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D. ENGEL

2,770,965

INSULATED HOLLOW BUILDING PANEL

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Fig. 1.

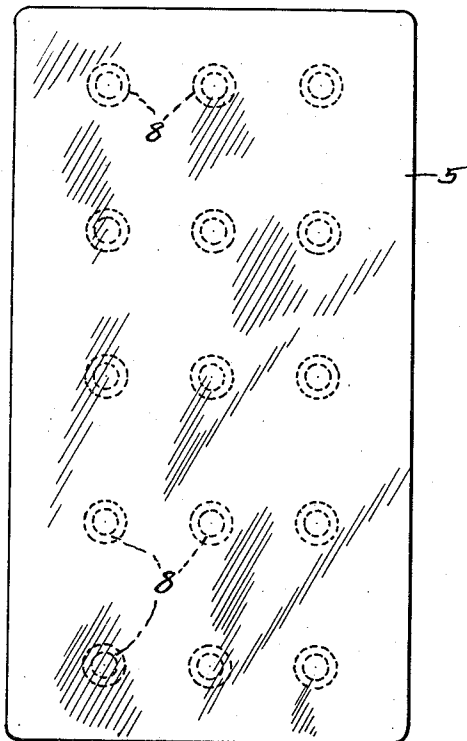


Fig. 2.

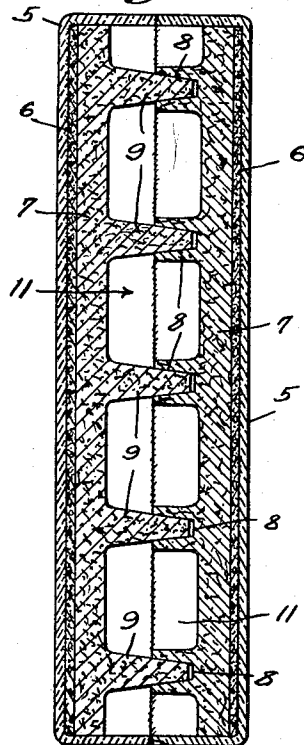


Fig. 3.

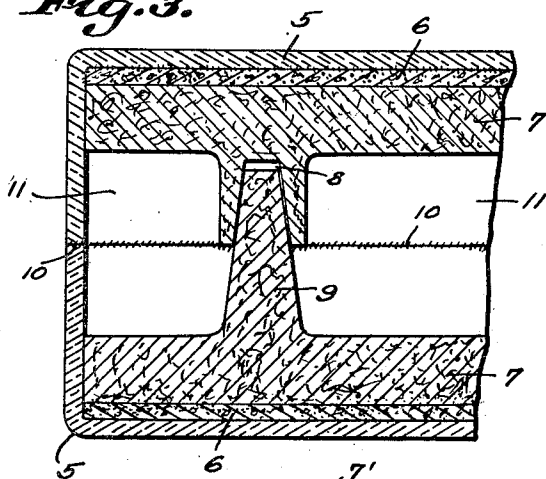


Fig. 4.

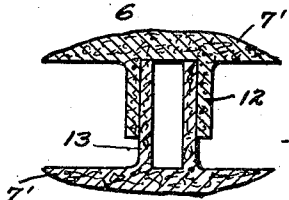
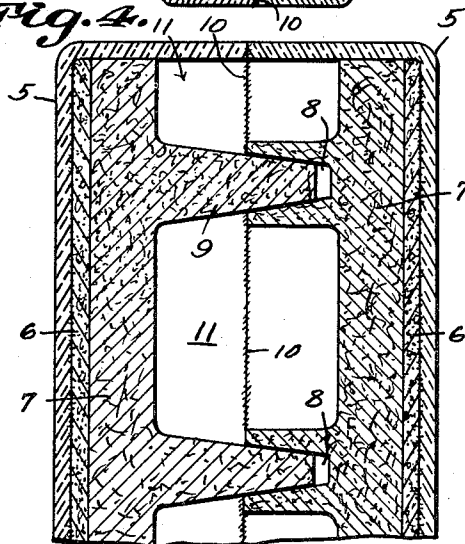


Fig. 5.

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2,770,965

INSULATED HOLLOW BUILDING PANEL

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2 Claims. (Cl. 72-41)

This invention relates to a composition building structure unit, the primary object of the invention being to provide a building structure unit, preferably in the form of a panel which will in use provide a strong and durable building wall, with exceptionally ornamental possibilities.

Another object of the invention is to provide a wall or other structural unit wherein the outer and inner surfaces thereof may be of identical design, or distinctively different, as desired.

A further object of the invention is to provide a composition structural unit, which is exceptionally light in weight, one which is insulated against heat and cold, the unit being utilized in the construction of walls, ceilings or floors, to meet the requirements of use.

Another important object of the invention is the provision of an exceptionally light structural unit which may be constructed according to selected specifications for use in building a structure of a predetermined design.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawing:

Figure 1 is a plan view of a building structural unit constructed in accordance with the invention.

Fig. 2 is a longitudinal sectional view therethrough.

Fig. 3 is an enlarged fragmental sectional view through a unit illustrating the method of connecting the sections of which the unit is formed.

Fig. 4 is a similar sectional view taken at right angles to Fig. 3.

Fig. 5 is a sectional view through a modified form of the invention.

Referring to the drawing in detail, the structural unit forming the subject matter of the present invention embodies shells 5 of identical construction and formed preferably of glass of the desired thickness, to meet the requirements of use.

The shells are preferably rectangular in formation and may be constructed of any desired thickness within certain limits, so that the units may be erected as panels, in constructing a wall, ceiling or floor.

The inner surface of each shell is supplied with a layer of sand and gravel 6, which is supplied during the manufacture of the shells and while the shells and sand and gravel are red hot, the sand and gravel becoming fused to the inner surfaces of the shell sections forming designs simulating conventional building materials, or as a matter of fact any desired decoration which will be visible through the transparent walls of the shells.

In each section of the unit is provided a layer of insulating material 7 which is constructed preferably of wood pulp mixed in plastic form with suitable powdered

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mineral or mineral fiber having insulating qualities, the specific insulating material being molded in such a way as to provide sockets 8 that extend from the inner surface of the insulating material 7, the inner surfaces of the sockets being tapered outwardly towards the outer ends thereof.

The insulating material 7 of the opposite section of the unit is formed with inverted cone-shaped extensions 9, which are of lengths to fit within the sockets 8, when the sections of the unit are brought together and their meeting edges fused together as at 10.

With this construction, it will be seen that the weight of superposed units will be supported by the shells, the sockets and inverted cone-shaped extensions providing means to hold the layers of interlocking material spaced apart and at the same time produce an air pocket 11.

In the form of the invention as shown by Fig. 5 of the drawing, the socket member 12 is formed with vertical walls to receive the vertical walls of the extensions 13 carried by the cooperating insulating section.

It will be understood that the composition thickness and spacing of the component parts of the wall section units may be varied in accordance with the desired strength in a given instance.

It might be further stated that when the sections of each unit have been formed and are to be connected in assembled relation, the inner surfaces of the sockets 8 are coated with a suitable liquid cement so that when the extensions 9 are positioned within the sockets the sockets will be firmly united with the extensions providing a reinforcing medium as well as an insulating medium for the glass shell sections of the unit.

It will also be understood that in the construction of the layer 6 various types of decorative materials may be used as desired, in accordance with individual preference.

It will also be noted that due to the construction shown and described, I have provided a wall unit which will be exceptionally light, decorative and exceptionally strong and durable, the unit having a universal use in the construction of building walls, ceilings, floors, columns, or the like, and at the same time providing a structural unit which is exceptionally cheap to manufacture.

Having thus described the invention, what is claimed is:

1. In a building structure unit, a panel embodying precast hollow sections, each section having laterally projected marginal flanges providing open-sided sections, said marginal flanges of said sections being in alignment and fused together, layers of insulating material lining the inner surfaces of said precast hollow sections, socket members circular in cross section having tapered inner surfaces, extending from and forming a part of the insulating lining of one section, solid cone-shaped extensions integral with the insulating material of the other hollow section and seating in said socket members, the taper of said socket members and the taper of said extensions being identical, the small ends of said extensions having a diameter greater than the diameter of the bottoms of said sockets whereby said extensions will tightly wedge in said sockets with the ends of said extensions spaced from said socket bottoms, said extensions projecting beyond the plane of the edges of the flanges of its section a distance less than is the bottom of the socket spaced inwardly from the plane of the edges of the flanges of its section.

2. In a building structure unit, a hollow panel embodying a pair of confronting precast hollow sections, laterally extended marginal flanges formed on said hollow sections, the marginal flanges of adjacent sections being disposed in alignment and fused together along their contacting edges, layers of insulating material lining the

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inner surfaces of said precast hollow sections, socket members circular in cross section having tapered inner surfaces, extending from and forming a part of the insulating lining of one section, solid cone-shaped extensions integral with the insulating material of the other hollow section, and said extensions of said other section extending within and bearing against the walls of said socket members of the cooperating section bracing said sections with respect to each other.

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