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(54) A gully with a cover and a supporting member suitable for such a gully.

(57) A gully with a cover (9) is supported by a supporting member (14) in the area located within the inner circumference of the gully upper edge (8, 48; 48a) engaging the cover (9).

The gully and/or the cover (9) consist of a fibre reinforced plastics.

In order to support one or more dividers (20, 20a, 31, 31a) for dividing liquids to division feed lines (21a to 21j, 22a to 22j) and division return lines (32a to 32j and 33a to 33j) the supporting member comprises two plates (38, 39) provided with slots (44, 45), being interconnected by means of a connecting plate (40). The lower side and upper side of the two plates (38, 39) are connected with supporting member plates (46, 47).

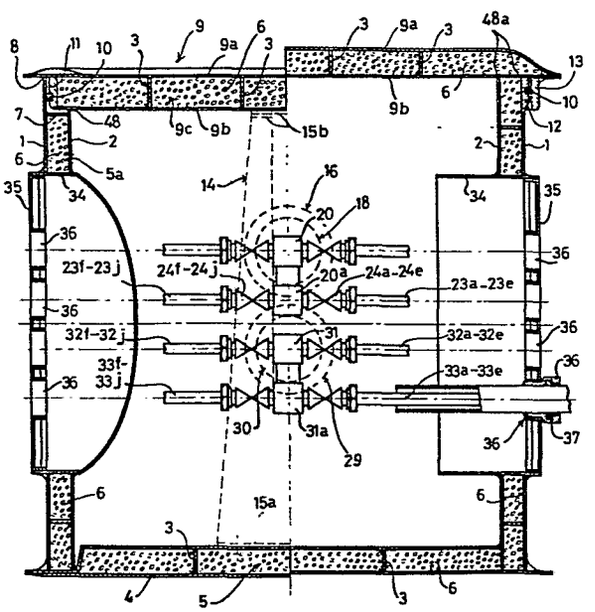


Fig: 2.

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A gully with a cover and a supporting member suitable for such a gully.

The invention relates to a gully with a cover, more particularly to a plastics gully with a plastics cover.

Plastics gullies with covers are generally known and are adapted either to discharge sewage water through sewer systems whether in the form of sewer gullies or inspection gullies, or as cable shafts. In order to use these gullies in roads or streets having a normal road traffic, rather thick metal covers have to be used which involves a heavy, expensive and difficult handling, as well as an excessive expenditure of material.

Plastics covers which are by themselves light and easy to handle, are on the other hand, insufficiently rigid so that they will easily sag when a load is exerted upon them.

Moreover, plastics gullies, especially gullies having a large diameter, present the disadvantage that they can be damaged by a metal cover when high loads are exerted upon said cover, for instance by heavy road traffic.

The invention aims to provide a plastics gully which does not present the abovementioned disadvantages and which

can be used with relatively thin plastics covers, which will not be subject to any deformation even when a load is exerted upon them by heavy road traffic, thus allowing the use of less heavy, less expensive and less material-consuming covers, which are also easy to handle.

This object is attained in accordance with the invention in that the cover cooperates with a support member acting in the zone of the cover being located within the inner circumference of the gully edge engaging the cover and in that said cover and/or gully consists of plastics.

Supporting the cover in the central zone being located within the inner circumference of the gully edge engaging the cover, results in an additional support of the deformable area of said cover and/or of said gully and thus, in the abovementioned advantages.

The supporting member consists very advantageously of one or more column-shaped element(s) which bear(s) upon the bottom of the gully.

In addition, a column-shaped element of this type is very convenient as it can also be used for the support of certain parts of conduits, which will, for example, be provided in gullies of said type, if said gullies are destined to be used as division gullies for conveying heating fluids towards houses or edifices.

The invention will now be illustrated with the aid of an embodiment in the drawings, wherein:
Fig. 1 shows a top view of a plastics gully being used as a division gully in a conduit system for distributing heating fluids towards various different consumers;
Fig. 2 is a longitudinal cross section through a plastics

gully in accordance with the invention;
Fig. 3 is a perspective view of a support for a plastics cover in a plastics gully according to the invention, some components being shown separately;

In Fig. 1 a plastics gully is shown, consisting of a glass fibre thermosetting resin, more particularly of an epoxy or polyester resin, said gully being built up from a plastics outer wall 1 and a plastics inner wall 2 situated concentrically with respect to wall 1, said walls being interconnected by reinforcing ribs or spacer means 3 and thus forming a cylindrical space 5a.

The plastics gully comprises a double-walled gully bottom 4 which comprises re-inforcing partitions 3 between the gully bottom wall parts 4a and 4b.

The bottom space 5 and the space 5a between the inner wall 1 and the outer wall 2 are filled with plastics foam 6.

In its upper part the space between the inner wall 2 and the outer wall 1, is closed off by a cover 9 and the outer wall 1 further extends until outer wall upper edge 8.

The upper edges 8 and 48 of outer wall 1 and inner wall 2 forming a gully upper edge, support a plastics cover 9 of fibre reinforced plastics consisting of a cover upper wall 9a and a cover lower wall 9b, space 9c between said walls being filled with plastics foam 6. The space between outer wall 1 and inner wall 2 is closed by a closing surface 7.

A sealing ring 10 cooperating sealingly with the inner side of the outer wall 1, and the outer side of the circumferential edge 11 of the cover 9 provides a reliable

seal of the inner side of the plastics gully. The circumferential edge 11 may consist of a plastic different from that of the cover upper wall 9a, and the cover lower wall 9b.

Fig. 1 shows another embodiment for the provision of a cover in which the inner wall 2 and the outer wall 1 end at the same level so that cover 9 will be supported by the end edges of the inner wall 2 and the outer wall 1 forming the gully upper edge 48a. The outer side of outer wall 1 comprises a sealing ring 10 accommodated in a recess, formed by a ring 12 being fixed by means of an adhesive.

In this case the lower wall 9b of cover 9 comprises a downwardly extending circumferential edge 13 which may consist of each arbitrary material, but which is in any case sealingly connected with the cover lower wall 9b.

Inside the gully a cover support 14 is arranged, its supporting face 15a being supported by bottom 4 of the plastics gully, its upper face 15b cooperating on the other hand with cover 9.

The gully according to the invention further comprises an inlet 16 and an outlet 17 for the passage of a conduit 18, e.g. of polybutylene destined to convey a heating fluid. Through a valve 19 said conduit 18 is connected with a first divider 20 being in turn connected to a valve 19a, adjoining conduit 18a which forms an extension of conduit 18 and extends towards another gully.

Divider 20 comprises first division feed lines 21a to 21j inclusive, each comprising a division feed line valve 22a

to 22 j inclusive. The first divider 20 is further directly connected with a second divider 20a, which is in turn connected with second division feed lines 24a to 24j inclusive, through second division feed line valves 23a to 23j inclusive.

As can be seen in fig. 1 the conduits 18 and 18a, e.g. of polybutylene are provided with a polyethylene foam plastics insulating covering 25, being surrounded by a polyethylene tubular casing 27.

The conduits 18 and 18a are passed through the wall of the plastics gully by means of a passage comprising a sealing sleeve 28.

The plastics gully, on the other hand, comprises an additional passage 29 for passage of a return conduit 30 which return conduit is connected with the return conduit dividers 31 and 31a. The return division lines 32a to 32j inclusive, extend into the return conduit divider 31, while the return division lines 33a to 33j inclusive, extend into the divider 31a being connected with the return conduit divider 31.

In order to enable the passage of the division feed lines 21a to 21j and 24a to 24j as well as of the return division lines 32a to 32j and 33a to 33j, the plastics gully comprises passage cylinders 34, with end plates 35, said end plates comprising one or various passages 36 for the return lines, which can be sealed off by means of a sealing ring 37. The passages 36 are shaped as half mole sockets.

As previously described, plastics cover 9 is supported by means of a column-shaped support 14, which cooperates on the one hand with the cover by face 15b and on the other hand by part 15a with the bottom of the plastics gully.

As can be seen in fig. 2 the column-shaped support 14 supports the plastics cover 9 in a zone located within the inner upper edge 48 of the gully 1 which cooperates with cover 9.

The latter measure will obviously result in an extensive support of said cover, so that no sagging phenomena will occur, even when loads are exerted by heavy load traffic.

Fig. 3 is a perspective view of the support 14 which consists of a first metal plate 38 and a second metal plate 39 being interconnected by a connecting plate 40. Joining the plates 38, 39 and connecting plate 40, may be effected in any desired manner.

First plate 38 comprises an angled bottom edge 41, whilst second plate 39 comprises an angled bottom edge 42, which angled bottom edges may bear upon bottom 4 of the plastics gully together with lower edge 43 of connecting plate 40.

Plate 38 is also provided with a slot-shaped recess 44 extending from the upper side of said plate, whilst plate 39 comprises a slot-shaped recess 45 likewise extending from the free upper edge of plate 39.

The upper ends of plate 39 and plate 38 comprise angled upper edge parts 39a, 39b at either side of the slot-shaped recess 45, and angled edges 38a and 38b which extend at either side of said slot-shaped recess 44.

An effective support structure is obtained by disposing a support plate 46 upon the angled edge parts 39a, 39b, 38a, 38b and by tightly screwing said support plate 46 upon plates 39 and 38.

In order to equidistantly divide the supporting forces along the bottom, the lower side of the angled bottom edges 41 and 42 may obviously be also connected with a supporting member in the form of a plate 47.

Dividers 20, 20a, 31, 31a are spaced by spacer plates 26 which are secured upon plates 38 and 39.

Claims:

1. A gully with a cover, characterized in that said cover (9) cooperates with a supporting member (14) acting in the zone of the cover being located within the inner circumference of the gully upper edge (8, 48; 48a) engaging with said cover and in that said cover and/or gully consist of plastics.

2. Gully according to claim 1, characterized in that the cover, preferably of a glass fibre reinforced plastics, is a double-walled cover (9) comprising cover walls (9a, 9b), the intermediate space (9c) being filled with a foam plastic (6).

3. A gully according to any one or more of the preceding claims, characterized in that the bottom (4) of said gully is double-walled and is formed by an inner wall (1) and an outer wall (2), the space (5) between said walls being filled with a plastics foam (6).

4. A gully according to any one or more of the preceding claims, characterized in that said gully, preferably of a glass fibre reinforced plastics, is double-walled and in that the space (5a) between the walls (1, 2) is filled with a plastics foam (6).

5. A gully according to any one or more of the preceding claims, characterized in that the cover (9), the walls (1, 2) and/or the bottom of the plastics gully comprise reinforcing ribs (3).

6. A gully according to any one or more of the preceding claims, characterized in that the supporting member (14) is a column-shaped element which bears upon the bottom (4) of the gully by means of a lower supporting face (15a) whilst an upper supporting face (15b) cooperates with cover (9).

7. A gully according to any one or more of the preceding claims, characterized in that the supporting member (14) comprises means for supporting at least one divider (20, 20a, 31, 31a) being connected with division feed lines and/or division return lines (21a to 21j, 32a to 32j and 33a to 33j resp.).

8. A gully according to any one or more of the preceding claims, characterized in that the supporting element (14) is composed of at least two interconnected plate-shaped elements (38, 39) and in that said plate-shaped elements (38, 39) preferably cooperate with an upper supporting face (46) and preferably with a lower supporting face (47).

9. A gully according to any one or more of the preceding claims 7 or 8, characterized in that dividers (20, 20a, 31, 31a) are spaced by spacer means (48) being connected to the plate-shaped elements (38, 39).

10. A gully according to any one or more of the preceding claims, characterized in that the gully comprises a closure wall (35) having recesses for passage of division return lines and division

feed lines (21a to 21j, 22a to 22j, 32a to 32j, 33a to 33j), and in that preferably each recess in the closure wall or plate (35) comprises a socket (36) with a sealing ring (37), said sealing ring (37) cooperating with a division feed line (21a to 21j) or a division return line (32a to 32j).

11. A supporting member suitable for a gully with a cover according to any one or more of claims 1 to 10.

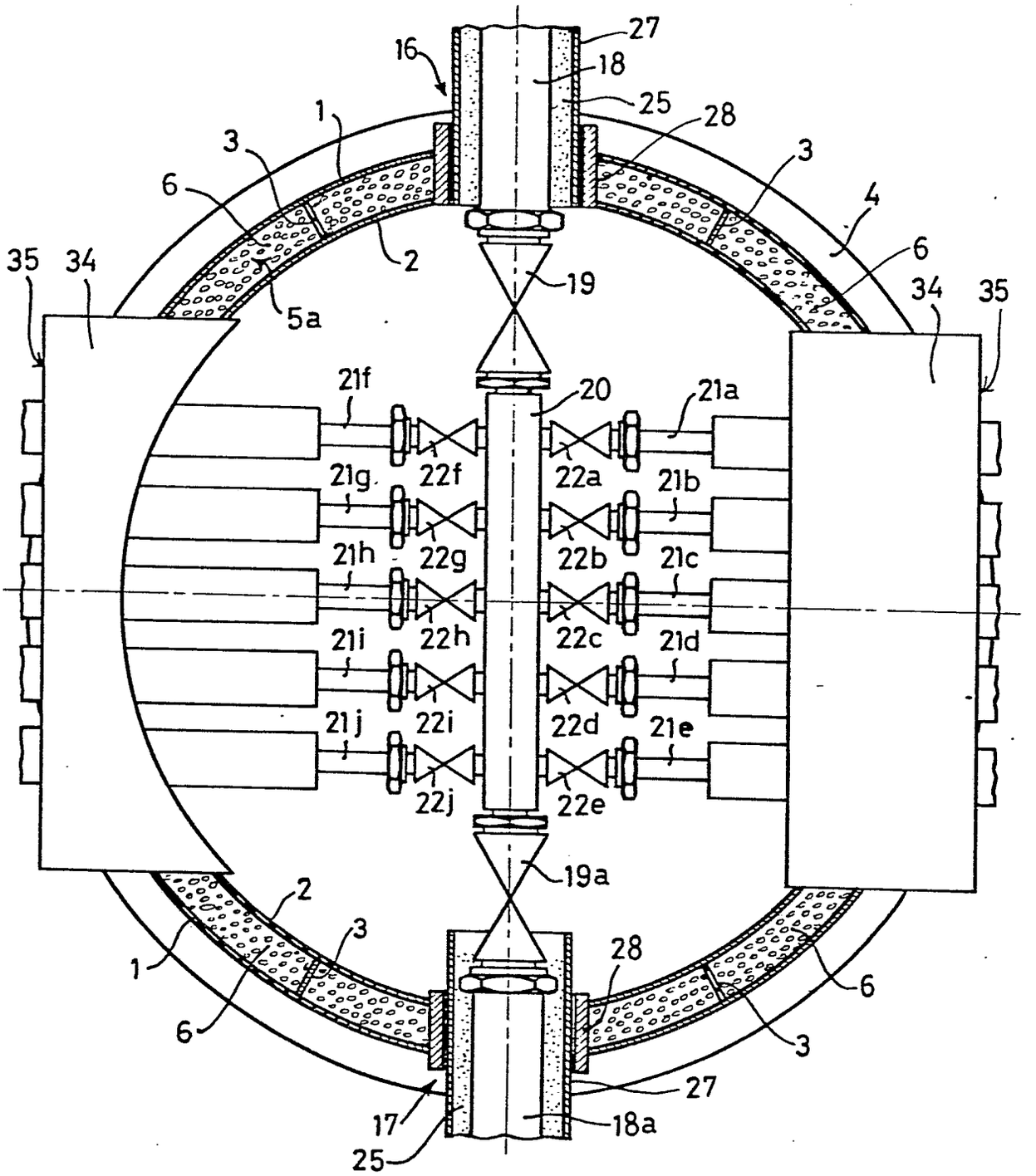

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Fig. 1.

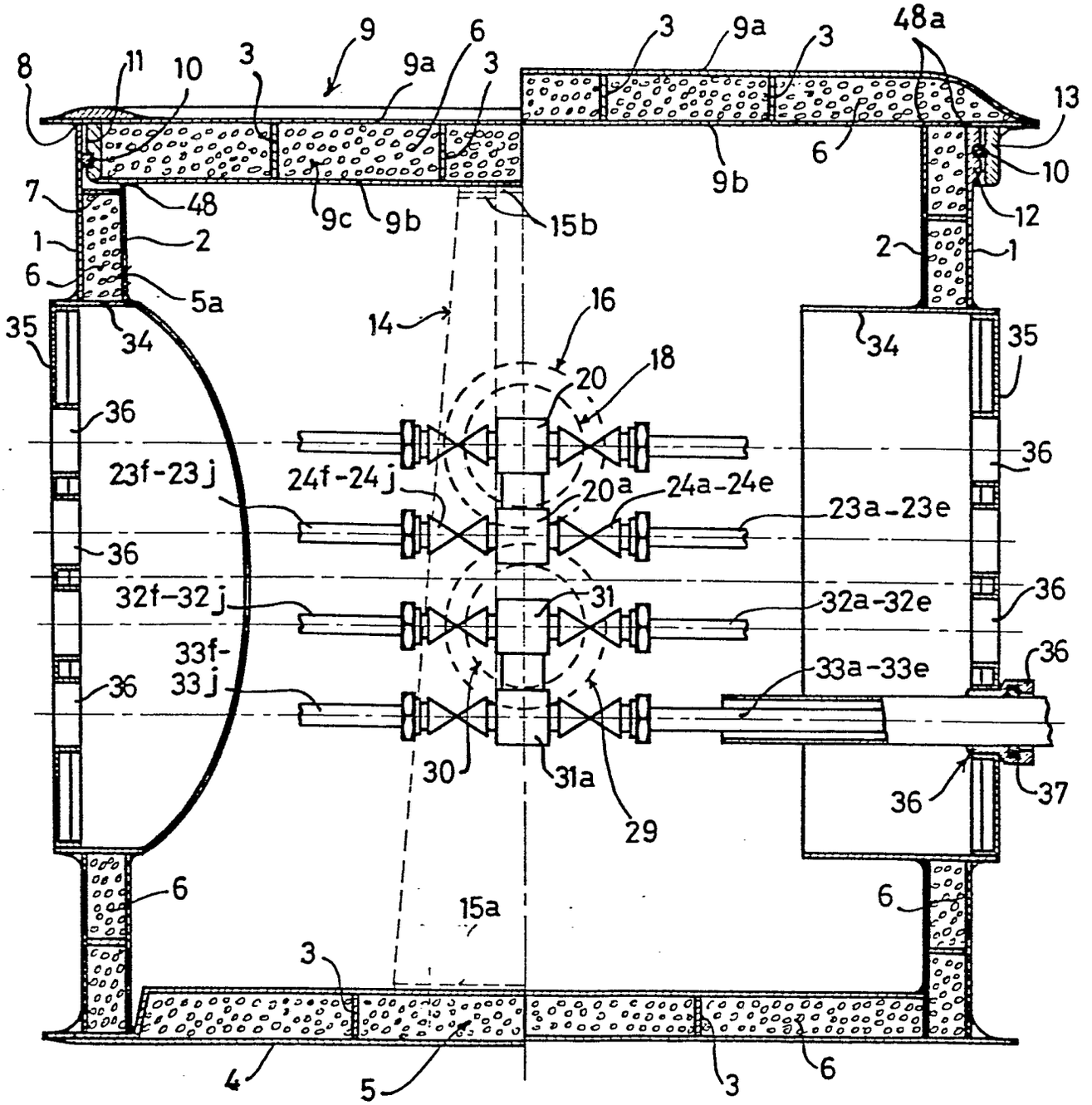

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Fig: 2.

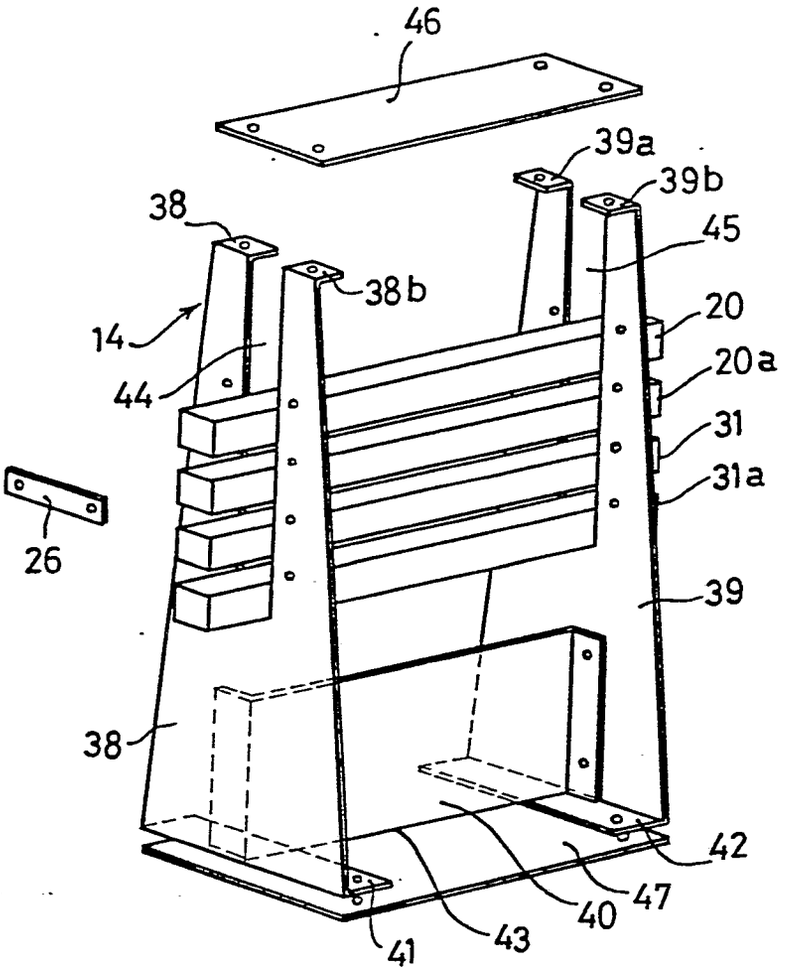


Fig. 3.

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EUROPEAN SEARCH REPORT

Application number EP 81 20 1045

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
	FR - A - 2 110 564 (ROCH) * Page 2, lines 17-40; page 3, lines 1-21; figures 1,3,4 *	1,6
	FR - A - 2 408 694 (MARLEY TILE) * Page 3, figure 1 * & GB - A - 1 577 454	1
	US - A - 3 974 599 (GROSH) * Column 3, lines 53-68; column 4, lines 1-43; figure 2 *	1-4
	FR - A - 2 088 153 (DAVID) * Whole document *	1,5
	NL - A - 80 01209 (REED) * Claim 1; figure 1 * & GB - A - 2 046 328	10
A	DE - A - 1 609 143 (VAN DE KERKE)	

CLASSIFICATION OF THE APPLICATION (Int. Cl.-)

E 03 F 5/02
E 02 D 29/12

TECHNICAL FIELDS SEARCHED (Int. Cl.-)

E 03 F
E 02 D

CATEGORY OF CITED DOCUMENTS

X: particularly relevant
A: technological background
O: non-written disclosure
P: intermediate document
T: theory or principle underlying the invention
E: conflicting application
D: document cited in the application
L: citation for other reasons

&: member of the same patent family, corresponding document

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	28-12-1981	HANNAART