

Annex to EPO Form 2004, Communication pursuant to Rule 71(3) EPC

Bibliographical data of European patent application No. 13 738 599.3

For the intended grant of the European patent, the bibliographical data are set out below, for information:

Title of invention:

- MULTIFUNKTIONELLER FRISIERARBEITSPLATZ
- MULTIFUNCTIONAL HAIRDRESSING WORKSTATION
- POSTE DE TRAVAIL MULTIFONCTIONNEL POUR COIFFURE

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*) If the time limit for the payment of designation fees according to Rule 39(1) EPC has not yet expired and the applicant has not withdrawn any designation, **all Contracting States/Extension States/Validation States** are currently still deemed to be designated. See also Rule 71a(3) EPC and, if applicable, the above Note to users of the automatic debiting procedure.

**) If two or more applicants have designated different Contracting States, this is indicated here.

Application No.:

13 738 599.3

IV.2. Patent classification

The classification has been changed. It now is as follows:

INV. A45D20/16 A45D44/02 A45D20/28 A45D20/34 A45D20/38 A45D20/14
A45D44/06

IV.3. Title of the invention

The title indicated on the published patent application remains unchanged. It reads as follows:

MULTIFUNKTIONELLER FRISIERARBEITSPLATZ

MULTIFUNCTIONAL HAIRDRESSING WORKSTATION

POSTE DE TRAVAIL MULTIFONCTIONNEL POUR COIFFURE

IV.4. Documentation

CDOC The following documents not mentioned in the Search Report were cited during the Examination Procedure:

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JP H03 210206 A (MATSUSHITA ELECTRIC IND CO LTD) 13 September 1991 (1991-09-13)

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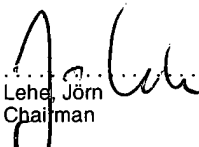
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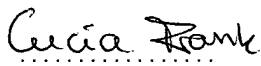
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Date


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MULTIFUNCTIONAL HAIRDRESSING WORKSTATION

Technical Field

The present invention relates to a multifunctional hairdressing workstation including a hot air supply unit, a dryer diffuser unit connected to the hot air supply unit through a hose, support means arranged to support one or more auxiliary tools, one or more electric sockets where those auxiliary tools that need to be activated or actuated by electric power can be connected, and it can furthermore include direct lighting means for lighting up the work area, indirect lighting means for producing ambient light, and generally any other element that may be useful for the work of a user.

Background of the Invention

International patent application WO 2010109503 A1 discloses a low electromagnetic impact hair drying device, comprising a tubular body suspended from a support, a turbine actuated by an electric motor housed inside the tubular structure for impelling air from an air inlet to an air outlet thereof, an electric heating element located inside the tubular structure downstream of the turbine and a hose connected to the air outlet. The end of the hose has an outlet section that may be handled manually by a user so that it can be placed in various positions in relation to a customer's hair. The electric motor actuating the turbine is therefore far enough away from the outlet section of the hose to assure a low electromagnetic impact on the customer. A handle is fixed laterally to the hose close to its free end for handling the blowing outlet.

A drawback of said international patent application WO 2010109503 A1 is that it is only useful as a hair drying device because the tubular body has not been envisaged to be equipped with support means to support one or more auxiliary tools and one or more electric sockets for the connection of those auxiliary tools requiring a power supply. Furthermore, the fact that the handle is fixed laterally to the hose close to its free end is a drawback because the lateral position of the handle makes it hard for the user to be able to direct the air jet expelled through the blowing outlet in certain directions.

Document EP 1834540 A1 describes a hair drying and modeling device comprising a diffuser unit connected to an air supply unit by a hose. The diffuser unit is in the form of a conduit with an air inlet at one end and a blowing outlet at the opposite end and has an electric heating element therein, such that the air from the hose circulates to the blowing outlet through the handle while it is heated by the electric heating element. In some embodiments, the air supply unit is fixed in a raised position close to the work area where the diffuser unit is used. Nevertheless, the air supply unit has not been envisaged to have a structure provided with support means to support one or more auxiliary tools and one or more electric sockets where those auxiliary tools requiring a power supply can be connected. A drawback of this diffuser unit is that the electric heater adds weight to the assembly which the user must handle manually, which tends to increase user fatigue. Furthermore, the handle does not include thermal insulation means, so the handle may overheat due to the electric heater housed therein and may bother or hurt the user.

WO2010109503 discloses a device for hair drying and hair care with low electromagnetic

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impact including a hollow structure suspended by an open end thereof, one turbine actuated by an electrical motor arranged inside the hollow structure and an electrical heating element located downstream the turbine and a manually handled hose connected to an air outlet of the hollow structure.

- 5 FR2607684 refers to a device for selective drying, ventilation and heating, particularly for the hair, which remains independently in a given position after each movement, without needing to be supported in the hand. It consists at the base of a casing containing a motor; a series of conduits and of articulations which make it possible to place an air-outlet diffuser perpendicularly with respect to the point of application without moving the latter and without interrupting the air flow;
10 and a resistance element between a bend and the diffuser which heats up the air. Fig 4 details an embodiment where the device is suspended from a ceiling.

The document JP355060806U1 discloses a workstation of the underlying context.

Disclosure

of the Invention

The present invention helps to mitigate the foregoing and other drawbacks by providing a multifunctional **hairstyling workstation according to claim 1** comprising an air supply unit based on a tubular structure

- 15 suspended by an upper end thereof, said tubular structure having at least one air inlet at or close to said upper end and at least one air outlet at or close to a lower end, at least one turbine actuated by an electric motor housed inside the tubular structure and arranged to impel air from said air inlet to said air outlet, at least one electric heating element located inside the tubular structure downstream of said turbine, and a hose having an inlet section connected to the air outlet and an outlet section
20 that may be handled manually by a user so that it can be placed in various positions in relation to a customer's hair.

- The tubular structure includes support means arranged to support one or more auxiliary tools and at least one electric socket configured for the connection of an auxiliary electric tool. The mentioned auxiliary tools can comprise, for example, scissors, combs, bottles or sprays, hand-held
25 mirrors, etc., as well as other auxiliary tools requiring a power supply, such as curling irons, hair clippers, etc., which generally include a cord ending in a plug that can be connected to the electric socket arranged in the tubular structure.

The proposal of this invention is detailed in claim 1.

- In one embodiment, the tubular structure further includes lighting means arranged to light
30 up a work area. In this case, the lighting means are preferably arranged to provide direct overhead lighting and configured for emitting light in a range of wavelengths similar to daylight. In one embodiment, this is achieved by using one or more light-emitting diodes (LEDs) and an electronic LED control device.

- In another embodiment, the tubular structure alternatively or additionally includes lighting
35 means arranged to provide ambient lighting. These lighting means for providing ambient lighting can advantageously be configured for emitting light of a color suitable for chromotherapy, which can be achieved by using one or more light-emitting diodes (LEDs) and an electronic LED control device.

In a preferred embodiment, the tubular structure comprises an outer tubular wall and a

40 layer of thermal and acoustical insulation material, such as compacted rock wool, for example,

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arranged between said outer tubular wall and the turbine actuated by the electric motor, whereby achieving a considerably low noise level, less than 65 dB. Preferably, the electric motor actuating the turbine is configured for working with low-voltage electric current, and the tubular structure comprises a layer of electromagnetic shielding surrounding at least the electric motor which, combined with the distance between the electric motor and the outlet section of the hose, assures virtually nil electromagnetic radiation or an insignificant level thereof on the customer.

In one embodiment, the tubular structure includes one or more air filters to assure the drying air quality. The filters can be removable and be located in an easy-to-access place so they can be changed and/or cleaned. Optionally, the filters can be of the ion ring type, the tourmaline crystal type or of the type comprising another type of crystals, or of the type comprising materials that can enrich the drying air provided by the workstation.

Starting and stopping the functions of the hair dryer is performed by means of a dryer control switch located in the tubular structure. This dryer control switch can be actuated by the user between a run position, in which the electric motor actuating the turbine and the electric heating element are operating, and a stop position, in which the electric motor actuating the turbine and the electric heating element are stopped.

In a preferred embodiment, when the dryer control switch is set in the stop position from the run position, control means cooperating with a temperature sensor first turn the electric heating element off and keep the electric motor actuating the turbine operating for a time until the temperature sensor indicates that the electric heating element has cooled down, after which they stop the operation of the electric motor. In another alternative embodiment, once the dryer control switch is set in the stop position, the control means turn the electric heating element off and keep the electric motor actuating the turbine operating for a time that is predetermined by a timer, with a similar result.

In one embodiment, the tubular structure includes display means configured for displaying at least one temperature indication and one flow indication in connection with said control means, a temperature sensor and a flow sensor. The mentioned display means can comprise a display screen or pilot lamps, for example.

In one embodiment, the outlet section of the hose comprises a blowing outlet and a handle attached to said blowing outlet. The blowing outlet and the handle preferably form a diffuser unit. The tubular structure preferably comprises support means for supporting the diffuser unit when it is not in use. If the outlet section of the hose does not comprise a diffuser unit, the tubular structure can comprise support means for supporting the outlet section of the hose.

In an alternative embodiment, the dryer control switch and/or display means could be located in the diffuser unit, although this would make it necessary to install electrical conductors throughout the hose and through the rotary joint between the outlet of the hose and the air inlet of the diffuser unit, which would increase the cost of the product.

In one embodiment, the tubular structure is suspended by the upper end thereof from the ceiling of the establishment where the workstation is installed, and accordingly the upper end of the tubular structure is closed by a cover, in which case the air inlet comprises a plurality of

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openings formed in the outer tubular wall of the tubular structure close to the upper end thereof and above the turbine. The workstation suspended from the ceiling has the advantage of offering an open area where there are no supports, connection cords, etc.

Another advantage of the workstation of the present invention is that the weight of the turbine, the electric motor, and the heating element is supported by the tubular structure, and therefore the diffuser unit is extraordinarily lightweight, which prevents fatigue problems for hairdressers. Furthermore, unlike a conventional dryer, the motor is located far away from the work area, with the subsequent benefit it has for the hairdresser and for the customer.

In a hairdresser's provided with several work areas there will generally be one workstation according to the present invention associated with each work area. In one embodiment, the tubular structure comprises sliding or rolling means coupled to a guiding device fixed to the ceiling or the like such that the tubular structure can be moved along said guiding device. Therefore, the user can at all times place the workstation in the position he/she considers most suitable in relation to the customer seated in the work area.

In one embodiment, the diffuser unit for the hair dryer comprises a handle, an air inlet that can be coupled to the outlet of a hose through which drying air is supplied, and a blowing outlet in fluid communication with said air inlet through said handle. The diffuser unit further comprises an outer casing configured for being held and handled with one hand, an inner conduit connecting the air inlet with said blowing outlet, and an insulation chamber arranged between said outer casing and said inner conduit to thermally insulate the outer casing.

In one embodiment, said insulation chamber is an air chamber, which can optionally be ventilated by means of one or more ventilation openings formed in the outer casing. In another alternative embodiment, the insulation chamber is a chamber filled with a thermally insulating material.

With this construction, the heat produced by the hot air circulating through the inner conduit does not reach the outer casing, or it does so to a low enough degree so as to not bother the user handling the diffuser unit.

In one embodiment, the air inlet of the diffuser unit is connected to the mentioned outlet of the hose by a rotary joint which allows freely turning the diffuser unit with respect to the hose and at the same time maintaining fluid communication between the hose and the blowing outlet. This rotary joint provides enormous freedom of movements and allows, in cooperation with the flexibility of the hose, the diffuser unit to have easy access to various hair drying areas. The blowing outlet can comprise a coupling element configured for coupling various interchangeable nozzles suitable for various types of air diffusion or various hairdressing accessories through which hot air passes for various drying operations, styling operations, shaping operations, etc.

In one embodiment, the outer casing defines a bend consistent with a bend of the inner conduit, where a central line of the air inlet and a central line of the blowing outlet form an angle. Said angle is preferably a 5° to 90° angle, more preferably a 45° to 70° angle, and even more preferably a 55° to 60° angle. Furthermore, the outer casing is substantially symmetrical with respect to a longitudinal central plane containing said central line of the air inlet and said central

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line of the blowing outlet. The diffuser unit can therefore be used both by right-handed individuals and by left-handed individuals, because it adapts perfectly to both lateralities. Optionally, the outer casing could include personal adaptors for either right-handed or left-handed individuals, to increase the comfort and ergonomics of the customized handle.

5 In one embodiment, the outer casing is made of or coated with a hypoallergenic material to prevent allergies and ailments due to direct contact and/or a non-slip material, such as natural and/or artificial fibers and materials, rubber and synthetic gums. Furthermore, the surface of the mentioned hypoallergenic and/or non-slip material can have a suitable texture to achieve perfect harmony between the diffuser unit and the hand of the user who is using it to dry hair.

10 The set of features of the diffuser unit of the present invention increase the ergonomics thereof because it adapts and can be adapted to the anatomy of the hand of the individual who is holding it, facilitating operations characteristic of drying a customer's hair with freedom of movement, easy access to various hair drying areas, etc., all resulting in a clear benefit for the occupational health of the user and in an increase in comfort for the customer.

15

Brief Description of the Drawings

The foregoing and other features and advantages will become more evident based on the following description of an embodiment in reference to the attached drawings, in which:

20 Figure 1 is a side view of a multifunctional hairdressing workstation according to an embodiment of the present invention;

Figure 2 is a cross-section view of the workstation of Figure 1;

Figure 3 is a perspective view of a diffuser unit for a hair dryer according to an embodiment of the present invention; and

25 Figure 4 is a cross-section view taken along a plane of symmetry of the diffuser unit, with a hose and a nozzle connected thereto.

Detailed Description of an Embodiment

30 Figures 1 and 2 show a multifunctional hairdressing workstation according to an embodiment of the present invention, comprising an air supply unit and a diffuser unit 18 connected to said air supply unit by a hose 7. The air supply unit is based on an elongated tubular structure 1 suspended from a ceiling T or the like by the upper end 1a thereof, such that the tubular structure 1 is in a vertical arrangement. In the embodiment shown, at said upper end 1a of the tubular structure 1 there are arranged sliding or rolling means, such as small wheels 30, for example, coupled to a guiding device 19 fixed to the mentioned ceiling T or the like such that the

35 tubular structure 1 can be moved along said guiding device 19 by pushing it manually or using motorized means. Optionally, the guiding device 19 can be configured for guiding movements in any horizontal direction, in the vertical direction or even in any inclined direction, and there may be means for making directional changes between several guiding devices.

40 The tubular structure 1 is formed by an outer tubular wall 28 which is cylindrical in the illustrated embodiment although it could alternatively have other shapes, and the upper end 1a

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thereof is closed by an upper cover 20, whereas the lower end 1b thereof is closed by a lower cover 29. The tubular structure 1 comprises an air inlet 2 consisting of a plurality of openings formed in said outer tubular wall 28 close to the upper end 1a and an air outlet 3 formed by a central opening in the lower cover 29.

5 Inside the tubular structure 1 there are housed a turbine 4 actuated by an electric motor 5 and an electric heating element 6 located downstream of said turbine 4. The turbine 4 is arranged to impel air from said air inlet 2 to said air outlet 3 through the electric heating element 6 such that the air is heated by the electric heating element 6. The electric motor 5 actuating the turbine 4 is configured for working with low-voltage electric current, and the tubular structure 1 comprises a
10 layer of electromagnetic shielding 14 in the form of an inner tubular metal wall surrounding both the electric motor 5 and the electric heating element 6.

 The layer of electromagnetic shielding 14 has a diameter less than the outer tubular wall 28, such that between the layer of electromagnetic shielding 14 and the outer tubular wall 28 there is an air chamber contributing to the acoustical insulation of the workstation. Furthermore, the
15 tubular structure 1 comprises a layer of thermal and acoustical insulation material 11 arranged inside the layer of electromagnetic shielding 14, and therefore interposed between the outer tubular wall 28 and the turbine 4 actuated by the electric motor 5 and the electric heating element 6. For example, the layer of thermal and acoustical insulation material 11 can be formed by compacted rock wool or any other material available on the market for thermal and acoustical insulation.

20 The layer of electromagnetic shielding 14 is shorter than the outer tubular wall 28, and an upper end of the mentioned air chamber formed between the layer of electromagnetic shielding 14 and the outer tubular wall 28 can be closed by a ring made of thermal and acoustical insulation material 11a located below a plurality of openings forming the air inlet 2. The turbine 4 and the electric motor 5 form a unit having a peripheral flange 4a inserted between two sections of the
25 layer of thermal and acoustical insulation material 11. The mentioned unit formed by the turbine 4 and the electric motor 5 is therefore supported by the layer of thermal and acoustical insulation material 11, which thus absorbs any vibration produced by said unit.

 A hose 7 extends from the lower cover 29, said hose 7 having an inlet section 7a connected to the air outlet 3 and an outlet section 7b that may be handled manually by a user so
30 that it can be placed in various positions in relation to a customer's hair. This outlet section 7b of the hose 7 comprises a blowing outlet 15 and a handle 16 attached to said blowing outlet 15 such that they form a diffuser unit 18 having an air inlet 24 connected to an outlet of the hose 7 by means of a rotary joint 23 which allows turning said diffuser unit 18 with respect to the hose 7 about the longitudinal axis thereof. The blowing outlet 15 is in fluid communication with said air
35 inlet 24 through the handle 16.

 The specific features of the diffuser unit 18 will be described in detail below in relation to Figures 3 and 4.

 As shown in Figure 2, the tubular structure 1 comprises support means 21 for supporting said diffuser unit 18 when it is not in use. Furthermore, the tubular structure 1 includes other
40 support means 22 arranged to support one or more auxiliary tools. Some of said auxiliary tools,

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such as scissors, combs, bottles or sprays, hand-held mirrors, etc., do not require a power supply, whereas other auxiliary tools, such as curling irons, hair clippers, etc., require a power supply to operate. To that end, the tubular structure includes one or more electric sockets 8 configured for the connection of an auxiliary electric tool X, which usually includes a cord ending in a plug X1 which can be connected to the electric socket 8 arranged in the tubular structure 1.

The workstation includes lighting means arranged in the tubular structure 1 for lighting up a work area. For example, these lighting means are arranged in the lower cover 29 to provide direct overhead lighting and are preferably configured to emit light in a range of wavelengths similar to daylight. For example, one or more LEDs 9 and an electronic LED control device can be used to provide said direct overhead lighting similar to daylight.

The lighting means are also arranged in the outer tubular wall 28 to provide ambient lighting and are configured, for example, to emit light of a color suitable for chromotherapy. To that end one or more LEDs 10 and one electronic LED control device can be used. The direct and ambient lighting means can be controlled by the user by means of one or more control elements 31 arranged in the tubular structure 1.

There is arranged in the tubular structure 1 a dryer control switch 12 which can be actuated by the user between a run position, in which the electric motor 5 actuating the turbine 4 and the electric heating element 6 are operating, and a stop position, in which the electric motor 5 actuating the turbine 4 and the electric heating element 6 are stopped. The workstation further includes control means configured for turning the electric heating element 6 off and keeping the electric motor 5 operating long enough for the air impelled by the turbine 4 to cool down the electric heating element 6 after the dryer control switch 12 has been set in the stop position after the run position.

In contrast, the control means are configured for turning the electric heating element 6 on while the electric motor 5 is stopped long enough for the electric heating element 6 to reach a pre-established temperature when the dryer control switch 12 is set in the run position after the stop position.

The workstation includes display means 17, such as a liquid crystal display, an OLED display or the like, or alternatively pilot lamps, configured for displaying at least one temperature indication and one flow indication in connection with said control means, a temperature sensor 13 and a flow sensor (not shown).

The tubular structure can include other elements, such as, for example, one or more speakers 32 connected to audio, for example, background music, reproduction equipment. The tubular structure can further include, for example, a two-way communication device, such as a USB port or a WIFI device, for charging other external devices or connecting to another device which may provide sound, lighting or video. For example, a customer could watch an image on a video or TV screen and listen to the corresponding audio by means of headphones connected by cable or wirelessly to a device installed in the tubular structure, or listen to music without bothering other customers while a hairdresser fixes or dries his/her hair.

Now in relation to Figures 3 and 4, the diffuser unit 18 for hair dryer according to the

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embodiment shown comprises an inner conduit 25 connecting the air inlet 24 located at one end of the diffuser unit 18 with a blowing outlet 15 located at the other opposite end, and an outer casing 41 defining a handle 16 configured for being held and handled with one hand. The air inlet 24 is coupled to the outlet of the hose 7 (Figure 4) by a rotary joint 23 which allows turning the diffuser unit 18 with respect to the hose 7 and at the same time maintaining fluid communication between the hose 7 and the blowing outlet 15.

In the illustrated embodiment, the hose 7 is a corrugated tube and the rotary joint 23 includes an inner thread in which the corrugations of the hose 7 are engaged. At the other end, the hose 7 has an inlet connected to the air outlet 3 of the air supply unit.

The diffuser unit 18 of the present invention can therefore be handled manually by a user so that it can be placed in various positions in relation to a customer's hair while a jet of hot air from the air supply unit is diffused from the blowing outlet 15. The diffuser unit 18 is extraordinarily lightweight and quiet because the turbine, electric motor and electric heater are located in the air supply unit far from the diffuser unit 18 and connected thereto by the hose 7.

The outer casing 41 covers substantially the entire inner conduit 25 and is connected thereto by its ends, such that there is formed between the outer casing 41 and the inner conduit 25 an insulation chamber 26 (Figure 4) thermally insulating the outer casing 41 from the heat diffused by the hot air circulating through the inside of the inner conduit 25 during operation. In the illustrated example, the insulation chamber 26 is an air chamber and the outer casing 41 comprises a plurality of ventilation openings 27 through which the insulation chamber 26 is ventilated, although the insulation chamber 26 could alternatively be a chamber filled with a thermally insulating material, such as for example, a foamed polymer, compacted rock wool, or similar materials, with the same result.

The blowing outlet 15, which is formed at the free end of the inner conduit 25, comprises a coupling element 39 configured for coupling, for example by elastic press fitting, various interchangeable nozzles 40 (Figure 4) or various hairdressing accessories through which hot air passes. The outer casing 41 shows, next to the air inlet 24, a flared portion 42 of the inner conduit 25 which is configured for being coupled, for example by elastic press fitting, to the support means 21 (Figures 1 and 2) where the diffuser unit 18 rests when it is not in use. The mentioned flared portion 42 of the inner conduit 25 externally overlaps a connecting sleeve 23a of the rotary joint 23 and is therefore thermally insulated from the heat transmitted by the circulating hot air.

The outer casing 41 defines a bend that is ergonomically configured for enabling the handle 16 to be held and handled with one hand. The mentioned bend is of a shape such that a central line 24a of the air inlet 24 and a central line 15a of the blowing outlet 15 form a 55° to 60° angle A, although values of 45° to 70° and even of 5° to 90° are also within the present invention for angle A. Furthermore, the outer casing 41 is substantially symmetrical with respect to a longitudinal plane of symmetry containing said central line 24a of the air inlet 24 and said central line 15a of the blowing outlet 15, such that the diffuser unit 18 is suitable for both right-handed individuals and left-handed individuals.

The outer casing 41 is made of two halves (Figure 3) that are joined together in the

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mentioned plane of symmetry according to a conventional technique. The material from which the two halves of the outer casing 41 are made can be a non-slip material, such as natural and/or artificial fibers and materials, rubber and synthetic gums, and preferably a hypoallergenic material to prevent allergies and ailments due to direct contact. Optionally, the two halves of the outer casing 41 can be made of a conventional plastic material and have a coating made of the mentioned non-slip and/or hypoallergenic material. The outer surface of the outer casing 18 can also have a texture that is suitable for providing a pleasant feeling to the touch.

A person skilled in the art will be able to make any modifications and variations based on the embodiment that has been shown and described without departing from the scope of the present invention as it is defined in the following claims.

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CLAIMS

1.- A multifunctional hairdressing workstation, comprising:

5 a tubular structure (1) suspended by an upper end (1a) thereof, said tubular structure (1) having at least one air inlet (2) at or close to said upper end (1a) and at least one air outlet (3) at or close to a lower end (1b);

at least one turbine (4) actuated by an electric motor (5) housed inside the tubular structure (1) and arranged to impel air from said air inlet (2) to said air outlet (3);

10 at least one electric heating element (6) located inside the tubular structure (1) downstream of said turbine (4); and

a hose (7) having an inlet section (7a) connected to the air outlet (3) and an outlet section (7b) that may be handled manually by a user so that it can be placed in various positions in relation to a customer's hair;

wherein

15 the tubular structure (1) includes support means (22) arranged to support one or more auxiliary tools and at least one electric socket (8) configured for the connection of an auxiliary electric tool (X), and

said electric motor (5) actuating the turbine (4) is configured for working with low-voltage electric current, and the tubular structure (1) comprises a layer of electromagnetic shielding (14) surrounding at least the electric motor (5).

2.- The workstation according to claim 1, wherein said upper end (1a) of the tubular structure (1) is closed by an upper cover (20) and said air inlet (2) comprises a plurality of openings formed in an outer tubular wall (28) of the tubular structure (1) close to said upper end (1a).

25 3.- The workstation according to claim 1, wherein the electromagnetic shielding (14) is in the form of an inner tubular metal wall surrounding both the electric motor (5) and the electric heating element (6), wherein the layer of electromagnetic shielding (14) has a diameter less than the outer tubular wall (28), such that between the layer of electromagnetic shielding (14) and the outer tubular wall (28) there is an air chamber contributing to the acoustical insulation of the workstation, wherein the tubular structure (1) further comprises a layer of thermal and acoustical insulation material (11) arranged inside the layer of electromagnetic shielding (14), and therefore interposed between the outer tubular wall (28) and the turbine (4) actuated by the electric motor (5) and the electric heating element (6),

30 wherein the layer of electromagnetic shielding (14) is shorter than the outer tubular wall (28), and an upper end of said air chamber is closed by a ring made of thermal and acoustical insulation material (11a) located below a plurality of openings forming the air inlet (2), and

35 wherein the turbine (4) and the electric motor (5) form a unit having a peripheral flange (4a) inserted between two sections of the layer of thermal and acoustical insulation material (11), whereby the unit formed by the turbine (4) and the electric motor (5) is therefore supported by the layer of thermal and acoustical insulation material (11), which thus absorbs any vibration produced

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by said unit.

4.- The workstation according to claim 1,2 or 3,
, wherein control means are provided which
turn the electric heating element (6) off and keep the electric motor (5) actuating the turbine (4)
operating long enough to cool down the electric heating element (6) after a dryer control switch
5 (12) has been set in a stop position.

5.- The workstation according to claim 4, wherein said control means
turn the electric heating element (6) on while the electric motor (5) is stopped long enough
for the electric heating element (6) to reach a pre-established temperature after a dryer control
switch (12) has been set in a run position after the stop position.

10 6.- The workstation according to claim 1, wherein the tubular structure (1) includes
lighting means arranged to light up a work area with direct overhead lighting, wherein said
lighting means for providing direct overhead lighting are configured for emitting light in a range of
wavelengths similar to daylight and include at least one LED (9) and one electronic LED control
device.

15 7.- The workstation according to claim 1, wherein the tubular structure (1) includes
lighting means arranged to provide ambient lighting configured for emitting light of a color
suitable for chromotherapy and including at least one LED (10) and one electronic LED control
device.

20 8.- The workstation according to claims 4 or 5, wherein the tubular structure (1) includes
display means (17) configured for displaying at least one temperature indication and one flow
indication in connection with said control means, a temperature sensor and a flow sensor.

25 9.- The workstation according to claim 1, wherein said outlet section (7b) of said hose (7)
comprises a blowing outlet (15) and a handle (16) attached to said blowing outlet (15), and
wherein the blowing outlet (15) and said handle (16) form a diffuser unit (18) having an air inlet
(24) connected to an outlet of the hose (7)

30 10.- The workstation according to claim 9, wherein the diffuser unit (18) comprises an
outer casing (41) configured for being held and handled with one hand, an inner conduit (25)
connecting the air inlet (24) with said blowing outlet (15), and an insulation chamber (26) arranged
between said outer casing (41) and said inner conduit (25) to thermally insulate the outer casing
(41).

11.- The workstation according to claim 10, wherein the air inlet (24) is connected to said
outlet of the hose (7) by a rotary joint (23) which allows turning the diffuser unit (18) with respect
to the hose (7) and at the same time maintaining fluid communication between the hose (7) and the
blowing outlet (15).

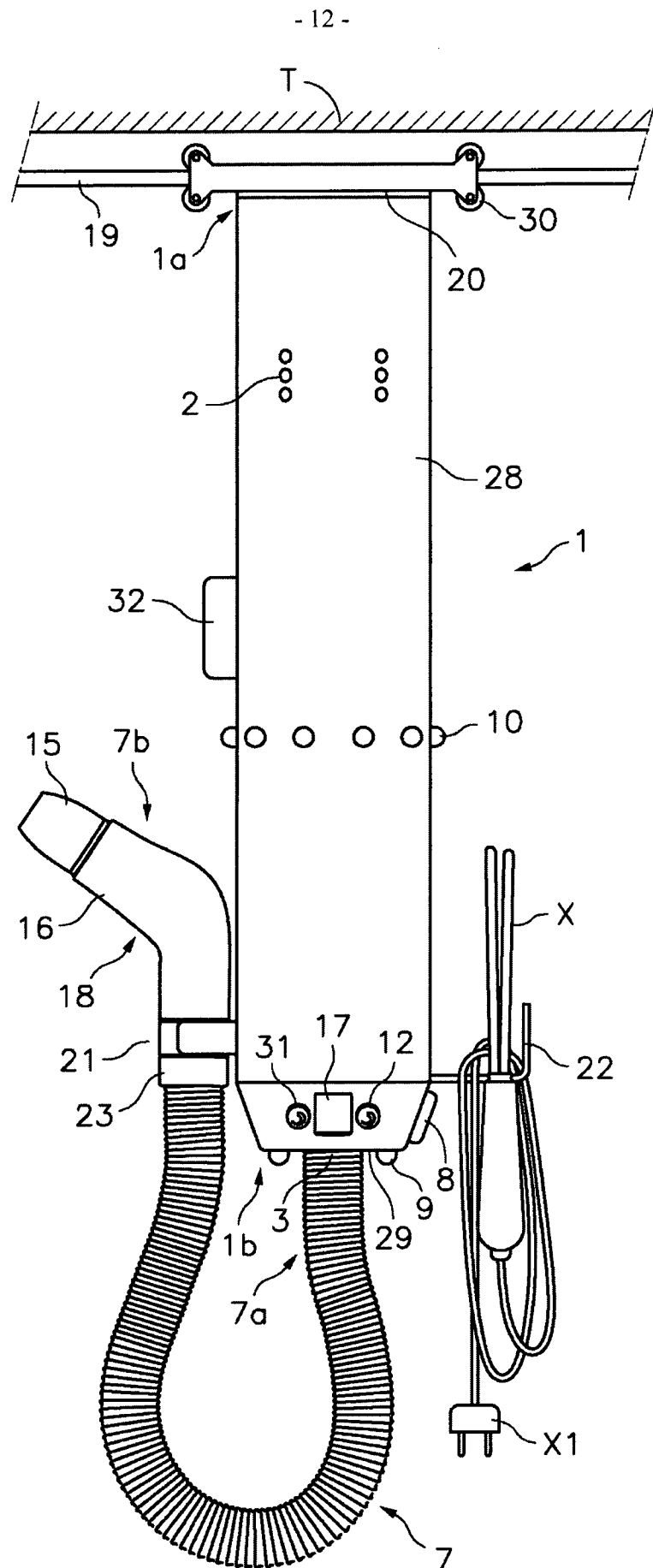
35 12.- The workstation according to claim 10 or 11, wherein said outer casing (41) is
substantially symmetrical with respect to a longitudinal central plane containing said central line
(24a) of the air inlet (24) and said central line (15a) of the blowing outlet (15) and defines a bend
such that a central line (24a) of the air inlet (24) and a central line (15a) of the blowing outlet (15)
form an angle (A) of 45 to 70 degrees.

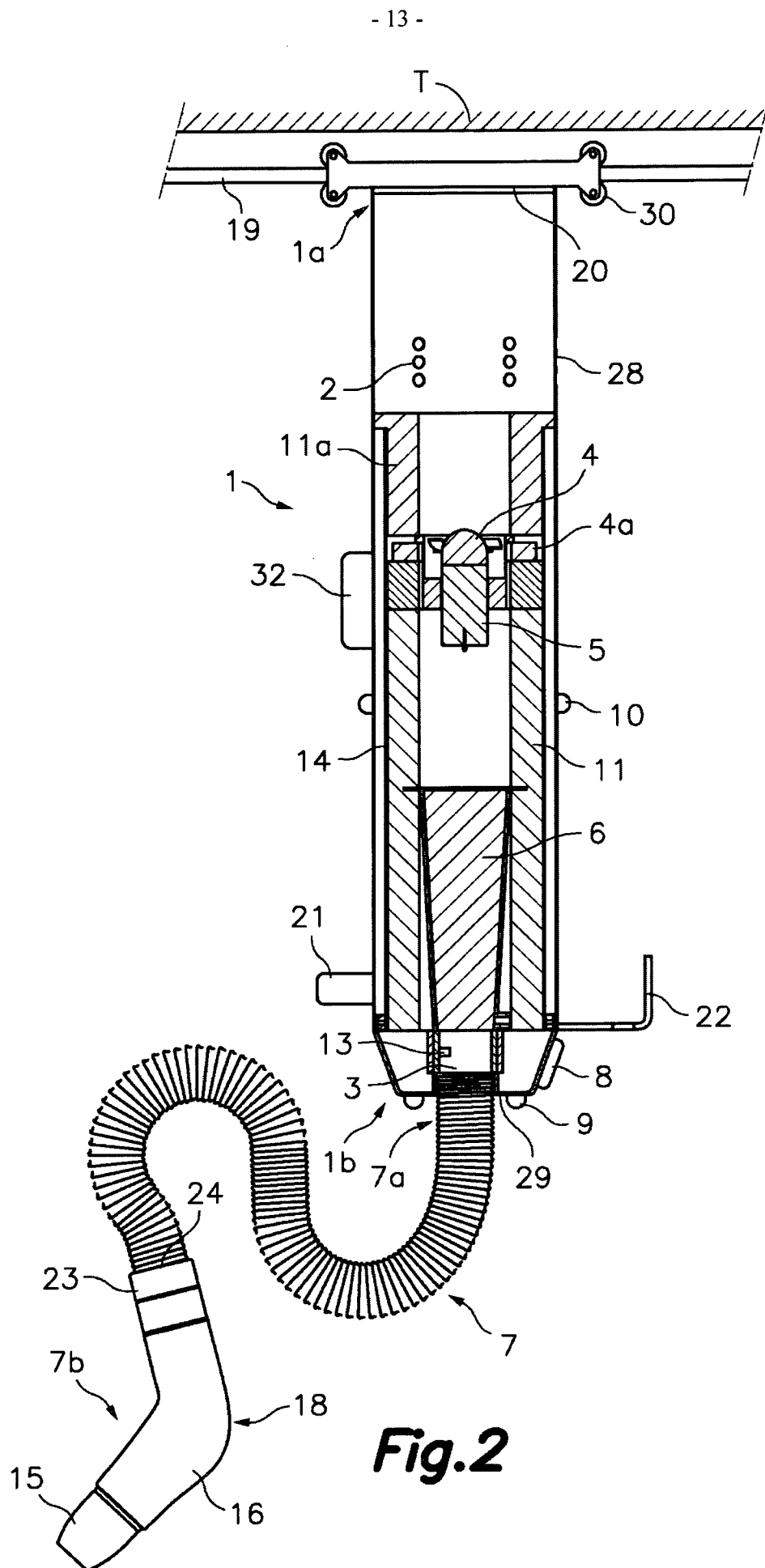
40 13.- The workstation according to claim 10, wherein said blowing outlet (15) comprises a

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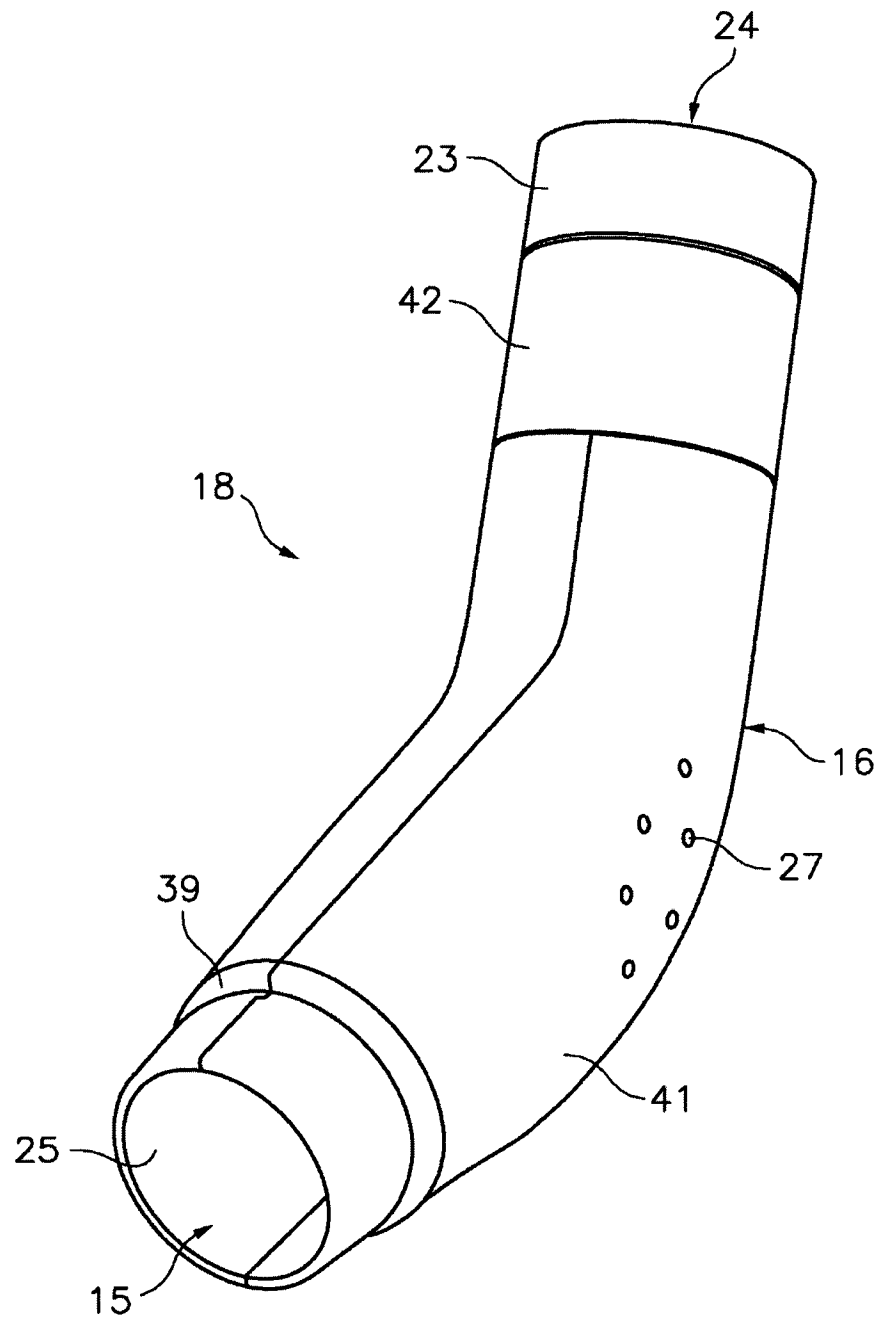
coupling element (39) configured for coupling various interchangeable hairdressing nozzles (40) or accessories.

- 14.- The workstation according to claim 1, wherein the tubular structure (1) comprises sliding or rolling means coupled to a guiding device (19) fixed to a ceiling (T) or the like such that
- 5 the tubular structure (1) suspended by an upper end (1a) thereof can be moved along said guiding device (19).

**Fig. 1**



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**Fig.3**

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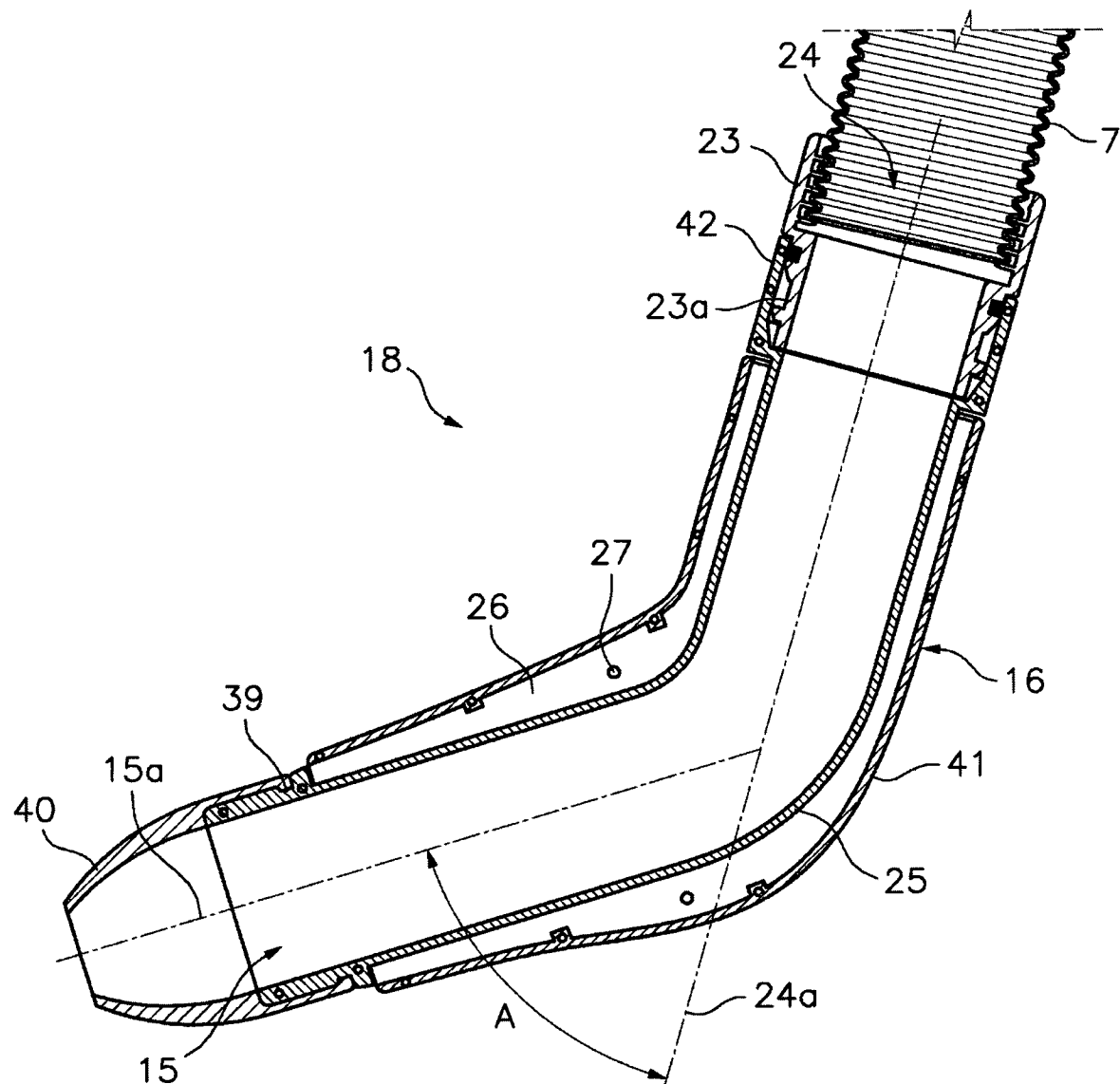


Fig. 4