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(54) **Beauty treatment apparatus using steam enriched with negative ions**

(57) This invention relates to a steam beauty treatment apparatus equipped with devices for the generation of steam and negative ions. Said apparatus can also be advantageously equipped with airflow- and ozone-generating devices. Said beauty treatment apparatus is equipped with a steam generator and characterised in that it involves the association of means (9) designed to

generate and direct steam with means (8) designed to generate negative ions and mix them with said steam, in such a way that said negative ions reach the person on whom said beauty treatments are performed and neutralise the positive electrical charges generated during said beauty treatments. Said apparatus can also be configured to perform beauty treatments on the face and hair.

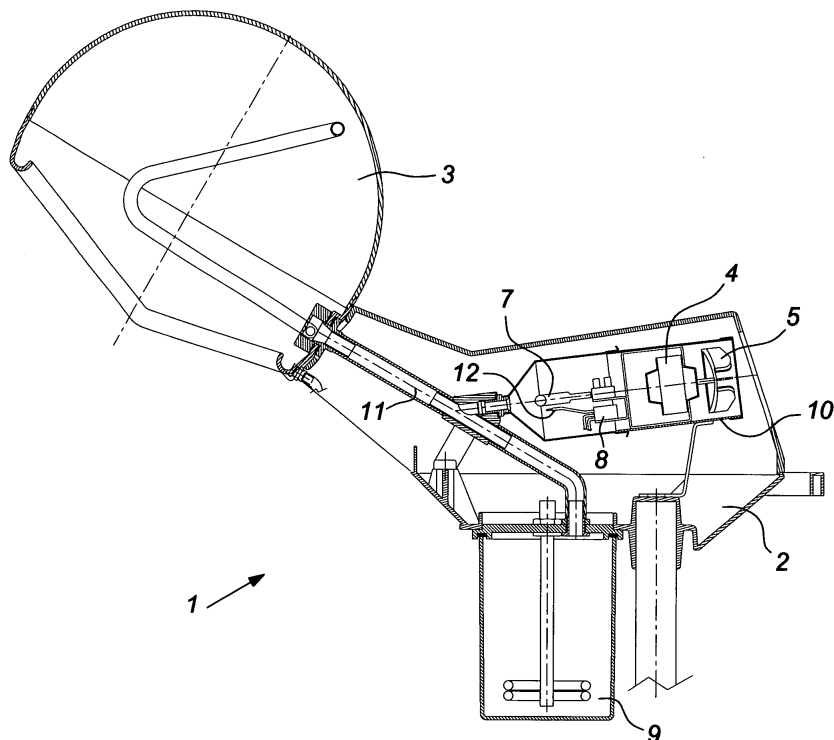


Fig. 2

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Description

[0001] This invention relates to a beauty treatment apparatus equipped with devices for the generation of steam and negative ions. Said apparatus can also be advantageously equipped with airflow- and ozone-generating devices.

[0002] Apparatus for steam beauty treatment of the hair or face, used by hairdressers and beauty salons, has been gradually improved in terms of manufacturing techniques and the incorporation of additional devices which provide greater efficiency and above all, better results.

[0003] Hood hairdryers equipped with an electric motor and an airflow-generating fan are used for hair treatment; in these hairdryers, steam promotes the opening of the hair scales, thus enhancing the effect of beauty treatments, and among other things reducing the required treatment time. Hair treatment hoods have also been improved by eliminating or attenuating some drawbacks of the entire treatment normally performed in hairdressers' salons. One problem is constituted by hair dyes, which can cause allergic reactions or intolerance, leading to itching and inflammation. The use of steam aids the elimination of toxic substances because when the warm steam reaches the hair, it prevents the formation of dye deposits on the scalp, and thus strongly reduces the risk of allergic reactions and/or intolerance.

[0004] A subsequent development led to the addition of an ozoniser, which further reduced the adverse effects of dyes and enhanced the favourable effects of steam, among other things further reducing treatment times.

[0005] Ozone combined with steam acts on the sulphur compounds present in the keratin to limit ferrous substances, which would otherwise give the hair a red shade.

[0006] Moreover, ozone, again in combination with heat, promotes the evaporation of the ammonia contained in bleaches and dyes, offering substantial advantages in that it reduces, if not eliminates the problems caused by ammonia, especially allergic itching.

[0007] The combined action of steam and ozone also promotes purification of the epidermis and produces lymph drainage of the scalp, also aiding the preparation of curative and beauty treatments which give the head a pleasantly light feeling.

[0008] Another advantage of ozone combined with steam is found in the process of bleaching the keratin of the hair, as it makes the treatment time 2/3 times shorter and enhances the action of the bleach, thus generating a considerable saving. The effect of steam and ozone makes the violent bleaching action less aggressive. Moreover, ozonised steam acts on the sulphide bridges that link the keratins; this is particularly useful because the ammonia contained in dye cleaves the S-S bond and causes the hair to curl, as do the alkaline agents contained in hair washing products, though to a much lower extent than in the past. Sometimes curling is desired, as in the case of permanent waves, but sometimes it is un-

wanted, in which case ozone promotes its elimination.

[0009] The obvious consequence is that ozone is useful when a permanent wave is to be neutralised, as it promotes fixing of the sulphide bridges that bond the keratins.

[0010] Finally, ozone has antiseptic, antifungal and antibacterial properties.

[0011] It is known that the friction generated when the hair is brushed or combed charges the hair electrostatically with positive electrical charges. This is undesirable, because electrically charged hair is difficult to comb, and can attract dirt and dust.

[0012] The hair is often brushed or combined while it is being dried with a small manual hairdryer. In this case the jet of hot air is sent to the hair at exactly the point at which the brush or comb is employed. To eliminate the effect of the positive electrical charges generated, many hairdryers are fitted with negative ion generators designed to neutralise said positive electrical charges.

[0013] The problem of electrostatically charged hair also exists, however, even if the hair is not brushed or combed, as the jet of hot air is enough to electrify it, even if the jet contains steam.

[0014] The problem therefore also arises in the case of the hood type of hair treatment apparatus; the fact that the hair is electrically charged means that the individual hairs tend to separate, thus increasing their apparent volume and becoming "fluffy", especially during the last stage of treatment. Under these conditions the airflow may tangle the hair, hindering subsequent combing, and the fact that the hair is electrically charged also makes it more difficult to comb.

[0015] In the case of facial treatment, apparatus is used that produces steam and ozone which are conveyed directly to the face to be treated. Here again, the combined action of steam and ozone promotes purification of the epidermis and produces lymph drainage, also aiding the preparation of curative and beauty treatments which give a pleasant feeling of freshness.

[0016] However, once again the friction generated by the steam can produce positive electrical charges which accumulate on the epidermis, giving rise to unpleasant sensations.

[0017] The purpose of the present invention is to eliminate the drawback of electrification of the hair and skin by offering a steam-treatment apparatus as claimed in claim 1, equipped with a device for the generation of negative ions which neutralises the positive electrical charges that accumulate in the hair and on the epidermis.

[0018] The beauty treatment apparatus according to the invention can advantageously be equipped with an ozone generator, in order to obtain the ideal treatment conditions.

[0019] Said apparatus according to the invention can be made in various embodiments, depending on the prevalent use, ie. for hair treatment or facial treatment. In the case of hair treatment it will be advantageously equipped with a hood into which steam enriched with

negative ions, and possibly ozone, is conveyed; in the case of facial treatments said apparatus will be advantageously equipped with a diffuser nozzle that directs the flow of steam enriched with ions and ozone directly onto the face.

[0020] The invention will now be described in detail, by way of example but not of limitation, according to a preferred form of embodiment and by reference to the annexed drawings wherein:

- figure 1 shows a beauty treatment apparatus according to the invention, in the configuration suitable for hair treatment;
- figure 2 shows the apparatus illustrated in figure 1 in cross-section;
- figure 3 shows a beauty treatment apparatus according to the invention, in the configuration suitable for facial treatment;
- figure 4 shows the apparatus illustrated in figure 3 in cross-section;
- figure 5 schematically illustrates an ion generator;
- figure 6 shows a possible combination of parts which produces configurations suitable for both hair and facial treatment in a single apparatus.

[0021] Fig. 1 shows a beauty treatment apparatus according to the invention in configuration (1a) suitable for hair treatment.

[0022] Apparatus (1a) comprises a casing (2) which contains all the activation devices, and a hood (3) which is positioned on the head of the person whose hair is to be treated.

[0023] Said activation devices contained in said casing (2) and shown in fig. 2, comprise a motor (4) with a fan (5), an ozone-generating device (7), possibly of adjustable intensity, an ion-generating device (8), possibly of adjustable intensity, and a steam-generating device (9), possibly of adjustable intensity, constituted by a water boiler with electrical heating element.

[0024] Said ozone-generating device (7) and said ion-generating device (8) are contained in a single casing (10) together with said motor (4) and said fan (5), so that heated air already containing ozone and ions exits from said casing (10). When said hot air containing ozone and ions exits from casing (10) it is conveyed into a pipe (11) leading from steam-generating device (9) into hood (3).

[0025] Provision could be made for ozone-generating device (7), ion-generating device (8) and steam-generating device (9) to be activated separately by means of suitable switches positioned, for example, on the casing of hair treatment apparatus (1a).

[0026] Alternatively, depending on the prevalent use proposed, said ozone generator could be omitted.

[0027] When motor (4) is switched on, fan (5) generates an airflow which is conveyed through casing (10), where it is enriched with ozone and negative ions if devices (7) and (8) respectively are activated. The air then passes through pipe (11), via which it is conveyed, mixed

with steam, into hood (3).

[0028] Fig. 3 shows a beauty treatment apparatus according to the invention in configuration (1 b) suitable for facial treatment.

[0029] Apparatus (1b) comprises a casing (20) and a diffuser nozzle (21) situated at the end of a pipe (22) which mechanically connects said casing (20) with said diffuser nozzle (21); the steam flows through said pipe (22), exits through opening (23) in said diffuser nozzle (21) and reaches the face of the person on whom the treatment is performed.

[0030] According to a preferred form of embodiment of the invention, an ozone-generating device (7) and a negative-ion generating device (8) are housed inside said diffuser nozzle (21), which swivels so that the flow of steam can be directed more effectively (fig. 4).

[0031] In this case there is no motor, as the continuous steam generation produces a flow of steam which reaches the face by exiting through opening (23) in diffuser nozzle (21) after being enriched with ozone and negative ions as a result of flowing over said ozone-generating device (7) and negative ion generating device (8).

[0032] Negative-ion generating device (8), shown in fig. 5, comprises an electrode (12) connected to a high-voltage current generator (13), which said generator (13) is powered through wiring (14) by the mains electricity supply. Said power supply may be controlled by a switch (not illustrated) which is activated by the operator.

[0033] The invention could be implemented in such a way as to obtain a single apparatus which can be configured for hair treatment or facial treatment, as required. In this case it will be necessary to position the various devices differently inside the apparatus; for example, as shown in fig. 6, by joining the main machine body (24) of the apparatus configured for hair treatment to swivelling nozzle (21) fitted at the end of pipe (22), as in the case where the apparatus is configured for facial treatment. In this case, ozone-generating device (7) and ion-generating device (8) will no longer be housed in said diffuser nozzle (21), as it is sufficient for said ozone and ions to be conveyed by a moderate airflow generated by motor (4) and fan (5), the intensity of said flow being adjustable to suit specific requirements.

[0034] The advantage of the apparatus according to the invention is that a single apparatus contains many devices frequently used for facial and hair treatments, and said devices can also be operated individually, and their intensity regulated as required.

[0035] The use of a beauty treatment apparatus according to the invention will therefore considerably increase the efficiency of the operations, thus reducing treatment times.

[0036] The hairdryer according to the invention is described herein by way of example but not of limitation, according to a preferred form of embodiment. A person skilled in the art could devise numerous other embodiments, all of which fall within the scope of protection of the claims that follow.

Claims

1. Steam beauty treatment apparatus, **characterised in that** it associates means (9), designed to generate and direct steam, with means (8) designed to generate negative ions and mix them with said steam, in such a way that said negative ions reach the person on whom said beauty treatments are performed and neutralise the positive electrical charges generated during said beauty treatments. 5
2. Apparatus as claimed in claim 1, **characterised in that** it comprises a motor (4) which activates a fan (5) to generate an airflow, which said air flows over steam-generating device (9) and negative-ion generating device (8) so that it mixes with said steam and negative ions, which are conveyed by said air into a hood (3) that diffuses said steam and negative ions onto the hair and scalp of the person on whom said beauty treatment is performed. 10 20
3. Apparatus as claimed in claim 2, **characterised in that** it also includes an ozone generator (7) positioned along the airflow generated by fan (5) driven by motor (4). 25
4. Apparatus as claimed in claims 1 to 3, **characterised in that** said steam-generating device (9), ozone-generating device (7) and ion-generating device (8) are contained in a single casing (2) which also encloses said motor (4) and said airflow-generating fan (5). 30
5. Apparatus as claimed in claim 4, **characterised in that** said ozone-generating device (7) and ion-generating device (8) are contained in a casing (10) which also encloses said motor (4) and said airflow-generating fan (5). 35
6. Apparatus as claimed in claim 1, **characterised in that** it also includes an ozone generator (7) positioned along the steam flow in such a way that said ozone can mix with said steam to reach the body of the person on whom said beauty treatment is performed, together with said steam and said negative ions. 40 45
7. Apparatus as claimed in claim 6, **characterised in that** said ozone-generating device (7) and negative-ion generating device (8) are positioned inside a diffuser nozzle (21). 50
8. Apparatus according to at least one of claims 1 to 7, **characterised in that** said diffuser nozzle (21), fitted at the end of a pipe (22), is designed to be mounted on main machine body (24) of the apparatus configured for hair treatment. 55
9. Hair treatment apparatus as claimed in any of claims 1 to 8, **characterised in that** it includes a steam-generating device (9) of adjustable intensity which can be operated separately from the other devices. 5
10. Hair treatment apparatus as claimed in any of claims 1 to 8, **characterised in that** it comprises an ozone-generating device (7) of adjustable intensity which can be operated separately from the other devices. 10
11. Hair treatment apparatus as claimed in any of claims 1 to 8, **characterised in that** it comprises an ion-generating device (8) of adjustable intensity which can be operated separately from the other devices. 15 20

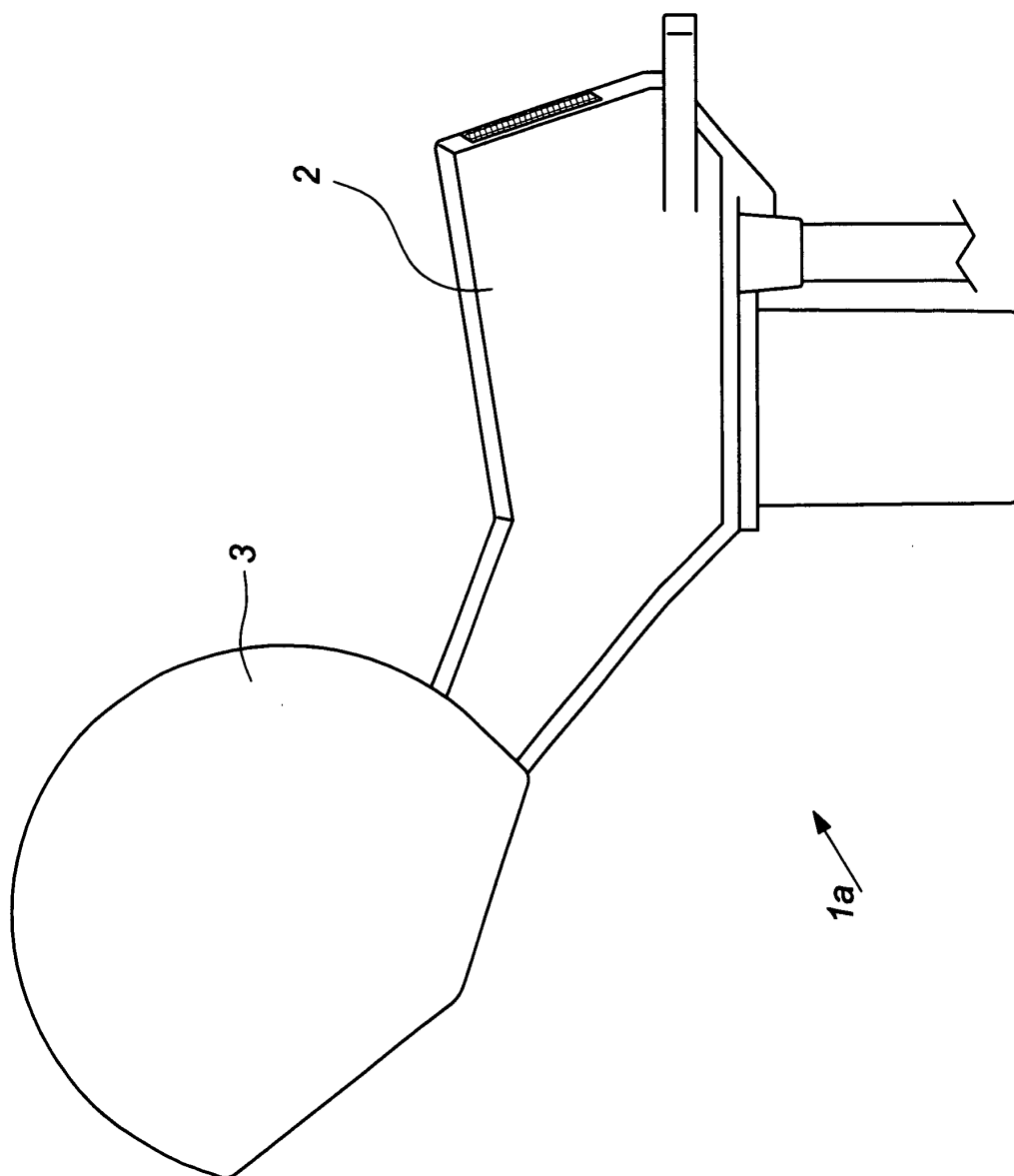


Fig. 1

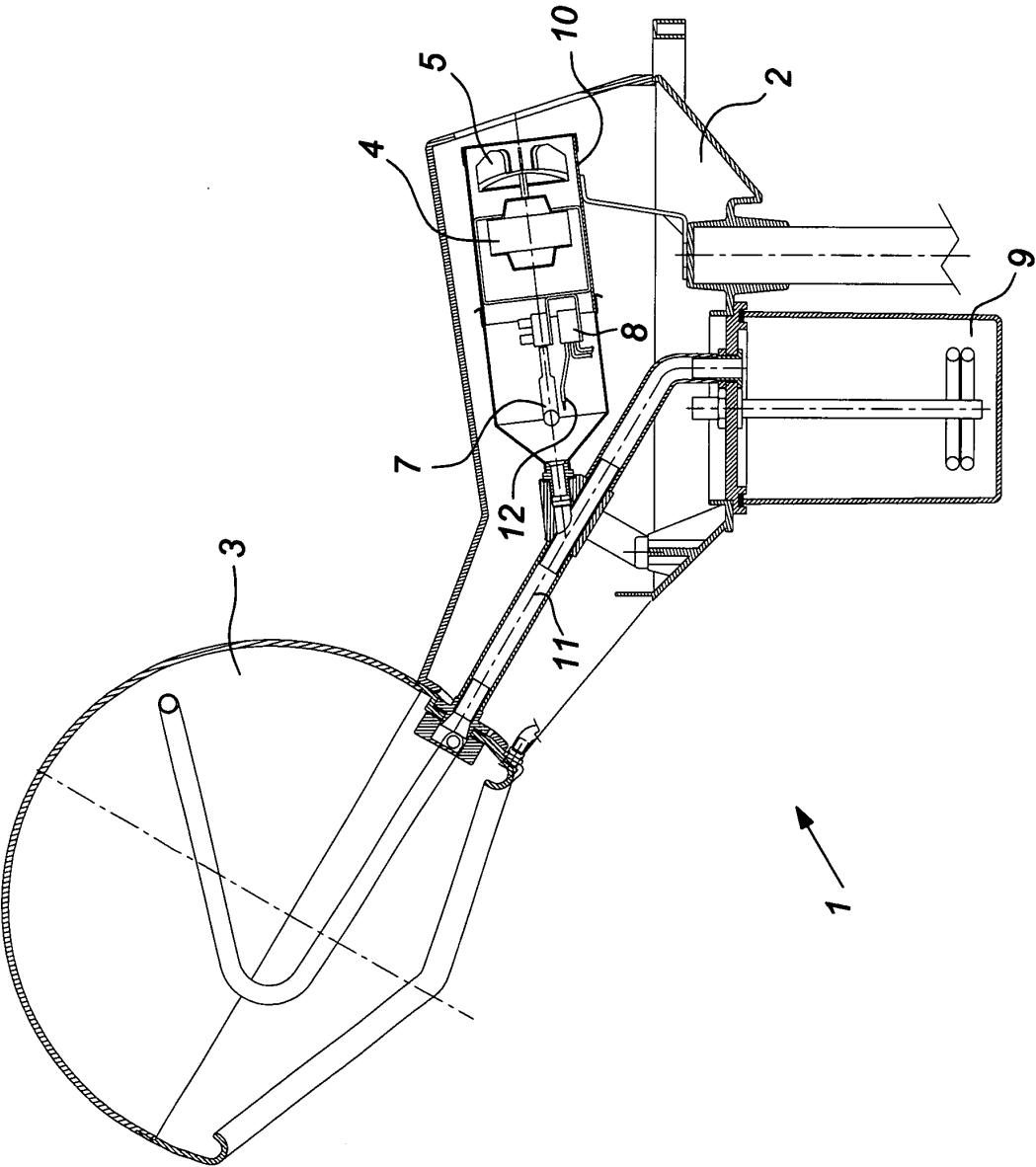


Fig. 2

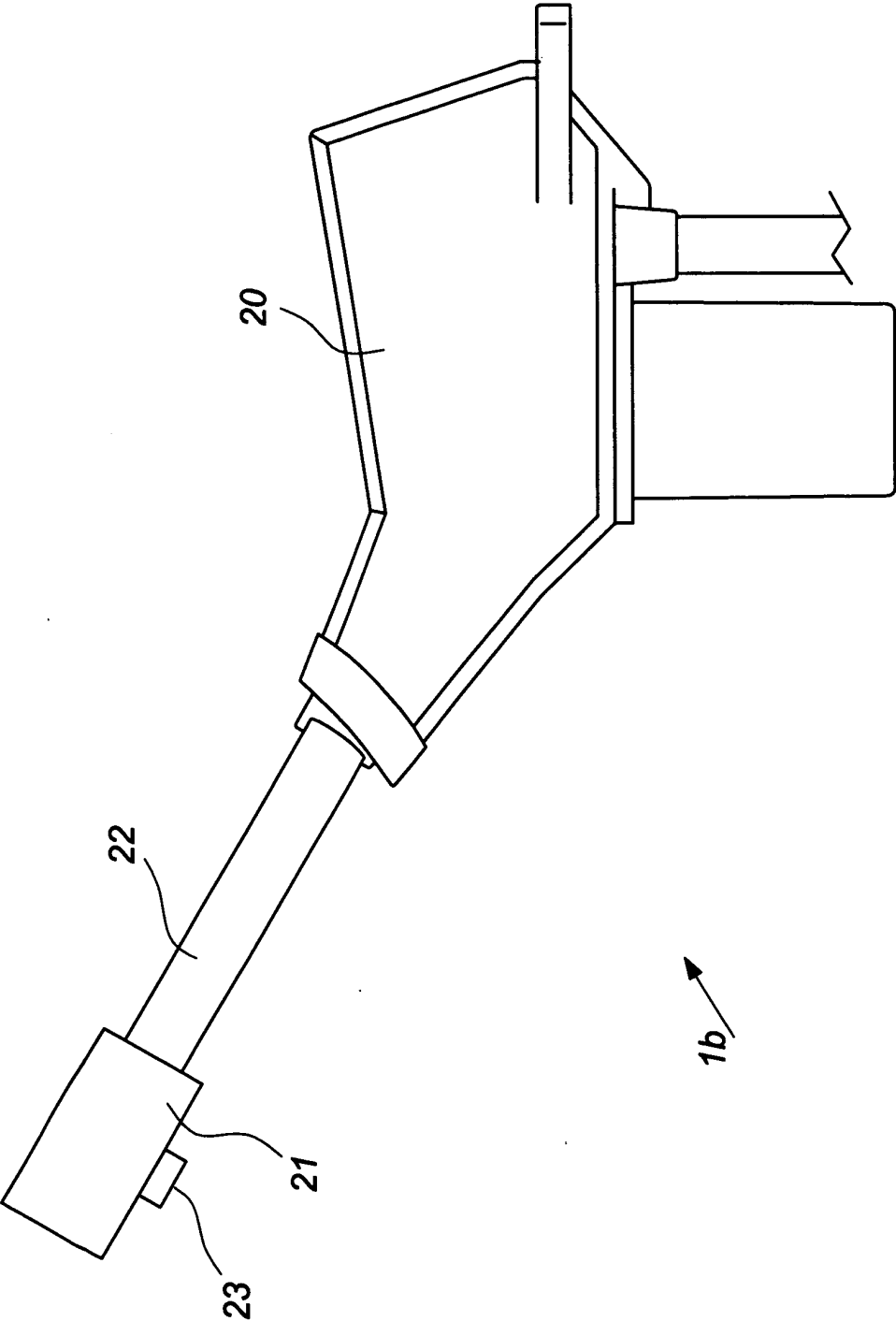


Fig. 3

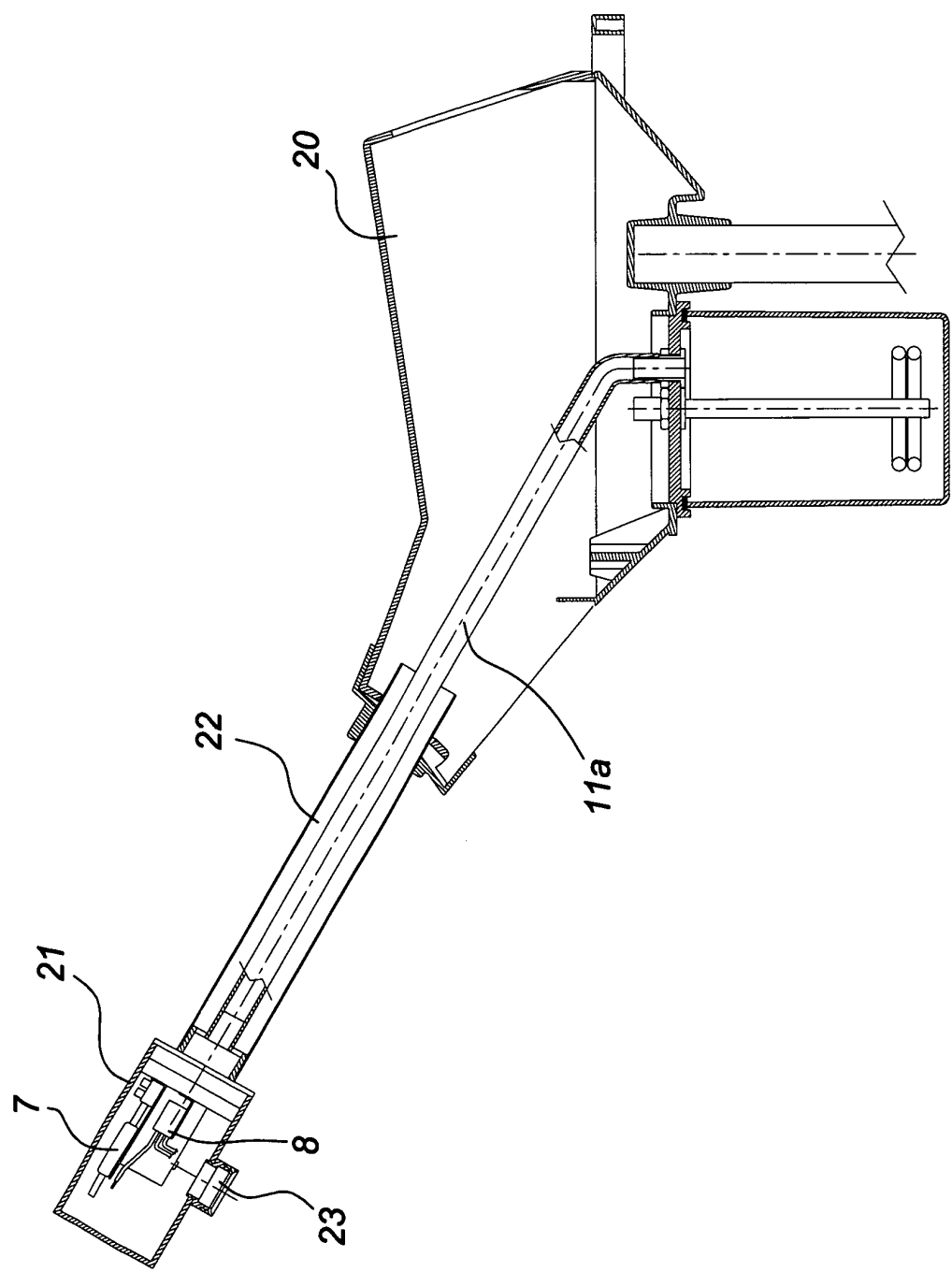


Fig. 4

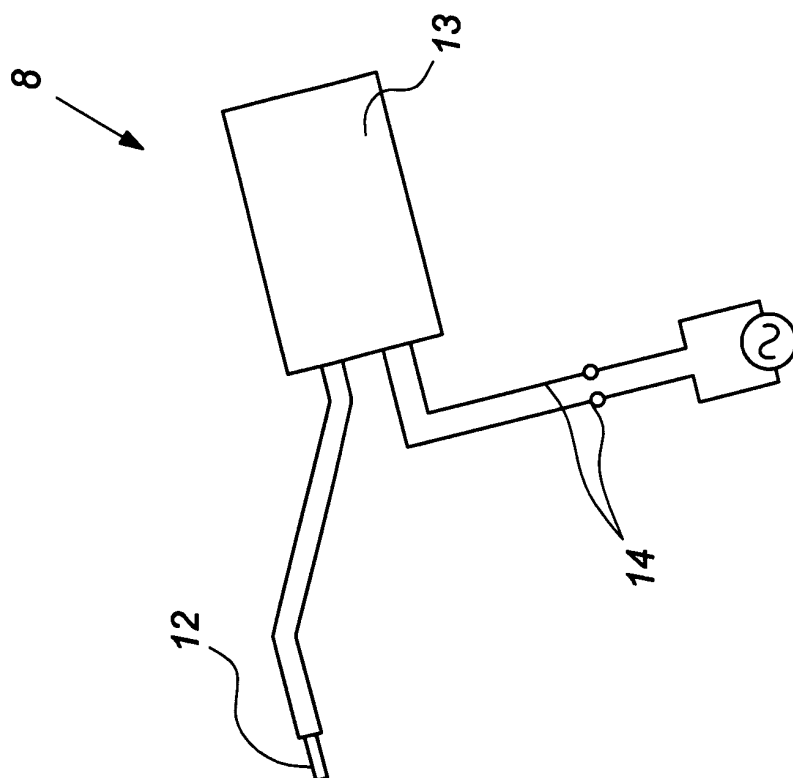


Fig. 5

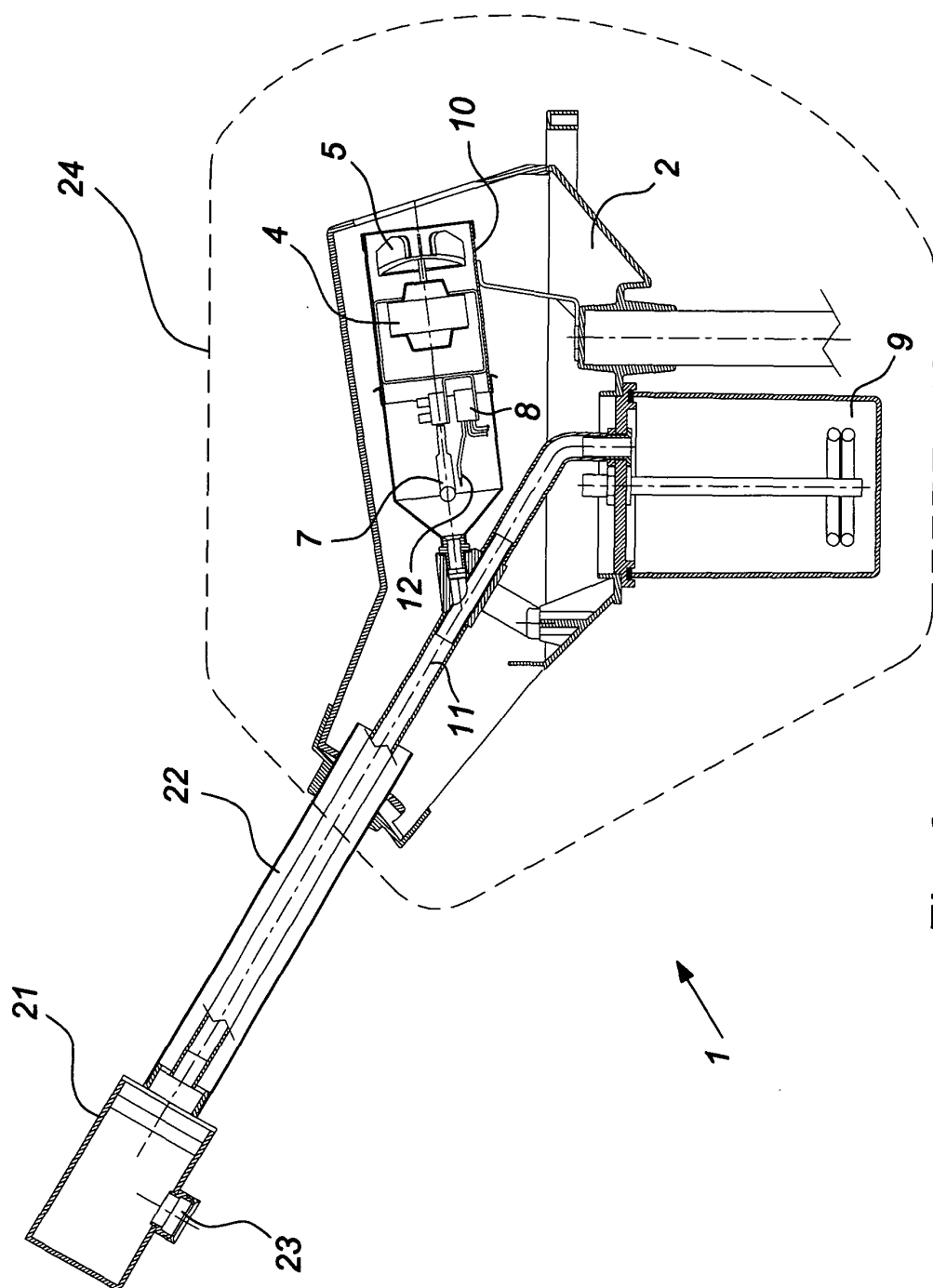


Fig. 6