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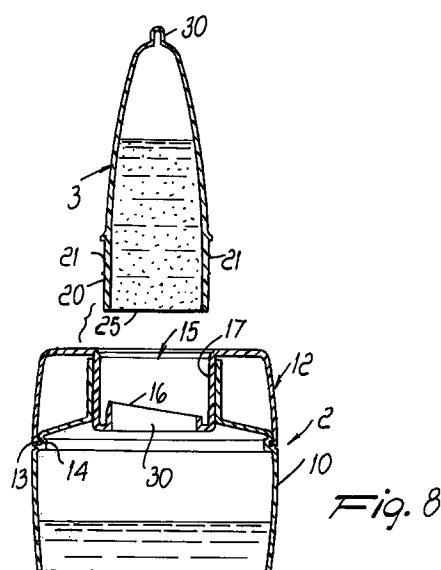
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(54) **Mixing bottle for containing and dispensing in mixed form two products to be kept separated before use**

(57) A mixing bottle for containing and dispensing in mixed form two products to be kept separated before use, including a base container (2) for containing one product and a dispensing container (3) for containing a second product. The dispensing container (3) comprises a closure membrane (25) and the base container (2) comprises a mouth (15) provided with an element (16) for tearing the closure membrane (25) and forming a hermetic coupling (17, 20) of the dispensing container (3). An opening is also provided to connect the chambers formed inside the containers (2, 3) when they are hermetically coupled.



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Description

The present invention relates to a mixing bottle for containing and dispensing in mixed form two products to be kept separated before use.

It is known that in many fields it is necessary to have a bottle that allows to mix, at the time of use, two products, generally liquid products, that must be kept separated before use.

In order to solve this problem, bottles are already commercially available which, for example, have a first container body that internally contains a first product and is provided with a bottom having a closure cover that is applied by pressing and is removed when the second container for containing the second product, from which the closing cap is removed beforehand, is arranged at the closure region.

These structural arrangements are generally very complicated and require very precise and accordingly expensive machining operations to achieve the desired assurances of tightness both while dispensing the mixed product and before combining the two products.

A principal aim of the invention is to solve the above described problem by providing a mixing bottle that allows to have two structurally simple containers that ensure the perfect closure of the separate product and can be quickly and easily coupled together to mix the two products and perform mixed dispensing.

Within the scope of this aim, a particular object of the invention is to provide a mixing bottle wherein it is possible to obtain perfect containment of the individual products and of the mixed product.

Another object of the present invention is to provide a mixing bottle that can be obtained with a limited number of components that can be easily and rapidly assembled together.

Another object of the present invention is to provide a mixing bottle that can be easily obtained starting from commonly commercially available elements and materials and is furthermore competitive from a merely economical point of view.

This aim, these objects, and others that will become apparent hereinafter are achieved by a mixing bottle for containing and dispensing in mixed form two products to be kept separated before use, according to the invention, which comprises a base container for containing a first product and a dispensing container for containing a second product, characterized in that said dispensing container comprises a closure membrane and in that said base container comprises a mouth that is provided with means for tearing said closure membrane and forms means for the hermetic coupling of said dispensing container, an opening being furthermore provided to connect the chambers formed inside said containers when said containers are hermetically coupled.

Further characteristics and advantages of the invention will become apparent from the following detailed description of a mixing bottle for containing and dispensing in mixed form two products to be kept sepa-

rated before use, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is an exploded view of the components of the mixing bottle;

figure 2 is a view of the container body of the base container;

figure 3 is an exploded view of the base container;

figure 4 is a top plan view of the base container;

figure 5 is a sectional view of the detail of the coupling between the collar and the container body;

figure 6 is a sectional view of the collar, illustrating the means for tearing the closure membrane;

figure 7 is an exploded view of the dispensing container;

figure 8 is an exploded view of the bottle before the coupling of the base container to the dispensing container;

figure 9 is a schematic sectional view of the bottle, with the base container and the dispensing container coupled together.

With reference to the above figures, the mixing bottle for containing and dispensing in mixed form two products to be kept separated before use, according to the invention, generally designated by the reference numeral 1, comprises a base container 2 for containing a first product and a dispensing container 3 for containing a second product.

The base container 2 is constituted, as shown more clearly in figure 3, by a container body 10 that internally forms a first chamber 11 and to which a collar 12 can be coupled in a snap-together manner; said collar is peripherally provided with a tooth 13 that can be inserted in a corresponding hollow 14 formed on the container body.

The collar 12 forms a mouth, generally designated by the reference numeral 15, having tearing means 16 constituted by a cylindrical element that has a slanted tapered edge formed on the bottom of a seat 17 that allows hermetic coupling of the dispensing container, as will become apparent hereinafter.

There is also provided a removable plug 18 that closes the mouth 15 to keep the container body in closed condition when it contains the first product.

The dispensing container 3, as shown more clearly in figure 7, has, at its end, a tang 20 that can be hermetically inserted in the seat 17. The hermetic seal can be provided by means of lips 21 or optionally by means of a threaded portion that couples in a corresponding thread formed in the seat 17.

In a downward region, the dispensing container 3, which is advantageously ogive-shaped, is closed by a tearable membrane 25 that is preferably constituted by an aluminum membrane coupled by heat sealing or other conventional methods to the free edge of the dispensing container 3.

At the end lying opposite to the one provided with the membrane 25, the dispensing container 3 has a

removable protrusion 30 that can be cut to form the hole for dispensing the mixed product.

In practical use, the base container 2 and the dispensing container 3 contain two different and separate products that can be mixed together only at the time of use.

In order to perform coupling, it is sufficient to insert the tang 20 of the dispensing container 3 in the mouth 15, so as to apply a sealing action on the seat 17 and obtain, by virtue of the presence of the tapered and slanted edge 16, the tearing of the membrane 25, so that the second product can pass through the opening 30 formed inside the edge 16 in the chamber 11, accordingly mixing the product.

From the above description it is thus evident that the invention achieves the intended aim and objects; in particular, the fact is stressed that a mixing bottle is provided which is produced with extremely simple means that can be easily and quickly assembled together when the product is to be used.

In practice, the materials employed, so long as they are compatible with the specific use, as well as the contingent shapes and dimensions, may be any according to the requirements.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. Mixing bottle for containing and dispensing in mixed form two products to be kept separated before use, comprising a base container (2) for containing a first product and a dispensing container (3) for containing a second product, characterized in that said dispensing container (3) comprises a closure membrane (25) and in that said base container (2) comprises a mouth (15) that is provided with means (16) for tearing said closure membrane (25) and forms means (17, 20) for the hermetic coupling of said dispensing container (3), an opening being furthermore provided to connect the chambers formed inside said containers (2, 3) when said containers are hermetically coupled.
2. Mixing bottle according to claim 1, characterized in that said base container (2) has a container body (10) to which a collar (12) is coupled, said collar (12) forming said mouth (15).
3. Mixing bottle according to the preceding claims, characterized in that said collar (12) is perimetrically provided with a tooth (13) that can couple, in a snap-together fashion, in a hollow (14) formed by said container body (10).
4. Mixing bottle according to one or more of the preceding claims, characterized in that said tearing means (16) are constituted by a tapered and slanted edge formed at the bottom end of said mouth (15).
5. Mixing bottle according to one or more of the preceding claims, characterized in that said hermetic coupling means are constituted by a seat (17) in which the base tang (20) of said container (3) can be coupled.
6. Mixing bottle according to one or more of the preceding claims, characterized in that it comprises, on said tang (20), lip gaskets (21) that provide a seal at said seat (17).
7. Mixing bottle according to one or more of the preceding claims, characterized in that it comprises, on said tang (20), threaded portions that can be coupled to corresponding threaded portions formed on said seat (17).
8. Mixing bottle according to one or more of the preceding claims, characterized in that it comprises a plug (18) that can be detachably coupled hermetically so as to close said mouth (15).
9. Mixing bottle according to one or more of the preceding claims, characterized in that said closure membrane (25) is constituted by an aluminum foil that is coupled to the free edge of said dispensing container (3).
10. Mixing bottle according to one or more of the preceding claims, characterized in that said dispensing container (3) has, at the end lying opposite to said membrane (25), a protrusion (30) that can be removed by cutting to form the hole for dispensing the mixed product.

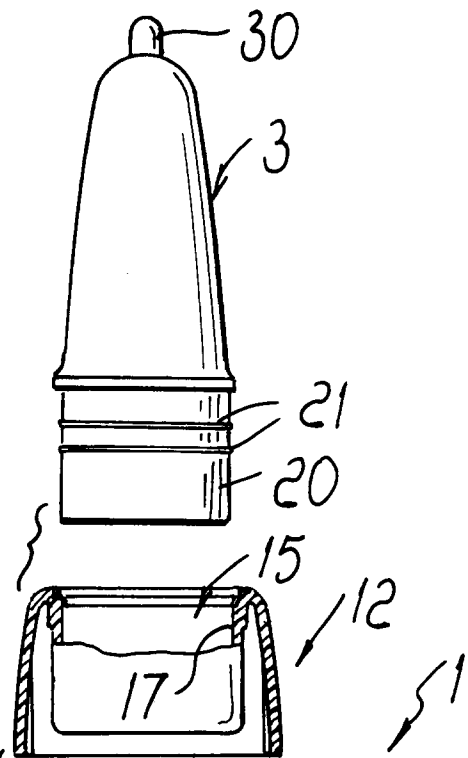


Fig. 1

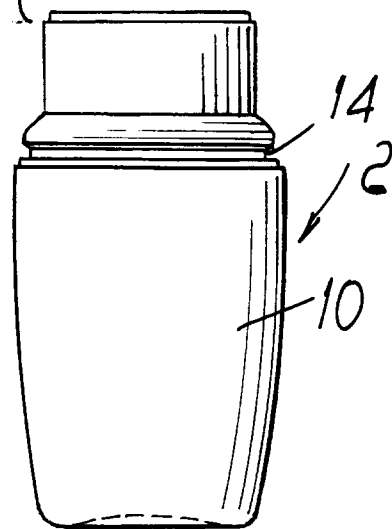


Fig. 6

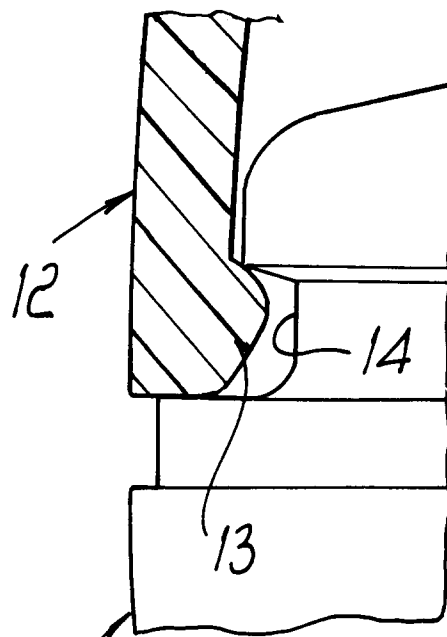
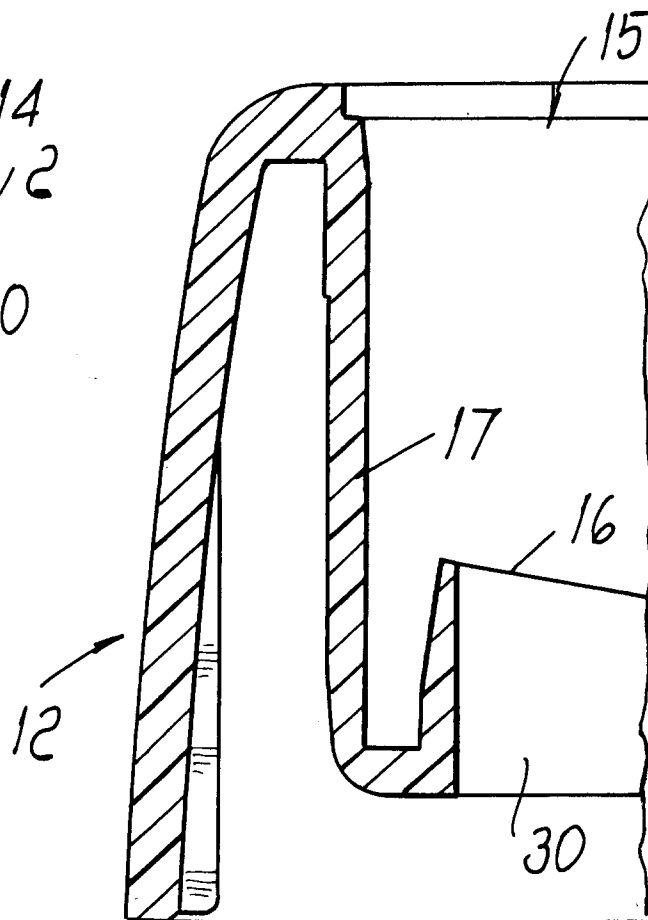


Fig. 5



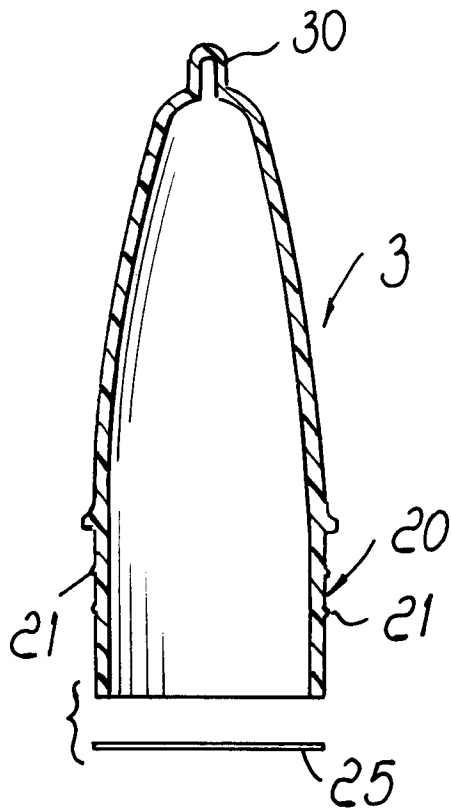


Fig. 7

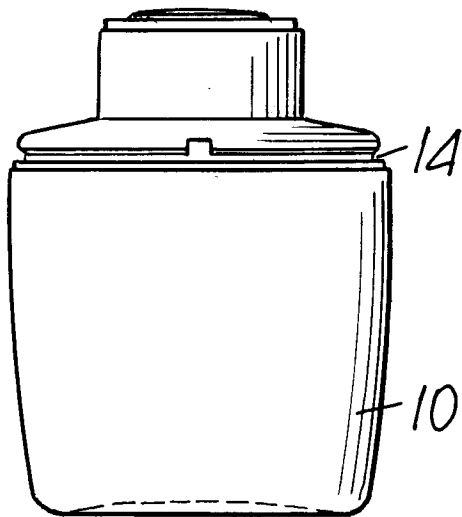


Fig. 2

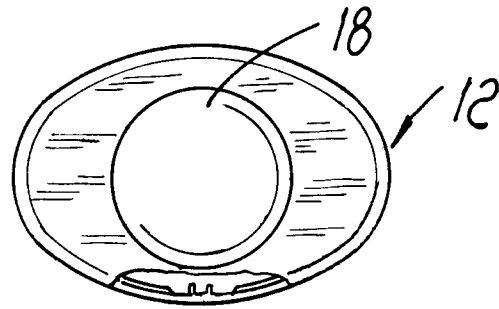


Fig. 4

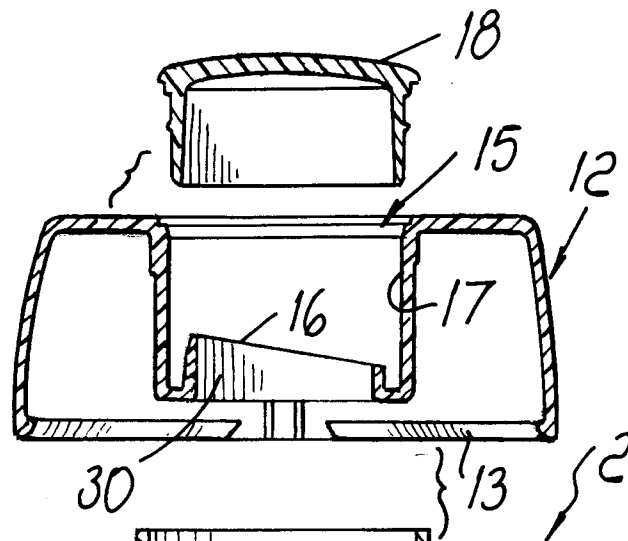
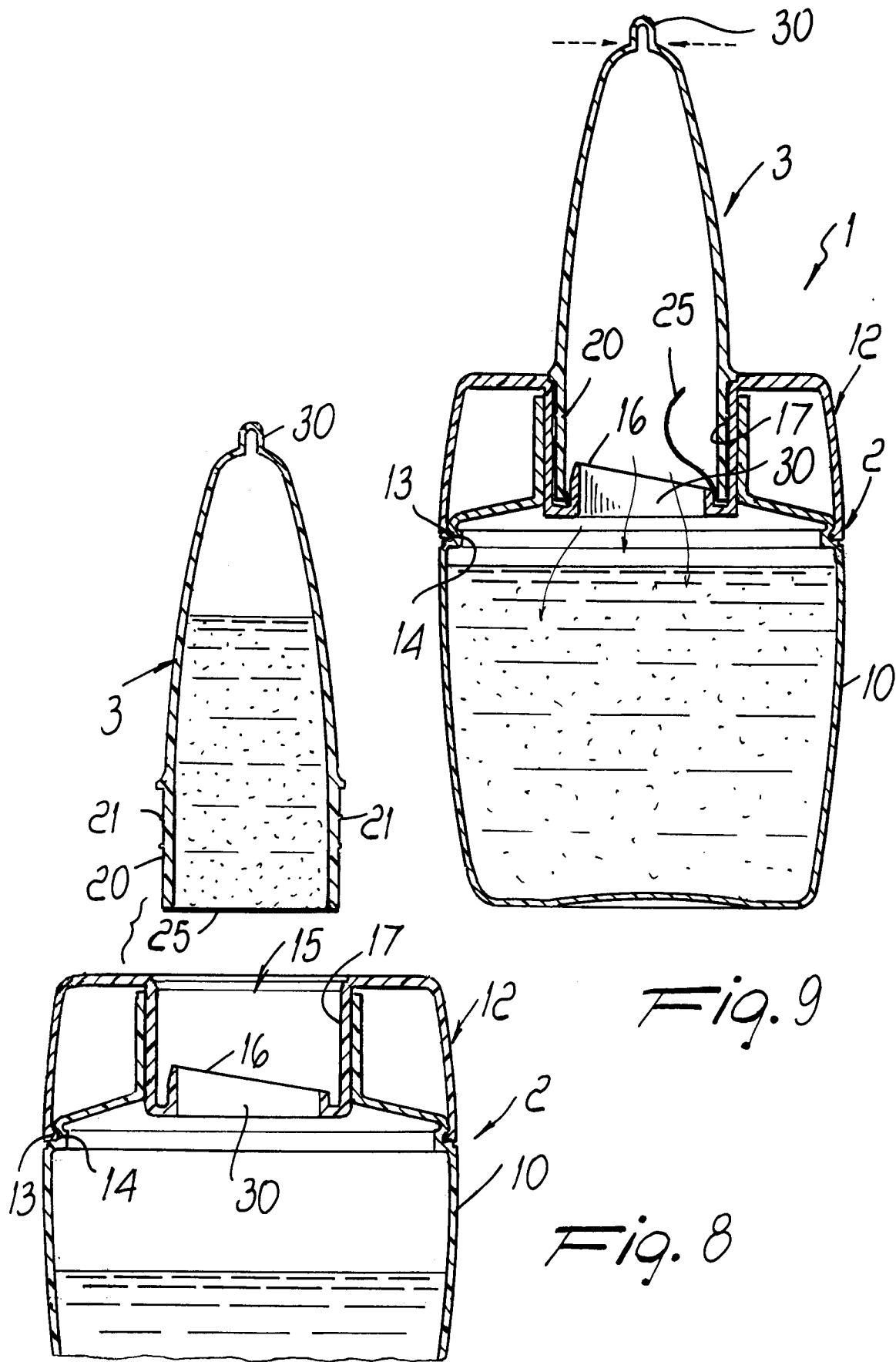


Fig. 3





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EUROPEAN SEARCH REPORT

Application Number
EP 96 11 6852

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)
X	FR 2 569 666 A (OREAL) 7 March 1986 * the whole document *	1-10	B65D51/28
X	FR 2 590 235 A (OREAL) 22 May 1987 * page 5, line 16 - page 8, line 30; figures *	1-4,8-10 5,6	
A	US 4 682 689 A (PEREIRA JOSEPH J ET AL) 28 July 1987 * column 3, line 26 - column 5, line 14; figures *	1-5,9	
A	DE 24 32 290 A (WUNSCH ERICH) 22 January 1976 * claims; figures *	1,2,4,5, 9	
A	EP 0 528 707 A (OREAL) 24 February 1993 * claims 1-5,14,15; figures *	1,2,5,6, 8	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B65D
Place of search		Date of completion of the search	Examiner
THE HAGUE		5 February 1997	SERRANO GALARRAGA, J
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