

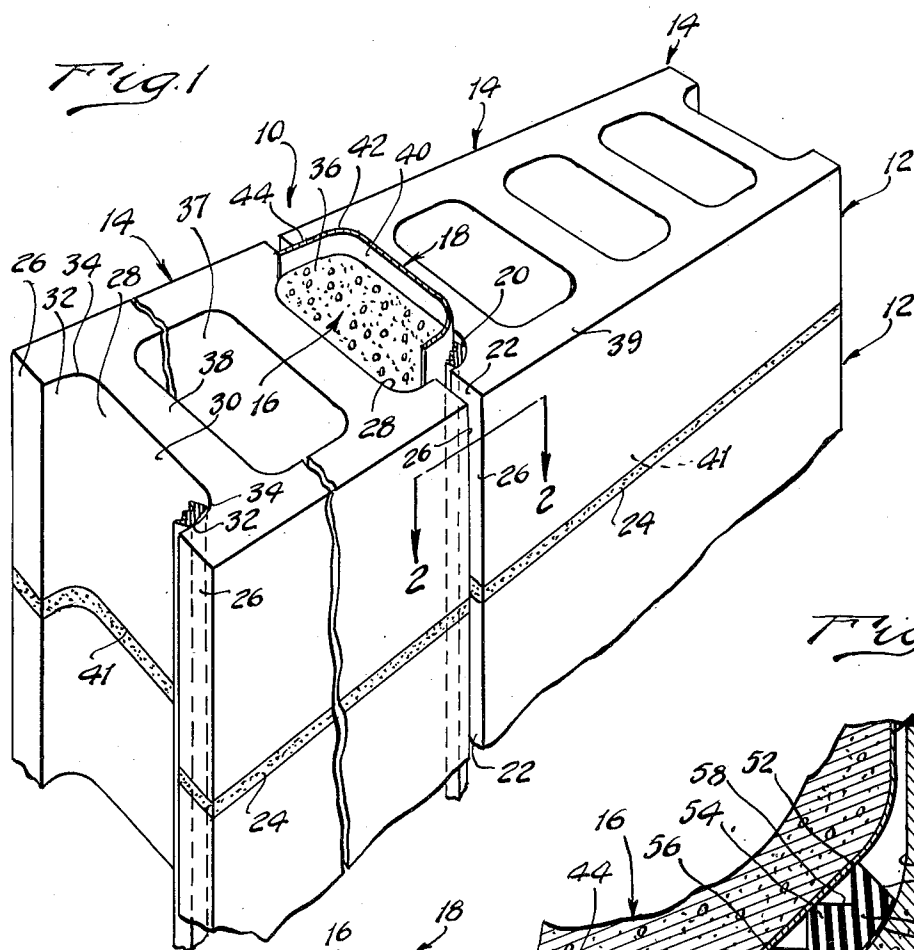
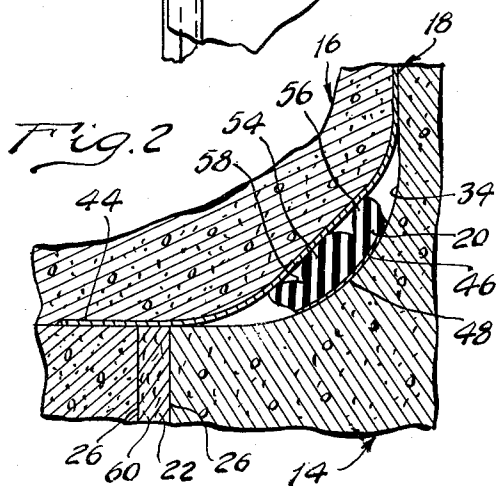
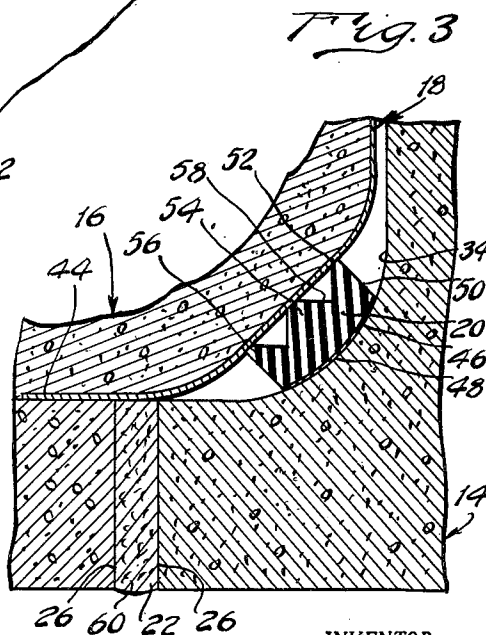
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L. H. WILLIAMS

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METHOD OF MAKING A SEALED JOINT MASONRY BLOCK WALL STRUCTURE

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INVENTOR.
LLOYD H. WILLIAMS
BY
Barthel & Bugbee
ATTORNEYS

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**METHOD OF MAKING A SEALED JOINT
MASONRY BLOCK WALL STRUCTURE**Lloyd H. Williams, 17928 Kinross Ave.,
Birmingham, Mich.

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1 Claim. (Cl. 50-533)

This invention relates to building structures and, in particular, to sealed-joint masonry block wall constructions and methods of making such wall constructions.

One object of this invention is to provide a masonry block wall structure and method of making the same, with joints which are maintained automatically sealed against the passage of water, regardless of shrinkage of the blocks after laying, by means of a resilient multi-ribbed sealing strip of weather-resistant material which is placed in the joint at the time the blocks are laid and carried upward as each tier or course of blocks is laid.

Another object is to provide a masonry block wall structure and method of the foregoing character wherein the meeting ends of the blocks are provided with vertical recesses in which mortar is placed, preferably with the use of a flexible mortar-retaining sheet between the mortar and the joint-sealing strip, which isolates the mortar from the sealing strip until the mortar hardens, and thus prevents interlocking of the mortar and sealing strip, and consequent lowering of the sealing efficiency of the sealing strip.

Another object is to provide an interlocked masonry block structure and method of the foregoing character wherein the sealing strip is preferably located in one of the vertical end recesses of each pair of meeting blocks, with the flexible sheet resting against it and projecting into that cavity from the opposite cavity in the other block containing mortar which causes interlocking of the blocks.

Another object is to provide an interlocked masonry block structure and method of the foregoing character wherein the recess containing the sealing strip has a vertically-extending rounded corner surface near one side thereof, and wherein the sealing strip is placed in this rounded corner portion of that recess.

Other objects and advantages of the invention will become apparent during the course of the following description of the accompanying drawings wherein:

FIGURE 1 is a perspective view of a portion of a sealed-joint block wall structure according to one form of the invention, showing the flexible mortar-retaining sheet in one of the vertical block end recesses and the vertical resilient sealing strip on the other side of the sheet in the same recess;

FIGURE 2 is an enlarged fragmentary horizontal section taken along the line 2—2 in FIGURE 1, showing the relative positions of the parts immediately after the masonry blocks have been laid with the sealing strip compressed and before shrinkage has occurred; and

FIGURE 3 is a horizontal section similar to FIGURE 2, but showing the relative positions of the parts after shrinkage has occurred and with the sealing strip expanded while still maintaining sealing engagement with the adjacent ends of the blocks.

Referring to the drawing in detail, FIGURE 1 shows an interlocked masonry block wall structure, generally designated 10, according to one form of the invention as consisting generally of a plurality of tiers or block courses 12, each consisting of a plurality of individual masonry blocks 14 of concrete or other suitable material having their opposite ends interlocked by mortar masses 16 retained at least temporarily in position by flexible mortar-retaining sheets 18 of paper or other suitable material.

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These prevent the mortar mass 16, while still soft, from reaching and interlocking with resilient sealing strips 20 provided to seal the vertical control joints or gaps 22 between the ends of the blocks 14 and to maintain the seal against the entrance or passage of water even after shrinkage of the blocks 14 and mortar as a result of the drying out of the water in the blocks and mortar. The successive tiers 12 of blocks 14 are separated from one another by horizontal layers 24 of mortar.

The individual blocks 14 (FIGURE 1) are of conventional construction and are ordinarily made of concrete in conventional ways, or, optionally, may be made of other suitable materials, such as, for example, cinder materials. Each block 14 has vertical laterally-spaced end ribs 26 with vertical end recesses 28 separating them laterally. The recesses 28 in turn have end surfaces 30 and side surfaces 32 with trough-shaped rounded corner surfaces 34 of approximately quarter-cylindrical form interconnecting the end and side surfaces 30 and 32. Each pair of such block end recesses 28 on adjacent blocks 14 forms a vertical mortar cavity 36. Each block 14 also ordinarily contains vertical intermediate cavities or chambers 37 separated from the end recesses 28 by end walls 38 from which the end ribs 26 project longitudinally of the block 14. Each block 14 also has a top 39 and a bottom 41.

Disposed in the space formed by each pair of vertical end recesses 28 between the blocks 14 during the laying of the block tiers 12 is the mortar mass 16 deposited against the flexible mortar-retaining sheet 18 extending into one of the end recesses 28 against the resilient compressible sealing strip 20, as described below in connection with the process of making and sealing the wall structure 10.

The mortar-retaining sheet 18 (FIGURE 1), as its name indicates, is formed of flexible sheet material, such as building paper preferably treated with waterproofing compound and also preferably cut in sheets of suitable width sufficient to cause its central portion 40 to rest against the recess end surface 30 of one recess 28 while its rounded corner portions 42 engage the corresponding rounded corner block portions 34 and its parallel side portions 44 rest against the block recess portions 32 and span the gaps or control joints 22 between the facing end ribs 26 of the blocks 14.

The sealing strip 20 of the building structure 10 consists of an elongated strip or body of resilient material, such as expanded polyvinyl chloride plastic, which is preferred because of its great resilience, easy compressibility, wide expansibility and weather-resisting qualities. The sealing strip 20 is produced preferably by extrusion in strips of great length and supplied in coils (not shown) containing many feet of the material. Each sealing strip 20 (FIGURES 2 and 3) has a bottom or back surface 46 which may be originally flat or slightly curved, preferably coated with a layer 48 of pressure-sensitive adhesive facilitating its installation, as described below in connection with the process of the invention. The sealing strip 20 is provided with substantially flat opposite sides 50 (FIGURE 3) and with a ridged top surface 52 having a central ridge 54 and edge ridges 56 separated from one another by grooves or troughs 58. The ridges 54 and 56 and troughs 58 are preferably of approximately V-shaped cross-section in their relaxed or nearly relaxed form (FIGURE 3) and become rounded when initially laid (FIGURE 2) as described below.

In carrying out the process of making or erecting the wall structure 10, and sealing the same, according to the present invention, the lowermost tier 12 of blocks 14 is laid up by the mason upon the concrete footings in the usual manner, after the usual layer or mortar has been

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placed on the footings. The blocks 14 are spaced apart from one another by the mason with the usual control joints or gaps 22 between their end ribs 26. The mason then unwinds a short length of the sealing strip 20 and places the back surface 46 with its adhesive layer 48 resting against some portion of the end wall 38 containing the vertical block end recess 22, preferably the rounded corner surface 34 of the end recess 28 of one of each adjacent pair of blocks. The mason then lays the rest of the coil of sealing strip 20 on the top 39 of the block 14 while he inserts a mortar-retaining sheet 18 in the same block end recess 28 with its sides 44 overlapping the control joint 22 and extending into the opposite block end recess 28 (FIGURE 1). He then pours or otherwise deposits sufficient mortar in the mortar cavity 36 for the resulting mortar mass 16 to fill the cavity and press against the mortar-retaining sheet 18 and compress the ridges 54 and 56 of the sealing strip 20 lying behind the sheet 18. An expansible layer 60 of conventional caulking compound is placed in the gap or control joint between the adjacent block end ribs 26, such compounds being frequently composed of asphaltic materials, well known in the building trade.

The mason then proceeds to lay a horizontal layer 24 of mortar on the tops 39 of the blocks 14 (FIGURE 1) and then proceeds to lay the next tier 12, placing the bottoms 41 of the blocks 14 upon a mortar layer 24 in superimposed relationship upon the first tier 12. He unwinds the coil of sealing strip 20 as he does this, continuing it upward vertically and pressing its adhesive layer 48 against the rounded corner surface 34 in the manner described above, again laying the coil of sealing strip 20 on the top 39 of the block 14. He then continues to carry out the process in the manner described above in connection with the laying of the first tier 12, including the laying of the next mortar layer 24, and the installation of the next mortar-retaining sheet 18 and mortar mass 16 in the vertical mortar cavity 36 formed above the previous mortar cavity 36 between the end ribs 26 of each pair of blocks 14.

In the subsequent use of the wall construction 10 of the invention, as the blocks 12 and mortar masses 16 of the wall structure 10 shrink during the succeeding

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months or years, the control joint or gap 22 between them widens, this widening, however, being taken up by the consequent stretching of the caulking compound layer 60 between the block end ribs 26. Between the recess 28 of one block 14 and the adjacent portion of the mortar-retaining sheet 18, the gap also widens, but the sealing strip 20 automatically expands, as shown by the contrast between FIGURES 2 and 3, so that its previously-compressed ribs 54 and 56 assume their more nearly relaxed forms of V-shaped cross-section, as shown in FIGURE 3, still maintaining their sealing engagement and therefore preventing the entrance or passage of water. In this manner, the wall structure 10 remains effectively sealed over a great length of time notwithstanding shrinkage of the building materials of which it is composed, this shrinkage being automatically compensated for and counteracted by the invention set forth herein.

What I claim is:

A method of making a sealed-joint masonry block wall structure from masonry blocks with vertically-recessed ends, comprising laying a plurality of masonry blocks in end-to-end relationship with vertically-directed shrinkage joints between the outer edge portions of adjacent ends of adjacent blocks and with vertical cavities formed by the recessed ends of the blocks, placing an elongated compressible sealing strip of resilient material against the end surface of one of each adjacent pair of the end recesses of the blocks, placing a flexible mortar-retaining sheet against said recess end surface of each of said last-mentioned end recesses with said sealing strip between said sheet and said recess end surface, and pressing mortar into said cavity to substantially fill said cavity and urge said sheet against said recess end surface and sealing strip in compressing relationship with said sealing strip.

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