

March 6, 1934.

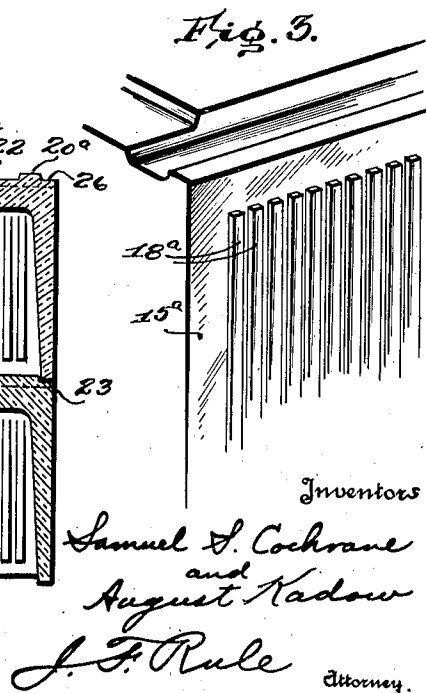
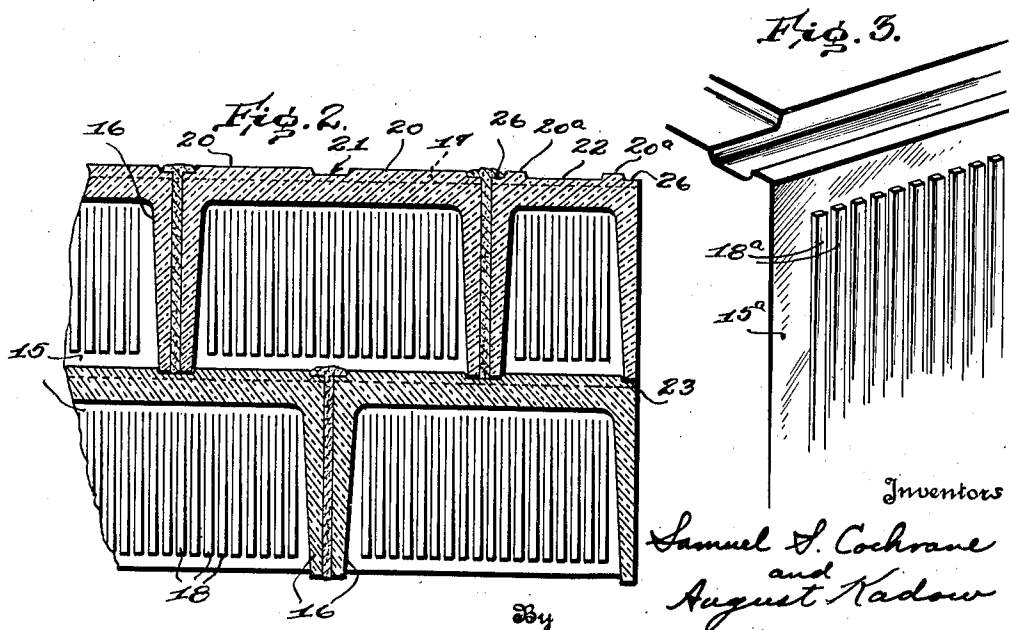
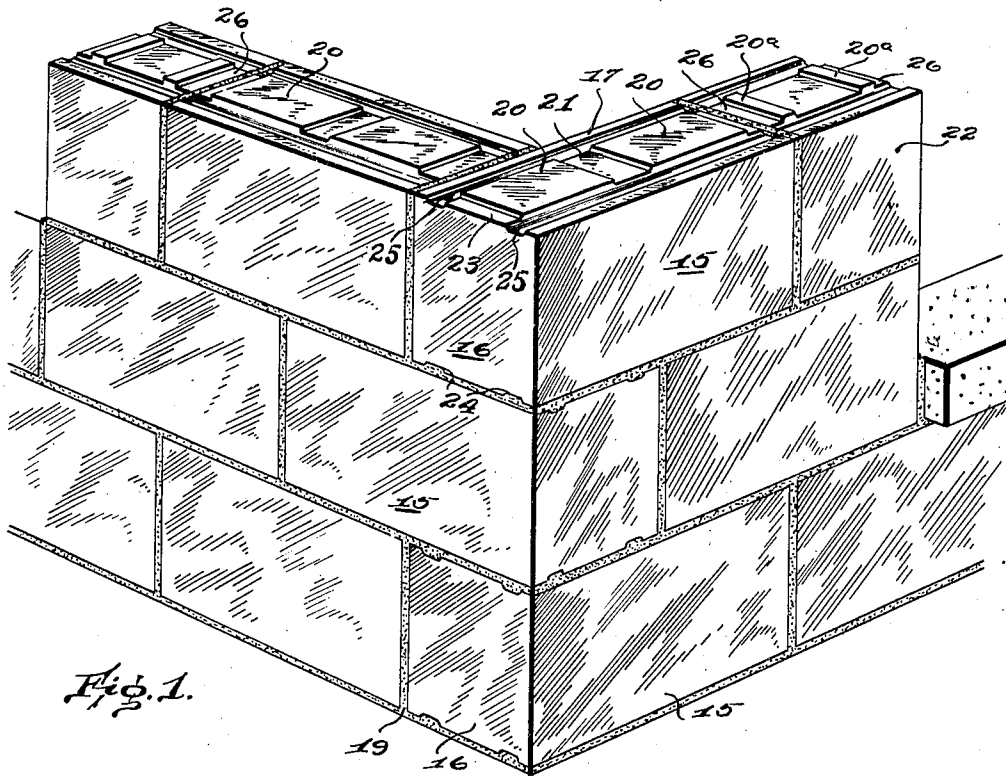
S. S. COCHRANE ET AL

1,949,898

BUILDING BLOCK

Filed Jan. 31, 1931

3 Sheets-Sheet 1



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Fig. 4.

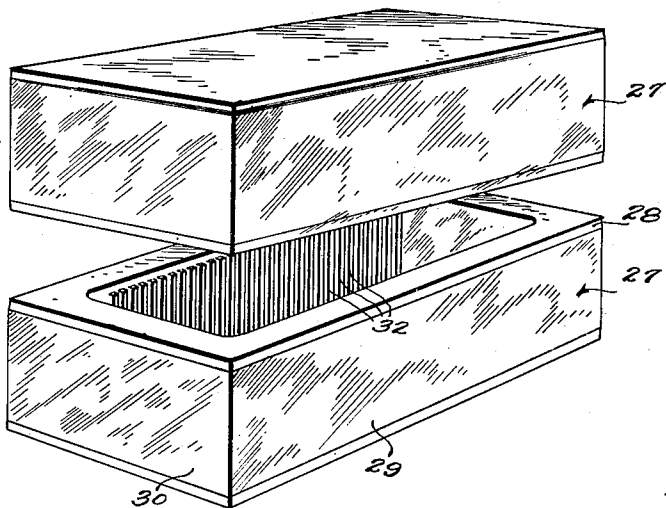
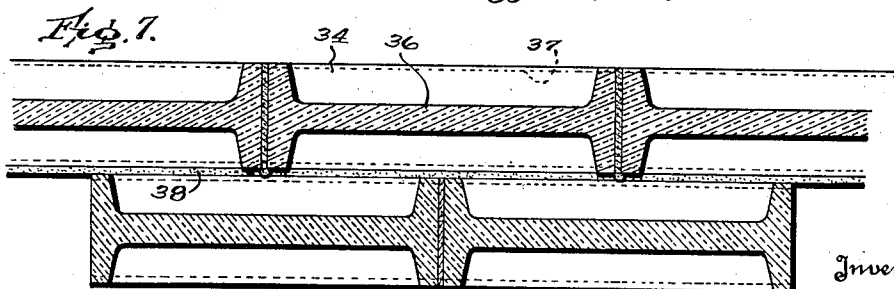
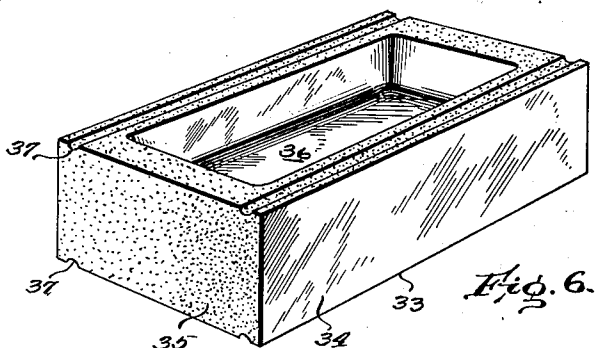
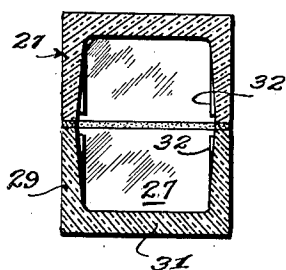


Fig. 5.



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Fig. 8.

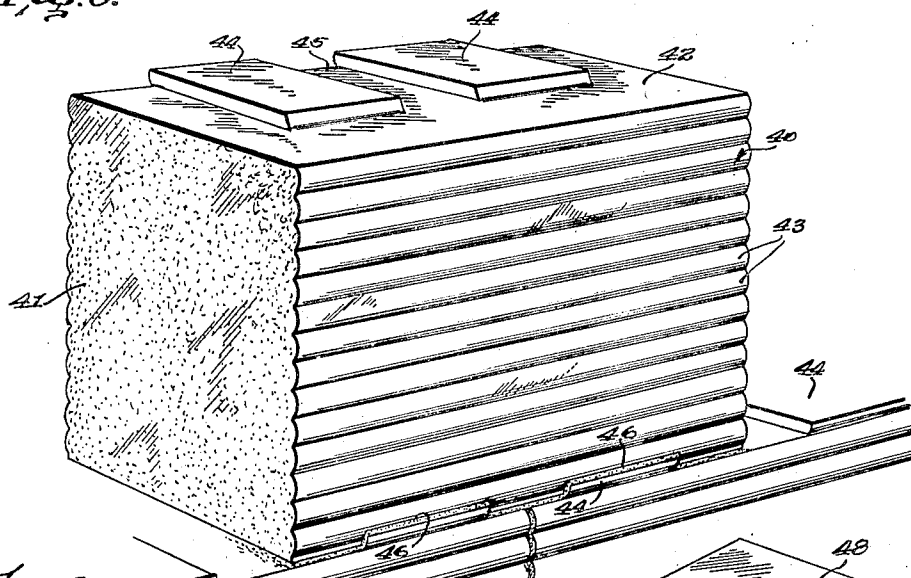


Fig. 9.

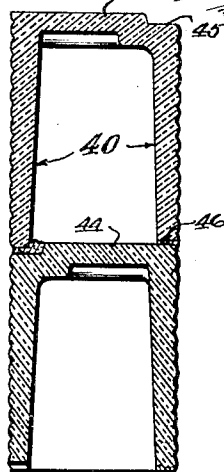


Fig. 10.

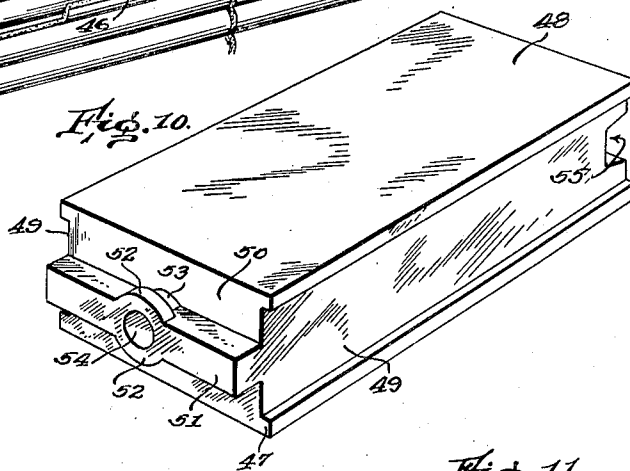
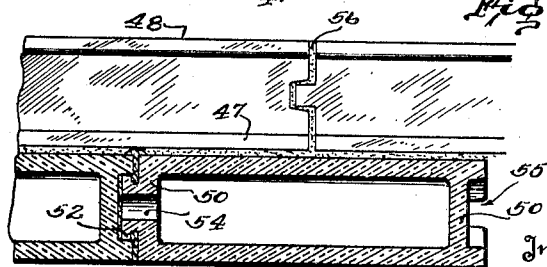


Fig. 11.



Inventors

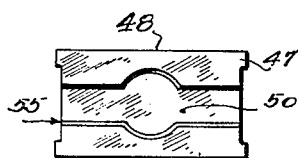


Fig. 12.

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UNITED STATES PATENT OFFICE

1,949,898

BUILDING BLOCK

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pany, a corporation of Ohio

Application January 31, 1931, Serial No. 512,601

5 Claims. (Cl. 72-41)

The present invention relates to improvements in building blocks and more particularly to blocks formed of transparent glass or the like material.

An object of the present invention is the provision of a block of the above character which may be manufactured at a comparatively low cost.

Another object is the provision of a novel construction in glass building blocks in which the blocks are of hollow formation and, therefore, of comparatively light weight, and, in addition, require relatively small quantities of raw material in their structure.

A further object is the provision of hollow glass building blocks including a novel form of light diffusing means. To this end the building blocks are provided with surface projections which may take the form of a series of parallel ribs on the inner or outer vertical surfaces of the side walls of the blocks.

Another object is the provision of a blown glass building block, that is, one which is shaped in a suitable mold into which air under pressure is introduced for expanding the glass against the walls of the mold.

Other objects will be in part apparent and in part pointed out hereinafter.

In the drawings:

Fig. 1 is a perspective view showing a number of blocks constructed according to the present invention, assembled to form two walls of a building.

Fig. 2 is a detail vertical sectional view showing a number of the building blocks and one form of light diffusing means.

Fig. 3 is a fragmentary detail perspective view showing light diffusing ribs provided on the exterior surface of a block.

Fig. 4 is a detail perspective view showing another form of building block in which two cup-like units are secured together prior to embodiment in the structure being built.

Fig. 5 is a transverse sectional view showing the manner in which the two cup-like units shown in Fig. 4 are secured together.

Fig. 6 is a detail perspective view of another form of block which in cross section assumes substantially the form of an I-beam.

Fig. 7 is a detail sectional view illustrating the manner of assembling blocks of form shown in Fig. 6.

Fig. 8 is a perspective view of another form of hollow block in which the exposed vertical surfaces are ribbed for the diffusion of light.

Fig. 9 is a vertical transverse sectional view

showing two blocks, of the form illustrated in Fig. 8, assembled.

Fig. 10 is a perspective view of a glass building block which is blown to its final shape in a manner closely resembling that practiced in blowing bottles.

Fig. 11 is an elevation, with parts in section, showing the assembly of a number of blocks of the form illustrated in Fig. 10.

Fig. 12 is an elevational view of the blocks as shown in Fig. 10, taken from the end opposite that shown in the foreground of Fig. 10.

In one form of the invention, (Figs. 1 and 2) the building block construction includes pairs of vertical side and end walls 15 and 16, respectively, tapering toward their lower ends. These walls and a horizontal top wall 17 are of integral construction and may be formed in any suitable pressing machine. Because of the hollow formation of the blocks, they may be handled with comparative ease and, when assembled, as in the formation of a building wall, provide the greatly desired insulating qualities.

As a means for diffusing light rays, a plurality of parallel ribs 18 are arranged within each building block upon either or both of the side walls 15. These ribs extend substantially the full height of the interior of the block. By arranging the ribs within the blocks their effectiveness is not in any way decreased by accumulation of dust or other foreign matter or by the elements generally, as would probably be the case if the ribs were on the outer surface.

In assembling blocks of the above character, as in the construction of walls of buildings, they are arranged in superposed rows in staggered relation (Fig. 1) and are united by a suitable binding material 19, or mortar. For the purpose of increasing the effectiveness of the binding material, the adjacent horizontal surfaces of the blocks are of irregular formation. In this connection, the top wall 17 is provided with a pair of parallel channels 25 extending lengthwise thereof in proximity to the upper edges of the side walls 15. A pair of upward projections 20 arranged between said channels 25 and spaced apart as shown in Fig. 1, complete the top wall construction. These upward projections 20 are spaced apart to provide a central transverse channel 21, the width of which is equal to the total thickness of two end walls 16 and the body of binding material or mortar 19 which secures said end walls together. The outer ends of the projections 20 are spaced from the adjacent ends of the blocks a distance equal to the thickness of the

lower ends of the end walls 16 of the blocks. Thus, where a "half" size block 22 (Fig. 2) is used to fill in a small space, one end wall thereof seats itself on the surface 23 while the other wall fits into a portion of the transverse channel 21. The end walls 16 have transverse notches 24 formed therein which are adapted to be filled with a portion of the mortar which unites the blocks. The "half" size blocks 22 are of a construction closely resembling that of the "whole" or "full" size blocks above described, the exception being that the raised portions 20a on the top walls are proportionately much smaller than the raised portions 20. The portions 20a on the "half" size blocks 22 are spaced from the ends of the blocks a distance sufficient to provide seats 26 upon which the end walls of other blocks may rest.

When the blocks are assembled to form a building wall, adjacent end walls 16 of a pair of blocks are seated on one of the central transverse channels 21 and spaced apart a distance sufficient to permit application of the binding material 19 or mortar. Due to such interlocking of the building blocks and the presence of the mortar or other binding material, an exceptionally substantial structure is obtained.

In another form of the invention (Fig. 3) the light diffusing ribs 18a are formed on the outer surface of the side walls 15a. By arranging these ribs in this fashion their length may be somewhat greater than in the form above described with the result that a greater diffusion of light rays will be obtained.

In another form of the invention (Figs. 4 and 5) two cup-like units 27 are secured together by mortar or the like, to form a sealed hollow building block. Each unit includes side and end walls 29 and 30, respectively, and a horizontal wall 31, said walls being of integral formation. A plurality of light diffusing ribs 32 are provided within each unit being formed on either or both side walls 29. In assembling blocks of this construction to form a wall, they will be arranged in staggered relation as in the form shown in Figs. 1 and 2, for obvious reasons.

Another form of the invention is shown in Figs. 6 and 7, wherein the block 33 in cross-section assumes somewhat the shape of an I-beam. The block consists of vertical side and end walls 34 and 35, respectively, formed as a unit and a horizontal web 36, arranged within the confines of said walls and formed integral with the latter at a plane substantially midway their height. In order to effect a more substantial union of the blocks, the upper and lower surfaces of the side walls are provided with pairs of longitudinal channels 37 into which portions of mortar 38 project during assembly. A further step in this direction consists in roughening the surfaces of the blocks which contact with the mortar so that the latter actually penetrates, to some extent, the block wall structure. Thus, the blocks may be firmly united.

In another form of the invention (Figs. 8 and 9) each block consists of vertical side and end walls 40 and 41, respectively, and a horizontal top wall 42 connecting the other walls. The side walls are provided on their outer surfaces with a series of horizontally disposed ribs 43 for the diffusion of light rays. These ribs in cross-section are of arcuate form and in addition to performing the function of a light ray diffusing means, improve the general appearance of the block and accordingly give a wall formed of the blocks an attractive ornamental appearance. The top wall 42 is

provided with a pair of upward projections 44 extending from one side edge to a point in proximity to the other edge, said projections being spaced from the end walls 41 a distance substantially equal to the thickness of the lower end of one wall of the block, and spaced from each other to provide a transverse channel 45, the width of which substantially equals the combined thickness of two end walls and a film of mortar interposed between said walls. The lower end of one side wall 40 of each block is provided with downwardly facing notches 46 spaced apart in the same manner as the raised portions 44. These notches are of about the same width as said raised portions and when the blocks are assembled to form a wall the projections 44 of one block fit into the recesses or notches 46 in the next adjacent block so that an interlocking joint is provided. The end walls 41 are roughened so that the mortar actually projects into and in effect forms a part of the block structure. In assembling the blocks, corresponding side walls 40 of superposed rows face in opposite directions as shown in Fig. 9 so that the projections 44 of one block fit into the recesses 46 of the other block and the lower end of the longer side wall is disposed between the ends of the projections 44 in the notched side wall.

Another form of the invention is shown in Figs. 10, 11, and 12. In this form the building block is of hollow construction and is formed by a blowing operation in much the same manner as glass bottles are blown. The block is rectangular in cross-section, including bottom and top walls 47 and 48, respectively, connected together by side and end walls 49 and 50, respectively. One end wall 50 is formed with a rib 51 extending the full width of the block and provided at its center with an offset arcuate projection 52, the latter spaced from the adjacent end wall 50 and providing a channel 53 into which mortar projects, as will be described presently. An opening 54 extends transversely through the rib at its center and communicates with the interior of the block. It is through this opening that air under pressure is introduced during manufacture of the block for the purpose of expanding the molten glass of which the block is formed, against the walls of the shaping molds (not shown). At the other end of the block is formed a channel 55 extending the full width of the end wall and of substantially the same shape and dimensions as said rib 51 and projections 52 above described. This channel 55, when the blocks are assembled, is adapted to receive the rib 51 and projection 52 on the next adjacent block to thereby form an interlocking joint. Mortar 56, or other binding material, is placed between the adjacent horizontal and vertical surfaces of the blocks and together with the interlocking feature just described, provides an exceptionally effective union of the blocks.

Modifications in the details of the construction may be resorted to within the spirit and scope of the appended claims.

What we claim is:

1. A building block consisting of transparent material and comprising pairs of vertical side and end walls, a horizontal top wall overlying and integrally formed with the side and end walls, and means formed on the inner surface of at least one of the side walls for the diffusion of light.

2. A building block consisting of transparent material and comprising pairs of vertical side and end walls, a horizontal top wall overlying and integrally formed with the side and end walls,

and a plurality of ribs formed on the inner surface of at least one of the side walls for the diffusion of light.

3. A wall construction consisting of a plurality of substantially rectangular cup-like transparent blocks, said blocks arranged in superposed horizontal rows and in staggered relation to each other, a binding material for securing the blocks together, and light diffusing means formed on the interior surfaces of the blocks.

4. A hollow building unit made of transparent material and comprising a pair of cup-like blocks having the margins of their open faces secured together to provide a single closed chamber form-

ing the interior of said unit, and light diffusing means formed on the interior faces and forming a part of the blocks constituting said unit.

5. A hollow building unit made of transparent material and comprising a pair of cup-like blocks having the margins of their open faces secured together to provide a single closed chamber forming the interior of said unit, said blocks including vertical side walls, and a plurality of parallel ribs provided on the interior surface of at least one of said side walls.

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