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(54) Hairdryer with ergonomic operating switches

(57) This innovation relates to a hairdryer with an ergonomic handle and operating switches which allow easy movement of said hairdryer even while said switches are being operated.
Said hairdryer, which has a handle (3) attached to a body

(4) that houses the motor, the motor cooling fan and the air heating elements, is activated by a plurality of switches (2) and is characterised in that at least some of said switches (2) are positioned at the rear of said motor housing body (4).

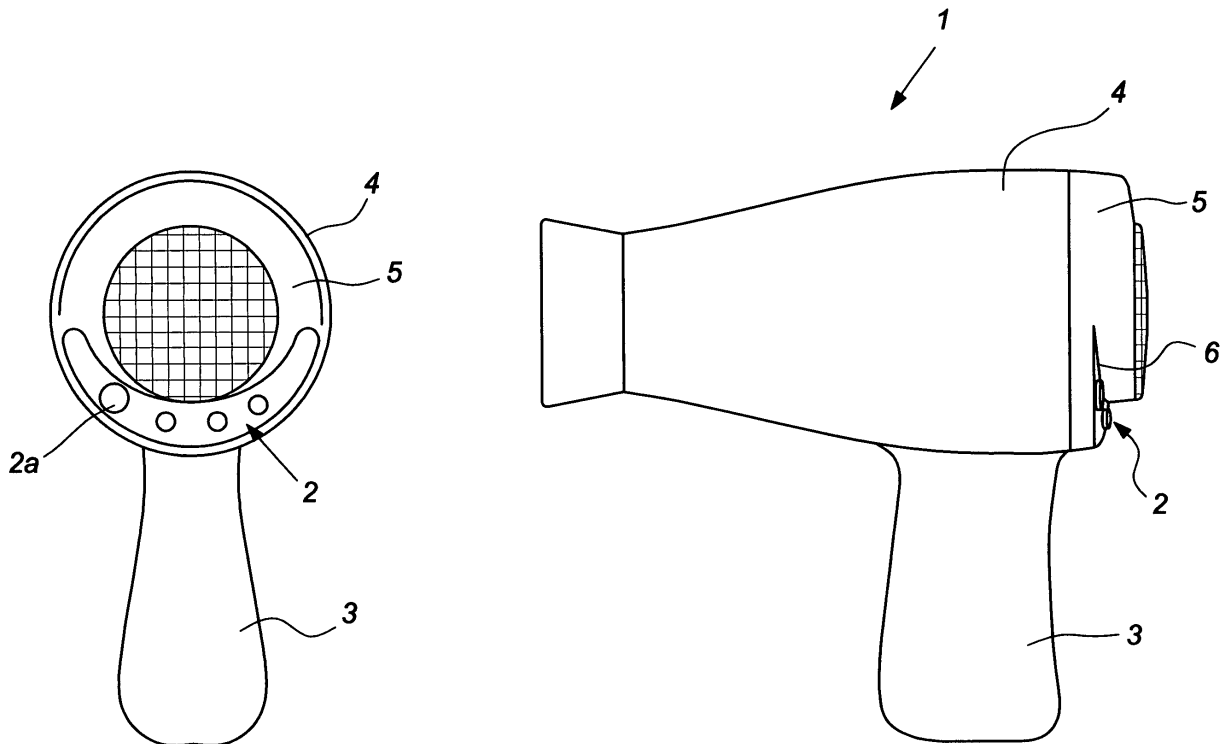


Fig. 1

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Description

[0001] This invention relates to a hairdryer with an ergonomic handle and operating switches which allow easy movement of said hairdryer even while said switches are being operated.

[0002] According to the prior art, the hairdryer is operated by control devices positioned at the front or side of the handgrip, and on the handle in general. Said devices can be ordinary pushbutton switches, rocker switches with two or more positions, or sliding switches with two or more positions.

[0003] The position of said operating devices according to the prior art forces the operator to make unnatural hand movements.

[0004] A first problem is due to the fact that the switches are positioned on the handle. The result is that when the handle is held, the hand exerts, or may exert pressure on said switches, leading to unintentional operation thereof.

[0005] If the switches are in the rear part of the handle, the operator could unintentionally operate them while the part of his hand comprised between the thumb and the forefinger.

[0006] If the switches are in the front part of the handle, the operator is unable to grip said handle firmly, because of the risk of pressing the switches when not required. This obviously affects the possibility of moving the hairdryer effectively in all situations, with evident adverse effects on the convenience of use of the hairdryer.

[0007] If the switches are on the side of the handle, the situation is less critical, as they will be positioned on the thumb side, and therefore remain substantially free.

[0008] However, this design presents two drawbacks. Firstly, if the operator holds the hairdryer in the left hand, because he or she is left-handed or in particular situations of use, unless two hairdryer versions are made with the switches positioned on opposite sides, the switches will be under the palm of the operator's hand. In this case, the risk of accidental operation is obvious, and the use of the hairdryer will consequently be inconvenient.

[0009] Moreover, the switches are positioned in the median part of the handle so as not to interfere with the thumb during the operating stage. As a result, in order to activate the switches the thumb must be bent downwards, and lateral pressure exerted on the switches with the tip of the thumb.

[0010] This situation is inconvenient in itself, especially because the thumb operates in an awkward position in such situations. Moreover, if said movement is combined with the numerous movements required for the hair drying operation, it may be very uncomfortable in some cases. In the particular case of the "cold blast", which is used to fix the set of the hair, a switch that cuts out the heating elements has to be kept pressed down while the hairdryer is moved so as to direct the airflow in the most suitable direction.

[0011] Especially in this case, in which the operator is

obliged to exert continuous pressure in an unnatural position while moving the hairdryer, but also in all other operations, though to a lesser extent, the hand is subjected to repeated unnatural strains which can cause inflammation of the hand and wrist ligaments, thereby reducing the efficiency of the operator, who may also suffer physical pain.

[0012] The present invention solves the above-mentioned problems by offering a hairdryer with a particular arrangement of operating switches that leaves the handle completely free so that it is more practical for the operator to hold, with no risk of unintentional activation or injury to the hand used.

[0013] Said particular arrangement of the switches also enables said switches to be operated with a much more natural thumb movement.

[0014] The invention will now be described by reference to the annexed figures, wherein:

- figure 1 shows two views of a hairdryer according to the invention;
- figures 2 and 3 (a, b) show the hand movements required to operate the switches of a hairdryer according to the invention;
- figure 4 shows the hand movements required to operate the switches of a hairdryer according to the prior art.

[0015] In fig. 1, reference number (1) indicates a hairdryer according to the invention, which comprises a plurality of operating switches (2) positioned in the rear part of the dryer, immediately above the handle (3).

[0016] In particular, said switches are positioned in the rear part of body (4) which houses the hairdryer motor.

[0017] For this purpose the rear cover (5) of motor housing body (4) is preferably shaped in such a way as to obtain a preferably flat surface (6) to which said switches (2) are fitted, said preferably flat surface being positioned in such a way that switches (2) can easily be reached by the operator's thumb, as shown in figs. 2 and 3a.

[0018] A switch (2a), which is part of said set of switches (2), is designed to cut off power to the air heating elements when it is held down. As said switch (2a) must be easily identifiable by the operator and easily operated during use, it will preferably be of different dimensions from the other switches, or alternatively may be positioned in such a way that it can be operated with the forefinger, ie. in a similar way to a trigger (2b) (fig. 3b). In such case it will preferably be positioned at the point where the front of handle (3) intersects with housing body (4).

[0019] As will be seen in fig. 2, the thumb of the hand with which the handle is held can easily rotate upwards through an angle α of a few degrees, easily reaching all the switches whether the right or left hand is used, and the other four fingers are obviously free to grip the handle, thus giving perfect control of the hairdryer, as shown in

fig. 3, with no risk of unintentional operation of the switches, as there are no switches on the handle. Fig. 3 shows a side view of the operator's hand while operating switches (2). es.

[0020] As can be clearly seen, the thumb is in the erect position and can easily exert the pressure required to operate the switches (2). 5

[0021] If fig. 3 is compared with fig. 4, which shows the handle (3a) according to the prior art, in which switches (2a) were positioned on said handle (3a), it will be seen that in order to reach all the switches the thumb has to rotate downwards through an angle α' which is far greater than α and exert the lateral pressure required to operate the switches in this awkward position. 10

[0022] Conversely, in the case of the position according to the invention, the thumb always remains in a position such that it can exert considerable pressure, and is therefore not subjected to the repeated small traumas which can cause inflammation of the muscle and tendons. 15 20

[0023] The above description is supplied by way of example and not of limitation; one skilled in the art could therefore devise numerous variations on the preferred embodiment described, all of which fall within the ambit of protection of the claims set out below. 25

Claims

1. Hairdryer which has a handle (3) attached to a body (4) that houses the motor, the motor cooling fan and the air heating elements, which said hairdryer is activated by a plurality of switches (2) and is **characterised in that** at least some of said switches (2) are positioned at the rear of said body (4) which houses said hairdryer motor. 30 35
2. Hairdryer as claimed in claim 1, **characterised in that** said switches (2) are positioned on a surface (6) of the rear cover (5) of said motor housing body (4). 40
3. Hairdryer as claimed in claim 2, **characterised in that** said surface (6) on which said switches (2) are positioned is substantially flat. 45
4. Hairdryer as claimed in claim 1, **characterised in that** a switch (2a) that cuts out the air heating element is of different dimensions from the other switches. 50
5. Hairdryer as claimed in claim 1, **characterised in that** a switch (2b) that cuts out the air heating element is positioned in an area at which the front of handle (3) intersects with housing body (4). 55
6. Hairdryer according to the preceding claims, as described and illustrated and for the specified purposes.

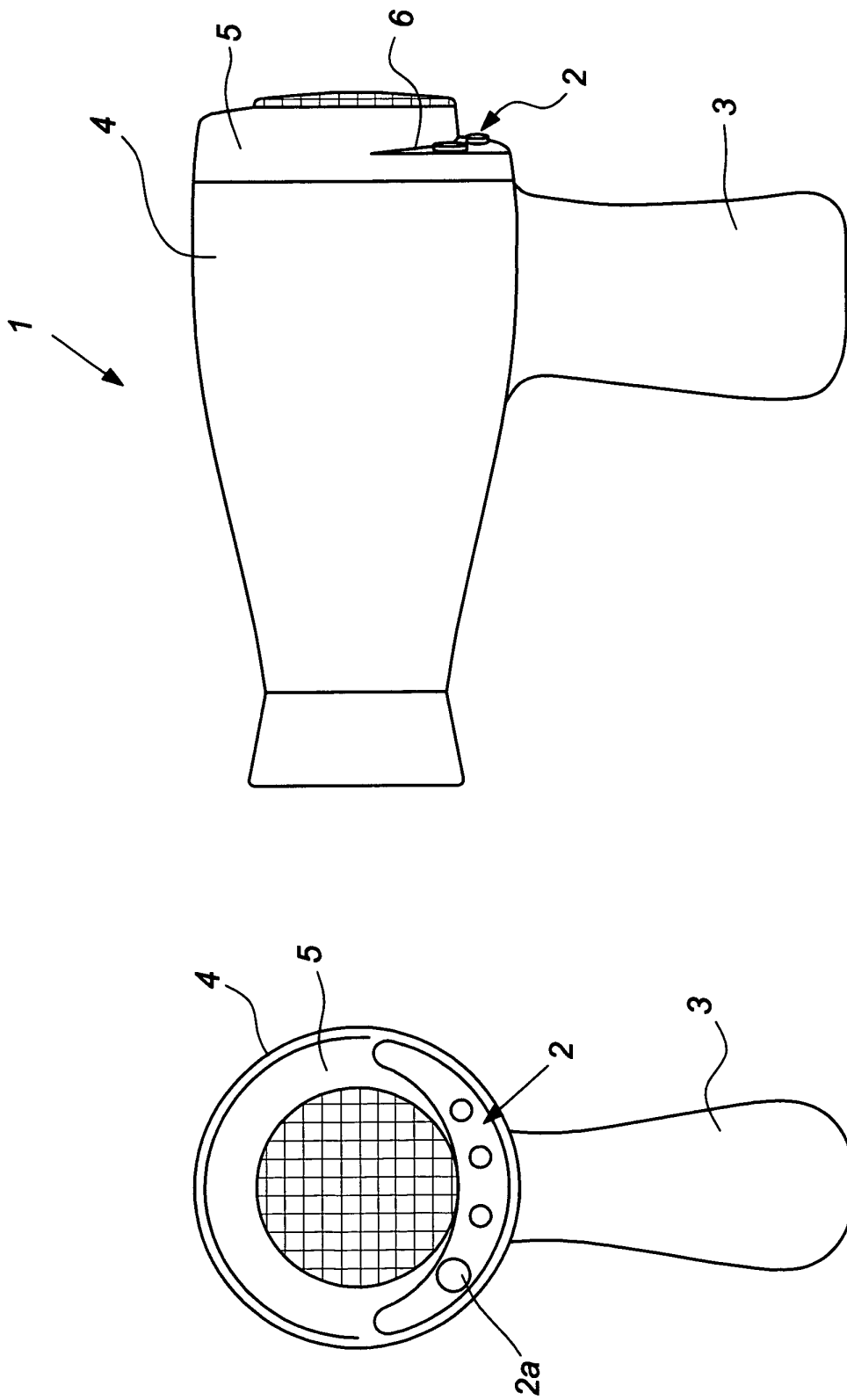


Fig. 1

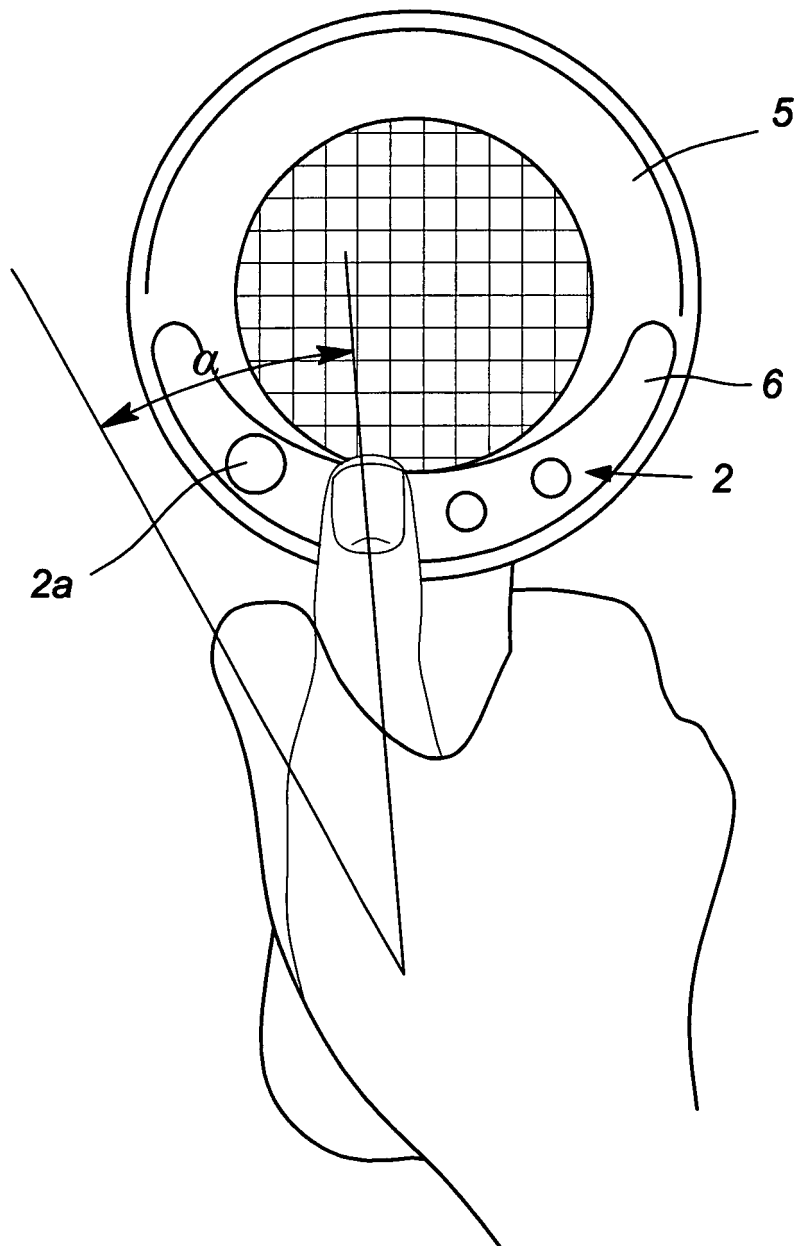


Fig. 2

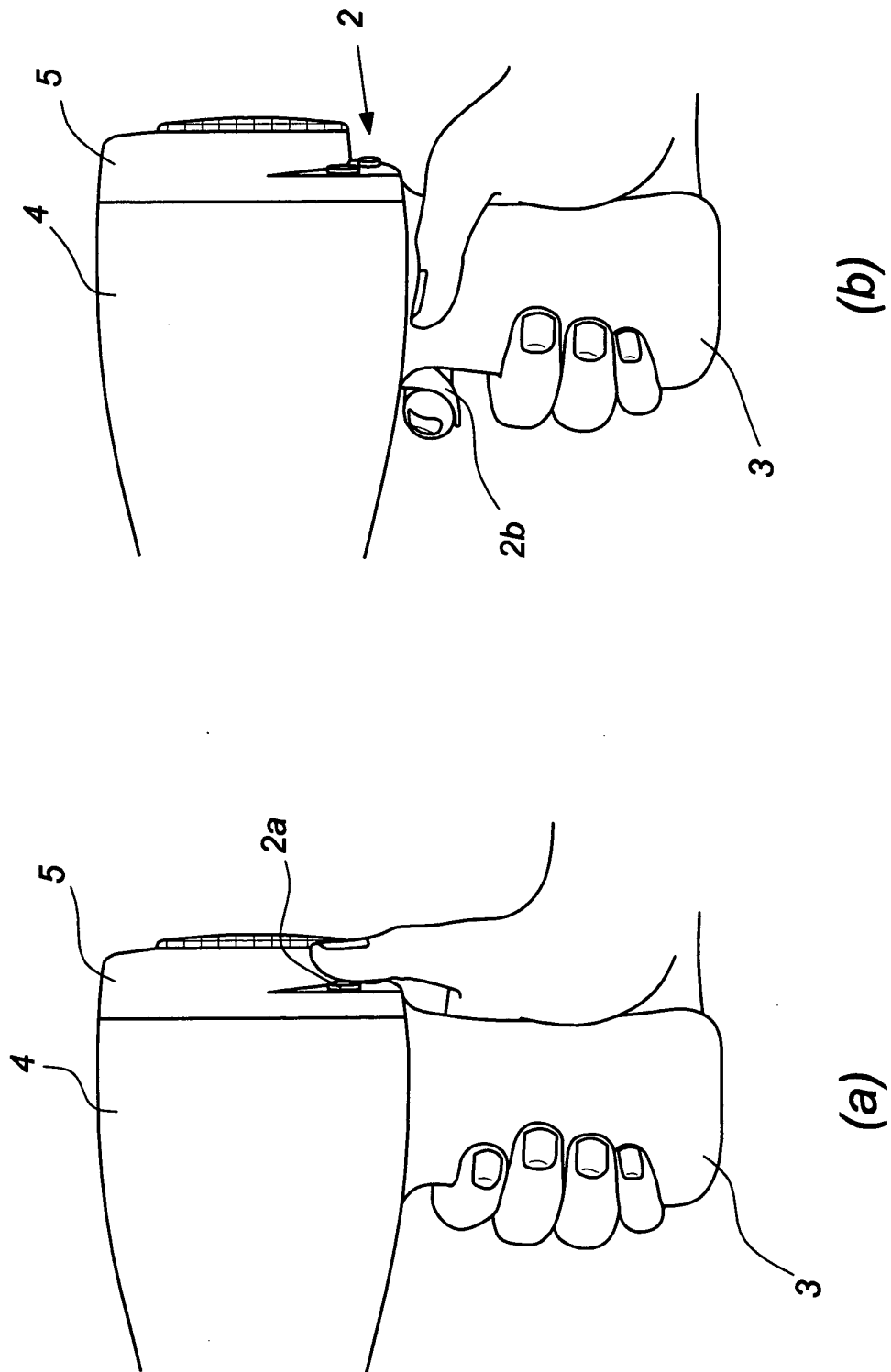


Fig. 3

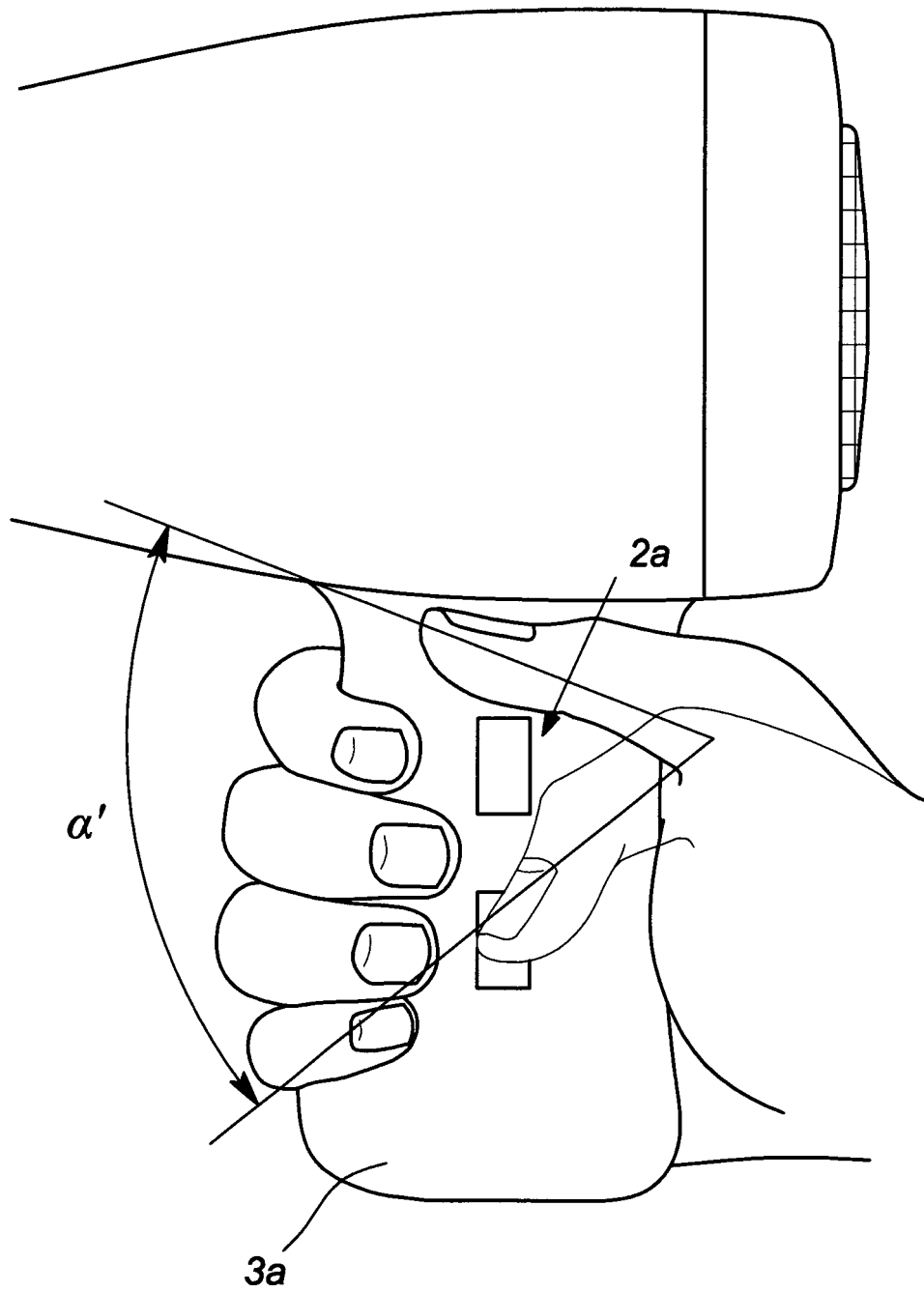


Fig. 4



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EUROPEAN SEARCH REPORT

Application Number
EP 04 02 7064

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Place of search		Date of completion of the search	Examiner
Munich		8 December 2004	Koob, M
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 04 02 7064

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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