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(54) **Spacer and method for packaging stapled bottle capsules**

(57) A packaging system for still or sparkling wine bottle capsules, comprising a tray (5) presenting housing channels (7) for housing rows of stacked capsules (2); a spacer (1) comprising at least one engagement portion (11) to be inserted into an end capsule (2') of the row and

a supporting crosspiece (12) fixed perpendicularly to said engagement portion (11); a cover sheet (14) wrapped about the trays (5) to urge said supporting crosspiece (12) towards said row of capsules (2) to maintain said end capsule (2') spaced from an end of said housing channel (7).

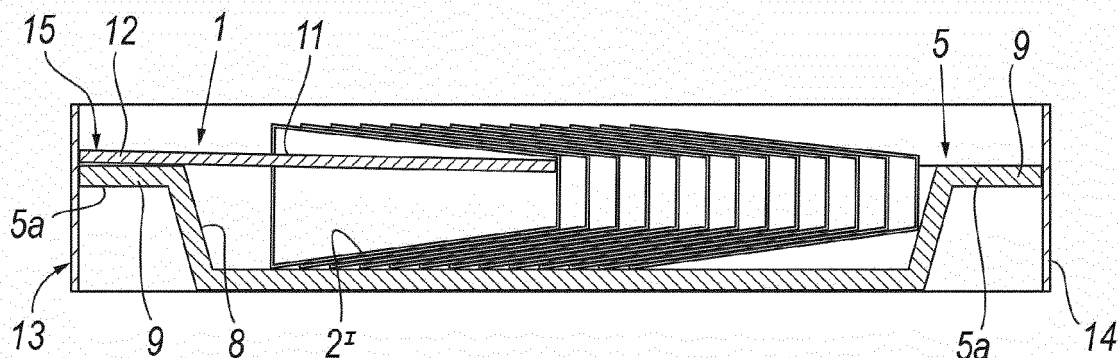


Fig. 7

Description

[0001] The present invention relates to a packaging spacer for wine or other liquid bottle capsules, a packaging system comprising said spacer, and a packaging method using said spacer.

[0002] The present invention finds application in the packaging and subsequent transport of capsules for bottles for example of still wines or sparkling wines. Capsules are hollow elements of substantially frusto-conical shape with one end closed and one end open, produced from sheets of plastic, metal such as aluminium, or poly laminate formed from plastic and metal layers, to be positioned on the corked mouth of bottles containing wine or other liquids.

[0003] Traditional capsules have a substantially flat open end.

[0004] Recently there has been a certain development of capsules with a so-called "medallion", i.e. a rounded protuberance of merely aesthetic purpose positioned at the open end.

[0005] Known capsules are stacked one inside another in rows and disposed in that state in cardboard boxes. Alternatively, the rows of capsules are disposed in trays presenting channels in which the rows are housed spaced apart.

[0006] In this respect the document DE 42 15 611 is known. Unfortunately, the capsules can easily undergo damage during packaging and subsequent transport between the production site and their place of use.

[0007] In particular, the capsules can deform, especially in proximity to the open end, as a result of impact against the box or tray in which they are contained. Even slightly deformed capsules can create serious difficulties for the machines which apply them to bottles, to the extent of blocking the machine.

[0008] In this situation, the technical aim at the basis of the present invention is to propose a packaging spacer for wine bottle capsules, a packaging system comprising said spacer, and a packaging method using said spacer which overcome the aforesaid drawbacks of the known art.

[0009] A particular object of the present invention is to provide a packaging spacer for wine bottle capsules, a packaging system comprising said spacer, and a packaging method using said spacer which enable the integrity of capsules to be preserved during their packaging and subsequent transport, in a simple and economical manner.

[0010] The said technical aim and the specified object are substantially attained by a packaging spacer for wine bottle capsules, a packaging system comprising said spacer, and a packaging method using said spacer comprising the technical characteristics expounded in one or more of the accompanying claims.

[0011] Further characteristics and advantages of the present invention will be more apparent from the indicative and therefore non-limiting description of a preferred

but non-exclusive embodiment of a packaging spacer for wine bottle capsules, a packaging system comprising said spacer, and a packaging method using said spacer, as illustrated in the accompanying drawings, in which:

Figure 1a is a perspective representation of a first embodiment of a sparkling wine bottle capsule;

Figure 1b is a perspective representation of a second embodiment of a sparkling wine bottle capsule;

Figure 2 is a plan representation of a packaging spacer for wine bottle capsules in accordance with the present invention;

Figure 3 is a perspective representation of an element of the packaging system in accordance with the present invention;

Figure 4 is a view from above showing the packaging system of the present invention in a first operative stage;

Figure 5 is a view from above showing the packaging system of Figure 4 in a second operative stage;

Figure 6 is a lateral section through the packaging system in the first operative stage;

Figure 7 is a lateral section through the packaging system in the second operative stage; and

Figure 8 is a lateral section through a preferred embodiment of the packaging system.

[0012] With reference to the accompanying figures, the reference numeral 1 indicates overall a packaging spacer for wine bottle capsules.

[0013] According to the terminology used herein, so-called still wine capsules are used for still wine bottles in which the cork is generally smooth and of substantially conical shape. Sparkling wine capsules are used for sparkling wine bottles which are closed by a mushroom-type cork secured by a metal cage or other type of closure. The present invention relates to both types of capsule.

[0014] With particular reference to Figures 1a and 1b, these show a sparkling wine capsule 2 for bottles intended to contain sparkling wines.

[0015] The capsule 2 is a hollow body substantially of frusto-conical shape having a closed end 2a to be positioned on the cork of a bottle, and an open end 2b enabling the capsule 2 to be mounted on the bottle neck. According to the embodiment shown in Figure 1a, the capsule 2 comprises a projection 3 known as a medallion. The medallion 3 can be of rounded, pointed or of other shapes. It can in fact be of any shape. The medallion 3 has a purely aesthetic purpose.

[0016] Figure 1b shows a sparkling wine capsule without any medallion.

[0017] The capsule 2 is made by folding a sheet which for example can be of plastic, metal such as aluminium, or poly laminate material. This poly laminate material is produced for example by coupling two layers of metal material and one layer of plastic material interposed between the metal layers. Once formed, the capsules 2 are

stacked one in another to form successive rows. In particular the capsules 2 are stacked by inserting the first end 2a of a capsule through the second end 2b of a previous capsule 2. The last mounted capsule 2 in which no further capsule is inserted is known, for the purposes of the present description, as the end capsule 2' with reference to the row of which it forms part. The packaging system for wine bottle capsules comprises at least one tray 3 (Figure 3) in which the rows of capsules 2 formed in this manner are housed. Preferably, the system comprises a plurality of trays 5.

[0018] Each tray 5, which for example can be of the type described in patent DE4215611 in the name of Schneider, comprises a plurality of mutually parallel walls 6 and base walls 10 disposed between pairs of lateral walls 6 to define housing channels 7 in which to position the rows of capsules 2.

[0019] As illustrated, the housing channels 7 are side by side and parallel.

[0020] Each tray 5 comprises end walls 8 at the respective opposite ends of each housing channel 7.

[0021] Each tray 5 also comprises a strip 9 positioned at least at one end of the housing channels 6. The strip 9 defines an edge 5a of the tray 5 and is preferably flat.

[0022] In the preferred embodiment, the strip 9 extends about the entire tray 5.

[0023] As shown, each tray 5 presents seven housing channels 7. In further embodiments, the tray 5 can present any number of housing channels 7.

[0024] Hence, the rows of capsules 2 are disposed in respective housing channels 7, resting on the base walls 10, of a plurality of trays 5.

[0025] When the rows of capsules 2 are disposed in the housing channels 7, the spacer 1 is associated with the rows of capsules 2.

[0026] In this respect, the system comprises a plurality of spacers 1 of a number equal to the number of trays 5 used.

[0027] With reference to Figure 2, each spacer 1 comprises at least one engagement portion 11 to be inserted into one of the end capsules 2' of one of the rows.

[0028] Preferably, each spacer 1 comprises a plurality of engagement portions 11 each associated with a respective row of capsules 2 and, hence, with a respective housing channel 7.

[0029] The engagement portions 11 are disposed substantially parallel.

[0030] In the illustrated embodiment, each spacer 1 comprises seven engagement portions 11.

[0031] In addition, each spacer 1 comprises a transverse connection element 15 connected to the engagement portions 11 to enable them to be moved together.

[0032] In the illustrated embodiment, the transverse connection element 15 comprises a supporting crosspiece 12 fixed to the engagement portions 11. In particular, the supporting crosspiece 12 is perpendicular to the engagement portions 11. Preferably, the engagement portions 11 and the supporting crosspiece 12 are formed

in one piece.

[0033] In an alternative embodiment, not illustrated, the transverse connection element 15 comprises a cord (or any other flexible means) connected to the engagement portions 11 by means, for example, of eyelets disposed on the engagement portions 11.

[0034] Each engagement portion 11 is tapered starting from the supporting crosspiece 12. In other words, the width of the engagement portions 11 decreases starting from the supporting crosspiece 12.

[0035] The width of the supporting crosspiece 12 is between 28 mm and 32 mm. Preferably, the width of the supporting crosspiece 12 is substantially 30.5 mm.

[0036] In an alternative embodiment, not illustrated, each engagement portion 11 is of rectangular shape and is therefore of uniform width.

[0037] If the spacer has seven engagement portions 11, the width of the supporting crosspiece is between 490 mm and 510 mm.

[0038] Preferably, the length of the supporting crosspiece 12 is substantially 490 mm.

[0039] The width of each engagement portion 11 in proximity to that end connected to the supporting crosspiece 12 is between 26 mm and 32 mm.

[0040] Preferably, the width of each engagement portion 11 in proximity to that end connected to the supporting crosspiece 12 is substantially 29.5 mm.

[0041] The width of each engagement portion 11 in proximity to the opposite end to that connected to the supporting crosspiece 12 is between 18 mm and 22 mm. Preferably, the width of each engagement portion 11 in proximity to the opposite end to that connected to the supporting crosspiece 12 is substantially 20 mm.

[0042] The distance between two consecutive engagement portions 11 (or pitch), measured between the respective central axes of symmetry, is related to the number and dimension of the housing channels 7.

[0043] In the preferred embodiment, the distance between two consecutive engagement portions 11 (or pitch), measured between the respective central axes of symmetry, is between 70 mm and 90 mm.

[0044] Preferably, the distance between two consecutive engagement portions 11, measured between the respective central axes of symmetry, is 80 mm.

[0045] Preferably, each spacer 1 is made of corrugated cardboard. Alternatively, other materials can be used, such as plastic materials.

[0046] In accordance with Figure 4, the spacer 1 is associated with a respective tray 5 by inserting the engagement portions 11 of the end capsules 2' of the rows of capsules 2 disposed in the housing channels 7 of the tray 5. In particular, all the engagement portions 11 are inserted into the end capsules 2' simultaneously.

[0047] This operation is carried out by an operator.

[0048] When the spacer 1 is inserted, the supporting crosspiece 12 is disposed in proximity to the edge 5a of the tray 5. In greater detail, the supporting crosspiece 12 is disposed at that edge 5a close to the end capsules 2'.

[0049] When in that position, the supporting cross-piece 12 projects from the edge 5a. More precisely, the supporting crosspiece 12 projects from the strip 9, as can be seen from Figure 4.

[0050] In particular, the distance between the closed end 2a of the end capsule 2' and the end 5a of the trays 5 is preferably less than an overall width of the spacer 1. As already stated, the system preferably comprises a plurality of trays 5.

[0051] In that case, when one of the spacers 1 is inserted into the end capsules 2' of the rows inserted into the tray 5, an empty tray 5 is stacked on the tray 5 which has just been filled, in order for itself to be filled with other rows of capsules 2. Then a further spacer 1 is associated with this latter tray 5. This operation is repeated for the entire plurality of trays 5.

[0052] The system also comprises counteracting means 13 associated with the trays 5 and acting on the spacers to urge the engagement portions 11 towards the rows of capsules 2 to withdraw the end capsules 2', and maintain them withdrawn, from those end walls 8 facing the respective housing channels 7.

[0053] In the illustrated embodiment, the counteracting means 13 act directly on the support crosspieces 12. In that embodiment in which the transverse connection element 15 comprises the cord, the counteracting means 13 act directly on those ends of the engagement portions 11 opposite the entry ends in the end capsules 2a.

[0054] In the preferred but non-exclusive embodiment, the counteracting means 13 comprise a cover sheet 14 of extensible material.

[0055] This cover sheet 14 is wrapped about the stacked trays 5 at least at the edges 5a of the trays 5. Preferably, the cover sheet 14 totally wraps the trays 5.

[0056] By way of example, the cover sheet 14 is made of plastic material such as PVC or the like.

[0057] When wrapped about the trays 5, the cover sheet 14 exerts a force against the supporting crosspieces 12 of the spacers 1, so urging them towards the rows of capsules 2.

[0058] In this manner, the engagement portions 11 touch the closed ends 2a of the end capsules 2' and withdraw them from the respective end walls 8 of the housing channels 7 and bring the first capsule 2 of the row against the opposite end wall 8.

[0059] Consequently, the open ends 2a of the end capsules 2' are prevented from striking the facing end wall 8 and undergoing damage.

[0060] According to a further embodiment, not illustrated, the counteracting means 13 comprise other packaging elements, such as straps, which when wrapped about the trays 5 press against the spacers 1.

[0061] According to a non-illustrated embodiment, the counteracting means 13 comprise at least that end wall 8 facing the end capsule 2'. In that case, the spacer 1 is inserted into the end capsule 2' and restrained against the end wall 8 - which acts as a counteracting means - such as to remain in tension and urge the end capsule

2' away from the end wall 8.

[0062] According to a preferred embodiment, the system also comprises the plurality of capsules 2 contained in the trays 5.

[0063] The system implemented in this manner can be placed on a pallet such as to facilitate its transport.

[0064] The invention thus described attains the specified object.

[0065] In this respect, the use of the described spacer enables the capsules to be quickly packaged, ensuring that they do not move within the trays in which they are contained, hence preventing impact which would deform the capsules and render them unusable.

Claims

1. A packaging system for wine or other liquid bottle capsules, comprising:

- a tray (5) presenting a plurality of housing channels (7) for housing corresponding rows of stacked capsules (2) and an edge (5a) at at least one end of said housing channels (7);

- a spacer (1) comprising a plurality of engagement portions (11) to be inserted into an end capsule (2') of each row of stacked capsules (2) and a supporting crosspiece (12) connected to said engagement portions (11) to enable them to be moved together;

- said supporting crosspiece (12) projecting from a preferably flat strip (9) defining said edge (5a);
- counteracting means (13) associated with the tray (5) to urge said spacer (1) towards said row of capsules (2) to maintain said end capsule (2') spaced from an end of said housing channel (7).

2. A system as claimed in claim 1, **characterised in that** said engagement portions (11) touch closed ends (2a) of the end capsules (2') to withdraw them from said ends of said housing channels (7).

3. A system as claimed in claim 1 or 2, **characterised in that** said counteracting means (13) comprise at least one packaging element wrapped about the tray (5) at least at said strip (9).

4. A system as claimed in claim 3, **characterised in that** said packaging element comprises at least one cover sheet (14) of extensible material.

5. A system as claimed in any one of the preceding claims, **characterised by** comprising a plurality of said trays (5) stacked one on another, and a corresponding plurality of spacers (1), each associated with a respective tray (5).

6. A packaging method for still or sparkling wine cap-

sules, comprising the steps of:

- preparing a spacer (1) having a supporting crosspiece (12) and a plurality of engagement portions (11) connected transversely to said supporting crosspiece (12); 5
- stacking a plurality of capsules (2) one in another to define a plurality of rows of capsules;
- placing said rows of capsules (2) in respective housing channels (7) of a tray (5); 10
- inserting said engagement portions (11) of said spacer (1) into end capsules (2') of the rows such that said supporting crosspiece (12) projects from a preferably flat strip (9) defining said edge (5a) of said tray (5); 15
- urging said spacer (1) towards said row of capsules (2) such as to maintain said end capsules (2') spaced from the ends of said housing channels (7). 20

7. A method as claimed in claim 6, **characterised in that** said engagement portions (11) touch the closed ends (2a) of the end capsules (2') to withdraw them from said ends of said housing channels (7). 25
8. A method as claimed in claim 6 or 7, **characterised in that** the step of urging the supporting crosspiece (12) comprises the step of wrapping said tray (5), at least at said strip (9) of said edge (5a), with at least one packaging element. 30
9. A method as claimed in any one of claims from 6 to 8, **characterised by** comprising the steps of superposing a plurality of trays (5) containing a plurality of rows of capsules (2) prior to the step of urging said spacers (1). 35
10. A method as claimed claim 9, **characterised by** comprising the step urging the plurality of spacers (1) towards said rows of capsules (2) such as to maintain said end capsules spaced from respective ends of said housing channels (7); said step being achieved by wrapping said plurality of trays (5), at least at respective edges (5a), with at least said packaging element. 40 45
11. A packaging spacer for still or sparkling wine capsules, comprising:
 - a plurality of engagement portions (11) each adapted to be inserted into a corresponding end capsule (2') of corresponding capsule rows aligned within a tray (5) defining housing channels (7); said engagement portions (11) being substantially mutually aligned; 50 55
 - at least one supporting crosspiece (12) disposed transversely to said engagement portions (11) and connected to said engagement por-

tions (11); said engagement portions (11) being adapted to be urged towards said rows of capsules to maintain said end capsules spaced from an edge of said housing channel (7).

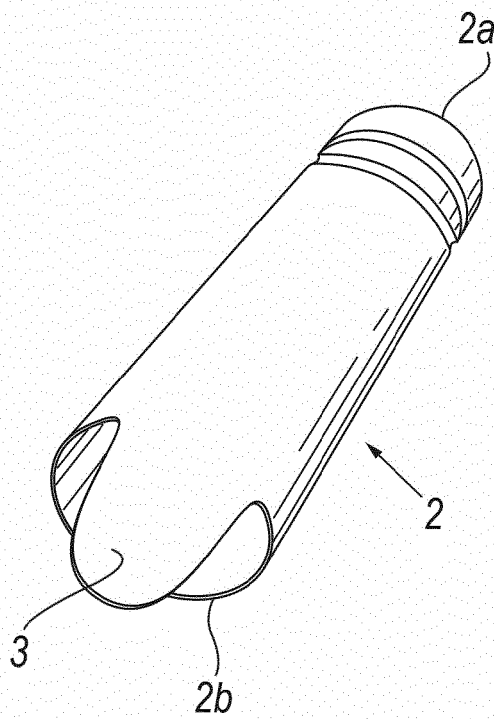


Fig. 1a

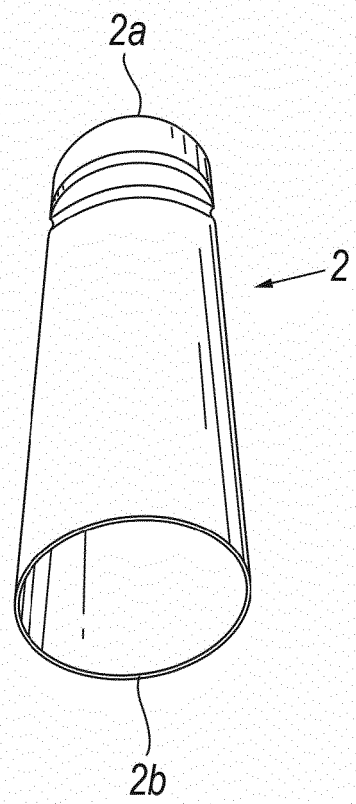


Fig. 1b

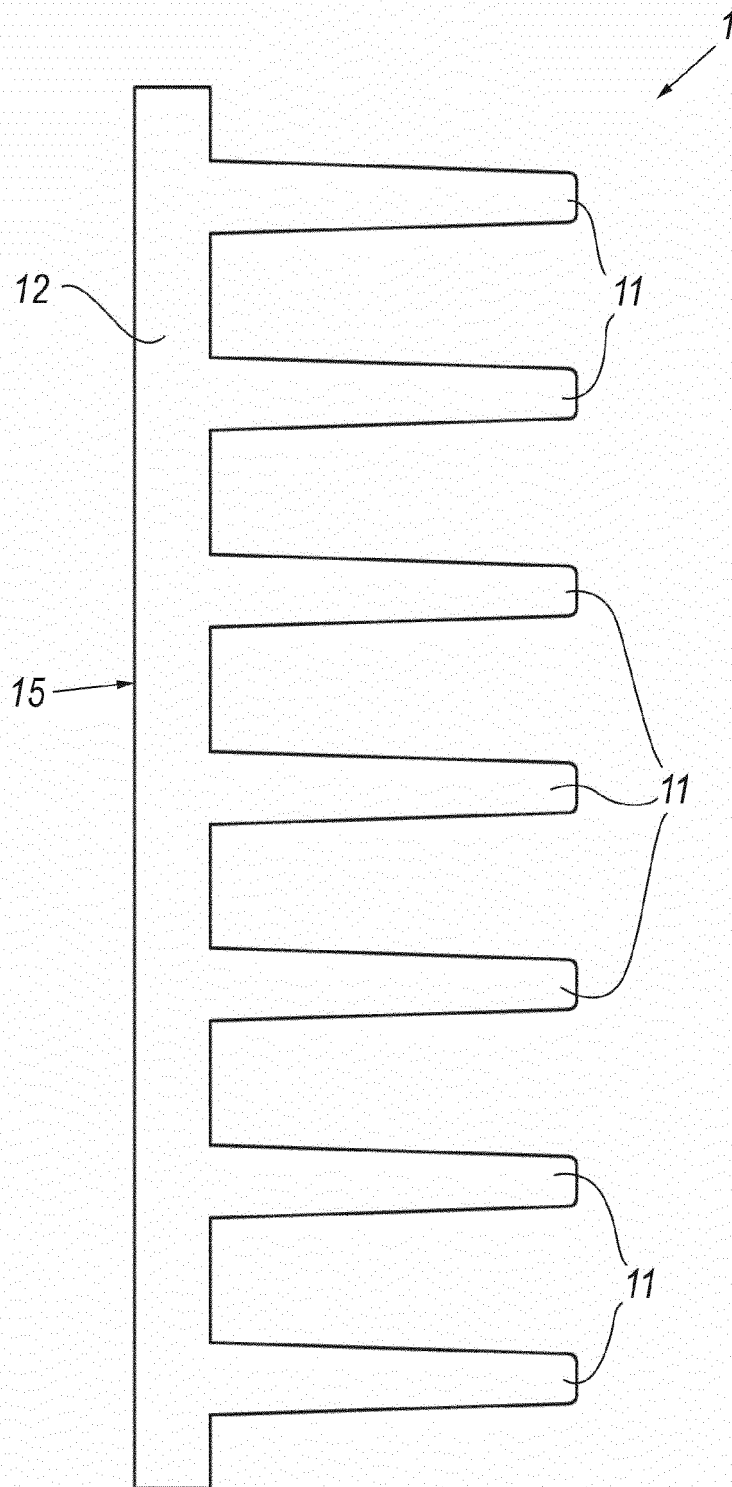
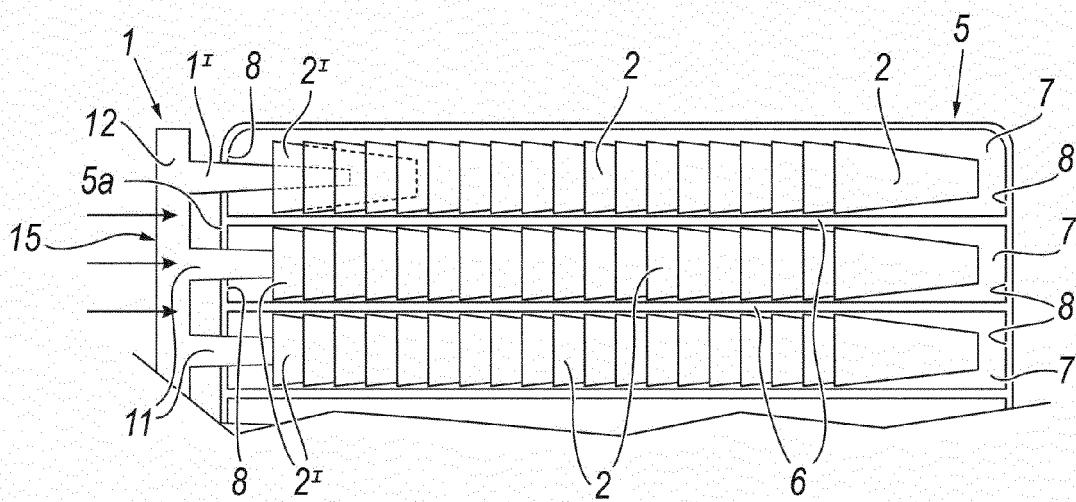
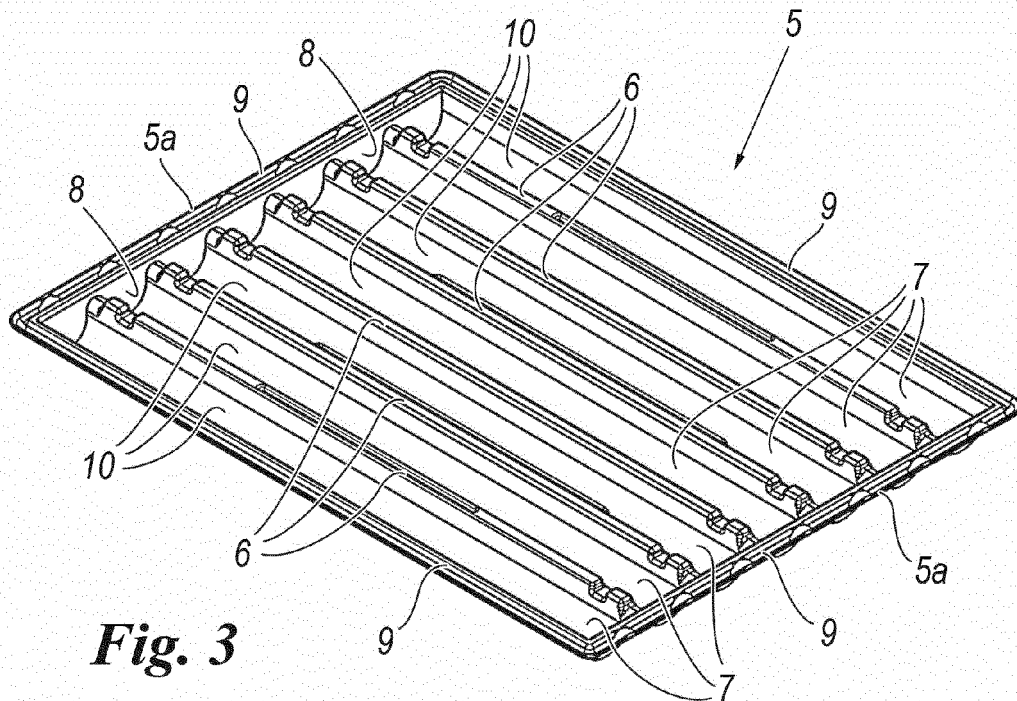


Fig. 2



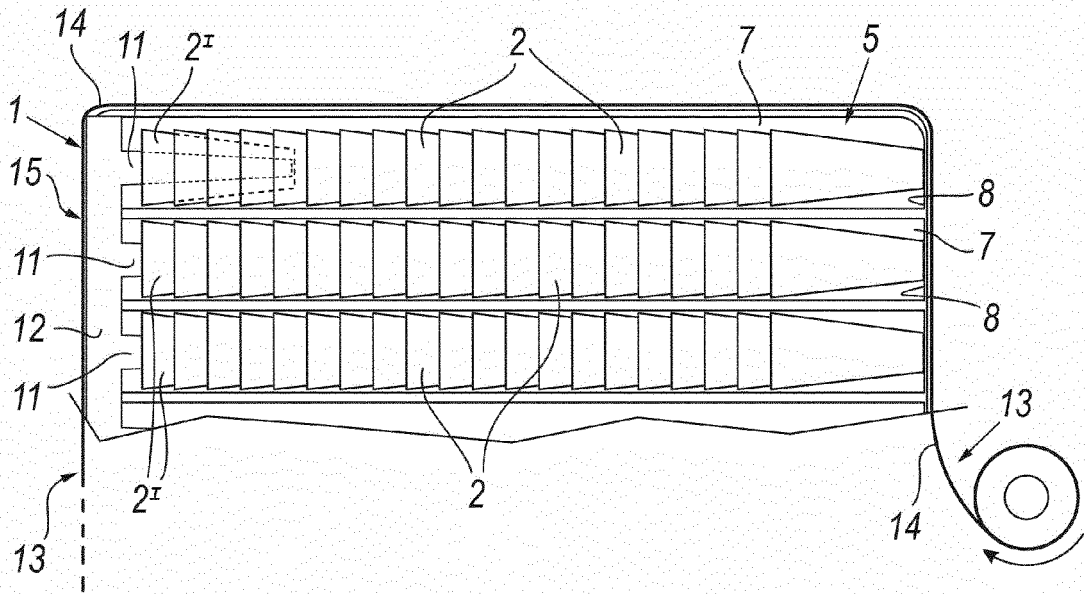


Fig. 5

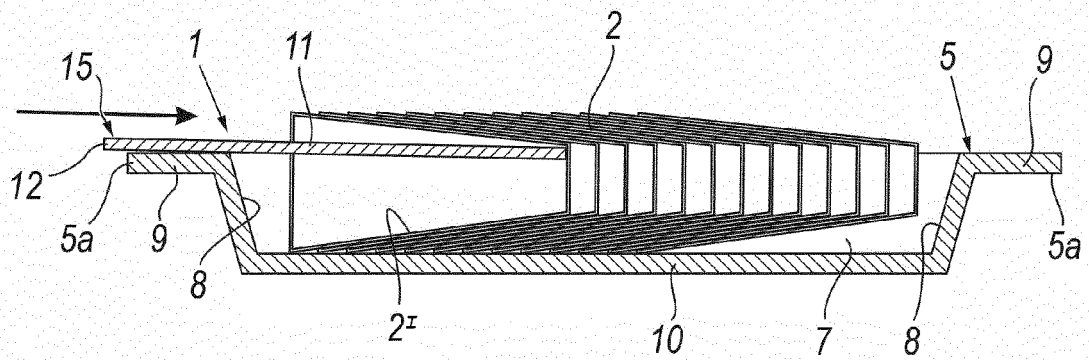


Fig. 6

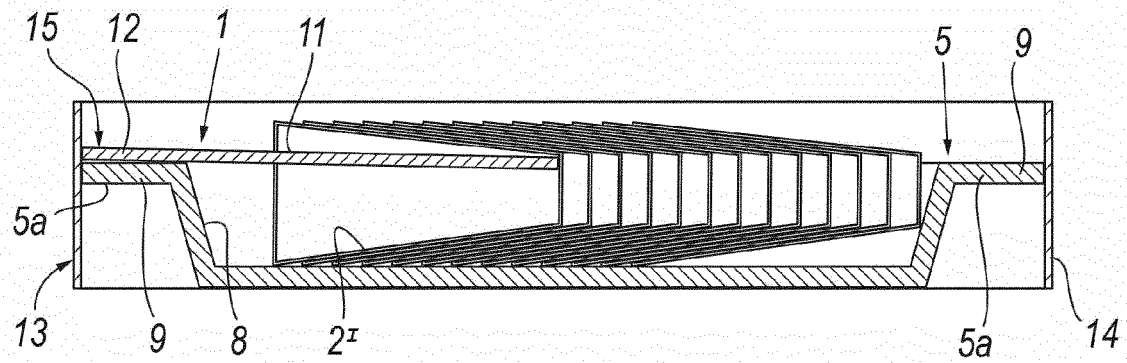


Fig. 7

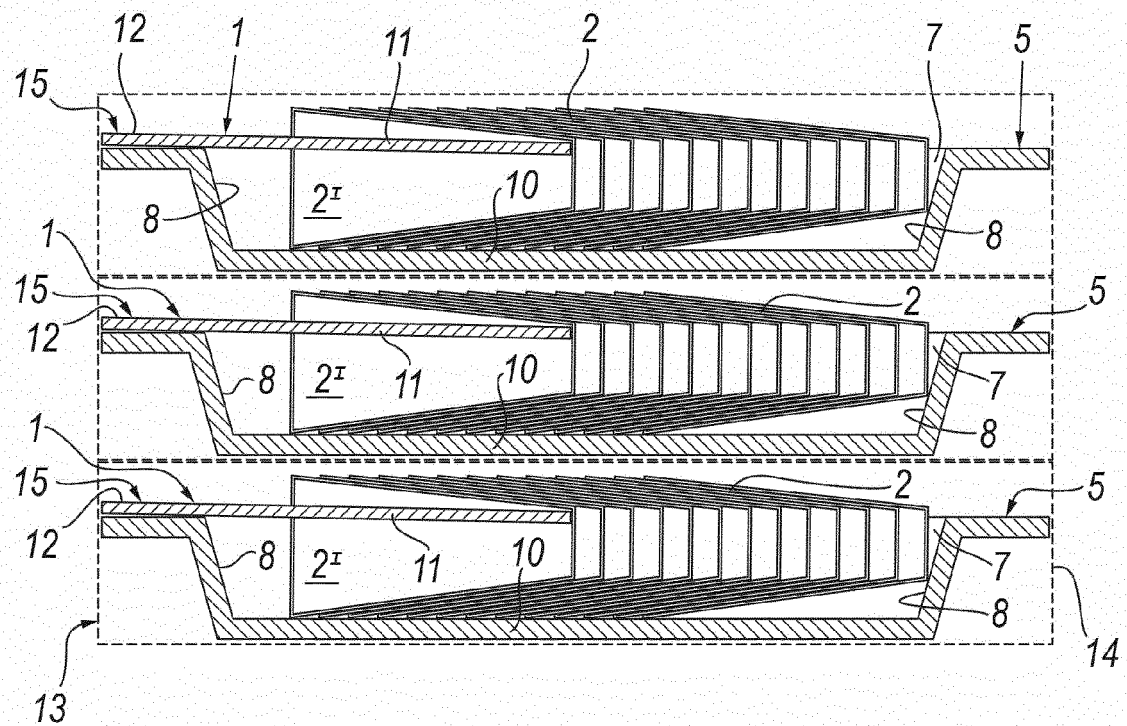


Fig. 8



EUROPEAN SEARCH REPORT

Application Number
EP 13 16 2471

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	DE 42 15 611 A1 (SCHNEIDER PH DRAHT & METALLFAB [DE]) 18 November 1993 (1993-11-18) * abstract * * column 5, line 26 - line 27 * * column 4, line 27 - line 29 * * figures 1-3, 4-6 *	1-11	INV. B65D25/10
A	US 2010/163067 A1 (WYNNE CHARLOTTE [US]) 1 July 2010 (2010-07-01) * abstract * * figures 1,6 *	11	
A	US 2004/195115 A1 (COLOMBO EDWARD A [US]) 7 October 2004 (2004-10-07) * abstract * * figure 7a * * paragraph [0061] *	3,4,8,10	
A	US 2012/037176 A1 (ITO MICHIAKI [JP]) 16 February 2012 (2012-02-16) * abstract * * figure 9 *	11	TECHNICAL FIELDS SEARCHED (IPC) B65D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 6 September 2013	Examiner Damiani, Alberto
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 13 16 2471

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REFERENCES CITED IN THE DESCRIPTION

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