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(71) Demandeur/Applicant:
JONES, TED, CA

(72) Inventeur/Inventor:
JONES, TED, CA

(74) Agent: WILBUR, JAMES T.

(54) Titre : BLOCS IMBRICABLES POUR STRUCTURE TEMPORAIRE

(54) Title: INTERLOCKING BLOCKS FOR TEMPORARY STRUCTURE



This invention relates to building blocks for temporary structures and more particularly to building blocks which can be rapidly assembled at a location where there is a need for a temporary structure and afterward, when the need has passed, can as easily be dismantled. Once dismantled, the blocks can be shipped at relatively low cost to a new location and reused.

When a disaster occurs such as a hurricane or a fire, there are often injuries and loss of life as well as damage and destruction of buildings. Many buildings such as houses, schools and factories must be rebuilt quickly to avoid a prolonged disruption in the lives of the survivors. However, in most cases, existing structures are not rebuilt quickly. Rather, there are usually long delays before new structures are constructed and ready for occupancy.

I have invented building blocks which are suitable for use in temporary structures. The blocks are composed of lightweight material such as polypropylene or other polymeric material so that the blocks can be carried and lifted easily by hand. A crane or other machine for transporting and lifting the blocks into position is not required.

The blocks interlock to form the shell of a complete structure. Mortar or other bonding material is not required to hold the blocks in place. The blocks can be assembled into a structure quickly and later dismantled for use elsewhere with a minimum of delay and cost.

The blocks are hollow to minimize their weight. The hollow interior of the blocks may be filled in the course of construction with a variety of materials. The interior may for example be filled with particles of insulating material or it may be filled with sand. Sand serves to increase the

weight of the blocks and to increase the stability of the structure. Afterward, when the blocks are disconnected as the structure is being dismantled, the insulating material or sand can be poured out of the blocks in order to decrease their weight and to make them easier to handle during the dismantling process.

Plugs are provided to close the openings through which the insulating material or sand is introduced into the interior of the blocks and pins are provided in the side walls of the blocks to which straps for drywall may be attached.

Briefly, the building block of my invention has a hollow interior and is defined by a pair of oppositely facing rectangular side walls, rectangular end walls and rectangular top and bottom walls. Each block has a vertically extending tongue in one end wall and a vertically extending groove in the other end wall. The tongue serves to interconnect the block with the groove of a second like building block placed adjacent to one end of the subject building block and the groove serves to interconnect the block with the tongue of another building block placed adjacent to the other end of the subject building block.

The subject building block has at least one rectangular projection which extends upward from its top wall and at least one cavity which extends inward from its bottom wall. The projection serves to interconnect the subject building block with a cavity in a like building block located above the subject building block and the cavity in the subject building block serves to interconnect the subject building block with a building block located beneath the subject building

block.

The subject building block has an opening through which particulate material such as particles of insulating material or sand may be selectively introduced and extracted from the hollow interior of the subject building block.

The building blocks of the invention are described with reference to the accompanying drawings in which:

Figure 1 is a perspective view of block for use in the front, rear and side walls of a building;

Figure 2 is a perspective view of a strap adapted to be attached to the interior face of the building block of Figure 1;

Figures 3, 4 and 5 are plan, side and end views, respectively, of the building block of Figure 1;

Figures 6 and 7 are perspective views of blocks for use at the corners of a structure having front, rear and side walls similar to those of the building block illustrated in the previous drawing;

Figures 8 and 9 are plan and side views, respectively, of the building block of Figure 6;

Figures 10 and 11 are plan and side views, respectively, of the building block of Figure 7;

Figure 12 is a perspective view of a roof block;

Figure 13 is a perspective view of an end block;

Figure 14 is a view of the bottom wall of the roof block;

Figure 15 is an elevation of the roof block;

Figures 16 and 17 are a plan view and elevation of the end block illustrated in Figure 13;

Figures 18 and 19 are a plan view and elevation of another embodiment of an end block;

Figure 20 is a perspective view of a door block;

Figure 21 is an elevation of the door block;

Figure 22 is a perspective view of a window channel block;

Figure 23 is a plan view of a corner block for use in conjunction with the window channel block of Figure 22; and

Figure 24, 25 and 26 are an elevation, a plan view, an elevation from the side opposite that depicted in Figure 24, respectively, of the window channel block and Figure 27 is a plan view of a second embodiment of the window channel block.

Like reference characters refer to like parts throughout the description of the drawings.

With reference to Figures 1, 3 and 4, the building block of the invention, generally 10, has a hollow interior 12 and is defined by a pair of oppositely facing rectangular front and back side walls 14, 16 respectively, oppositely facing rectangular end walls 18a,b and rectangular top and bottom walls 20, 22. respectively.

End wall 18b has a vertically extending tongue 30 and the other end wall 18a has a vertically extending groove 32. The tongue is adapted to interconnect with a groove in an end of a second identical building block (not illustrated) placed adjacent to one end of the subject building

block 10 and groove 32 is adapted to interconnect with a tongue in an end wall of a third identical building block (not illustrated) placed adjacent to the other end wall of the subject building block

A pair of spaced apart rectangular projections 36a,b extends upward from the top wall 20 of the building block and a pair of rectangular cavities 38a,b with extend inward from bottom wall 22. The projections are received in cavities in the bottom wall of an identical fourth building block (not illustrated) placed on top of the subject building block while the cavities receive projections in an identical building block (not illustrated) immediately below the subject building block. Each projection has an opening 40 in its upper wall for introduction and removal of insulating material, sand or other particulate material in the hollow interior of the building block. The opening may be closed by a cap (not illustrated) to prevent moisture from entering the interior of the block.

With reference to Figures 6, 8 and 9, a corner building block, generally 42, has a vertically extending tongue 44 on one end wall 46a. The other end wall 46b is flat. A vertically extending groove 50 is formed on one side wall 52a while the other oppositely facing side wall 52b is flat. Projections and cavities, 56, 58 respectively, identical to those in the building block of Figure 1, are formed on the top and bottom walls, respectively, of the corner building block.

The flat walls 46b and 52b of the corner building block define the exterior faces of the corner of a structure. The tongue and groove in the oppositely facing walls 46a and 52a fit into conforming grove and tongue, respectively, of adjacent non-corner building blocks in the same

course as the corner building block.

The corner building block of Figures 7, 11 and 12, generally 60, is the same as corner block 42 except that a groove 60 is substituted for tongue 44 of block 42 in one end wall and a tongue 62 is substituted for groove 50 of block 42 in one side wall. Corner block 60 is adapted for use at an end of a course of blocks where corner block 42 is at the opposite end.

With reference to Figures 12, 14 and 15, the roof block, generally 70, is hollow and has front and back side walls 72a,b, top and bottom walls 76 and 78 and a single end wall 80. The slope of the top wall 76 is the same as the slope of the roof of building in which the roof block is located.. In the drawing, the slope is approximately 45 degrees, which is the angle between the top and bottom walls.

A rectangular cavity 82 is formed in the bottom wall for receipt of the projection of the building block on which the roof block is seated. An opening (not illustrated) is formed in the top wall through which particulate material is introduced into the hollow interior of the block. A pin 84 is provided on the front wall of the block to which a strap may be attached.

With reference to Figures 13, 16 and 17, the end block, generally 90, has a hollow interior, front and back side walls 92a,b, top and bottom walls 96, 98 having a projection and cavity 100, 102, respectively, for the same purpose as the projections and cavities described above. A vertically extending groove 104 is formed in one end wall while the other end wall 106 as well as the front and back walls of the end block are flat.

Figure 18 is a plan view of an end block, generally 110, which is the same as that illustrated in Figure 13 except that a vertically extending tongue 112 is substituted for groove 104 of block 90. The elevation of block 110 is illustrated in Figure 19 and is the same as the elevation of end block 90.

With reference to Figure 20 and 21, the door block, generally 120, has a pair of cavities 122 in its bottom wall. The cavities have the same construction as the cavities described above except that each is provided with an opening 124 for introduction of insulating material. A pair of spaced apart, longitudinally extending ridges 126 extends upwardly from the upper wall 128.

With reference to Figure 22 and 24- 26 a window channel block, generally 140, has a pair of spaced apart longitudinally extending ridges 142 which extend outwardly from side wall 144. A conventional sash is accommodated between the ridges. A tongue 146 is formed on the side wall 148 opposite side wall 144 and the tongue into a groove 150 formed in corner block, generally 152. In Figure 27, a groove 160 is substituted for tongue 146 and receives tongue 162 in the corner block.

It will be understood, of course, that modifications can be made in the structure of the building blocks described and illustrated herein without departing from the scope and purview of the invention as defined in the appended claims. For example the side walls of the tongues and grooves may be bevelled for a more secure fit between the two. Those walls are marked 30a and 32a in Figure 3. Likewise the side walls of the projections and cavities may be bevelled for the same reason. The latter side walls are marked 56a and 58a in Figure 9.

I claim:

1. A plurality of building blocks adapted to interconnect with each other to form a wall, each said building block having a hollow interior and being defined by a pair of oppositely facing rectangular side walls, rectangular end walls and rectangular top and bottom walls, a vertically extending tongue formed in one said end wall; a vertically extending groove formed in the other said end wall, said tongue being adapted to interconnect with a like said groove in a second said building block disposed adjacent to said one side wall, said groove being adapted to interconnect with a like said tongue in a third said building block disposed adjacent to said other side wall; at least one projection which extends upwardly from said top wall; at least one cavity which extends inward from said bottom wall, said projection being adapted to interconnect with a like said cavity in a fourth said building block disposed immediately above said top wall, said cavity being adapted to interconnect with a like said projection in a fifth said building block disposed immediately beneath said bottom wall, said top wall having an opening through which particulate material may be selectively introduced and extracted from said hollow interior.
2. The building blocks of claim 1 wherein each said building block has a removable cap for closing said opening.
3. The building blocks of claim 1 wherein said building block has a knob on one side wall for removable attachment of strapping to which a sheet forming an interior wall is adapted to be attached.

4. The building block of claim 1 wherein said tongue and said groove each have bevelled side walls.

5. The building block of claim 1 wherein said projection and said cavity each have bevelled side walls.

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Figures: Fig. 1 - Fig. 27

Pages: _____

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