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A brush head and a steam cleaning tool

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**Abstract**

The present utility model relates to a brush head and a steam cleaning tool comprising the brush head. The brush head comprises a connector, a connecting block and a  
5 sponge block which is located on said connecting block. Said connector has a through-hole inside, with one end connected with said connecting block and the other end connected with a steam transporting hose. Said connecting block has many tiny holes located corresponding to through-hole of said connector. Said sponge block has vent holes located corresponding to said tiny holes. Compared with the prior art, the  
10 present utility model, using sponge block to clean the surface of object to be cleaned, has expanded the cleaning area, protected the cleaning surface from scratching, avoided damages brought by direct contact between the high temperature steam and the cleaning surface of object to be cleaned, thereby providing high cleaning efficiency and comfortable and convenient using. Moreover, the steam can be  
15 distributed more evenly, so that the cleaning effect is very satisfactory. What's more, there is a significant reduction in steam export volume, which can save water significantly and is beneficial to environmental protection and energy saving.

Figures

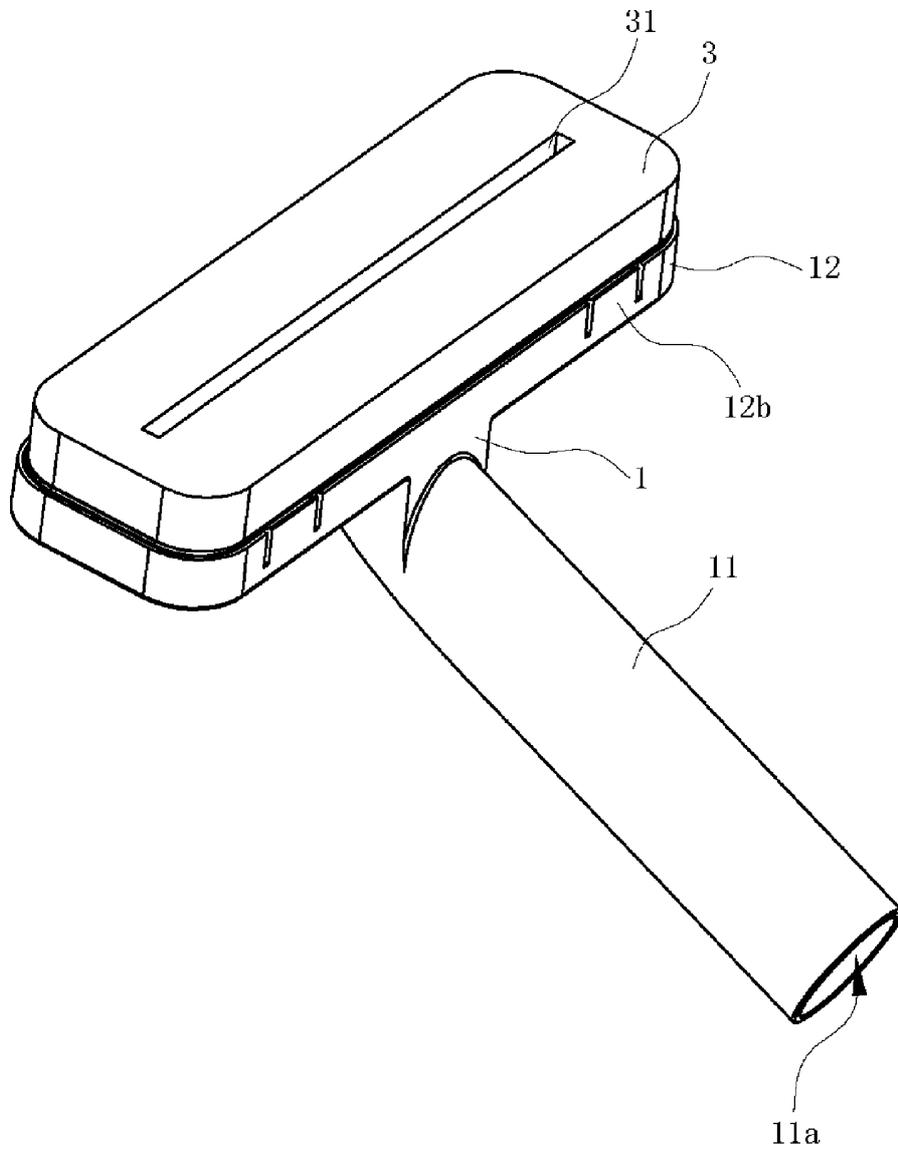


Fig.1

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**INNOVATION SPECIFICATION FOR AN INVENTION ENTITLED**

Invention title: A brush head and a steam cleaning tool

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**The invention is described in the following statement:**

## Description

### A Brush Head and a Steam Cleaning Tool

5 **Technical Field:**

The present utility model relates to the technical field of cleaning tools, and more specially relates to a steam cleaning tool and a brush head used in the steam cleaning tool.

10

**Background Art:**

At present, in daily life and industrial production, kitchenwares, walls, glasses of doors and windows, automobiles, large-scale instruments and equipments and so on, 15 are all needed to be cleaned after long time using. The current cleaning methods include water scrubbing, steam cleaning, ultrasonic cleaning, etc.

Steam cleaning is a method that uses saturated steam obtained under the high temperature and high pressure conditions to dissolve grease particles on the cleaning 20 surface and gasify it so that the surface cleaned by saturated steam could come to a super clean state. At the same time, the over-saturated steam can efficiently access any tiny holes and fissures, and can peel and wipe off the stains and residues thereof.

The method is mainly applied to industrial instrument cleaning, field vehicle care, industrial bearing maintenance and cleaning, grease and stain eliminating of components and parts surface, inside and outside cleaning of vehicles, cleaning and disinfection of food industrial equipments and tools, cleaning and disinfection of 5 medical applications, epidemic prevention, etc. However, the disadvantage thereof is that, if the steam or existing brush head directly contact with the object to be cleaned, the surface of the object to be cleaned would be scratched and could not get cleaned.

Steam cleaning tools are required while steam cleaning, for example, a steam vehicle 10 cleaner is a steam cleaning tool for cleaning vehicles, using a small amount of condensate water which is generated by the pipeline with the heat of steam and the pressure generated instantaneously or by gas storage g. For example, a Chinese utility model patent Pressure Steam Cleaning Machine, with a patent number of ZL01232033.1(the publication number is CN2482520Y), has disclosed a such kind 15 steam vehicle cleaning machine. An existing steam vehicle cleaning machines usually comprise a steam generator, a steam transporting hose and a spray gun, the spray gun is communicated with the steam transporting hose, while working, the steam generated by steam generator gets through the steam transporting hose, exports from the tiny holes on the head of the spray gun, and then directly acts on the surface of 20 vehicles.

However, it is found during the process of practical using that, because the

distribution area of the steam, which is exported from the tiny holes of spray gun, on the vehicle surface is too small, the cleaning process is laborious and time-consuming, and the total water consumption of cleaning a vehicle is comparatively high and often accompanied with the uneven phenomenon, which can affect the cleaning result.

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**Utility Model Content:**

The technical problem that the present utility model has to resolve is to provide a brush head and a steam cleaning tool in the light of the state of the art, the brush head could be connected with the head of the spray gun, which brings advantages of expansion of cleaning area, wrapping small particles like sand and so on, more even distribution of steam, so that the cleaning effect is satisfactory. What's more, the water can be substantially saved, which is beneficial to environmental protection and energy saving.

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In order to achieve above purposes, the technical scheme of the present utility model has provided a brush head, said brush head comprises a connector, a connecting block and a sponge block located on said connecting block; said connector has a through-hole inside, with one end connected with said connecting block and the other end connected with the steam transporting hose; said connecting block has several tiny holes located corresponding to the through-hole of said connector, said sponge block has vent holes located corresponding to said tiny holes.

Preferably, clamps are located on said connecting block, said sponge block is fastened to said connecting block with said clamps.

5 Preferably, said connecting block has an embedded slot, said sponge block is embedded into said embedded slot, said embedded slot has one or more strengthen pins inside for fastening said sponge block.

10 Preferably, a buckle-up component is located on said connecting block and a buckle-down component is correspondingly located on said sponge block, wherein said sponge block is fixed on said connecting block by said buckle-up component and buckle-down component.

Preferably, said sponge block wraps said connecting block.

15 Preferably, the junction of said connecting block and sponge block can be of any shape.

20 The technical scheme of the present utility model has provided another brush head, the brush head comprises a T shaped brush holder, a cover board and a sponge block located on the cover board, wherein, the vertical part of the brush holder has a central through-hole along its length, the horizontal part is flat-box shaped and has an elongated shaped outlet, the outlet is communicated with the central through-hole,

said cover board covers the surface of the horizontal part of the brush holder and the cover board has a row of tiny holes located corresponding to the outlet, said sponge block has an elongated shaped hole located corresponding to the row of tiny holes.

5 Said sponge block, fixed or movable, can be located on the surface of the cover board in various ways. To make the sponge block detachable, which can be cleaned and used repeatedly, a pair of male-female clasps can be located on the surface of said cover board and the bottom of said sponge block. Because the cover board is usually one-step molded, a bonding layer can be located on the surface of the cover board so  
10 that the sponge block can be conveniently bonded and dismantled.

In order to clean the inside part of the brush head conveniently, said cover board is connected with the horizontal part of the brush holder in an active and dismantle way, to be specific: at least one pair of inverted J shaped sprung buckles are located on the  
15 edge of the horizontal part of said brush holder, and notches are located on the edge of said cover board appropriately. Every buckle has a definite elasticity because of the clearance between the two flanks thereof and the horizontal part, the undercut part of the inverted J shaped sprung buckles can be buckled into the notches, so that the cover board can be connected with the horizontal part of the brush holder, actively buckled  
20 or dismantled.

The technical scheme of the present utility model has also provided a steam cleaning

tool comprising a brush head, said steam cleaning tool also comprises a steam generator, a steam transporting hose and a spray gun, said steam transporting hose is connected with the tail of said spray gun and steam generator at two ends, the head of said spray gun is connected with said brush head.

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Compared with the prior art, the advantages of the present utility model are that: the brush head of the present utility model can be connected with the head of the spray gun of the steam cleaning tool, after intensively exporting from the tiny holes, the steam would enter a large-area sponge block. The sponge block is used to clean the surface of object to be cleaned, which has expanded the cleaning area, protected the cleaning surface from scratching, avoided damages brought by direct contact between the high temperature steam and the cleaning surface of object to be cleaned, thereby providing high cleaning efficiency and comfortable and convenient using. Moreover, the steam can be distributed more evenly, so that the cleaning effect is very satisfactory. What's more, because outlets of the steam have concentrated on the tiny holes, there is a significant reduction in steam export volume, which can save water significantly and is beneficial to environmental protection and energy saving. The water volume for cleaning a car could be only 1L with no more ground pollution.

20 **Illustration:**

Fig.1 is a structure diagram of a brush head in Embodiment 1 of the present utility

model;

Fig.2 is a structure diagram of a brush head with the sponge block detached in Embodiment 1 of the present utility model;

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Fig.3 is an exploded assembly drawing of a brush head in Embodiment 1 of the present utility model;

Fig.4 is a structure diagram of a brush head with the sponge block detached in Embodiment 6 of the present utility model;

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Fig.5 is a structure diagram of the connector of a brush head in Embodiment 6 or 7 of the present utility model;

Fig.6 is a structure diagram of a brush head with the sponge block detached in Embodiment 7 of the present utility model.

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**Detailed Description:**

Combined with the figures and embodiments, detailed descriptions of the embodiments of the present utility model are as follows. The following embodiments are used to illustrate the utility model, but not a limit to the utility model.

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**Embodiment 1:**

The structure of a brush head of the embodiment is as Fig.1, Fig.2 and Fig.3, the brush head comprises a T shaped brush holder 1, a cover board 2 and a sponge block 3 located on the cover board 2;

5

Wherein, the vertical part 11 of the brush holder 1 is tubular shaped, the horizontal part 12 is flat-opened-box shaped, the vertical part 11 is smoothly connected with horizontal part 12 at one end, then the vertical part 11 is provided with a central through-hole 11a and the horizontal part 12 is provided with a elongated shaped outlet

10 12a, both are communicated with each other;

Said cover board 2 covers the surface of horizontal part 12 of the brush holder 1 in a flexible and dismantled way, the structure of the flexible connection between the two specially is: two pairs of inverted J shaped sprung buckles are located on the edge of horizontal part 12 of said brush holder 1, and notches 22 are located correspondingly on the edge of said cover board 2. And, a row of tiny holes 21 are located corresponding to the outlet 12a on the cover board 2.

15

Said sponge block 3 has an elongated shaped hole 31 located corresponding to the row of the tiny holes in order to discharge the steam.

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At the same time, a binding layer 4 is located on the surface of said cover board 2,

surrounding outside the row of tiny holes 21, a pair of male-female buckles, which are suitable for the bonding layer 4 on the surface of cover board 2, are located on the bottom of said sponge block 3.

5 **Embodiment 2:**

In this embodiment, the connecting method of said cover board 2 and sponge block 3 is: clamps are located at both end of said cover board 2, said sponge block 3 is fastened to said cover board 2 with said clamps. The rest is as the Embodiment 1.

10 **Embodiment 3:**

In this embodiment, the connecting method between said cover board 2 and sponge block 3 is: said cover board 2 has an embedded slot, said sponge block 3 is embedded into said embedded slot, said embedded slot has one or more strengthen pins inside for fastening said sponge block. The rest is as Embodiment 1.

15

**Embodiment 4:**

In this embodiment, the connecting method between said cover board 2 and sponge block 3 is: a buckle-up component is located on said cover board 2 and a buckle-down component is correspondingly located on said sponge block 3, wherein said sponge  
20 block is fixed on said cover board 2 by said buckle-up component and buckle-down component. The rest is as Embodiment 1.

**Embodiment 5:**

In this embodiment, the connecting method between said cover board 2 and sponge block 3 is: said sponge block 3 wraps said cover board 2 and the horizontal part 12 of said brush holder 1. The rest is as Embodiment 1.

5

In Embodiment 1 to 5, while working, the brush head of the present utility model is plugged into the spray gun of the steam cleaning tool, the steam exported from the head of spray gun successively passes through the vertical part 11 of the brush holder 1, the outlet 12a of the horizontal part 12, and then intensively outputs from the row of tiny holes 21 on the cover board 2 and scatters evenly on the sponge block 3, the sponge block 3 could be controlled to clean the surface of the object to be cleaned while the user operating the whole brush head, and finally achieve the purpose of cleaning.

15 **Embodiment 6:**

The structure diagram of a brush head of this embodiment is as Fig.4, wherein the structure of the connector is as Fig.5. The brush head comprises a connector 5, a connecting block 6 and a sponge block located on said connecting block 6; said connector 5 has a through-hole 51 inside, with one end connected with said connecting block and the other end connected with steam transporting hose; said connector 6 has several tiny holes 61 located corresponding to the through-hole 51 of said connector, said sponge block has vent holes located corresponding to said tiny

holes 61. The junction of said connecting block 6 and sponge block is circle shaped.

**Embodiment 7:**

The structure of a brush head of this embodiment is as Fig.6, wherein the structure of  
5 the connector is as Fig.5. In this embodiment, a different connecting block is used  
compared with Embodiment 6, connecting block 7 is used in this embodiment, said  
connecting block 7 has several tiny holes 71 located corresponding to said  
through-hole 51 of said connector, the junction of tiny holes 71 and the sponge block  
is flat. The rest is as Embodiment 6.

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In Embodiment 6 and 7, while working, the brush head of the present utility model is  
plugged into the spray gun of the steam cleaning tool, the steam exported from the  
head of spray gun successively passes through the connector 5, the through-hole 51 of  
connector 5, and then intensively outputs from several tiny holes 61 of the connecting  
15 block 6 and scatters evenly on the sponge block, the sponge block 3 could be  
controlled to clean the surface of the object to be cleaned while the user operating the  
whole brush head, and finally achieve the purpose of cleaning.

**Embodiment 8:**

20 The embodiment has provided a steam cleaning tool comprising the brush head, said  
brush head can be any one of Embodiment 1 to 7, said steam cleaning tool also  
comprises a steam generator, a steam transporting hose and a spray gun, said steam

transporting hose is connected with the tail of said spray gun and the steam generator at two ends, the head of said spray gun is connected with said brush head.

A brush head and a steam cleaning tool of the present utility model can be used in  
5 cleaning tools for cleaning kitchenwares, walls, glasses of doors and windows, automobiles, large-scale instruments and equipments, bicycles, floors, bathroom, shutters, lampblack machine, etc.

The brush head of the present utility model can be connected with the head of the  
10 spray gun of the steam cleaning tool, after intensively exporting from the tiny holes, the steam would enter a large-area sponge block. Using sponge block to clean the surface of object to be cleaned, has expanded the cleaning area, protected the cleaning surface from scratching, avoided damages brought by direct contact between the high  
15 high cleaning efficiency and comfortable and convenient using. Moreover, the steam can be distributed more evenly, so that the cleaning effect is very satisfactory. What's more, because the steam exports concentrate on the tiny holes, there is a significant reduction in steam export volume, which can save water significantly and is beneficial to environmental protection and energy saving. The water volume for cleaning a car  
20 could be only 1L with no more ground pollution.

The above is just preferable embodiments of the present utility model, what should be

pointed out is that, for the ordinary skill in this art, the utility model can have some modifications and embellishments without departing from the technical principles of the present utility model, these modifications and embellishments should also be embraced within the scope of patent protection of the present utility model.

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**Claims**

1. A brush head, characterized in that, said brush head comprises a connector, a connecting block and a sponge block located on said connecting block; said connector  
5 has a through-hole inside, with one end connected with said connecting block and the other end connected with a steam transporting hose; said connecting block has several tiny holes located corresponding to the through-hole of said connector, said sponge block has vent holes located corresponding to said tiny holes.
- 10 2. A brush head described according to claim 1, characterized in that: clamps are located on said connecting block, said sponge block is fastened to said connecting block with said clamps.
- 15 3. A brush head described according to claim 1, characterized in that: said connecting block has an embedded slot, said sponge block is embedded into said embedded slot, said embedded slot has one or more strengthen pins inside for fastening said sponge block.
- 20 4. A brush head described according to claim 1, characterized in that: a buckle-up component is located on said connecting block and a buckle-down component is correspondingly located on said sponge block, wherein said sponge block is fixed on said connecting block by said buckle-up component and buckle-down component.

5. A brush head described according to claim 1, characterized in that: said sponge block wraps said connecting block.

5 6. A brush head described according to any one of claims 1 to 5, characterized in that, the junction of said connecting block and sponge block can be of any shape.

7. A brush head, characterized in that: comprising a T shaped brush holder (1), a cover board (2) and a sponge block (3) located on the cover board (2), wherein, the  
10 vertical part (11) of the brush holder (1) has a central through-hole (11a) along its length, the horizontal part (12) is flat-box shaped and has an elongated shaped outlet (12a), the outlet(12a) is communicated with the central through-hole (11a), said cover board (2) covers the surface of the horizontal port (12) of the brush holder (1) and the cover board (2) has a row of tiny holes (21) located corresponding to the outlet (12a),  
15 said sponge block (3) has an elongated shaped hole (31) located corresponding to the row of tiny holes (21).

8. A brush head described according to claim 7, characterized in that: a pair of male-female clasps is located on the surface of said cover board (2) and the bottom of  
20 said sponge block (3), a bonding layer (4) is provided on the surface of the cover board (2).

9. A brush head described according to claims 7 or 8, characterized in that: said cover board (2) is connected with the horizontal part (12) of the brush holder (1) in a movable and dismantle way, to be specific: at least one pair of inverted J shaped sprung buckles are located on the edge of the horizontal part (12) of said brush holder  
5 (1) and notches (22) are located on the edge of said cover board (2) appropriately

10. A steam cleaning tool with a brush head according to clams 1 to 7, characterized in that: said steam cleaning tool also comprises a steam generator, a steam transporting hose and a spray gun, said steam transporting hose is connected with the  
10 tail of said spray gun and the steam generator at two ends, the head of said spray gun is connected with said brush head.

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Figures

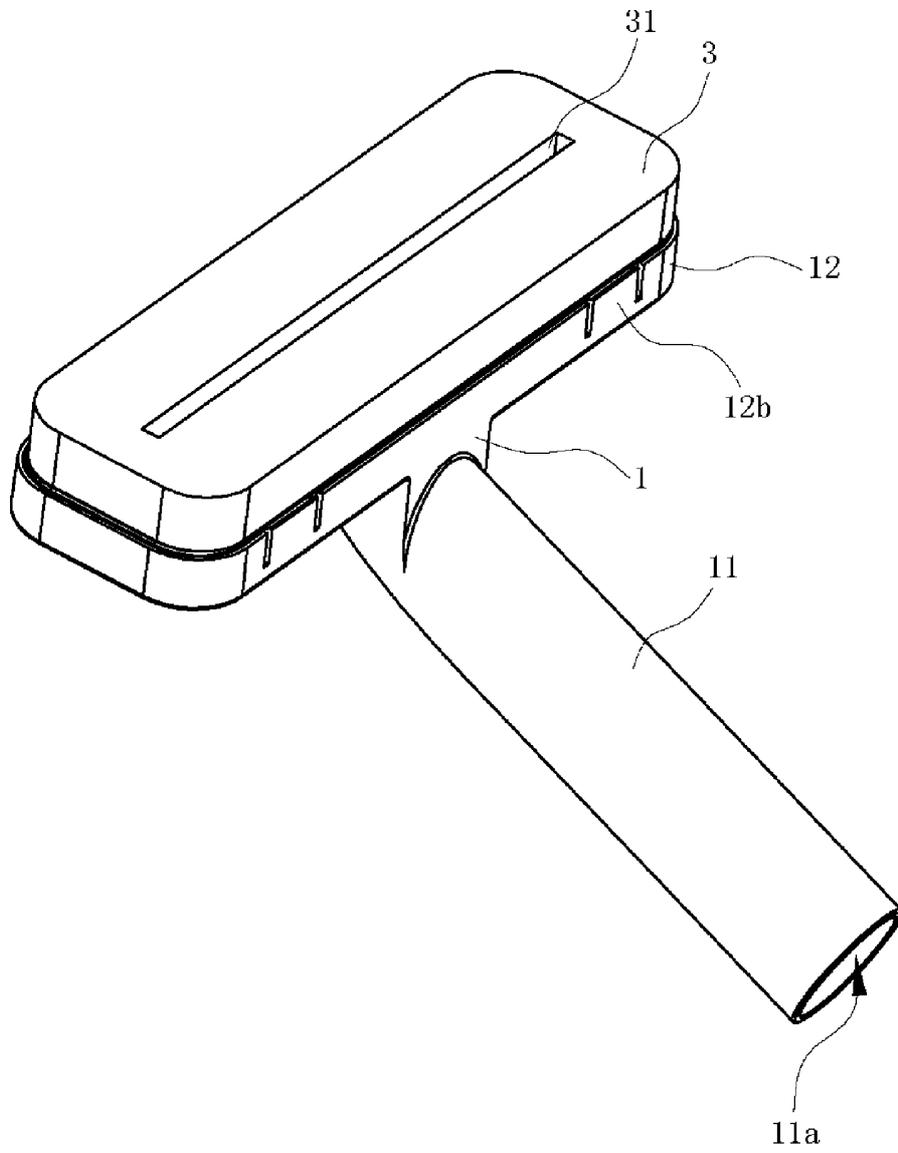


Fig.1

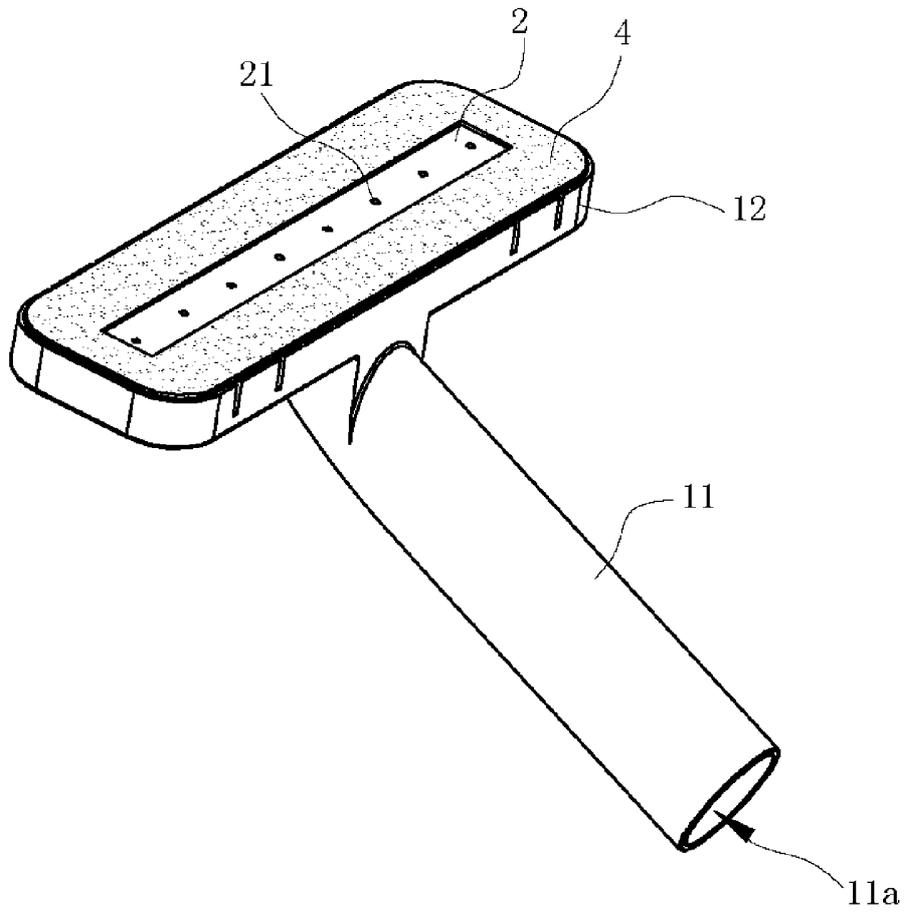


Fig.2

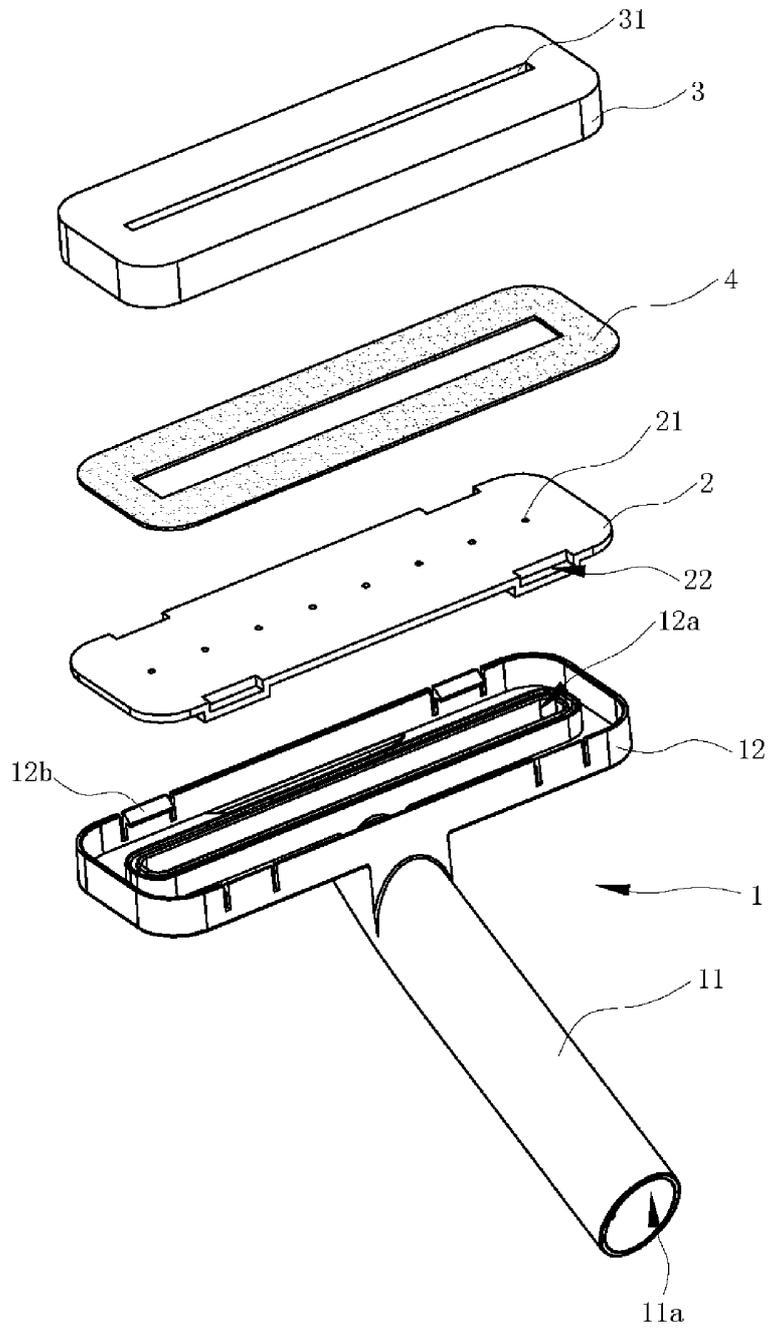


Fig.3

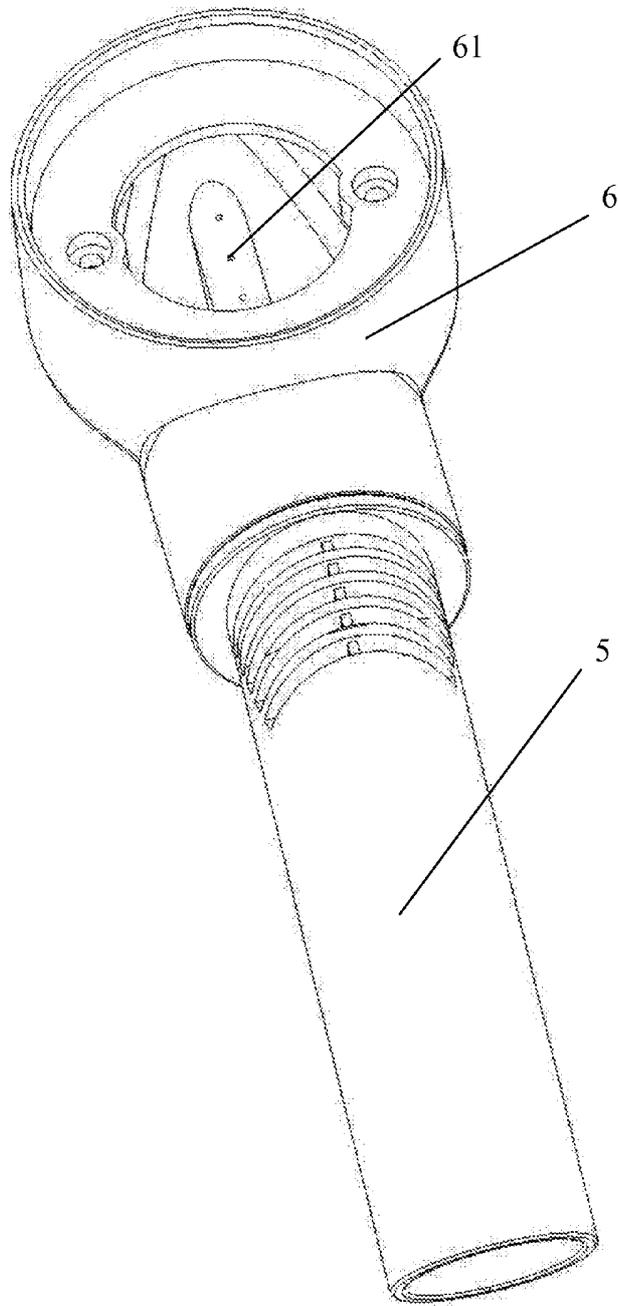


Fig.4

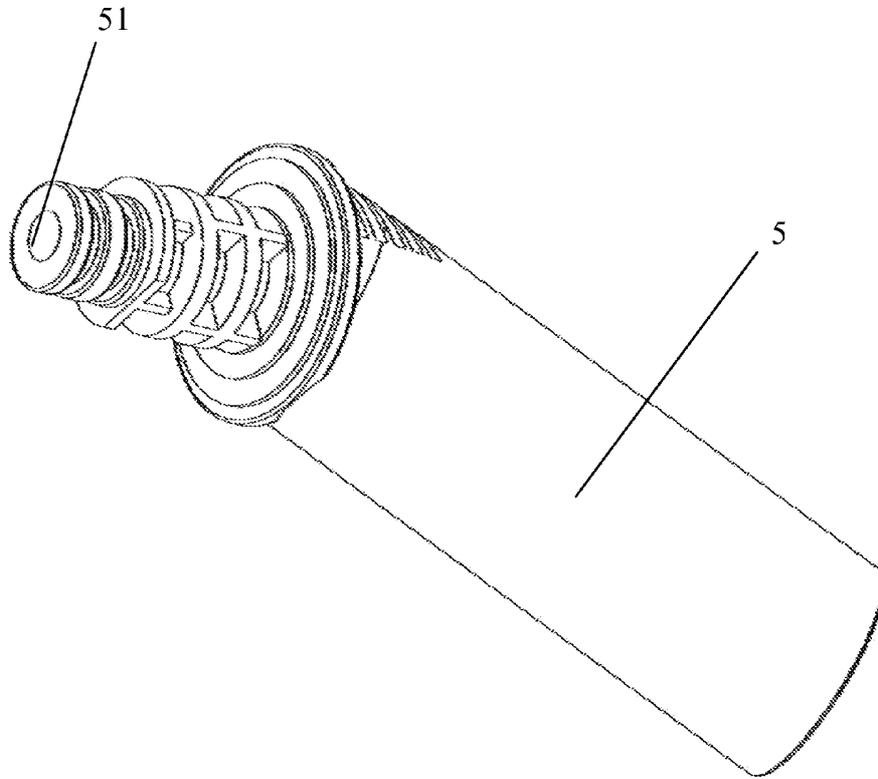


Fig.5

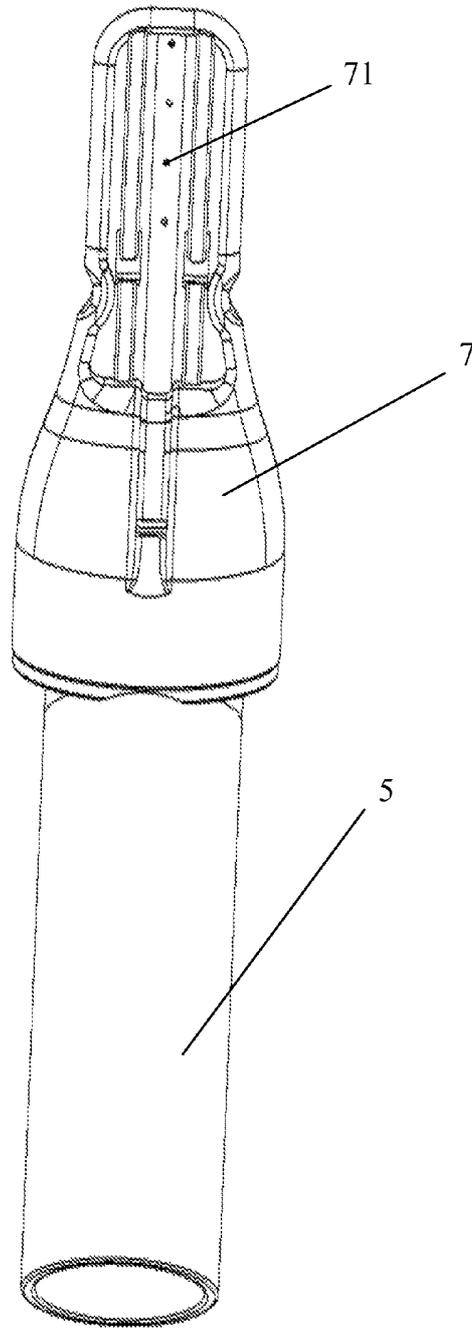


Fig.6