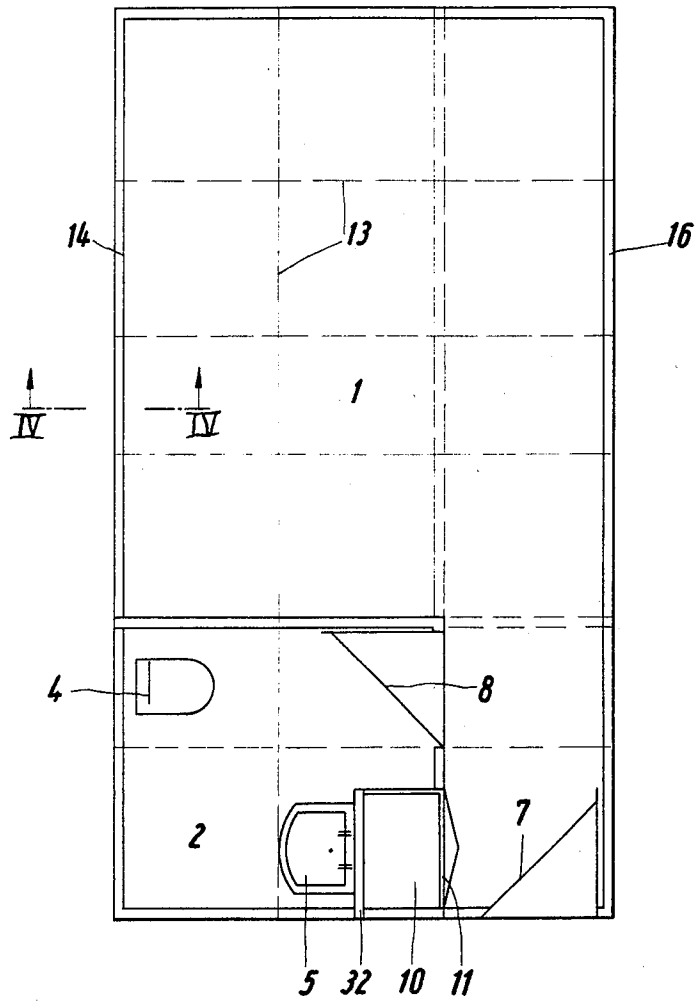
March 10, 1970 F. SANDMANN ET AL 3,499,251

ROOM OR CABIN SPACE PARTITIONING SYSTEM

Filed Oct. 25, 1967 4 Sheets-Sheet 1

Fig. 1



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ROOM OR CABIN SPACE PARTITIONING SYSTEM

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Fig. 2

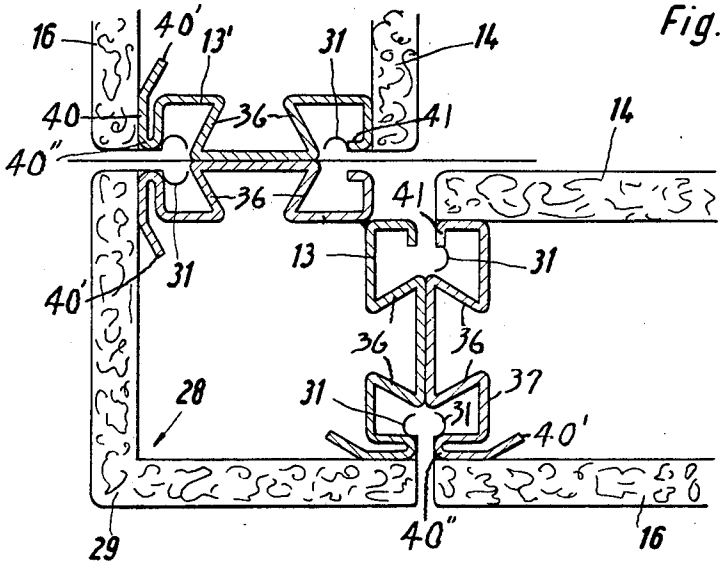
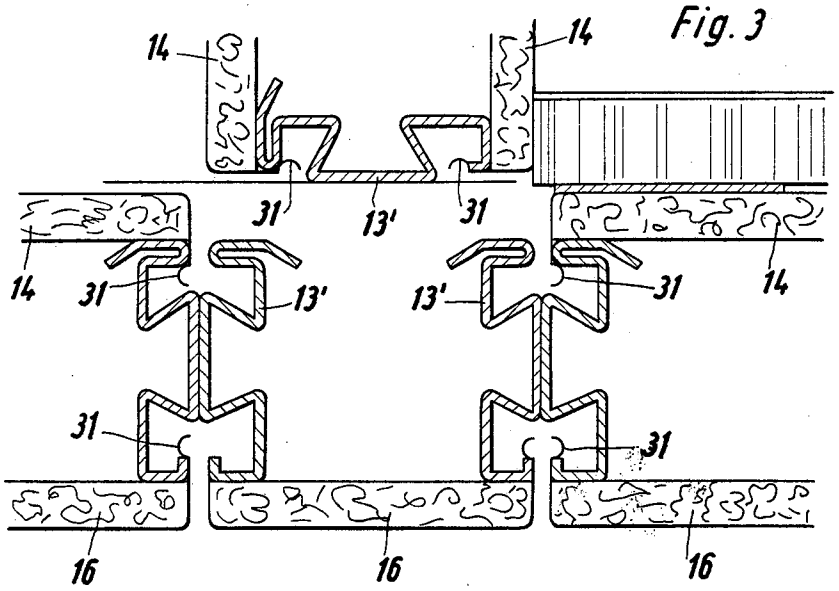


Fig. 3



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ROOM OR CABIN SPACE PARTITIONING SYSTEM

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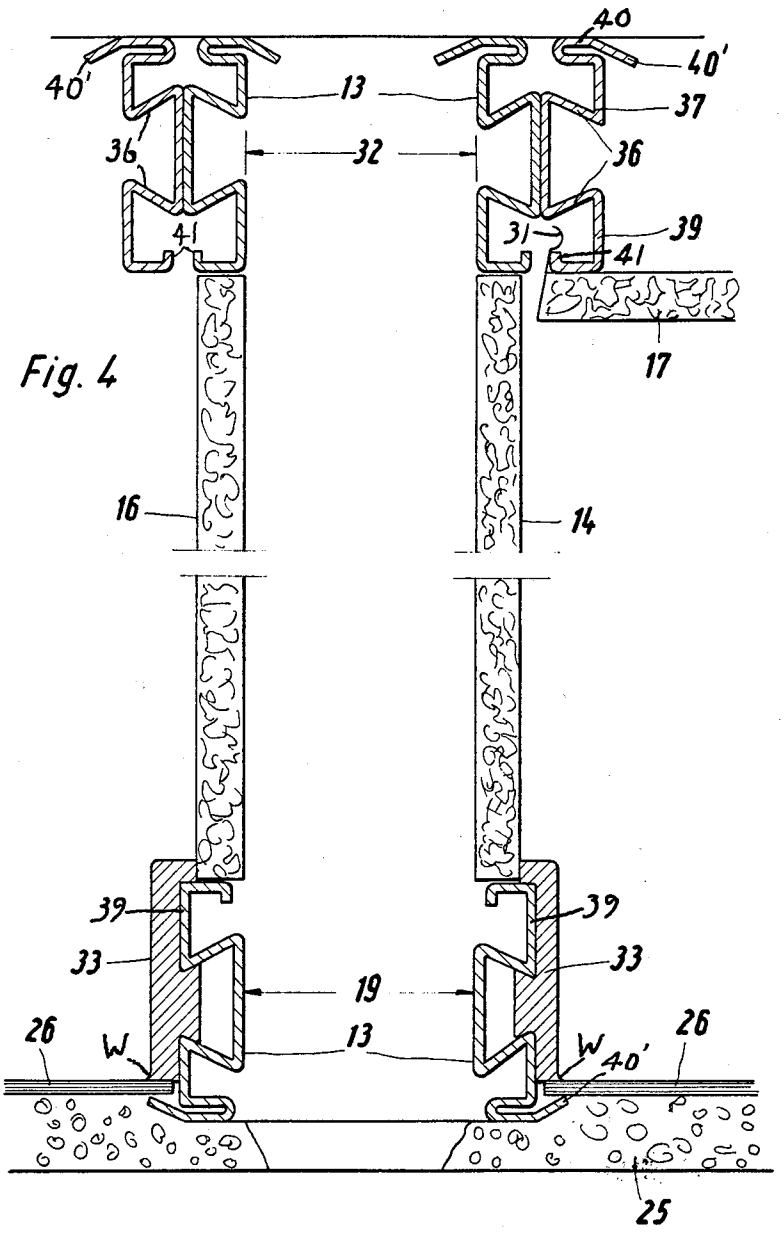

Fig. 4

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ROOM OR CABIN SPACE PARTITIONING SYSTEM

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Fig. 5

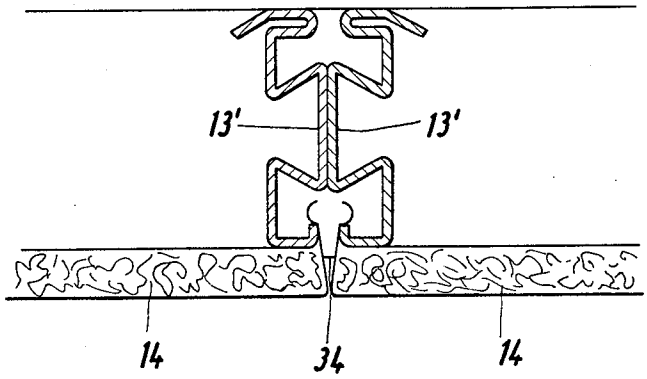
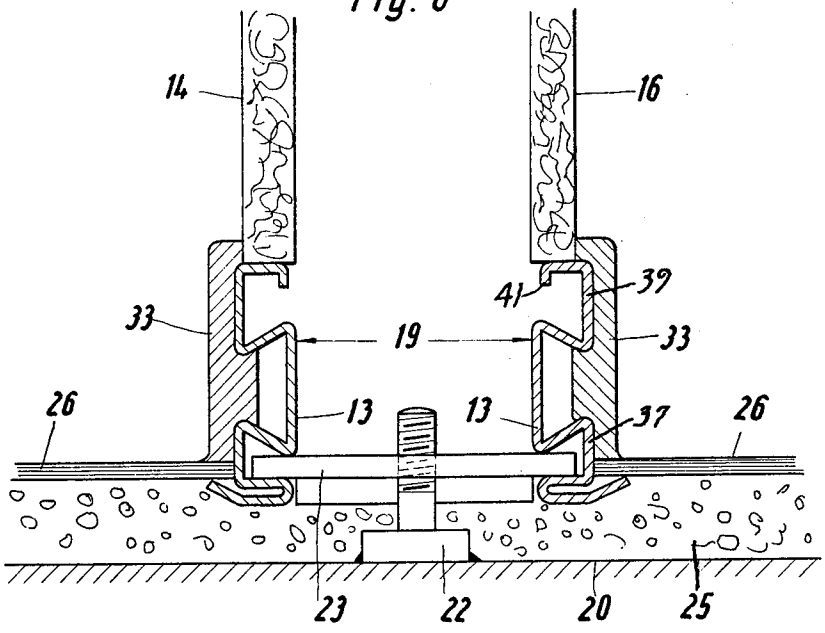


Fig. 6



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3,499,251

ROOM OR CABIN SPACE PARTITIONING SYSTEM

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U.S. Cl. 52—122 12 Claims

ABSTRACT OF THE DISCLOSURE

Room or cabin space partitioning system particularly adapted for fitting out ship's cabins comprising a skeleton framework of identically shaped profiled members having wing parts onto which spring-grip clipping members provided on wall and ceiling panels are mountable, being retained by ledging means on the wing parts to retain said mounted wall and ceiling panels on said profiled members, the like profiled members being prefabricated and connected together as by spot welding to form the skeleton framework, the profile members additionally having generally dove-tail shaped channels intermediate the wing parts in which channel dove-tail portions of cover rails or skirting boards may be engaged.

SUMMARY

The invention relates to a room or cabin partitioning system especially for fitting out ship's cabins.

In the latter field, it is known for this purpose to weld U-profiled members to the deck around the edges of the cabin or compartment spaces to be produced into which the wall components can be inserted at their lower edges and in some cases fastened in position. The fastening of the upper ends of these wall components is effected by battens fixed to the hull structure whereby each panel of the wall can be fastened individually, these panels consisting of chipboard members or the like covered on both sides with synthetic resin materials. An H-profiled member may be used as a connecting member between two adjacent panels.

The ceiling for the cabin space is fastened in this known arrangement to a framework consisting of battens which is also fitted to the ship's structure (to the under side of a deck). The furniture, consisting of cupboards or the like and in particular the walls thereof, are fastened on the one hand to the framework and on the other hand are inserted into further U-profiled members welded to the deck. In order to eliminate the high labor costs involved, it has also been known to insert finished prefabricated furniture in the cabin and to secure it in position by screws or the like to avoid accidents due to the ship's movements when under way.

Finally, it is also known to make the walls forming the cabins of double-walled construction and to fill the space between the inner and outer walls with an insulating material which serves both to damp vibrations and noise and also to reduce undesired transfer of heat.

These known arrangements for producing and equipping cabin spaces and the like on ships are not only extremely complicated, but have disadvantages since a comparatively large number of welding points are necessary for fastening the U-profiled members to the deck. This leads to a condition wherein the deck is liable to twist and must be corrected and such correction involves considerable care, skill and time.

This invention is directed to the problem of providing an arrangement by which the production and equipping of

cabin spaces and the like is extremely rapid and can be carried out with low labor costs and in which only a relatively few welding points are necessary, and the under frame construction otherwise heretofore necessary for fastening the ceiling, can be omitted.

In order to attain this object, a skeleton, preferably of steel, is provided being produced from like members having a special profile into which the wall parts and the ceiling parts can be fitted with a snap-in action. This arrangement avoids not only the defects already referred to, but represents a substantial technical advance in that the furniture to be fitted in the cabin or the equipment thereof can be secured in a particularly convenient way which will be described further below.

In order to ensure that the cabin space adopts a desired position in reference to the hull and remains permanently in position, the base framework of the steel skeleton formed from some of the special profiled members is provided with adjuster screws permitting adjustment as necessary and which are welded to the floor or deck after adjustment of the steel skeleton at its required level and position.

Such adjuster screws may be fitted to a clamp plate, the opposite ends of which engage two facing profiled members. This arrangement permits the base framework to be correctly aligned and levelled before the screws are welded in position and subsequently the floor or deck may be covered with a screeded layer to which floor tiles are subsequently fitted.

So far as the cabin space concerned is of the type which is to be associated with plumbing services, for example, a washbasin or the like, it is desirable that a waterproof floor trough or pan should be used which is covered by means of a grating.

While according to the known arrangements, the equipment of the cabins thereof on board ship may have to be planned to fit a schedule (e.g. based on critical path analysis), the main work of producing the cabins according to the present invention can be effected in the shipyard because the special profiled members providing the steel skeleton can be joined together by spot welding to form a prefabricated unit.

A particularly important feature of the invention lies in the fact that the special profiled members hold the wall and ceiling panels by spring tongues on the panels and are provided with a dove-tail part into which a cover strip or skirting board can be fitted. In this way, it is possible to install the wall and ceiling members in an extremely rapid way and without the need for great care in assembly, while avoiding all screws or similar fastenings.

In order that the service cables or pipes for electric supply, water or air conditioning to the cabins can be installed as invisibly as possible, provision is further made that the special profiled members are adapted to hold both an outer wall and also an inner wall while leaving a hollow space between them for the service cables or pipes. The said service cables or pipes can thus be disposed invisibly in the hollow spaces formed between the inner and outer walls. The desired sound and heat insulation is obtained by the fact that the wall and ceiling members are provided with an insulating coating. Complete filling of the hollow chamber with an insulating material, as is generally employed, is not required according to the present arrangement. In certain extreme cases, this can, however, be used by providing a foamed material, for example, a foamed resin, injected into the hollow spaces concerned after the service cables or pipes have been installed.

In order that the rapid connection between the steel skeleton and the wall and ceiling members can be obtained, the latter each comprise a metal plate preferably of steel coated with a thermoplastic synthetic material

and are provided at their edges or at two opposite edges with spring clips or tongues which can be snapped into the special profiled members to give a clamping action.

In an advantageous way, brackets or the like, for example, can be fitted into the gaps between adjacent mounted wall members for shelves or plumbing or other fittings and can be adapted to be screwed to the special profiled members. This arrangement proves to be particularly convenient since no welded joints are then necessary.

Finally, a further feature of the invention consists in the fact that both the door frames and also the built-in furniture or the like can be produced by using the special profiled members.

Other objects and features of this invention will become apparent from the following detailed description and the accompanying drawings forming a part hereof and wherein the invention is shown by way of example in the drawing as a constructional example appropriate for ship's cabins which consist of two compartments, and in which:

FIG. 1 is a ground plan of such a cabin;

FIG. 2 shows a corner joint in section and on a larger scale;

FIG. 3 shows a T-joint;

FIG. 4 is a longitudinal section on the line IV—IV in FIG. 1;

FIG. 5 is a cross-section through the connection of two adjacent wall members, and

FIG. 6 is a vertical section through the base frame and its fastening to the deck.

DETAILED DESCRIPTION

Referring now to the drawings:

The ship's cabin or stateroom indicated in FIG. 1 comprises a cabin compartment proper **1** and a washroom compartment annex **2**, the latter including, for example, a water closet **4** and a washbasin **5** as well as a waterproof floor trough or pan with a grating cover, and a shower fitment (not shown). Both compartments **1** and **2** have access doors **7, 8.** In the drawings, the cabin port hole which is generally necessary has been omitted to show the inventive features more clearly. The wash room **2** further comprises a built-in cupboard **10** provided with doors **11.**

The invention involves the use of like specially shaped profiled members **13, 13'** preferably of metal such as steel, the shape of which is illustrated on FIGS. 2 to 6 of the drawings which also show various ways in which these profiled members are assembled and used in building up the skeleton framework and in utilizing them for supporting wall and ceiling panels. These profiled members **13, 13'** may be formed by extrusion or by bending from flat strip. As shown, for example, in FIG. 4, each profiled member **13** is of substantially double Z shape and provides a dove-tail central channel **36** facing on one direction and channels **37, 39** formed by end wing parts on the two sides of the channel **36**, the channels **37** and **39** facing in the opposite direction to channel **36.** The channel **37** is terminated by a re-entrant wing **40** with an obliquely angled end part **40'**, while the other channel **39** is terminated by an inturned ledge **41.** As indicated in FIG. 2, the ledge **41** provides an engagement surface for a spring tongue **31** provided on an inner wall panel member **14** while the re-entrantly bent part **40''** of the wing **40** of the channel **37** provides a ledging surface for a spring tongue **31** associated with an outer wall panel member **16.** As shown in FIG. 2, pairs of such profiled members **13, 13'** may be assembled by spot welding regions of the walls of channels **36** to provide pairs of outwardly facing dove-tail channels **36.** Further, two such joint pairs of profiled members **13** and **13'** may be assembled to form a corner frame assembly also as by spot welding, as is also indicated in FIG. 2. Another use of the profiled members **13** is indicated in FIG. 4, where

the dove-tail channels **36** of the lower profiled members **13** provide supports for rails or skirting members **33,** as is explained below. In this case, the upper outer surfaces of the profiled members **13** defining the channels **39** provide supports on which the respective bottom edges of wall panel members **14, 16** rest, such panels being conveniently held in position by the spring tongues **31** engaging the vertical frame members as seen in FIG. 2, but not shown in FIG. 4. The outwardly directed angled end parts **40'** serve in the case of profiled members **13** defining the base frame **19** as reference edges, after levelling as indicated in FIG. 6, for the flooring screed **25.**

In equipping cabin areas for ships according to the present invention, the cabin shown in FIG. 1 and comprising the areas **1** and **2** embodies a steel skeleton produced from like special profiled members **13, 13'** (see FIGS. 2 to 6) in which wall panels **14, 16** (see FIG. 4) and ceiling panels **17** are fitted in the manner still to be described, both from the outside and from the inside, leaving a hollow space between them. The cage-like steel skeleton consists of a base frame **19** (FIGS. 2 and 6) comprising a pair of spaced-apart profiled members **13** which can be aligned or levelled to the deck **20** by means of adjuster screws **22** (FIG. 6) which engage a steel bar **23** adapted to be inserted into channels **37** of the profiled members **13** forming the frame **19,** in order to compensate possible unevenness in the deck **20.** After alignment, the adjuster screws **22** are welded to the deck, whereafter the flooring **25** is laid as a screed on which the floor covering **26** or the like is laid.

Other special profiled members **13, 13'** are welded at regular distances to the profiled members **13** defining the base frame **19** and run both horizontally and vertically. Horizontally arranged profile members **13** serve for stiffening those forming the base frame **19** while vertically extending profiled members **13'** provide for the holding of the wall panels **14, 16** and also provide a member into which the ceiling panels **17** can be inserted with a snap-in action. Further vertically arranged special profiled members **13'** are provided for the door frames, not shown, and for the corner posts of the built-in cupboard **10.**

As will be seen from the drawing, all the special profiled members **13, 13'** have a single, like form so that only one type of profiled member is required which can be assembled and used both singly and also doubly to provide the skeleton framework. As indicated in FIG. 2, the corner joint is formed by two pairs of double profiled members **13, 13'** which are joined together, and one pair to the other pair as by means of spot welding. An angular corner structure **28** is formed to provide the outer closure of the corner joint. This corner structure comprises, for example, a steel or other metal plate coated with synthetic resin which embodies an inwardly disposed insulating layer **29** and also spring tongues or clips **31** at their outer edges. The tongues or clips **31** are adapted to be brought into engagement with the special profiled members **13** and **13'** at the corner joint and thus to secure the corner structure thereto. The wall parts **14, 16** are also provided with tongues or spring clips **31** so that these also can be snapped into position in engagement with respective of the special profiled members **13** and **13'.**

The arrangement shown in FIG. 3 is a vertical sectional view of the arrangement of the special profiled members **13'** and the mounted wall panels **14, 16** at the point indicated at **32** in FIG. 1 and represents a T-joint required for the built-in cupboard **10.**

In FIG. 4, a vertical section is shown indicating the base frame **19** formed by horizontal profiled members **13** serving as mounts for the inner and outer wall panels **14, 16** and a top ceiling frame **32** which also consists of horizontally extending special profiled members **13.** The ceiling frame **32** is, moreover, formed by special profiled members **13** running in the transverse and longitudinal direction so that the ceiling panels **17** can be mounted in the manner already described.

As will further be seen from FIG. 4, rails **33** are moreover provided in the region of the base frame **19** which can be slipped into a dove-tail part of the said lower profiled members **13**. These rails form a particularly appropriate termination or merging between the floor covering **26** and the lower edges of wall members **14**, **16** and provide the appearance of a skirting board. The rails **33** and also the floor covering **26** are preferably formed from a thermoplastic synthetic material and hence it is possible to weld the rails **33** with the covering **26** at W in order to ensure an absolutely fluid-tight joint at this point so that the special profiled members **13** of the base frame **19** are largely protected from corrosion.

In FIG. 5, vertically extending special profiled members **13'** are shown which are used in the form of a double profiled member, and serve for supporting the wall members **14**. As will be seen from this figure of the drawing, comparatively narrow gaps **34** remain between the wall members **14**. The latter serve to permit brackets or the like, not shown, to be screwed to the special profiled members **13'**. These brackets extending inwardly of the cabin serve for fastening furniture and the line.

When equipping cabin spaces on board ship, there is a special factor in that countless current feeding cables are necessary in order to carry out various operations like welding, drilling and the like, and cables lying around during the installation phase are not only inconvenient but also dangerous and often lead to short circuits. The arrangement according to the present invention wherein a pre-assembled prefabricated steel skeleton is used permits a cable termination to be fitted at any desired point to which a single current feed cable can be attached and which embodies the power sockets or other electrical components to which the electric appliances may be connected without using lengthy supply cables.

The arrangement provided according to the invention permits an extremely rapid installation of the cabin spaces, for example, ship's cabins, which has the advantage that the construction which is substantially separate from the hull and insulated therefrom provides the considerable advantage that the vibration present on board ship and which is found to be extremely disturbing cannot be transmitted to any serious degree to the inside of the cabin, and, moreover, from the aspect of fire protection account is taken in an optimum way of this factor which is of particular importance on board ship.

While specific embodiments of the invention have been described and shown, variations in structural detail within the scope of the appended claims are possible and are contemplated. There is no intention, therefore, of limitation to the exact abstract or disclosure herein presented.

What is claimed is:

1. Space partitioning arrangement especially aboard ships, comprising a skeleton framework attachable to rigid ship structure, said framework comprising a plurality of like profiled members disposed to receive ceiling and wall panel members, said profiled members each having a channel portion and wing parts at ends of said channel portion, said panel members having spring slip members mountable onto said wing parts for engagement therewith to secure said panel members to said profiled members, said profiled members being of metal which are assembled to define said skeleton framework, and welded together at spots, each profiled member being of substantially double Z-shape defining its channel portion is of central dove-tail shape opening in one direction, the wing parts being integral at ends of said channel and of substantially trapezoidal shape defining end channels opening in opposite direction to that of said dove-tail central channel, one of said wing parts terminating in an inturned ledge and a substantially bent part terminating in an oblique angled end portion on the other wing part, said spring clip members of said panel members being respectively engageable with an inturned ledge and said reentrantly bent part and a skirting element having a dove-tail portion mounted in the dove-tail channels of profiled members.

2. An accommodation arrangement for providing shipboard cabin structure comprising a prefabricated cage-like skeleton framework mountable on a floor deck of a ship, said framework comprising joined profiled members having wing parts, side wall panels and ceiling panels respectively mountable for support on said members, bar member means engageable with wing parts of said profiled members for leveling the framework on said deck, clip type frictional means for fastening said ceiling panels to the wing parts of the ceiling profiled members and clip type frictional means for fastening the side wall panels to the wing parts of the side wall profiled members, and wherein said clip type frictional means comprise spring clip members on said panels and said wing parts of said profiled members have ledging surfaces with which said clip members are frictionally engageable.

3. An accommodation arrangement according to claim **2** wherein said bar member means for leveling include bar members engageable with side wall profiled members and levelling adjuster screws extending from the floor deck and threadedly engaging said bar members.

4. An accommodation arrangement according to claim **2** wherein said joined profiled members are prefabricated and spot welded at their joints.

5. An accommodation arrangement according to claim **2** wherein the profiled members constituting the wall supports are disposed as oppositely facing pairs with a hollow space between them and interiorly and exteriorly located side wall panels mounted on said last-named supports.

6. An accommodation arrangement according to claim **2** wherein the wall and ceiling panels include insulating coverings.

7. An accommodation arrangement according to claim **6** wherein the panels are of metal and said insulating coverings are of thermoplastic material.

8. An accommodation arrangement for providing shipboard cabin structure comprising a prefabricated cage-like skeleton framework mountable on a floor deck of a ship, said framework comprising joined profiled members having wing parts, side wall panels and ceiling panels respectively mountable for support on said members, bar member means engageable with wing parts of said profiled members for leveling the framework on said deck, clip type frictional means for fastening said ceiling panels to the wing parts of the ceiling profiled members and clip type frictional means for fastening the side wall panels to the wing parts of the side wall profiled members, and including skirting means and wherein said profiled members include dovetail shaped portions, said skirting means including elements insertable into said dovetailed shaped portions of said profiled members for mounting thereon.

9. An accommodation arrangement for providing shipboard cabin structure comprising a prefabricated cage-like skeleton framework mountable on a floor deck of a ship, said framework comprising joined profiled members having wing parts, side wall panels and ceiling panels respectively mountable for support on said members, bar member means engageable with wing parts of said profiled members for leveling the framework on said deck, clip type frictional means for fastening said ceiling panels to the wing parts of the ceiling profiled members and clip type frictional means for fastening the side wall panels to the wing parts of the side wall profiled members, and wherein each profiled member has a dove-tail channel and wing parts extending therefrom at both sides of the channel, said wing parts being engageable by said fastening means to carry the panels from the respective supports.

10. An accommodation arrangement according to claim **9** wherein said wing parts of said supports have substantially trapezoidal shape in section.

11. An accommodation arrangement according to claim

10 wherein a wing part of each support has a reference edge for a floor covering.

12. An accommodation arrangement for providing shipboard cabin structure comprising a prefabricated cage-like skeleton framework mountable on a floor deck of a ship, said framework comprising joined profiled members having wing parts, side wall panels and ceiling panels respectively mountable for support on said members, bar member means engageable with wing parts of said profiled members for leveling the framework on said deck, clip type frictional means for fastening said ceiling panels to the wing parts of the ceiling profiled members and clip type frictional means for fastening the side wall panels to the wing parts of the side wall profiled members, and wherein said plurality of like profiled members are of metal which are assembled to define a skeleton cabin framework and spot welded together, each said profiled member being of like substantially double Z-shape defining a dove-tail central channel facing in one direction and integral wing parts on each said profiled member at opposite ends thereof of substantially trapezoidal shape defining end channels facing in opposite direction to that of said dove-tail central channel, one of said wing parts of each profiled member terminating in an inturned ledge and a re-entrantly bent wing terminating in an oblique angled end portion on the other wing part of each said profiled members, and fastening means of said panel members being respectively engageable with an inturned ledge and said re-entrant bent wing.

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U.S. Cl. X.R.

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