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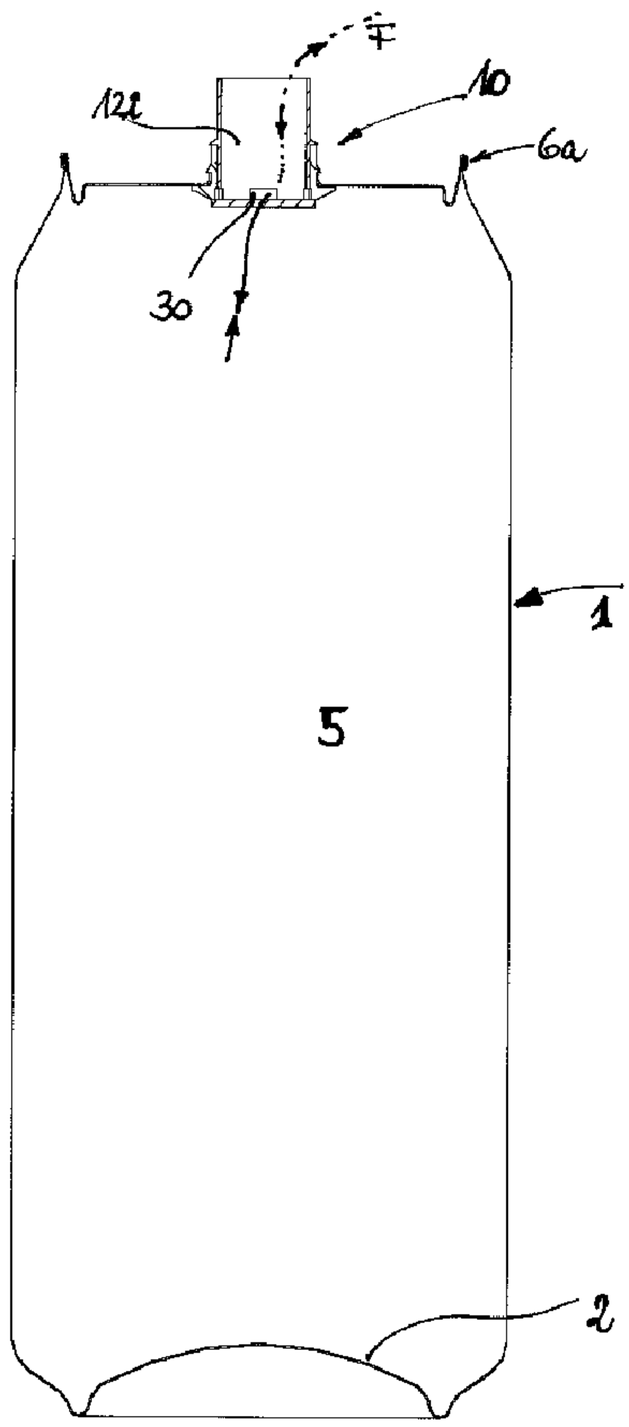
(71) Demandeur/Applicant:
BALL PACKAGING EUROPE GMBH, DE

(72) Inventeur/Inventor:
BERKEFELD, RAINER, DE

(74) Agent: RIDOUT & MAYBEE LLP

(54) Titre : RECIPIENT A PIECE DE SOUPAPE REFERMABLE POUR LE PRELEVEMENT CONTROLE D'UN LIQUIDE CONSOMMABLE

(54) Title: CONTAINER HAVING A DISPLACEABLE VALVE PIECE FOR THE CONTROLLED DISPENSING OF A SERVICE FLUID



(57) Abrégé/Abstract:
The invention relates to a container for storing and dispensing fluid to viscous products. The container comprises a container rump (1) having an opening (4) which is suitable for filling and the diameter (d4) of which is smaller than the diameter (d5) of the rump,

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(57) Abrégé(suite)/Abstract(continued):
and also comprises a lid (8) which serves to close the opening (4). The lid has a central lid opening (9), into which a dispensing valve (10) which has a valve piece is inserted in a sealing manner with the aid of a shaped piece (11). It is advantageous to manufacture, to fill and to close the container very easily, rapidly and inexpensively. At the same time, easy and controllable dispensing of the filling product and reliable, sealed closure of the product in the container after every product dispensing action are ensured.

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(71) Anmelder *(für alle Bestimmungsstaaten mit Ausnahme von US)*: **Ball Packaging Europe GmbH** [DE/DE]; Kaiserswerther Str. 115, 40880 Ratingen (DE).

(72) Erfinder; und

(75) Erfinder/Anmelder *(nur für US)*: **BERKEFELD, Rainer** [DE/DE]; Peter-Kallenbach-Str. 3, 53604 Bad Honnef (DE).

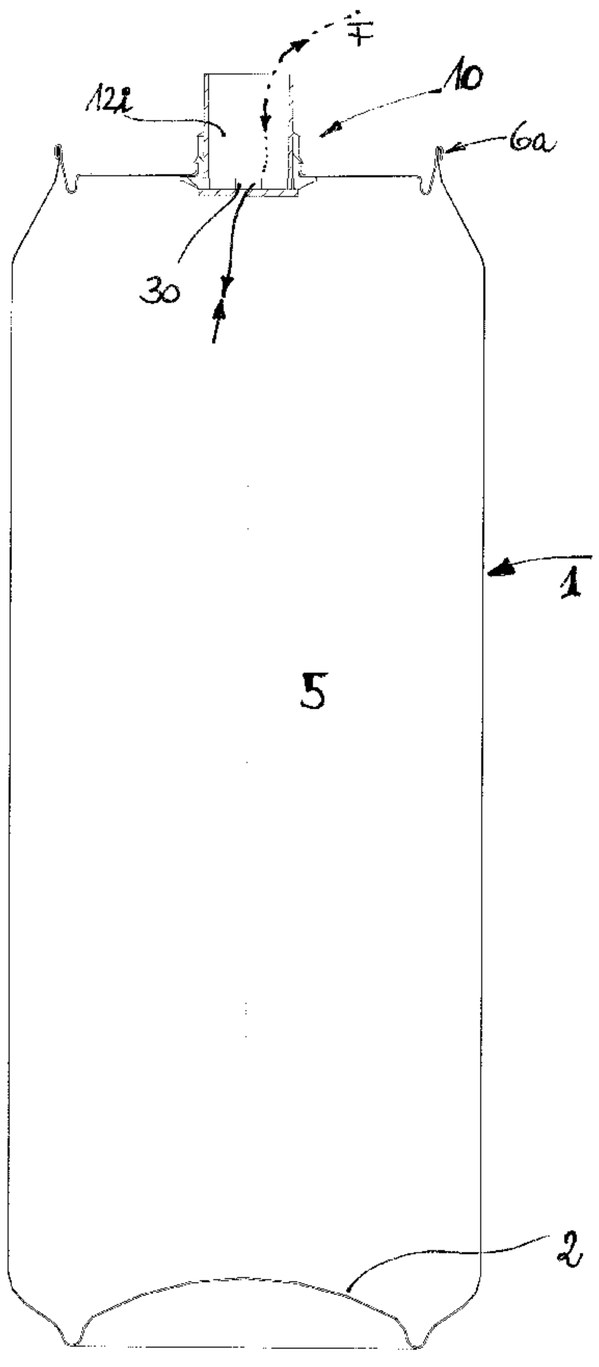
(74) Anwalt: **LEONHARD OLGEMOELLER FRICKE**; Postfach 10 09 62, 80083 Muenchen (DE).

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[Fortsetzung auf der nächsten Seite]

(54) Title: CONTAINER HAVING A DISPLACEABLE VALVE PIECE FOR THE CONTROLLED DISPENSING OF A SERVICE FLUID

(54) Bezeichnung: BEHAELTER MIT VERSCHIEBBAREM VENTILSTUECK ZUR GESTEUERTEN ABGABE EINES GEBRAUCHSFLUIDS



(57) Abstract: The invention relates to a container for storing and dispensing fluid to viscous products. The container comprises a container rump (1) having an opening (4) which is suitable for filling and the diameter (d4) of which is smaller than the diameter (d5) of the rump, and also comprises a lid (8) which serves to close the opening (4). The lid has a central lid opening (9), into which a dispensing valve (10) which has a valve piece is inserted in a sealing manner with the aid of a shaped piece (11). It is advantageous to manufacture, to fill and to close the container very easily, rapidly and inexpensively. At the same time, easy and controllable dispensing of the filling product and reliable, sealed closure of the product in the container after every product dispensing action are ensured.

(57) Zusammenfassung: Die Erfindung betrifft einen Behälter zum Aufbewahren und Abgeben von flüssigen bis viskosen Produkten. Der Behälter besteht aus einem Behälterrumpf (1) mit zum Befüllen geeigneter Öffnung (4), deren Durchmesser (d4) kleiner als der Durchmesser (d5) des Rumpfes ist, sowie aus einem zum Verschließen der Öffnung (4) dienenden Deckel (8). Der Deckel weist eine zentrale Deckelöffnung (9) auf, in der ein Abgabe-Ventil (10) mit Hilfe eines Formstücks (11) abdichtend eingesetzt ist, das ein Ventilstück aufweist. Es ist ein Vorteil, den Behälter sehr leicht, schnell und kostengünstig herzustellen, zu befüllen und zu verschließen. Zugleich wird auch eine leichte und steuerbare Abgabe des Füllproduktes und eine sicherer, dichter Verschluss des Produktes im Behälter nach jeder Produkt-Entnahme erreicht.

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Zur Erklärung der Zweibuchstaben-Codes und der anderen Abkürzungen wird auf die Erklärungen ("Guidance Notes on Codes and Abbreviations") am Anfang jeder regulären Ausgabe der PCT-Gazette verwiesen.

Specs amended & claims amended

Container having a displaceable valve portion for the controlled dispensing of a service fluid

The invention concerns a valve lid for sealingly closing a container body and for delivering – in any steps –fluid to viscous fluids, in particular beverages, sauces, flavouring agents, as 'foodstuffs', or service or utility fluids such as waxes, silicones, shampoo or shaving foam and a container having such a valve lid.

Such containers are known in the form of two-part or three-part aerosol cans, in which the product is under relatively high pressure. They have a curved lid with an opening which has the delivery valve. The delivery valve is usually fixed in the opening by means of a shaped portion, a metallic valve disc and a sealing ring, by clinching.

Many products can be stored and delivered without involving high pressures. For such products, a conventional aerosol can is much too complicated and expensive from the point of view of manufacture, material expenditure and the filling difficulties.

DE 103 58 230 A1 concerns a closure cap for a container having a product which is capable of flow. The cap provides a circular opening in which a delivery valve is arranged. The delivery valve includes a shaped portion in the form of a sleeve, and a cylindrical valve body, wherein the delivery valve is fixedly and sealingly inserted solely by means of the shaped portion. US patent No 5 755 354 concerns a drinks can of metal with a container body and a lid having a closable discharge opening. The lid can be fixed to the container body by means of a folded seam configuration. EP 1 577 229 A2 concerns a conventional aerosol valve including a cylindrical valve body as the valve portion and a shaped portion in sleeve form, wherein the shaped portion is elastic in respect of shape and the valve portion is movable to achieve an open operative position of the valve, with elastic deformation of the shaped portion. The valve is arranged centrally in a cup-like lid portion. In addition German patent No 196 81 702

B4 describes a valve lid for an aerosol can in which the delivery valve has a cylindrical valve body as the valve portion and a shaped portion in the form of a sleeve which is elastic in respect of shape, wherein, in this case also, the valve portion is movable with elastic deformation of the shaped portion, to attain an open position of the valve. The valve is arranged centrally relative to a cup-like valve lid portion which is connected by means of a penetration joining process (clinching) to a radially outer lid portion which is itself fixed to the container body by means of a folded seam configuration.

The object of the invention is to provide a valve lid and a container which is very easy, quick and inexpensive to manufacture, fill and close, but which at the same time provides for easy controllable delivery of the filling product and reliable sealing closure of the product in the container after each product removal operation.

That object is attained by a valve lid having the features of claim 1. The valve lid according to the invention is distinguished in that a flat panel portion radially outwardly adjoins the collar, which panel portion near its outer edge has a damping bead which in turn is radially outwardly adjoined by a folded edge configuration with which the valve lid can be connected to a flange edge of the container body.

The valve lid which is in the form of an independent, prefabricated unit can also be used for containers other than those produced in the manner of drinks cans, but which can be used in particular for such containers. A delivery valve can be fixedly and sealingly fitted into the round opening in the valve lid, solely by means of a shaped portion in the form of a bush or sleeve.

The sleeve-like shaped portion is of a hollow-cylindrical shape (claim 2) and, by virtue of its elasticity, permits a movement of the valve portion which is fitted into the shaped portion. The shaped portion (for mounting to the sheet metal lid) and the valve portion (held by the shaped portion) form the valve arrangement (claim 5). The valve portion can be moved by virtue of the elasticity in respect of shape. In that respect, it is moved relative to the shaped portion (or relative to the flat panel part of the sheet metal lid), but not in such a way that it is moved only with a sliding movement or only

with a rotating movement, in the manner of a bearing, but it is held sealingly by the shaped portion and can be moved by way of that shaped portion which is elastically deformed. That is also a relative movement in relation to the shaped portion, but with deformation of that elastic shaped portion (claims 5, 6). If the valve portion is moved only in the axial direction, the shaped portion is symmetrically compressed (claim 14).

Elastic deformation is effected at least in an upper part of said shaped portion that is provided above the collar of the central lid opening (claim 14).

The elasticity in respect of shape, or, in other words, the material of the shaped portion, which is elastic in respect of shape, has a different effect at different locations of that shaped portion. Preferably a spring action is achieved above the collar, while a sealing action is achieved beneath the collar of the lid opening (by means of a sealing lip which protrudes further).

The spring action is preferably used in the case of an axial pressure force acting on the valve portion (claim 7). The holding action of the radial collars of the shaped portion on the metallic collar of the lid metal sheet is in that case so great that it withstands that transmitted axial pressure and the shaped portion cannot come loose from the opening, and therefore in that respect remains connected to the lid in 'fixed and tight' relationship. Nonetheless a spring action occurs in at least the upper part above the upper collar of the shaped portion, which allows the movement of the valve portion.

A fluid path can lead through radial windows which extend in limited peripheral relationship and which, in dependence on the position of the valve portion with respect to the shaped portion, open at least one fluid path through the interior of the valve portion and the at least one window.

Preferably the at least one window is arranged near the lower edge of the valve portion, in particular immediately above the lower collar, serving as the valve disc, of the valve portion (claim 13). The latter then serves as the valve disc and, when it is lifted off the end face of the sealing lip of the shaped portion, the valve is opened.

If the symmetrical deformation of the upper part of the shaped portion is characteristic of an axial movement of the valve portion taking place, asymmetrical deformation is a characteristic of a tilt movement which can also be referred to as a tipping movement. In that case, two opposite sides of the shaped portion are deformed in different ways, on one side being compressed and on the other side experiencing a change in its inclination without however losing the sealing contact with the valve portion (claim 14).

Between those two movements, the axial thrust movement and the tilt movement, a rotary movement is also allowed, which can be used for example together with the axial movement. If it is used alone as the cause to produce the axial displacement, provided in the lower part of the shape portion is a screwthread which co-operates with a counterpart screwthread on the valve portion.

A plurality of radial windows are advantageous if the tilt movement is used (claim 13). That ensures that, with any direction of the tilt movement, at least a portion of a window of a plurality of windows arranged in peripherally distributed relationship on the valve portion is opened and the valve disc at that location lifts off the sealing lip (the lowermost edge of the shaped portion) and opens the fluid path.

In the upper part of the shaped portion, at an inwardly disposed location there can be a peripherally extending channel or groove which as a recess performs the function of a desired-bend location, which therefore assists with the spring action of that upper part. By virtue of the spring action being controlled or assisted in that way, when an axial loading is involved, deterministic changes in shape occur in the upper cylindrical part of the shaped portion, for example a spring part of the shaped portion, which spring part is formed in two axially spaced ridges or beads (under an axial pressure).

The invention also concerns a container as set forth in claim 16 in the manner of a drinks can with a bottom formed integrally with the container body and with a seamless container body, wherein an independent valve lid

can be connected to the container body in the usual manner in relation to drinks cans sealingly and – with a folded seam configuration – fixedly.

Such a container (as a container body), like the usual drinks cans, can be produced very easily, quickly and inexpensively and can be correspondingly easily and quickly filled because of the large container body opening (can filling).

A container of that kind produced from steel sheet or aluminium sheet, in the manner of the drinks cans, is pressure-resistant and optimally adapted to customer requirements in the foodstuffs sector.

The valve lid can be connected to the edge of the body of the container in the usual manner after filling. Such a container saves on material and is inexpensive and user-friendly, from manufacture and filling as far as the closure operation. It is however also possible for the filling material to be introduced prior to assembly of the valve-lid unit into the body of the container and for a further different or identical filling material to be introduced into the container which is closed with the lid unit, through the valve.

(Continued on page 4, line 22 of the translation of the original PCT text)

The shaped portion 11 which comprises a material that is elastic in its shape is fixedly and sealingly connected to the collar 9a. For that purpose the hollow-cylindrical, in particular sleeve-shaped shaped portion 11 has radially directed, annular projections, collars or lips 11a and 11b which are arranged at a suitably adapted axial spacing h9a and which engage fixedly and sealingly at top and bottom over the collar 9a delimiting the opening 9.

The cylindrical main body 12 of the delivery valve arrangement 10 can be introduced without clearance into the hollow-cylindrical shaped body 11 and engages over the upper and lower edges thereof with a respective further collar forming a corresponding shoulder. That further collar is collar 10a for the lower edge of the shaped portion and collar 10b for the upper edge. The further collar is to be considered, in terms of its action, as a valve disc. It seals off at the lower edge (of the lower lip 11a), but here opens a fluid passage.

The radial dimensions of the individual collars are so matched to each other that for example firstly the shaped portion 11 can be introduced into the lid opening 9 and thereafter the valve portion 12 can be introduced for forming the valve arrangement 10, or in the reverse sequence. The valve 10 can also be firstly entirely assembled and the shaped portion 11 and the valve portion 12 can be jointly fitted into the opening 9. The shaped portion 11 and the valve portion 12 together form the valve (the valve arrangement) indicated at 10.

The prefabricated and pre-assembled valve-lid unit, after filling of the container through the large container body opening 4, is arranged on the edge 6 of the container body by means of the folded seam configuration 6a.

The advantages which can be achieved with the design configuration here have already been set forth in detail in the preamble to the description. It only remains to make it clear that the valve lid can also be used in relation to two-part containers which are designed in a different way from the typical form of drinks cans and that if required the central lid opening can also be used as the filling opening, before the valve 10 is fitted in position by means of the shaped portion 11.

The illustrated versions of the container and the valve lid are however preferred.

The valve 10 itself, after fixing (for example by means of a folded seam connecting configuration) of the valve-lid unit (which is prefabricated and pre-assembled), can finally also be used as a filling opening (by way of a fluid path through the valve, in particular the central interior 12i of the valve portion). In that case, fixing involves securing that unit to the fold edge of the container body portion, by means of a folded seam connecting operation. That is effected by way of the fixing part which is for example in the form of a double fold configuration. In that case the filling material can be introduced into the container when already closed, in the form of a fluid to viscous fluid, in particular a drink (foodstuff), after the folded connection is made with the fold configuration 6a.

A further way of filling that container involves introducing a filling material into the container body prior to fitment of the valve-lid unit, and introducing a further different or identical filling material into the container which has been closed by the lid unit, through the valve 10.

Those filling variants concern a filling method which is specifically referred to here and which itself does not describe or is not intended to limit the container or the valve-lid unit, but rather serves to explain the use and application thereof on the part of the user.

Referring to Figures 2a and 2b and in the assembled condition on the lid in Figure 2c, the fundamental mode of operation of the valve (the valve arrangement) will now be described. A valve action which derives therefrom can be appreciated by referring to Figures 3a to 3c. Figure 3a shows Figure 2c in a position of the valve body 12, in which a fluid path is opened. The fluid path is opened by axial pressure being exerted on the valve body 12, in which case the valve body moves downwardly in the direction indicated by the arrow S and a radial window 30 above the lower collar 10a which here forms the valve disc opens, and thus a fluid path is opened through the interior 12i of the valve body 12 into the interior of the closed container. In that way fluid can issue from the interior (out of the container, the upper end part of which is only shown). In the axial displacement

movement of the valve portion 12 the shaped portion 11 is compressed in the upper part 11c. That part which is above the collar 9a of the metallic lid metal sheet (around the opening 9 shown in Figure 2b) is now shown thickened in a two-stage configuration in a bead-like shape, with two circular rings, which was the hitherto purely cylindrical shape between the collars 10b and 11b as shown in Figure 2c.

That deformation is achieved by the shaped portion 11 being of a material which is elastic in respect of shape. The elastic material has a spring action in the region above the collar 9a. It opposes the pressure for opening the valve 10. Either when the pressure is released or when the valve body 12 is pulled back in the direction of the other tip of the arrow indicating the movement S, the window 30 and therewith the fluid path are closed again.

The lower part of the shaped portion 11, with its lower lip region 11a which protrudes further, serves for sealing contact in respect of the shaped portion. The lower edge 11a' is the opposite sealing surface or sealing line which co-operates with the collar 10a of the valve portion 12, to provide sealing integrity and for opening the passage.

Figure 3b illustrates the same procedure, additionally with a rotational component R which is shown in the form of a helical line. It is possible to see here two windows 31, 32 at the lower end part of the valve portion 12, which open two fluid paths. The rotary movement is additionally allowed, in the event of an axial displacement movement S which is superimposed on the rotary movement, but not forced, but only permitted. It is initiated by the user.

In a variant (not shown), provided in the part above the lower lip 11a and below the upper end of the collar 9a of the lid sheet metal is an axially short screwthread co-operating with a counterpart screwthread on the valve portion 12. In that way, a forced axial movement of the valve portion 12 can be achieved by a rotary movement. In this case also, the upper part 11c is symmetrically compressed in the axial direction, that is to say pressed together, which is achieved by the choice of elastic material for the shaped portion 11.

Figure 3c illustrates a tilting movement as also being possible. In this case, asymmetrical deformation of the shaped portion 11 occurs. A greater degree of compression than that shown in Figure 3b is shown at the left in Figure 3c. In contrast, the right-hand side shows entrainment of the upper part 11c of the shaped portion 11, which still continues to serve as the seal. The contact of the upper collar 11b against the collar 9a of the sheet metal of the lid is slightly released, caused by the tilt angle of the tilt movement T. As a result, at least a part of a lateral window is also opened, here the entire window 33, and at least a part or a portion of the window 30 (and in opposite relationship to the window 32), but not the window 31, when there are four windows provided at the lower edge of the valve portion 12.

To improve the action of the fluid path, the shaped portion 11 can be radially slightly enlarged in the lower axial part, as can also be seen from Figure 3a, as indicated in Figure 2a. Provided above that radial enlargement is a sealing zone which is in close contact. Then, in the heightwise direction, that is followed by the desired-bend location which is described hereinafter, as far as the upper end of the upper cylindrical part 11c of the shaped portion 11.

It will be seen from Figures 3 how symmetrical deformation (Figures 3a and 3b) or asymmetrical deformation as shown in Figure 3c can be produced or formed for different relative movements of the valve portion 12 in regard to the at least upper part 11c of the shaped portion, by virtue of the elasticity in respect of shape of that shaped element 11 which is also to be referred to as a connecting or compensating portion. It serves as a kind of flexible mounting which allows a movement of the valve portion 12 with respect to the closing lid 8 and its panel portion.

The elasticity in respect of shape can be of varying degrees, it can be of such a nature, in regard to its spring force in the described resilient portion, that the shaped portion 12, after being pressed in, automatically closes again and moves back into the rest position which is the closure position. In that case, the friction at the outside wall of the valve portion 12 and at the inside wall of the shaped element 11 is to be so adapted that, in spite of a cylindrical sealing surface, only a slight frictional effect is

(Continued from page 10, line 2 of the translation of the original PCT text)

The shaped portion 11 can also be referred to as a sleeve-shaped portion and then, for brevity, it can be referred to as a 'sleeve'. That sleeve is of a hollow-cylindrical configuration, corresponding to the shape of the hollow-cylindrical valve portion 12. The shaped portion 11 is fitted into the opening 9 in fixed sealing relationship, wherein the reference to 'fixed mounting' is so intended that it represents an assembly step which can resist the forces acting on the valve portion 12, by an embracing action. The valve portion 12 is moved in relation to that sleeve 11, in particular it is axially displaced in the above-indicated sense. The latter occurs, making use of the elasticity in respect of shape of the shaped portion, in particular the upper part 11c in the case of the longitudinal movement and, also in respect of a further portion, of the lower part 11a in the tilting movement shown in Figure 3c.

The sealing action is achieved by introducing the hollow-cylindrical valve portion within the shaped portion 11, without any clearance. At least a sealing line is formed between them, but preferably an entire cylindrical sealing strip which also provides for adequate sealing integrity in the closure position of the valve or the valve arrangement 10, with the windows 31, 32, 33 and 30 closed.

Although the cylindrical valve portion 12 has an upper collar 10b and a lower collar 10a which engage over the axial ends of the shaped portion 11, it is displaceable relative to it, in which respect it will be appreciated that a part of the movement is also transmitted to the shaped portion 11, by virtue of the elasticity involved. It will be noted however that the shaped portion 11 is held fast with respect to the panel 3 of the lid 8, more specifically at the collar 9a.

The above-mentioned collars can be at least of peripherally extending nature, preferably both collars 10b, 10a extend around the entire periphery, wherein the latter collar 10a is the edge side of the actual valve disc in the interior of the can and at the lower end of the valve or the valve arrangement 10.

The other two collars 11b, 11a are also referred to as lips and have a holding function on the collar 9a of the sheet metal of the lid, and at the same time also a sealing function in respect of the lip 11a which bears against the inside or from the inside of the panel 3 of the lid, adjoining the opening 9.

The opening is also cylindrical, in accordance with the cylindrical shape of the two valve parts 11, 12, and can preferably be arranged in the centre of the lid.

Figure 4 also shows a more precise illustration of Figure 2c. The elements which are fitted together in Figure 4 can be seen from Figures 5a, 5b and 5c. They correspond to Figures 2a and 2b, wherein the lid of Figure 2b with the inner round opening 9 is shown in respect of a portion thereof (without the folded edge configuration 8a) in Figure 5a.

(Continued on page 11, line 14 of the translation of the original PCT text)

The position of being still further assembled, that is to say the position of the valve lid shown in Figure 4 (illustrated therein without the folded edge configuration), with a folded edge configuration which is actually present, then also applied by a folded configuration to the drinks can shown in Figure 6, is intended to show the differences in size and is a more precise reproduction of the same position and location of Figure 1.

Here the flow path or the fluid path F is illustrated, which is closed in the closed condition on the window 30 in relation to the shaped portion 11. When the valve or the valve portion 12 is pushed in, through the window, it has a closed path which extends through the interior 12i of the valve portion 12. That path can serve both for taking fluid from the container and also for re-filling it, or for entirely filling the internal space 5 of the can.

In this case, closure at the edge 6 with the folded edge configuration 6a is effected prior to or after the container body 1 is filled. If the folded edge configuration 6a is already closed, the fluid path F can also serve for re-filling or for mixing filling. The main filling operation however is preferably a can filling operation, that is to say when the folded edge configuration 6a is not yet closed.

25th April 2008

PCT/EP2007/051277

Ball Packaging Europe GmbH

40880 Ratingen

Container with displaceable valve portion

Amended claims 1 and 2

1. A valve lid for sealingly closing a container body (1) and for the delivery of fluid to viscous products,

- comprising a round opening (9) in which a delivery valve (10; 11, 12) which has a cylindrical valve body as a valve portion (12) and a shaped portion (11) in sleeve form is fixedly and sealingly inserted solely by means of the shaped portion (11), wherein the round opening (9) is defined by an axially outwardly or upwardly projecting collar (9a); wherein the shaped portion is elastic in respect of shape and the valve portion (12) is movable with elastic deformation of the shaped portion, characterised in that a flat panel portion (panel) radially outwardly adjoins the collar (9a), which panel portion near its outer edge has a damping bead (8b) which in turn is radially outwardly adjoined by a folded edge configuration (8a) with which the valve lid can be connected to a flange edge of the container body.

2. A valve lid according to claim 1 characterised in that the collar (9a) above and below can be sealingly and fixedly embraced by respective holding portions arranged at a corresponding axial spacing (h9a), in particular radial collars or lips (11a, 11b), of the hollow-cylindrical shaped portion (11).

3. A valve lid according to claim 1 characterised in that the cylindrical body (12) of the valve (10) is arranged without play in the hollow-cylindrical shaped portion (11) and is sealingly held by means of further

radial collars (10a, 10b) which are arranged at an axial spacing and which engage over axial ends of the shaped portion.

4. A valve lid according to claim 2 or claim 3 wherein at least some of the radial collars (11a, 11b, 10a, 10b) are peripherally continuous.

5. A valve lid according to claim 1 characterised in that the hollow-cylindrical shaped portion (11) is fitted in the form of a sleeve fixedly and sealingly in the lid and the valve portion (12) is movable, in particular axially slidable, in relation to the sleeve, to form the valve (10).

6. A valve lid according to claim 1 characterised in that the valve lid is suitable for controlling the delivery of fluid to viscous filling products, and in relation to the fixedly inserted hollow-cylindrical shaped portion (11), in particular a sliding displacement of the cylindrical body (12) as a valve portion controls opening and closing of the valve arrangement (10; 11, 12), utilising the elasticity in respect of shape of the shaped portion (11).

7. A valve lid according to claim 2 and claim 6 characterised in that the outwardly projecting collar (9a) is fixedly embraced by the holding portions (11a, 11b) of the hollow-cylindrical shaped portion (11), so that the valve arrangement (10; 11, 12) is held, even upon actuation of the valve portion (12) and upon the occurrence of actuation pressure being applied to the valve portion.

8. A valve lid according to claim 3 and claim 6 characterised in that the cylindrical body (12) of the delivery valve (10; 11, 12) is sealingly held in the hollow-cylindrical shaped portion (11) by means of the further radial collars (10a, 10b), so that it cannot be released from said holding position.

9. A valve lid according to claim 6 characterised in that the at least some of the radial collars (11a, 11b, 10a, 10b) are peripherally continuous.

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10. A valve lid according to claim 6 characterised by a centrally arranged round opening (9).

11. A valve lid according to claim 1 or claim 6 characterised in that the elasticity in respect of shape provides a spring action and a sealing action.

12. A valve lid according to one of the preceding claims characterised in that the valve portion (12) near one end has at least one radial window (30).

13. A valve lid according to claim 12 characterised in that there are provided three or more windows (31, 32, 30), near the lower collar (10a) of the valve portion (12), which lower collar serves as a valve disc.

14. A valve lid according to one of the preceding claims characterised in that the movement of the valve portion (12) is permitted by the elasticity in respect of shape of the shaped portion, with symmetrical deformation at least of an upper part (11c) of the shaped portion (11).

15. A valve lid according to one of the preceding claims characterised in that the movement of the valve portion (12) is permitted by the elasticity in respect of shape of the shaped portion, with asymmetrical deformation at least of an upper part (11c) of the shaped portion (11).

16. A container for storing and – in any steps – delivering fluid to viscous filling products as filling fluids,

- comprising a container body (1) having an opening (4) which is suitable for filling and the diameter (d4) of which is smaller than a diameter (d5) of the container body; and

- a valve lid which is suitable for or serves for closing the opening (4) according to one of claims 1 to 15.

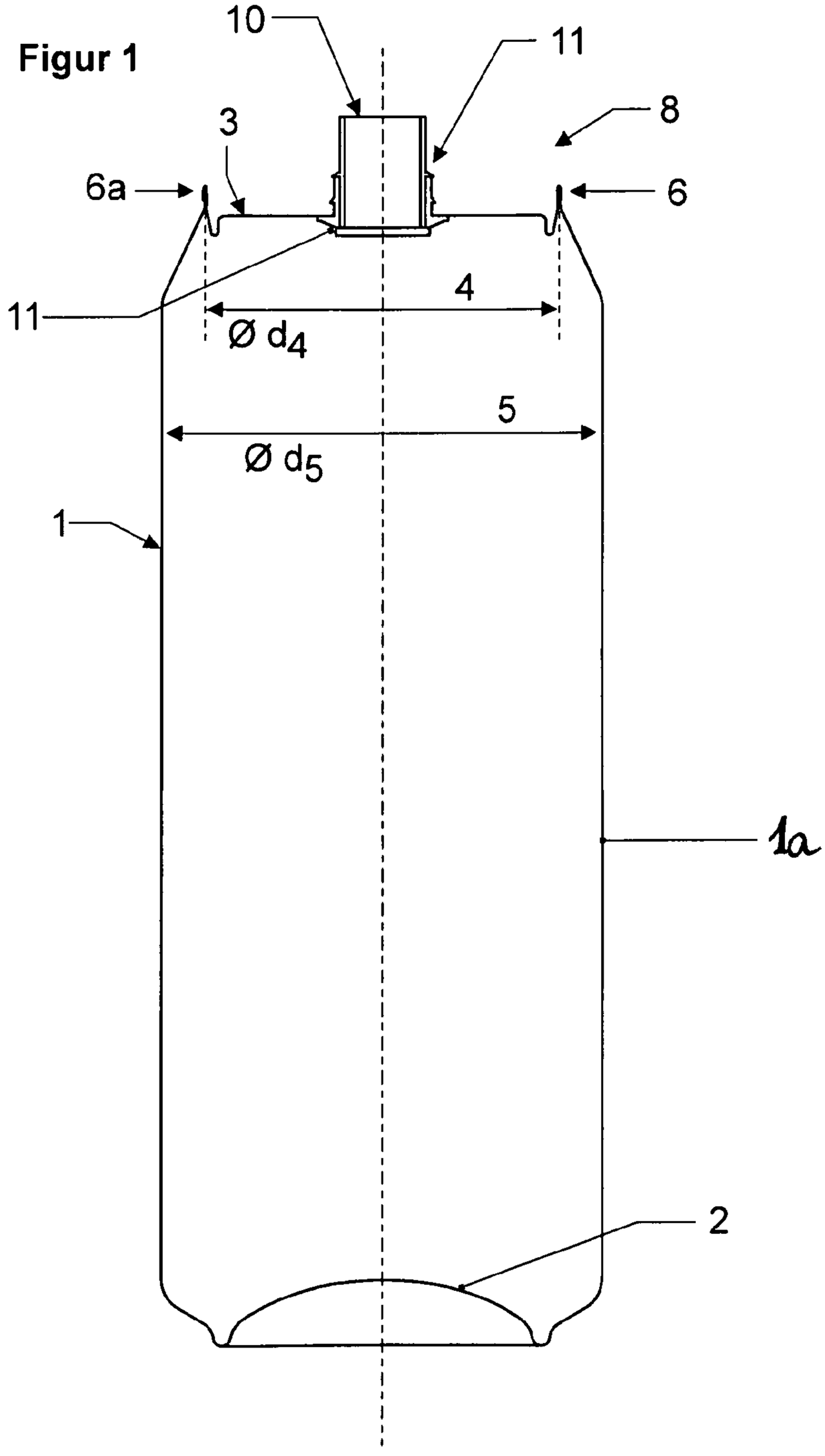
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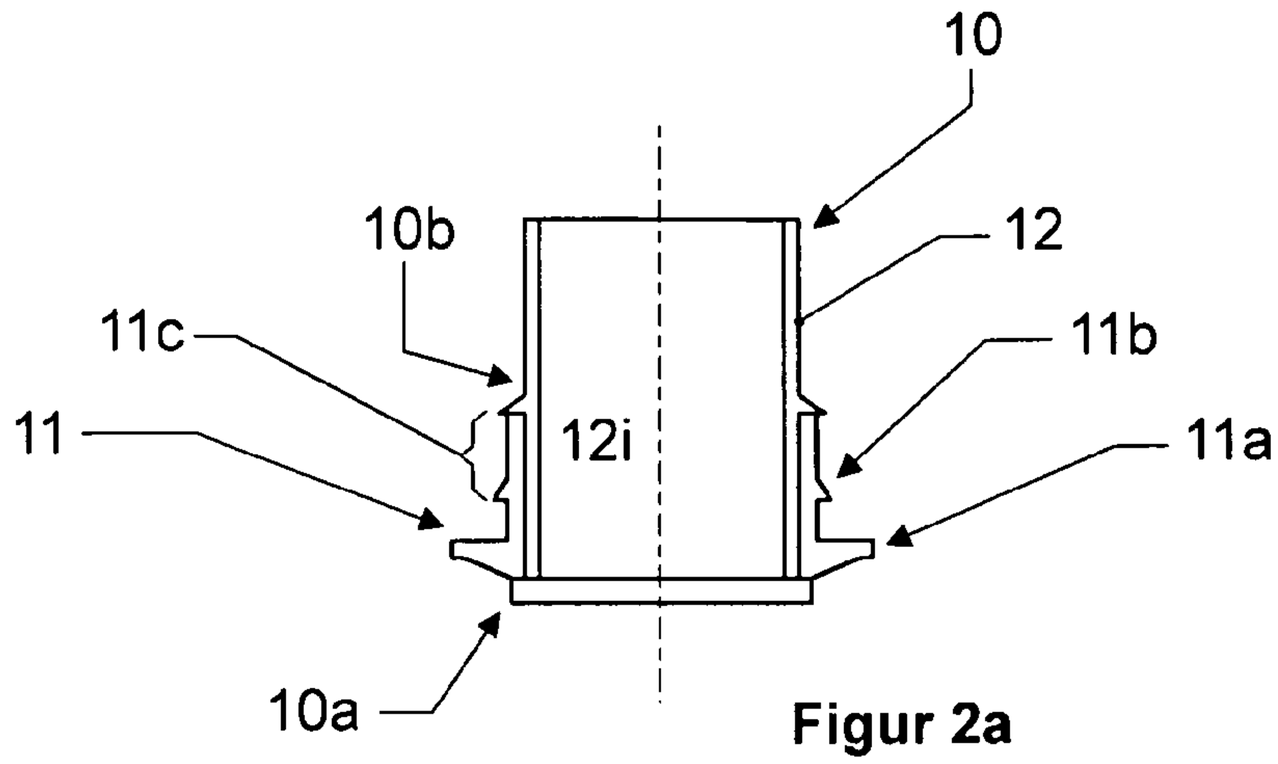
17. A container according to claim 16 characterised in that it is in the form of a drinks can stretched from metal sheet, wherein the container body (1) is provided with a bottom (2) formed integrally on the container wall (1a) and the lid at its edge is so adapted to be fixedly and sealingly connected to a container body edge (6) or is already connected thereto by way of a fold configuration.

18. A container according to claim 16 or claim 17 characterised in that the valve lid (8) with delivery valve (10) comprising a valve portion (12) and a shaped portion (11) is a pre-assembled unit which can be sealingly and fixedly connected to an edge (6) of the body of the container, in particular by way of a fold configuration (6a).

19. A method of filling a container according to claim 16 wherein filling material is introduced prior to assembly of the valve-lid unit into the body of the container and a further different or identical filling material is introduced into the container which is closed with the lid unit through the valve.

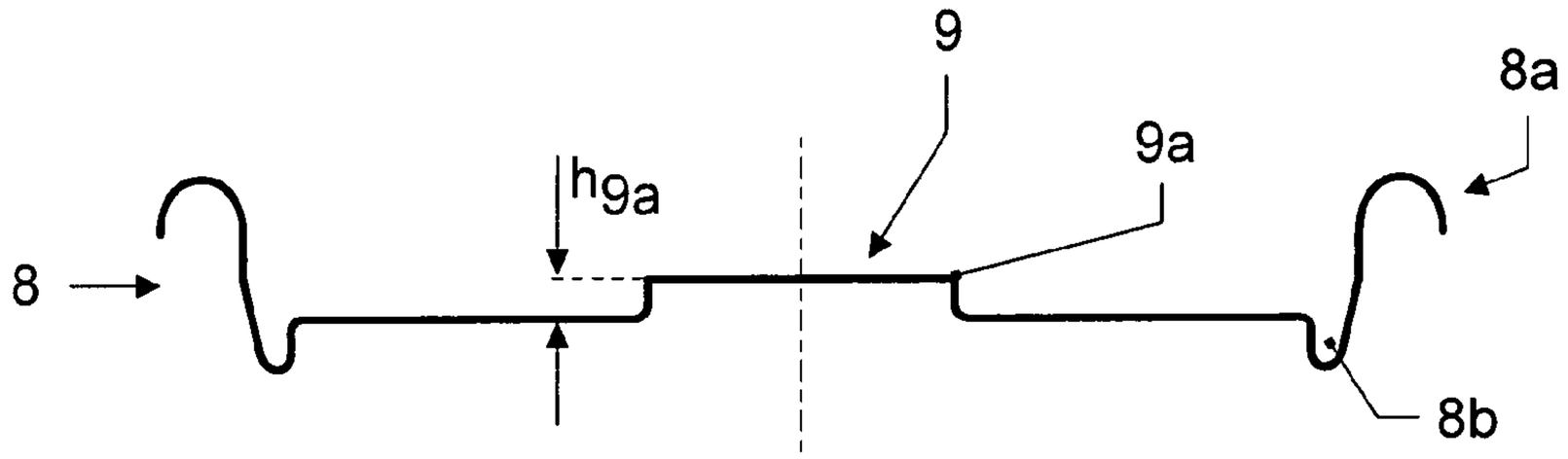
Figur 1



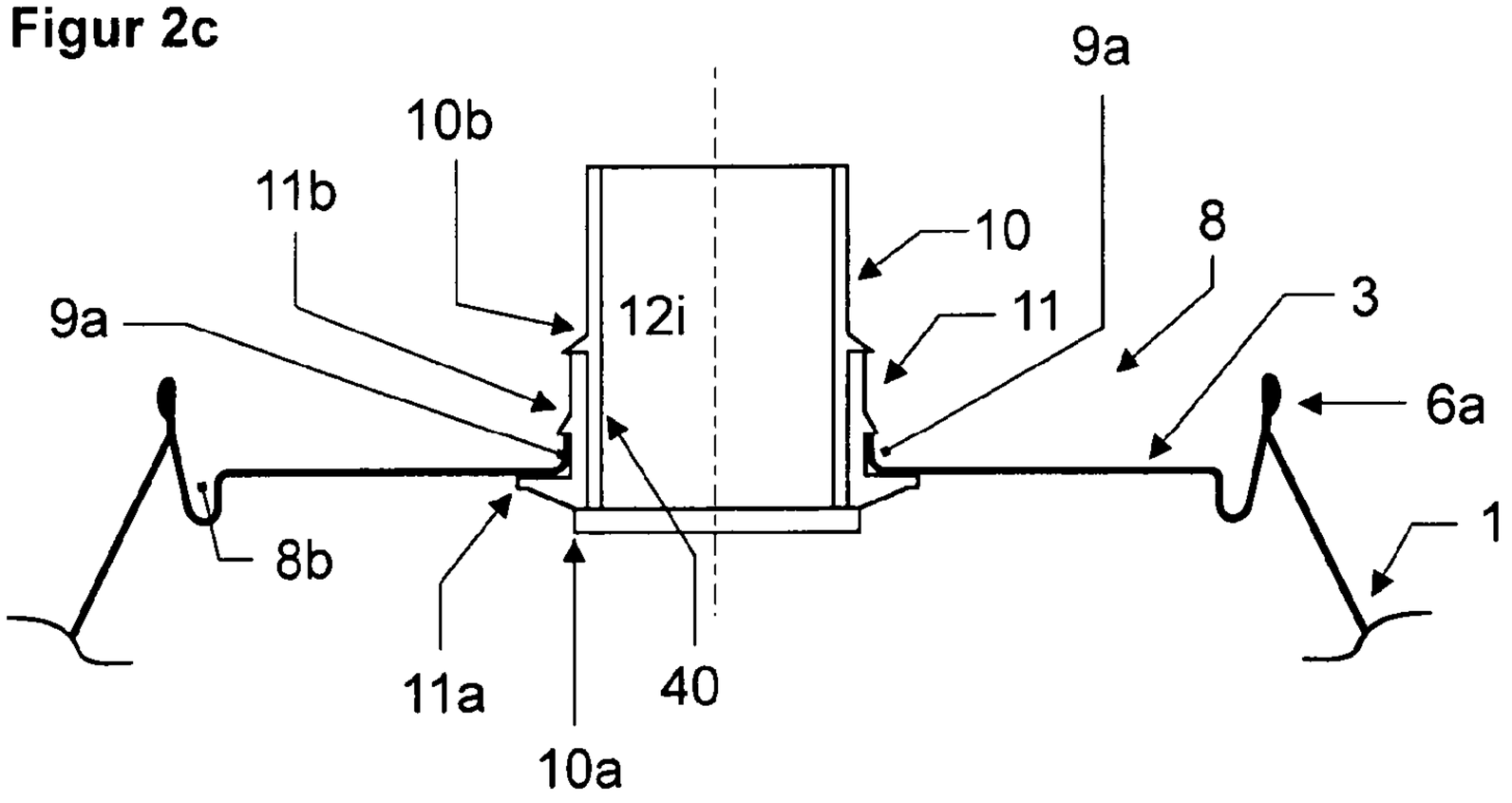


Figur 2a

Figur 2b



Figur 2c



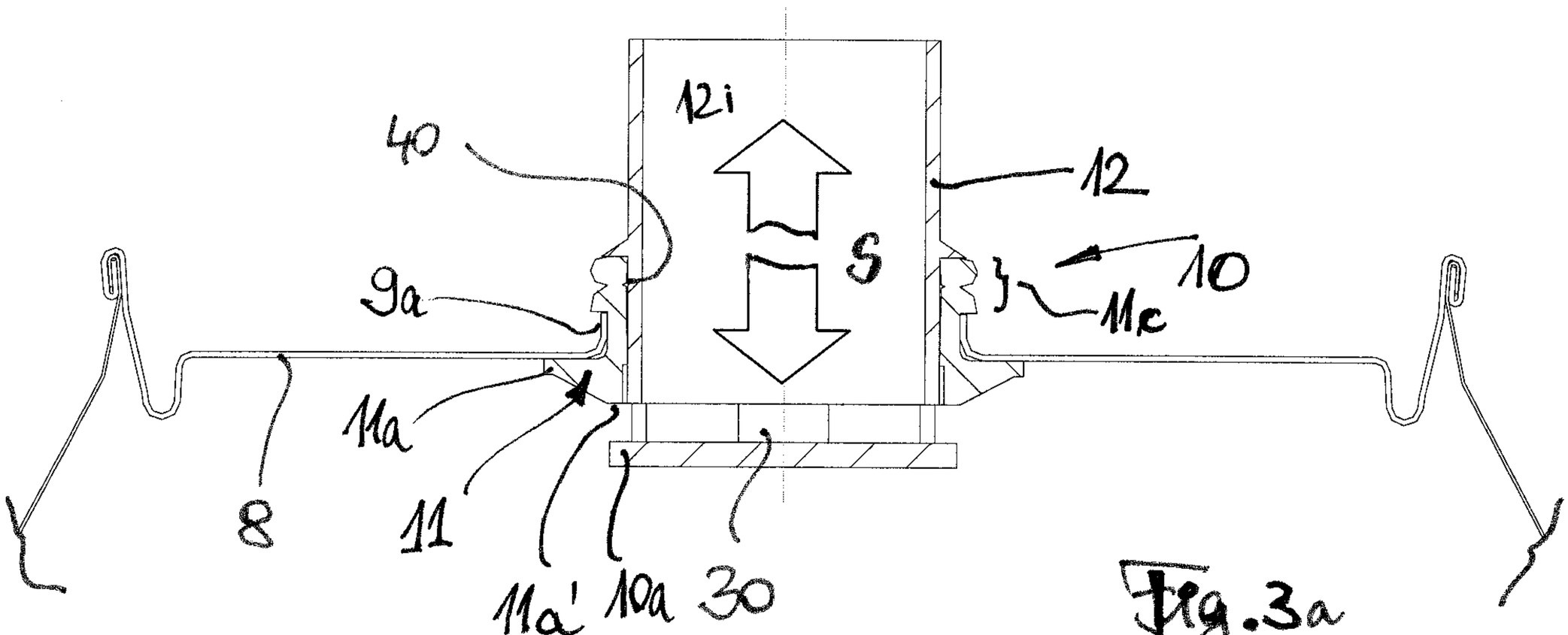


Fig.3a

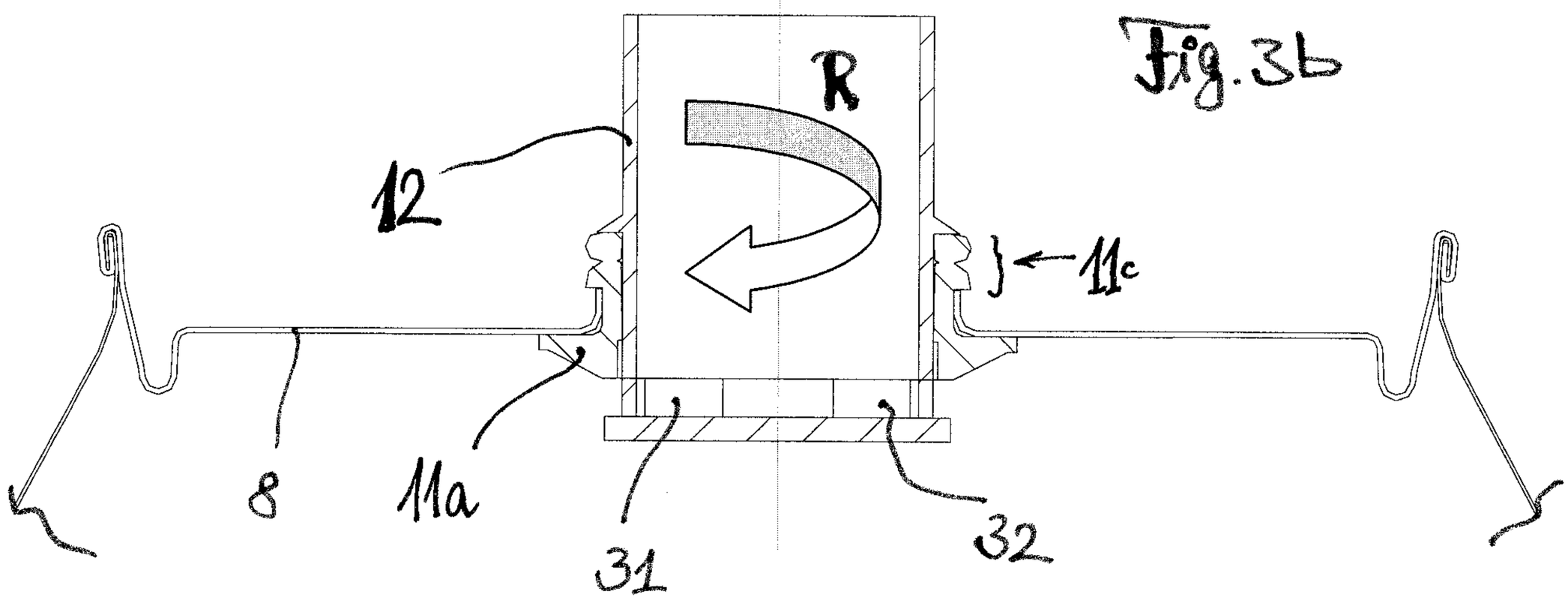


Fig.3b

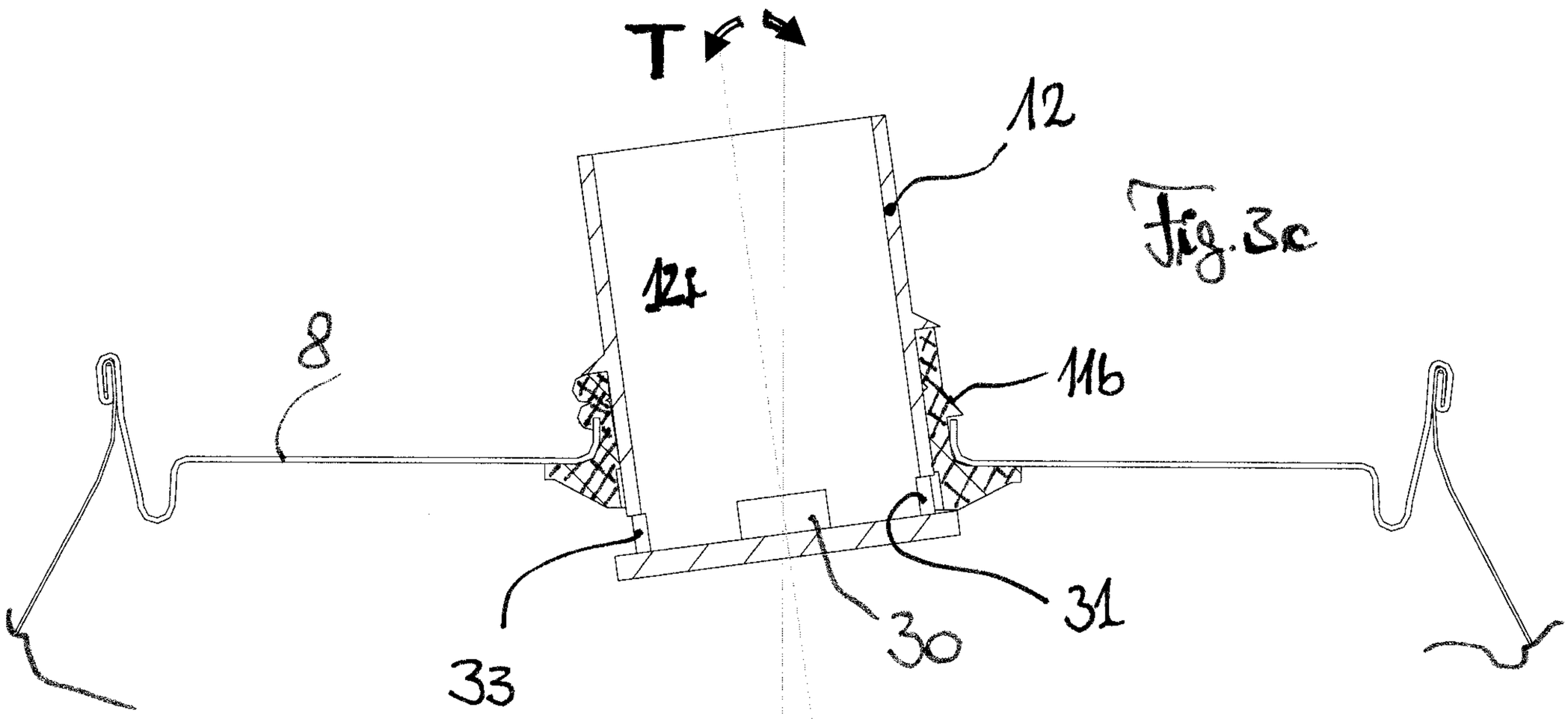


Fig.3c

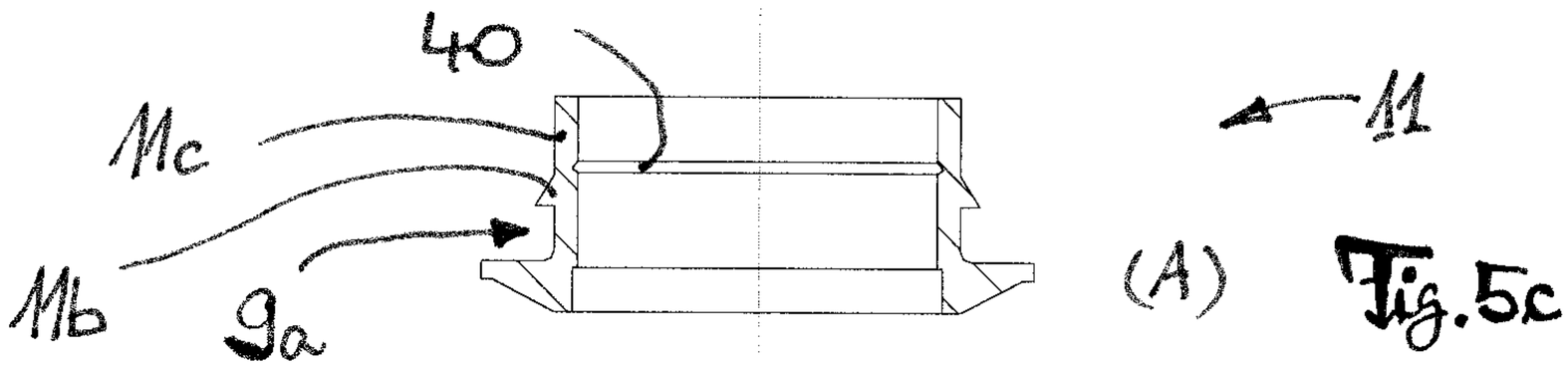


Fig.5c

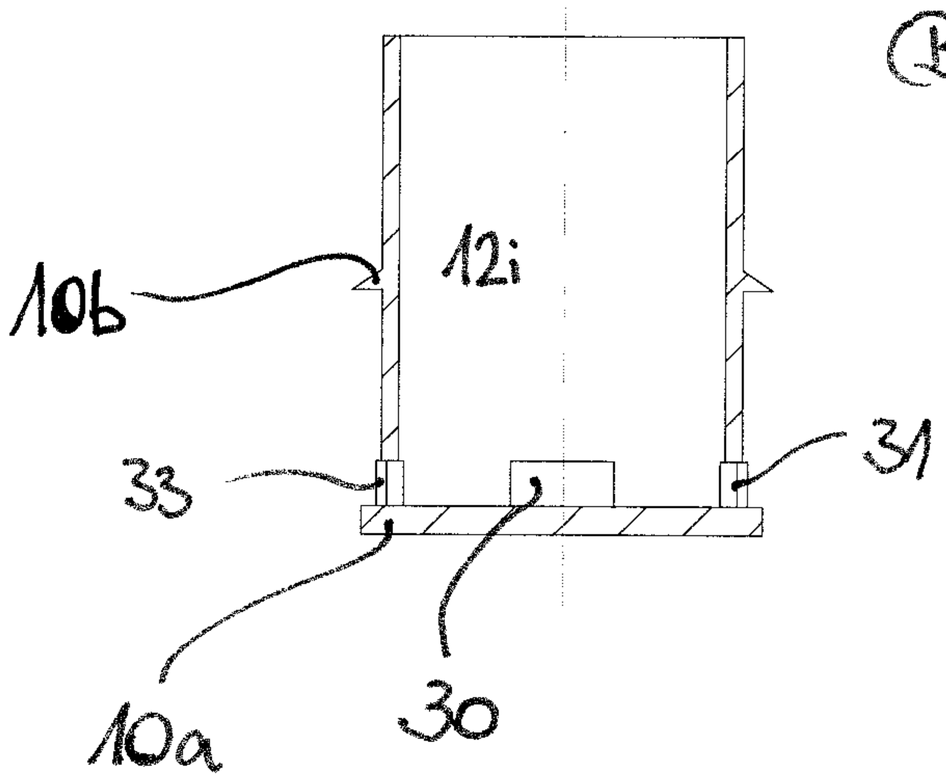


Fig.5b

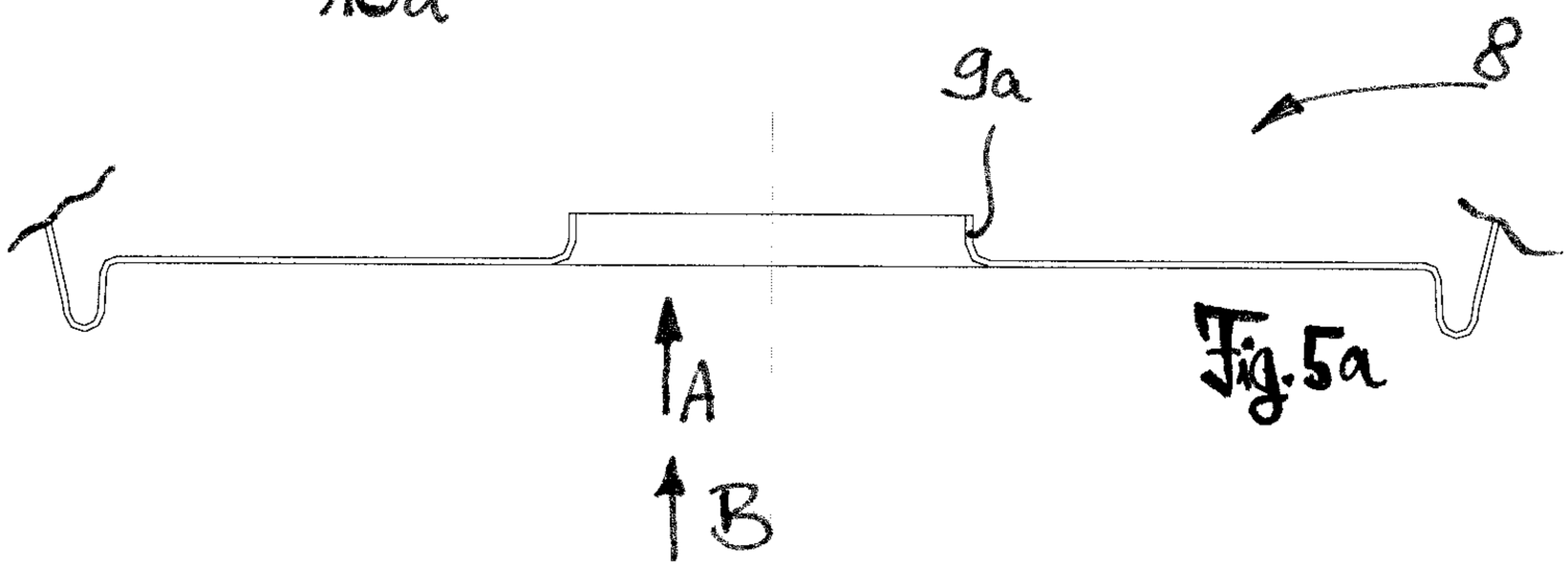
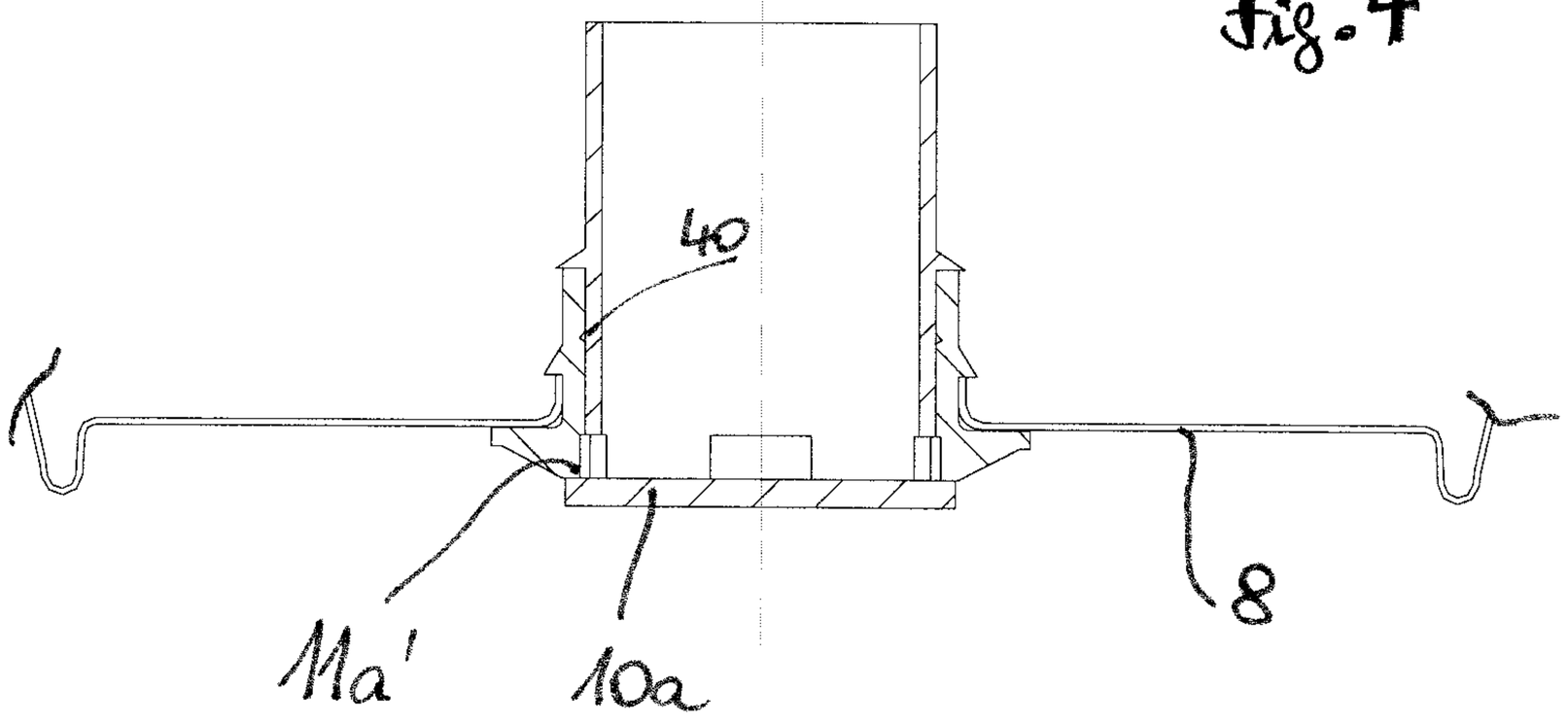


Fig.5a

Fig.4



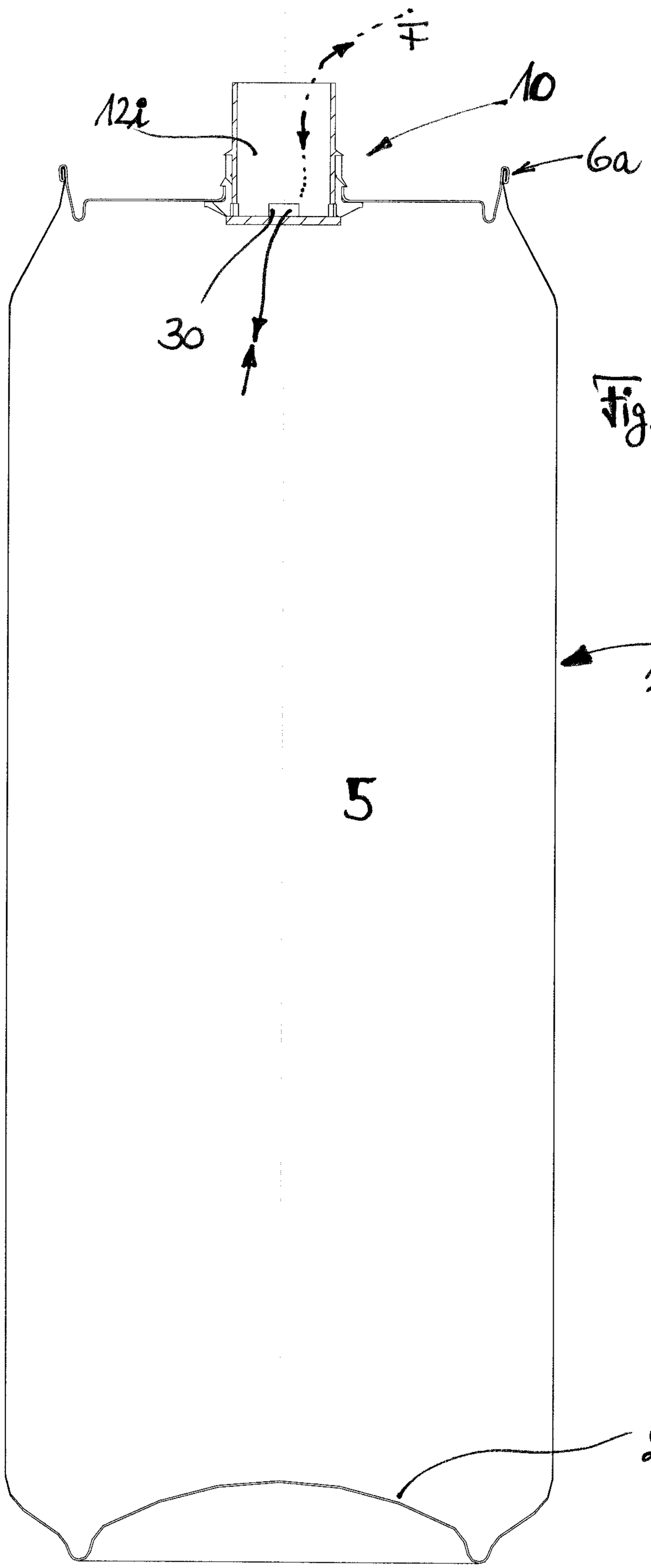
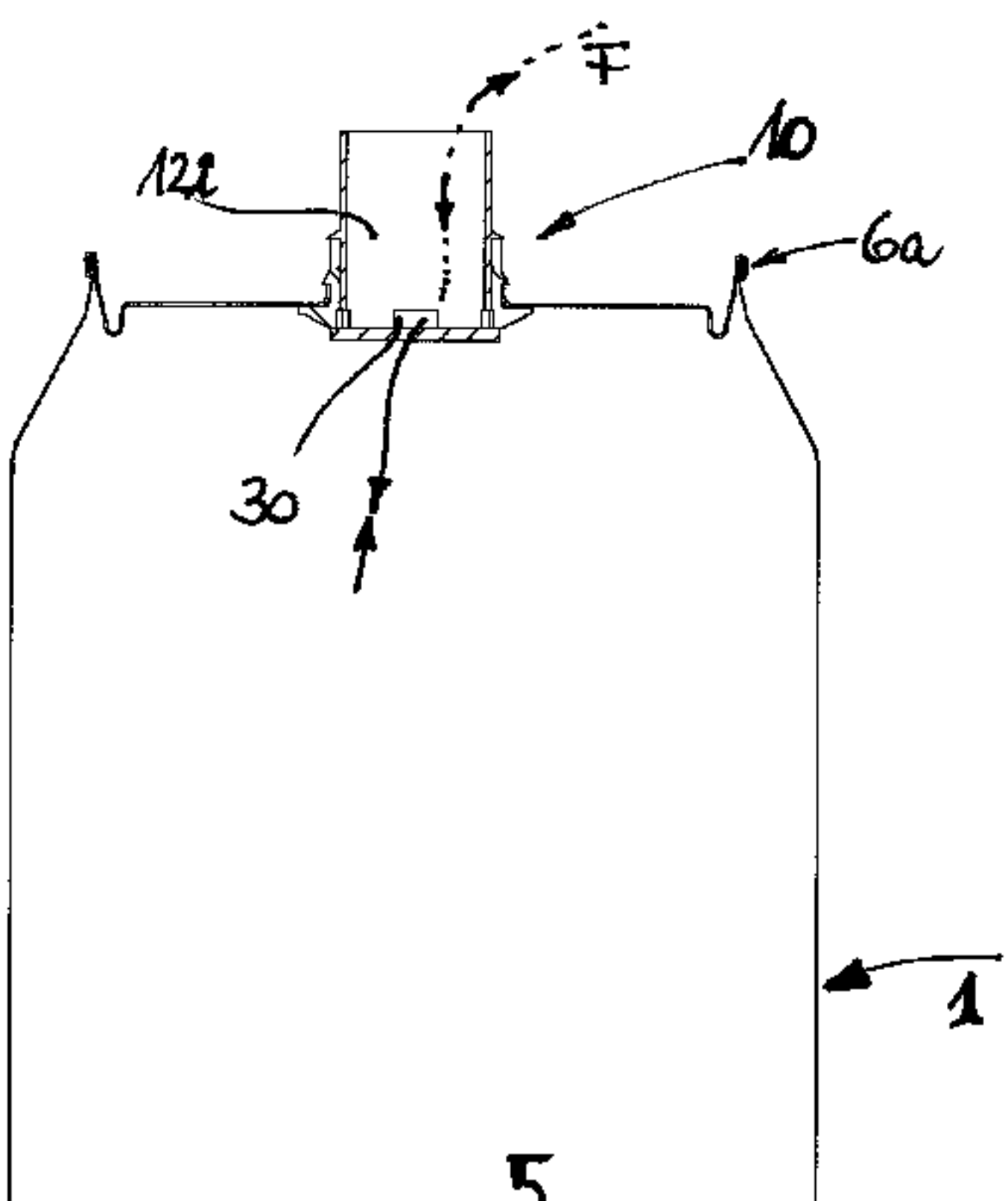


Fig.6


F
10
12a
6a
30
1
2