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(54) Device for folding and packaging a shirt

(57) It is provided a device for packaging a shirt comprising a casing adapted to hold a folded shirt of the type having a collar, a body region and sleeves and means adapted to cooperate in folding said shirt, said means comprising a core (1b) having a plurality of preformed folding lines (8) and substantially having the shape and sizes of the shirt in an extended position, and said casing (1a) comprising a shaped plate (3) the shape of which matches at least that of the collar of a shirt internally housing the core (1b) and folded together with the core (1b) at preformed folding lines (8).

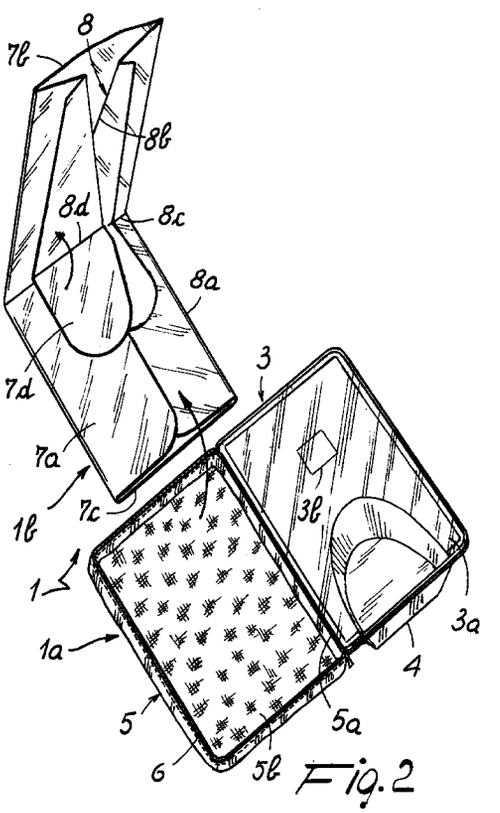

Fig. 2

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Description

The present invention relates to a device for packaging a shirt, of the type specified in the preamble of Claim 1.

It is known that shirts are generally packaged and sold in parallelepipedic cases provided with a rectangular base and made of plastic or cardboard materials.

In said cases shirts are maintained in place by means adapted to cooperate in folding them and comprising pins, clips, bands and different rigid or semi rigid inserts intended particularly for stiffening the shirt collar.

Said pins, clips, bands, inserts are removed after purchase and generally are thrown away at once, and the cases too.

Then shirts, after being used, washed and ironed, are generally freely folded and freely put back into drawers or wardrobes. For transportation, in case of a journey for example, shirts, duly folded, are usually put into suitcases or bags together with other garments.

A first drawback of this situation resides in that said technical solution employed for folding shirts for sale and keep them folded, involving a wide use of pins, clips and inserts and subsequent insertion into cases, is complicated and difficult and practically can be carried out only by a suitably trained staff.

A further drawback of this situation is that even for normal manual folding of shirts, after a first use, a certain degree of skill is required: almost always this operation is likely to be executed in an approximate and imprecise manner, or an important amount of time is required.

A still further drawback is connected with the fact that shirts, once folded by users are weakly or not at all protected and are subjected to creasing and damaging, above all if they are inserted into suitcases or bags or are crammed into drawers or wardrobes where the available room is reduced.

The last-mentioned drawback also depends on the fact that cases used for packaging shirts for display or sale are inappropriate for subsequent protection and handling of the shirts themselves.

Actually, these cases, substantially rigid on the whole, are not generally used again because they are too bulky, due above all to their thickness. Said thickness is imposed by the necessity of housing and protecting the region of the shirt collar in an appropriate manner.

It wilt be recognized that containers into which shirts are put for sale are also inappropriate for an occasional utilization in case of journeys, due to their bulkiness and also because they can damage other garments put close to them.

Practically, on the one hand, when shirts are to be packaged, a complicated and unrepeatable procedure is carried out in order to fold and keep them steady, for subsequently housing them into substantially disposable containers and, on the other hand, in daily uses, the user has no instruments facilitating folding of said shirts and protecting them against crumpling.

The above drawbacks are important due to the universal diffusion of shirts as a garment and also due to the fact that sometimes care in dressing of people is evaluated based on the state of the shirt they are wearing.

Under this situation, the technical task underlying the invention is to provide a device for packaging a shirt capable of substantially obviating the above mentioned drawbacks.

Within the scope of this technical task, it is an aim of the invention to provide a device which is of valid and general help in folding and protecting shirts, i.e. which is capable of both replacing the initial packaging and enabling unskilled people or people of low skill to fold shirts in a precise manner and house them in a reduced space.

A further aim of the invention is to provide a device which can be advantageously utilized also when a small room is available, at the inside of luggage or travelling bags for example, and adapted to avoid damages to other garments contiguous thereto.

A still further aim of the invention is to provide a device of low cost and simple structure, which as such is susceptible of a wide diffusion on the market.

The technical task mentioned and the aims specified are substantially achieved by a device for packaging a shirt as claimed in Claim 1.

Preferred embodiments of the invention are specified in the other Claims.

Further features and the advantages of the invention are set forth in the following detailed description given with reference to the accompanying drawings, in which:

Fig. 1 shows the outer casing of the device in a closed position;

Fig. 2 shows the device seen as a whole and in a mostly open position, with a semirigid core pulled out of said casing;

Fig. 3 shows the shape of said core in an extended position and inserted into a shirt, the shirt being diagrammatically shown in chain lines;

Fig. 4 shows a first folding step of a shirt executed with the use of said core;

Fig. 5 shows a subsequent intermediate folding step of a shirt with the use of said core;

Fig. 6 represents the final folding step of a shirt incorporating said core; and

Fig. 7 shows a folded shirt incorporating said core, which shirt is about to be introduced into a casing.

With reference to the drawings, the device in accordance with the invention is denoted by reference numeral **1** and is provided for packaging shirts **2** which in a usual manner have a collar **2a**, a substantially tubular body region **2b**, and sleeves **2c** emerging from the

body region 2b.

Still as usually, packaging is provided to be carried out in such a manner that the folded shirt 2 may exhibit a main face **2d** from which collar 2a emerges well in sight (Fig. 7). In fact, collar 2a is an essential element of the shirt and must be exposed for purchase purposes and for enabling a selection among the available shirts.

Device 1 comprises two components having functions that are complementary to each other and synergetic: a casing **1a**, external to shirt 2, and means adapted to cooperate in folding the shirt and comprising a core **1b** to be fitted internally of the shirt itself.

Casing 1a is defined by a shaped plate **3** having an expansion or bubble-shaped raised portion 4 and by a tray 5.

The shaped plate 3 is made of a material selected from rigid and semirigid materials. Preferably it is made of a semirigid transparent plastic material.

The shaped plate 3 is placed over the tray 5 like a cover and is such shaped that it matches the shape of, and adheres to the main face 2d of the folded shirt 2 and therefore is formed with a flat region **3a** from one end of which expansion 4 emerges.

Fig. 1 then shows that different identification elements **3b** or other elements concerning the shirt 2 disposed in the casing 1a can be reproduced on the shaped plate.

The shaped plate 3 may also be made of two layers of plastic material, at Least the outer one of which is transparent and between which sheets, pictures or the like carrying the identification elements 3b can be freely inserted.

Tray 5 is shaped in the form of a hollow container and defines a seating **5b** in which at least one major portion of the folded shirt 2 can be housed.

In addition, tray 5 has a different rigidity than the shaped plate 3: it is less rigid than the plate and is made of a material selected from semirigid and flexible materials.

Preferably it is made of flexible material, fabric, nylon, polyester or thin plastic material for example.

Therefore tray 5 practically can be a mere bag having the same thickness as a shirt, excluding the collar. The shaped plate 3 and tray 5, seen in plan view, both have the shape of a rectangle and preferably can be opened like a book.

Actually, they are joined to each other in a flexible manner at a major side **5a** of said rectangle. Junction can be obtained in many ways, by means of a weakened area or an area made flexible by pressing, when casing **1a** is completely made of the same material.

In particular, the shaped plate 3 can be formed of a double layer of plastic material and tray 5 of a thin layer of the same plastic material.

Also provided are removable-connection members 6 between the shaped plate 3 and tray 5, at least at the casing side facing side 5a.

These connection members 6 can be mere buttons, fitting elements or a zip-fastener. Figs. 1, 2, 7 show connection members 6 formed of a zip-fastener extending over three sides of casing 1a.

In order to promote matching between tray 5 and the shaped plate 3, when tray 5 is made of a very flexible material, a small semi rigid frame may be provided around the tray 5 opening.

Core 1b which together with casing 1a creates the device 1 of the invention, as shown in Fig. 2, in its extended ondition originally has the same shape as a buttoned-up shirt in an extended position, flattened and not yet folded.

Furthermore, core 1b is similar, as to sizes, to the shirt 2 in which it has to be inserted; it may have only slightly smaller sizes for example, and is preferably formed of a semirigid or rigid sheet, made of plastic material or cardboard, for example.

In detail, it is pointed out that core 1b has a central portion **7a**, corresponding to the body region 2b of a shirt 2, extending from an upper edge **7b** simulating the shoulder region, and a lower edge **7c** simulating the lower margin of shirt 2.

Symmetrically emerging from the central portion 7a are two tailpieces **7d** simulating the sleeves 2c of shirt 2.

Tailpieces 7d can have a shorter length than the shirt sleeves 2c.

Core 1b is also provided to have a plurality of preformed folding lines **8**.

Folding lines 8 can consist of local deformations of the semirigid sheet obtained by a series of forced and previously-made folding operations carried out thereon.

Otherwise, said folding lines may consist of thinning lines formed by pressing or scraping off the semirigid sheet, which thinning lines are carried out each time on the semirigid sheet face towards which folding is provided.

Actually, each folding line 8 must promote a single predetermined folding movement, in a given direction.

In Figs. 2 to 5 core 1b has no openings or holes, but wide holes may be obviously provided in the semirigid sheet. Not only these holes or openings can have a lightening function, but they can also be positioned and shaped in such a manner as to facilitate folding at the folding lines 8.

In particular, the folding lines 8 comprise two parallel main lines **8a** extending longitudinally over the whole length of the central portion 7a, from the upper edge 7b to the lower edge 7c thereof.

The main lines 8a have a mutual distance adapted to include collar 2a therebetween and adapted to define the width of shirt 2 once the latter has been folded. In addition, they are such made as to promote folding with mutual approaching of the outer parts of the central portion 7a, i.e. those parts that are not included between lines 8a.

Also provided are two auxiliary lines **8b** identifying attachment areas for tailpieces 7d and slightly inclined

in a direction moving towards the upper edge 7b, or parallel to the main lines 8a.

Each of the auxiliary lines 8b is made in a manner adapted to promote folding of a tailpiece 7d with a rotation in an opposite direction relative to the folding direction allowed by the main line 8a disposed close to it, as shown in Fig. 4.

A transverse Line **8c** is finally provided at a distance from the upper edge 7b corresponding to the length of shirt 2 once it has been folded.

Practically, the transverse line 8c intersects median areas of the main lines 8a and is disposed approximately equidistant from the upper edge 7b and lower edge 7c.

An extension **8d** of this transverse line 8c also crosses the tailpieces 7d simulating sleeves 2c and it can be submitted to a slight flexion, so that when tailpieces 7d are folded at the auxiliary lines 8b, lines 8d shall match with the transverse line 8c, as shown in Figs. 2, 4 and 5.

Tailpieces 7d are therefore provided to have an important length, although they are shorter than sleeves 2c.

Obviously, said means adapted to cooperate in folding shirt 2 may comprise other elements, in addition to core 1b. For instance, if tailpieces 7d have a shorter length than sleeves 2c, as shown, simple clips **9** may be provided for fastening the shirt cuffs, as shown in Fig. 5.

Use of device 1 is as follows.

The first thing to execute, for packaging a shirt 2 by folding it and inserting it into casing 1a in a correct manner, is to put core 1b at the inside of the shirt. Core 1b must be disposed internally of shirt 2 in an extended condition so that the central portion 7a thereof can occupy the body region 2a, and tailpieces 7d can be inserted into sleeves 2c, thereby obtaining the solution shown in Fig. 3, where shirt 2 - seen from the back - is reproduced in chain lines.

For carrying out this operation, shirt 2 must be buttoned up preferably only after core 1b has been inserted.

Under this situation all parts of the shirt are supported and made stiff and if core 1b is substantially to size, as suitable, no curling or crumpling will take place.

Shirt 2 must then be folded as provided by folding lines 8.

As shown in Figs. 4 and 5, the folding lines 8 first cause the shirt parts external to the main lines 8a to be folded over on the shirt back, then a further folding of sleeves 2c in an opposite direction about the auxiliary lines 8b occurs. Finally, as shown in Fig. 6, overturning of the lower part of shirt 2 about the transverse line 8c takes place.

In this manner a situation as shown in Fig. 7 is reached and shirt 2, folded and made stiff due to incorporation of core 2b, can be inserted into casing 1a, as viewed from Fig. 7.

In the casing the position of the folded shirt is steady because said shirt and in particular the shirt collar are kept immobile and to a correct position by core 1b.

Casing 1a, which is thin and transparent, wraps the folded shirt to a tight fit so as to protect it at all parts thereof without substantially increasing bulkiness of same.

The most rigid portion of casing 1a consists of the shaped plate 3, whereas tray 5 can also be freely flexible, made of cloth for example. In any case, the shirt packaging as a whole is made stiff by core 1b which is folded together with shirt 2. In this way, core 1b operates in a synergistic manner together with casing 1a in giving sufficient stiffness to the packaging on the whole.

It is pointed out that preparing a shirt for folding by inserting a core thereinto which has preformed folding lines and subsequently carrying out folding of said shirt through folding of the core itself are steps of a simple and precise process for packaging a shirt.

The invention achieves important advantages.

Actually, the device is of minimum bulkiness in that it has the same size as a folded shirt, protects the latter efficiently against damages from the outside, prevents slipping or crumpling of the folded shirt from taking place within the casing and promotes and guides a correct folding of the shirt.

In addition, the device lends itself to be employed both during normal use of a shirt and on the occasion of the initial packaging of same, for display or sale purposes.

In this manner, the initial packaging can be maintained as a permanent set for a shirt, thereby promoting a correct use and protection of same under any circumstances.

It will be recognized that a packaging as made possible by the device of the invention does not require any skill and can be immediately carried out in a very precise manner even by unskilled people. This will bring about, as a result, a better maintenance of a shirt.

In addition, packaging as made is also adapted for very narrow spaces in a bag or suitcase and there are no risks of damaging other garments disposed close to the shirt casing.

In fact, said casing, in addition to being of minimum thickness, also has the tray devoid of sharp corners if made of flexible material such as a fabric.

Therefore the casing can be pressed without damaging the shirt and without the same leaving marks on the adjacent garments.

Costs for casing 1a, which is simple and thin, can be very low, also with reference to transportation of same after its manufacture, because it can be stacked in an open position as shown in Fig. 2, so that it takes up a minimum space.

Likewise, costs for core 1b are very low too, as said core may consist of a mere sheet of plastic or cardboard material.

Claims

1. A device for packaging a shirt, comprising a casing adapted to hold a folded shirt of the type having a collar, a body region and sleeves, and means adapted to cooperate in folding said shirt,

   - characterized in that said means comprises a core (1b) having a plurality of preformed folding lines (8) and having a shape and sizes similar to those of said shirt in an extended position,
   - and in that said casing (1a) comprises a shaped plate (3) substantially matching the shape of, and to be superposable at least with said collar (2a) of one said shirt folded together with said core (1b), at said folding lines (8).

2. The device as claimed in claim 1, wherein said casing (1a) comprises a tray (5) defining a seating (5b) adapted to house at least one major portion of said folded shirt, and one said shaped plate (3) engaging said tray (5) substantially like a cover, and wherein said shaped plate (3) and tray (5) have different rigidity, said shaped plate (3) being made of a material selected from rigid and semirigid materials and said tray (5) being made of a material selected from semirigid and flexible materials.

3. The device as claimed in claim 2, wherein said shaped plate (3) has a substantially flat region (3a) and a bubble-shaped expansion (4) emerging from said substantially flat region (3a) and matching said collar (2a) of said folded shirt.

4. The device as claimed in claim 2, wherein said shaped plate (3) and tray (5), seen in plan view, have a substantially rectangular form and wherein said shaped plate (3) and tray (5) are joined to each other at a major side (5a) of said rectangle so that they can be opened in respect of each other like a book.

5. The device as claimed in claim 4, wherein removable-engagement members (6) are provided between said shaped plate (3) and tray (5), which members are embodied by a snap-fastener.

6. The device as claimed in claim 1, wherein said core (1b) is a sheet of a material selected from rigid and semi rigid materials having a central portion (7a) simulating said body region (2b) of a shirt and tailpieces (7c) emerging from said central portion (7a) and simulating said sleeves (2c).

7. The device as claimed in claim 6, wherein said preformed folding lines (8) are defined by thinning lines of said core (1b).

8. The device as claimed in claim 6, wherein said preformed folding lines (8) have predetermined folding directions.

9. The device as claimed in claim 6, wherein said preformed folding lines (8) comprise two main lines (8a) extending along said central portion (7a) and having a mutual distance defining the folded-shirt width, two auxiliary lines (8b) identifying attachment areas between said tailpieces (7d) and central portion (7a), and a transverse line (8c) intersecting a median area of said main lines (8a).

10. The device as claimed in claim 9, wherein said tailpieces (7d) simulating said shirt sleeves (2c) extend at least to such a length that they can be crossed by extensions (8d) of said transverse line (8c).

11. A device for packaging a shirt, comprising a casing adapted to hold a folded shirt of the type having a collar, a body region and sleeves, characterized in that said casing (1a) comprises a tray (5) having a seating (5b) adapted to house at least one major portion of one said folded shirt, and a shaped plate (3) the shape of which matches at least that of said collar (2a) and engaging said tray (5) substantially like a cover, and in that said shaped plate (3) and tray (5) have different rigidity, said shaped plate (3) being made of a material selected from rigid and semirigid materials and said tray (5) being made of a material selected from semi rigid and flexible materials.

12. A device for packaging a shirt, comprising a casing adapted to hold a folded shirt of the type having a collar, a body region and sleeves, characterized in that said means comprises a core (1b) having a plurality of preformed folding lines (8) and having a shape and sizes similar to those of said shirt in an extended position, in that said core (1b) consists of a sheet of a material selected from rigid and semirigid materials and being provided with at least one central portion (7a) simulating said body region (2b) of the shirt and tailpieces (7c) emerging from said central portion (7a) and simulating said shirt sleeves (2c), and in that said preformed folding lines (8) have predetermined folding directions.

13. A process for packaging a shirt, characterized in that it comprises a preparation step in which a core is inserted into said shirt, which core has a plurality of preformed folding lines and a shape and sizes similar to those of said shirt in an extended position, and a folding step in which said shirt is folded through folding of said core at said preformed folding lines.

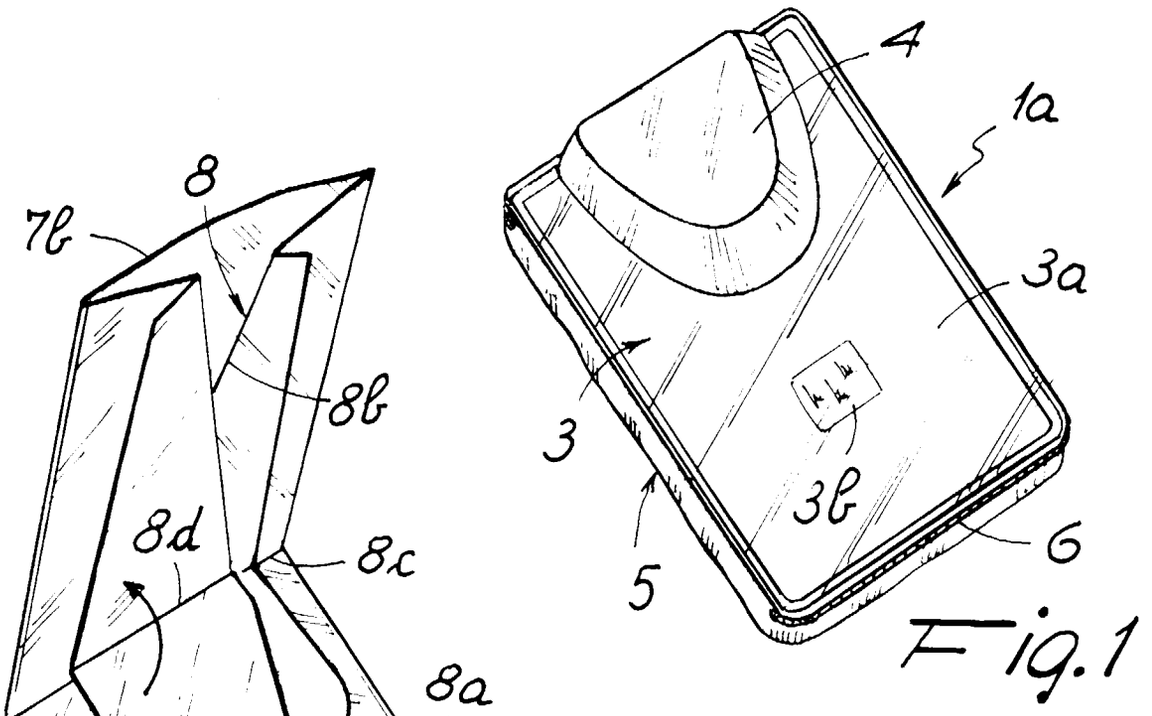


Fig.1

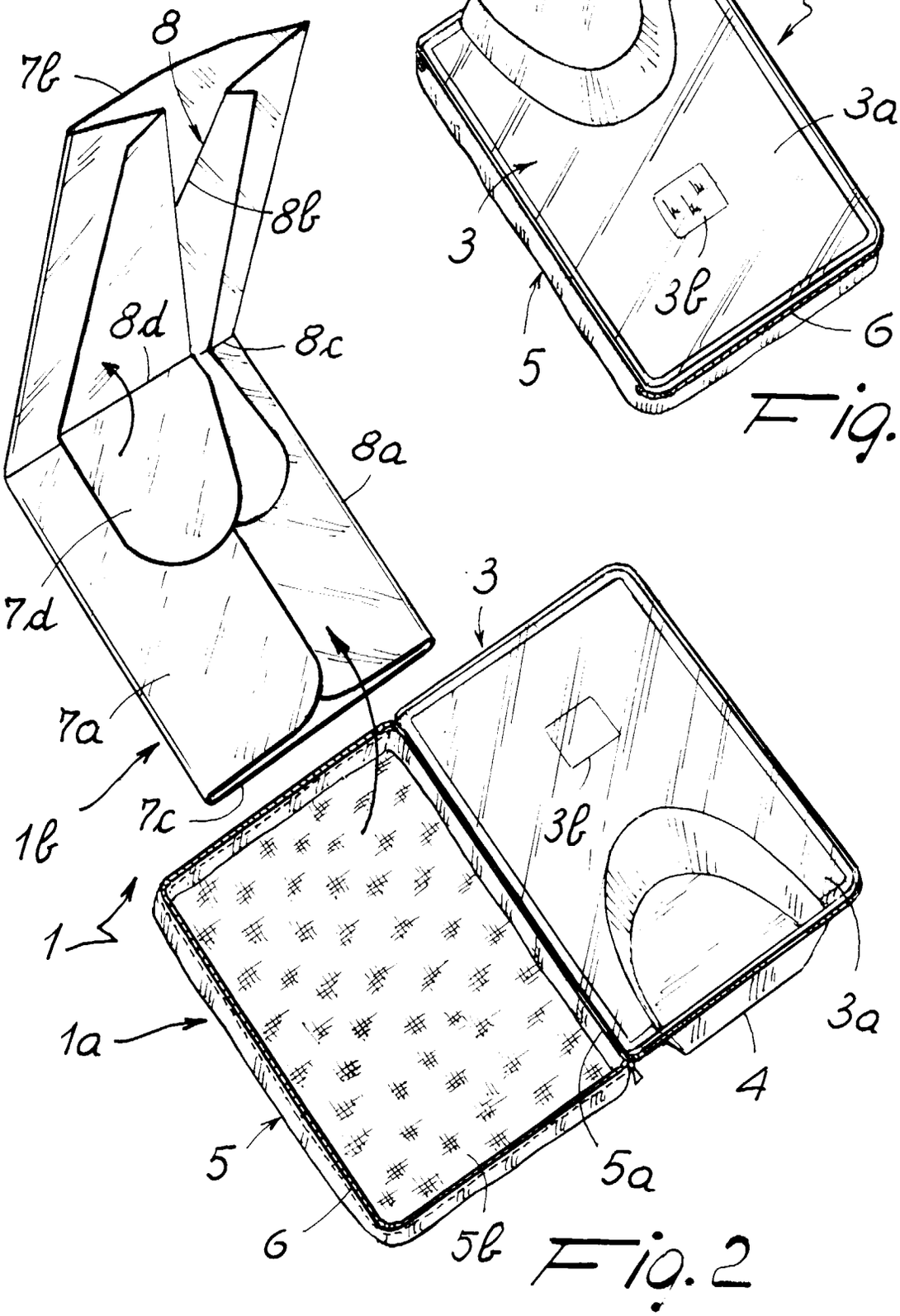
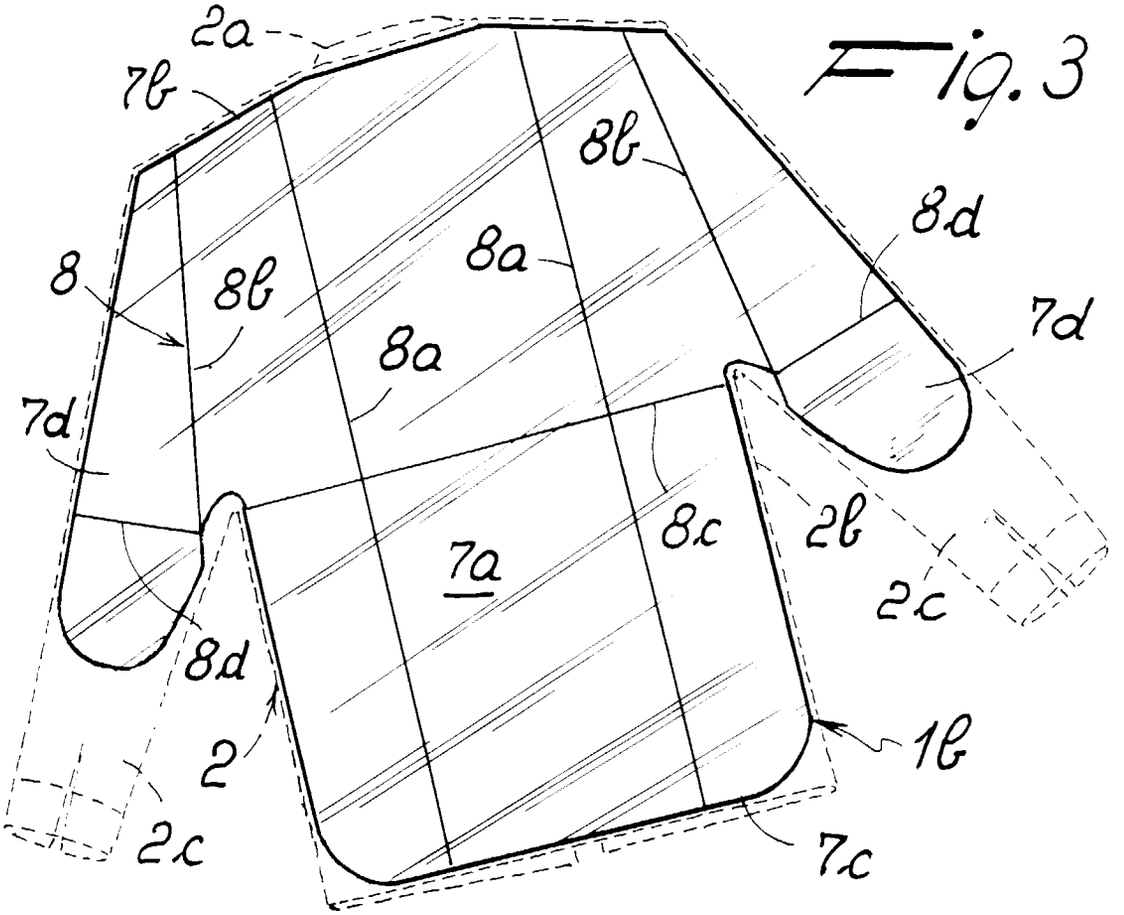


Fig.2


2a
7b
8b
8d
8
8b
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8c
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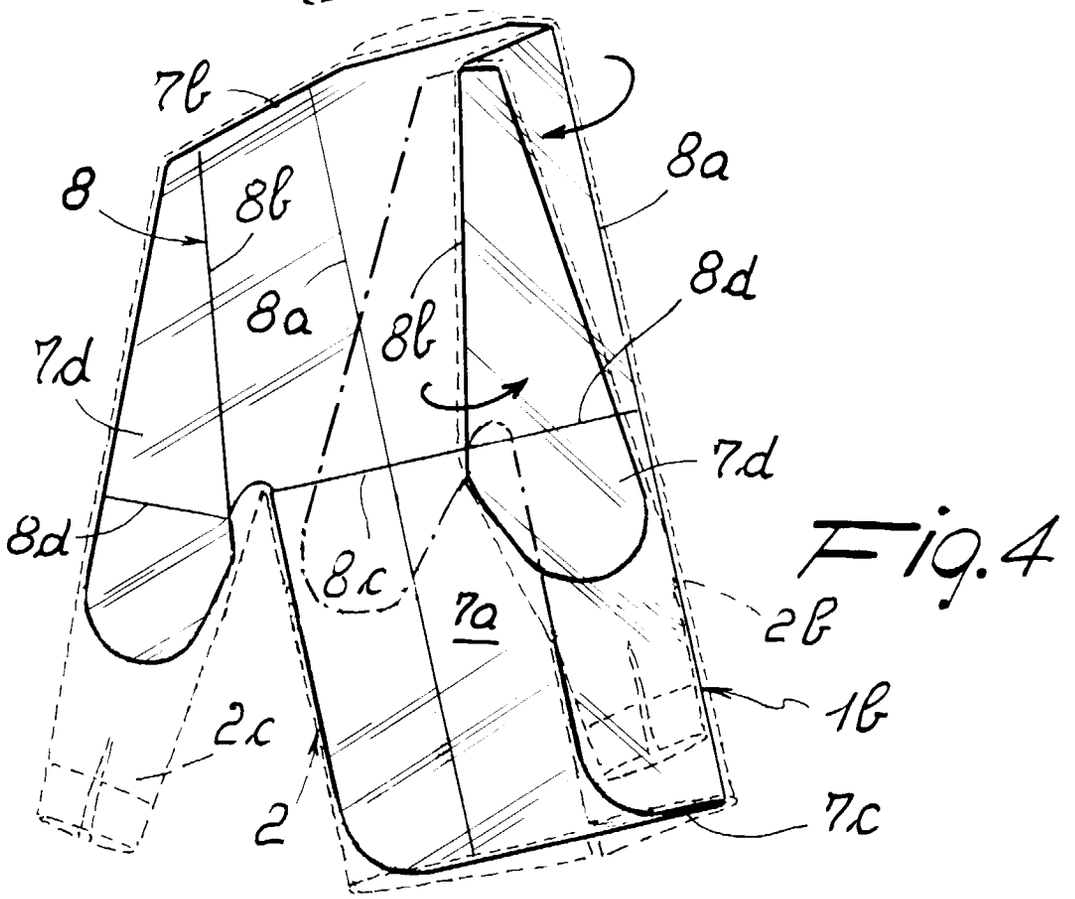
2
1b
2c
7c

Fig. 3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8a
8
8b
8d
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Fig. 4

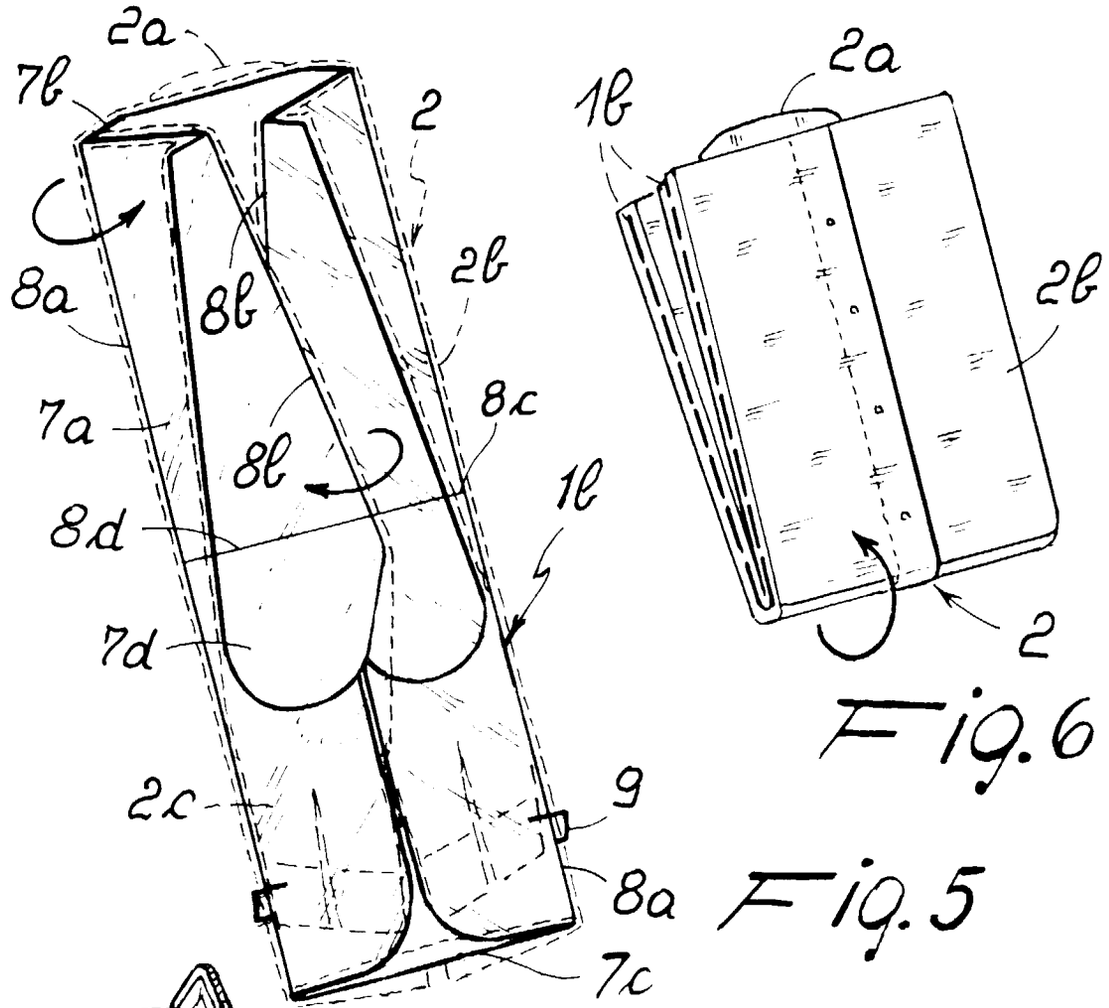

Fig.5

Fig.6

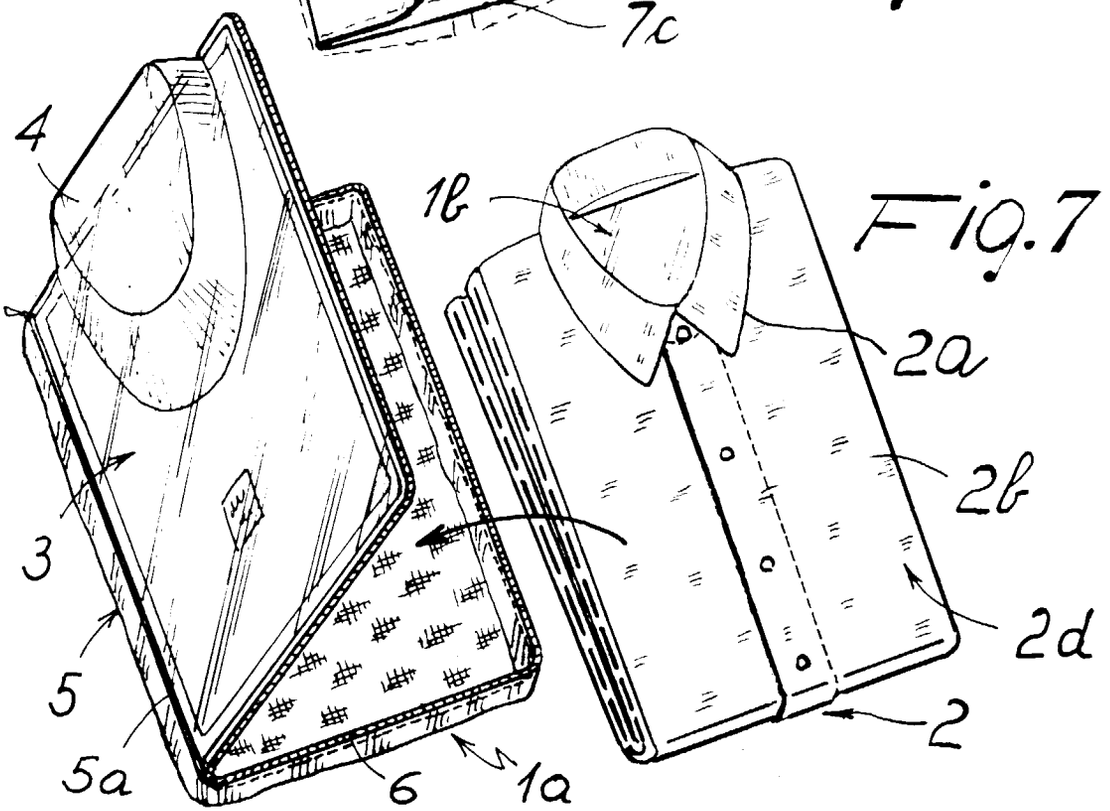

Fig.7

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EUROPEAN SEARCH REPORT

Application Number
EP 97 12 2045

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 A	US 5 154 329 A (DORFMUELLER DANIEL P) * abstract; figures * ---	13 1,6,9	B65D1/00 B65D85/18
X,P A	WO 97 28069 A (CONTE MARIO) * claims 1-3,6-8,11; figures * ---	11 1-5	
A	DE 89 06 024 U (GUSTAV ALBERT GMBH) * the whole document * -----	1,6,9	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	19 March 1998	SERRANO GALARRAGA, J

CATEGORY OF CITED DOCUMENTS

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