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(54) **Universal holding element**

(57) The subject matter of the patent application is an universal holding element that comprises a base, a fastening element that is substantially parallel to the base and the fastening element is connected to the base along a part of its outer limits by means of an oblique side wall. The subject of the patent application is also the use of such an universal holding element in a display and/or advertising construction and a display and/or advertising construction that comprises such an universal holding element.

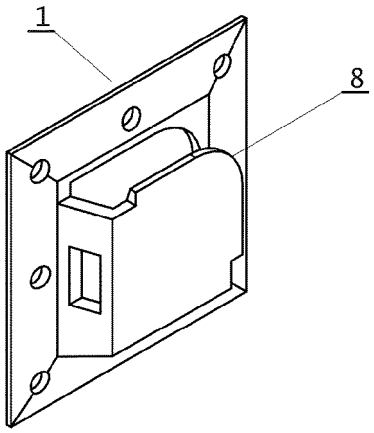


Fig. 1

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Description

[0001] The subject of the invention is an universal holding element intended for use in display and/or advertising constructions of cardboard or carton board.

[0002] The present invention concerns an universal holding element intended for use in different display and/or advertising constructions of cardboard or carton board, e.g. display-advertising racks conveying advertising or promotional information at points of sale.

[0003] Many display and/or advertising constructions of cardboard or carton board are known in the art in which are used different assembly systems that allow mounting of elements of such constructions and fixing their position to each other. A collapsible display rack is known from the Polish patent specification PL212265 B1 in which is used an assembly system made up of hitching elements in the form of catches and fixing elements in the form of locks, and the catches have a recess extending centrally through the opposite wall to the side surface of the body, the catches have a lower wall and the locks are made up of two flat surfaces. The flat surfaces of the locks are connected by means of a connector. Strengthening elements in the form of a shaft are arranged crosswise on the external flat surface of the locks. The assembly system used in this solution requires the use of a pair of elements and each of the elements of such a pair has a different structure. Therefore, in case of need these elements can't replace each other freely and it is also necessary to use two different moulds for their manufacture, and as a consequence such a system is difficult to use and its manufacture is relatively complicated.

[0004] Further, a collapsible cardboard display rack is known from the US patent specification US4582003 in which is used an assembly system comprising an elastic band element and a pair of formed supporting elements of a shelf, one at each end of the elastic band. Each of the formed supporting elements of a shelf has a lock of a side wall that is connected by means of a bended connecting element to a carrying area, which has a flange extending downwards, supporting a side wall and a mandrel extending upwards, mating a hole in the shelf. Such a system requires the use of two different elements made of different materials and therefore it is difficult to use and its manufacture is relatively complicated, and in the case of damage to the elastic bands the assembly system stops performing its function.

[0005] The subject matter of the invention is an universal holding element characterized in that it comprises a base, a fastening element that is substantially parallel to the base and the fastening element is connected to the base along a part of its outer limits by means of an oblique side wall.

[0006] Moreover, the holding element of the present invention is characterized in that a fastening element is connected to a base at least along a part of its outer circumference by means of an oblique side wall.

[0007] Moreover, the holding element according to the present invention is characterized in that its base comprises a hole arranged centrally below a fastening element.

[0008] Moreover, the holding element according to the present invention is characterized in that an oblique side wall between a fastening element and a base extends into at least two adjacent sides of the fastening element.

[0009] Moreover, the holding element according to the present invention is characterized in that the angle of oblique side wall inclination is within the range of 65° to 90°.

[0010] Moreover, the holding element of the present invention is characterized in that the angle of oblique side wall inclination is within the range of 69° to 73° and in particular 71,4°.

[0011] Moreover, the holding element according to the present invention is characterized in that an inner side of a fastening element comprises blocking elements.

[0012] Moreover, the holding element according to the present invention is characterized in that its base comprises means for spreading a glue and in particular holes and/or grooves.

[0013] Moreover, the holding element according to the present invention is characterized in that an oblique side wall comprises latch gap and the holding element base comprises latch projections arranged below the latch gaps.

[0014] Moreover, the holding element according to the present invention is characterized in that it comprises at least two gaps arranged in the oblique side walls and latch splines fitted to these gaps.

[0015] Moreover, the holding element according to the present invention is characterized in that its base has a square-form.

[0016] Moreover, the holding element according to the present invention is characterized in that a fastening part has a nearly square-form.

[0017] Moreover, the subject matter of the invention is also the use of an universal holding element in a display and/or advertising construction.

[0018] Moreover, the subject matter of the invention is also a display and/or advertising construction that comprises an universal holding element.

[0019] The use of the universal holding element of the present invention allows an elimination of the necessity of using assembly systems that comprise several elements that have a different structure and are made of different materials. In particular, we obtain an universal holding element that performs the same functions as the assembly systems known from the state of the art, but which provides the possibility of obtaining many different types of fixing means. For the manufacture of the universal holding element is needed only one mould, which considerably simplifies the manufacturing process and the use.

[0020] The subject of the invention in preferable embodiment is presented in a more detailed manner in the following drawings:

Fig. 1 is a front perspective view of the holding element;
Fig. 2 is a back perspective view of the holding element;
Fig. 3 is a back view of the holding element;
Fig. 4 is a front view of the holding element;
Fig. 5 is a A-A sectional view of the holding element of Fig. 1-4;
Fig. 6 is a B-B sectional view of the holding element of Fig. 1-4;
Fig. 7 is a view of one side of the holding element;
Fig. 8 is a view of another side of the holding element;
Fig. 9 is a view of the empty universal fastening seat;
Fig. 9A is a sectional view of the fastening seat of Fig. 9;
Fig. 10 is a front view of the holding element of the present invention fastened in the fastening seat of Fig. 9;
Fig. 10A is a sectional view of the holding element of Fig. 10;
Fig. 11 is a view of the empty L-shaped fastening seat;
Fig. 11A is a sectional view of the holding element of the present invention fastened in the fastening seat of Fig. 10;
Fig. 12 is a view of the holding element mounted in the right position in the fastening seat of Fig. 9;
Fig. 12A is a view of the holding element mounted in the left position in the fastening seat of Fig. 9;
Fig. 13 is a sectional view of the holding element mounted on a single corrugated cardboard panel in the fastening seat;
Fig. 13A is a sectional view of the fastening by means of glue joints of the holding element of the present invention mounted on a single corrugated cardboard panel in the fastening seat;
Fig. 13B is a view of the directions of glue spread during the fastening of the holding element of Fig. 13A;
Fig. 13C is a sectional view of the glue joint of the holding element of the present invention fastened on a single corrugated cardboard panel;
Fig. 14 is a view of the fastening by means of glue joints of the holding element of the present invention between two panels of corrugated cardboard;
Fig. 14A is a view of the directions of glue spread during the fastening of the holding element of Fig. 14;
Fig. 14B is a sectional view of the glue joint of the holding element of the present invention fastened between two panels of corrugated cardboard;
Fig. 15 is a sectional view through the holding elements of the present invention according to the first example of use after fixing the position of the holding elements to each other;
Fig. 15A is a sectional view of the initial position of the holding elements of the present invention fastened on elements of corrugated cardboard according to the first example of use;
Fig. 15B is a sectional view of the final position of the holding elements of the present invention fastened on elements of corrugated cardboard according to the first example of use;

[0021] The universal holding element of the present invention shown in Fig. 1 through Fig. 8 comprises a square-shaped base 2 and a fastening element 3 that is above and parallel to the base, and the base 2 comprises a hole 11 that has a form fitted to the fastening element 3, which is arranged centrally above the hole 11 and connected with the base 2 by means of an oblique side wall 12 arranged on two adjacent edges of the hole 11 of the base 2 and accordingly on two adjacent edges of the fastening element 3.

[0022] The bottom side of the base 2 has an flat surface 10, whereas the top side of the base 2 is inclined from a sealing edge 14 to the external edge of the base 2. The base 2 comprises glue holes 4 arranged accordingly at its outer circumference.

[0023] The hole 11 at the edges on which is arranged the oblique side wall 12 comprises latch splines 7 that are flat, half-round and directed towards the interior of the hole 11 projections. Rectangular latch holes 6 are arranged on the oblique side wall 12 above the latch splines 7.

[0024] A corner 8 of the fastening element 3 is rounded at the site where its free edges converge. The inner side of the fastening element 3 comprises a blocking element 5 that has the form of an irregular projection and is arranged at the free edges and the rounded corner 8 of the fastening element 3. The blocking element 5 has substantially such a form and is positioned such that extends at most to the half of the length of the fastening element 3 and the blocking element 5 from the side of the free edges and the rounded corner 8 has an oblique surface that facilitates snapping in.

[0025] Such a structure of the holding element allows an easy and fast mounting as well as positioning of the holding element of the present invention, even without using a glue.

[0026] The square form of the base allows a mounting of the holding element in any position, in the right (Fig. 12A) and also left position (Fig. 12B), and the holding element is mounted in fastening seats, which can have the form of square-shaped universal fastening seats (Fig. 9, 9A, 10, 10A), nearly L-shaped fastening seats (Fig. 11, 11A) or upside down letter 'L' according to the holding element position.

[0027] The properties of materials such as corrugated

cardboard cause that during the process of production of elements with the use of corrugated cardboard in the areas of cuts for holding elements durable indentations form and corrugated cardboard thickness decreases in this area (Fig. 9, 9A), the fastening seats 15 are formed in such a way. In order to level the effects of such a decrease in corrugated cardboard thickness the top side of the base 2 has an inclined surface 9 and the bottom side of the base 2 has a flat surface 10 as shown in Fig. 7 and Fig. 8. The inclined surface 9 levels the loss of corrugated cardboard thickness and the flat surface 10 faces the not indented surface of the corrugated cardboard, as shown in Fig. 10A, 11A.

[0028] The holding element of the present invention can be mounted on a single sheet of corrugated cardboard in the fastening seat 15, as shown in Fig. 10A and Fig. 11A, or a second sheet of corrugated cardboard can be fastened on the holding element mounted in the fastening seat 15, as shown in Fig. 14, 14A, 14B. Because of the glue holes 4 arranged in the base 2 the holding element can be additionally fastened by means of a glue on a corrugated cardboard panel. The glue holes 4 increase the glue binding area and facilitate the glue spread between the connected surfaces and the glue excess carrying off.

[0029] The method of fastening by means of glue joints of the holding element on a single panel of corrugated cardboard is represented in Fig. 13, 13A, 13B, 13C. The glue 17 is applied directly on the corrugated cardboard around the fastening seat 15 at the glue holes 4 height. The sealing edge 14 of the holding element 1 brought in into a prepared in such a way fastening seat 15 contacts the corrugated cardboard around the edge 16 of the fastening seat 15 causing a self-sealing of these edges, which protects against excessive glue outflow. Whereas during the pressing down of the holding element 1 on corrugated cardboard, a part of the glue 17 is pushed out towards the external edge of the base 2 as a result of the decrease of the gap 18 formed between the cardboard surface and the inclined surface 9 of the top surface of the base 2, which forms an inner joint 19. The rest of the glue 17 flows through the glue holes 4 and runs out around these holes on the flat surface 10 of the bottom side of the base 2 where after becoming congealed it forms an external joint 20 that has a shape resembling a rivet head.

[0030] The method of fastening the holding element 1 between the two sheets of corrugated cardboard 23, 24 that are connected by means of the same glue joint is represented in Fig. 14, 14A, 14B. After mounting the holding element 1 in the fastening seat 15 arranged on the first sheet of corrugated cardboard 23, the glue 17 is supplied directly on the outer limits of the flat surface 10 of the bottom side of the base 2 at the glue holes 4 height (Fig. 14). A part of the glue 17 runs out on the flat surface 10 of the bottom side of the base 2 in the directions shown in Fig. 14A and after pressing down the second sheet of cardboard 24 it forms an inter-surface joint 21 between the flat surface 10 and the second sheet of corrugated cardboard 24. As shown in Fig. 14B, the rest of the glue 17 that is flowing through the glue holes 4 and can't flow in towards the interior of the holding element due to the self-sealing by the sealing edge 14, runs through the gap 18 towards the external edge of the base 2. As shown in Fig. 14A, after pressing down all the elements the rest of the glue 17 forms the inner joint 19' between the inclined surface 9 of the top surface of the base 2 and the indented surface around the fastening seat 15. The first and the second sheet of corrugated cardboard 23, 24 become stuck together directly at the glue holes 4 and at the external surface of the base 2 through an edge joint 22 formed by means of the glue 17 pushed out beyond the outer circumference of the base 2.

[0031] The holding elements can be used in display and/or advertising constructions of cardboard, carton board or similar materials where they make it possible to form separable fastenings between elements of such constructions.

[0032] Three examples of the use of holding elements according to the present invention in constructions of cardboard, carton board or similar materials such as display racks are represented in Fig. 15 through 17B.

[0033] The first example of the use of the holding element 1 for connecting together elements of relatively rigid and resistant materials such as corrugated cardboard is shown in Fig. 15, 15A and 15B. Two holding elements 1', 1" of the present invention are fastened on two elements 25, 26 of corrugated cardboard with the method represented in Fig. 14, 14A, 14B and the first holding element 1' is fastened in such a way that the rounded corner 8' of the fastening element 3' of the first holding element 1' is directed downwards, whereas the second holding element 1" is fastened in such a way that the rounded corner 8" of the fastening element 3" of the second holding element 1" is directed upwards. Moreover, the external surfaces 13', 13" of the fastening elements 3', 3" of the holding elements 1', 1" are directed towards each other. In order to fix the position of the elements 25, 26 of corrugated cardboard, these elements are shifted in relation to each other in the direction shown by the arrow in Fig. 15A and during this shifting the external surfaces 13', 13" of the fastening elements 3', 3" of each of the holding elements contact the inner surfaces 27, 27' of the elements 25, 26 of corrugated cardboard. The elements 25, 26 of corrugated cardboard are shifted in relation to each other in the direction shown by the arrow in Fig. 15A till the blocking elements 5', 5" of the holding elements 1', 1" pass each other, i.e. the position of the holding elements 1', 1" become fixed in relation to each other, as shown in Fig. 15 and 15B.

[0034] The second example of the use of the holding element for connecting together elements of very flexible materials such as carton board is represented in Fig. 16, 16A, 16B. Two holding elements 1', 1" of the present invention are arranged on the two 28, 29 elements made of carton board. The holding element 1" is brought in into

the L-shaped fastening seat 15 (Fig. 11) cut out in the element 29 made of carton board, whereas the glue 17 is applied on the inclined surface 9 on the board around the fastening seat 15 at the glue holes 4 height. The holding element 1' is brought in into the square-shaped universal fastening seat 15 (Fig. 9) cut out in the element 28 made of carton board whereas the glue 17 is applied on the flat surface 10 on the board around the fastening seat 15 at the glue holes 4 height. The rounded corners 8', 8" of the fastening elements 3', 3" of the holding elements 1', 1" are positioned in the same direction, i.e. upwards. Moreover, the holding elements 1', 1" are positioned parallel to each other in such a way that the top surface of the fastening element 3" of the second holding element 1" is opposite to the flat surface 10' of the base 2' of the first holding element 1'. In order to fix the position of the elements 28, 29 made of carton board in relation to the hole 11 of the first holding element 1', the rounded corner 8" of the fastening element 3" of the second holding element 1" is brought in till the snapping in splines 7' of the first holding element 1' snap on the snapping in holes 6" of the second holding element 1" fixing the position of the holding elements 1', 1" and at the same time that of the elements 28, 29 made of carton board in relation to each other (Fig. 16B).

[0035] The third example of the use of a single holding element is represented in Fig. 17, 17A, 17B. The holding element 1 of which rounded corner 8 of the fastening element 3 is directed downwards is mounted on the first element 25' made of corrugated cardboard. The fixing seat 30 is made in the inner surface of the second element 26' made of corrugated cardboard. In order to fix the position of the elements 25', 26' made of corrugated cardboard, the fastening element 3 is brought in into the fixing seat 30 and then the first element 25' made of corrugated cardboard is shifted in relation to the second element 26' in the direction shown by the arrow in Fig. 17A till its position becomes fixed in the fixing seat 30. The fixing seat 30 can be made of materials such as polypropylene, solid fibreboard, corrugated cardboard E or carton board according to the desired strength of the fixing joint.

[0036] Increasing the number of fixing seats manifold on the surface of a construction element allows some kind of regulation of joint height.

Claims

1. Universal holding element **characterized in that** it comprises
   a base (2),
   a fastening element (3) that is substantially parallel to the base (2) and
   the fastening element (3) is connected to the base (2) along a part of its outer circumference by means of an oblique side wall (12).

2. Holding element according to claim 1 **characterized in that** a fastening element (3) is connected to the base (2) along at least a half of its outer circumference by means of an oblique side wall (12).

3. Holding element according to claim 1 or 2 **characterized in that** its base (2) comprises a hole (11) arranged centrally below a fastening element (3).

4. Holding element according to any of claims 1 to 3 **characterized in that** an oblique side wall (13) between a fastening element (3) and the base (2) extends at least into two adjacent sides of the fastening element (3).

5. Holding element according to any of claims 1 to 4 **characterized in that** the angle of oblique side wall (12) inclination is within the range of 65° to 90°.

6. Holding element according to any of claims 1 to 4 **characterized in that** the angle of oblique side wall (12) inclination is within the range of 69° to 73° and in particular 71,4°.

7. Holding element according to any of claims 1 to 6 **characterized in that** an inner side of the fastening element (3) comprises blocking elements (5).

8. Holding element according to any of claims 1 to 7 **characterized in that** its base (2) comprises means for spreading a glue and in particular holes and/or grooves.

9. Holding element according to any of claims 1 to 8 **characterized in that** an oblique side wall (12) comprises latch holes (6) and the base (2) comprises latch splines (7) arranged below the latch holes (6).

10. Holding element according to claim 9 **characterized in that** it comprises at least two holes (6) arranged in the oblique side walls (12) and latch splines (7) fitted to these holes.

11. Holding element according to any of claims 1 to 10 **characterized in that** its base (2) has a square-form.

12. Holding element according to any of claims 1 to 11 **characterized in that** a fastening part (3) has a nearly-square-form.

13. Use of the universal holding element according to any of claims 1 to 12 in a display and/or advertising construction.

14. The display and/or advertising construction comprising an universal holding element according to any of claims 1 to 12.

Amended claims in accordance with Rule 137(2) EPC.

1. Universal holding element comprising
a base (2),
a fastening element (3) that is substantially parallel to the base (2) and
the fastening element (3) is connected to the base (2) along a part of its outer circumference by means of an oblique side wall (12).
characterized in that
a base (2) comprises a hole (11) arranged centrally below a fastening element (3), and a hole (11) is of a size enabling attaching two universal holding elements in parallel.

2. Holding element according to claim 1 **characterized in that** a fastening element (3) is connected to the base (2) along at least a half of its outer circumference by means of an oblique side wall (12).

3. Holding element according to any of claims 1 to 2 **characterized in that** an oblique side wall (13) between a fastening element (3) and the base (2) extends at least into two adjacent sides of the fastening element (3).

4. Holding element according to any of claims 1 to 3 **characterized in that** the angle of oblique side wall (12) inclination is within the range of 65° to 90°.

5. Holding element according to any of claims 1 to 3 **characterized in that** the angle of oblique side wall (12) inclination is within the range of 69° to 73° and in particular 71,4°.

6. Holding element according to any of claims 1 to 5 **characterized in that** an inner side of the fastening element (3) comprises blocking elements (5).

7. Holding element according to any of claims 1 to 6 **characterized in that** its base (2) comprises means for spreading a glue and in particular holes and/or grooves.

8. Holding element according to any of claims 1 to 7 **characterized in that** an oblique side wall (12) comprises latch holes (6) and the base (2) comprises latch splines (7) arranged below the latch holes (6).

9. Holding element according to claim 8 **characterized in that** it comprises at least two holes (6) arranged in the oblique side walls (12) and latch splines (7) fitted to these holes.

10. Holding element according to any of claims 1 to 9 **characterized in that** its base (2) has a square-form.

11. Holding element according to any of claims 1 to 10 **characterized in that** a fastening part (3) has a nearly-square-form.

12. Use of the universal holding element according to any of claims 1 to 11 in a display and/or advertising construction.

13. The display and/or advertising construction comprising an universal holding element according to any of claims 1 to 11.

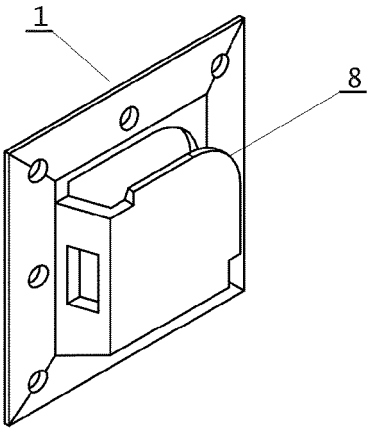


Fig. 1

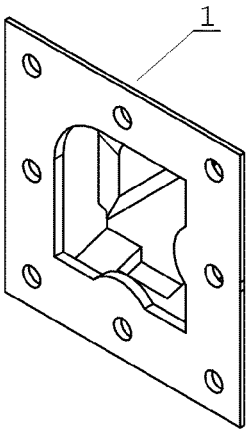


Fig. 2

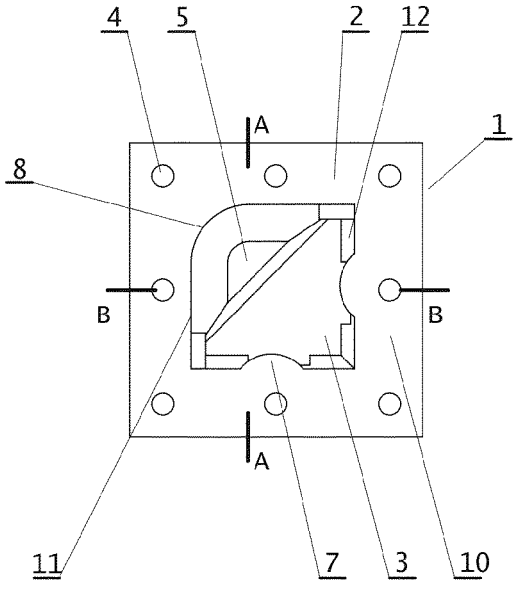


Fig. 3

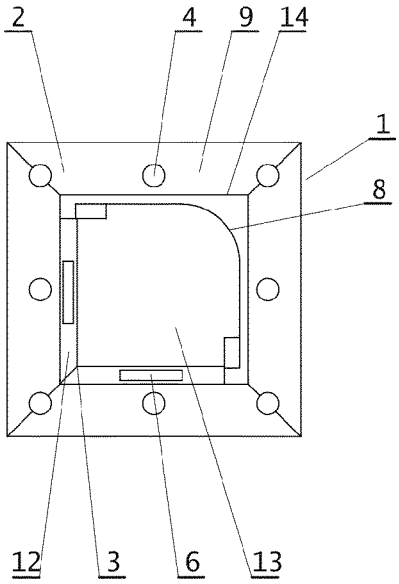


Fig. 4

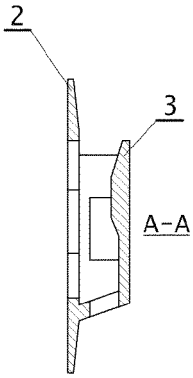


Fig. 5

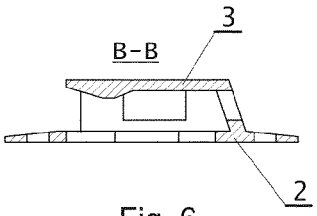


Fig. 6

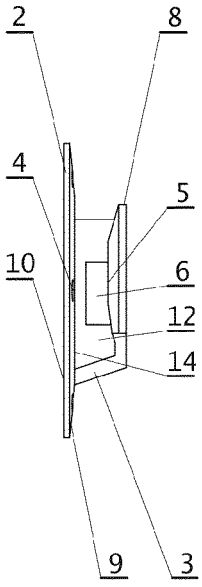


Fig. 7

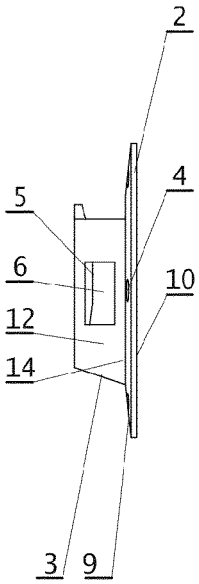


Fig. 8

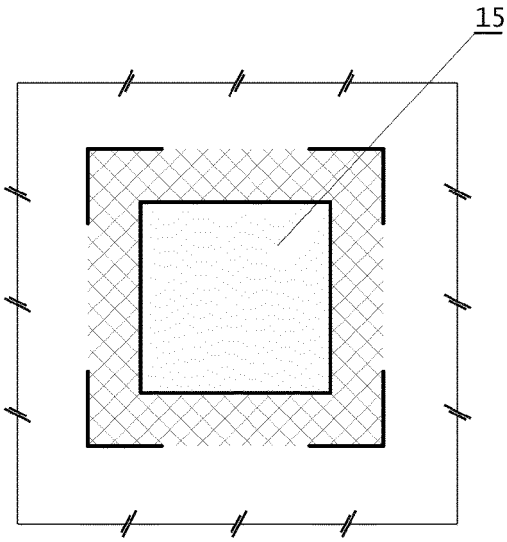


Fig. 9

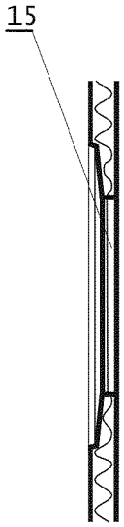


Fig. 9A

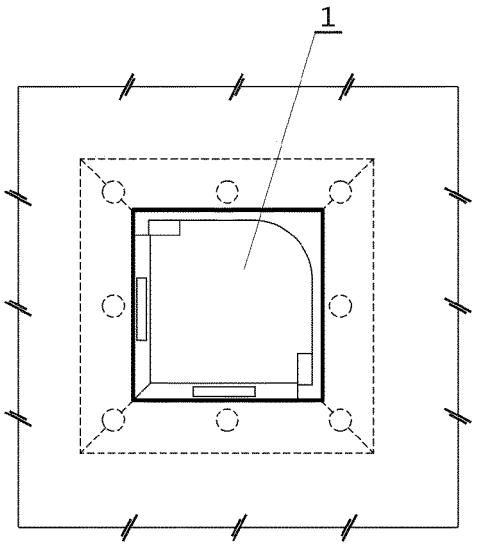


Fig. 10

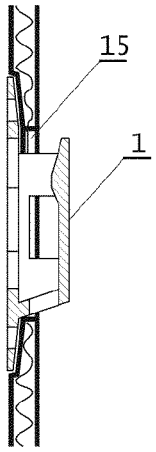


Fig. 10A

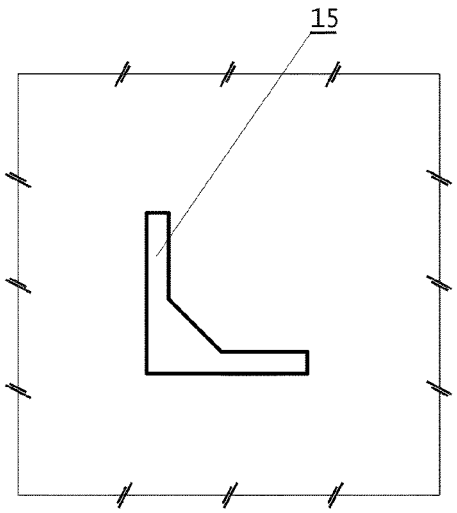


Fig. 11

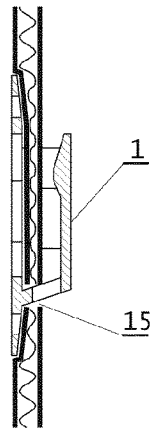


Fig. 11A

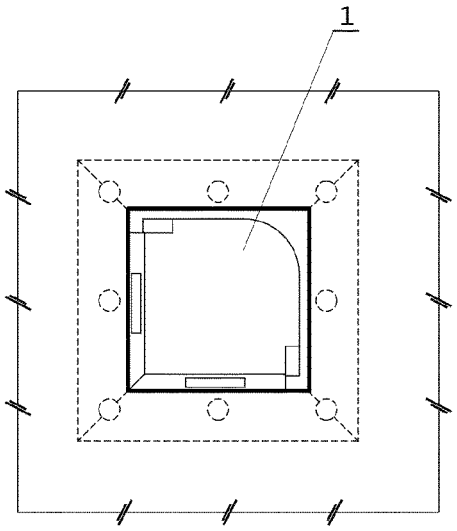


Fig. 12

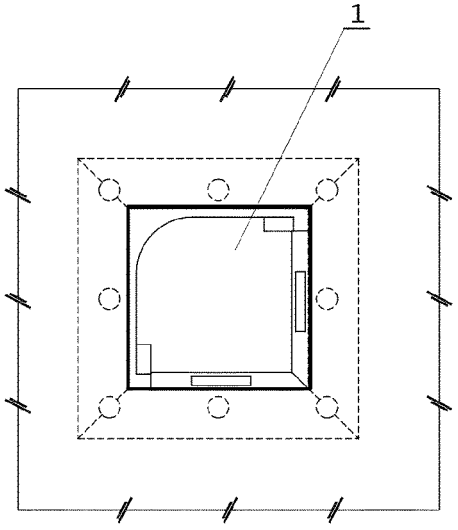


Fig. 12A

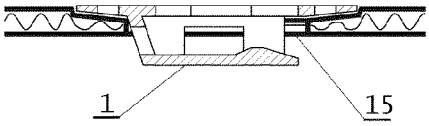


Fig. 13

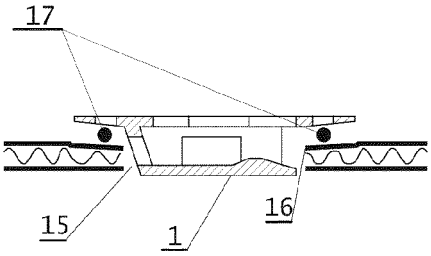


Fig. 13A

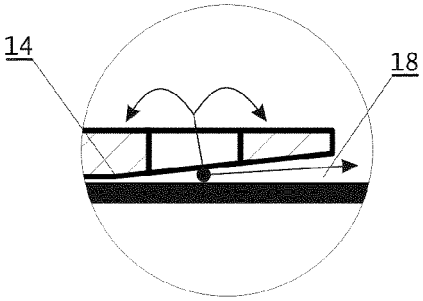


Fig. 13B

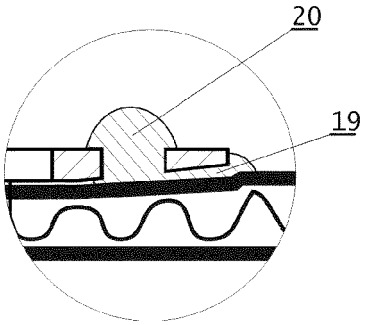


Fig. 13C

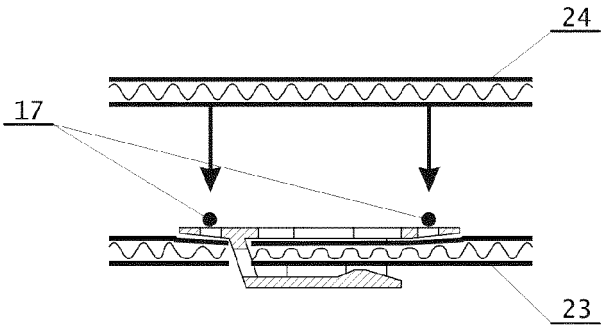


Fig. 14

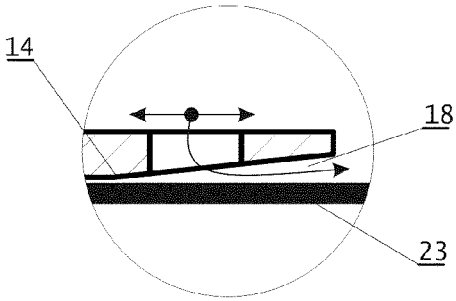


Fig. 14A

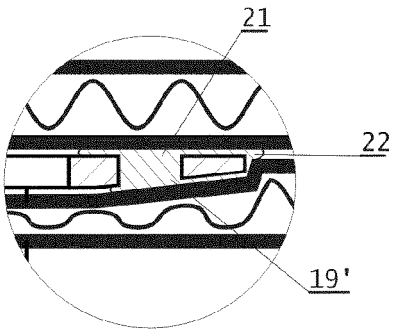


Fig. 14B

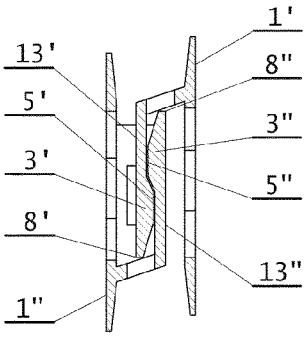


Fig. 15

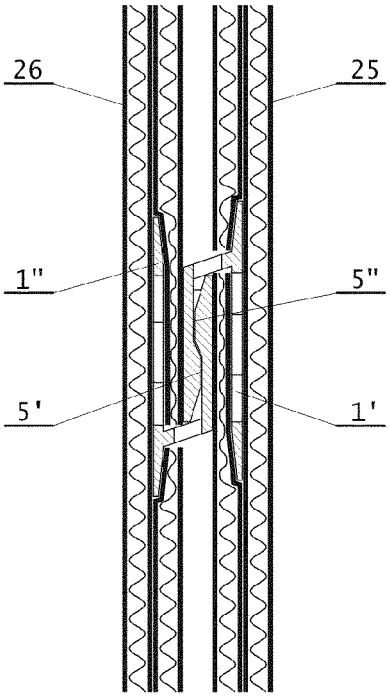


Fig. 15B

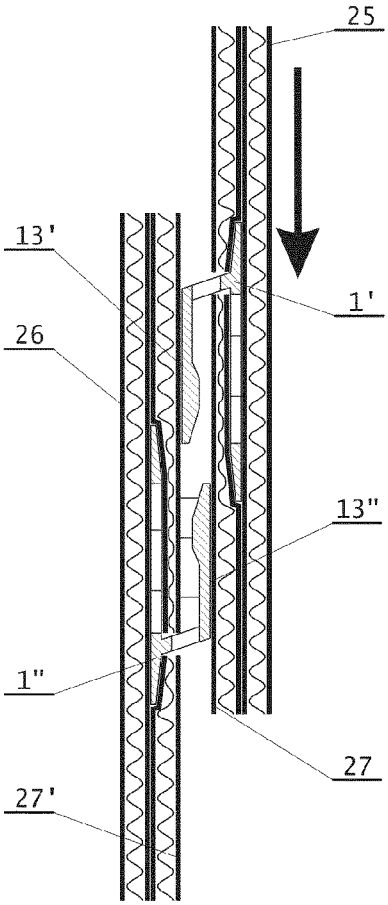


Fig. 15A

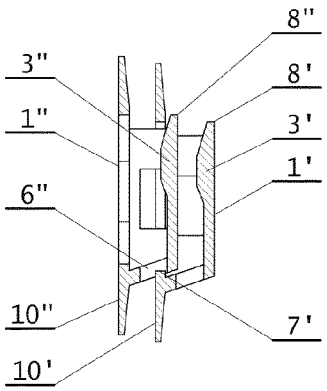


Fig. 16

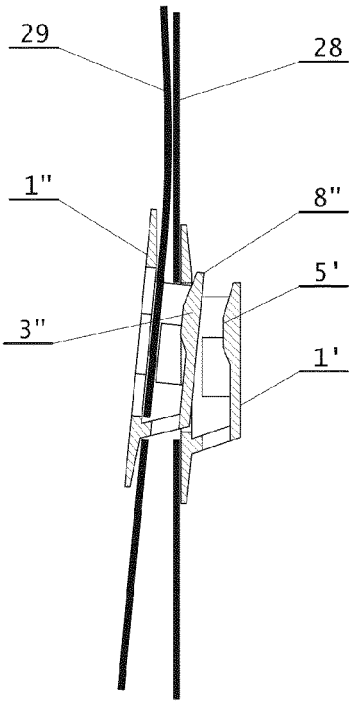


Fig. 16A

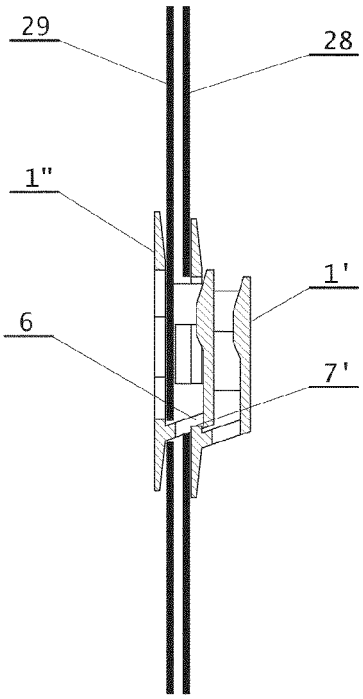


Fig. 16B

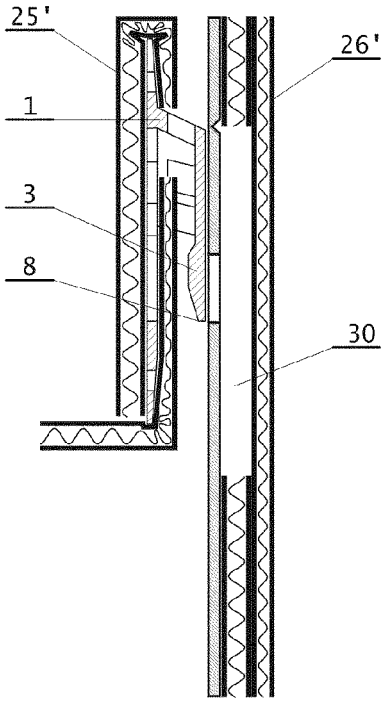


Fig. 17

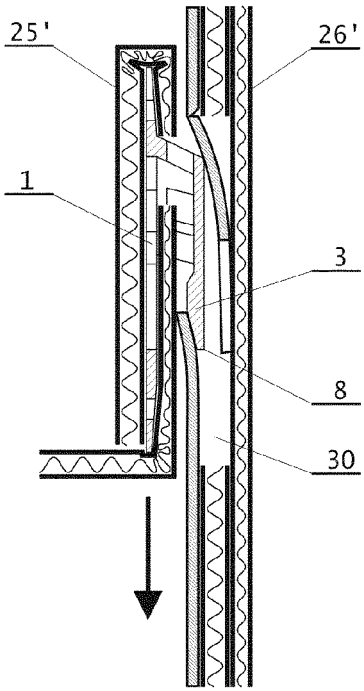


Fig. 17A

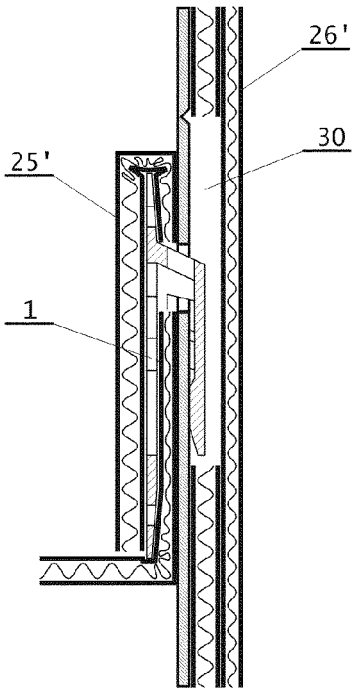


Fig. 17B

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EUROPEAN SEARCH REPORT

Application Number
EP 13 16 4518

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	GB 2 456 568 A (JONES SAMUEL NICHOLAS [GB]) 22 July 2009 (2009-07-22) * page 1, line 5 - line 10 * * page 3, line 5 - page 4, line 31 * * figures 1-3 *	1-8, 12-14	INV. G09F15/00 G09F1/10
X	DE 10 2006 029019 A1 (BURG GIEBICHENSTEIN HOCHSCHULE [DE]) 3 January 2008 (2008-01-03) * paragraph [0023] - paragraph [0027] * * figures 5a-5c *	1,11-14	
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TECHNICAL FIELDS SEARCHED (IPC)

G09F
E04B
A47B
F16B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	22 August 2013	Pantoja Conde, Ana

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