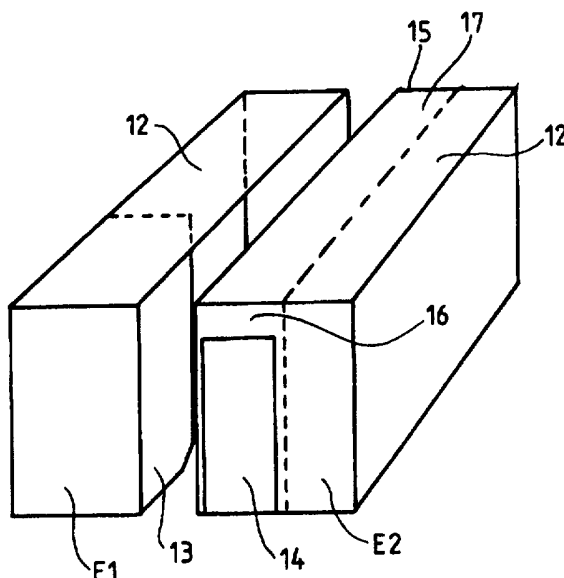




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(21) International Application Number: PCT/FI96/00674 (22) International Filing Date: 18 December 1996 (18.12.96) (30) Priority Data: 956264 27 December 1995 (27.12.95) FI (71) Applicant (for all designated States except US): OY SHIPPAX LTD. [FI/FI]; Mustionkatu 4, FIN-20750 Turku (FI). (72) Inventor; and (75) Inventor/Applicant (for US only): KORDELIN, Tapio [FI/FI]; Vartiokuja 1 D 35, FIN-20700 Turku (FI). (74) Agent: TURUN PATENTTITOIMISTO OY; P.O. Box 99, FIN-20521 Turku (FI).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published With international search report. With amended claims. In English translation (filed in Finnish).

(54) Title: CABIN SYSTEM



(57) Abstract

The invention relates to a cabin system for ships and the like. The cabins (10) comprise two pre-fabricated cabin elements E1 and E2 or their mirror image elements E1' and E2', provided with walls (11) and a ceiling (12) and connection elements (15, 16, 17) connecting said cabin elements E1 and E2 resp. E1' and E2'. Said cabin elements E1, E2, E1', and E2' form suitable transfer units for transportation. The cabin elements E1 and E1' form alone transportable units. According to one alternative the cabin elements E2 and E2' attached to each other form a transfer unit. According to another alternative at least part of the connection elements (15, 16, 17) are attached to the cabin elements E2 resp. E2' so that each of the cabin elements E2 and E2' forms a self-supporting transfer unit. According to a recommended embodiment, the edges of the cabin elements and the connection elements are provided with known L- and Z-section strips.

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CABIN SYSTEM

The invention relates to a cabin system for ships and the like. The invention also relates to transportable parts of the cabin system or transfer units. The invention further relates a method for assembling said cabin system from
5 these transfer units.

According to a known method depicted in the patent publication FI 62984, the ship cabins are prefabricated so far as to include all elements with insulation, lining and other equipment except the floor. The ship deck forms the
10 floor of the installed cabin. This kind of floorless cabin is naturally rapid to install on the building site. However, the cabin is difficult to transport on the road as well as to move it in the narrow passages in the ship to its final place.

15 According to another known method depicted in the patent FI 78036, two elongated cabin parts are prefabricated and transported to the site packaged so that said parts are close together during transportation. On the building site
20 the parts are separated from each other thereby forming the cabin space between them and the end walls and ceiling structure are mounted on them. This solution is advantageous from the point of view of transportation, but its installation stage is difficult. The patent indeed
25 teaches that the prefabricated parts are provided with a ceiling but in practice this solution has been difficult to realize. Installation of the ceiling over the intermediate space on lined parts must be done from the inside, due to lack of space, and this is difficult with conventional
30 attachment sections.

The object of this invention is to remove the above problems and obtain a cabin system consisting of transfer units which are easy to transport and rapid to install on

the ship.

The characteristics of the invention appear in the independent claims 1 and 5.

The invention will be explained in greater detail in the following referring to the enclosed drawings in which

Fig. 1 shows an above view of adjacent cabins installed on the deck of a ship,

Fig. 2 shows cabin elements side by side,

Fig. 3 shows a cabin assembled from the cabin elements and connection elements of Fig. 2,

Fig. 4 shows the transfer units of a cabin system according to one embodiment,

Fig. 5 shows the transfer units of a cabin system according to another embodiment,

Fig. 6 shows the principle of a prior art solution suitable for attaching elements together, and

Fig. 7 shows the attachment of cabin elements and connection elements to each other on the site.

Fig. 1 shows an above view of ship cabins 10 installed in place side by side. Each cabin comprises two prefabricated cabin elements E1 and E2 provided with walls 11 and ceiling 12 (Fig. 2) or cabin elements E1' and E2' in the form of their mirror images. The space 30 between the cabin elements E1 and E2 (resp. E1' and E2') defines the passage space of the cabin. Walls 11 form the ends and the side wall of the cabin elements. Besides other fittings, the cabin elements E1 and E1' also contain a sanitary unit 13 normally with a wash basin, WC and shower. For technical

reasons, the elements E1 and E1' containing a sanitary unit are always installed side by side and, therefore, also the lighter elements E2 and E2' are installed side by side. The cabin elements E1 and E2, resp. E1' and E2', are connected
5 to each other with end walls 15 and 16 and the ceiling 17 (Fig. 3) covering the intermediate space 30. The end walls 15 and 16, of which 15 includes a window (not shown in the figures) and 16 includes a door 14, and the ceiling 17 will in the following also be called connection elements. The
10 edges r of the cabin elements E1, E1', E2, E2', and the connection elements 15, 16, and 17 are at the installation stage placed against each other. The edges r are suitably provided with attachment sections by which the elements are attached to each other.

15 Prefabricated cabin elements may be transported to the installation site e.g. so that the elements E1 and E2, which form one cabin, are placed in the same "pack" or transfer unit as described in the patent FI 78036. Elements E1 and E1', which include sanitary units 13, are self-
20 supporting and consequently alone transportable transfer units. Lighter elements E2 and E2' on the contrary are too unstable to be transported alone as such.

Figs. 4 and 5 show two new optional ways to form transportable transfer units of the cabin elements.

25 According to the solution of Fig. 4 the cabin element E1 forms the first transfer unit. Cabin elements E2 and E2' attached to each other form the second transfer unit which need not be disassembled on the installation site. The cabin element E1 and the transfer unit E2+E2' are placed so
30 that E1 and E2 are situated at a suitable distance from each other. Then the elements E1 and E2 are connected together with the end walls 15 and 16 as well as the ceiling 17.

In the solution of Fig. 5 the cabin element E1 also forms
35 the first transfer unit. In this case the ceiling 17 covering the space 30 between the elements and the end

walls 15 and 16 have been pre-attached to the cabin element E2, and the door 14 in the wall 16 is already in place. The element E2 with the connection elements attached thereto forms the second transfer unit which is self-supporting and transportable as such. On the installation site, the transfer units are fastened to each other. Cabin element E2 can acquire the necessary transport stability although only part of the connection elements 15, 16 and 17 have been attached to it.

10 The edges of cabin elements to be attached to each other at the installation stage, and the connection elements are suitably provided with attachment sections described in the Finnish patent application 942654. This solution is shown in Fig. 6 showing two elements to be attached to each other. The edge of the main plate 20 of the first element is bent into an L-section and the plate edge of the second element into a Z-section. The edges of the plates to be attached to each other at the installation stage always form an L/Z-pair. The L- and Z-sections are provided with holes 21, 22, respectively, spaced a specific distance apart (the figure shows only the uppermost pair of holes) over the length of the joint. A tongue strip 23 is attached against the L-section so that its tongue 25 goes through the hole 21 (and also through the hole 22 of the Z-section when installed). A wedge strip 24 has been lightly attached against the Z-section, which wedge strip is at the installation stage knocked in the joint direction as indicated by the arrow. Hence the wedge strip and the tongue strip lock the L- and Z-sections of the elements tightly together.

Fig. 7 shows assembling of the units of Fig. 4 together. The edges of the elements E1 and E2 as well as the vertical edges of the end walls 15 and 16 and the side edges of the ceiling element 17 are provided with the above described L- and Z-sections with the tongue and wedge strips (the details of the section strips are not shown in this figu-

re). The end walls 15 and 16 are fastened by knocking the vertical wedge strips downward. The ceiling 17 forms here two parts 17a and 17b with an opening 40 between them for air conditioning unit. The ceiling parts 17a and 17b can be
5 fastened to the elements E1 and E2 from the opening 40 by knocking the wedge strips at the edges in the horizontal direction as shown by the arrows.

The cabin elements and the connection elements are provided with insulation, lining and channels for the lines and the
10 like required by the cabin technique and the cabin elements are also provided with cabin fittings.

It is obvious to a specialist in the field that various embodiments of the invention may vary within the scope of the enclosed claims.

CLAIMS

1. Cabin system for ships and the like comprising cabins (10) to be propped up on the deck of a ship and installed side by side, each installed cabin comprising two pre-fabricated cabin elements E1 and E2 or their mirror image elements E1' and E2' provided with walls (11) and a ceiling (12), and connection elements (15, 16, 17) connecting said cabin elements E1 and E2 resp. E1' and E2', the cabin elements E1 and E1' being self-supporting and containing besides other fittings also a sanitary unit (13), characterized in that said cabin elements E1, E2, E1', and E2' form a transfer unit combination for transportation consisting of separately transportable transfer units, the transfer unit combination comprising either

(i) the cabin elements E1, E1', and the cabin elements E2 and E2' attached to each other, or

(ii) the cabin elements E1, E1', E2, and E2', each of the cabin elements E2 and E2' having at least part of the connection elements (15, 16, 17) attached thereto with the result that each of the cabin elements E2 and E2' fitted with the connection elements (15, 16, and/or 17) forms a self-supporting transfer unit.

2. Cabin system according to claim 1 characterized in that the edges (r) of the cabin elements E1, E1', E2, and E2' and the connection elements (15, 16, 17), which at the installation stage are placed against one another, are provided with attachment sections.

3. Cabin system according to claim 2 characterized in that - the edges of the cabin elements E1, E1', E2, and E2' and the connection elements (15, 16, 17) are bent into L- or Z-shaped sections so that the edges of the elements to be attached to each other always constitute an L/Z-pair, the

L- an Z-sections being over the length of the joint provided with holes (21 resp. 22) spaced a specific distance apart, and that

- tongue strips (23) have been attached against the L- sections so that the tongues (25) go through the holes of the section edges, and that
- a wedge strip (24) has been slightly attached against the Z-sections, the wedge strip being designed to be knocked in the direction of the joint at the installation stage so that it, in cooperation with the tongue strip, locks the L- and Z-sections of the elements together.

4. Cabin system according to claim 1, 2 or 3 characterized in that the cabin elements and the connection elements are provided with insulation, lining, and channels for the lines required by the cabin technique.

5. Cabin system for ships and the like comprising cabins (10) to be propped up on the deck of a ship and installed side by side, each installed cabin comprising two pre-fabricated cabin elements E1 and E2 or their mirror image elements E1' and E2' provided with walls (11) and a ceiling (12), and connection elements (15, 16, 17) for connecting said cabin elements E1 and E2 resp. E1' and E2', the cabin elements E1 and E1' containing besides other fittings also a sanitary unit (13), and said cabin elements E1 and E2 form the first transfer unit and the cabin elements E1' and E2' form the second transfer unit for transportation characterized in that

- the edges (r) of the cabin elements E1, E1', E2, and E2' and the connection elements (15, 16, 17) are bent into L- or Z-shaped sections so that the edges of the elements to be attached to each other always constitute an L/Z-pair, the L- an Z-sections being over the length of the joint provided with holes (21, 22) spaced a specific distance apart, and that
- tongue strips (23) have been attached against the L- sections so that the tongues (25) go through the holes of

the section edges, and that

- a wedge strip (24) has been slightly attached against the Z-sections, the wedge strip being designed to be knocked in the direction of the joint at the installation stage so
- 5 that it, in co-operation with the tongue strip, locks the L- and Z-sections of the elements together.

6. Method for assembling the cabin system according to claim 3 on a ship or the like characterized in that the transfer units, which comprise either

- 10 (i) the cabin elements E1, E1' and the cabin elements E2 and E2' attached to each other, or
- (ii) the cabin elements E1, E1', E2, and E2', each of the cabin elements E2 and E2' having at least part of the connection elements (15, 16, 17) attached thereto,
- 15 are installed with the necessary connection elements so that the cabin elements E1 and E2 resp. E1' and E2' come to form one cabin, and the L- and Z-sections of the edges of the elements are placed against each other so that the tongue (25) of the tongue strip (23) goes through both
- 20 holes of the section edges, and the wedge strip (24) attached slightly against the Z-section is knocked in the direction of the joint so that the wedge strip and the tongue strip together lock the L- and Z-sections of the elements to one another.

25 7. Transfer unit for assembling the cabin system according to claim 1 characterized in that it is a ready-to-install combination of

- the cabin elements E2 and E2' attached to each other, or
 - the cabin element E2 resp. E2' with one or more
- 30 connection elements (15, 16, 17) attached thereto.

8. Transfer unit according to claim 7 characterized in that all connection elements (15, 16, 17) are attached to the cabin elements E2 resp. E2'.

9. Transfer unit for assembling the cabin system according

to claims 3 or 5.

AMENDED CLAIMS

[received by the International Bureau on 15 May 1997 (15.05.97);
original claim 1 amended; remaining claims unchanged (1 page)]

1. Cabin system for ships and the like comprising cabins
(10) to be propped up on the deck of a ship and installed
side by side, each installed cabin comprising two pre-
fabricated cabin elements E1 and E2 or their mirror image
5 elements E1' and E2' provided with walls (11) and a ceiling
(12), and connection elements (15, 16, 17) connecting said
cabin elements E1 and E2 resp. E1' and E2', the cabin
elements E1 and E1' being self-supporting and containing
besides other fittings also a sanitary unit (13), wherein
10 said cabin elements E1, E2, E1', and E2' form a transfer
unit combination for transportation consisting of
separately transportable transfer units, characterized in
that the transfer unit combination comprises either

(i) the cabin elements E1, E1', and the cabin elements E2
15 and E2' attached to each other, or

(ii) the cabin elements E1, E1', E2, and E2', each of the
cabin elements E2 and E2' having at least part of the
connection elements (15, 16, 17) attached thereto with the
result that each of the cabin elements E2 and E2' fitted
20 with the connection elements (15, 16, and/or 17) forms a
self-supporting transfer unit.

2. Cabin system according to claim 1 characterized in that
the edges (r) of the cabin elements E1, E1', E2, and E2'
and the connection elements (15, 16, 17), which at the
25 installation stage are placed against one another, are
provided with attachment sections.

3. Cabin system according to claim 2 characterized in that
- the edges of the cabin elements E1, E1', E2, and E2' and
the connection elements (15, 16, 17) are bent into L- or Z-
30 shaped sections so that the edges of the elements to be
attached to each other always constitute an L/Z-pair, the

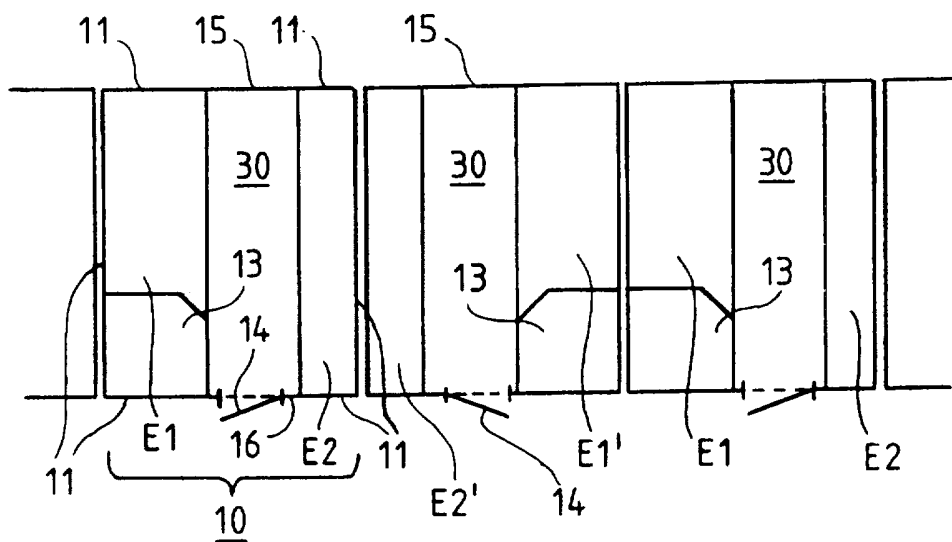


FIG. 1

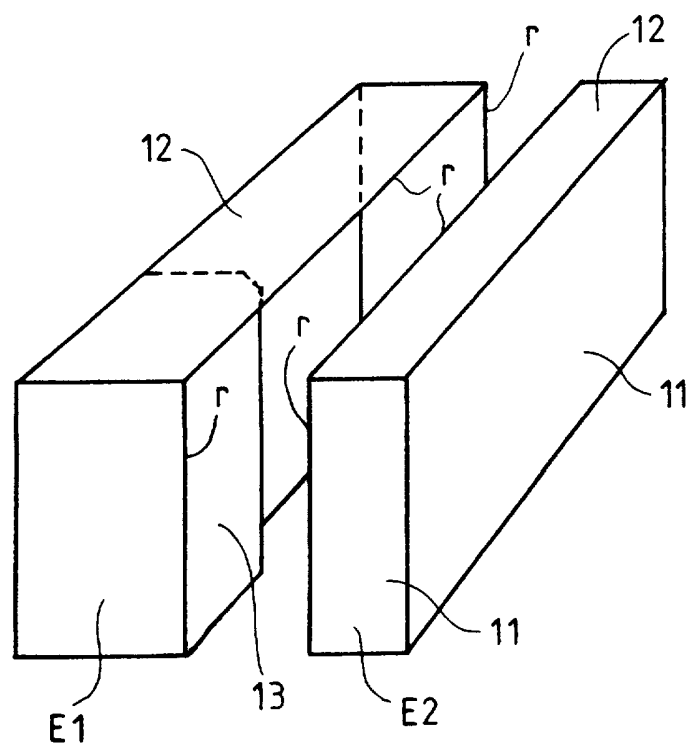


FIG. 2

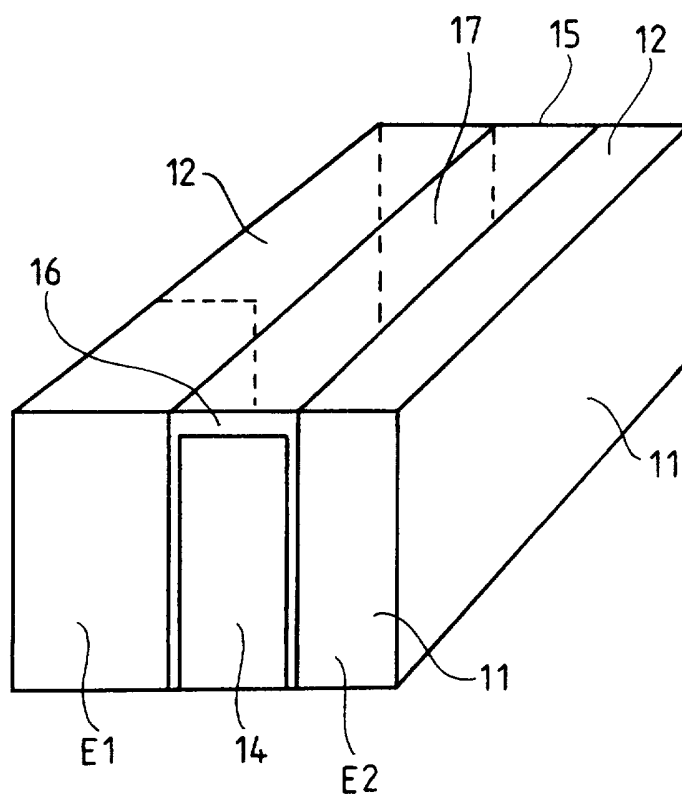
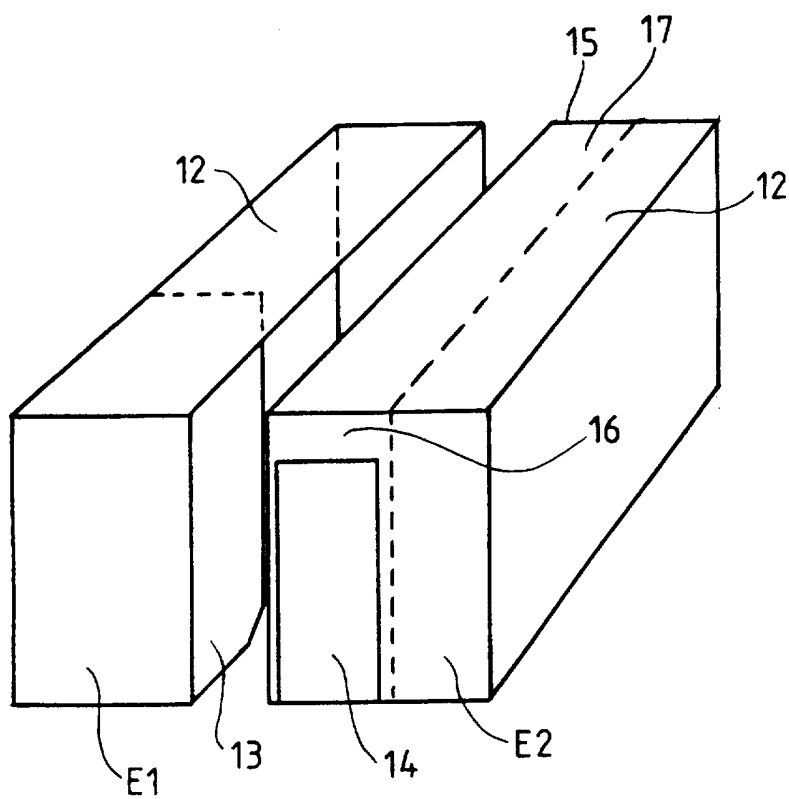
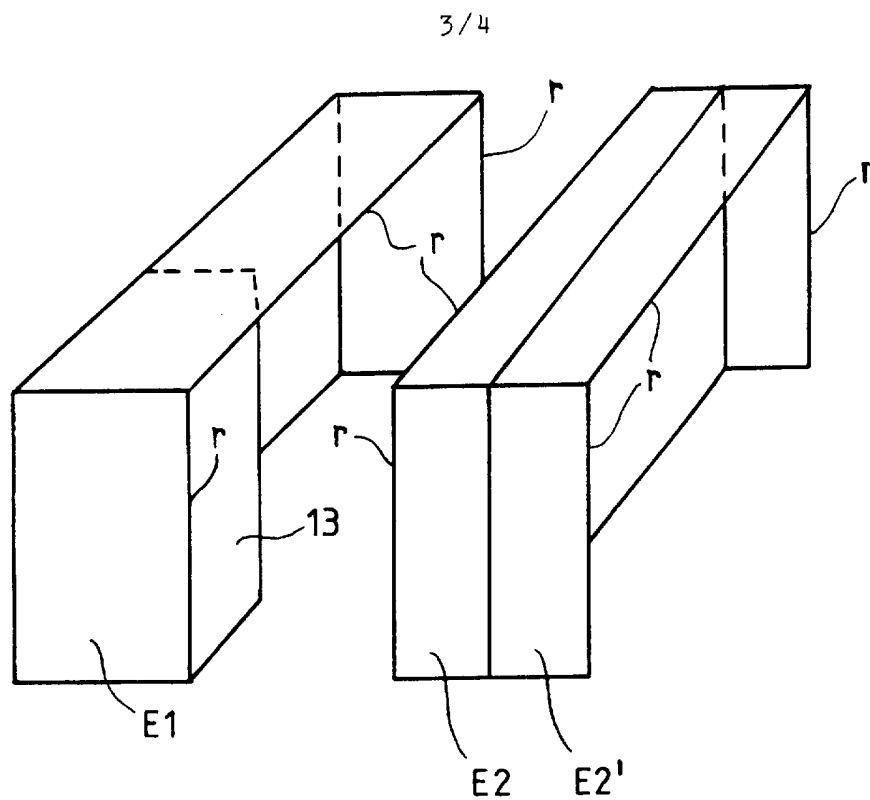


FIG. 3



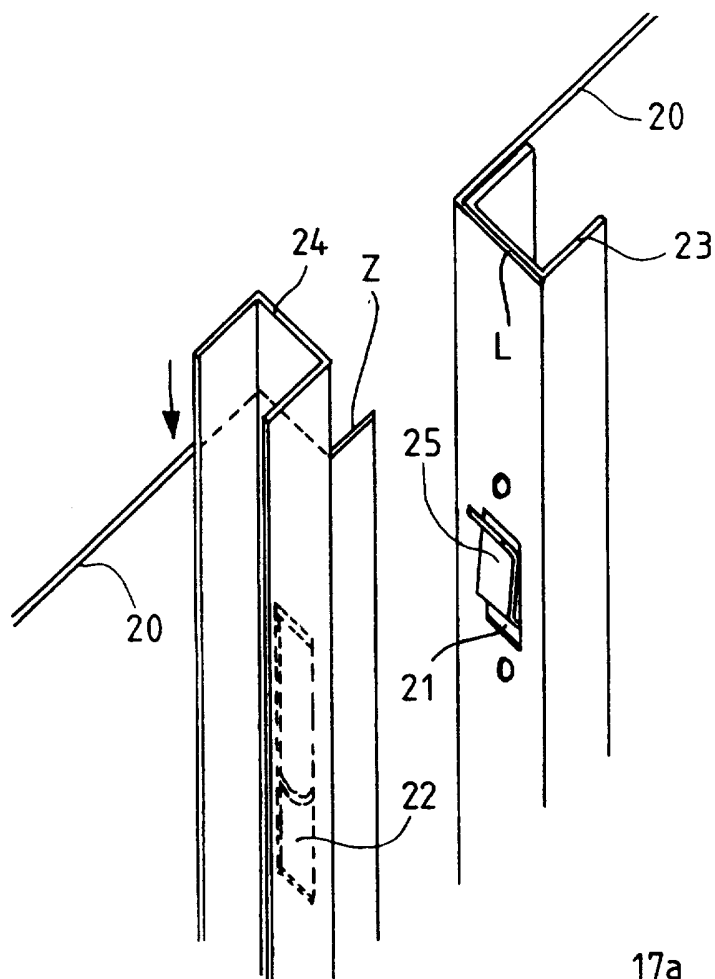


FIG. 6

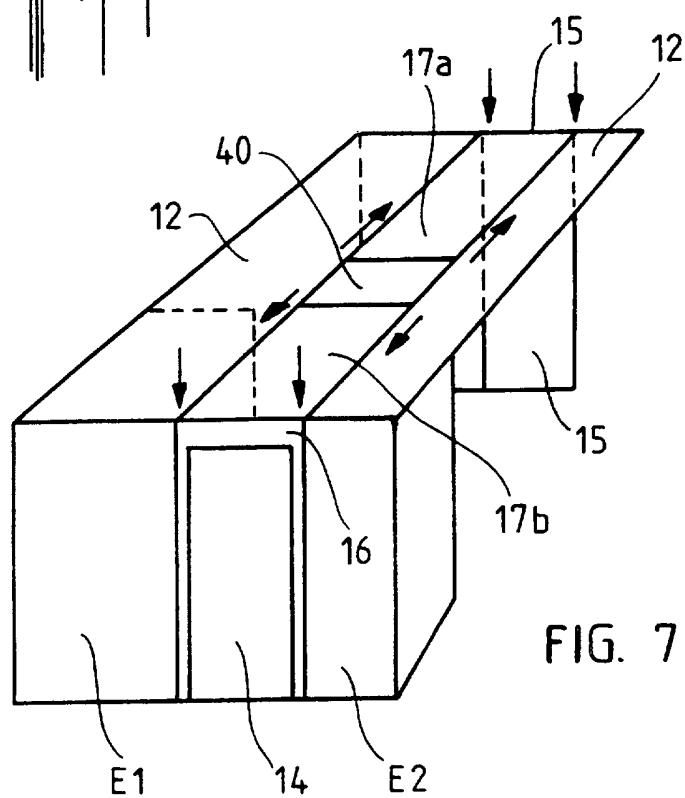


FIG. 7

INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 96/00674

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: B63B 29/02

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)

IPC6: B63B, E04B

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

SE,DK,FI,NO classes as above

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

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Y	NO 136286 B (A/S AKERS MEK. VERKSTED), 9 May 1977 (09.05.77), page 2, line 19 - page 3, line 12, figures 1,3	3,5,6
A	US 4528928 A (VIRTA ET AL), 16 July 1985 (16.07.85), figures 1,3, abstract	1,2,4,7-9
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Date of the actual completion of the international search

27 March 1997

Date of mailing of the international search report

12 -04- 1997

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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Information on patent family members

04/03/97

International application No.

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