Sept. 15, 1942. M. TYM 2,296,002

BUILDING CONSTRUCTION

Filed Sept. 14, 1940

Fig. 1

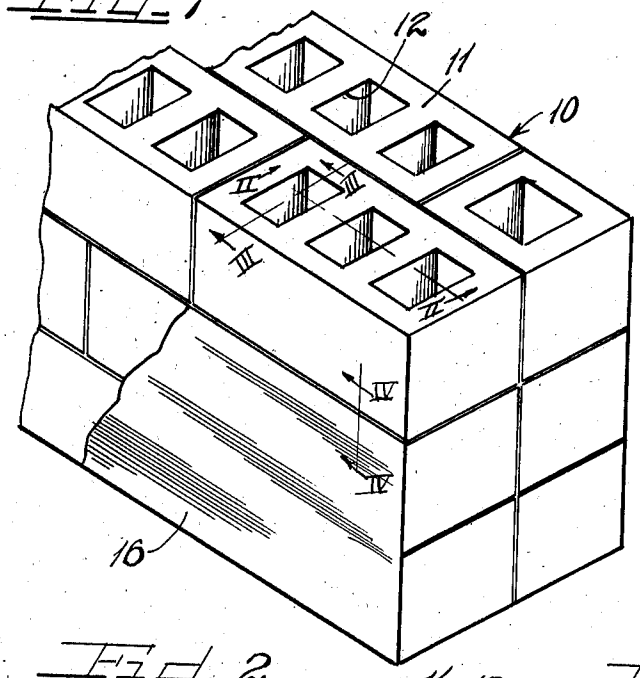


Fig. 5

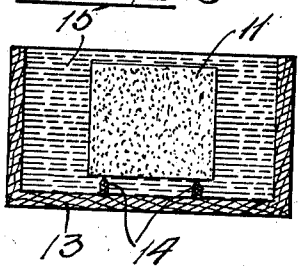


Fig. 2

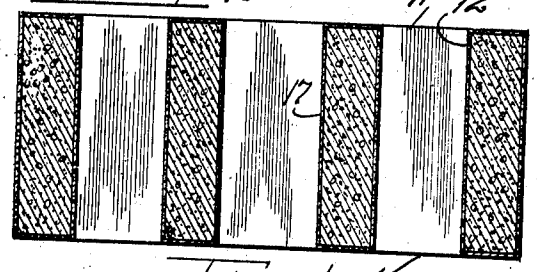


Fig. 3

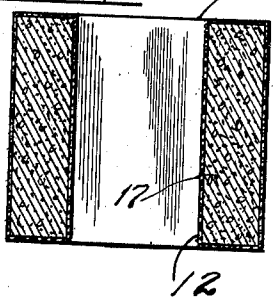
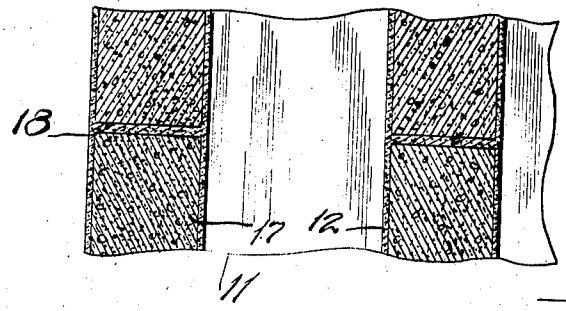


Fig. 4



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BUILDING CONSTRUCTION

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3 Claims. (Cl. 72—37)

The present invention relates in general to a building construction and is particularly concerned with an improved wall construction and method, whereby walls for buildings and other edifices may be constructed of greater strength, and with materially improved waterproof and insulating characteristics at a materially decreased cost for labor and materials.

It is a further object of the herein described invention to provide a wall construction of such character that it may be built up of standard base forming units, such as blocks, and wherein the coating material for the exposed wall surfaces, interior and exterior, is applied to the base units before assembly into the wall, thus eliminating the usual plastering operations after the wall base structure is built.

A further object of the invention is to provide an improved wall construction wherein a synthetic stone medium is applied to the wall base forming members while in a plastic state prior to assembly into the wall structure, and in which the medium, upon setting, forms a uniform coating presenting an exposed wall surface and in addition serves to intimately bond the base forming members into assembled relation.

A still further object of the invention is to provide an improved wall construction, wherein a synthetic stone medium may be applied to the wall base forming members while in a plastic state prior to assembly into the wall structure, and in which the medium, upon setting, serves to reinforce the base members, waterproof and insulate the base members, secure the base members into bonded relation, and form a surface coating on the exposed wall surfaces.

Still another object of the invention is to provide an improved wall construction of such character that it may be assembled from a plurality of standard structural elements, these elements being so treated that after they are assembled into the wall they become united in such a manner as to form a wall having monolithic characteristics.

Yet another object of the invention is to provide an improved method of construction for walls and similar edifices.

In general, in constructing building walls, particularly where it is desired to secure a plaster or stucco finish on the wall surfaces, it has heretofore been the usual practice to apply furring, brick, wood strips, metal laths or the like to the frame structure of the building to afford a base structure to which the plaster coatings might be applied. For the exterior surface it is the usual practice to apply a scratch coat, and after this has dried apply the usual brown coat upon which the finish coat is subsequently placed. For the interior wall surface, it is usual to apply a scratch coat upon which the finish coat is thereafter placed. In order to carry out these operations, several different types of labor will be required, with the attending loss of time between labor operations, waiting for the coatings to become properly fixed before the subsequent coatings are applied, and etc. Moreover, walls of such construction are inherently lacking in very desirable characteristics, such as strength, waterproofing and insulating qualities, longevity without deterioration, and the like.

In order to overcome these as well as other objectionable features of walls as presently constructed, the present invention contemplates, in accordance with its general features, the provision of an improved wall construction and method of constructing the wall whereby, in one operation of treating a plurality of standard constructional units, such as blocks of cement, tile, cork and the like, and by assembling these units into a wall, the treating medium, after being smoothed on the exposed surfaces and upon setting, will intimately bond the blocks together and also form the wall surface. In carrying out my improved method of construction, the wall may be constructed by one class of labor, at a material saving in time. Moreover, a wall constructed in this manner eliminates the furring, lathing and plastering operations as now necessary in walls as generally constructed.

My improved construction produces a wall having monolithic characteristics in which the joints between the standard block units are exceptionally strong, in which the material of the block unit is reinforced over its exposed surface in a manner similar to the case hardening of steel, in which the constructional units are rendered waterproof and for this reason retain their insulating properties.

Various materials might be utilized for treating the base-forming units, but for such purpose I have found it desirable to utilize a cementitious material which may be formed into a plastic by the addition of a liquid such as water and in this state used to treat the building units before assembly into a wall. More specifically, I prefer to use a synthetic stone commonly known as "Tymstone." This composition will set in approximately four hours and, upon setting, forms a homogeneous structure of fine, exceptionally strong texture, suitable to form the finished wall

coat. Moreover, this composition produces an exceptionally strong bond when applied to the joined surfaces of a relatively porous building unit, and will coat and impregnate the surfaces in such a manner that the joints will be stronger than the material of the base members. In fact, any breakage that might be occasioned between blocks joined with this composition will be in the block, rather than in the joint. Moreover, this material is particularly noted for its insulating and waterproofing qualities.

Other objects and features of the invention will more fully appear from the following description, taken in connection with the accompanying drawing, which illustrates a single embodiment thereof, and in which:

Figure 1 is a perspective view of a wall structure embodying the features of the present invention;

Figure 2 is a transverse section taken through one of the standard unit constructional members composing the wall, taken substantially on line II—II of Figure 1;

Figure 3 is an enlarged transverse section through one of said members, taken substantially on line III—III of Figure 1;

Figure 4 is an enlarged fragmentary view, partially in section, taken through one of the wall joints, substantially on line IV—IV of Figure 1; and

Figure 5 is a view illustrating one manner in which the wall units may be treated before assembly into a wall.

As shown on the drawing:

For purposes of illustration, I have shown a portion of a wall structure, as generally indicated at 10, this wall being constructed according to the present invention.

In general, the wall is composed of a plurality of standard building units 11 which may be formed solid or with openings 12 therethrough, from cement, clay, cork or any other suitable material. These blocks are shown as being laid up in double rows composed of superposed courses with their joints in staggered relation.

Before assembling the units into the wall structure, each unit is treated by applying to its surface a plastic cementitious material, which may be done in any suitable manner, as by spraying, dipping, immersing and the like. Referring to Figure 5 I have shown one manner in which this may be done by providing a container 13 which, if desired, may have shallow inclined bottom end portions and provided with rails 14—14 upon which the building units may be slid through the treating material as shown at 15, and which is in a plastic state. With this arrangement, the block is entirely immersed, so that its entire exposed surfaces will be covered with the treating material.

It is preferred to use a block constructed of a rather porous material so that the treating material will not only cover the block surfaces, but will also penetrate a short distance into the material of the block in order that the treating material, upon setting, will be keyed with the block proper.

While I have disclosed means for immersing the block, it will be appreciated that I do not desire to be limited to this particular manner of treating the blocks, as the blocks may be dipped, sprayed, or otherwise covered with the treating material, and also, as in the case of hollow blocks, it may be found desirable to only treat the outer surfaces of the blocks, leaving the surfaces of the openings through the blocks untreated.

For the purpose of treating the blocks, any suitable cementitious material which may be prepared in a plastic state and which will thereafter set to form a homogeneous mass may be utilized. However, I have found it preferable, and have secured extremely satisfactory results, by utilizing a synthetic stone composition commonly known as "Tymstone."

After these blocks have been treated, they are immediately assembled into the wall structure, or at least within such time as to enable their being assembled before the treating material has started to set. The blocks may be laid up in any desired manner, as by disposing them in courses in which the joints between the blocks are in staggered relation.

It will be noted that with the surfaces of the blocks covered or coated with the treating material, this material, when the blocks are laid up in the wall, not only forms a bonding medium between the blocks, but also provides a coating on the exposed surface of the wall, as indicated at 16. Since the material is in a plastic state when the blocks are assembled into the wall, there may be some disturbance in the uniformity of the plastic coating due to handling and a tendency before the material has completely set for it to flow a slight amount. After the blocks are assembled, the plastic coating 16 on the exposed surfaces is spread by means of a rubber squeegee, trowel or other suitable means or manner to fill in all imperfections in the wall faces, eliminate unevenness and provide a continuous surface having a finished appearance of whatever texture and homogeneity is desired. It is also apparent that each of the individual exposed faces of the blocks may be worked into a smooth homogeneous surface to thereby provide a wall face having a plurality of spaced smooth surfaces separated by the joints between the blocks.

When the material has set, as shown in Figures 2, 3 and 4, the block surfaces will be encased with a hard waterproofing reinforcing layer 17 which strengthens the block in a manner similar to the case hardening of steel. Moreover, the material in the joints between adjacently disposed surfaces of these laid-up blocks will form a joint 18 which will intimately bond these surfaces together.

As shown in Figure 1, a wall constructed in this manner will provide a plurality of spaced vertical layers of the treating material which are integrally interconnected by ties forming the joints between the blocks so as to form a cellular structure of great strength and in which the blocks are encased. It is not necessary to provide additional material coats on the inner and outer wall-forming surfaces, since the treating material is of fine texture and provides an excellent finish coat. Of course, if desired, the interior and exterior wall surfaces might be painted or otherwise finished. Due to the cellular construction of my improved wall and the encasing of the blocks therein, a waterproof structure results and excellent insulating qualities are obtained, these qualities being particularly desirable where the building is to be air conditioned.

It is thought that the improved method of constructing a wall according to the present invention will be apparent without further description, and that it will likewise be obvious that the features and objects as heretofore related

will be attained by a wall construction and method as described herein.

The invention has been described herein more or less precisely as to details, yet it is to be understood that the invention is not to be limited thereby, as changes may be made in the arrangement and proportion of parts, and equivalents may be substituted, without departing from the scope and spirit of the invention.

I claim as my invention:

1. The method of constructing a wall structure from block members which comprises the steps of covering the surfaces of each block member with a cementitious material in a plastic state, assembling the blocks into a wall before the material hardens, smoothing the material on the exposed surfaces of the blocks into a jointless wall coating, and permitting said material to harden as a bond for the blocks.

2. The method of constructing a wall having monolithic characteristics, which comprises the steps of coating and impregnating the surfaces of a plurality of blocks of relatively porous material with a synthetic stone medium in a plastic state, assembling the blocks to form a wall while said medium is still plastic, and smoothing the medium on the exposed surfaces of said blocks, said medium upon setting forming an intimate bond between the blocks and a uniform homogeneous wall surface.

3. The method of making a building construction having monolithic characteristics, which comprises the steps of dipping blocks of relatively porous material in a bath of plastic cementitious material, assembling the dipped blocks into said building construction while said cementitious material is still plastic, working the excess cementitious material on the exposed surfaces of the blocks into a homogeneous coating, and permitting the cementitious material between the blocks and the worked coating to harden to form a bonded building construction having smooth faces.

MICHAEL TYM.