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(54) **BINDING DEVICE AND METHOD**

(57) The present invention relates to a binding device which allows sheets to be assembled between a cover and cover backing so as to form a file where all the sheets remain aligned on top of each other and the dimensions of the cover and cover backing are the same as the dimensions of the sheets being filed, while the binding method allows sheets to be added to the binding device without theses projecting from the limits which are defined by the cover and cover backing.

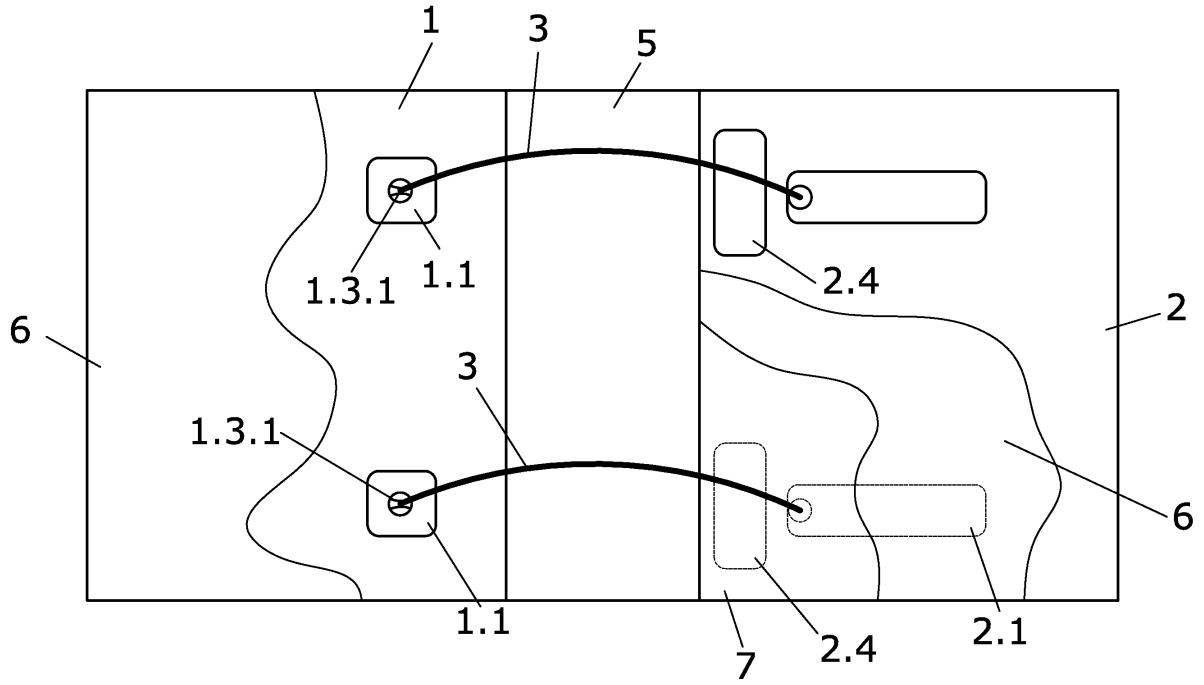

FIG.2

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Description

Subject of the invention

[0001] The present invention refers to a binding device which allows sheets to be assembled between a cover and a cover backing so as to form a file in which all the sheets are aligned on top of each other.

[0002] Due to its especial structure, in the binding device the dimensions of the cover and the cover backing are the same than the dimensions of the sheets being filed.

[0003] Also, the binding method permits to add sheets to the binding device without the sheets projecting from the limits which are defined by the cover and the cover backing.

Background to the invention

[0004] The filing cases or files having fastening rings are already known in the state of the art. Such files permit the binding or grouping of a given number of sheets, previously perforated, according to the thickness of the file and the height of the rings.

[0005] In the formerly know files in which the rings are riveted to the external part of one of the covers or cover backing of the file, the height of the rings is fixed as they are generally made out of steel and permit to file a predetermined number of sheets.

[0006] Due to the aforegoing, when the file has not been filled to the limit of its capacity, auxiliary means are necessary to abut against the block of sheets in order that the sheets may be kept together against the cover of the file on which the are being placed.

[0007] In the aforegoing case, if it is not necessary to add more sheets to the file, an unused space is left in it, which unused space will be left on the shelf or in the place where the file is located as its thickness is defined by the height of the rings, which does not change.

[0008] Moreover, the rings have a curved shape at least in its upper region, which brings about that the sheets which are filed on the upper portion, when the capacity on the file has reached its limit, are progressively displaced in respect to the sheets which have been already placed in the lower part of the file.

[0009] This has as a consequence that the final aspect of the set of sheets in the file is not uniform, apart from the fact that the upper sheets have a tendency to fold over, adopting wrinkles and arriving to be torn by the orifices which were previously made to permit the filing. Furthermore it is needed that the cover or cover backing to be wider due to the offsetting produced between the sheets, for which reason the width of the cover has to be bigger than the width of the sheets, with the subsequent additional cost of material.

[0010] All of these shortcomings are overcome by means of the invention which will be described in the following, in which the device, after its assembly, has the aspect of a conventional hard cover book, this improving the aspect of the conventional files, in which the rivets are to be seen on the outside of the file.

Description of the invention

[0011] This invention refers to a binding device permitting to group the sheets between a cover and a cover backing to form a file, wherein all the sheets are aligned one on top of the other.

[0012] The cover of the binding device has at least an opening to receive a body which has anchoring means.

[0013] Besides, the cover backing has at least an opening to receive a body with an orifice which is located in register with one of the ends of a substantially vertical rigid hollow element, which height defines the number of sheets or similar, cardboard webs, separator sheets, plastic folders, etc. which may be filed.

[0014] And the same time, the binding device has a ribbon, strap, chain or similar with an abutment portion in one of its ends to prevent going out through the orifice of the body inserted in the cover backing, while the other end of the ribbon, strap, chain or similar goes through the essentially vertical rigid hollow element, passes out by the other end and has anchoring means which are counterpart to the anchoring means in the body which is inserted in the cover.

[0015] In this way the sheets may be inserted by means of orifices previously made using all ribbons, straps or chains that the binding device has, passing afterwards through the essentially vertical rigid hollow element until coming to rest on the cover backing or on the sheet which has been previously filed.

[0016] Once all the sheets are within the essentially vertical rigid hollow member, the ribbon, strap, chain or similar is anchored to the anchoring means of the body incorporated to the cover.

[0017] Additionally, both the body inserted in the cover as the body inserted in the cover backing have anchoring means on said cover and cover backing, preventing a relative movement in respect to said means after its insertion.

[0018] The binding device so configured has dimensions for the cover and cover backing which are equal to the dimensions of the standard sized sheets, such as for example A1, A2, A3, A4, A5, A6 and subsequent which have been file in the binding device.

[0019] The body inserted on the cover may be inserted in the cover backing and vice verse, that is, the body to be inserted in the cover backing may be inserted in the cover, so that the ribbon will be anchored in this case to the cover backing.

[0020] As a summary, the binding device has

- a cover with at least one opening in which a body having anchoring means is to be inserted,
- a cover backing with at least one opening in which a body with an orifice opposite to one of the ends of

an essentially vertical rigid hollow element, is inserted, defining the height of said element the number of sheets or similar elements which is possible to file, and

- a ribbon, strap, chain or similar partially inserted in the essentially vertical rigid hollow element with an abutment portion in one of its ends preventing its passing through the orifice of the body inserted in the cover backing and having anchoring means in the other end which are a counterpart to the anchoring means in the body inserted in the cover.

[0021] Also, this binding method permits to add sheets to the file without the sheets coming out of the limits defined by the cover and cover backing, wherein the method will be carried out by means of the following steps:

- removal of the ribbon strap, chain or similar from the anchoring means on the body in located in the cover,
- introduction of the sheets, which may pass by means of orifices previously made in the same, in the ribbon and the essentially vertical rigid hollow element, and
- anchoring the ribbon, strap, chain or similar to the anchoring means of the body inserted in the cover.

Description of the drawings

[0022] To complete this description, a set of non limitative drawings will be annexed to illustrate the invention.

Figure 1 shows a perspective view of the body which is inserted within the cover, the body which is inserted in the cover backing, the essentially vertical rigid hollow element and the ribbon.

Figure 2 shows a plant view of the binding device of the present invention.

Figure 3 shows an essentially vertical rigid hollow element attached to a second body which is to be inserted within the cover backing.

Figure 4 shows a second example embodiment of the base of the body to be inserted within the cover.

Figure 5 shows a closing element to be inserted in the cover as shown in figure 4.

Figure 6 shows a plant view of the closing element of figure 5.

Figure 7 shows a cross section through AA' in figure 6.

Figure 8 shows another embodiment example of the base of the body to be inserted within the cover backing.

Figure 9 shows a cover for the narrow section of the base shown in figure 8.

Figure 10 shows a closing element to be inserted in the wider part of the cover shown in figure 8, wherein this closing element is attached to an essentially vertical rigid hollow element.

Figure 11 shows a plant view on the closing element in figure 10.

Figure 12 shows a cross section through BB' in figure 11.

Figure 13 shows another embodiment example of the ribbon.

Preferred embodiment of the invention

[0023] Taking the aforegoing into account, the present invention refers to a binding device having a cover (1) and a cover backing (2) with two openings (1.1, 2.1) each (1, 2), as this preferred example embodiment is aimed at sheets (7) with two orifices for its filing.

[0024] Within each of the openings (1.1) a first body is inserted which has a base (1.2) with a parallelepipedic form with the top surface removed, having a set of legs (1.2.1) for anchoring to the cover (1).

[0025] At the same time, the first body to be inserted in the cover (1) has a closing element (1.3) to be inserted in the base (1.2) which pushes the attachment legs (1.2.1) in order that these may be introduced within the internal wall of each opening (1.1) of the cover (1).

[0026] The closing element (1.3) has anchoring means (1.3.1) for the attachment of one of the ends of a ribbon (3) which will be described in detail further on.

[0027] Within the openings (2.1) of the cover backing (2) a second body is inserted which has a base (2.2) with a parallelepipedic form in which the top surface has been removed, being complemented by a closing element (2.3).

[0028] The base (2.2) has an orifice (2.2.1) in one of its side walls which is arranged opposite to the end of an element (4) which is essentially vertical, rigid and hollow, which height defines the number of sheets (7) to be filed.

[0029] The base (2.2) of the second body has a number of legs (2.2.2) to be anchored to the cover backing (2) due to the fact that the closing element (2.3) to be inserted in the base (2.2) pushes the anchoring legs (2.2.2) in order that these be inserted within the internal wall of each of the openings (2.1) of the cover backing (2).

[0030] In this example the essentially vertical rigid hollow element (4) is integrated with a third body to be inserted in the opening (2.4) in the cover backing (2), which body is formed by a base (2.5) with a parallelepipedic form in which the top surface has being removed, which body has a number of legs (2.5.1) for its attachment to the cover backing (2).

[0031] This third body which has the essentially vertical rigid and hollow element (4) has a closing element (2.6) which to be inserted within the base (2.5) and pushes the anchoring legs (2.5.1) in order that these may be inserted within the internal wall of each of the openings (2.4) of the cover backing (2).

[0032] The bases (1.2, 2.2, 2.5) of the first, second and third elements have a recessed portion (1.2.2, 2.2.3, 2.5.2) where the protrusions (1.3.2, 2.3.1, 2.6.1) of the closing elements (1.3, 2.3, 2.6) are inserted to prevent the relative movement among the bases (1.2, 2.2, 2.5) and the closing elements (1.3, 2.3, 2.6).

[0033] At same time, the binding device has a ribbon (3) with and abutment portion (3.1) in one of its ends to prevent its coming out of the orifices (2.2.1) of the second body to be inserted in the cover backing (2), while the other end of the ribbon (3) passes through the essentially vertical rigid and hollow element (4) coming out through the other end and having anchoring means (3.2) which are a counterpart to the anchoring means (1.3.1) of the closing element (1.3) of the first body to be inserted within the cover (1).

[0034] The cover (1) and the cover backing (2) are attached by one of their equal sides by means of a back portion (5) and lined by means of respective webs (6) which hide those first, second and third bodies.

[0035] In other example embodiment shown in figures 4 to 10, the base (1.2) of the first body to be inserted within each of the openings (1.1) of the cover (1) has a leg (1.2.1) for its anchoring to the cover (1) in each of its sides, while the closing element (1.3) to be inserted in the base (1.2) which pushes the anchoring legs (1.2.1) for these to be inserted within the internal wall of each opening (1.1) of the cover (1), have respective lugs (1.3.3) which are inserted within the holes (1.2.3) at the base (1.2) to prevent the relative movement between the base (1.2) and the closing element (1.3). All this is to be seen in figures 4 to 7.

[0036] The rest of elements of the first body do not show any variation in respect to the above described elements corresponding to the first example embodiment.

[0037] The second body to be inserted within the openings (2.1) of the cover backing (2) is made out of a base (2.2), shown in figure 8, with a wide portion and a narrow portion, in which the top surface has been removed and two closing elements (2.3) for each of the portions of the base (2.2).

[0038] The base (2.2) of the second body has a leg (2.2.2) for its anchoring to the cover backing (2) in each of the sides of the same, while the closing elements (2.3) which are to be inserted within the base (2.2) push the anchoring legs (2.2.2) for its insertion within the internal surface of each of the openings (2.1) of the cover backing (2).

[0039] In this example, the essentially vertical rigid and hollow element (4) is integrated in one of the closing elements (2.3), i. e. in the one closing the wider portion of the base (2.2) permitting the passage of the ribbon (3) through an orifice (2.3.2) in the top surface of the closing elements (2.3).

[0040] The base (2.2) of the second body has orifices (2.2.4) in which some lugs (2.3.3) of the closing elements (2.3) are to be inserted, having said closing element an essentially vertical rigid hollow element (4) to prevent the relative movement between the base (2.2) and the closing element (2.3). All this is to be seen in figure 8 at 12.

[0041] At the same time, the ribbon (3), in this preferred example embodiment, shown in figure 13 has an abutment portion (3.1) with the form of an angling hook in one of its ends to prevent its coming out of the orifices (2.3.2) in the top surface of the closing elements (2.3), while the other end of the ribbon (3) passes through the essentially vertical rigid hollow element (4) coming out through the other end and has anchoring means (3.2) which are a counterpart to the anchoring means (1.3.1) of the closing elements (1.3) of the first body to be inserted within the cover (1). To adequate the length of the ribbon (3) to the number of bound sheets (7), said ribbon (3) is displaced along the narrow part of the base (2.2).

[0042] At the same time, the binding method permits to add sheets (7) to the file without the sheets coming out of the limits which are defined by the cover (1) and the cover backing (2) by

- removing the ribbon (3) of the means (1.3.1) of the closing elements (1.3) of the first body of the cover (1), being able the abutment portion (3.2) to slide along the internal portion of the second body.
- introducing the sheets (7) which pass thanks to orifices previously made in the same, in the first place along the ribbon (3) and subsequently along the essentially vertical rigid hollow element (4), and
- attaching the ribbon (3) to the anchoring means (1.3.1) of the closing elements (1.3) of the first body of the cover (1).

[0043] The essentiality on the present invention will not be altered by variations in materials, form, size and general arrangement of the component elements, the invention having been described in a non limitative form, being the description sufficient for the reproduction of the invention by any expert.

Claims

1. Binding device **characterized in that** it comprises:

• a cover (1) with at least one opening (1.1) in which a body having anchoring means (1.3.1) is inserted,
• a cover backing (2) with at least one opening (2.1) in which a body is inserted having an orifice (2.2.1) which is opposite to one end of the essentially vertical rigid hollow element (4), which height defines the number of sheets (7) or similar

which may be filed, and

• a ribbon (3), strap, chain or similar partially inserted in the essentially vertical rigid hollow element (4) with an abutment portion (3.1) in one of its ends preventing its coming out through the orifice (2.2.1) of the body inserted in the cover backing (2) and having anchoring means (3.2) in the other end which are a counterpart to the anchoring means (1.3.1) of the body to be inserted in the cover (1).

2. Binding device according to claim 1, **characterized in that** it the body to be inserted in each of the openings (1.1) of the cover (1) is formed by a base (1.2) which has a set of anchoring legs (1.2.1), a closing element (1.3) being inserted on the base (1.2) which closing element pushes the anchoring legs (1.2.1) in order that these legs be inserted in the internal wall of each opening (1.1) of the cover (1).

3. Binding device according to claim 1, **characterized in that** the body which is inserted in each of the openings (2.1) of the cover backing (2) is formed by a base (2.2) having a set of anchoring legs (2.2.2), a closing element (2.3) being inserted on the base (2.2) pushing the anchoring legs (2.2.2) in order that these may be inserted in the internal wall of each opening (2.1) of the cover backing (2).

4. Binding device according to claim 1, **characterized in that** the essentially vertical rigid hollow element (4) is integrated in a body to be inserted in the opening (2.4) of the cover backing (2) and has a base (2.5) having a set of anchoring legs (2.5.1) to the cover backing (2) due to the fact that a closing element (2.6) is inserted in the base (2.5) and pushes the anchoring legs (2.5.1) in order that these may be inserted in the internal wall of each opening (2.4) of the cover backing (2).

5. Binding device according to any of previous claims, **characterized in that** the body to be inserted in the cover (1) may be inserted in the cover backing (2) and viceversa, that is, the body to be inserted in the cover backing (2) may be inserted in the cover, so that the ribbon (3) is anchored in this case to the cover backing (2).

6. Binding device according to any of previous claims, **characterized in that** the cover (1) and the cover backing (2) are lined by respective webs (6) which hide the bodies inserted in the cover (1) and the cover backing (2).

7. Binding device according to claim 1, **characterized in that** the cover (1) and the cover backing (2) are attached together by one of their equal sides by means of the back portion (5).

8. Binding device according to claims 2, 3 and 4, **characterized in that** the bases (1.2, 2.2, 2.5) of the first, second and third elements have a recessed portion (1.2.2, 2.2.3, 2.5.2) where the protrusions (1.3.2, 2.3.1, 2.6.1) of the closing elements (1.3, 2.3, 2.6) are inserted to prevent the relative movement among the bases (1.2, 2.2, 2.5) and the closing elements (1.3, 2.3, 2.6).

9. Binding device according to claim 1, **characterized in that** the dimensions on the cover (1) and the cover backing (2) are the same than those of the sheets (7) which correspond to standard sizes such as A1, A2, A3, A4, A5, A6, which have to be filed in it.

10. Binding device according to claim 2, **characterized in that** the closing element (1.3) which is inserted in the base (1.2) and pushes the anchoring legs (1.2.1) in order that these may be inserted in the internal wall of each opening (1.1) of the cover (1) have lugs (1.3.3) which are inserted in orifices (1.2.3) of the base (1.2) to prevent the relative movement between the base (1.2) and the closing element (1.3).

11. Binding device according to claim 3, **characterized in that** the body to be inserted in the openings (2.1) of the cover backing (2) is formed by a base (2.2) with a wide portion and a narrow portion in which the top face has been removed and two closing elements (2.3) for each of the portions of the base (2.2).

12. Binding device according to claim 11, **characterized in that** the essentially vertical rigid hollow element (4) is integrated in the closing element (2.3) of the wide portion of the base (2.2) permitting the passage of the ribbon (3) through an orifice (2.3.2) in the top surface of the closing element (2.3).

13. Binding device according to claim 12, **characterized in that** the base (2.2) has orifices (2.2.4) where some lugs (2.3.3) of the closing element (2.3) are inserted, this latter having the essentially vertical rigid hollow element (4) to prevent the relative movement between the base (2.2) and the closing element (2.3).

14. Binding device according to claim 11, **characterized in that** in order to adequate the length of the ribbon (3) to the number of bound sheets (7), said ribbon (3) displaces along the narrow portion of the base (2.2).

15. Binding method **characterized by** the following steps

• removal of the ribbon (3), strap, chain or similar from the anchoring means (1.3.1) of a body incorporated to the cover (1),

• introduction of the sheets (7) or similar, which

pass due to orifices previously made in said sheets (7), along the ribbon (3) and the essentially vertical rigid hollow element (4), and

• anchoring the ribbon (3) to the anchoring means (1.3.1) of the body incorporated in the cover (1).

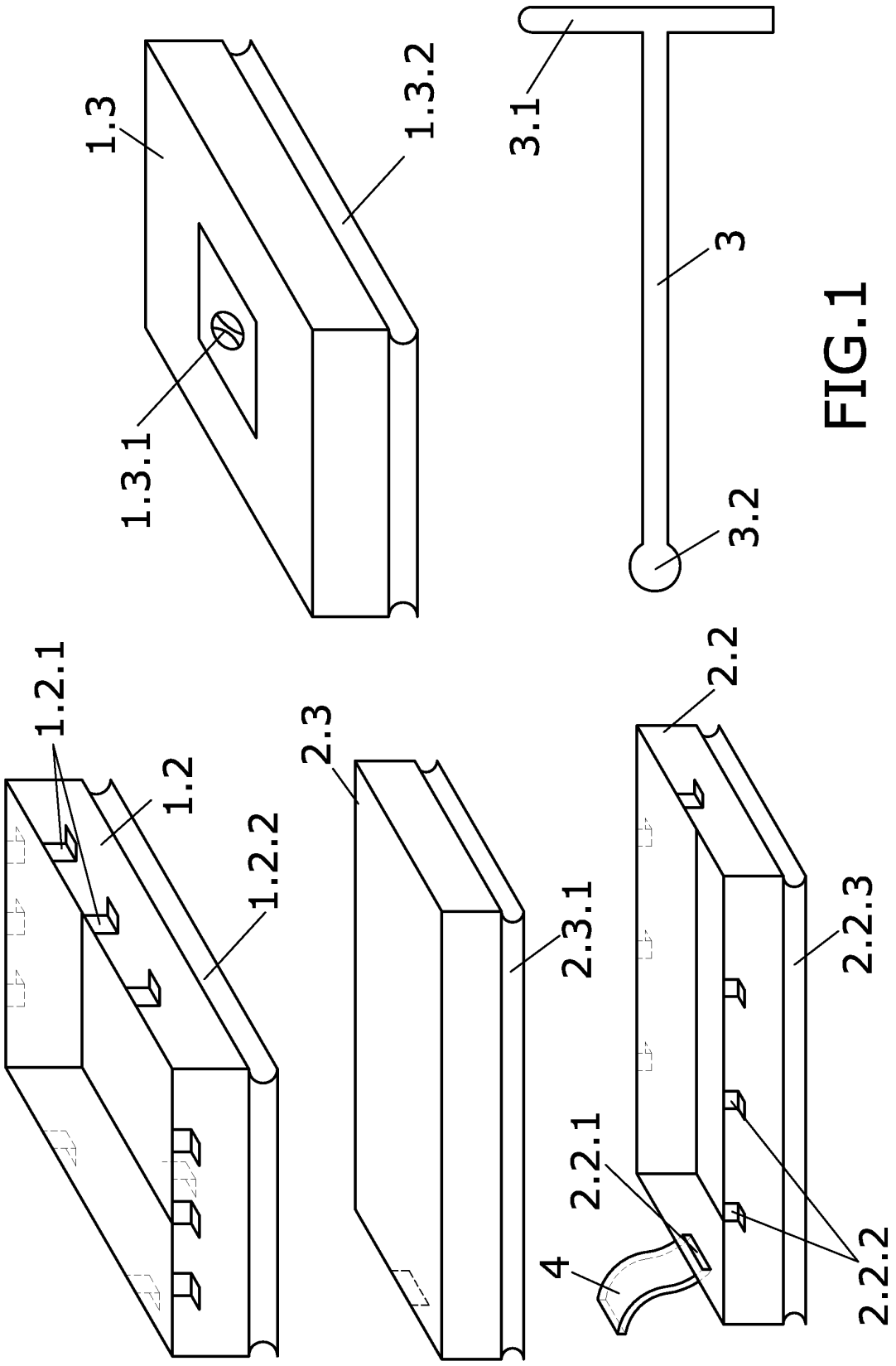

FIG.1

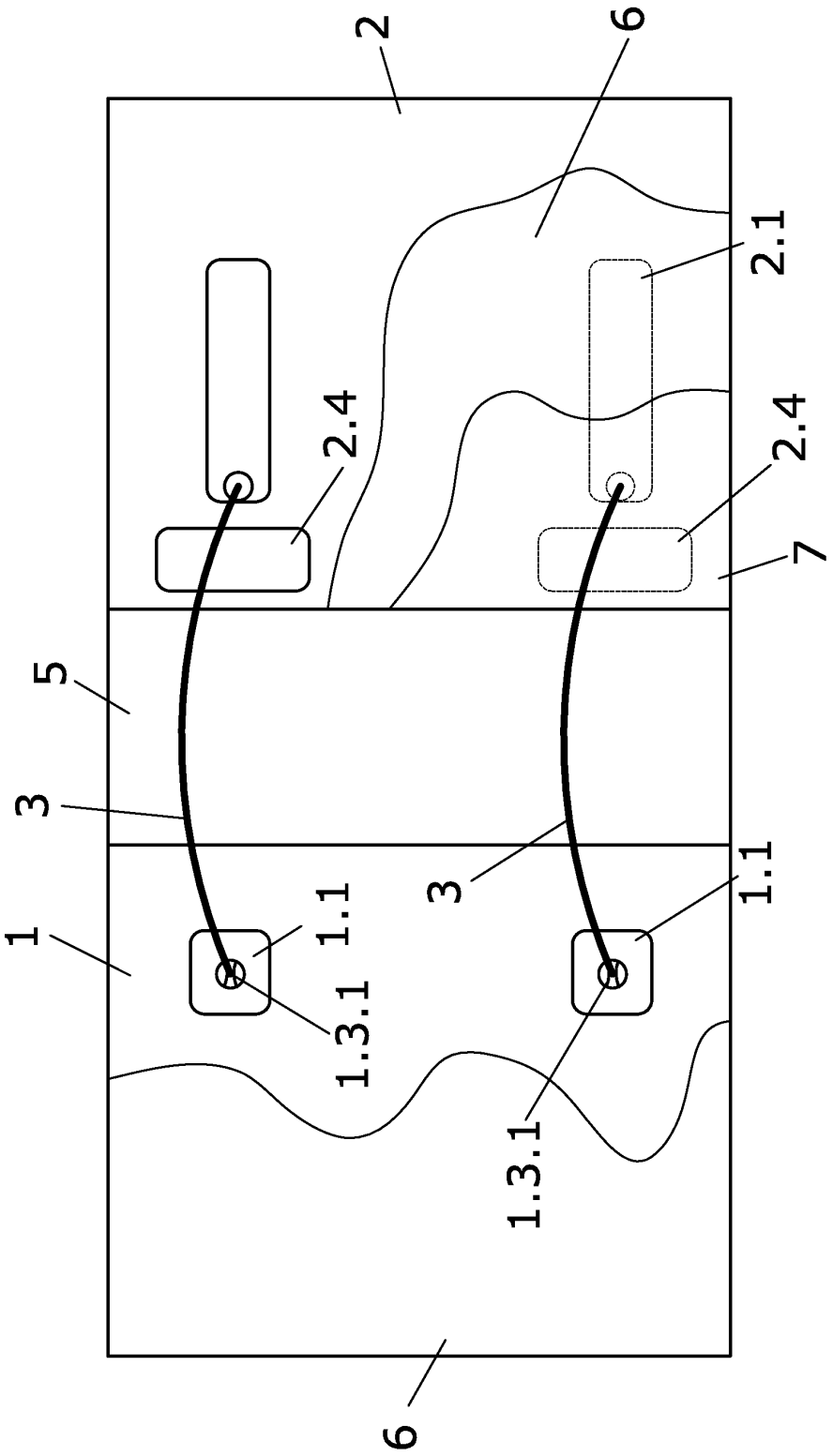

FIG.2

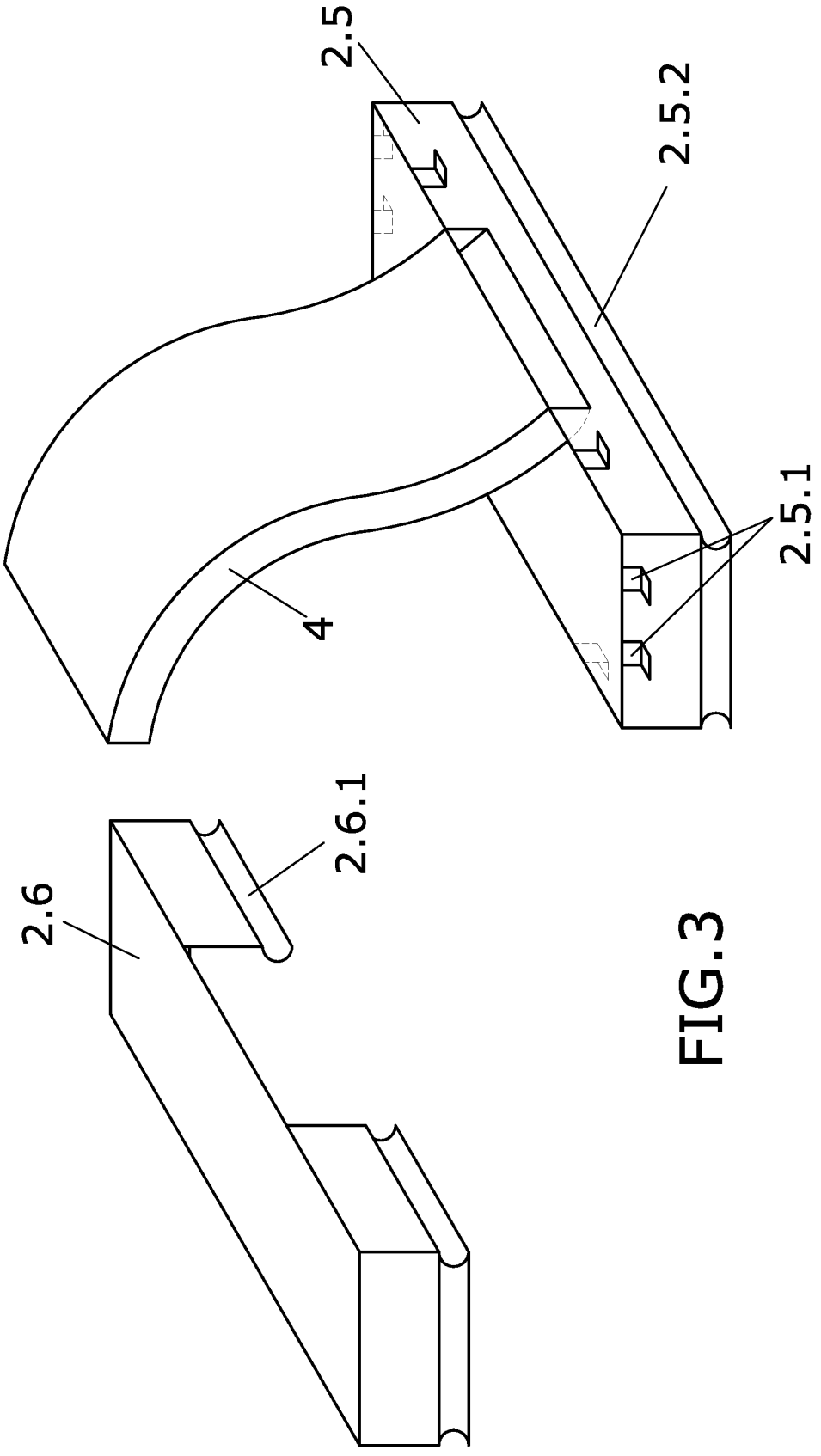

FIG.3

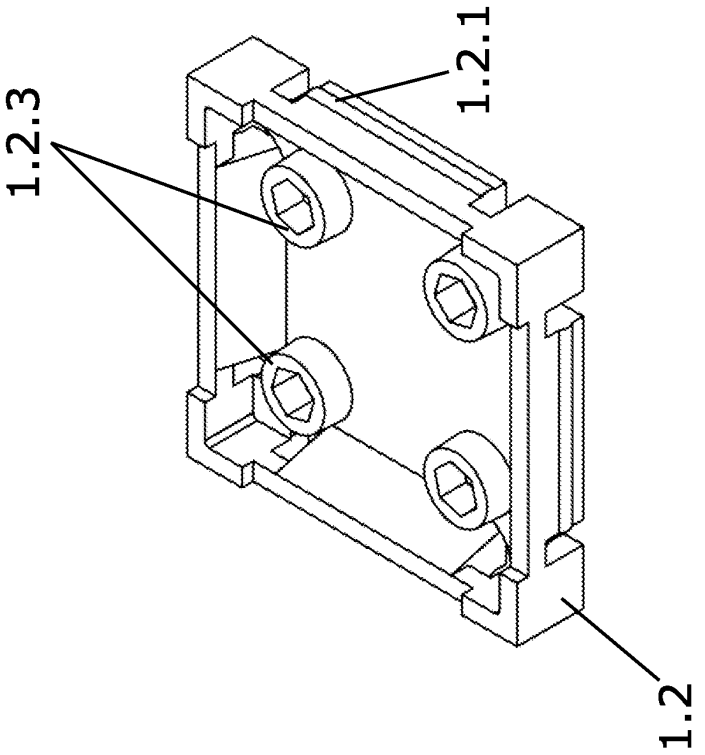

FIG.4

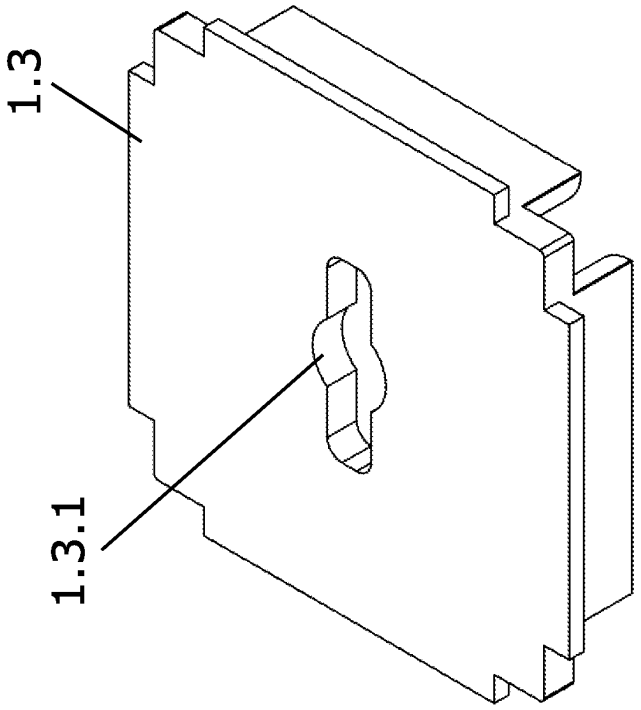

FIG.5

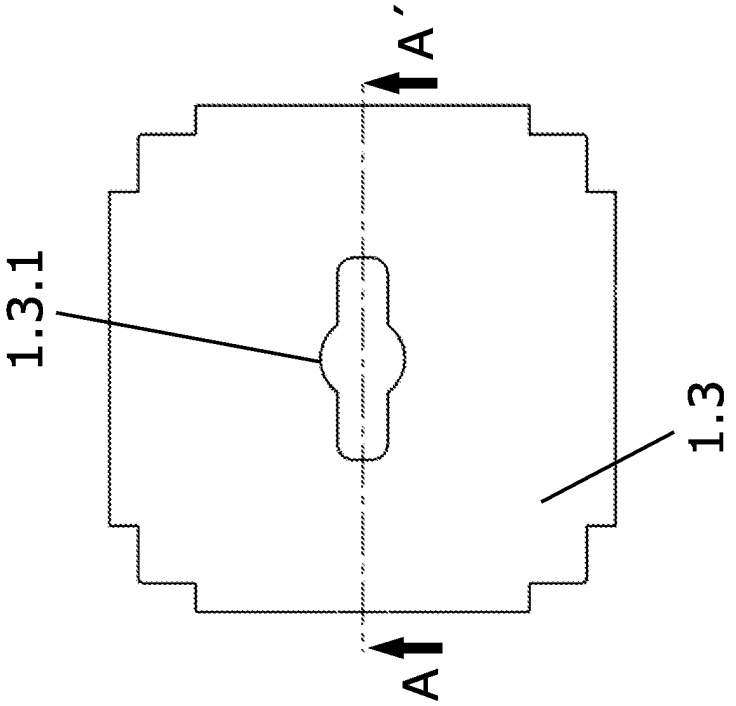

FIG.6

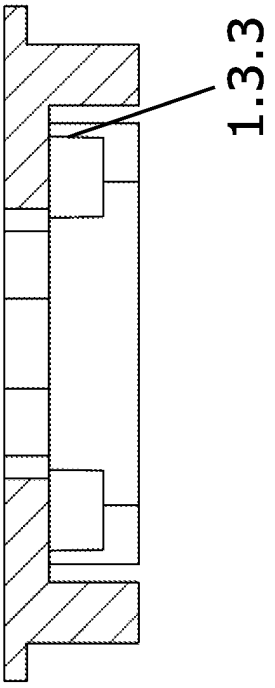

FIG.7

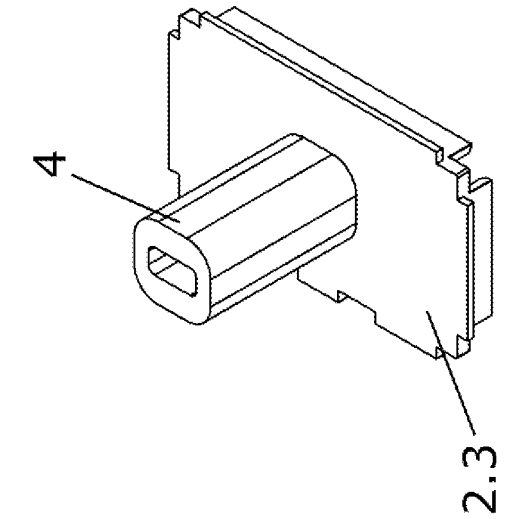

FIG.10

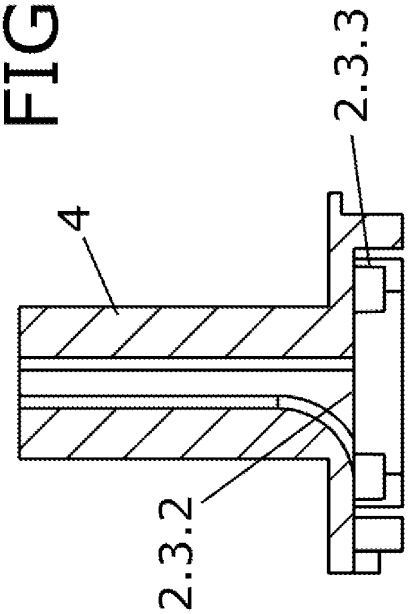

FIG.12

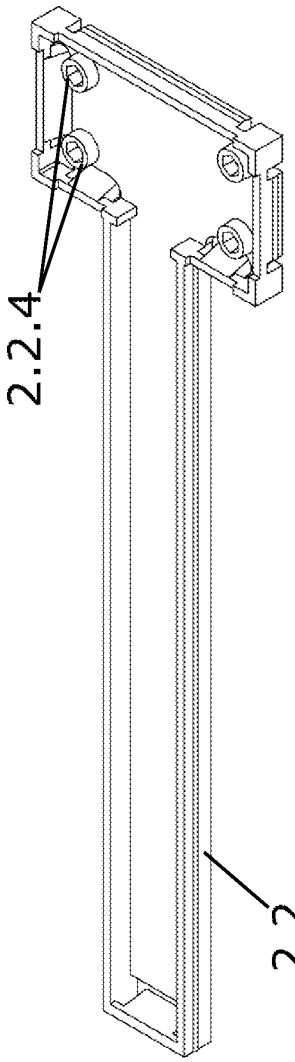

FIG.8

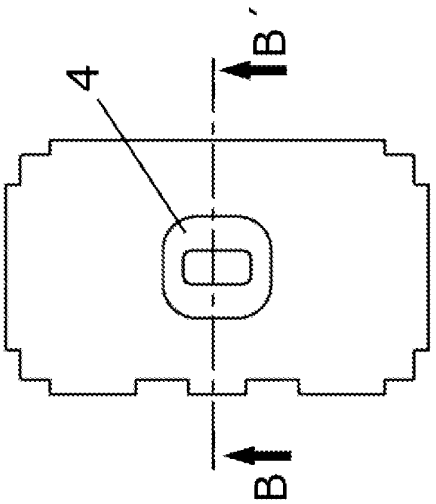

FIG.11

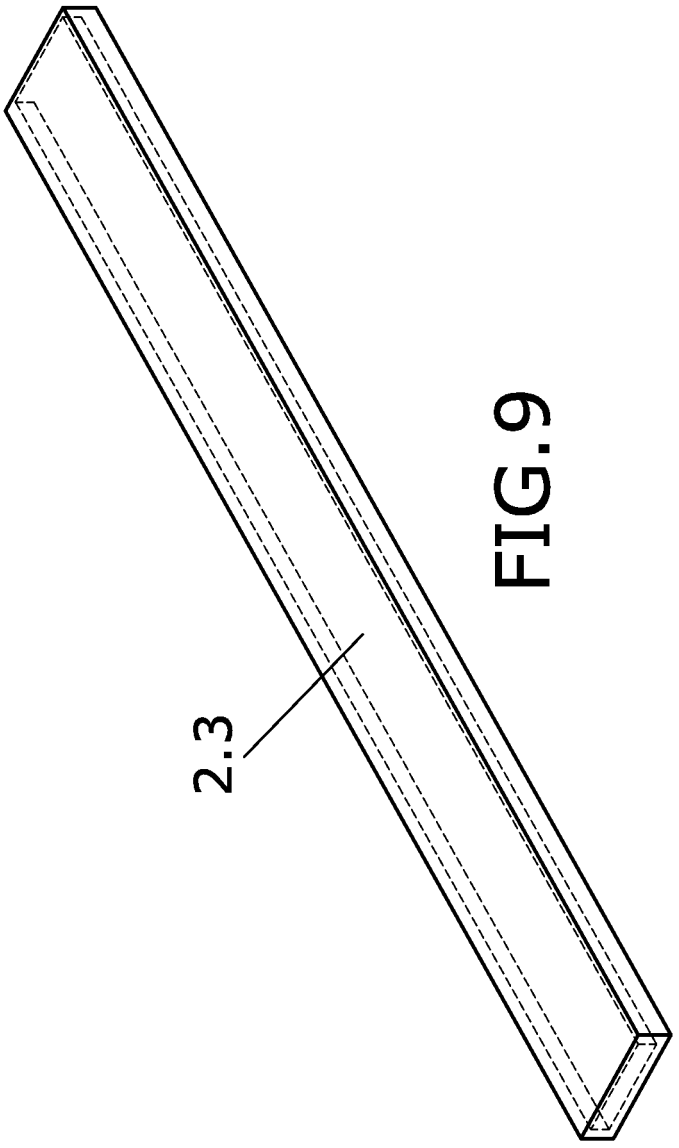

FIG.9

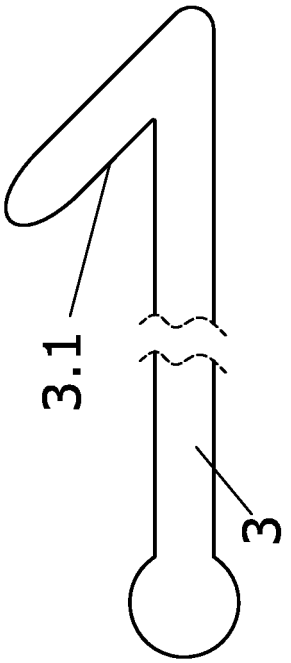

FIG.13

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ ES 2009/070592

A. CLASSIFICATION OF SUBJECT MATTER

see extra sheet
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

INVENES,EPODOC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 1425844 A (ROCH E A) 18.02.1976, page 1, line 88 - page 2, line 66; figures.	1,7,9,15
A	US 4661006 A (STEVENS et al.) 28.04.1987, column 2, line 32 - column 4, line 43; figures.	1,7,9,15
A	FR 2529138 A1 (DIFFUSION ARTICLES MECANOGRAPH) 30.12.1983, page 4, line 28 - page 6, line 29; figures.	1,9,15
A	ES 0201039 U (BERMEJO LLOBET) 16.09.1975, the whole document.	1,6,7,9,15

☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance.
"E" earlier document but published on or after the international filing date
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Date of the actual completion of the international search	Date of mailing of the international search report
15.April.2010 (15.04.2010)	**(16/04/2010)**
Name and mailing address of the ISA/ O.E.P.M. Paseo de la Castellana, 75 28071 Madrid, España. Facsimile No. 34 91 3495304	Authorized officer A. Hoces Diez Telephone No. +34 91 349 53 71

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES 2009/070592

C (continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of documents, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2802469 A (PILLING et al.) 13.08.1957, column 1, line 69 - column 2, line 47; figures 1-3.	1,5,7,9,15
A	US 1638763 A (ENNIS et al.) 09.08.1927, the whole document.	1,7,9,15
A	US 1765579 A (GRAF et al.) 24.06.1930, the whole document.	1,9,15

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/ ES 2009/070592

Patent document cited in the search report	Publication date	Patent family member(s)	Publication date
GB 1425844 A	18.02.1976	NONE	----------
US 4661006 A	28.04.1987	EP 0192322 AB EP 19860300194	27.08.1986 14.01.1986 14.01.1986
FR 2529138 A	30.12.1983	NONE	----------
ES 0201039 U	16.09.1975	NONE	
US 2802469 A	13.08.1957	NONE	----------
US 1638763 A	09.08.1927	NONE	----------
US 1765579 A	24.06.1930	NONE	----------

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INTERNATIONAL SEARCH REPORT

International application No.

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CLASSIFICATION OF SUBJECT MATTER

B42F 13/02 (2006.01)
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