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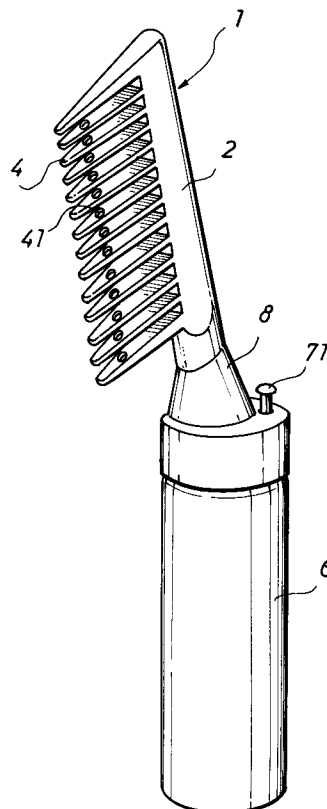
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W-8000 München 22(DE)(54) **Device for applying foam cosmetic material.**

(57) A device for applying a foam cosmetic material comprises a cosmetic material container (6) containing a foam cosmetic material therein and including an outlet port (7) through which the foam cosmetic material is jetted, and a jet operating portion (71) for jetting the foam cosmetic material through the outlet port (7); and a comb body (2) mounted on the cosmetic material container (6) through a mounting member (8), and including a plurality of hollow comb teeth (4) and a cosmetic material filling chamber (3) defined in a base member of the comb body (2). The device further comprises a foam discharging tube (5) having a cross sectional area of 30 to 70% relative to an internal cross sectional area of the cosmetic material filling chamber (3), a basal end (51) of the foam discharging tube (5) being communicated with the outlet port (7) and a distal end (52) thereof being located within the cosmetic material filling chamber (3) at a spot 35 to 65% relative to a length of the cosmetic filling chamber (3), each of the hollow comb teeth (4) being provided with an aperture (41) at a spot 0 to 40% away from a tip of each of the comb teeth (4) relative to a length thereof.

Fig .1

BACKGROUND OF THE INVENTION

[Field of the Invention]

This invention relates to a device for applying a foam cosmetic material, and more particularly to a device for applying a foam cosmetic material, in which a foam cosmetic material, such as a foam hair care material, can be applied or spread uniformly to the whole hair from the root to the tip thereof, and in which the hair can also be combed or brushed even during the applying of the foam cosmetic material.

[Description of the Prior Art]

As a conventional foam cosmetic applying device in which a foam cosmetic material such as a foam hair care material is jetted from the interior of a comb or a brush so as to be applied to the hair directly from the comb or the brush, there is known a foam jetting brush, a foam hair care material applying device, or a hair care material impregnated comb as disclosed, for example, in Japanese Utility Model Early Laid-open Publication No. Sho 62-128443, Sho 62-109002, or Sho 57-103003.

The foam brush discussed in the first-mentioned publication No. Sho 62-128443 comprises a base member provided at one surface thereof with a number of bristles and the like to form a brush, a foam channel defined within the base member in its longitudinal direction, and a foam jetting means connected to one end of the foam channel. The foam channel has a gradually increasing cross section as it goes away from the foam jetting means. A number of through-holes, through which the foam channel is opened, are formed in the brushing surface of the base member in alignment with the foam channel, so that the foam can be jetted uniformly or almost uniformly from each of the through-holes.

The foam hair care material applying device discussed in the second-mentioned publication No. Sho 62-109002 comprises a comb shape provided with a number of teeth and a back portion for connecting these teeth. The back portion has a guide channel defined therein and adapted to guide the foam hair care material, and outlet ports each formed between the adjacent teeth.

The hair care material impregnated comb discussed in the third-mentioned publication No. Sho 57-103003 comprises hollow teeth for a comb or a hair brush, and a hollow body member for supporting the teeth, the hollow portion being filled with a fiber material, a hair care material being fed into the hollow portion through oil inlet ports formed in a part of a wall portion of the hollow portion in order to be impregnated into the fiber material, that

portion of the body member to be contacted with the hair being provided with a tiny aperture leading to the hollow portion.

Referring to the above foam jetting brush, however, the through-holes near to the foam jetting means tend to jet a comparatively large amount of foam, but the through-holes remote from the foam jetting means tend to jet a comparatively small amount of foam. Moreover, the foam jetted through the through-holes so as to be applied to the hair tends to remain at the basal portions of the bristles or on the surface of the base member. As a result, the foam is applied only to the tip portion of the hair and not to the root portion thereof.

Referring back to the above foam hair care material applying device, the hair care material is not jetted uniformly to the whole teeth, and is, therefore, not applied or spread uniformly to the whole hair. The above hair care material impregnated comb is designed for the purpose of applying a liquid-type hair care material, and is, therefore, not suitable for applying the foam cosmetic material uniformly.

SUMMARY OF THE INVENTION

It is, therefore, an object of the present invention to provide a device for applying a foam cosmetic material, in which when a foam cosmetic material, such as a foam hair care material, is to be applied to the hair, the foam cosmetic material can be jetted uniformly to the vicinity of the tip portions of the comb teeth over the entire rows thereof without allowing the foam cosmetic material to remain at the basal portions of the comb teeth, so that the same can be applied or spread uniformly to the whole hair from the root portion to the tip portion thereof, and in which the hair can be combed or brushed even during the applying of the foam cosmetic material.

The present invention has achieved the above object by providing a device for applying a foam cosmetic material comprising a cosmetic material container containing a foam cosmetic material therein and including an outlet port through which the foam cosmetic material is jetted, and a jet operating portion for jetting the foam cosmetic material through the outlet port; and a comb body mounted on the cosmetic material container through a mounting member, and including a plurality of hollow comb teeth and a cosmetic material filling chamber defined in a base member of the comb body; the device for applying a foam cosmetic material further comprising a foam discharging tube having a cross sectional area of 30 to 70% relative to an internal cross sectional area of the cosmetic material filling chamber, a basal end of the foam discharging tube being communicated

with the outlet port and a distal end thereof being located within the cosmetic material filling chamber at a spot 35 to 65% relative to a length of the cosmetic filling chamber, each of the hollow comb teeth being provided with an aperture at a spot 0 to 40% away from a tip of each of the comb teeth relative to a length thereof.

According to a device for applying a foam cosmetic material of the present invention, when a foam cosmetic material, such as a hair care material, is jetted from the comb teeth in order to apply the same to the hair, the foam cosmetic material is jetted uniformly to the vicinity of the tip portions of the comb teeth over the entire rows thereof without allowing the foam cosmetic material to remain at the basal portions of the comb teeth, so that the foam cosmetic material can be applied or spread uniformly to the whole hair.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of a device for applying a foam cosmetic material according to a first embodiment of the present invention;

Fig. 2 is a vertical sectional view showing an important portion of the first embodiment;

Fig. 3(a) is an enlarged vertical sectional view of the comb teeth of the first embodiment, and Figs. 3(b), 3(c) and 3(d) are enlarged sectional views showing modified embodiments of the comb teeth;

Fig. 4(a) is a perspective view showing a distal end portion of a foam discharging tube of the first embodiment on its enlarged scale, and Figs. 4(b) and 4(c) are perspective views showing modified embodiments of the same; and

Fig. 5 is a view similar to Fig. 2, but showing a second embodiment of the present invention.

DETAILED DESCRIPTION OF THE EMBODIMENTS

A device for applying a foam cosmetic material of the present invention will now be described in the form of one preferred embodiment with reference to the accompanying drawings.

Figs. 1, 2, and 3(a) show a first embodiment of a device for applying a foam cosmetic material of the present invention, Fig. 1 is a perspective view thereof, Fig. 2 is a vertical sectional view showing an important portion thereof, and Fig. 3(a) is an enlarged vertical sectional view showing the hollow comb teeth of the embodiment of Fig. 1.

The device for applying a foam cosmetic material of the first embodiment, as shown in Figs. 1 and 2, comprises a cosmetic material container 6 containing a foam cosmetic material therein and including an outlet port through which the foam

cosmetic material is jetted, and a jet operating portion 7 for jetting the foam cosmetic material through the outlet port; and a comb body 1 mounted on the cosmetic material container 6 through a mounting member 8, and including a plurality of hollow comb teeth 4 and a cosmetic material filling chamber 3 defined in a base member 2 of the comb body 1. The cosmetic material filling chamber 3 is communicated with the hollow interior of each of the hollow comb teeth 4.

The device for applying a foam cosmetic material of this embodiment, as shown in Figs. 1 and 2, further comprises a foam discharging tube 5, a basal end 51 of the tube 5 being communicated with the outlet port and a distal end thereof being located within the cosmetic material filling chamber 3 at a spot 35 to 65%, preferably 35 to 45%, away from the container side of the cosmetic material filling chamber 3 relative to a length of the chamber 3. The foam discharging tube 5 used herein, is provided, as shown in Fig. 4(a), at the distal end 52 with a foam discharging port 53. And the tube 5 is formed in a cylindrical shape having a cross sectional area of 30 to 70% relative to a cross sectional area of the interior of the cosmetic material filling chamber 3. The distal end of the foam discharging tube 5 has the general configuration shown in Fig. 4(a). Further, as shown in Figs. 1 and 3, each of the hollow comb teeth 4 is provided with an aperture 41 at a spot 0 to 40%, preferably 20 to 30%, away from its tip relative to its length. The reason why the distal end of the foam discharging tube 5 is arranged to be located at the above spot, is that the foam cosmetic material can be filled uniformly into the cosmetic material filling chamber so that the foam cosmetic material can flow uniformly into each of the hollow comb teeth 4. On the other hand, the reason why the aperture 41 is arranged at the above spot, is that the foam cosmetic material can be prevented from remaining at the basal portion of each of the comb teeth 4. An operation button 71 for jetting the foam cosmetic material contained in the cosmetic material container 6 is mounted on a portion of the mounting member 8. The comb body 1 is mounted on the hollow comb teeth 4 side of the cosmetic material container 6 at angles of 15° to -15°, preferably 10° to -5° (10° in the embodiment), with respect to a longitudinal center line of the cosmetic material container 6.

The device for applying a foam cosmetic material of this embodiment will be described in more detail. As shown in Figs. 1 through 3(a), the hollow comb teeth 4 are arranged in a single row. The aperture portion 41 is formed in the tip portion of each of the comb teeth 4 and opened up at two places thereof towards the adjacent comb teeth 4. As a result, the aperture portions 41 of the adjacent

hollow comb teeth 4 are faced with each other in the longitudinal direction of the comb body 1.

By virtue of the above-mentioned construction of the device for applying a foam cosmetic material of this embodiment, upon depression of the operation button 71 on the jet operating portion 7, the jet operating portion 7 is urged downward (towards the cosmetic material container 6 side). As a result, the foam cosmetic material contained in the cosmetic material container 6 is jetted from the outlet port and guided into the foam discharging tube (outer diameter: 2mm and inner diameter: 1mm) 5. Then, the foam cosmetic material guided into the foam discharging tube 5 is jetted from the distal end 52 of the foam discharging tube 5 and filled into the cosmetic material filling chamber (inner diameter: 2.9mm) 3. The foam cosmetic material then flows into the hollow interior of each of the hollow comb teeth 4 so as to be jetted to the vicinity of the tip portions of the hollow comb teeth 4 through the aperture portions 41. When the hair is combed by the device of this embodiment under the foregoing condition, the foam cosmetic material jetted to the vicinity of the tip portions of the hollow comb teeth 4 can be applied or spread to the whole hair. Furthermore, by operating the operation button 71 while combing the hair (that is, the tip portions of the comb teeth is placed in contact with the head skin of the user), the foam cosmetic material can be supplied to the tip portions of the hollow comb teeth 4. As a result, the foam cosmetic material can be applied effectively to the root portion of the hair.

When the foam cosmetic material is applied to the hair in the manner as mentioned above, the distal end 52 of the foam discharging tube 5 is located at a central portion within the cosmetic material filling chamber 3, and the aperture portion 41 of each of the hollow comb teeth 4 is formed in the tip portion of each tooth 4. Therefore, the foam cosmetic material such as a foam hair care material can be applied uniformly to the whole hair without allowing the foam cosmetic material to remain at the basal portions of the comb teeth. In addition, the hair can be combed during the spraying of the foam cosmetic material to the hair.

Fig. 5 is a view similar to Fig. 1, but showing a device for applying a foam cosmetic material according to another embodiment (second embodiment) of the present invention. In this second embodiment, the operation button 71 of the first embodiment is omitted. However, it is designed such that by depressing the mounting member 8, the jet operating portion 7 can be directly urged downward. The remaining construction is the same as in the first embodiment. Therefore, the same effects as in the first embodiment can be obtained.

The shape and the opening position of the aperture portion 41 of each of the hollow comb

teeth 4 can be changed in various ways as shown, for example, in Figs. 3(b), 3(c) and 3(d). Further, the shape of the distal end portion of the foam discharging tube 5 may be designed such that its tip 52 is closed and the foam discharging port 53 is formed in its side surface as shown in Figs. 4(b) and 4(c). The shape and the number of the foam discharging port 53 are not limited, either.

A device for applying a foam cosmetic material of the present invention is not limited to the aforementioned embodiments. As long as the foam discharging tube having a cross sectional area of 30 to 70% relative to the internal cross sectional area of the cosmetic material filling chamber is communicated at its basal end with the outlet port and located at its distal end within the cosmetic material filling chamber at a spot 35 to 65% relative to a length of the chamber, and each of the hollow comb teeth is provided with an aperture at a spot 0 to 40% away from its tip relative to its length, various modifications can be made to the shapes, etc. of the foam discharging tube and hollow comb teeth. Furthermore, any suitable means, known per se, can be used as the jetting means of the foam cosmetic material, etc. For example, the comb teeth with the foam discharging tube disposed therein may be arranged in plural rows, and such comb teeth or brush portions as normally available may be arranged in parallel relation so that the foam cosmetic material can be applied more uniformly.

According to the device for applying a foam cosmetic material of the present invention mentioned above, when a foam cosmetic material, such as a foam hair care material and a foam hair dye, is to be applied to the hair, the foam cosmetic material can be jetted uniformly to the whole comb teeth without allowing the foam cosmetic material to remain at the basal portions of the comb teeth, so that the same can be applied or spread uniformly to the whole hair. In addition, the hair can be combed or brushed even during the applying of the foam cosmetic material.

Claims

1. A device for applying a foam cosmetic material comprising a cosmetic material container containing a foam cosmetic material therein and including an outlet port through which the foam cosmetic material is jetted, and a jet operating portion for jetting the foam cosmetic material through said outlet port; and a comb body mounted on said cosmetic material container through a mounting member, and including a plurality of hollow comb teeth and a cosmetic material filling chamber defined in a base member of said comb body,

said device for applying a foam cosmetic material further comprising a foam discharging tube having a cross sectional area of 30 to 70% relative to an internal cross sectional area of said cosmetic material filling chamber, a basal end of said foam discharging tube being communicated with said outlet port and a distal end thereof being located within said cosmetic material filling chamber at a spot 35 to 65% relative to a length of said cosmetic filling chamber, each of said hollow comb teeth being provided with an aperture at a spot 0 to 40% away from a tip of each of said comb teeth relative to a length thereof.

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2. A device for applying a foam cosmetic material as claimed in Claim 1, wherein said hollow comb teeth are arranged in a single row, and said aperture is opened up at two places thereof towards the adjacent comb teeth.

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3. A device for applying a foam cosmetic material as claimed in Claim 1, wherein said foam discharging tube is formed in a cylindrical shape and provided with a foam discharging port at said distal end.

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4. A device for applying a foam cosmetic material as claimed in Claim 3, wherein said tip of said foam discharging tube is opened, and said opened tip forms said foam discharging port.

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5. A device for applying a foam cosmetic material as claimed in Claim 3, wherein said tip is closed, and said foam discharging port is formed in the side surface close to said tip of said discharging port.

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6. A device for applying a foam cosmetic material as claimed in Claim 1, wherein said comb body is mounted on said hollow comb teeth side of said cosmetic material container at angles of 15°C to -15°C with respect to a longitudinal center line of said cosmetic material container.

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Fig .1

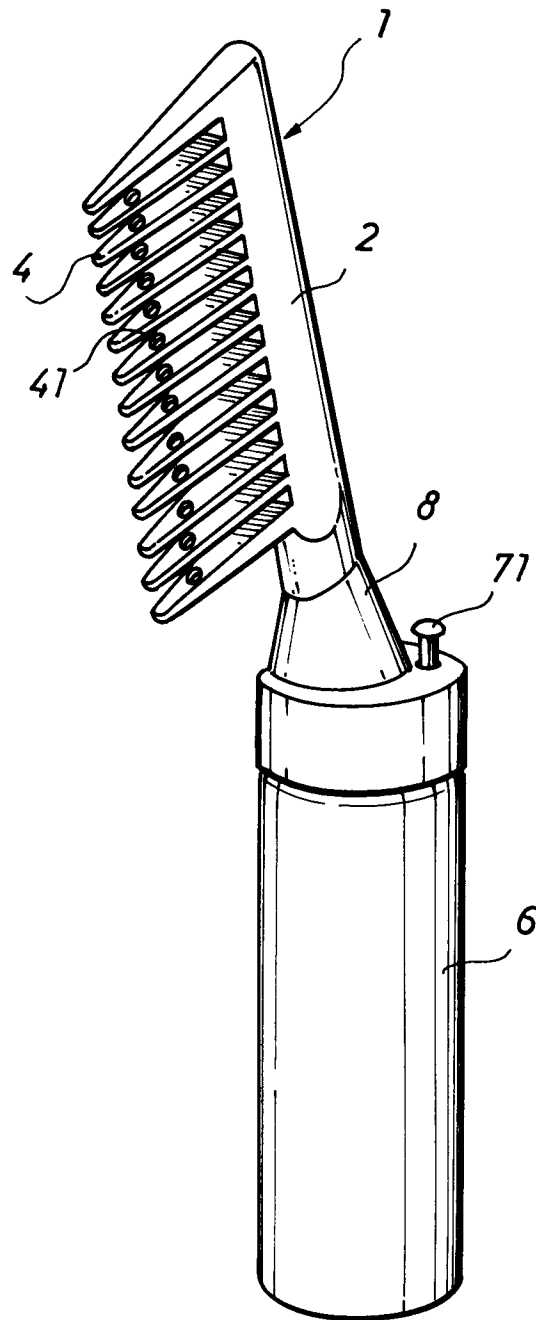


Fig . 2

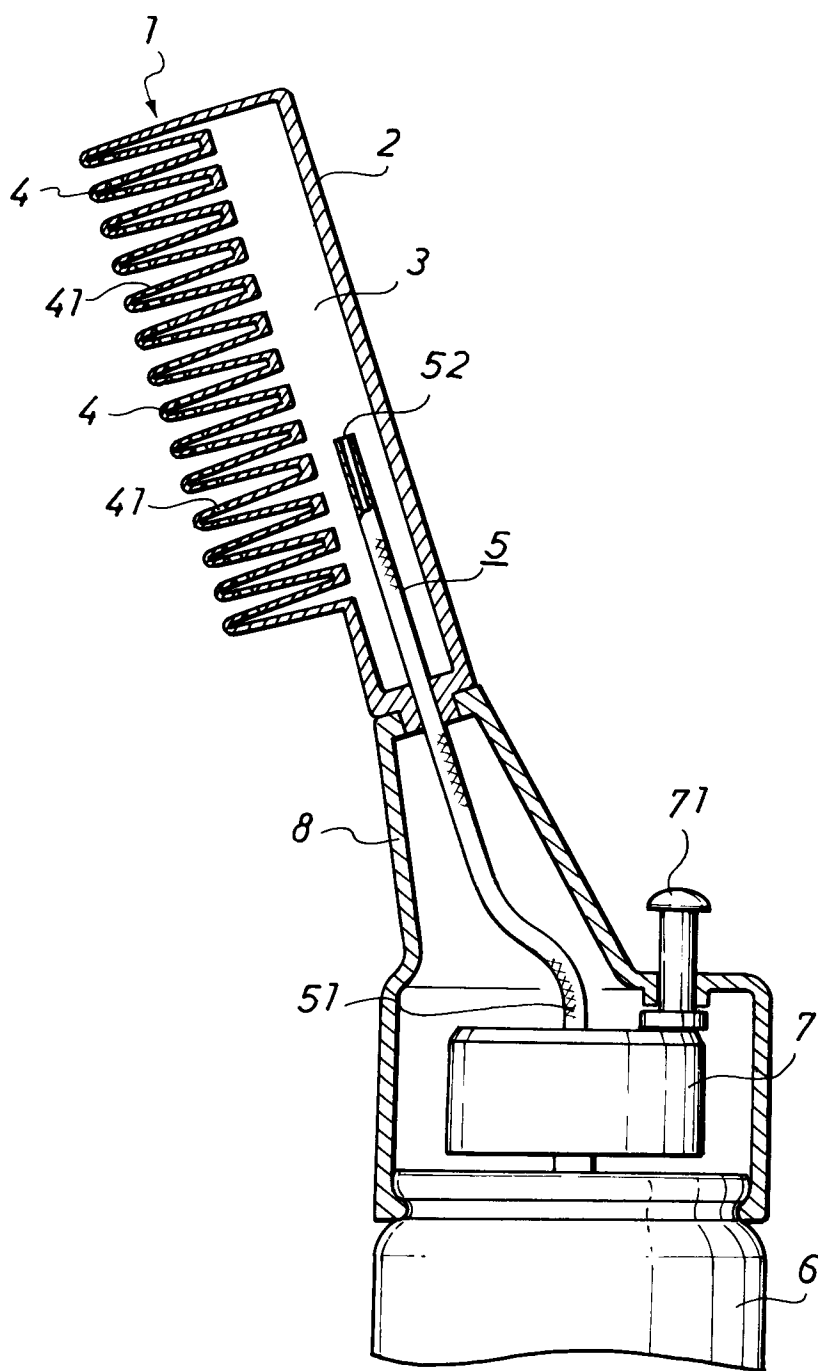


Fig . 3a

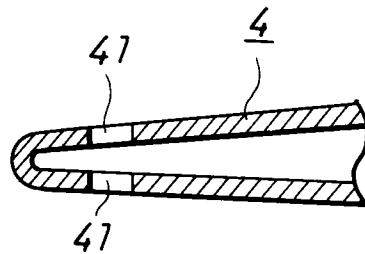


Fig . 3b

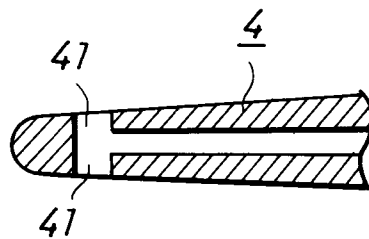


Fig . 3c

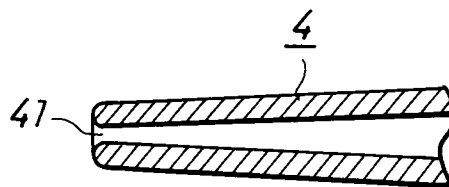


Fig . 3d

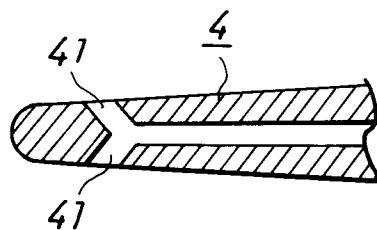


Fig. 4a

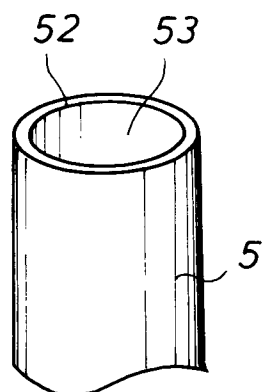


Fig. 4b

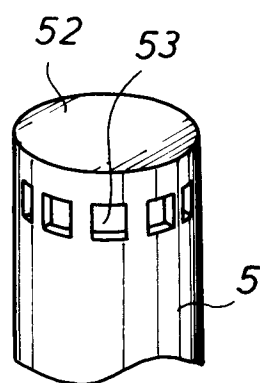


Fig. 4c

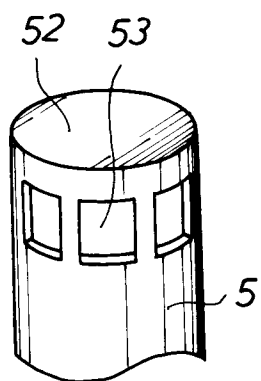


Fig .5

