

Description

[0001] The present invention relates to a module of a boundary barrier for a track for vehicles, for example a sporting event circuit, and in particular for delimiting the track of go-kart circuits.

[0002] Go-kart competitions are very widespread, both at a competitive and amateur level; moreover, there are several enthusiasts who rent a go-kart to drive around the circuit a few times for recreational purposes.

[0003] Given the nature of this sport, it is doubtless that there are risks, such as the possibility of accidents between the vehicles and especially the possibility that the vehicle leaves the circuit track, unfortunately also involving audience members.

[0004] For this reason, significant attention is paid to making boundary barriers that are sufficiently resistant to stop the travel of the vehicle, but also such as not to jeopardize the safety of the driver with an impact that is too violent.

[0005] There are several solutions of boundary barriers for go-kart circuits. An example is disclosed in document WO-A1-2006/072679.

[0006] Further examples are disclosed in Italian Patent Applications No. 102018000002864 and No. 102018000009911 to the Applicant.

[0007] One of the most critical aspects in making a barrier for circuits is the mutual connection between the modules, given that such an aspect for the most part depends on the behavior of the barrier to the impacts of the vehicles, which is to be neither too flexible nor too rigid. Some solutions are disclosed in documents FR2642096 and DE19632026; however, such solutions do not have an adequate flexibility.

[0008] It is the object of the present invention to make a boundary barrier for a vehicle track for which the connection between the modules is simple and reliable and gives the barrier the desired behavior to impacts.

[0009] Such an object is achieved by a barrier module according to claim 1; the dependent claims describe further advantageous embodiments.

[0010] The features and advantages of the barrier module according to the present invention will be apparent from the following description, given by way of a non-limiting example, according to the accompanying drawings, in which:

- Figure 1 shows an embodiment of a boundary barrier according to the present invention;
- Figure 2 shows a side view of a barrier module according to an embodiment of the present invention;
- Figure 3 depicts a plan view of the barrier module in Figure 2;
- Figure 4 shows a front view of the head side of the barrier module in Figure 2;
- Figures 5 and 6 show a barrier module according to an embodiment of the present invention;
- Figure 7 diagrammatically shows the connection be-

tween two barrier modules according to the present invention;

- Figure 8 depicts a barrier module with fastening device, according to an embodiment of the present invention.

[0011] With reference to the accompanying drawings, a barrier for delimiting a vehicle circuit, in particular for go-karts, is indicated as a whole by numeral 1. Barrier 1 winds along the entire track of the circuit and consists of at least one row 2 of barrier modules 4 connected to one another.

[0012] Moreover, barrier 1 preferably comprises at least one continuous band 6, for example made of high-density polyethylene (HDPE), laterally applied to the barrier modules 4 along the entire track or along sections thereof, arranged on the side of the circuit.

[0013] Moreover, barrier 1, for example consists of two rows placed side-by-side along the track.

[0014] Each barrier module 4 is made as a single plastic piece, for example made of high-density polyethylene (HDPE), preferably by blow molding, and consists of one or more base elements 8, a head element 10, arranged at the head, a tail element 12, arranged at the tail, and joining regions or flexible elastic partitions 14 which join said elements 8, 10, 12 to each other in a flexible manner.

[0015] The base element 8 consists of a thin-walled hollow base casing 16, for example having a thickness between 3 and 8 millimeters, comprising a base body 18, preferably having a rectangular base, for example with rounded corners, a base cover 20 arranged on the top to close the base body 18, and a base bottom 22 arranged on the bottom to support the base body 18.

[0016] The tail element 12 consists of a preferably hollow and thin-walled tail casing 24, for example comprising a tail body 24a, a tail cover 24b and a tail bottom 24c.

[0017] The head element 10 consists of a hollow head casing 26, for example comprising a head body 26a and a head cover 26b.

[0018] The head element 10 is adapted to couple with the tail element 12 of a further module so as to achieve a stable connection.

[0019] The head casing 26 preferably is adapted to completely house the tail casing 24, with the exception of the tail bottom 24c.

[0020] In particular, the head body 26a consists of an annular head wall adapted to surround the tail body 24a.

[0021] Moreover, the head casing 26 preferably has a slit 30, passing through the thickness of the head wall of the head body 26a, for the whole height thereof, for the insertion of the joining region or flexible elastic partition 14 which joins the tail element 12 to the last base element 8 of a further module 4.

[0022] Moreover, the head element 10 preferably is identical in shape and size to a base element, but does not have a base bottom, so as to allow the insertion on the tail element 12 of a further module 4; in turn, the tail element 12 is identical in shape to a base element 8, but

is slightly smaller, so as to be received in the head element 12 of a further module 4. Thus, the coupling between a head element 10 and the tail element 12 of a further module 4 is a shape coupling which, by virtue of the respective shapes, prevents the relative rotation between said head element 10 and said tail element 12 of a further module 4.

[0023] According to a preferred embodiment, barrier 1 further comprises a plurality of fastening devices 40, in which each fastening device 40 comprises a fastening base 42 adapted to be fastened to the ground, for example by means of pins, and a fastening unit 44 connected, for example by means of pins, to a partition 14 of the module 4.

[0024] The fastening unit 44 preferably comprises an externally rounded and convex front body 46 directly fastened to partition 14.

[0025] Innovatively, the barrier according to the present invention overcomes the drawbacks of the prior art since the connection between the modules is highly effective.

[0026] Moreover, the assembly of the barrier advantageously is very quick and can be carried out without making assembly mistakes.

[0027] It is apparent that those skilled in the art may make changes to the barrier and to module described above, all of which contained within the scope of protection as defined by the following claims.

Claims

1. A barrier module (4) for a boundary barrier (1) of a vehicle circuit, in particular for go-karts, made as a single plastic piece, comprising at least one base element (8), one head element (10) arranged at the head of the barrier module (4), and comprising a hollow head casing (26), a tail element (12) arranged at the tail of the barrier module (4) and a plurality of flexible elastic partitions (14) which connect said elements (8, 10, 12) together in sequence in a flexible manner; wherein the head element (10) is adapted to couple with the tail element (12) of a further barrier module of the barrier (1) so as to achieve a flexible and stable connection, and wherein the head casing (26) has a slit (30) for the insertion of a flexible partition (14) which joins the tail element (12) to a last base element (8) of the further module (4).
2. A barrier module according to claim 1, wherein the base element (8) comprises a hollow, thin-walled base casing (16), for example with a thickness of between 3 and 8 millimeters.
3. A barrier module according to claim 2, wherein the base casing (16) comprises a base body (18), a base cover (20) arranged on the top to close the base

body (18), and a base bottom (22), preferably open, arranged on the bottom to support the base body (18).

4. A barrier module according to any one of the preceding claims, wherein the tail element (12) comprises a hollow tail casing (24).
5. A barrier module according to any one of the preceding claims, wherein the head casing (26) is adapted to completely house the tail casing (24).
6. A barrier module according to any one of the preceding claims, wherein the head element (10) comprises a head body (26a), consisting of an annular head wall adapted to surround a tail body (24a) of the tail element (24) of the further barrier module (4).
7. A barrier module according to any one of the preceding claims, wherein the head element (10) is identical in shape and size to a base element (8), but is adapted to insert a further module (4) on a tail element (12).
8. A barrier module according to any one of the preceding claims, wherein the tail element (12) is identical in shape to a base element (8), but of a smaller size to be accommodated in a head element (12) of a further module (4).
9. A boundary barrier (1) for a vehicle circuit, for example for go-karts, comprising a plurality of barrier modules (4) linked to one another in sequence so that the head element (10) of a successive barrier module (4) is inserted over the tail element (12) of a preceding barrier module (4), wherein each barrier module (4) is according to any one of the preceding claims.
10. 13. A boundary barrier according to claim 9, comprising a plurality of fastening devices (40), wherein each fastening device (40) comprises a fastening base (42) adapted to be fastened to the ground, and a fastening unit (44) connected to a joining region (14) of a barrier module (4).
11. A boundary barrier according to claim 9 or 10, wherein the coupling between a head element (10) and a tail element (12) of a further module (4) is a shape coupling which, by virtue of the respective shapes, prevents the relative rotation between said head element (10) and said tail element (12) of a further module (4).

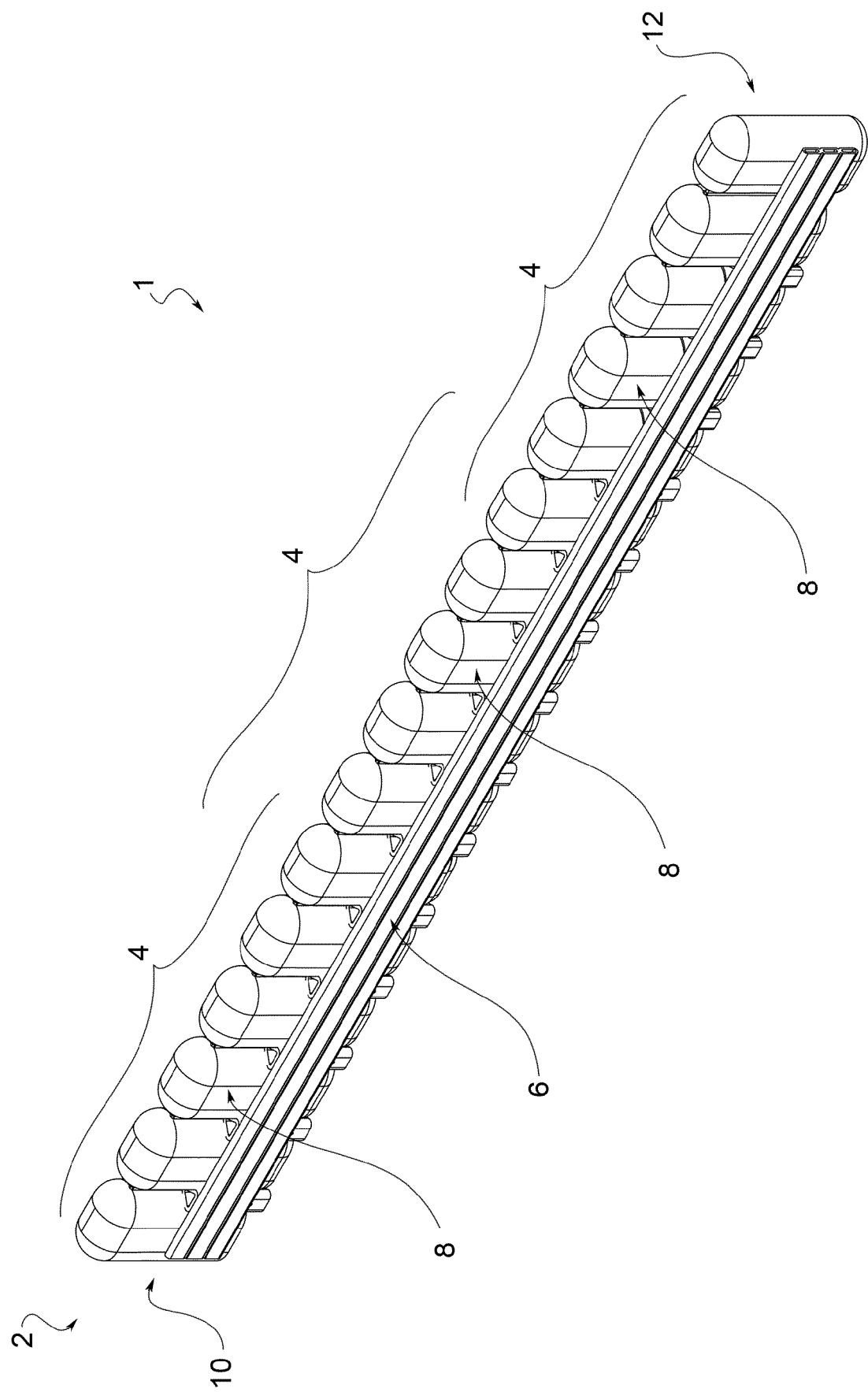


FIG.1

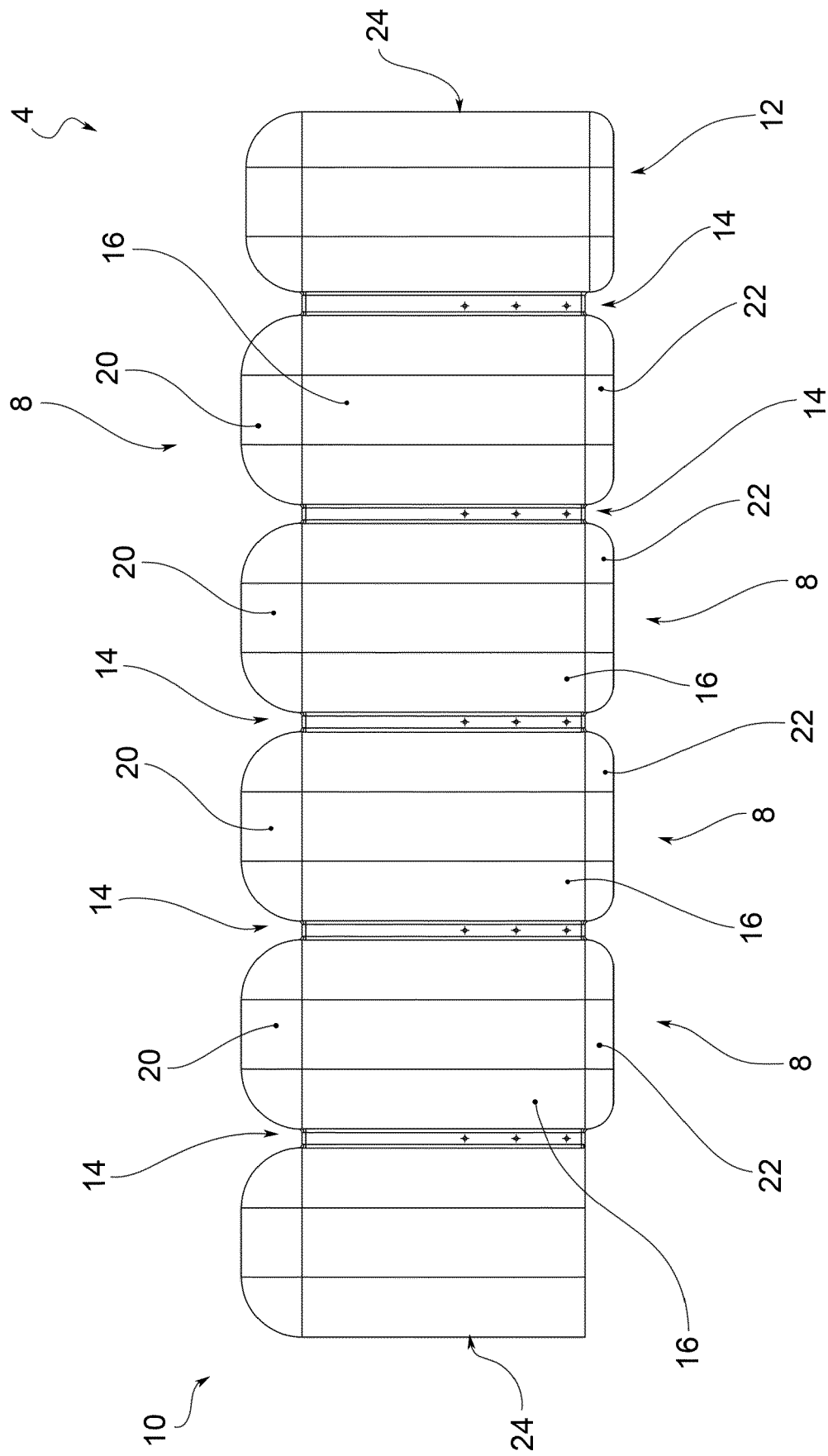


FIG.2

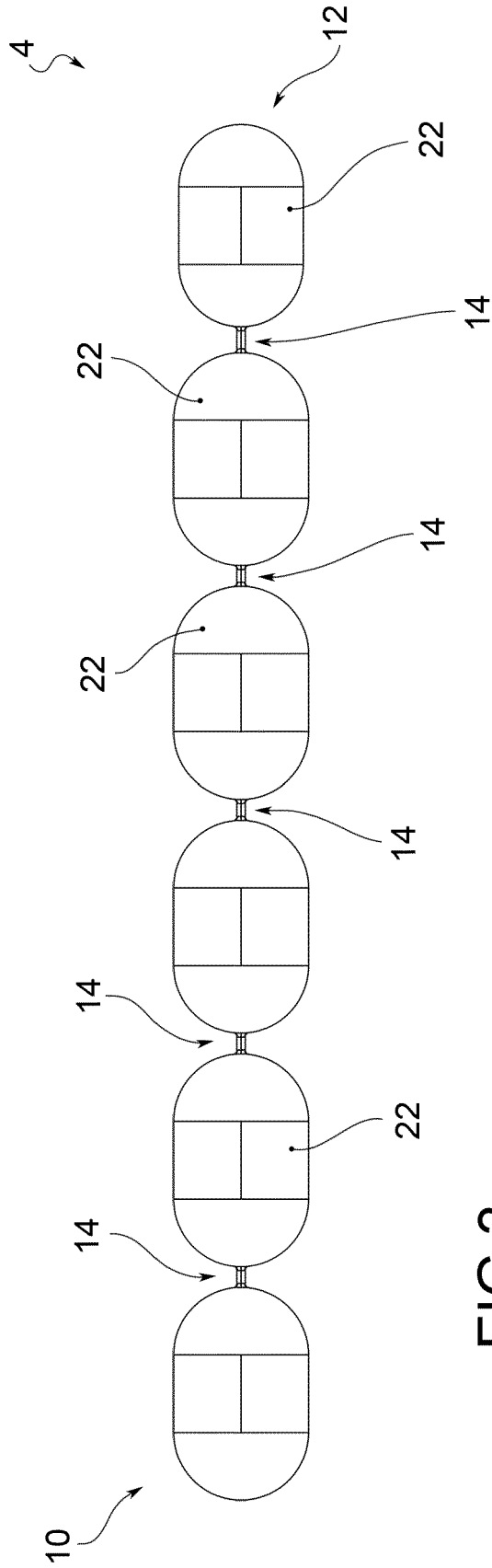


FIG.3

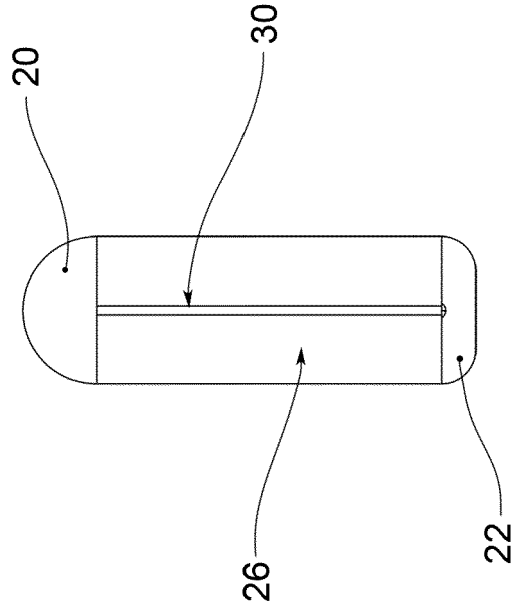


FIG.4

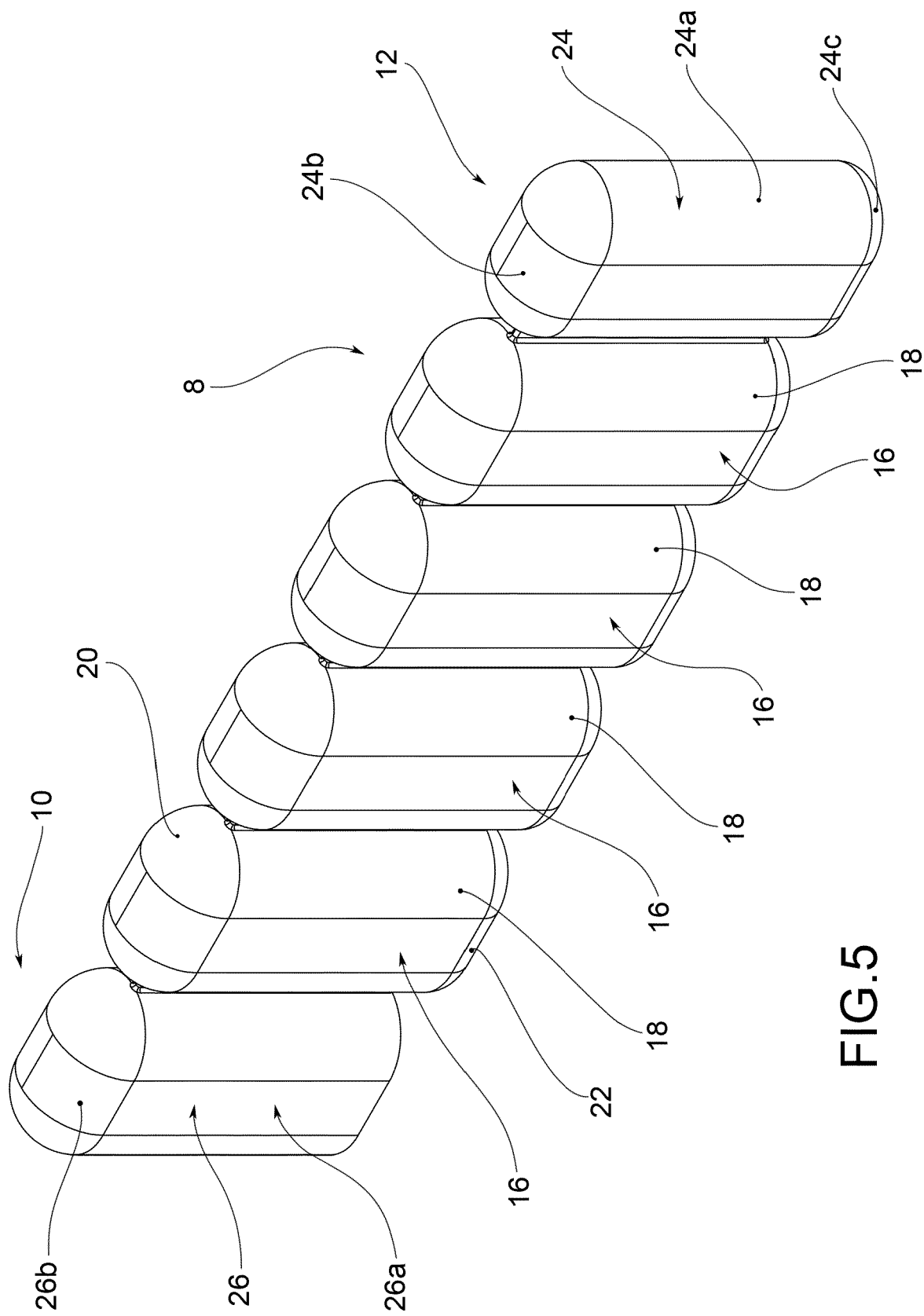


FIG.5

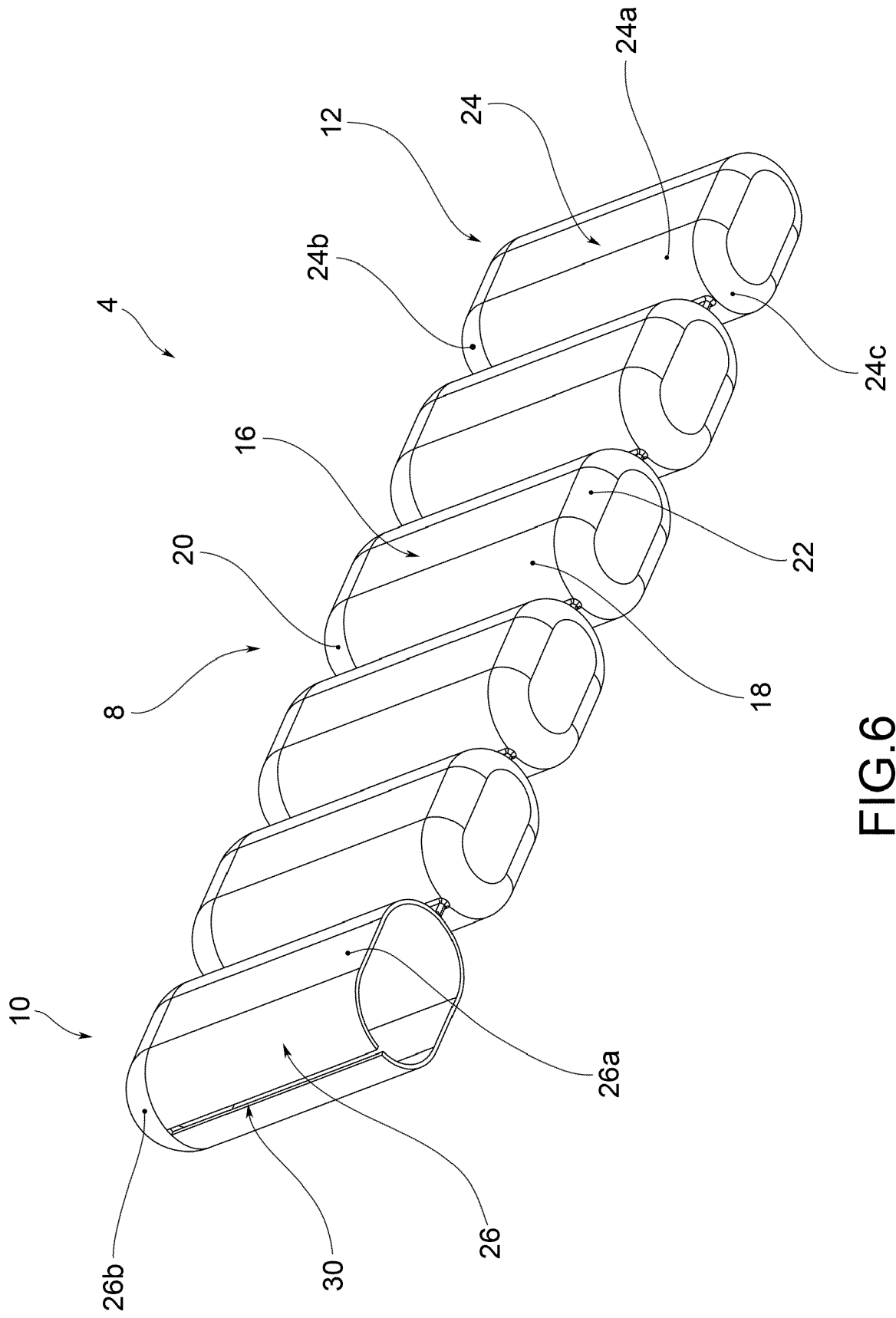


FIG. 6.

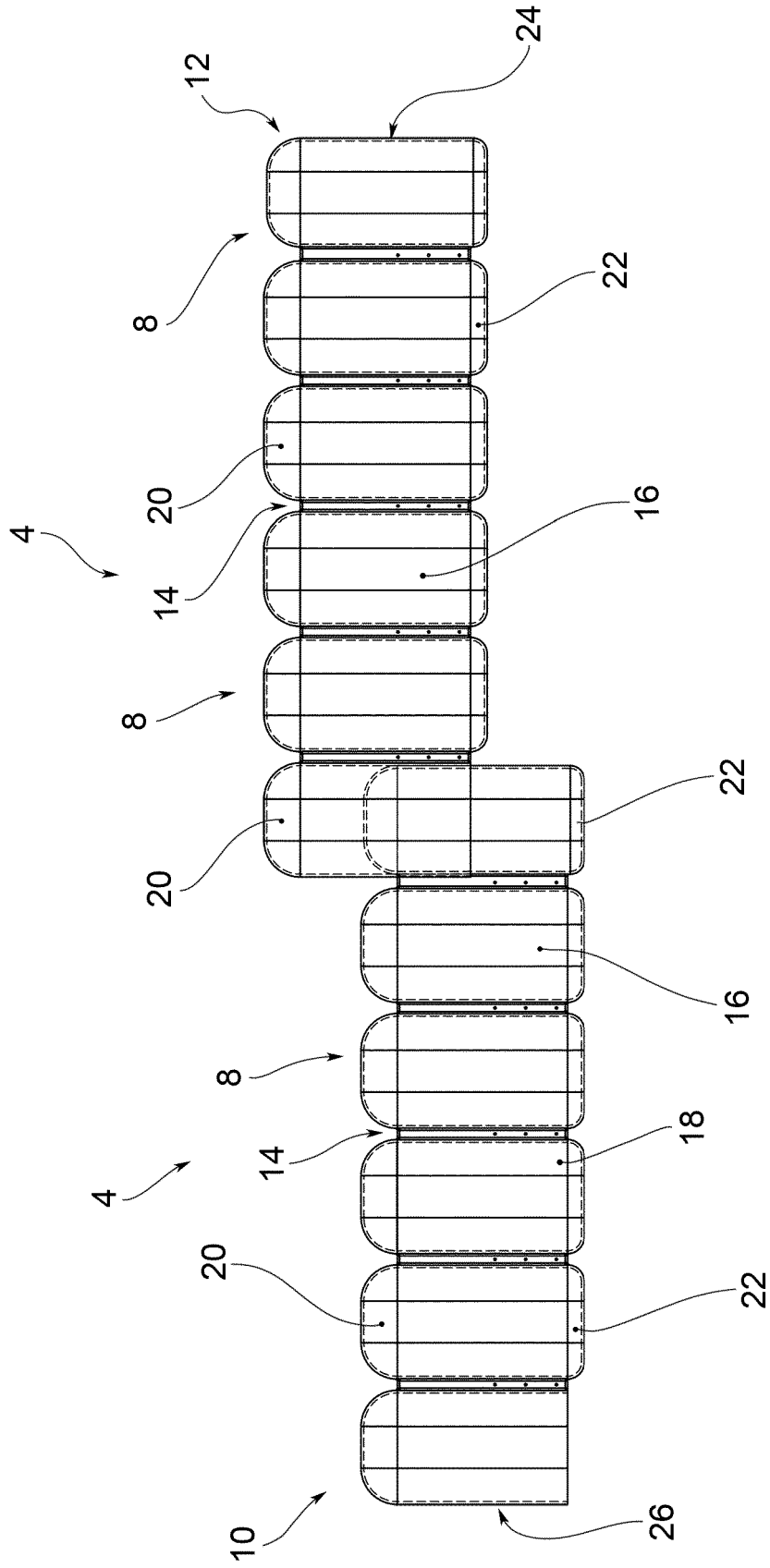


FIG. 7

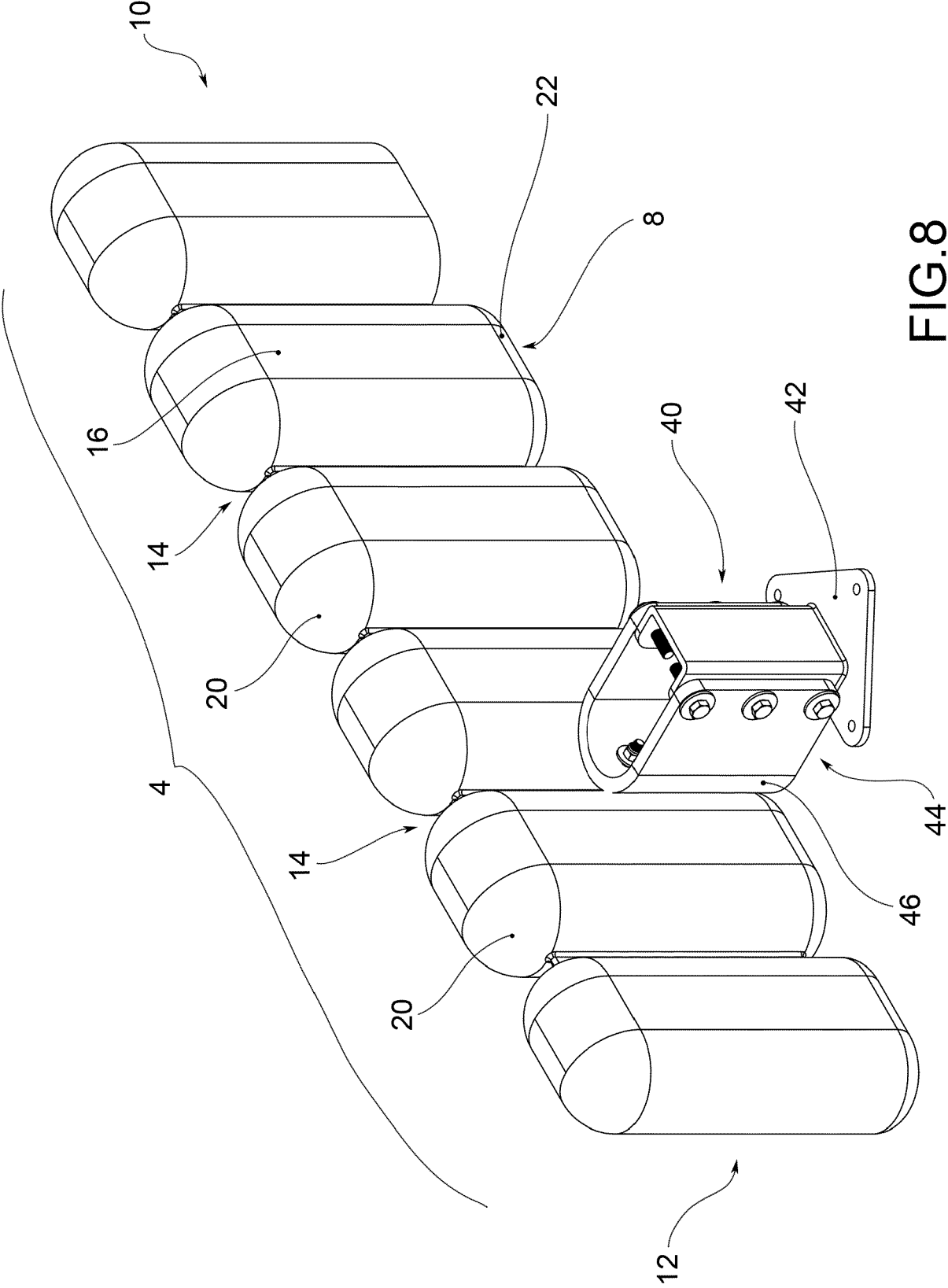


FIG. 8



EUROPEAN SEARCH REPORT

Application Number
EP 20 20 2883

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DOCUMENTS CONSIDERED TO BE RELEVANT			
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A	DE 196 32 026 C1 (FRITZINGER KLAUS [DE]) 13 November 1997 (1997-11-13) * column 3, lines 25-50; figures 1-3 *	1-11	INV. E01F15/08
A	FR 2 642 096 A1 (MASAIR [FR]) 27 July 1990 (1990-07-27) * page 4, line 4 - page 5, line 20 * * page 6, lines 15-17; figures 1-4 *	1-11	
A	DE 298 07 232 U1 (MAIBACH VERKEHRSSICHERHEIT [DE]) 27 August 1998 (1998-08-27) * page 6, lines 12-18; figures 1,2,6-8 *	1-11	
			TECHNICAL FIELDS SEARCHED (IPC)
			E01F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 21 January 2021	Examiner Flores Hokkanen, P
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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- DE 19632026 [0007]