Sept. 7, 1954 G. A. VESPER 2,688,245

INTERLOCKING COMPOSITION BUILDING BLOCK

Filed Feb. 8, 1949

FIG. 1.

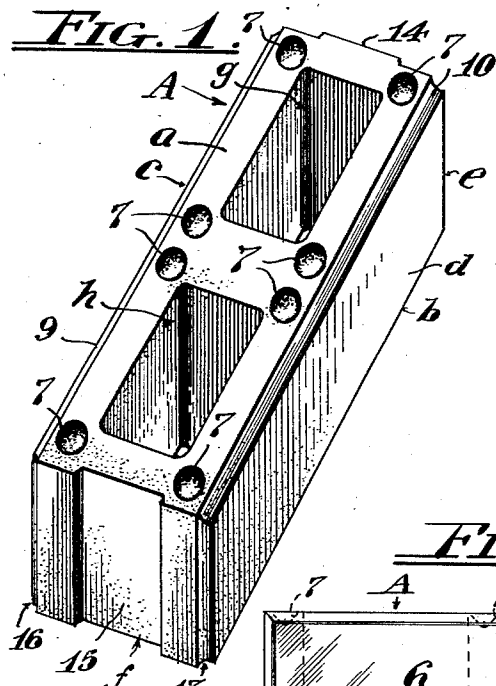


FIG. 2.

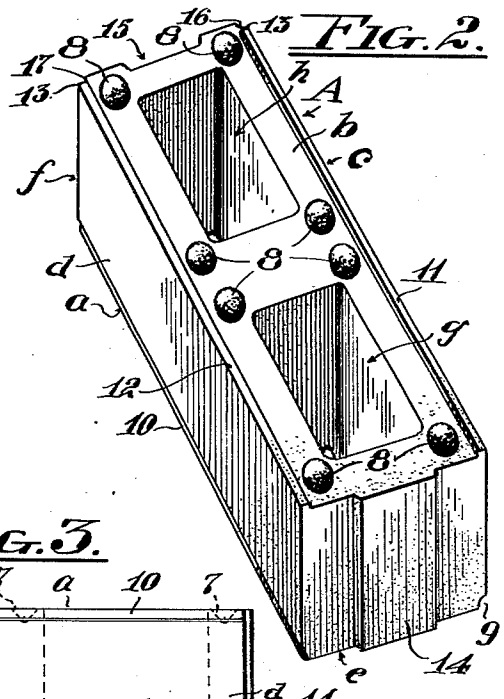


FIG. 3.

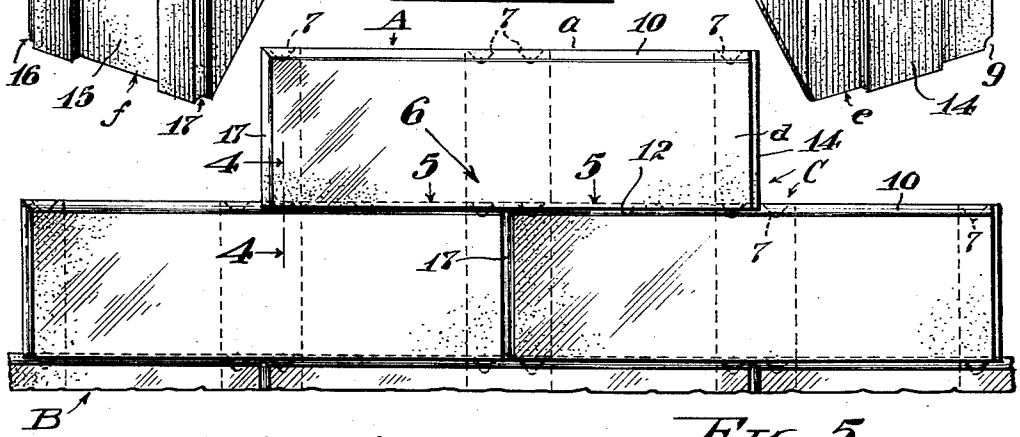


FIG. 4.

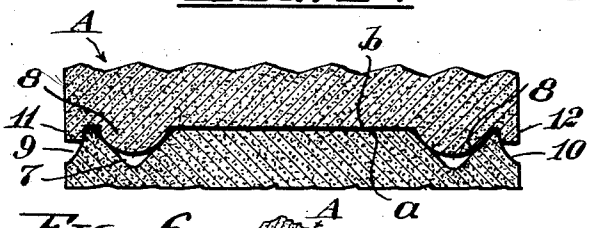


FIG. 5.

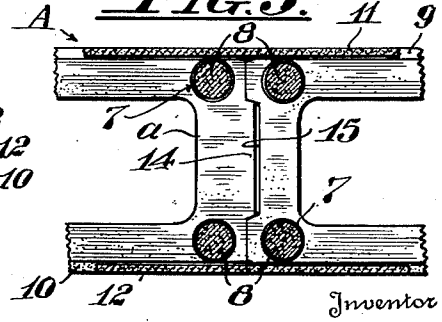
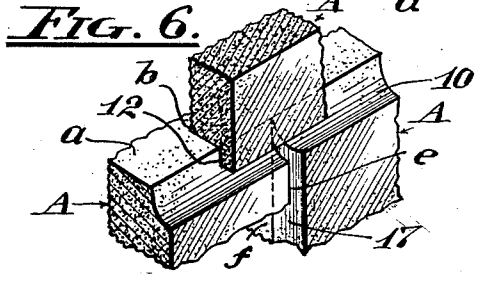


FIG. 6.



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INTERLOCKING COMPOSITION BUILDING BLOCK

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2 Claims. (Cl. 72—41)

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This invention relates to a composition building block and more particularly pertains to buiding blocks embodying interlocking features.

An object of the invention is to provide a composition building block with elements formed for interlocking engagement with companion elements of a corresponding block, which elements are so formed and arranged that on assembling an aligned course of the blocks, superposed courses of the blocks may be readily assembled in proper alignment with adjacent blocks in a course interlocked end to end and superimposed blocks interengaged either in alignment with subjacent blocks or in broken joint relation thereto.

A particular object of the invention is to provide an interlocking composition block which may be assembled in courses in a wall without the employment of a bonding material such as mortar interposed in the joints between adjacent blocks by reason of the interlocking connection between contiguous blocks, and when so assembled will prevent the passage of light between adjacent blocks, and which when so desired, by the application of a solidifying waterproof sealing fluid to the abutting surfaces of adjacent blocks the joint between the contiguous blocks will be rendered waterproof.

Another object is to provide a construction in the margins of the block such that when the blocks are assembled in superimposed courses channels will be formed in the face of the resultant wall structure along the joints between adjacent blocks either to form shadow lines defining the individual blocks throughout the face of the wall, or to provide channels for the reception of pointing material where the employment of such material is found desirable.

A further object is to provide an interlocking connection between courses of the blocks which will afford a drip edge along the lower margins of superimposed blocks to direct water flowing downwardly over the face of a block onto the face of a subjacent block and thereby minimize if not prevent the passage of water into the joint between superposed blocks.

With the foregoing objects in view together with such other objects and advantages as may subsequently appear, the invention resides in the parts and in the combination, construction and arrangement of parts hereinafter described and claimed, and illustrated by way of example in the accompanying drawing in which:

Fig. 1 is a perspective view of the composition building block as seen from one end and the upper face thereof:

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Fig. 2 is a perspective view of the building block showing the other end and the underside of the block; the view showing the block inverted and turned end to end relative to the block shown in Fig. 1:

Fig. 3 is a view in front elevation showing the manner of assembling the block in courses with a broken joint formation, as in constructing a wall:

Fig. 4 is a detail in cross section taken on the line 4—4 of Fig. 3:

Fig. 5 is a horizontal section and plan view taken on the line 5—5 of Fig. 3:

Fig. 6 is a fragmentary view in perspective as seen in the direction indicated by the arrow 6 in Fig. 3 showing the manner of forming intersecting vertical and horizontal channels defining the individual blocks in the face of a wall structure, and also showing the manner of breaking the horizontal joint and at the same time affording a drip edge between superimposed blocks.

Referring to the drawing more specifically A indicates generally the building block which is of general rectangular formation and embodies upper and lower faces *a* and *b*, opposed side walls *c* and *d* and opposed end walls *e* and *f*; the block being here shown as of the hollow type, that is with a pair of openings *g* and *h* extending vertically therethrough as is common in hollow block construction. The upper face *a* is formed with a series of conical recesses 7 and the lower face *b* is formed with a series of semi-spherical protrusions 8 arranged directly opposite to the recesses 7 and thereby adapted to be engaged with the recesses 7 of a complementary block disposed therebeneath with its upper face *a* abutted by the lower face *b* of the superimposed block; the recesses being slightly larger in diameter than the protrusions 8 to fully receive the latter and allow the faces *a* and *b* of relatively superimposed blocks to abut in superficial contact with each other.

As here shown a recess 7 and a protrusion 8 is provided adjacent each corner of the respective upper and lower faces *a* and *b* of the block, and a pair of such recesses 7 and protrusions 8 is provided at the inner end of each of the openings *g* and *h*, each of which pair of recesses 7 is arranged to receive an end pair of the protrusions 8 of the superimposed block arranged with one-half of the length thereof imposed over one-half the length of a subjacent block when assembling the blocks in off-set or broken joint formation as particularly shown in Fig. 3; the intermediate pairs of protrusions 8 then being engage-

able in the end pairs of recesses 7 of and abutting blocks.

The opposed side margins of the upper face *a* of the block are formed with longitudinal channels 9 and 10 which extend throughout the length of the block and have their wall surfaces curved downwardly and outwardly so that the channels are substantially arcuate in cross section. The longitudinal margins of the lower face *b* of the block are formed with flanges 11 and 12 which extend substantially throughout the length of the block directly opposite the channels 9 and 10; the flanges 11 and 12 terminating at one end flush with the end *f* of the block and termination in slightly spaced relation to the other end *e* of the block as indicated at 13.

The flanges 11 and 12 are substantially rectangular in cross section with their outer faces extending flush with the side faces *c* and *d* of the block and with their inner faces slightly beveled and spaced apart to extend into and effect engagement with the upper marginal portion of the grooves 9 and 10 when the blocks are superimposed in their assemblage as shown in Fig. 4. The flanges 11 and 12 serve the double purpose of affording a light proof seal of the joint btween adjacent courses of the blocks and also serve as drip flanges for directing at least the major portion of water flowing downwardly over the outer faces of superimposed blocks onto the outer faces of subjacent blocks so as to minimize the penetration of such water, as by capillary attraction, into the horizontal joint between the blocks.

Formed on the end wall *e* of the block intermediate the vertical edges thereof is a vertical tongue 14 which extends throughout the height of the block and has its side margins converging outwardly in cross section and extending parallel with the side edges of the end wall *e*. Formed on the end wall *f* intermediate the vertical edges thereof is a channel 15 which extends throughout the height of the block and has its side margins tapered or inclined and extending parallel with the margins of the end wall *f*; the channel 15 and tongue 14 being formed directly opposite each other whereby the channel is adapted to receive in interengagement the tongue 14 of a block positioned with its end wall *e* abutting the end wall *f*. This abutting interlocking relation of the end walls of the contiguous blocks breaks the joint therebetween and serves to prevent passage of light therethrough as well as affording a substantial keying or interlocking of contiguous blocks end to end. In order that the blocks may be positioned with the end walls *e* and *f* of endwise abutting blocks in superficial contact with each other, the tongues 14 project from the walls *e* a distance less than the depth of the channels in the walls *f*.

The side margins of the end wall *f* are formed with curved grooves 16—17 which extend from the lower edge of the block up to and intersect the grooves 11—12 so as to cooperate with the latter in forming grooves or channels defining the outer faces of the blocks when assembled in a wall, as illustrated in Fig. 3.

The blocks A constructed as above set forth are adapted to be assembled in constructing walls without the use of mortar or other plastic material interposed between the abutting faces of contiguous blocks. This feature of the blocks renders them highly suitable for use in the construction of low retaining walls, fences, facings and partitions where no cementitious bond between the contiguous blocks is necessary; the interlocking connections afforded between the contiguous blocks by the protrusions 7 and recesses 8, the flanges 11—12 with the grooves 9—10 and the tongues 14 with the grooves 15 being ordinarily sufficient for retaining the blocks in a wall formation.

However in instances where it is desired to bond the blocks together and form a more adequate watertight joint therebetween than would be afforded by mere abutment of the contiguous surfaces of adjacent blocks, a liquid plastic capable of hardening may be applied to the abutting surfaces of the contiguous blocks as by brushing the material thereon, in a thin layer. This mode of cementing the blocks together elimintaes mortar joints and trowel operations commonly employed in block wall constructions. However, in many instances the use of cementing material may be dispensed with since the blocks are designed to have such closely abutting off-set surfaces as to prevent light and water from passing through the joints between adjacent blocks.

In erecting a wall of the blocks A as shown in Fig. 3, a lower course B is laid to a line on a level surface with the blocks arranged end to end and with the tongues 14 of each block engaged in the channel 15 of an adjacent block and with the surface *a*, recesses 7, and channels 9—10 extending uppermost. A succeeding course C of the blocks A is then laid on the course B with the protrusions 8 extending into the recesses 7 and the flanges 11 and 12 extending into the channels 9 and 10. In thus laying the course C and succeeding courses the laid blocks will be disposed in proper alignment since the interlocking elements thereof insure such alignment.

Where desired a pointing material, such as plaster may be applied in the channels 9—10 and 16—17 either to seal the joints between adjacent blocks or for ornamental purposes, but such may ordinarily be dispensed with.

The blocks A may be formed of any suitable material but are preferably press molded of a composition of hydraulic cement and a hard granular material such as sand as is commonly practiced in the manufacture of building blocks known as concrete or cement blocks.

An important feature of the invention afforded by the provision of the channels 9—10 and 16—17 is that when the blocks are assembled in a wall without mortar joints such channels provide marginal crevices defining the outer faces of adjacent blocks which impart the appearance in the wall of joints between adjacent blocks in a fashion similar to that afforded by mortar joints. In other words by use of the subject blocks a wall may be built dry or without mortar and yet have the desirable appearance of a wall built with inset or recessed mortar joints in that the individual blocks will be clearly defined by marginal crevices.

This feature is important since it renders the wall construction of the channelled margin blocks considerably more pleasing in appearance than where the wall is erected of blocks with flush outer margins; the crevices formed by the channels 9—10 to 16—7 producing much desired shadow lines throughout the exterior wall surface which relieves unwanted plainness in block wall constructions.

I claim:

1. As an article of manufacture, an integral hollow interlocking building block adapted to form inner and outer surface portions of a building wall, said block having spaced opposed and

substantially parallel side and end walls, said side and end walls providing an opening therebetween and adjacent-block-engaging top and bottom faces for said block when the latter is embodied in a building wall; the top face of said block being formed with a series of longitudinally spaced recesses between said opening and the plane of each of the exterior surfaces of said side walls; a series of longitudinally spaced protrusions on the bottom face of said block arranged with a protrusion directly opposite each of said recesses; the height of each of said protrusions being less than the depth of each of said recesses; the top face being formed with a substantially coextensive longitudinal channel at each of its outer side margins outwardly of the plane of said protrusions and recesses, a depending flange adjacent each side margin of the bottom face and having exterior and inner surfaces, each inner flange surface making a junction with the bottom face of the block, and each exterior flange surface extending in continuation of the adjacent exterior side wall surface of the block, said flanges projecting beyond the plane of said bottom face of the block a distance less than the depth of said channels; each of said channels provided by surface means having a junction with the top face of the block and spanning substantially said exterior and inner surfaces of the subjacent one of said flanges; the junctions of the respective inner flange surfaces with the bottom surface of the block and the junctions of the superjacent channel-providing surface means with the top face of said block lying in a plane which is substantially normal to the top and bottom faces of said block; one of the end walls of the block having its outer surface formed centrally thereof with a vertical channel; a vertical tongue on the outer surface of the other end wall of the block opposite said vertical channel and projecting from said end wall a distance less than the depth of the vertical channel in the other end wall; and one of said end walls having vertical marginal channels intersecting said first mentioned channels.

2. As an article of manufacture, an integral hollow interlocking building block adapted to form inner and outer surface portions of a building wall, said block having spaced opposed and substantially parallel side and end walls, said side and end walls providing an opening therebetween and adjacent-block-engaging top and bottom faces for said block when the latter is embodied in a building wall; the top face of said block being formed with a series of longitudinally spaced recesses between said opening and the plane of each of the exterior surfaces of said

side walls; a series of longitudinally spaced protrusions on the bottom face of said block arranged with a protrusion directly opposite each of said recesses; the height of each of said protrusions being less than the depth of each of said recesses; the top face being formed with a substantially coextensive longitudinal channel at each of its outer side margins outwardly of the plane of said protrusions and recesses, a depending flange adjacent each side margin of the bottom face and having exterior and interior surfaces, each interior flange surface making a junction with the bottom face of the block, and each exterior flange surface extending in continuation of the adjacent exterior side wall surface of the block, said flanges projecting beyond the plane of said bottom face of the block a distance less than the depth of said channels; each of the said channels being provided by a wall which makes a junction with the top face of the block and curves transversely outwardly toward the adjacent side wall thereof and substantially spans the exterior and inner surfaces of the subjacent one of said flanges; the junction of the interior surface of each flange with the bottom face of the block and the junction of the superjacent one of said channel-providing walls with the top face of the block lying in a plane which is substantially normal to the top and bottom faces of said block, one of the end walls of the block having its outer surface formed centrally thereof with a vertical channel, a vertical tongue on the outer surface of the other end wall of the block opposite said vertical channel and projecting from said end wall a distance less than the depth of the vertical channel in the other end wall; and one of said end walls having vertical marginal channels intersecting said first mentioned channels.

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