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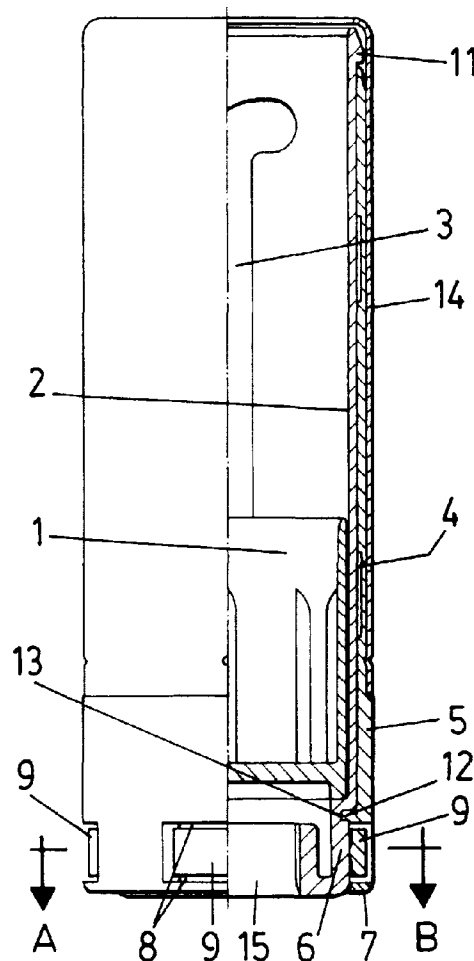
AT BE CH DE DK FR GB GR IE IT LI LU MC NL PT SE(30) Priority: **20.02.1996 ES 9600390****11.06.1996 ES 9601304**(71) Applicant: **Techpack Espana S.L.****08030 Barcelona (ES)**

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28004 Madrid (ES)(54) **Mechanical container for stick shaped products**

(57) The container incorporates, at the lower end of the stem (2), a tucked-in section (6), namely of a diameter smaller than the rest of the stem, as opposed to the conventional way, so that the spiral (5) extends and reaches, through its lower end (7), the lower end of the stem wherein are located a series of tabs (9) established in the lower end section (7) of the spiral (5) by means of transversal pairs of cuts (8), each of said resiliently deformable tabs being fitted with a protrusion or stub (10) centered on its inner face through which the tabs press against the external surface of the lower end section (6) of the stem (2). The spiral (5) uniformly contacts the stem (2) and is coupled to the stem via the lower end, being axially retained in respect to the stem (2) by means of the typical upper staggering (11) of the stem and by a lower flange (12) in the spiral, lodged in a perimeter groove (13) of the stem.

**FIG.-1****EP 0 791 309 A1**

Description

OBJECT OF THE INVENTION

This invention relates to a mechanical container for stick shaped products of the kind typically used for lipstick cases, in which the lipstick is liable to be axially projected to the exterior of the case when in use and subsequently retracted inwards.

The characteristics of the container are directed toward achieving an improved mechanical finish of the case, particularly in regard to a perfect relative movement between the grooved stem and the surrounding spiral in the absence of a typical lubricant relating both elements to one another.

BACKGROUND OF THE INVENTION

Conventionally, lipstick cases are structured around a fixed grooved stem provided with a pair of grooves located so as to correspond to diametrically opposite generatrices, grooves within which play respective stubs in a support or housing onto which the lipstick is conveniently adhered to, the free end of said stubs having access to an enveloping cylinder, a so-called spiral, the inner wall of which is fitted with one or two spiralling grooves in which said housing stubs act in such a manner that the rotating movement of the spiral in respect to the grooved stem results in axial movement in either direction of the housing carrying the applicable lipstick.

The grooved stem and the spiral come in contact with each other through an ample cylindrical surface, thereby providing a wedging tendency to the rotating movement which in actual practice is avoided by applying an adequate lubricating layer between the contact surfaces.

This solution, in addition to the cost involved in providing and applying said lubricant, presents a further drawback in that possible exhalations from the lubricant may cause a negative response from the buyer or user of the case, particularly when the container has been in storage for a long period of time and the risk exists of rancidness in the substance.

In an effort to overcome this problem, the French patent 1.501.043 is known to describe a case for a bar of pasty product, particularly a cosmetic product such as lipstick, in which, in order to minimize friction between the grooved stem and the spiral, the former is provided, in the lower end thereof, with a truncated cone expansion onto which leans an inner perimeter edge of the spiral's lower outlet, in a manner that, after mounting these elements, theoretically an axial pressure of the spiral is exerted against the truncated cone section of the stem which tends to radially expand the spiral and thus to effect a practically lineal contact between both parts.

However, and as previously stated, this is merely a theoretical assumption since practice reveals that per-

fect coaxiality between these parts is practically impossible to maintain, the parts tending to tilt in respect to one another in such a way that in addition to the lineal theoretical contact between the edge of the spiral and the truncated cone expansion of the stem, in actual practice there is also lateral contact at the opposite area of the assembly which is furthermore asymmetrical and consequently maintains said binding or seizing tendency between the parts during their relative rotational movement.

Furthermore, and not merely in regard to the lipstick case of this French patent but to lipstick cases in general, the stem widens substantially at the lower end of the stick, thereby causing considerably staggering between the free area of the stem and the spiral hiding the remainder of the stem, this having a negative effect on the subsequent assembly of the set inside the housing.

DESCRIPTION OF THE INVENTION

The container proposed by the invention solves the above problem in a fully satisfactory manner in regard to the various aspects discussed.

Toward this end and more specifically, the container derives from a shaping of the grooved stem contrary to what is conventional, in that the bottom of the stem is not only not oversize in respect to the remainder of the stem but it actually features a smaller lower diameter. This allows for several complementary objectives; on the one hand, the spiral can be extended to the level of the lower end of the grooved stem, thus determining an external surface of the assembly which provides an almost perfectly continuous cylinder that is devoid of a mold joint, consequently providing the following advantages:

- uniform friction with the spiral's tabs,
- accurate regulation of the effort or torque required to operate the mechanism,
- the part of the spiral facing this section of the stem has an internal diameter which is smaller than the remainder of the spiral, thereby allowing for thicker walls in the area containing the skates, reference to which shall be made further on, and
- assembly of the spiral on the stem and its housing may be performed contrary to what is conventional, i.e. by inserting the spiral through the bottom of the stem; this, in addition to avoiding deformation of the stem during assembly, allows for greater productivity, and on the other it enables an extensive section of this lower end area to receive said skates designed to minimize the relative friction between both parts and consequently to provide a substantial aid toward avoiding use of the typical lubricants.

In regard to this last aspect, more specifically in the periphery of the spiral's lower end, namely the one fac-

ing the reduced diameter section of the stem, a perimeter alignment of a considerable amplitude of the tabs is established, each tab being provided with a central nerve along the inner side thereof, in such a manner that the nerves in the various tabs establish dimensionally reduced mutual contact areas between both parts, thus reducing the friction coefficient between them and, according to the main object of the invention, allowing the spiral to rotate freely in respect to the grooved stem without the risk of seizure in the absence of lubricant.

Furthermore, the fact that the mounted assembly has the appearance of a perfect cylinder, in view that the spiral encloses the whole of the stem, involves the impossibility of using the mechanism without the help of a base, an advantage which may be utilized to market the mechanism as a spare part for the complete case.

According to another characteristic of the invention, the housing is tubular-shape, i.e. open at both ends, thus allowing the container to be loaded by its rear end, the retractable movement of the housing being likewise limited by virtue of a rear internal perimeter staggering of the stem.

The possibility has also been foreseen for the stem to be axially overdimensioned in respect to the spiral, specifically beyond the sliding skates, thereby determining a free access terminal section which allows for mechanized attachment of the external surface of both elements in order to conduct the relative movement between them.

This entails a discontinuity of the container's external surface, which may be compensated for by the attachment of a ring to the external side of the stem in the projecting section thereof which may or may not form a single part with the stem itself and which expands the diameter of the stem until it achieves that of the spiral, thereby enabling the external appearance of the container to be that of a perfect cylinder.

Regardless of the shape, the above mentioned inviolability effort can be obtained by means of an extension of the spiral equivalent to that of the stem whenever the container is to be handled by machines fitted with a means of attaching the stem through the internal surface of its filling mouth.

DESCRIPTION OF THE DRAWINGS

In order to complement the description being provided and to help toward a better understanding of the characteristics of the invention, a set of drawings is attached to this description, being an integral part thereof, wherein the following is represented having an illustrative, non-limiting character:

Figure 1 shows a side elevation and a quarter cross sectional view of a container for products shaped in the form of a bar, performed according to the object of the invention.

Figure 2 shows a cross section of the same container, at the lower end level, according to A-B cut plane of

Figure 1.

Figure 3 shows an enlarged detail of Figure 1 which corresponds to the lower marginal section of said figure.

Figure 4 shows an enlarged detail of the section in Figure 2, specifically at the level of one of the spiral's lower end tabs.

Figure 5 shows a side elevation and a diametrical sectional view of a variation of the embodiment of a container wherein the housing is shown to be open at both ends.

Figure 6 shows the same case in a view similar to that of the previous figure, although fitted with an additional associated ring at the level of the lower end of the stem, designed to achieve the overall cylindrical shape of the embodiment in Figure 1.

Figure 7 shows, on ending, a view similar to that of Figure 6, wherein the continuous and generally cylindrical shape is achieved through an axial extension of the spiral.

PREFERRED EMBODIMENT OF THE INVENTION

In the light of these figures, the container of the invention is seen as a conventional container composed of a housing (1) providing a support for the lipstick that is axially movable along a stem (2) having an external diameter substantially adjustable to the external diameter of the housing (1) and which is provided, in the direction of its generatrices, with grooves (3) through which stubs penetrate through and emerge radially through the housing (1), not visible in the figures, which in turn act within spiraling channels (4) operational on the inner side of a typical spiral (5) which in turn envelops the grooved stem (2), whereby the relative rotational movement between stem (2) and spiral (5) causes axial movement of the housing (1) resulting in the consequent outward extension or else the retraction of the lipstick implanted within it.

Thus, on the basis of this conventional structure, the object of the invention is centered on the fact that said grooved stem (2) is provided with a lower end section (6) which, instead of presenting a larger diameter in the conventional manner, shows a diameter which is slightly smaller than that the rest of said stem (2), thereby allowing a perfectly homogeneous contact along the length of the stem, between the stem and the spiral (5), as a result of which friction between both parts is practically non existent.

This means that the spiral (5), instead of being substantially interrupted before reaching the lower end of the stem (2), in the conventional manner, projects itself downwards along a complementary section (7) in which, with the aid of pairs of crosswise cuts (8), tabs (9) are defined which are resiliently deformable and are fitted centrally on their inner side with a stub (10) which, as previously stated, constitutes a contact area of a very small size between spiral (5) and stem (2), as can be perceived particularly in the enlarged detail shown in

Figures 3 and 4.

Specifically, in the example of the practical embodiment shown in the figures there are four tabs (9) provided with said support stubs (10) on the tucked-in lower section (6) of the stem (2), although this number can equally increase or decrease without affecting the essence of the invention.

The spiral (5) is axially immobilized in respect to the stem (2) - in addition to the typical external perimeter staggering (11) means at the upper end of the stem - by means of an inner perimeter flange (12) provided in the spiral (5) and which fits into a groove (13) in the stem (2), as can be seen also from the detail in Figure 3, with the peculiarity that the smaller diameter of the lower end area of the stem permits mounting the spiral, as previously pointed out, along the opposite direction to that which is conventional, namely from the bottom of the stem towards its open end, enabling the assembly operation to be conducted without causing any deformation to the stem and in a more rapid and simple manner, thus allowing for increased productivity.

The spiral (5), with the possible involvement of an adornment element (14), totally hides the stem (2) along its entire length, so that this assembly adopts an overall external shape that is perfectly cylindrical and which is readily adaptable to the housing, not shown in the drawings, specifically by attaching the body of the housing to the axial lodging (15) at the base of the stem (2), providing a slight gap between the lateral wall and the spiral (5) and a means at the mouth for receiving the cover.

This in turn allows, as previously stated, for the possible marketing of the container with its corresponding lipstick as a spare part for the complete case, being replaceable within the assembly composed of the housing and adornment element/original case cover.

According to a variation of the embodiment shown in Figure 5, the stem (2) extends along its lower or rear end beyond the spiral (5), in a terminal section (16) which defines the cylindrical collar or axial lodging (15) itself which provides access to the housing (1), although featuring the special characteristic of an open lower end (17) for the housing.

This allows, on the one hand, the replacement lipstick product filling of the container to be performed through the lower end area of the container, aided by the typical ogive (18) which can be coupled to the upper or external mouth of the housing (1) and which is removable after molding the product, and, on the other hand, the relative rotational movement between stem (2) and spiral (5) to be performed with the use of standard machines presently available in the market, since the stem (2) is externally accessible to the machine along with the spiral (5) itself, specifically through its end projecting section (16).

This solution, as shown in Figure 5, presents a drawback in that the perfect continuity of the external surface of the container is lost, since a perimeter staggering is defined between the spiral (5) and the project-

ing section of the stem (16). To deal with this problem it is foreseen that, as shown in Figure 6, the axially prominent section (16) of the stem (2) may be assisted by a ring (19) composed of a single part with the stem (2) itself or attached to the stem through any means coinciding in shape and size to said staggering in a way that through it and maintaining the external accessibility for securing the stem there is a perfect cylindrical continuity between said stem and spiral, as clearly shown in said Figure 6.

However, this dimensional continuity can likewise be achieved through a lower extension (20) of the spiral (5), with an amplitude coinciding with the extension (16) of the stem (2), as shown in Figure 7, in the specific case wherein machines are available capable of acting on the stem through the internal surface of its cylindrical collar (15).

Claims

1. Mechanical container for stick shaped products, structured on the basis of a product containing housing (1), e.g. lipstick, acting within an externally grooved stem (2) on which a spiral is established (5) provided with spiralling grooves in its internal wall for guiding radial stubs which extend from the housing (1) and penetrate through the stem grooves (3), said container being characterized in that said stem (2) exhibits a tucked-in lower end section (6), namely of a diameter that is smaller than the rest of the stem, whereas the spiral (5) extends downwards forming a section (7) which adapts to the stem's tucked-in section (6), and in that resilient support means are established in the stem to provide an homogeneous and uniform contact between stem (2) and spiral (5) which in turn allows for the absence of lubricant for the relative rotation between these elements.
2. Mechanical container for stick shaped products, according to Claim 1, characterized in that the spiral (5) is fitted at its lower end section (7), which is inwardly overdimensioned in thickness, with pairs of transversal cuts (8) which determine resiliently deformable tabs (9), each of which incorporates, in the center of their inner face, a protrusion or stub (10) abutting against the external wall of the lower end section (6) of the stem (2).
3. Mechanical container for stick shaped products, according to the previous claims, characterized in that the assembly composed of the stem (2) and the spiral (5) exhibits an overall external shape closely resembling a perfect cylinder.
4. Mechanical container for stick shaped products, according to the previous claims, characterized in that

the spiral (5) is coupled onto the stem (2) through the lower end or bottom of the stem, in the absence of any deformation caused on the stem.

5. Mechanical container for stick shaped products, according to the previous claims, characterized in that, for the purpose of axially retaining the spiral (5) in respect to the stem (2), the latter incorporates, in addition to the typical staggered expansion (11) of its upper end, a perimeter groove (13) delimiting the tucked-in lower end section (6) of the stem, wherein an internal perimeter flange (12) of the spiral (5) is lodged. 5 10
6. Mechanical container for stick shaped products, according to Claim 1, characterized in that the stem (2) extends beyond the spiral (5) in a lower end section (16) wherein a lower cylindrical collar (15) is defined providing access to the housing (1) which exhibits an open lower base (17) for providing access for the product which constitutes the stick to the interior of the container through this lower area of the container, in a manner that both the spiral (5) and the stem (2) are externally accessible for mechanical handling, said stem being accessible through the extended projecting section (16). 15 20 25
7. Mechanical container for stick shaped products, according to Claim 6, characterized in that the stem incorporates, conveniently solidary with its axially projecting section (16), a ring (19) which brings back the projecting section of the stem to the external diameter of the spiral, in a manner that while said stem maintains its external accessibility, the overall container presents an external cylindrical shape having a constant diameter. 30 35
8. Improved mechanical container for stick shaped products, according to Claim 6, characterized in that the spiral (5) also extends axially in the lower end of a section (20) having an axial amplitude which coincides with that of the stem's extension (16), in a manner that the overall case presents a cylindrical shape with a constant section throughout its length, in which circumstance access to the stem for rotational movement in respect to the spiral is performed via an internal cylindrical collar (15) in the stem. 40 45

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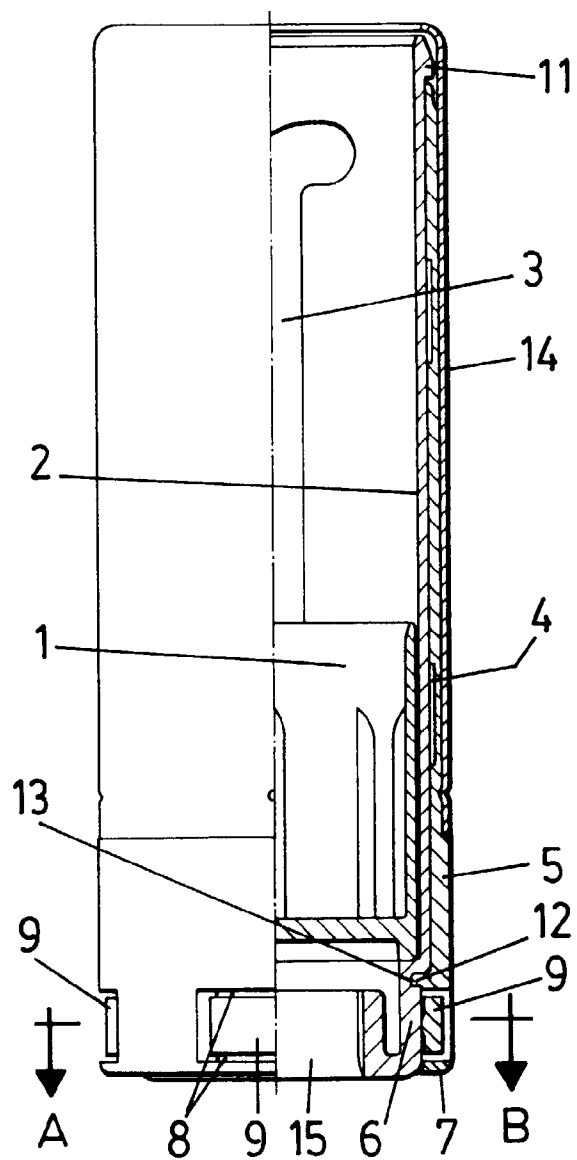
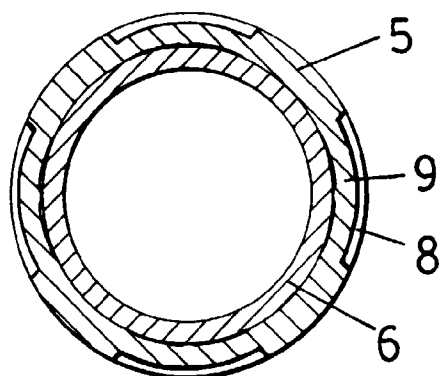


FIG-1



A-B
FIG-2

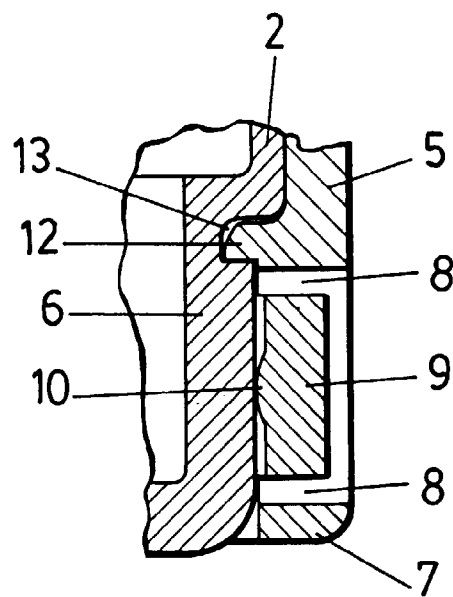


FIG-3

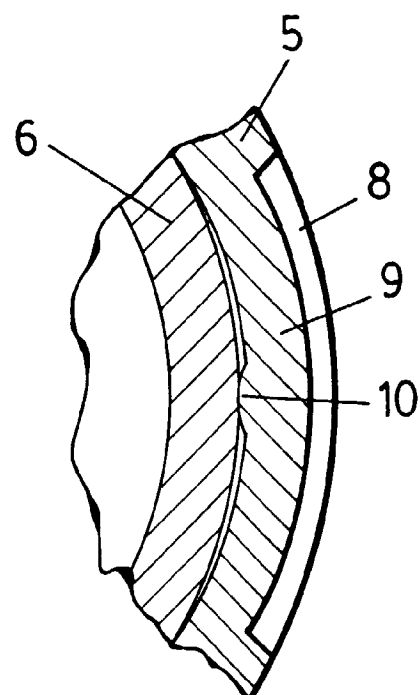


FIG-4

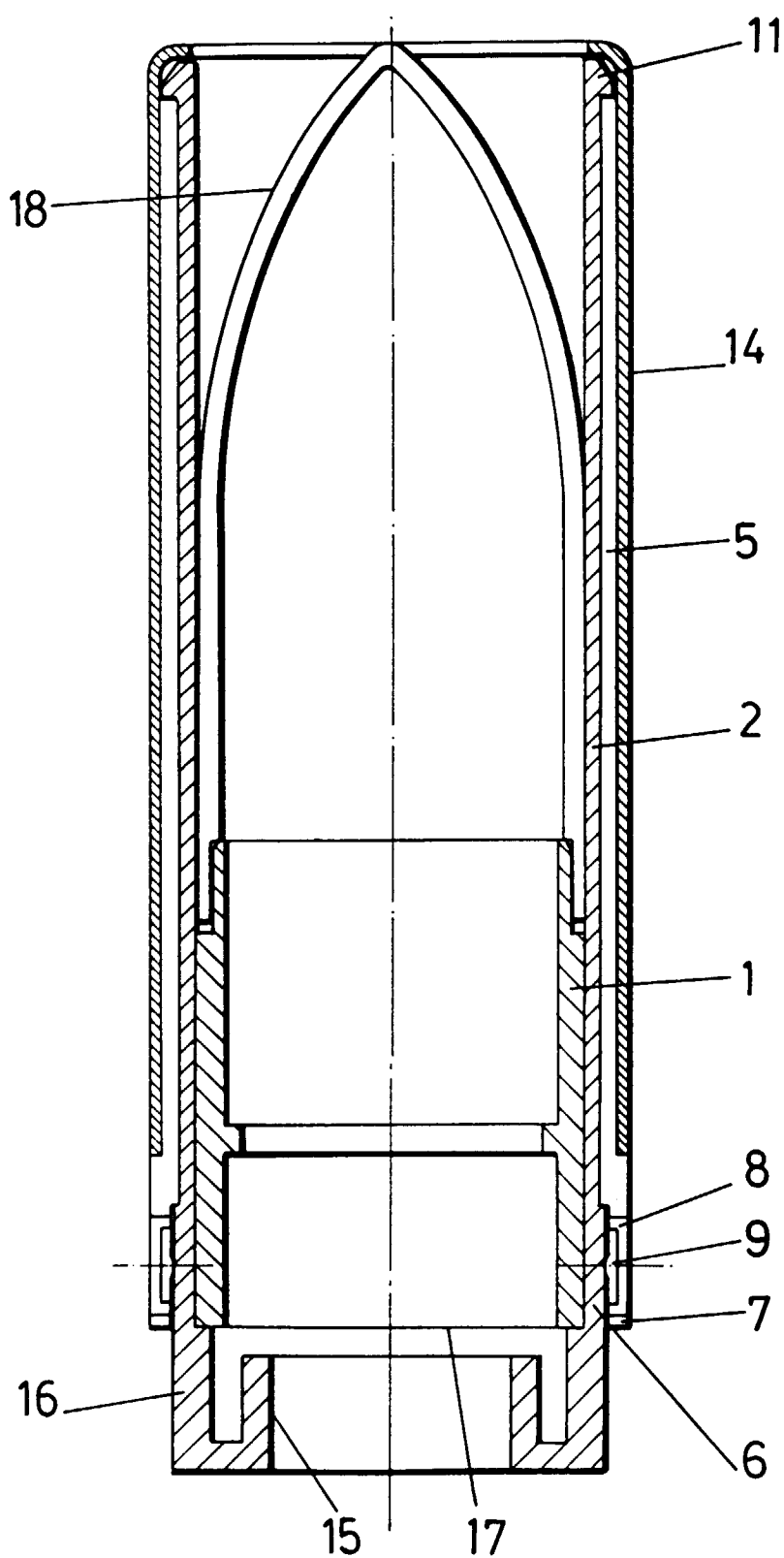


FIG.-5

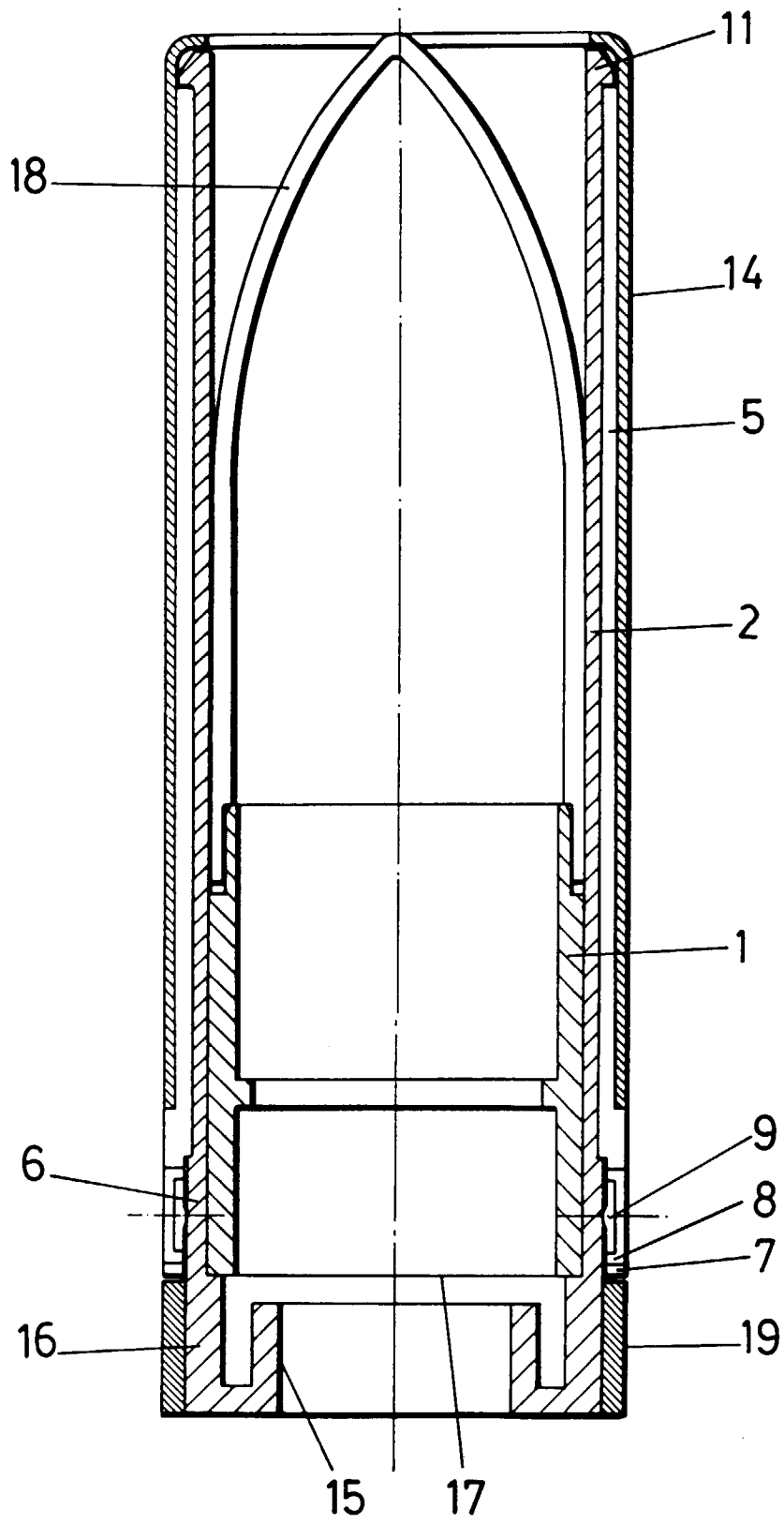


FIG.-6

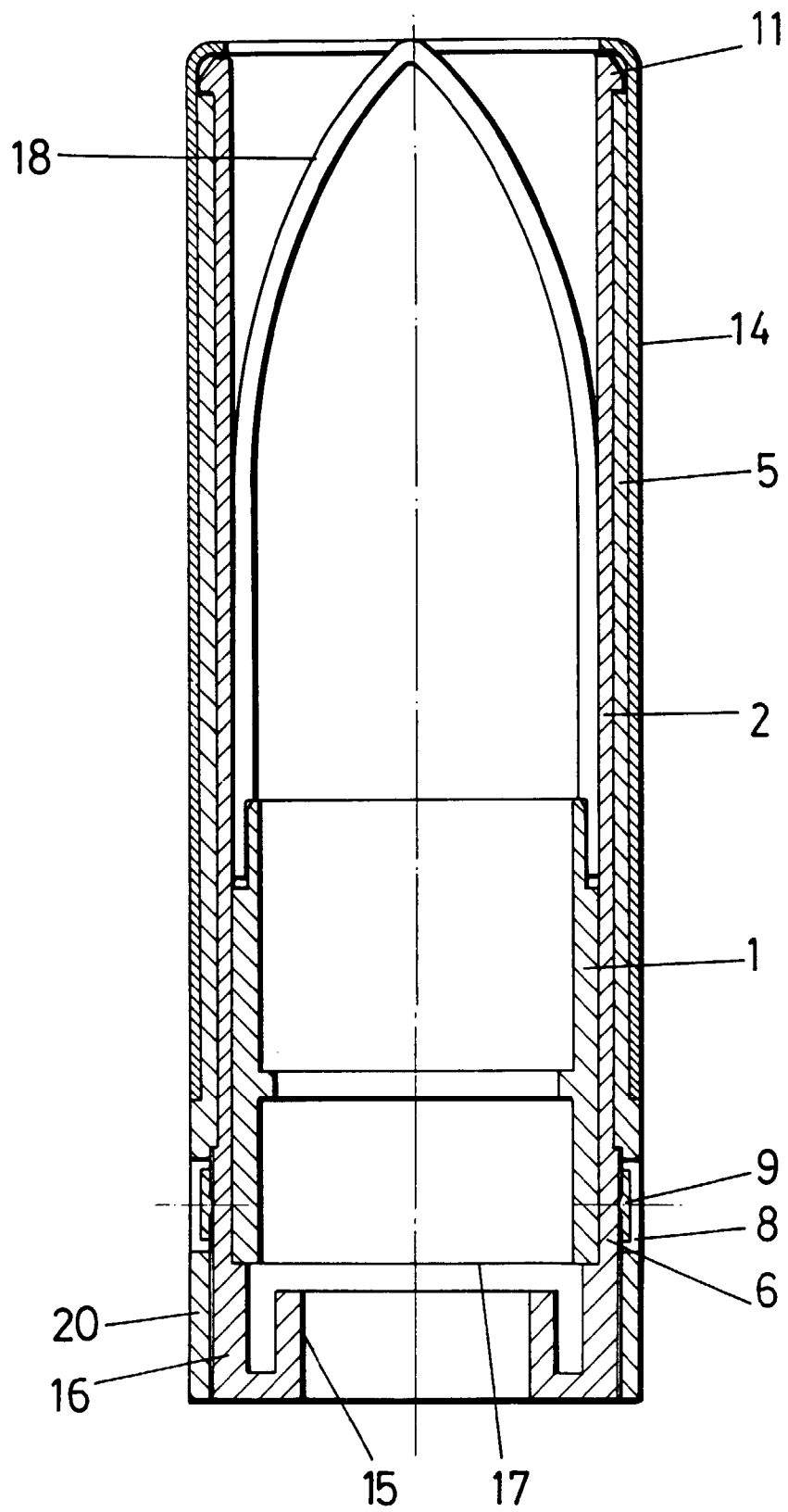


FIG.-7



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 97 50 0001

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	FR 1 124 179 A (MARQUISE) * page 1, right-hand column, last paragraph - page 2, right-hand column, paragraph 2; figures *	1,6,7	A45D40/06
A	EP 0 658 325 A (GUERET) * abstract; figures *	1	
A	US 1 966 884 A (COE) * page 1, line 25 - line 94; figures *	1	
A	EP 0 491 579 A (GUERET) * abstract; figures *	1	
A	DE 20 53 268 A (OEKAMETALL OEHLHORN) * page 4, paragraph 4 - page 5, last paragraph; figures *	1	
A	FR 1 017 627 A (MARQUISE) * figures *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			A45D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 28 May 1997	Examiner Perney, Y
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 P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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