applied only in the vicinity of the extensions of the hooks. Gaps are thus easily created between portions excluding the vicinity of the extensions of the hooks and the face. Therefore, in the electric stimulus mask described in Patent Literature 3, current is concentrated on limited contact areas between the electrodes and the face, thus giving discomfort such as pain to the user and failing to provide effective electric stimuli.

Solution to Problem

[0008]

In order to solve the above-described problems, an electric stimulus mask of the present invention is characterized by (1) including: a mask body with openings in areas corresponding to eyes, a mouth, and a nose; a conductive section provided on an inner surface

of the mask body excluding the openings; a pair of left and right cores that extend from an area corresponding to a lower jaw excluding a chin to an area corresponding to a tempora along an outer edge of the mask; and tension members that are secured to the cores for pulling the mask body in a direction to adhere the mask closely to a front surface of a face via the cores when the mask is worn, the tension members being attached to at least two securing parts including a first securing part and a second securing part positioned on a side of an upper edge and a side of a lower edge, respectively, with respect to a center of the core in a longitudinal direction.

[0009]

(2) In the configuration of (1) described above, the following expression (1) can be satisfied where A is a length from the first securing part to the upper edge of the core, B is a length from the second securing part to the lower edge of the core, and C is a length from the first securing part to the second securing part: $B < A < C$ ……(1).

[0010]

(3) In the configuration of (1) or (2) described above, the conductive section can include a first conductive section covering an area corresponding to the lower jaw and a cheek and extending from an area corresponding to the chin to an area corresponding to a temple, and a second conductive section extending from an area corresponding to one of left and right forehead regions on either side of a center line of the electric stimulus mask in a transverse

direction to an area corresponding to the other one of the forehead regions.

[0011]

(4) In the configurations of (1) to (3) described above, a housing section for housing a large number of pliant ribs extending from the mask body toward the conductive section is formed between the mask body and the conductive section, and these pliant ribs elastically deform due to abutment of the pliant ribs against the face of a user via the conductive section when the mask is worn. This can improve a sense of softness and a sense of fit when the mask is worn.

[0012]

(5) In the configurations of (1) to (4) described above, the mask body includes a slit into which the core is inserted, the core is formed in a bow shape, an end face of the core in its inserting direction includes a plurality of cutouts at predetermined intervals in the longitudinal direction of the core, and the cutouts are fit in a plurality of partition walls formed in the slit, respectively. This can prevent the positional displacement of the core. Additionally, elastic deformation of the core in a direction to close the cutouts when the mask is worn can effectively reduce unevenness in adherence level in the mask body.

[0013]

(6) In the configurations of (1) to (5) described above, a bent barb part for temporarily retaining a liquid falling in drops

along the inner surface of the mask body can be formed in an area of the inner surface of the mask body corresponding to a jaw. This allows a drug solution, for example, flowing out from a nonwoven fabric, for example, interposed between the conductive section and the face and falling in drops along the inner surface of the mask body to be retained in the barb part. Consequently, the liquid can be prevented from flowing out to the outside of the electric stimulus mask.

Advantageous Effects of Invention

[0014]

According to the electric stimulus mask of the present invention, tension to secure the electric stimulus mask to the face transmits over the entire mask body via the cores. Thus, the face and the mask can stably adhere closely to each other, thereby applying effective electric stimuli to the face.

Brief Description of Drawings

[0015]

FIG. 1 is a schematic view illustrating the structure of a human face.

FIG. 2 is a front view of an electric stimulus mask.

FIG. 3 is a side view of the electric stimulus mask.

FIG. 4 is a rear view of the electric stimulus mask.

FIG. 5 is a diagram illustrating a state in which the electric stimulus mask is used.

FIG. 6 is a rear view of an electric stimulus mask according

to a second embodiment.

FIG. 7 is a schematic diagram of a slit.

FIG. 8 is a plan view of a core according to the second embodiment.

Description of Embodiments

[0016]

The structure of a human face by which an electric stimulus mask 1 according to an embodiment of the present invention is worn will be described first. FIG. 1 schematically illustrates the structure of the human face, and dotted lines are used to specify respective regions of the face.

[0017]

The human face has the eyes, nose, mouth, and ears, which are sensory organs, and these form eye areas 100, a nose area 101, a mouth area 102, and ear areas 103.

[0018]

The lower jaw is formed under a line connecting a lower edge of the mouth area 102 with a lower edge of the ear area 103. The lower jaw includes a chin area 104 formed under the mouth area 102 and a corpus mandibulae area 105 extending from the chin area 104 to an area under the ear area 103. The corpus mandibulae area 105 includes an angulus mandibulae area 110 at an intersection between the lower contour of the jaw and the side contour of the jaw.

[0019]

A temple area 106 is formed between the eye area 100 and the

ear area 103. A cheek area 107 is formed at a position surrounded by the eye area 100, the nose area 101, the mouth area 102, the corpus mandibulae area 105, the ear area 103, and the temple area 106.

[0020]

A gently curved forehead area 109 is formed on the anterior side of the face with respect to a boundary along a line connecting one of the left and right angulus mandibulae areas 110 with the other one thereof through the left and right temple areas 106 as well as above the eye area 100 and the nose area 101.

[0021]

A temporal area 108 is formed lateral to the forehead area 109 as well as above the ear area 103 and the temple area 106.

[0022]

Hereinafter, the electric stimulus mask 1 according to an embodiment of the present invention will be described in comparison to the structure of the human face.

[0023]

FIG. 2 is a front view of the electric stimulus mask 1. A mask body 2 mainly includes areas corresponding to the forehead area 109, the temporal area 108, the temple area 106, the cheek area 107, the corpus mandibulae area 105, and the chin area 104. The mask body 2 is formed with a curved shape in conformity with the structure of the front surface of the face.

[0024]

The mask body 2 includes openings 3a to 3c in areas corresponding to the eye areas 100, the nose area 101, and the mouth area 102, respectively. For example, the openings 3a corresponding to the eye areas 100 are formed in a horizontally symmetrical manner about a center line X at positions 2/10 to 4/10 of the mask body 2 from an upper edge of the mask body 2. The opening 3b corresponding to the nose area 101 is formed in a horizontally symmetrical manner across the center line X at a position 5/10 to 6/10 of the mask body 2 from the upper edge of the mask body 2. The opening 3c corresponding to the mouth area 102 is formed in a horizontally symmetrical manner across the center line X at a position 6/10 to 8/10 of the mask body 2 from the upper edge of the mask body 2.

[0025]

The phrase "area corresponding to" herein refers to an area of the electric stimulus mask 1 covering a specific region of the human body when the electric stimulus mask 1 of the present invention is worn by the face.

[0026]

The mask body 2 may use an insulating and flexible member, and a silicon rubber, for example, may be used. The use of the silicon rubber in the formation of the mask body 2 allows for deformation of the mask body 2 in conformity with the facial contour, thus improving a degree of close adherence between the electric stimulus mask 1 and the face.

[0027]

An inner surface of the mask body 2, which is a contact surface between the mask body 2 and the face, is provided with a forehead conductive section 10, a right side conductive section 11-R, and a left side conductive section 11-L indicated by dotted lines. Cores 4 indicated by dotted lines are embedded in the mask body 2. Note that the forehead conductive section 10, the right side conductive section 11-R, the left side conductive section 11-L, and the cores 4 will be described later.

[0028]

The configuration as well as the functions and effects of the electric stimulus mask 1 according to the present embodiment will be described next with reference to FIGS. 3 to 5.

[0029]

FIG. 3 is a side view of the electric stimulus mask 1. As shown in FIG. 3, the core 4 extends from an area corresponding to the corpus mandibulae area 105 to an area corresponding to the temporal area 108. In other words, the core 4 extends from the area corresponding to the lower jaw excluding the chin area 104 to the area corresponding to the temporal area 108.

[0030]

Here, the cores 4 extend along an outer edge of the mask body 2. The cores 4 may extend generally parallel to the outer edge of the mask body 2 at positions distant from the outer edge by 1 cm, for example.

[0031]

The cores 4 include a pair of left and right at least two securing parts including a first securing part 20 and a second securing part 21 positioned on an upper edge side and a lower edge side, respectively, with respect to the center of the core 4 in the longitudinal direction. A tension member 5 is secured to these securing parts 20 and 21. Although the cores 4 are embedded in the mask body 2 in the present embodiment, the cores 4 may be provided on the inner surface or the outer surface of the mask.

[0032]

According to the above-described configuration, tension applied by securing the electric stimulus mask 1 to the face transmits to the core 4 from the upper edge side and the lower edge side on either side of the center of the core 4. This can reduce unevenness in tension in the respective regions from the upper edge to the lower edge of the mask body 2. Thus, the electric stimulus mask 1 of the present invention enables the entire mask body 2 to adhere closely to the face in a well-balanced manner. Additionally, the electric stimulus mask 1 can maintain the close adherence between the mask body 2 and the face even when the face wearing the electric stimulus mask 1 moves.

[0033]

FIG. 5 is a diagram illustrating a state in which the electric stimulus mask 1 is used. Arrows extending from the core 4 schematically indicate tension applied on the mask body 2. If the core 4 has no configuration described above, in contrast, tension

applied on the mask body 2 when the electric stimulus mask 1 is worn concentrates on part of the mask body 2. Additionally, a gap is created between the mask body 2 and the face since the mask body 2 cannot deform in conformity with the facial contour.

[0034]

Moreover, it is preferred to satisfy the following expression (1) where A is a length from the first securing part 20 to the upper edge of the core 4, B is a length from the second securing part 21 to the lower edge of the core 4, and C is a length from the first securing part 20 to the second securing part 21 as shown in FIG. 3. In this case, the first securing part 20 and the second securing part 21 are provided on horizontal extensions of the relatively hard portions in the facial structure such as the forehead and the lower jaw, for example. Consequently, the mask body 2 can stably adhere closely to the face.

$$B < A < C \quad \cdots\cdots(1)$$

[0035]

The core 4 can use a member less likely to have plastic deformation under the application of an external force. Polycarbonate or acrylonitrile butadiene styrene (ABS) resin, for example, can be used in the core 4.

[0036]

The tension member 5 will be described next. As shown in FIG. 4, the tension members 5 are provided on the left and right sides, and each includes a first connecting member 6, a second connecting

member 7, and a belt part 8. The tension members 5 provided on the left and right sides are connectable to each other. The mask body 2 is pulled in a direction to adhere the mask body 2 closely to the front surface of the face via the cores 4 by connecting the tension members 5 to each other at the back of the head. Thus, the electric stimulus mask 1 can be secured to the face. Note that FIG. 3 illustrates a state in which the tension members 5 provided on the left and right sides are connected to each other.

[0037]

The first connecting member 6 is formed by a linear member and secured to the first securing part 20 and the second securing part 21. The second connecting member 7 is formed in an arc shape and secured to the first connecting member 6. Such a configuration allows the first connecting member 6 to be tucked behind the ear via the second connecting member 7 as shown in FIG. 5, thus making the wearing process simple. Moreover, the belt part 8 secured to the second connecting member 7 includes a hook-and-loop fastener 9. Adjusting a position at which the hook-and-loop fasteners 9 provided on the left and right sides are attached to each other allows for adjustment of tension applied on the mask body 2.

[0038]

Titanium, for example, may be used in the first connecting member 6. In this case, the occurrence of an allergic reaction in the human body due to contact between a metal and the human body can be reduced.

[0039]

The conductive sections will be described next with reference to FIG. 4. FIG. 4 is a rear view of the electric stimulus mask 1. The forehead conductive section 10 extending from an area corresponding to one of the forehead areas 109 positioned around the center line X of the electric stimulus mask 1 in the transverse direction to an area corresponding to the other one of the forehead areas 109 as well as a left-and-right pair of the right side conductive section 11-R and the left side conductive section 11-L each covering an area corresponding to the lower jaw and the cheek area 107 and extending from an area corresponding to the chin area 104 to an area corresponding to the temple area 106 are provided on the inner surface of the electric stimulus mask 1. In this case, electric stimuli can be applied to areas around the eyes and the mouth where wrinkles are easily formed, for example.

[0040]

A conductive silicon rubber, for example, having a conductive property can be used in the forehead conductive section 10, the right side conductive section 11-R, and the left side conductive section 11-L. Note that the forehead conductive section 10, the right side conductive section 11-R, and the left side conductive section 11-L may each have a multilayer structure and may each include a metal plate inside a conductive electrode container, for example.

[0041]

A method of using the electric stimulus mask 1 will next be

described with reference to FIG. 5. Output cords (not shown) extending from an electric signal output device (not shown) can be connected to the forehead conductive section 10, the right side conductive section 11-R, and the left side conductive section 11-L.

[0042]

The electric stimulus mask 1 of the present embodiment can be used in a pair of a conductive section of a positive electrode type and a conductive section of a negative electrode type. In this case, an electrode other than the conductive sections provided on the inner surface of the mask body 2 can be provided and can be brought into contact with the human body. For example, when the forehead conductive section 10, the right side conductive section 11-R, and the left side conductive section 11-L are positive electrodes (negative electrodes), the electrode other than the conductive sections can be a negative electrode (positive electrode).

[0043]

The electric stimulus mask 1 of the present embodiment is worn by a face with a nonwoven fabric (not shown), for example, impregnated with a drug solution or serum, for example, being attached to the face. This allows for efficient injection of the drug solution, for example. Note that the electrode other than the conductive sections is only required to be able to be in contact the human body. The electrode may have a structure for allowing the electrode to be held by a hand, for example. Alternatively, the forehead

conductive section 10 may be a positive electrode (negative electrode), and the right side conductive section 11-R and the left side conductive section 11-L may be negative electrodes (positive electrodes). In this case, the electrode other than the conductive sections can be omitted.

[0044]

Alternatively, the electric signal output device may be provided with a polarity inverting circuit for alternately inverting the polarities of these electrodes in a predetermined cycle. For example, the electric signal output device may be provided with a pulse generation circuit for alternately supplying each electrode with a series of positive polarity pulse signals and a series of negative polarity pulse signals so that the polarity thereof is inverted at intervals of approximately 1.5 seconds. In this case, positively and negatively ionized active ingredients of a drug solution or serum, for example, can both permeate the living body.

[0045]

The electric stimulus mask 1 can also be worn with a nonwoven fabric, for example, impregnated with a drug solution or serum, for example, covering the forehead conductive section 10, the right side conductive section 11-R, and the left side conductive section 11-L provided on the inner surface of the mask body 2. Note that the electric stimulus mask 1 may be worn without the use of a nonwoven fabric, for example, impregnated with a drug solution or serum, for example.

[0046]

With now reference to FIGS. 2 to 4, a barb part 2a with an upper end thereof being bent inwardly is formed in an area corresponding to the jaw on the inner surface of the mask body 2. The upper end of the barb part 2a is pressed down from the above by the jaw of the user when the electric stimulus mask 1 is worn. A nonwoven fabric, for example, pressed against the face when the electric stimulus mask 1 is worn causes a drug solution, for example, to be squeezed out from the nonwoven fabric. Such a squeezed-out drug solution, for example, falls in drops along the face or the inner surface of the mask body 2 and then accumulates in the barb part 2a. This can prevent the drug solution, for example, from flowing out from the electric stimulus mask 1. Note that the barb part 2a can be applied also to modified examples and the second embodiment to be described later.

[0047]

The above-described electric stimulus mask 1 can be used also in applications other than the injection of a drug solution. For example, electric stimuli can be applied to the face by applying current to the conductive sections via the output cords extending from the electric signal output device (not shown).

[0048]

As described above, the electric stimulus mask 1 of the present invention can achieve close adherence between the face and the mask body 2 by the simple means, i.e., securing the mask body 2 to the

face by the tension members 5. Additionally, the electric stimulus mask 1 of the present invention can maintain the close adherence between the mask body 2 and the face even when the face wearing the electric stimulus mask 1 moves. This prevents the user from having discomfort such as pain caused by unevenness in current density, i.e., discomfort such as pain due to the concentration of current on a certain contact region.

[0049]

Moreover, the electric stimulus mask 1 of the present invention can uniformly introduce active ingredients contained in a drug solution or serum, for example, into the face, thus achieving the effective conditioning of the face. Moreover, the use of the electric stimulus mask 1 of the present invention without the use of the nonwoven fabric impregnated with a drug solution or serum, for example, can effectively relax the muscles of the face and thus improve blood circulation. In other words, the electric stimulus mask 1 of the present invention can apply effective electric stimuli to the face.

[0050]

(Modified Example 1)

In the above-described embodiment, the tension member 5 includes the first connecting member 6, the second connecting member 7, and the belt part 8. However, the tension member 5 is not limited thereto but may be any member capable of pulling the mask body 2 in the direction to adhere the inner surface of the mask body 2 closely to the front surface of the face. For example, the first

connecting member 6, the second connecting member 7, and the belt part 8 may be formed integrally.

[0051]

(Modified Example 2)

In the above-described embodiment, the electric stimulus mask 1 is secured to the face with the hook-and-loop fasteners 9 provided to the tension members 5. However, the tension member 5 may have another configuration as long as such a configuration can secure the electric stimulus mask 1 to the face. As an example of the other configuration, one of the tension members 5 provided on the left and right sides may be provided with a plurality of depressions arranged along the longitudinal direction thereof, and the other one of the tension members 5 may be provided with a protrusion capable of locking the depression. The electric stimulus mask 1 can be secured to the face by making the protrusion engaged with any one of the depressions.

[0052]

(Modified Example 3)

In the above-described embodiment, the electric stimulus mask 1 is secured by connecting the pair of tension members 5 at the back of the face. However, the tension member 5 is not limited thereto but may be any member capable of pulling the mask body 2 in the direction to adhere the mask body 2 closely to the front surface of the face. For example, an elastic member connecting the first securing part 20 and the second securing part 21 positioned thereunder

may be provided both on the left and right sides and the mask body 2 may be adhered closely to the face by directly tucking the elastic members behind the ears. Alternatively, tension members 5 secured to the first securing parts 20 and tension members 5 secured to the left and right second securing parts 21 may be provided and these left and right tension members 5 may be connected to each other at the back of the head, for example.

[0053]

(Modified Example 4)

In this embodiment, the number of the conductive sections may be further increased or decreased. For example, a conductive section may be provided in an area corresponding to the temporal area 108.

[0054]

(Modified Example 5)

In this embodiment, the tension member 5 may be secured to the core 4 with connectors. For example, a connector having a ring-shaped protrusion may be secured to each of the first securing part 20 and the second securing part 21 in the core 4. The tension member 5 may be secured to the core 4 by connecting the ring-shaped protrusions with rings provided at the ends of the tension member 5.

[0055]

(Second Embodiment)

FIG. 6 is a rear view of an electric stimulus mask 1' of the second embodiment and corresponds to FIG. 4. Elements functionally

in common with those of the first embodiment are denoted by the same reference numerals. A forehead conductive section 10 and a right side conductive section 11-R are electrically connected to each other via a first connecting conductive section 10R. The forehead conductive section 10 and a left side conductive section 11-L are electrically connected to each other via a second connecting conductive section 10L. An output cable extending from an electric stimulus signal output device (not shown) is connected to a connection port CT1 in the right side conductive section 11-R. Another output cable extending from the electric stimulus signal output device (not shown) is connected to a connection port CT2 in the left side conductive section 11-L.

[0056]

These connection ports CT1 and CT2 are provided at positions approximately horizontally symmetrical about the center line X. This can reduce unevenness in the value of current flowing through the conductive sections on the left and right sides, thus reducing the unbalance (unevenness) of the electric stimuli.

[0057]

The forehead conductive section 10, the right side conductive section 11-R, and the left side conductive section 11-L are connected to a mask body 2 along the outer edges thereof. Housing sections formed within these outer edges (housing sections each formed by a gap created between the mask body 2 and the conductive section) contain a large number of pliant ribs 23 protruding from the mask

body 2. The same material as the material used in the mask body 2 (e.g., a silicon rubber) can be used in these pliant ribs 23. The pliant ribs 23 elastically deform in accordance with the facial shape of the user when the electric stimulus mask 1' is worn, thus improving a sense of fit and a sense of softness when the electric stimulus mask 1' is worn.

[0058]

Slits 24 are formed at positions corresponding to the cores 4 of the first embodiment along the outer edge of the mask body 2. FIG. 7 is a schematic diagram of the slit as viewed in the direction of an arrow A in FIG. 6. The slit 24 is divided into a plurality of partitioned slit regions by locking walls 24a extending in a direction perpendicular to the longitudinal direction of the slit 24. Distances between the adjacent locking walls 24a can be made approximately the same. FIG. 8 is a plan view of a core 4'.

[0059]

The core 4' is formed in a bow shape and inserted into the slit 24 in an inserting direction indicated by an arrow. An end face of the core 4' in the inserting direction is provided with a plurality of cutouts 41'. These cutouts 41' are formed at positions corresponding to the locking walls 24a of the slit 24. Inserting the core 4' into the slit 24 allows the cutouts 41' to be fit in the locking walls 24a. Fitting of the locking walls 24a into the cutouts 41' can effectively prevent the positional displacement of the core 4'.

[0060]

The core 4' further includes hook parts 42'. A cross section of the hook part 42' in the radial direction thereof is formed in a circular shape, and the hook part 42' is formed in a stepped shape in which an upper end thereof has an increased diameter. The hook parts 42' run through the mask body 2 and protrude toward the outer surface of the mask body 2. The hook parts 42' are provided at positions corresponding to the first securing part 20 and the second securing part 21 in the first embodiment. These hook parts 42' are detachably attached to attachment holes (not shown) formed in one end of an attachment band 30.

[0061]

A hook-and-loop fastener 31 is provided in the other end of the attachment band 30. The electric stimulus mask 1' can be worn by the face by attaching one hook-and-loop fastener 31 to the other hook-and-loop fastener 31. At this time, the cores 4' elastically deform in a direction to close the cutouts 41' by being pulled by the attachment bands 30. As a result, unevenness in adherence level in the mask body 2 can be effectively reduced. An elastomer can be used in the attachment band 30. The use of the elastomer makes the positional displacement less likely to occur since the elasticity of the elastomer causes the electric stimulus mask 1' to be pressed against the worn region. The use of the elastomer can also reduce the cost.

Reference Signs List

[0062]

1, 1' electric stimulus mask

2 mask body

2a barb part

3-a opening corresponding to eye area

3-b opening corresponding to nose area

3-c opening corresponding to mouth area

4, 4' core

5 tension member

6 first connecting member

7 second connecting member

8 belt part

9, 31 hook-and-loop fastener

10 forehead conductive section

11-R right side conductive section

11-L left side conductive section

20 first securing part

21 second securing part

23 pliant rib

24 slit

24a locking wall

30 attachment band

41' cutout

42' hook part

X	center line
100	eye area
101	nose area
102	mouth area
103	ear area
104	chin area
105	corpus mandibulae area
106	temple area
107	cheek area
108	temporal area
109	forehead area

CLAIMS

1. An electric stimulus mask comprising:

a mask body with openings in areas corresponding to eyes, a mouth, and a nose;

a conductive section provided on an inner surface of the mask body;

a pair of left and right cores that extend from an area corresponding to a lower jaw excluding a chin to an area corresponding to a tempora along an outer edge of the mask; and

tension members that are secured to the cores for pulling the mask body in a direction to adhere the mask closely to a front surface of a face via the cores when the mask is worn, the tension members being attached to at least two securing parts including a first securing part and a second securing part positioned on a side of an upper edge and a side of a lower edge, respectively, with respect to a center of the core in a longitudinal direction.

2. The electric stimulus mask according to claim 1, wherein the following expression (1) is satisfied where

A is a length from the first securing part to the upper edge of the core,

B is a length from the second securing part to the lower edge of the core, and

C is a length from the first securing part to the second securing part:

$B < A < C$ ……(1).

3. The electric stimulus mask according to claim 1 or 2, wherein the conductive section includes a first conductive section covering an area corresponding to the lower jaw and a cheek and extending from an area corresponding to the chin to an area corresponding to a temple, and a second conductive section extending from an area corresponding to one of left and right forehead regions on either side of a center line of the electric stimulus mask in a transverse direction to an area corresponding to the other one of the forehead regions.

4. The electric stimulus mask according to any one of claims 1 to 3, wherein

a housing section for housing a large number of pliant ribs extending from the mask body toward the conductive section is formed between the mask body and the conductive section, and

these pliant ribs elastically deform due to abutment of the pliant ribs against the face of a user via the conductive section when the mask is worn.

5. The electric stimulus mask according to any one of claims 1 to 4, wherein

the mask body includes a slit into which the core is inserted,

the core is formed in a bow shape, an end face of the core in its inserting direction includes a plurality of cutouts at predetermined intervals in the longitudinal direction of the core, and the cutouts are fit in a plurality of partition walls formed in the slit, respectively.

6. The electric stimulus mask according to any one of claims 1 to 5, wherein a bent barb part for temporarily retaining a liquid falling in drops along the inner surface of the mask body is formed in an area of the inner surface of the mask body corresponding to a jaw.