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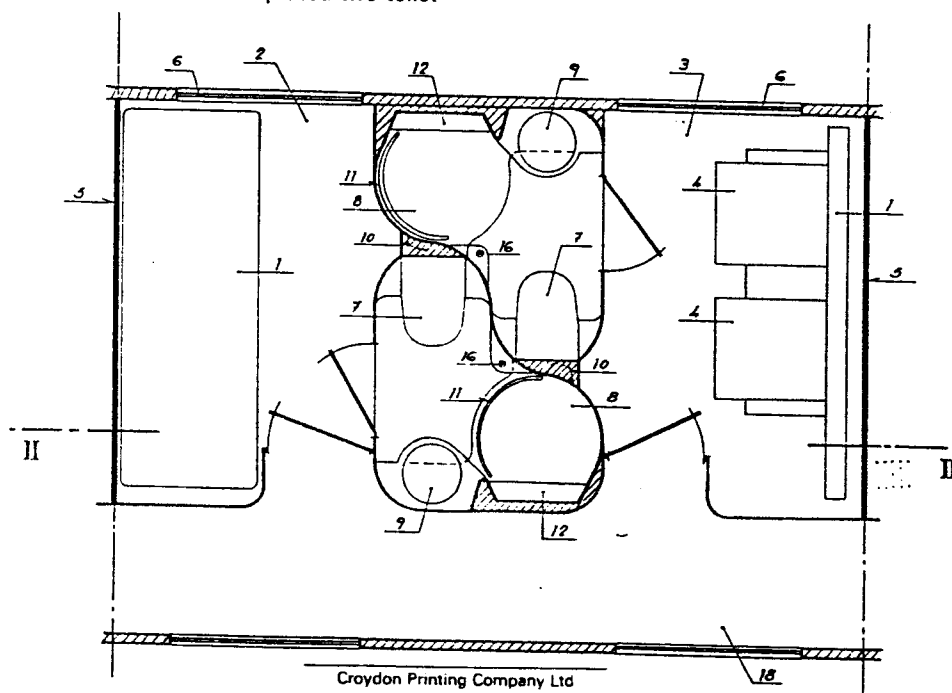
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54 **Sleeping car.**

57 An improved sleeping-car having cabins in succession on one side of the vehicle, and every two adjacent cabins there is a module in the central part of which are placed two toilet

rooms, one for each cabin, both provided with a shower (8), a lavatory basin (7) and a wash-basin (9).



**FIG. 1**

DESCRIPTION

TITLE MODIFIED  
see front pageAn improved sleeping-car

It is the object of the present invention to provide the cabins of the sleeping-cars with shower and lavatory besides the usual wash-basin, placing said services in a toilet space that can be rendered independent of the living-space, whereby in the living-space one or two people indifferently can travel. It can fundamentally be applied to railway coaches for night trips.

The improvement of the comfort level is one of the main demands that are presently put to the railway transportations. And it has to be attained at lowest possible cost, because there is a strong competition among the different transportation means.

As a consequence, a lay-out that has to most conveniently attain both objectives is one that happily combines a suitable arrangement of the limited room available with attractive services offered.

This is accomplished by means of the invention herein claimed.

The cabins are adjacent to one of the side-walls of the vehicle. Two cabins adjacent to one-another make up a module that is repeated successively along the coach.

Incorporating a compartment provided with shower, wash-basin and lavatory joined to each cabin is an arrangement of fundamental importance for the comfort in an age in which swift displacements to another town are normal and compel one to travel even two successive nights.

At the moment of using the services the traveler has the possibility of making himself completely independent of the living room and seclude himself, with the necessary privacy. This contributes not only to the comfort, but also to the cost savings, as this possibility is what allows to equip therewith two-bed cabins.

This possibility of isolation is nevertheless compatible with the simultaneous utilization of two of the three services available in the toilet nook, if this suits both travelers occupying the cabin.

To the comfort and cost-saving qualities there might be added the versatility, which is a fundamental feature for the success of the commercial exploitation of whatever vehicle. It has already been shown how these cabins can be used either as singles or as doubles, either during strictly night-trips or during long distance trips taking place for a large part in a sitting position, either in business trips or in tourism and pleasure trips.

To the advantages that have been pointed-out, more will be added that will become evident in the following description, in which reference will be made to the

following Figures:

Fig. 1 is a schematic plan view of a module comprising two cabins;

Fig. 2 is an elevation view of the same module showing a section along the line II-II of Fig. 1;

Fig. 3 shows the practical application of this distribution mode to an entire coach.

As it has already been pointed out, each module comprises two cabins 2, 3, as shown in Figs. 1 and 3.

The service or toilet rooms of both cabins take up the central part of the module, one of them being adjacent to the side-wall of the vehicle, and the other one being adjacent to the corridor 18 of the coach.

The beds 1 are placed against the panels 5 by which the modules are separated.

In the "night" position, as shown in cabin 2, the beds 1 are in an horizontal position, the position in which they are used by the travelers for rest purposes. The seats 4 have disappeared, lowered under the lower bed 1.

In the "day" position, as shown in cabin 3, the beds 1 are in the vertical position, thus disappearing as they are embedded in the panel 5, which is provided with the necessary housings.

The seats 4, that are hinged onto the lower bed 1, are arranged in such a position that they can be used for

their purpose. They are arranged in such a position that the sitting travelers have the windows 6 at their side. In front of the travelers there is large room towards the panel dividing the living room from the toilet room. In this panel there is the entry door to the toilet room. This has a shape that resembles an "L" one of whose arms is perpendicular to the corridor and the other one is parallel to the same. In the end part of the first arm of said L is placed the WC basin 7, and in the second arm is placed the shower 8. The wash-basin 9 is placed near the vertex of the corner formed by both arms.

The two toilet compartments pertaining to the same module are coupled so as to form a surface that is sensibly rectangular.

All the additional or accessories that are necessary in the shower, like the diffuser, the tap or cock, the soap-dish, and so on can be placed in a niche 10 placed in the cylindrical wall of the shower. This latter can be closed by means of a sliding door 11 having likewise a cylindrical form, or by means of a curtain. A seat or bench 12 inside the shower, and a strap 13 embedded in the niche 10 secure the necessary comfort and safety for elderly people using the shower. The bench 12 might be used as the stop at the two terminal positions of the door 11. In the shower 8 pertaining to cabin 2, the door or curtain 11 has been shown in the "closed" position. The water passes through the plank 14 and is collected by the basin constituting the floor. The water that

might get out is collected through the grating 15 which is placed in the area of wash-basin and WC.

On a vehicle it is interesting to reduce the water consumption for the shower by supplying it in the right and sufficient quantity. For this purpose it is indispensable to avoid wasting water before (while it is being adjusted to the desired temperature) and after the utilization of the shower (for example because the tap has not been closed). To achieve this result it is possible to resort to various procedures, like, for example, preventing the water opening unless the door is closed, timing the water supply, etc.

Another solution among the many possibilities would consist in placing a weight detector in the floor grating in such a way as to automatically turn off the water when the traveler leaves the shower area.

For the restrictions having the purpose of reducing an excessive water consumption to be admissible, it is necessary to warrant that the water does not come out exceedingly hot, nor extremely cold, and that the traveler can adjust, within certain limits, the temperature and flow as well.

Innumerable procedures are possibly used to attain this type of operation, therefore they will not be described herein.

To comfortably get in and out of the shower room 8, there is also available a handle 16.

In the ceiling of room 8 (shower room) there can be provided a suction duct to secure the ventilation of the toilet room.

The ceiling of the toilet room is lower than the ceiling of the living room, thus there is between them some room 17, accessible from the living room, which is used as luggage room.

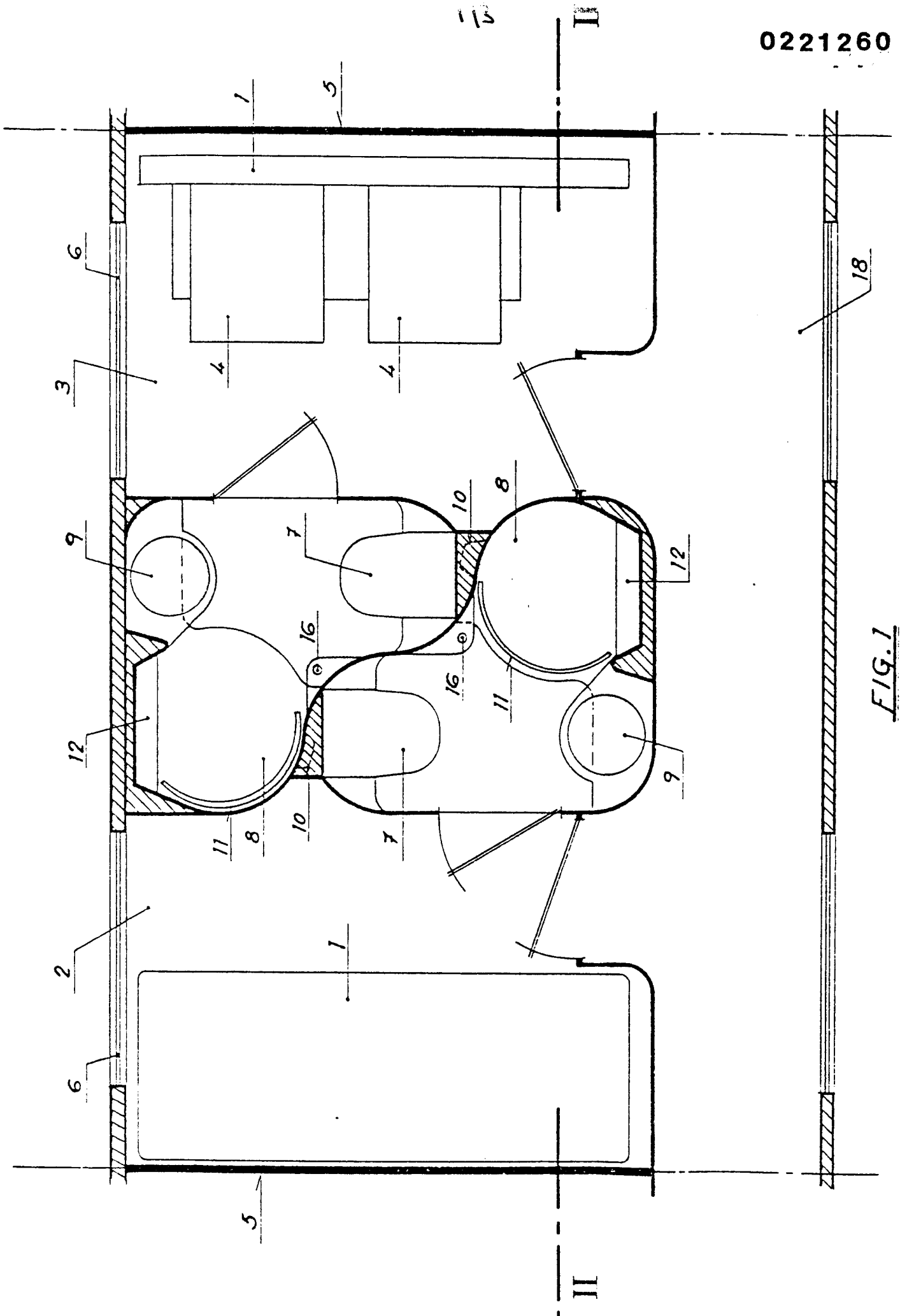
The entry door of the cabin is displaced towards the interior of the same. Therewith recesses are obtained in the corridor 18 which ease crossing of travelers going along the same.

## CLAIMS

1. An improved sleeping-car having cabins disposed in succession on a side of the vehicle, with communication corridor disposed between them and the opposite side wall, characterised in that every two adjacent cabins make up a module in the central part of which are placed two toilet rooms, one for each cabin, showing an "L" shape which are both provided with a shower, that is placed in one of the two extremities of the L, a lavatory basin in the other extremity of the L, and a wash-basin near the vertex of same L.
2. An improved sleeping-car as claimed in claim 1, characterised in that in each cabin the living-room and the toilet-room are independent and communicate by means of a door, thus making the privacy of the toilet room enough to make it possible to use in the living room one or two beds indifferently.
3. An improved sleeping-car as claimed in claim 1, characterised in that in the space that is allotted to the shower there is provided a projection at such a height that it can be used as a seat or bench.
4. An improved sleeping-car as claimed in claim 3, characterised in that the space that is allotted to the shower is essentially cylindrical and is closed by means of a door or curtain fitting said cylindrical shape, said door or curtain sliding along a circular path that is parallel to the cylindrical wall in going



from the opened to the closed position.



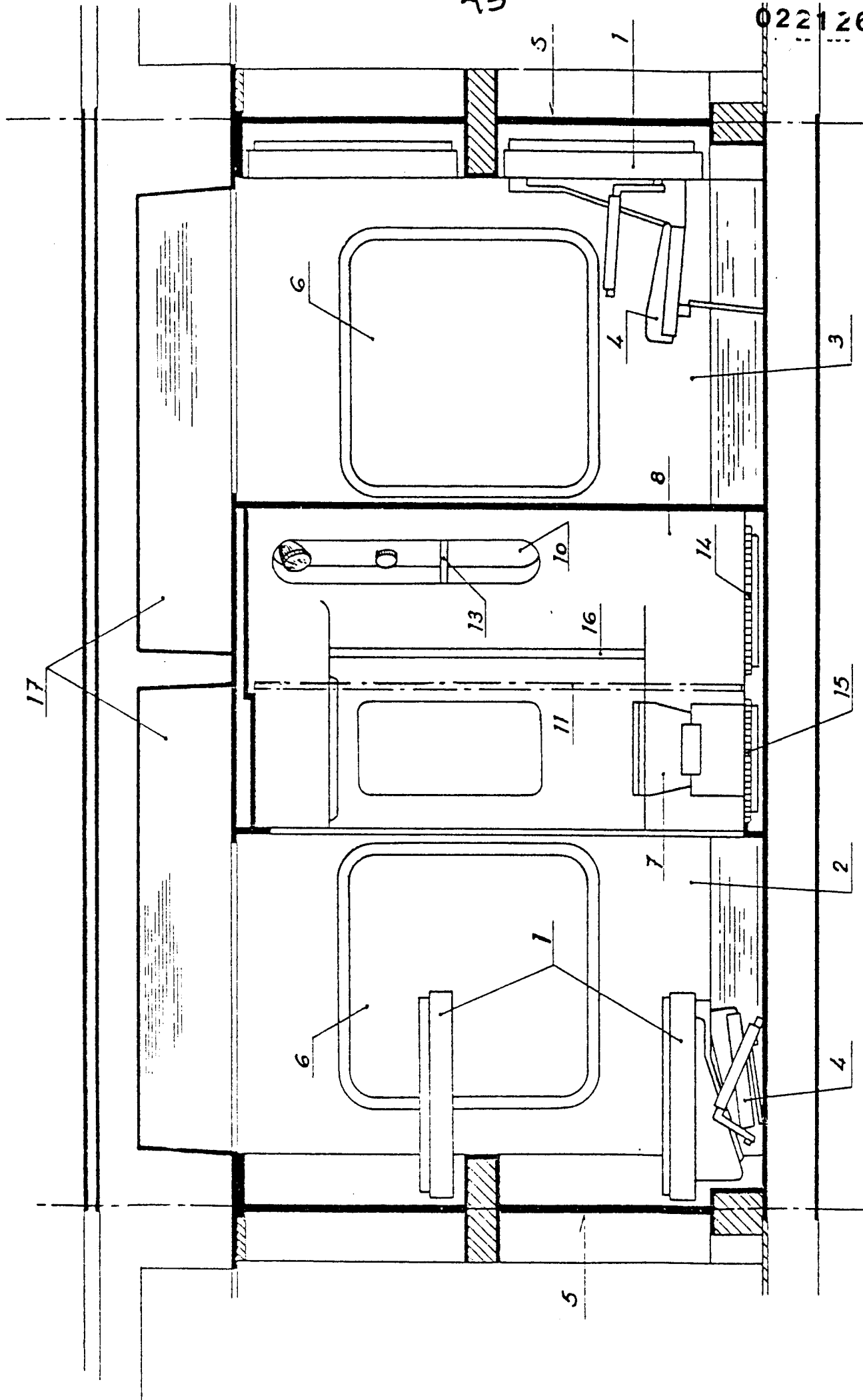
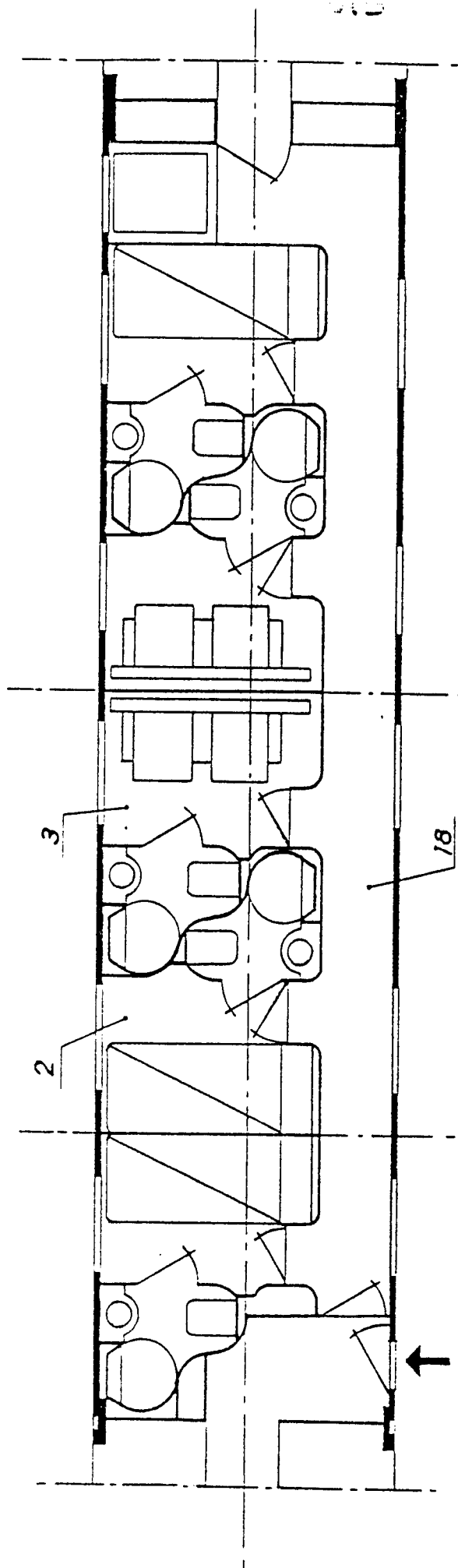


FIG. 2





DOCUMENTS CONSIDERED TO BE RELEVANT			EP 86110976.7
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
A	DE - C - 448 854 (ZYPEN) * Fig. 1,2 * --	1,2,4	B 61 D 1/02 B 61 D 35/00
A	DE - C - 445 157 (ZYPEN) * Totality * --	1,2,4	
A	DE - A1 - 2 446 954 (MESSER-SCHMITT) * Claim 1; fig. 1,6,7 * --	1	
A	DE - A - 2 244 288 (FENDT) * Claim 1 * --	1	
A	US - A - 4 100 857 (GUTRIDGE) * Fig. 2 * --	1	TECHNICAL FIELDS SEARCHED (Int. Cl.4)
A	US - A - 2 485 078 (NATTER) * Fig. 1 * ----	1	B 60 R B 61 D
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 14-11-1986	Examiner KREHAN
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			