(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 1 992 571 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
19.11.2008 Bulletin 2008/47

(51) Int Cl.:
B65D 47/42 *(2006.01)* ***B05C 17/00*** *(2006.01)*

(21) Application number: **07388035.3**

(22) Date of filing: **16.05.2007**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK RS

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(54) **Dispenser**

(57) The present invention relates to a dispensing device that may for instance be used for applying a nano technology coating for instance on a windscreen or other window portions and/or for applying vinyl make-up on appropriate portions of for instance an automobile comprising a container (2) for containing a liquid nano technology coating product or vinyl make-up and an absorbing body (12), where the device furthermore comprises a fluid passage (8) allowing said nano technology coating product or vinyl make-up to flow from said container (2) to said absorbing body (12), when the dispensing device is being used. The invention furthermore relates to a method of applying such products. By the device and method according to the invention hazards resulting from the handling and use of these materials is greatly reduced.

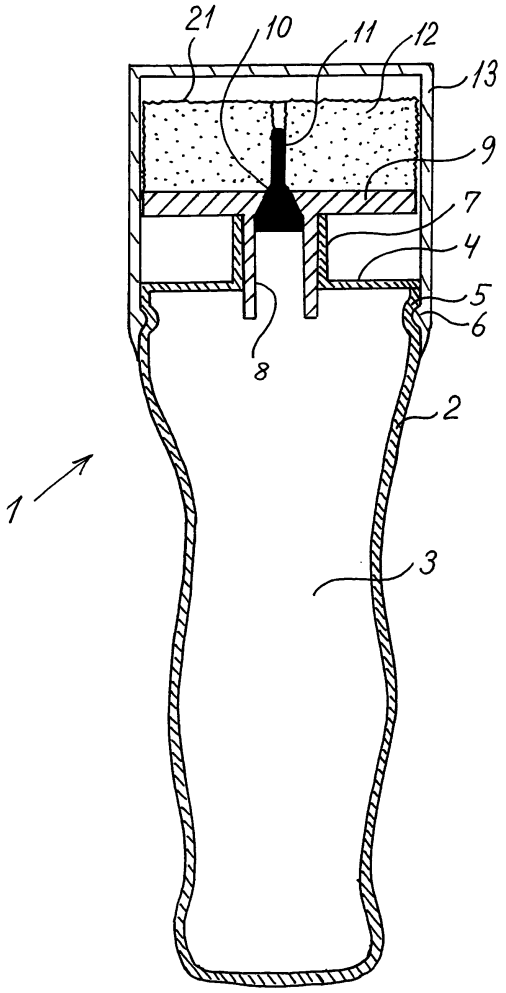

Fig. 1

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Description

TECHNICAL FIELD

[0001] The present invention relates generally to the application of a nano technology coating product for instance on windscreens or other window portions of an automobile, on tiles in bathrooms or kitchens or on any other surfaces where such coatings may be used. The invention furthermore relates to the application of vinyl make-up on surfaces of components, such as dashboards etc. and more specifically to hand held dispensing devices for the application of such products. The invention also relates to a method of applying these products.

BACKGROUND OF THE INVENTION

[0002] Nano particle coating material used for coating of windscreens, tiles etc is traditionally applied by spraying directly on the windscreen, tile or other surface and subsequent polishing with a suitable piece of fabric. Alternatively such material can be applied to a suitable piece of fabric at the manufacturer and enclosed in a hermetically sealing package, for instance of metal coated foil to maintain the fluid intact. Prior to the use the package is broken and the fabric used for applying the fluid to the surface in question. Similarly vinyl make-up for cleansing and coating various surfaces for instance in an automobile is typically sprayed on the surface to be treated.

[0003] There is a growing body of evidence to the effect that nano particles may be hazardous both to the person applying materials containing such particles and more generally to the environment. Thus nano particles accidentally entering the human body may cause damages to the brain and to the central nervous system. Similarly vinyl make-up contains solvents that also may prove harmful to the central nervous system of a human being. Also vinyl make-up may pose an environmental problem.

[0004] Consequently it is advantageous to provide means and methods for a well-controlled application of said materials on surfaces, such as windscreens, other window portions and various other surfaces of for instance an automobile, tiles in bathrooms, kitchens etc. and any other surfaces and components where such materials may be applied.

SUMMARY OF THE INVENTION

[0005] On the above background it is an object of the present invention to provide a dispensing device for applying nano technology coating to any surface, for instance to windscreens and other window portions of an automobile and for applying vinyl make-up on vinyl and plastics objects inside and outside of for instance an automobile.

[0006] It is a further object of the present invention to provide a method for said application.

[0007] It is understood that the present invention is not limited to the above mentioned applications specifically relating to treatment of surfaces or components in automobiles, bathrooms and kitchens, but that the device and method according to the invention may be used for any surface that may be treated with the mentioned materials and indeed with any material that may pose health problems for persons applying such materials or problems for the environment.

[0008] The above objects are according to the invention attained by the provision of a dispensing device for applying a nano technology coating for instance on a windscreen or other window portions of an automobile and/or for applying vinyl make-up on portions of for instance an automobile, the device comprising a container for containing a liquid nano technology coating product or vinyl make-up and an absorbing body, where the device furthermore comprises a fluid passage allowing said nano technology coating product or vinyl make-up to flow from said container to said absorbing body, when the dispensing device is being used or about to be used.

[0009] According to a preferred embodiment said container is formed as a handle portion of the dispensing device, by which the dispensing device is held by the user during application of nano technology coating material or vinyl make-up to surfaces etc. that are to be treated or coated herewith. The handle can either be made of a rigid material or can be made at least partially compressible, whereby the liquid material in the hollow interior of the handle portion can be forced out of the handle portion and into the absorbing body.

[0010] During use the absorbing body, now at least partly filled with the material to be applied, is brought into contact with the surfaces to be treated or coated with the material, and the absorbing body is moved over these surfaces, preferably during application of a slight pressure on the absorbing body, whereby the liquid material is squeezed out of the absorbing body and unto the surface that is in contact with the absorbing body.

[0011] Preferably, although not necessarily, fluid communication from the container or handle portion to the absorbing body is controlled by appropriate valve means that can be activated when pressure is applied to the absorbing body. A specific example of such valve means is given in the detailed description of the invention, but the invention is not limited to the application of the shown valve means or for that matter to the presence of valve means at all for controlling fluid flow from the container/handle to the absorbing body.

[0012] A specific embodiment of the dispensing device according to the invention will be described in the detailed description of the invention, but it is understood that other designs may also embody the invention as defined by the independent claims.

[0013] The present invention furthermore relates to a method for applying a nano technology coating for instance on a windscreen or other window portions and/or for applying vinyl make-up on appropriate portions of for

instance an automobile, the method comprising the steps of:

- providing a container for containing a liquid nano technology coating product or vinyl make-up;
- providing an absorbing body that can absorb said liquid nano technology coating product or vinyl make-up;
- providing fluid communication between said container and said absorbing body, whereby an amount of said liquid nano technology coating product or vinyl make-up can flow from said container to said absorbing body;
- applying said liquid nano technology coating product or vinyl make-up on portions to be treated/coated by said liquid nano technology coating product or vinyl make-up through contact of surface portions of said absorbing body with said portions to be treated/coated.

[0014] Preferably the method according to the invention is carried out using an integrated unit comprising said container and said absorbing body, such that said fluid communication is only provided when said liquid nano technology coating product or vinyl make-up is applied on, or to be applied on, said surface portions.

[0015] According to a preferred embodiment of the method according to the invention said fluid communication is established by activation of valve means provided in a fluid passage leading from said container to said absorbing body.

[0016] Alternative or as a supplement said liquid nano technology coating product or vinyl make-up can be forced from said container to said absorbing body by applying a pressure on the container. In this case the container could be made at least partially compressible, although forcing the product out of the container could also be effected by other means. Preferably the container can be formed as a handle upon which the absorbing body is provided and said pressure can be applied by the hand of the person applying said liquid nano technology coating product or vinyl make-up to the chosen surface portions.

[0017] It is as mentioned understood that the dispensing device and method according to the present invention may also beneficially be applied in connection with other products than the nano technology coating and vinyl make-up products described in this specification.

[0018] By the application of the dispensing device and method according to the invention the potentially hazardous spray application of such materials is avoided, Furthermore these materials are largely prevented from coming in contact with the hands of the user. The dispensing device according to the invention may according to one alternative be pre-filled at the manufacturer with the nano technology coating product or vinyl make-up and afterwards closed without the user being able to open the container and re-fill the particular material. After emptying the container the dispensing device is then discarded and a new purchased. Alternatively the dispensing device can comprise a separate container portion and a separate dispenser portion that can be releasably attached to each other, whereby the container, when empty, can be refilled with the particular material. This latter version is described in detail in the detailed description of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] The invention will be better understood with reference to the following detailed description of an embodiment hereof taken in conjunction with the figures of the drawing, where

Figure 1 shows a cross sectional elevation of an embodiment of the dispensing device according to the invention;

Figure 2 shows a schematic, perspective cross sectional view of the embodiment of the dispensing device according to the invention shown in figure 1; and

Figure 3 shows a schematic view of a valve arrangement for use in the device according to the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0020] Referring to figure 1 there is thus shown a schematic, cross sectional view of a first embodiment of a dispensing device according to the invention. The device, generally designated by reference numeral 1, comprises a hollow handle portion 2 with an inner volume 3 for containing the nano particle material or vinyl make-up to be applied to a surface. At the upper end (as seen in the figure) the handle portion is terminated by the dispenser, which basically comprises support member 9, which in the shown embodiment is formed as a substantially planar disc, although other shapes would be possible. The support member is provided with a tubular portion 8 formed for releasable and sealing insertion into a corresponding tubular portion 7 provided at the upper end region of the handle portion. On the upper surface of the support member 9 there is provided an absorbing body 12, for instance a sponge with an upper surface 21 opposite the support member 9. In the shown embodiment a valve means, purely schematically indicated at reference numeral 10 in figure 1, can be activated by means of a rod 11, extending from the valve means and a certain distance into the absorbing body 12. As indicated the rod 11 may only extend partly through the absorbing body 12, although it may also extend totally through the absorbing body 12, with a distal end (i.e. opposite the valve means) being substantially flush with the upper surface 21 of the absorbing body 12. When the valve means is activated a fluid passage is provided between the volume 3 in the hollow handle portion 2, through the tubular por-

tion 8 and the valve means and into the absorbing body 12, which can hence absorb a liquid product present in the hollow interior of the handle portion. When a pressure is applied on the upper surface 21 of the absorbing member 12 (towards the support member 9) the valve means opens and provides fluid communication between the internal volume 3 of the handle portion 2 and the absorbing body 12.

[0021] The handle portion can either be made of a rigid material or it can alternatively be made of a suitable flexible material, whereby the handle portion may be at least to some extend compressible, whereby fluid in the interior volume may be pressed out of the interior volume of the handle portion, provided the valve is open.

[0022] The dispensing device can be provided with a protective cap 13, protecting the absorbing body 12. The cap 13 may towards the dispensing device be provided with engagement means for releasable engagement with corresponding means on the upper end region of the handle portion. In the embodiment shown in figure 1 these corresponding engagement means comprise a suitably shaped - rounded - protruding circumferential edge portion 6 on the cap and a corresponding circumferential recess 5 on the handle portion. The complementary solution, i.e. a circumferential recess on the cap and a corresponding circumferential protrusion on the handle portion may of cause also be used. Many other attachment means would however also be possible.

[0023] Referring to figure 2 there is shown a schematic, perspective cross sectional view of the embodiment of the dispensing device according to the invention shown in figure 1. The figure shows one example of an ergonomically correct form of the handle portion 2, but other shapes of handle portions are possible, for instance in accordance with specific applications. The handle portion may for instance comprise flexible (compressible) lateral hand grip portions and a substantially rigid top part (facing the dispenser) and bottom part 14.

[0024] Referring to figure 3 there is shown an embodiment of a valve for use in the dispensing device according to the invention. The valve is shown inserted into the support member 9 of the dispenser, through which support member 9 there is provided a conical passage 15. The valve member comprises a tubular member 16 provided with an attachment portion 19 for attachment to the tubular portion 8 and a conical valve closure member 17 is formed for sealing co-operation with the valve seat formed by an upper conical portion 18 of the conical passage 15 through the support member 9. An intermediate longitudinally compressible and expandable portion of the valve means is formed by elongated, flexible members 20 connecting the valve closure member 17 and the tubular member 16. The valve is furthermore provided with an actuating rod 11 embedded in the absorbing body 12 of the dispenser. When pressure is applied to the upper surface 21 (see figure 1) of the absorbing body 12 the rod 11 is displaced in a direction towards the valve means and hence the valve means opens. When the pressure is released the valve means closes.

[0025] It is understood that also other valve arrangements could be applied in the dispensing device according to the invention without thereby departing from the scope of the invention as defined by the claims.

Claims

1. A dispensing device for applying a nano technology coating product and/or for applying a vinyl make-up product to surfaces to be treated with such products, where the dispensing device comprises a container (2) for containing a liquid nano technology coating product or vinyl make-up product and an absorbing body (12), where the device furthermore comprises a fluid passage (8) allowing said liquid nano technology coating product or vinyl make-up product to flow from said container (2) to said absorbing body (12), when the dispensing device is being used.

2. A dispensing device according to claim 1, where said fluid passage (8) is provided with valve means (10) that are activated during use of the device.

3. A dispensing device according to claim 2, where said valve means (10) is in contact with said absorbing body (12), such that when a pressure is applied to an upper surface (21) of the absorbing body (12) the valve means (10) is opened, such that fluid may flow from said container (2) through said passage (8) and into the absorbing body (12).

4. A dispensing device according to any of the preceding claims, where said container (2) is formed by a handle portion of the dispensing device.

5. A dispensing device according to any of the preceding claims, where said absorbing body (12) is provided on a support member (9), through which support member (9) said valve means (10), upon activation of the valve means, provides fluid communication to said passage (8) leading to the interior volume (3) of the container (2).

6. A dispensing device according to claim 5, where said support member (9) comprises a portion (8) adapted to releasable engagement with a co-operating portion (7) provided on end portion of the container (2), whereby fluid may be supplied to the inner volume (3) of the container (2), when the support member (9) is removed from the container (2).

7. A dispensing device according to claim 4, where said handle portion of the dispensing device is compressible, such that fluid during use of the dispensing device by compressing the handle portion may be forced out of the inner volume (3) of the handle por-

tion and into the absorbing body (12).

8. A dispensing device according to any of the preceding claims, where the device is provided with a protective cab (13) covering the absorbing body (12), when the device is not in use.

9. A method for applying a nano technology coating product and/or for applying a vinyl make-up product to surfaces to be treated with such products, the method comprising the steps of:

- providing a container for containing a liquid nano technology coating product or vinyl make-up;
- providing an absorbing body that can absorb said liquid nano technology coating product or vinyl make-up;
- providing fluid communication between said container and said absorbing body, whereby an amount of said liquid nano technology coating product or vinyl make-up can flow from said container to said absorbing body;
- applying said liquid nano technology coating product or vinyl make-up on portions to be treated/coated by said liquid nano technology coating product or vinyl make-up through contact of surface portions of said absorbing body with said portions to be treated/coated.

10. A method according to claim 9, where said fluid communication is established by activation of valve means provided in a fluid passage leading from said container to said absorbing body.

11. A method according to claim 9 or 10, where said liquid nano technology coating product or vinyl make-up is forced from said container to said absorbing body by applying a pressure on the container, the container being at least partially compressible.

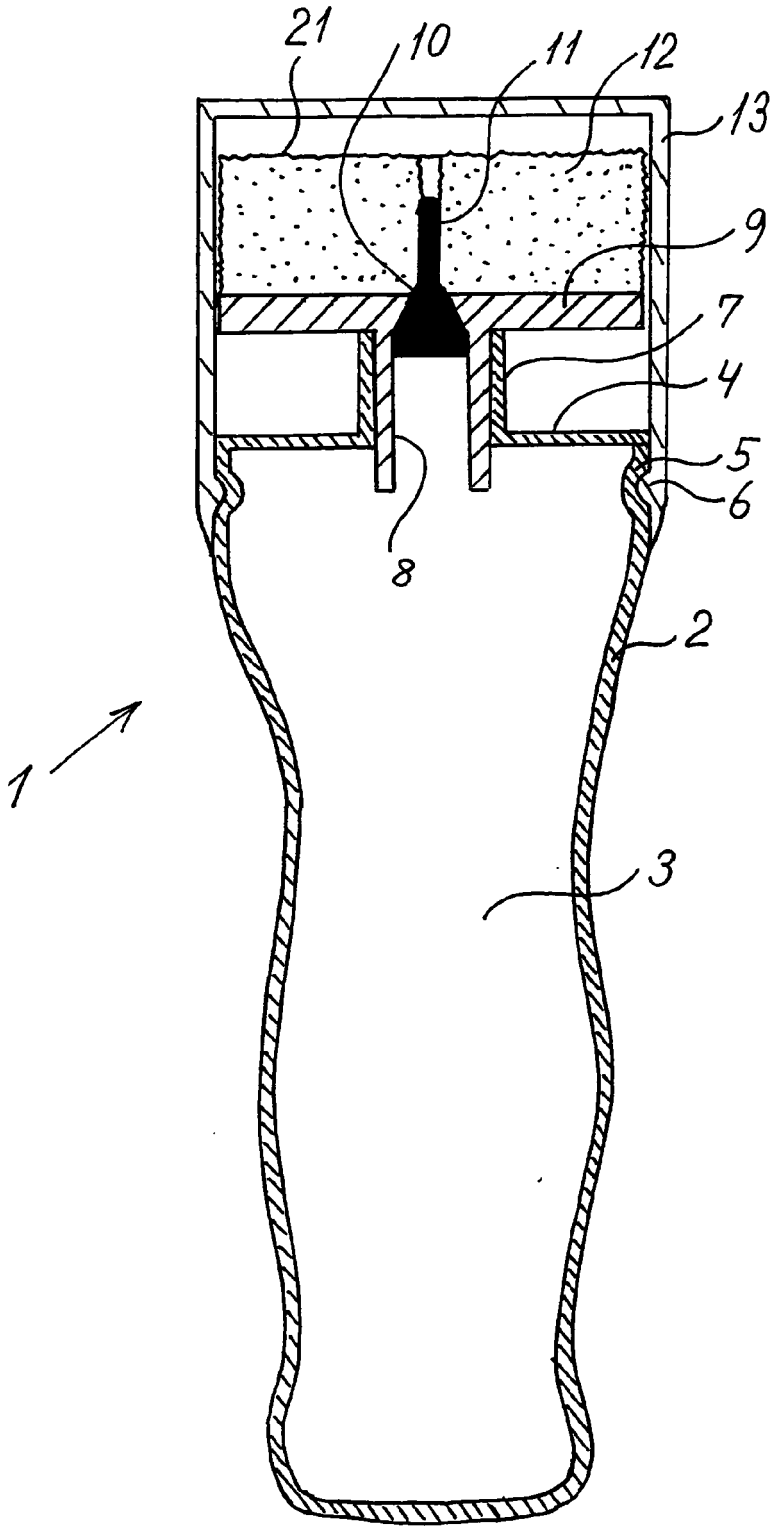

Fig. 1

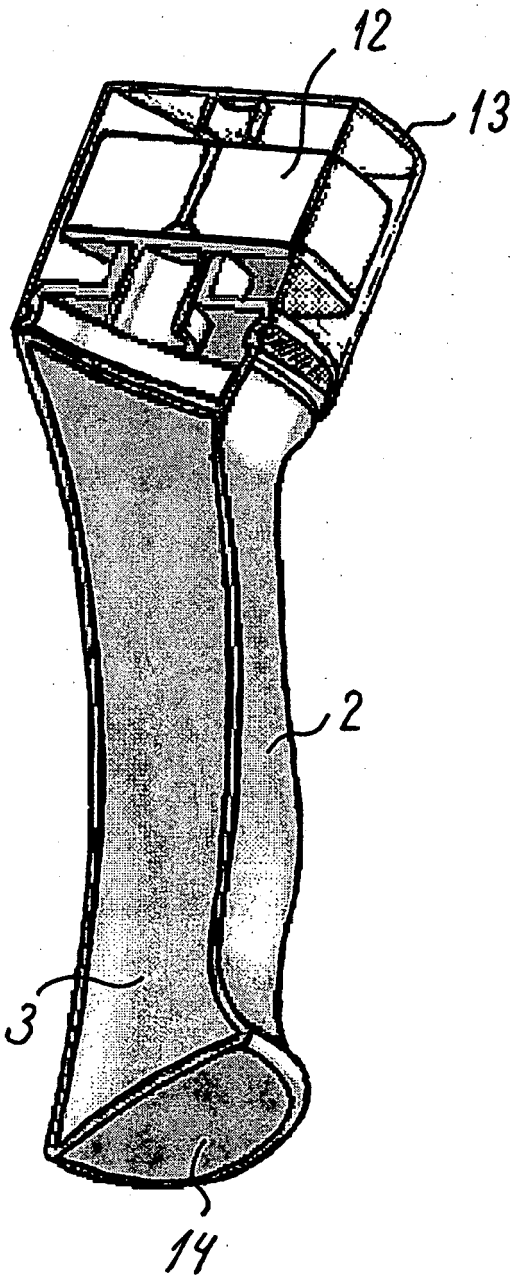

Fig. 2

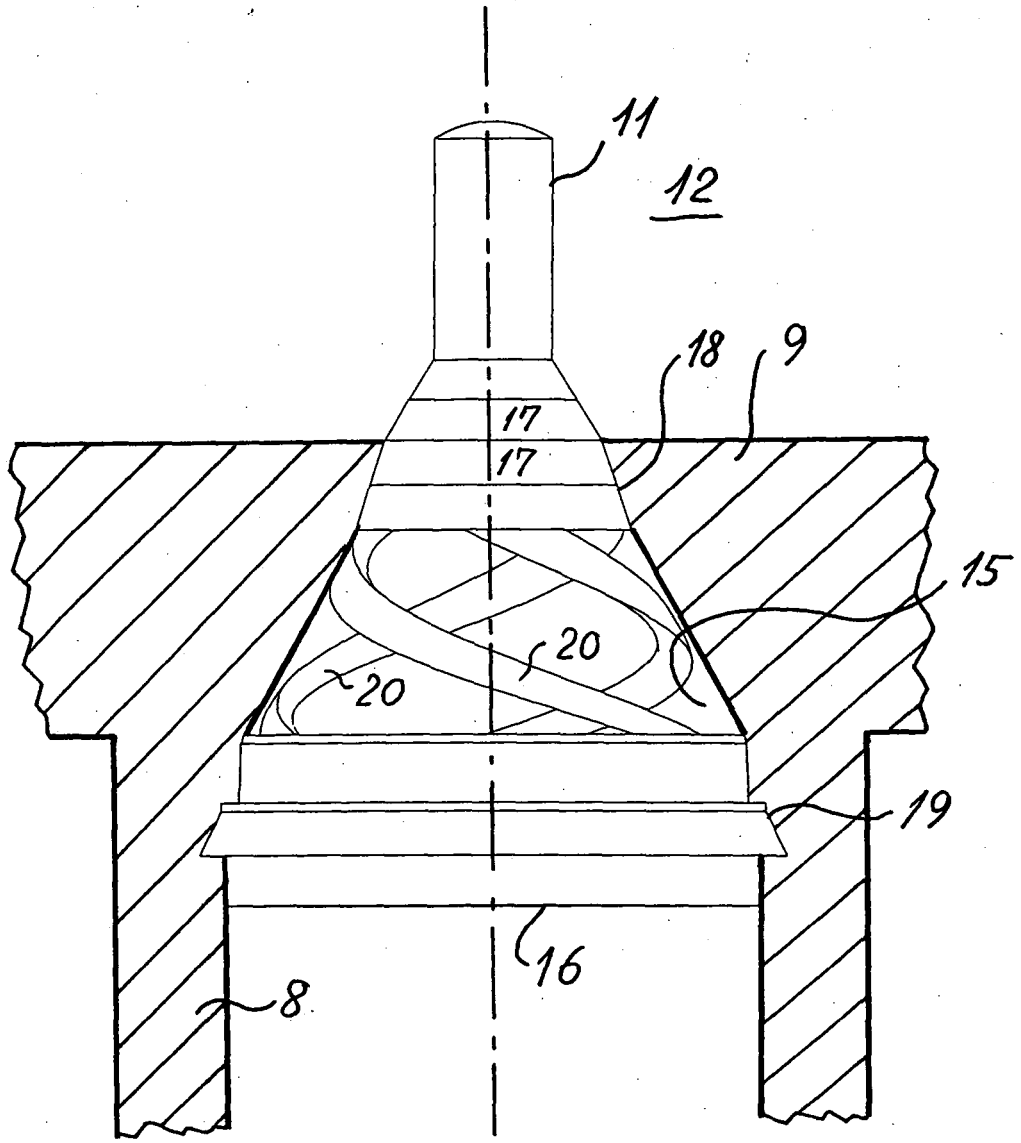

Fig. 3

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 07 38 8035

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 85 30 701 U1 (FRIEDRICH SANNER GMBH & CO KG SPRITZGUSSWERK, 6140 BENSHEIM, DE) 19 December 1985 (1985-12-19) * page 5, line 14 - page 9, line 15; figures 1-3 *	1-11	INV. B65D47/42 B05C17/00
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TECHNICAL FIELDS SEARCHED (IPC)

B65D
B05C
A46B
A45D
A47L

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	27 September 2007	Cazacu, Corneliu

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
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 07 38 8035

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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27-09-2007

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82