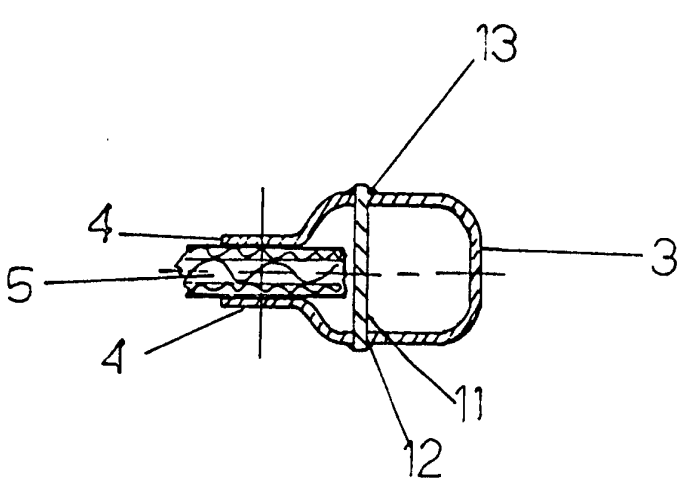


INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/NL93/00272 (22) International Filing Date: 21 December 1993 (21.12.93) (30) Priority Data: 9202237 23 December 1992 (23.12.92) NL (71) Applicant (for all designated States except US): AMAFILTER BV [NL/NL]; Kwakelkade 28, NL-1823 CL Alkmaar (NL). (72) Inventor; and (75) Inventor/Applicant (for US only): PLAISIER, Leendert [NL/NL]; Prinses Irenelaan 4, NL-1911 HW Uitgeest (NL). (74) Agent: KOOMEN, M., J., I.; Kennemerstraatweg 35-37, NL-1814 GB Alkmaar (NL).		(81) Designated States: US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i>
(54) Title: FILTER ELEMENT (57) Abstract Filter element, comprised of a filtration part and a supporting or mounting frame for the retaining of the filtration part, which frame is formed by a profile with a centre part and two opposite disposed border parts, between which the filtration part may be retained, while in between and onto the two opposite border parts a strip of material is firmly fixed. 		

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Filter element.

The invention relates to a filter element, whereby the filter element is intended to be installed standing or hanging within a filter vessel, and whereby the
5 filter element is formed by a filtration part and a supporting- or mounting frame for the retaining of the filtration part, which frame has a substantially U-shaped section and is formed by a profile having a centre part and two opposite border parts, between
10 which border parts the filtration part can be enclosed.

Such a filter element is known.

When manufacturing such a known filter element the filtration part is slid between the border parts
15 into the profile at a distance from the centre part, after which the border parts are fastened onto the filtration part. This generally takes place by connecting the border parts together with the filtration part placed therein between by means of
20 rivets.

During the bending of the profile into a shape which is adapted to the measurements of the filtration part, as well as during the mounting of the filtration part into the profile, it is possible that the two opposite
25 border parts are displaced with respect to each other, which displacement of the border parts with respect to one another is continued along the entire periphery of the frame. With a finished element the aforesaid displacement is only partly prevented by the rivet
30 connection, and the element may easily become deformed.

This is considered a drawback.

Also, the lack of torsional stiffness of the known

filter element has a very negative influence on the manoeuvrability of the element.

The invention aims to obviate this drawback of the known filter element.

- 5 The filter element according to the invention is to that end characterized, in that between and onto the two opposite border parts of the profile a strip of material is firmly fixed.

- 10 According to a further characteristic of the filter element according to the invention, two or more strips of material are placed at a distance from one another in the longitudinal direction of the profile.

The strip or the strips may thereby be mounted in various ways.

- 15 According to a characteristic of the filter element according to the invention the strip or strips are placed extending parallel to the longitudinal direction of the profile.

- 20 According to a further characteristic the strip or strips are placed at a distance from the centre part.

Other features and characteristics of the filter element according to the invention will be explained with reference to the drawings of an embodiment by way of example.

- 25 Fig. 1 is a front view of a filter element according to the invention.

Fig. 2 is a perspective view of a part of a profile according to the invention.

Fig. 3 is a cross section of the profile.

Fig. 4 is a part of a profile shaped into a bend.

Fig. 5 a and 5 b are a cross section respectively a longitudinal section of another embodiment of the filter element according to the invention.

As is shown in Fig. 1, the filter element is formed by a supporting- or mounting frame 1, which is formed by a profile 2 having a substantially U-shaped section, with a centre part 3 and, as shown in Fig. 2 and 3, two opposite disposed border parts 4. Between the border parts 4 the filtration part 5 is retained, which may consist of a heavy wire netting 6 over both sides of which a support gauze 7 is applied, and over which a filter gauze 8 is applied.

As is shown in Fig. 3, the filtration part is slid up to at a distance from the centre part 3 between the border parts 4 of the frame.

The two border parts are further provided with openings 9 for the rivet connection 10.

In the example of an embodiment according to the drawing, between the border parts 4 which extend parallel to the longitudinal direction of the profile, a strip 11 is placed, which in this example of an embodiment is placed within a slot 12, which is present in both border parts. The strip is mounted in the border parts by means of a weld connection 13.

As shown in Fig. 4 multiple strips may be placed in the longitudinal direction of the profile, for example in a bended section of the profile.

Figures 5 a and 5 b show another embodiment of the

filter element according to the invention.

- Two strips of material 11 are mounted such, that at one border part 4 they meet with their end parts 14, while at the opposite border part the strips 11 with their other end parts 15 are spaced apart.

The end parts 14 form an angle of 90 degrees with respect to each other, and the end parts 15 form an angle of 45 degrees with respect to the border part 4 to which they are attached.

- 10 The filter element according to the invention in comparison with the known filter elements has a greater formhold and is much stiffer at handling.

C L A I M S.

1. Filter element, comprised of a filtration part and a supporting- or mounting frame for the retaining of the filtration part, which frame is formed by a
5 profile with a centre part and two opposite disposed border parts, between which the filtration part may be retained, characterized in that between and onto the two opposite border parts a strip of material is firmly fixed.
- 10 2. Filter element according to claim 1, characterized in that two or more strips are placed in the longitudinal direction of the profile at a distance from each other.
- 15 3. Filter element according to claim 1 or 2, characterized in that the strip or strips are placed extending parallel to the longitudinal direction of the profile.
4. Filter element according to claim 1, 2 or 3, characterized in that the strip or strips of material are mounted between the border parts at a distance from
20 the centre parts.
5. Filter element according to claim 1, 2, 3 or 4, characterized in that two or more strips of material are mounted such, that at one border part the strips meet with their end parts, while at the opposite
25 border part the strips with their other end parts are spaced apart.
6. Filter element according to claim 5, characterized in that the strips are mounted such, that at the point where they meet they form an angle of 90 degrees.
- 30 7. Filter element according to any of the preceding

claims, characterized in that the strip or strips are inserted in a recess or slot provided in a border part.

5 8. Filter element according to any of the preceding claims, characterized in that the profile and the strip or strips are formed by metal.

10 9. Filter element according to any of the preceding claims, characterized in that the strip or strips are mounted onto or into the border parts by means of a weld connection.

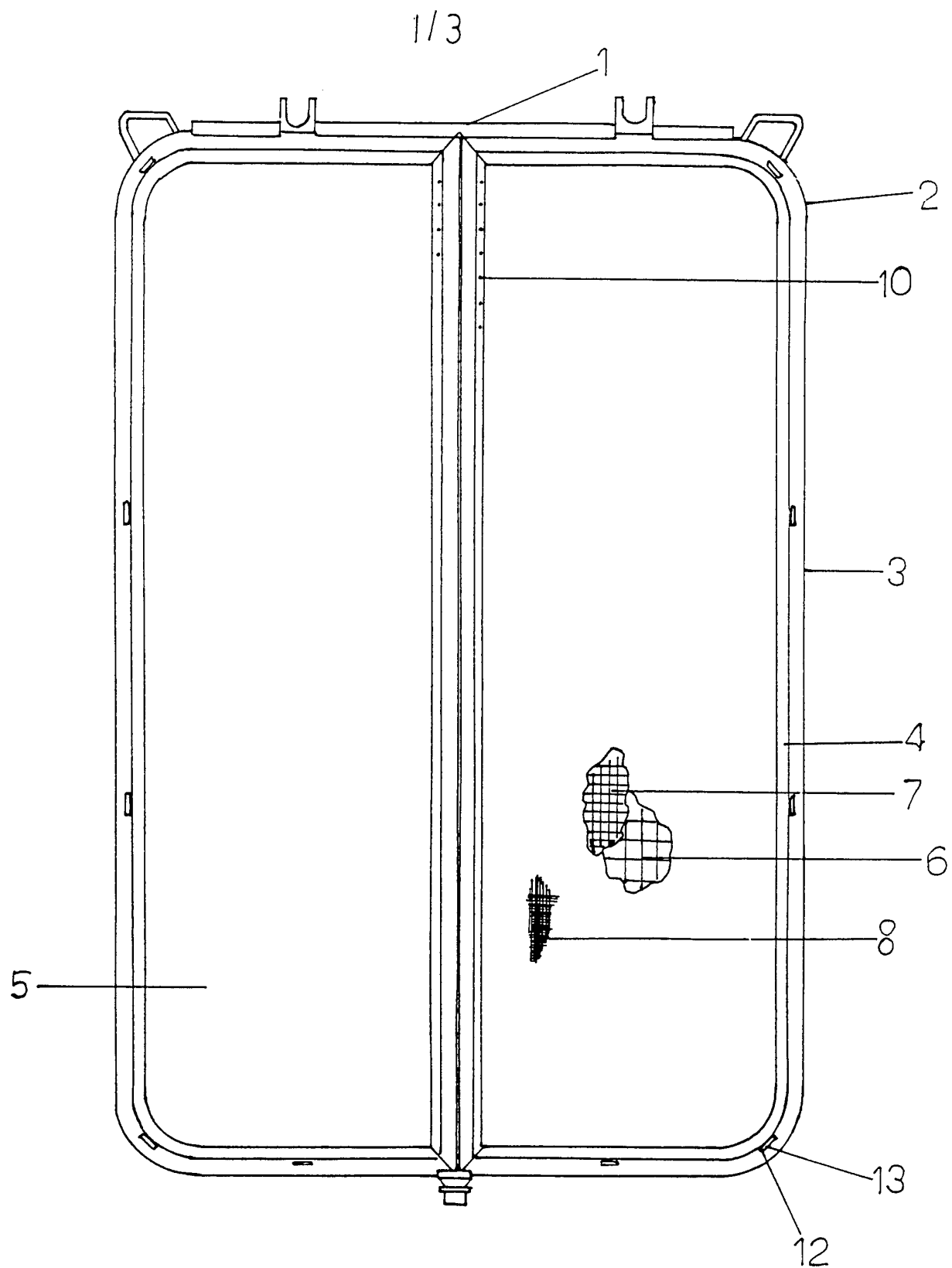


FIG 1

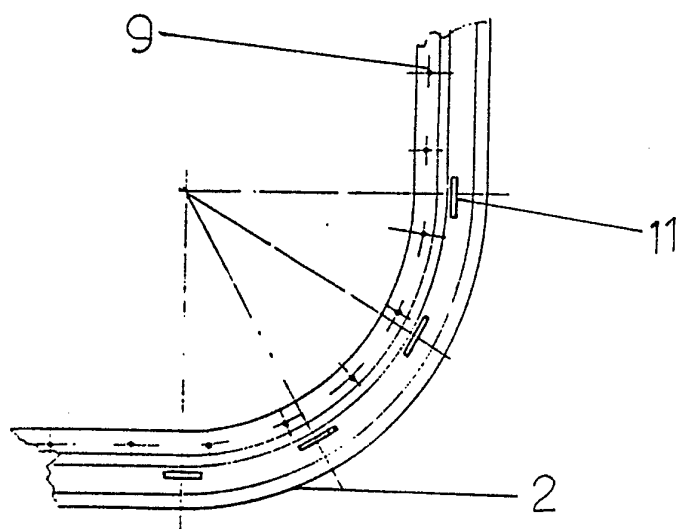
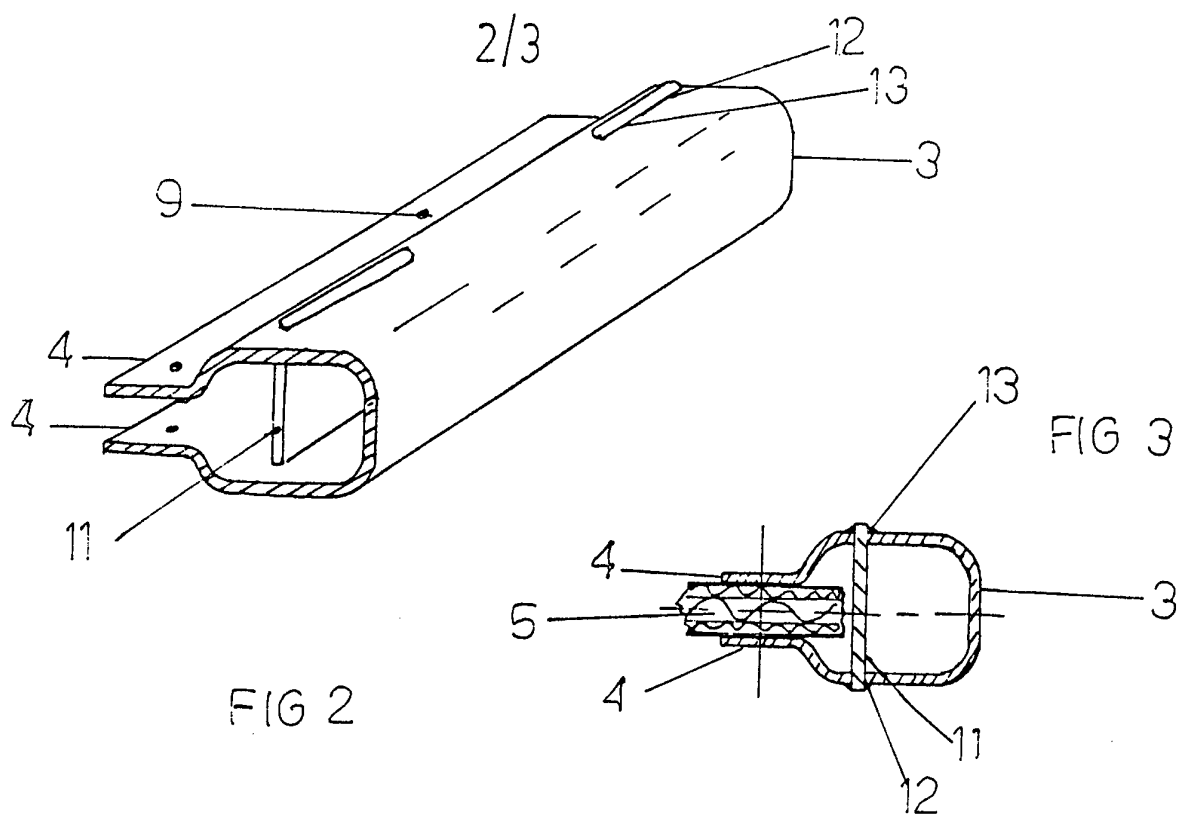


FIG 4

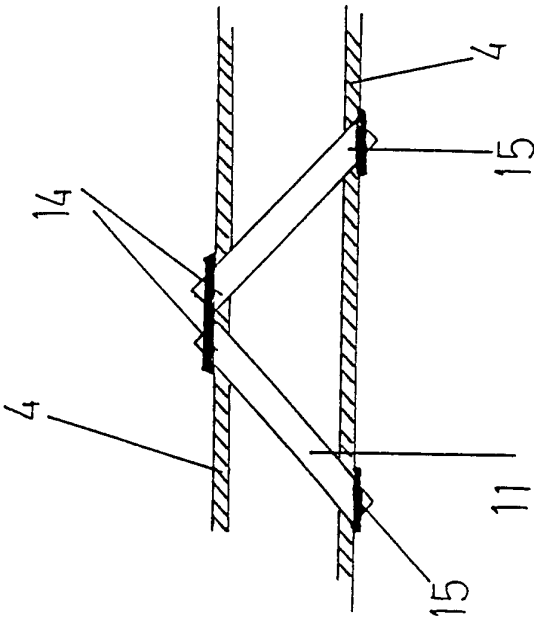


FIG 5b

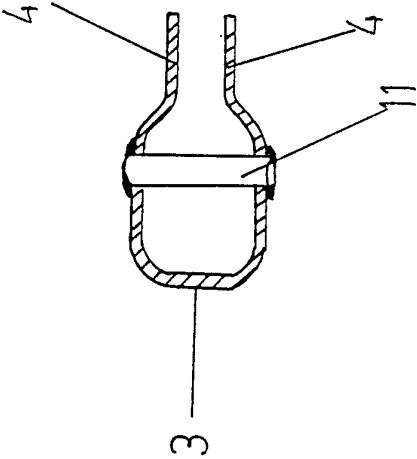


FIG 5a

INTERNATIONAL SEARCH REPORT

Int.: International Application No
PCT/NL 93/00272A. CLASSIFICATION OF SUBJECT MATTER
IPC 5 B01D29/39

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)
IPC 5 B01D

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 practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE,A,16 11 075 (DORR-OLIVER) 3 September 1970 see figures 1,2 ---	1
A	US,A,2 328 148 (A. JACOBOWITZ) 31 August 1943 see figures 2,4 -----	1

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE-A-1611075	03-09-70	FR-A- 1542180 NL-A- 6714673	01-05-68
US-A-2328148		NONE	