

May 11, 1937.

G. G. SHARP

2,079,635

STATEROOM AND ACCOMMODATION ENCLOSURE FOR SHIPS AND THE LIKE

Filed Feb. 13, 1935

2 Sheets-Sheet 1

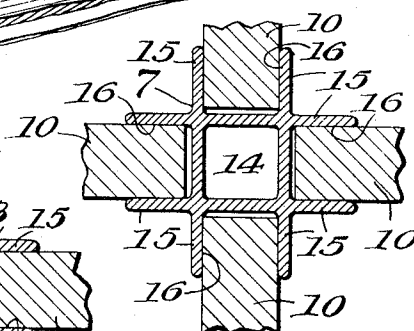
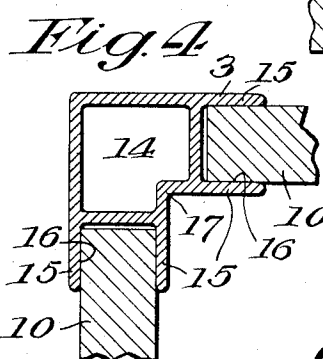
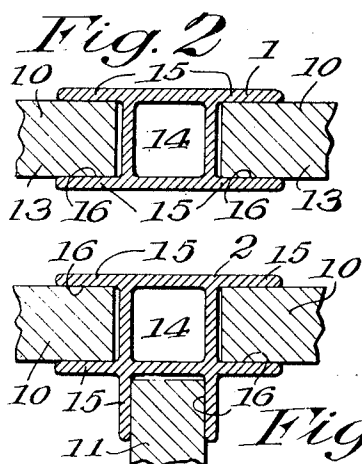
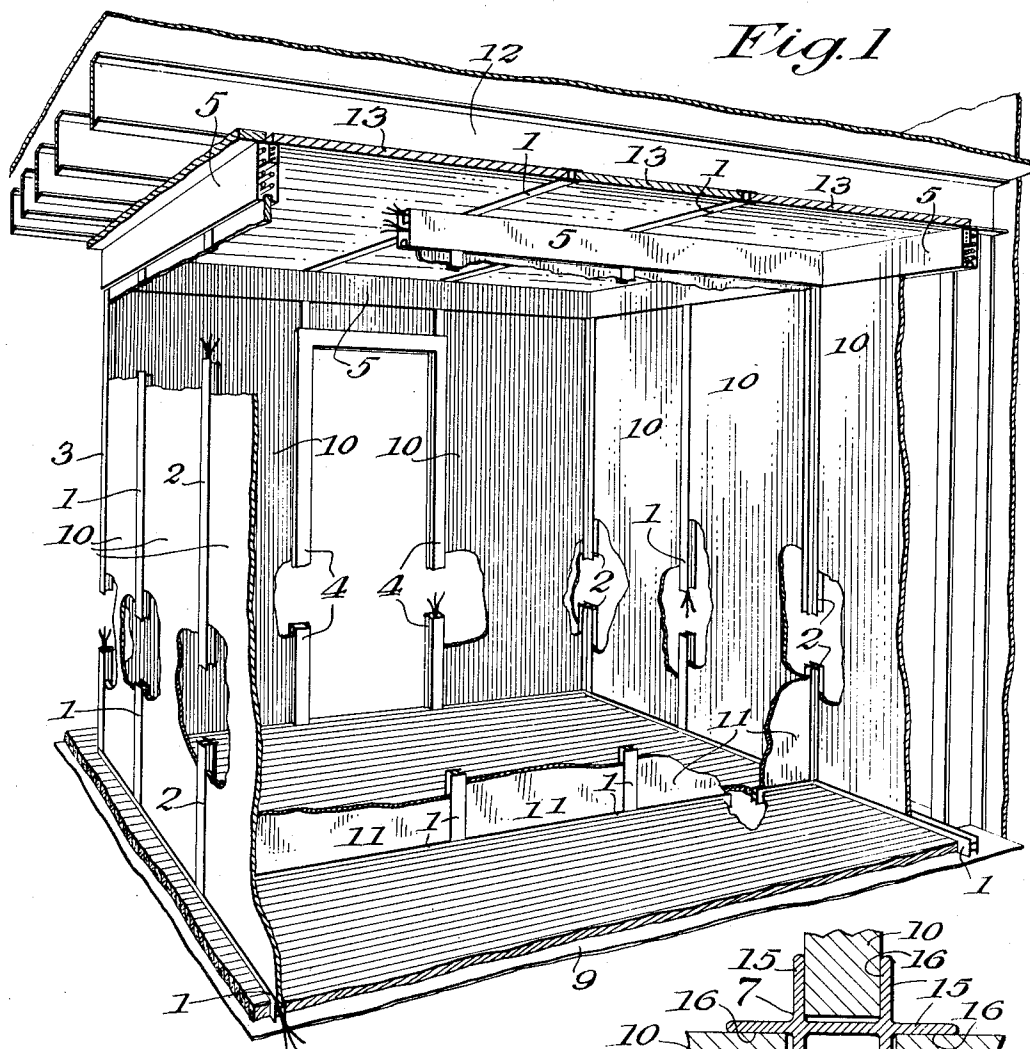


Fig. 5

Inventor:
George G. Sharp
By *Robt Rawlings*
Attorney.

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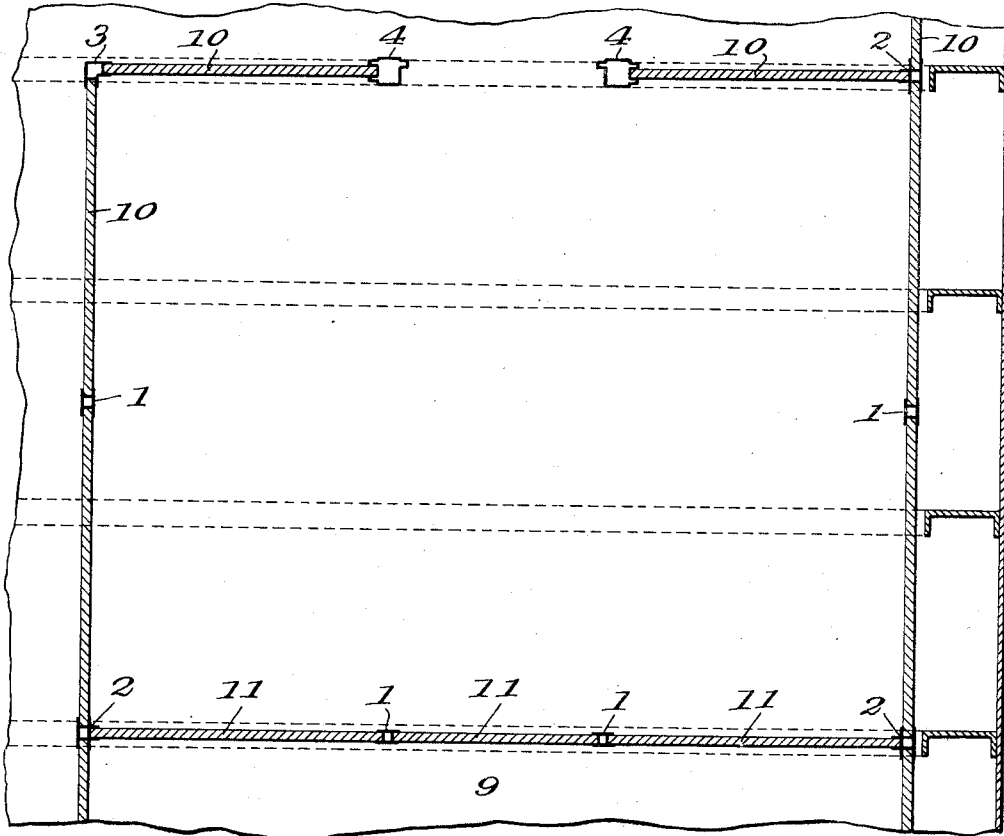


Fig. 6

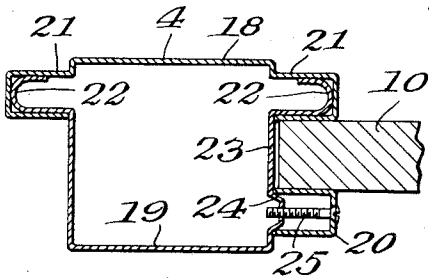


Fig. 7

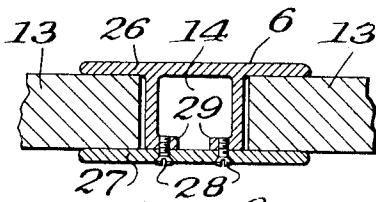


Fig. 8

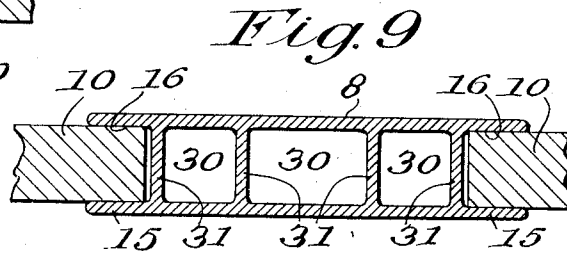


Fig. 9

Inventor:
George G. Sharp
By *Robt Rawlings*
Attorney.

UNITED STATES PATENT OFFICE

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STATEROOM AND ACCOMMODATION
ENCLOSURE FOR SHIPS AND THE
LIKE

George G. Sharp, Wyoming, N. J.

Application February 13, 1935, Serial No. 6,337
In Great Britain January 14, 1935

5 Claims. (Cl. 189—34)

The subject of this invention is an improvement in the parts and methods used to provide and erect partitions in living and/or utility quarters in ships, particularly, but may be adapted to other uses, as interior of buildings, and in units of construction such as cubicles to form garages, etc.

By way of readily explaining the specifications and to save words the term "stateroom" will be used with the understanding that it applies to any enclosure, whether public rooms such as lounge, dining saloon, bar room, etc. or utility rooms such as storerooms, lockers, crew's living spaces, etc. and whether on board ship, train, or elsewhere.

In the past such partitions (which are in marine phraseology called enclosure bulkheads, cabin enclosures, cabin lining and bulkheading, and ceiling and/or ceilings) have generally been constructed of wood or many parts and have been built-up piecemeal with innumerable nails, screws, bolts, etc. for fastenings.

These wooden partitions or joiner bulkheads as they are also called, sometimes abut steel bulkheads built into the ship's structure which consist of riveted plates and shapes, and also the inside shell of vessel and underside of deck forming top surface of the room space, all of similar steel construction. These require lining and/or "ceiling" in order to finish the interior surfaces of the staterooms in a livable and attractive manner as well as to hide electrical wiring that may be led to any desired part of walls and/or ceilings and the like.

The joiner bulkheads of wood with wood blocking and furring pieces commonly used were expensive while at the same time, because of use, establishing a unit of weight that was accepted in the marine field as a standard.

It has long been known that stateroom bulkheading and/or ceiling of wood had many disadvantages amongst which are non-fireproofness, squeaking unless carefully treated at joints, excessive thickness in way of panel joints, a breeding place for vermin, lack of strength when thin paneling is used unless substantially framed, and the necessary for using glue, innumerable nails, screws, bolts, etc. for fastenings.

It has also long been known that to increase weights or cost was generally undesirable, for the reason that increased weights add tonnage to the upper portions of a vessel, where such accommodations are usually provided, that must be offset by ballast in order to maintain the vessel's stability; and, that for ordinary bulkheading increased costs are justifiable only in spaces where

decorative or architectural considerations are warranted because of their special uses.

Further, it has long been known that substantially the same thickness of the bulkheading throughout its entire length was an aim to be accomplished so that surfaces would be substantially flush, space conserved and pilasters, corner posts, etc., prevented from projecting appreciably into the space unless desired in special spaces only for special considerations.

Still further, it has long been known that in single partition construction, that is, where one sheet or course of paneling constitutes the partition as contrasted with double partition where studding or posts with panels on both sides forms a double wall with space in between, it was advantageous, both from the standpoint of appearance and costs, to provide for electrical wiring without the necessity for separate conduits or arrangements whereby outlets might be made at desired points in walls and/or ceilings.

Additionally, it has long been known to be advantageous to provide means whereby fireproof construction could be utilized as long as panels of fireproof qualities were employed, and also to utilize panels that could be insulated as to sound or temperature conditions, and which also might be finished as to decorative and protective coatings or effects before being erected in the ship, as well as after erection.

A great many attempts have been made in the past to accomplish these highly important objectives which, however, have not been practical solutions for one or more reasons, but I have developed new parts and methods that may be used in part or in whole assembly whereby all of the foregoing desirable features are accomplished, resulting in a system free from separate fastening parts, conserving space, with no necessary increase in weight and actually saving in weight by using my standardized sectional members with any type construction, providing joints that are substantially flush with surface of partition and hence do not project appreciably beyond panel surface.

My invention may be utilized to economically and speedily construct and erect all types of single bulkheading and/or ceilings in connection with any materials of fireproof qualities such as steel, aluminum, asbestos, fibre composition, or other; or of non-fireproof properties such as wood, wall boards, laminated built-up materials of both metal and wood or fibre composition or other, and which may or may not be insulated, and which may be hollow or solid.

In all cases I use a small number of standardized metal sectional parts to form line joints, divisional joints, corner joints, top and bottom sills and door frames, all of which are universally adaptable to all size spaces and enclosures on all types of ships, and which by providing in themselves hollow cores for electric wiring eliminate the necessity for special conduit to carry the electrical wiring and special junction boxes at the point of electrical outlet attachment.

The sections or shapes which I use are of metal so shaped that by mathematical calculation of strength of materials as applied especially to metal structures I have all times a section with metal areas that, in association with calculations involving the distance of extreme fiber from neutral axis in both directions, enables me to obtain maximum strength with minimum thickness, and corresponding less weight, in proportion to the strength required and thicknesses of bulkheading panels used.

My system of stateroom construction is easily and quickly assembled and disassembled, may be produced as standardized sections and by quantity methods of production, and may be expanded in any direction according to the area to be enclosed and/or sub-divided.

In particular, my system of stateroom construction avoids the necessity of using wood-jointed bulkheading, with its innumerable fastenings, and provides for uniform or odd sizes of panels and substantially flush walls with no objectionable projections into the room space.

With my invention, the line posts, corner posts, divisional posts, and door posts which extend vertically between the top and bottom sills of the assembly support the panels and the panels themselves act as keys to interlock said posts and sills, thus avoiding the necessity of using any separate fastenings, as bolts, screws, etc. for fastening together the posts, sills and panels. Additionally, such posts, as well as the top and bottom sills, or any of them, have hollow cores through which the electrical wiring is carried to any desired points in the room.

As suggestive of the many possibilities of my invention and as illustrative of a structure which I have erected and experimentally used under actual conditions of service and have found extremely satisfactory from the standpoint of manufacture, assembly and service, I show in the accompanying drawings, a preferred embodiment of my invention, together with certain modifications which may be desirable to use under certain conditions.

In such drawings:—

Fig. 1 is a perspective view partly broken away showing a stateroom constructed and erected in accordance with the teachings of my invention.

Figs. 2 to 5 inclusive are fragmentary sections showing my standardized structural units respectively as a line joint, a three way joint, a corner joint, and a four way joint.

Fig. 6 is a plan section of Fig. 1.

Fig. 7 is a fragmentary section showing one of my standardized structural units as a combined door buck and jamb.

Fig. 8 is a similar view showing one of my standardized structural units in "knock-down" form and used with ceiling panels quite often and sometimes elsewhere, such unit being sectional so that one of its sections may be removed to permit convenient insertion of the adjacent panels, and

Fig. 9 is a fragmentary section showing a modified

form of my standardized structural unit designed to provide a plurality of individual hollow conduit cores for electrical wiring, as well as joints having greater widths combined with necessary strength.

According to my system of stateroom construction I provide an interlocked assembly of structural frame units and wall, ceiling and/or partition panels in which the panels themselves key the various structural units together, thus obviating the necessity for using any separate fastenings as bolts, screws, etc. The structural frame units comprise vertically disposed line, divisional, corner and door posts and horizontally disposed bottom sill units and top structural members.

The posts are vertically channeled to receive the vertical edges of the panel sections which are to constitute the walls and/or partitions of the stateroom. The bottom sill units and the top structural members are longitudinally channeled to receive the horizontal edges of such panels. Thus the panels are supported by the posts and themselves key the posts to the bottom sill units and the top structural members.

The ceiling panels likewise key into channeled ceiling units which in turn are suitably connected in any convenient manner with the top structural members. Preferably the ceiling units are duplicates of the bottom sill units although one of the ceiling units at least may be conveniently made with a removable section, see Fig. 8, to permit convenient assembly of the final panel of the ceiling panel assembly.

All or as many as desired of the vertical posts, the bottom sill units, the ceiling units and the top structural members are formed to provide hollow spaces which in themselves constitute conduits for the accommodation of electric wiring.

The several structural frame units are designated generally in Fig. 1 by the reference numerals 1 to 6 inclusive and such units, or certain of them, are detailed in separate figures of the drawings.

The units designated at 1 in Fig. 1 and detailed in Fig. 2 are interchangeably useable. When arranged vertically they constitute line posts. When arranged horizontally they may constitute either the bottom sill units or the ceiling panel units.

The units designated at 2 in Fig. 1 and detailed in Fig. 3 are interchangeably useable. These are adapted to be arranged vertically and when so arranged provide three way divisional posts adapted to receive and retain the vertical edges of the inserted panels which form the walls and/or partitions of the stateroom.

The units designated at 3 and detailed in Fig. 4 are adapted to be arranged vertically and provide corner posts which receive and retain the vertical edges of the inserted wall panels at the corners of the stateroom.

The units designated at 4 in Fig. 1 and detailed in Fig. 7 are adapted to be arranged vertically to provide combined door bucks and jambs or frames.

The units designated at 5 in Fig. 1 are top structural members suspended from the deck beams of the deck above. These receive and retain the upper longitudinal edges of the inserted panels constituting the side walls and/or partitions of the stateroom as well as the outside edges of the ceiling panels.

The unit designated at 6 and detailed in Fig. 8 is a special ceiling unit which has a removable

section to permit convenient assembly of the final panel of the ceiling panel assembly.

The unit designated at 7 and detailed in Fig. 5 is a variation of the three-way divisional post 2 detailed in Fig. 3 and is used as a four-way divisional post where four wall and/or partition panels intersect each other at right angles.

The unit designated at 8 and detailed in Fig. 9 is a variation of any of the units 1, 2, 3 or 7 and may be used where it is desired to provide a plurality of independent space-forming conduits for electrical wiring.

Before proceeding to a detailed discussion of the several units thus identified, I will explain briefly the method of assembling and interlocking the several units and panels to form the stateroom.

The fair lines having been established for the area to be enclosed as a stateroom or other enclosure, the required number of units 1 are laid vertically on edge transversely and longitudinally of the steel deck 9 of the ship as bottom sills and fastened in any suitable manner to the deck. The bottom edges of the wall forming panels 10 and/or the partition forming panels 11 of the stateroom are inserted in the channels presented by the upper or exposed faces of these bottom sill units, and may be concealed by such mouldings (not shown) as may be deemed desirable to use in order to finish the stateroom in a decorative and attractive manner.

The top structural members 5 are channeled on their under sides and are suspended, preferably in an adjustable manner, from the deck beams 12 of the deck above. The outside edges of the ceiling panels 13 are connected to said top members 5 by means of suitable connectors which form no part of the present invention and hence are not illustrated. The inside edges of the ceiling panels are received and retained in the channels of structural units 1 similar to the bottom sill units 1 but dropped horizontally (see Fig. 1) rather than vertically on edge as in the case of the bottom sill units, at least one of said ceiling units (see Fig. 8) preferably having a removable face-section to permit convenient assembly of the final ceiling panel.

The several line posts 1, (these being the same units as are employed for the bottom sills and the ceiling panels units but arranged vertically on end instead of horizontally) and the divisional posts 2 or 7, the corner posts 3, and the door bucks 4, are vertically erected at suitably spaced intervals according to panels used, between the bottom sill units and the top structural members 5, such being accomplished step by step and so that each post is fitted to respective panels as panels are placed, usually commencing at corner of space and proceeding to door, the assembled bulkheading accordingly fastened to its joining members 1, 2, 3, 4, 5, 7 and supported by them and likewise such joining members supporting the panelling 10 and 11, etc.

Inasmuch as the bottom edges of such panels are received and retained in the upwardly disposed channels of the bottom sill units and the top edges of said panels are received and retained in the downwardly disposed and registering channels of the top members 5, it results that the panels 10 and/or 11 themselves key the vertical posts to the bottom sills 1 and top members 5 without the necessity of using any special fastenings as screws, bolts, or the like.

It also results that the panels may be of uni-

form size and of single rather than double type, the hollow posts, bottom sills and top members affording concealed conduits for electrical wiring to various points within the stateroom, and these posts also enabling flush wall joints without objectionable projections into the room space, as in the case of joiner bulkheading of wood.

Describing now the various structural units designated as 1, 2, 3, 6, 7 and 8, said units may all be said to comprise a metal member, which may be cast, extruded or stamped, and however formed, provides an enclosed central core or hollow space 14 which serves as a conduit for electrical wiring, and are flanged as at 15 to provide at least two and sometimes three or four (units 2 and 7, Figs. 3 and 5) channels 16 for the reception and retention of the panel edges.

Where the unit 1 is used as a bottom sill (see Fig. 1) and hence placed horizontally on edge, the lower channel thereof may if desired straddle spaced lugs which are welded or otherwise fastened at spaced intervals to the deck, the bottom edge of a wall and/or partition panel being received and retained in the upper channel of such unit.

Where said unit 1 is used as a line post or as a ceiling unit, wall panels or ceiling panels are received and retained in both channels thereof (see Figs. 1 and 2).

With the three-way divisional posts 2 (Fig. 3) and the four-way divisional posts 7 (Fig. 5) the spaced pairs of parallel flanges 15 forming the several channels thereof are arranged at right angles to each other.

With the corner posts 3, detailed in Fig. 4, the shape and proportions of the unit are such as to provide an offset or jog as at 17 between the pair of spaced flanges 15 forming one channel and the flange pair forming the other channel.

The combined door bucks and jambs 4 as shown in Fig. 1 and as detailed in Fig. 7 comprise three interlocked sections 18, 19 and 20 which together define an enclosed conduit for the electrical wiring as well as a channel for the reception of a wall panel.

The outer section 18 is interlocked with the opposing inner section 19. The third section 20 is a removable section which is removably fastened to the inner section 19 and defines therewith and with the outer section 18 a channel for the reception of the vertical edge of the wall panel.

This may be variously accomplished. As shown, the ends of the outer section 18 are bent angularly to provide the hollow extensions 21. Within these recessed projections 21 the curved inner ends 22 of the inner section 19 are received. This interlocks the sections 18 and 19 in the spaced relation shown.

Additionally, one of the recessed projections 21 constitutes with the adjacent cross wall 23 of the inner section and with the adjacent wall of the removable section 20 a channel for the reception of the panel edge.

Conveniently, the section 20 is U-shaped. That portion of the cross wall 23 of the inner section 19 straddled by the legs of the U is preferably angularly bent as at 24 to interlock with the section 20. In order to more reliably retain the removable section 20 on the section 19, additional fastenings, as the screws 25 or their equivalents may be used. Where screws are used, these extend through the cross bar of the U-section 20 and into the angularly bent portion 24 of the section 19.

The top structural members 5 shown in Fig. 1 may be variously constructed. Essentially, they involve formations which will provide an enclosed space for electrical wiring, such space being preferably sub-divided to provide independent conduits through one of which low tension wires may be led and through the other of which light and power wires may be led.

Essentially, also they are of such construction as to permit convenient access to such wires, preferably being of sectional construction with one section detachable in whole or in part from an adjacent section to permit such access.

Essentially, also they are of such construction as to present along their underneath surfaces channels for the reception of the top edges of the wall forming and/or partition panels of the stateroom and at the same time provide ready support and attachment for the outermost ceiling panels which are inset from the deck beams of the deck above and are usually overlapped upon the upper faces of the top members and appropriately fastened in place by any suitable connectors.

The inner ceiling panels are supported in the channeled ceiling units 1, but in order to permit convenient insertion of the final panel of the ceiling panel assembly, I prefer to use the sectional unit 6 detailed in Fig. 8. Such unit comprises two opposed sections 26 and 27 which define the space-forming core or conduit for the electrical wiring, and the flanged channels for the reception of the inserted ceiling or other panels. The two sections, however, are removably fastened to each other, as by means of screws 28 or their equivalents or snap springs which pass through one of the sections and engage in flanges 29 formed on the cooperating section. I prefer to pass two screws 28 through the section 27 and to bend from the section 26 two flanges 29 inwardly into the conduit-space a distance sufficient to receive the screws but not sufficiently to obstruct materially the conduit-space or interfere with the electrical wiring passing therethrough.

The modified form of structural unit designated at 8 and detailed in Fig. 9 is of such formation as to provide not only the claimed flanges for the reception of panel edges but also a plurality of enclosed, independent space-forming conduits 30, here shown as three. This number may obviously be increased or reduced as desired by simply increasing or decreasing the number of cross-webs 31 sub-dividing the included space.

Various other modifications in methods, parts, and uses may obviously be resorted to within the spirit and scope of my invention as defined in the appended claims.

What I therefore claim and desire to secure by Letters Patent is:—

1. A self-contained wall structure comprising

top and bottom members adapted to be fastened, respectively to ceiling and floor surfaces, and having spaced flanges forming substantially continuous horizontal channels which respectively face each other in the respective members, spaced corner and partition posts extending vertically between the top and bottom members and having substantially continuous vertical channels, and vertically disposed panels some of which are disposed in angularly intersecting relation to each other and all of which have their vertical edges disposed in the channels of said corner or partition posts, the ends of the posts extending no farther than the inner edges of the respective flanges of the top and bottom members and the top and bottom edges of the panels projecting past the ends of said posts and into the respective channels of the top and bottom members whereby to provide a readily assembled and disassembled structure in which the posts are free of direct connection with the ceiling and floor and the panels key the posts and top and bottom members together as a rigid interlocked assembly and themselves constitute substantially the sole means for fastening said parts in operative relationship.

2. The structure of claim 1, the top members being adjustably suspended from the ceiling surface.

3. The structure of claim 1, and ceiling panels and structural members therefor supported by said top members and having channels, and the edges of the ceiling panels being received in said channels.

4. The structure of claim 1, the ceiling panels and structural members therefor supported by said top members and having channels, and the edges of the ceiling panels being received in said channels, at least one of said structural members having a removable section to facilitate convenient assembly of the final panel of the ceiling assembly.

5. The structure of claim 1, at least one of said partition posts comprising at least three members, one member presenting a wall portion terminating at each end in a reversely angled portion, another member presenting a wall disposed in spaced relation to the wall of said first named member and having end walls disposed in spaced relation to each other and terminating in bent locking portions adapted to frictionally engage said angled portions of the first-named member, and a third member, detachably engaged with one of the end walls of said first named member and itself formed to provide a wall spaced from a wall of one of the angled portions of the first member a distance corresponding substantially to the thickness of a panel inserted between the same.

GEORGE G. SHARP.