May 7, 1946. B. J. BARTHOLOMEW 2,399,978

PREFABRICATED WALLBOARD CONSTRUCTION

Filed Aug. 9, 1943 2 Sheets-Sheet 1

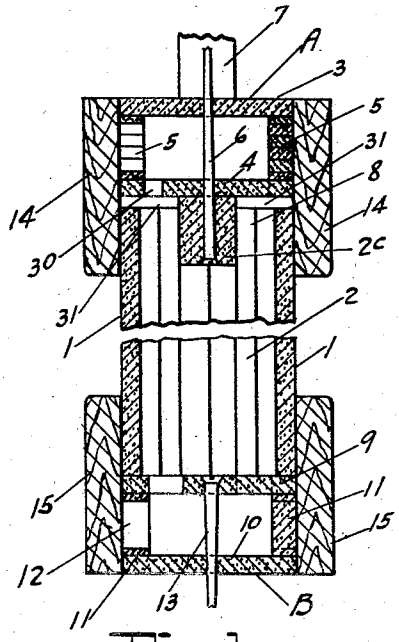


Fig. 1.

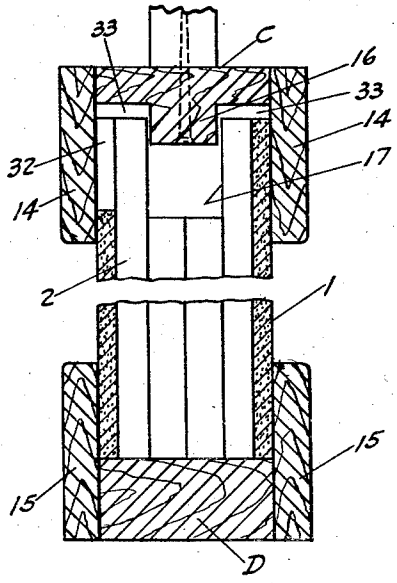


Fig. 2.

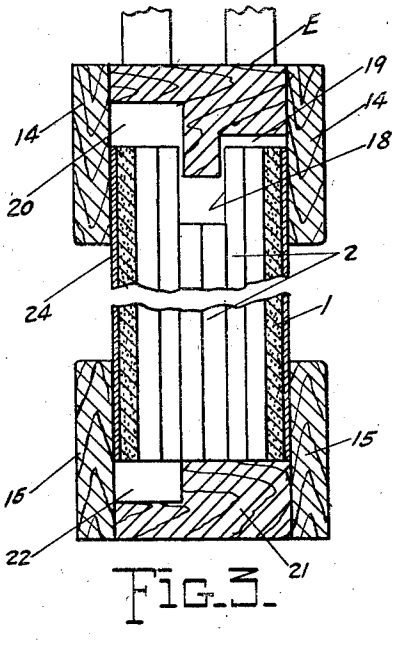


Fig. 3.

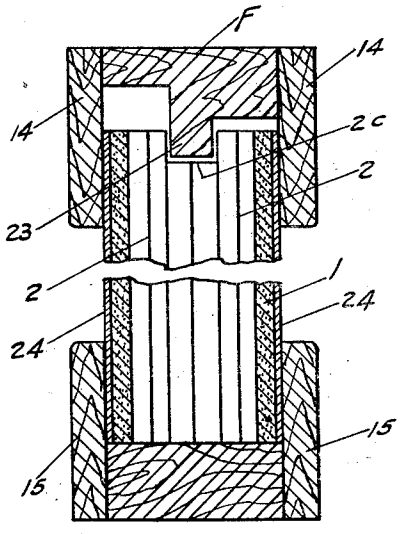


Fig. 4.

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PREFABRICATED WALLBOARD CONSTRUCTION

Filed Aug. 9, 1943 2 Sheets-Sheet 2

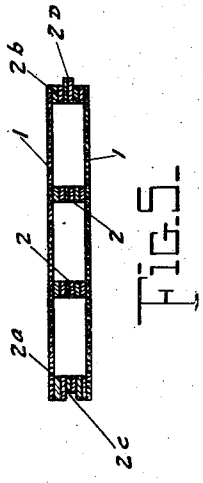


FIG. 5.

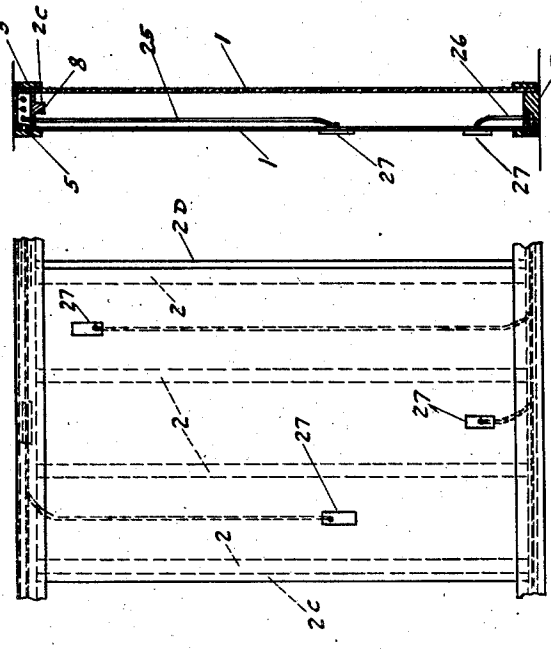


FIG. 6.

FIG. 7.

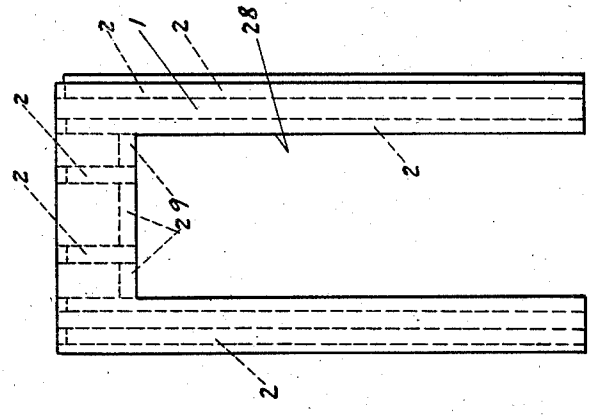


FIG. 8.

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2,399,978

PREFABRICATED WALLBOARD CONSTRUCTION

Byron J. Bartholomew, Burton, Ohio

Application August 9, 1943, Serial No. 497,993

2 Claims. (Cl. 20—4)

This invention comprises certain improved prefabricated structural wallboard, wall, and/or partition sections. The invention deals primarily with the need existing today for building or housing units which may be simply constructed, give a high degree of serviceability, and afford a flexibility of construction for erecting purposes not heretofore attained in the building art. In the carrying out of the invention, my improvements are characterized in that the wall or partition sections designed by me are made substantially entirely of wallboard of known commercial types, the sections in so far as they embody the wall or partition unit being prefabricated and comprising largely spaced side members with intermediate spacing members to form a hollow unit. The said parts of the wall or partition section, being made of wallboard, permit of employment of conventional wallboard manufacturing methods, said parts being assembled and connected by adhesive material preferably under pressure and being adapted thus to be shipped from the factory to the place of use ready to be put up.

In the use of the prefabricated sections of my invention the same are designed to be supported and held in place between upper and lower plates, the upper plate applied to a ceiling or top member of some sort and the lower plate to be carried by the floor or base on which the unit is erected. Thus it is possible to design a building with finished floors and ceilings installed and then very quickly sub-divide the building to suit the purposes of a particular occupant by installing the prefabricated wall or partition sections of the invention. Said sections will be put out in standard sizes and may at the site of use be cut at the upper and lower edges, and vertically thereof, to fit them to the sub-divisions of space required.

A special feature of the invention resides in the peculiar assembly of the prefabricated sections in relation to top and base plates above and below them, respectively, and in relation to ceiling and base moldboards, so that raceways provided in the said plates will be available for electric wires or other utilities without requirement for cutting of the prefabricated sections to supply such wire, pipe, or like raceways, thus affording a flexible arrangement for the location and control of various services, including those for telephones, electric lights, electric fans, gas lines, compressed air, etc.

The advantages of my invention will appear more fully upon reference to the accompanying description and the annexed drawings, in the latter of which—

Figure 1 is a vertical sectional view of a wallboard prefabricated section assembled in proper relation to upper and lower plates showing how the access openings are provided to assist in stringing the services along the wall or partition built with the sections.

Figure 2 is a similar view to Figure 1, but illustrating a different arrangement of the raceway feature and a somewhat different construction of the base plate.

Figure 3 is a view similar to Figure 1, showing still another modification and illustrating special finishing facing layers applied to the outer sides of the prefabricated sections.

Figure 4 illustrates, similar to Figure 1, a further modification of the invention.

Figure 5 is a horizontal sectional view taken through one of the prefabricated sections at a point intermediate its upper and lower ends.

Figure 6 is a vertical sectional view of one of the sections of the invention, showing service wires as they may be strung in the raceways and led to suitable outlets.

Figure 7 is a front elevation of a section such as shown in Figure 6.

Figure 8 illustrates a door section as it may be constructed for the purposes of the invention and later more fully described.

Referring to Figures 1 and 5 to 7 inclusive wherein the partition section is broken away at the middle portion, it is notable that the prefabricated partition or wall section comprises the side members 1 spaced apart by means of spacing members 2. The side members 1 may comprise one or more layers of wallboard material such as Cellotex, Gypsum, Masonite, and like wallboard substances commonly in use today. The spacing members 2 will ordinarily comprise a plurality of layers of wallboard material likewise, and those members at the vertical edges of the section designated 2*a* and 2*b* will have the layer formations thereof disposed to provide the groove 2*c* at one edge and tongue 2*d* at the other edge. Obviously, this section construction may be supplied in standard sizes as for instance in ordinary floor to ceiling lengths, and where the floor and ceiling distance varies slightly or more from the length of the section, it is only necessary by the use of an ordinary power saw to cut from one end of the section the necessary material to enable the section to be fitted snugly and readily into the space between the floor and ceiling and below an upper plate A in Figure 1 providing a boxed arrangement which itself may be built up of a top member 3, a lower member 4, and laminated sides 5. This affords a boxed construction to receive electric wires or other service lines such as previously referred to herein and the plate A will be attached to the ceiling by a suitable fastening 6 entering a plug 7 of wood or like material sunk into the ceiling. The fastening 6 will pass through a tongue member, also of wallboard material, designated 8 and fixed to the plate unit A by the fastening 6.

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In this form of the invention a base plate B may be employed of box-like formation and composed of the top member 9, bottom member 10, and side members 11, the left side member having an opening 12 which may come opposite an outlet for the service connections or lines strung in the units A and/or B. The lower plate B will be affixed to the floor by a suitable fastening 13.

Suitable moldboards 14 will be attached to the upper opposite sides of the prefabricated partition or wall section shown in Figure 1, and enclose the latter at its upper edges as well as the box-like plate A. Similar moldboards 15 will be located at the base of the section. The boards 14 and 15 may be of wood or other trim material, as desired.

In Figure 2 the construction of section shown is much the same as in Figure 1, save that the upper plate C is formed with an integral tongue 16 to enter the groove 17 at the top of the section, which groove is deepened in order to provide a service line raceway, as will be obvious. In this construction the base plate D is a single or unitary base member on which the partition or wall section rests. Otherwise the construction of the section is as before described.

In Figure 3 another modification is illustrated wherein a somewhat different formation of upper plate E is provided so formed as to supply a raceway 18 similar to the raceway 17 previously described, and the bottom portions of the member E are so spaced from the upper edges of the prefabricated section as to provide other raceways 19 and 20. In the above form the base plate 21 is formed with a side raceway 22 cut out of the same, as illustrated.

In Figure 4 the construction shown is substantially like the construction of Figure 3 save that the top plate F has the tongue 23 fully entering the upper groove of the prefabricated section 1.

Figures 3 and 4 show the prefabricated sections 1 provided on their outer surfaces with exceedingly dense layers 24 of a material such as now commonly known as plastics, these layers provide the advantages of imperviousness to moisture, provision for color to enhance the appearance of the partition or wall sections. Plastics comprising synthetic resins may be employed for the purpose of making the layers 24. These layers may be of Bakelite, and where the body of the section is made up of a layer or layers of more or less porous plasterboard, or porous wallboard material, the surface layers 24 may be formed of Masonite, but it will be understood that the prefabricated wall or partition sections of the invention are assembled at the factory as a manufactured complete product including the layer-like formation of the sides 1, the spacing members 2, and the surface layers 24, all pressed together under known pressure practice with adhesives for establishing complete union or integrality thereof.

Figures 6 and 7 show how the service lines 25 and 26 are strung in the section units and upper and lower plates and lead to suitable outlets 27 of conventional form.

Figure 8 shows how a section unit may be cut out to provide a door opening at 28, in which event the spacing members 2 at the top of the opening will be cut off at this point and other spacing members 29 quickly emplaced and glued or otherwise attached to reinforce the upper edge of the door opening in an obvious manner. Figure 8 illustrates how easy it is to cut off the lower edge portion of one of the section units where variation in length is required to fit between ceilings and floors. Moreover, when ceilings and floors are not parallel, the lower edge of a section unit may be cut on a slight slant so that snug fitting of the section between the ceiling and floor is obtained. This is advantageous in emplacing wall or partition sections in old buildings where ceilings or floors are unevenly settled.

In Figure 1, opening 30 affords a service line space leading from within plate A to spaces 31 at the upper ends of the spacing members 2. In Figure 2 opening 32 affords access to wire raceways 33. Such openings may be located at different convenient places desirable, dependent on the location of main utility service lines.

The ease with which the wall or partition units of my invention may be installed will be obvious from the foregoing, and it will be evident that installations may be made with a minimum of waste or debris, and relocation of the sections to suit occupants of buildings may be made with very little disturbance to tenants presently using the space where the installations are being set up.

The sections 1—2 are so made that they constitute structural units of strength sufficient to support ceiling and/or floor loads of many different types of building structures.

The upper and lower plate members used with the wall or partition sections may be made of wallboard material, laminated or unlaminated. Moreover, said sections in wall construction have peculiar inherent rigidity incident not only to compression stresses but also for counteracting tension stresses, these factors being highly important in producing practical structural building units of the type of this invention. Additionally, the factor of value of resistance of the unit to tension stresses is enhanced by the use of an additional lamination, or laminations, or plastic material.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In combination, a prefabricated wall board unit capable of sustaining load stresses and comprising spaced sides or faces of wall board, wall board spacing members between said sides disposed in load-sustaining position and bonded thereto under compression to integrate the sides and spacing members into an independent, homogeneous and rigid panel, certain of said spacing members at the top of the unit being recessed, and a separate channel unit at the top of the panel extending the entire width thereof and having a tongue member on its under side engaging in the recessed portions of said spacing members.

2. A wall construction as set forth in claim 1, wherein the channel unit at the top is of box-like form and composed of horizontal upper and lower members of wall board spanning the space between and above the wall board sides of the panel to form service line channels, and spaced narrow laminae of wall board forming the sides of the channel unit and located in the planes of the panel unit sides aforesaid.

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