

Sept. 8, 1959

D. E. LOFSTROM

2,902,853

BUILDING CONSTRUCTION

Filed July 15, 1957

3 Sheets-Sheet 1

FIG. 1

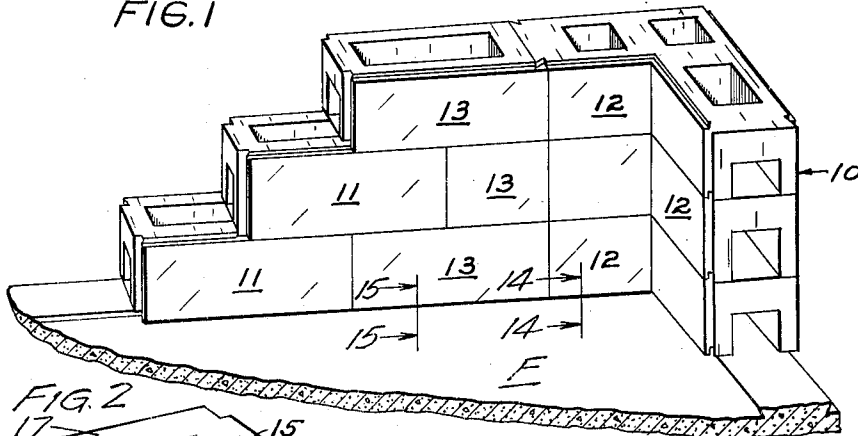


FIG. 2

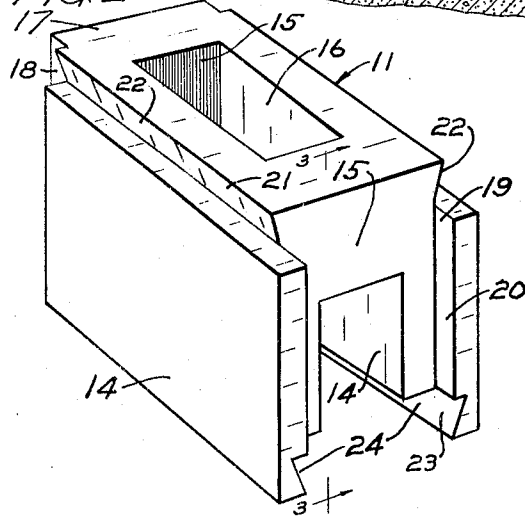
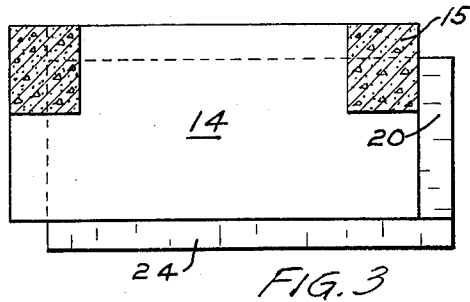


FIG. 3

FIG. 4

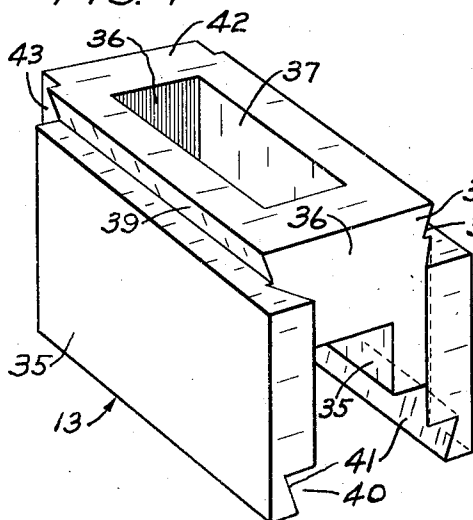
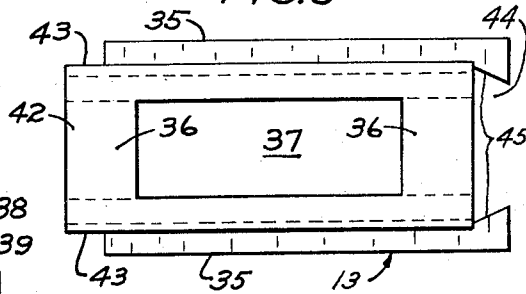


FIG. 5



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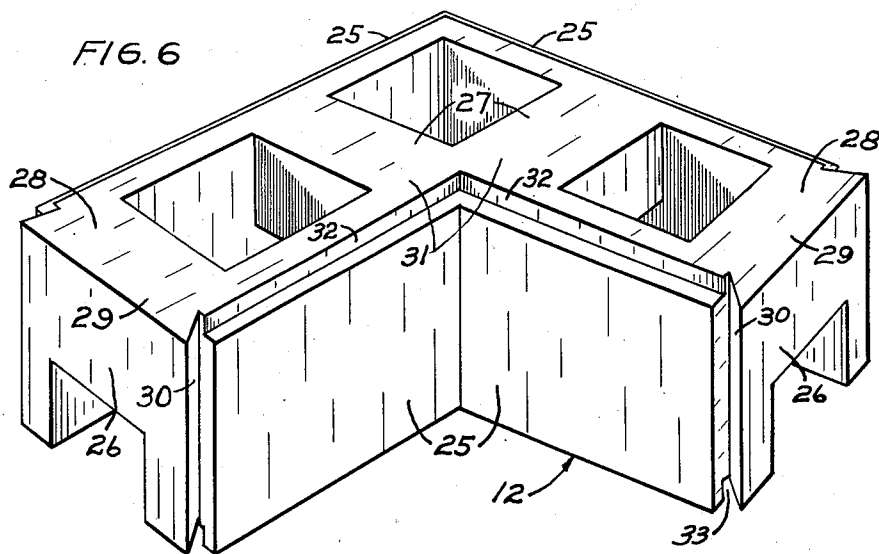
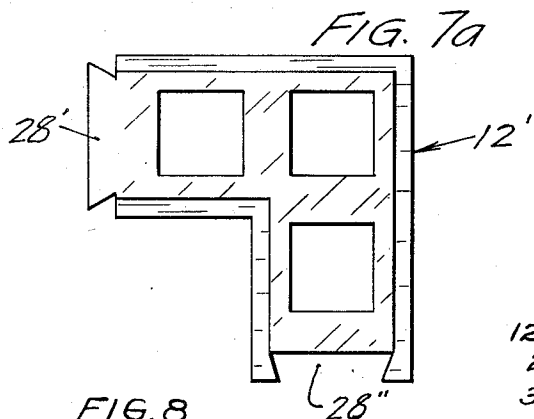
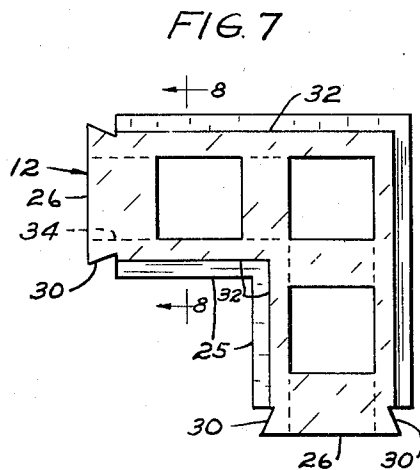
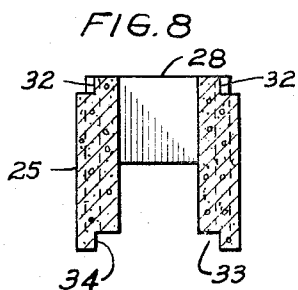
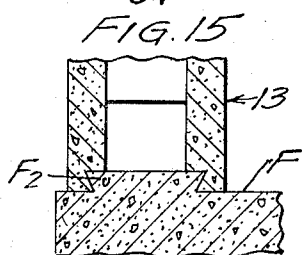
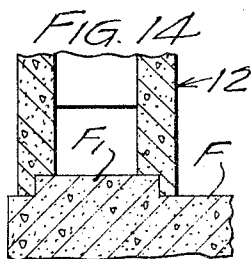
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FIG. 9

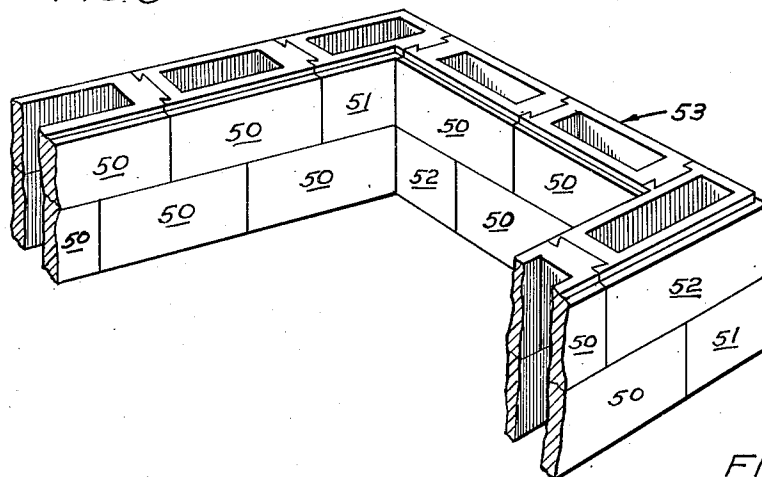


FIG. 10

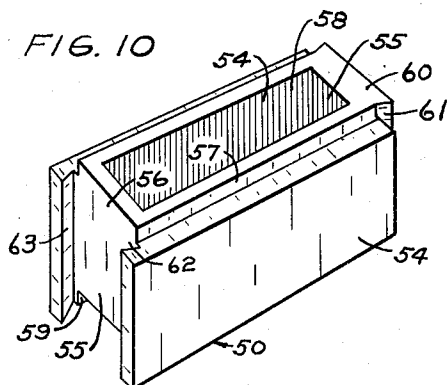


FIG. 13

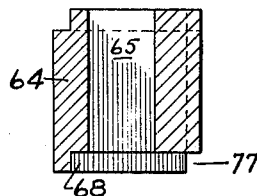


FIG. 11

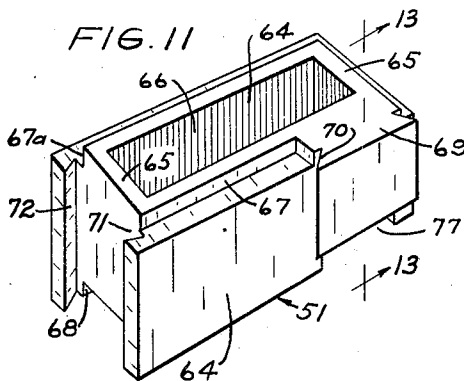
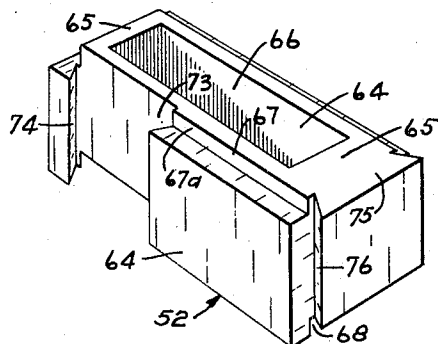


FIG. 12



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BUILDING CONSTRUCTION

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5 Claims. (Cl. 72-41)

This invention relates to a building construction and more particularly relates to a building construction utilizing interfitting building blocks.

An object of my invention is to provide a new and improved building construction which is simple and inexpensive.

Another object of my invention is the provision of a novel building construction which is well adapted for structures such as garages, cabins, grain bins, farm buildings, one story and one and one-half story buildings and the like, and which may be readily and easily built without need for special building forms or reinforcement.

Still another object of my invention is to provide a new and novel building construction utilizing building blocks which are fitted together in interlocking relation without the need for adhesive cement, and which provide smooth inside and outside walls for the building which may be finished in any desired manner at the time of manufacturing or after assembly of the blocks into a structure.

A further object of my invention is to provide a building construction utilizing building blocks which have dead air spaces which intercommunicate between adjacent blocks in both horizontal and vertical directions to facilitate ready and easy insertion of insulation, and utility fixtures such as wires, conduits and pipes into the walls.

These and other objects and advantages of my invention will more fully appear from the following description made in connection with the accompanying drawings wherein the like reference characters refer to the same parts throughout the several views and in which:

Fig. 1 is a perspective view of a partially completed wall structure utilizing the building construction comprising the present invention;

Fig. 2 is a perspective view of one of the types of blocks utilized in the present building construction;

Fig. 3 is a longitudinal section view taken on a vertical plane substantially at the center line of the block shown in Fig. 2;

Fig. 4 is a perspective view of another type of block used in the present building construction;

Fig. 5 is a top plan view of the block shown in Fig. 4;

Fig. 6 is a perspective view of still another type of block used in the building construction;

Fig. 7 is a top plan view of the block shown in Fig. 6;

Fig. 8 is a detail transverse section view and taken on a substantially vertical plane as indicated at 8-8 in Fig. 7;

Fig. 9 is a perspective view of a partially completed wall structure utilizing a modified form of the building construction;

Fig. 10 is a perspective view of one of the types of blocks utilized in the building construction of Fig. 9;

Fig. 11 is a perspective view of another type of block utilized in the construction of Fig. 9;

Fig. 12 is a perspective view of still another type of block utilized in the construction shown in Fig. 9;

Fig. 13 is a detail transverse section view taken on

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a substantially vertical plane as indicated at 13-13 in Fig. 11;

Fig. 14 is a detail vertical section taken at 14-14 in Fig. 1; and

Fig. 15 is a detail vertical section taken at 15-15 in Fig. 1.

The building construction shown in Fig. 1 utilizes a plurality of differently styled building blocks which, when assembled, are cooperatively interlocked in mutual supporting relation to form a rigid wall structure which may be indicated in general by numeral 10. The wall structure 10 is formed of a plurality of wall blocks 11, as seen in Figs. 2 and 3, a plurality of corner blocks 12 as seen in Figs. 6-8, and a plurality of connecting blocks 13 as seen in Figs. 4 and 5.

The wall blocks 11 are integrally formed in one piece construction from concrete or other suitable materials which are rigid and weather-resistant and which may be well adapted to suit local conditions where the building construction is to be used. The composition of materials used in forming the blocks may be varied according to the availability of materials in a locality. The wall blocks 11 have opposite side walls 14 which are spaced from each other and are interconnected by means of end walls 15 which extend downwardly from the upper edge of side walls 14 only through a portion of the height of the side walls. The side walls 14 and end walls 15 thereby define an enlarged interior chamber or dead air space 16 which opens vertically and longitudinally through the block for communication with the similar chambers 16 of adjacent blocks in the wall structure. The opposite end portions of the wall blocks 11 are provided with vertically oriented and longitudinally interfitting male and female portions of complementarily shape relative to each other for interfitting with other similar blocks in a row. One end portion of block 11 is provided with a longitudinally projected insert 17 which has vertical and parallel sides 18 disposed inwardly from the outer wall surface of the block. The other end portion of block 11 is provided with a longitudinally recessed receiving portion 19 which has vertical and parallel sides 20 in opposed relation with each other for receiving the insert 17 of an adjacent block therein.

The top and bottom portions of wall block 11 are formed with dovetail interfitting means for interlocking with similar blocks disposed thereabove and therebelow in adjacent rows. The top portion of block 11 is provided with a vertically disposed dovetail projection 21 which is oriented longitudinally of the elongated block 11 and which has downwardly convergent and longitudinally parallel sides 22. The bottom portion of block 11 has a vertically disposed and longitudinally oriented dovetail recess 23 formed in the lower edge portions of the side walls 14. The dovetail recess 23 is complementary in shape in relation to the insert 21 and has downwardly convergent and longitudinally parallel sides 24.

The corner block 12 is substantially L-shaped for use in a corner location between two adjacent and convergent walls formed of the wall blocks 11 and connecting blocks 13. Corner blocks 12 are also integrally formed in one-piece construction in a fashion similar to the wall block 11 and are provided with spaced upright side walls 25 which are interconnected by end walls 26 and the intermediate transverse walls 27 which are substantially identical to end walls 26 and which extend downwardly from the upper edge of the side walls 25 through only a portion of the height of the side walls. The spaced walls 25, 26 and 27 define an enlarged interior chamber or dead air space in the block 12 which opens longitudinally or horizontally and vertically through the block for communication with the chambers of blocks interfitted therewith in the building construction.

The end portions 28 of the corner block 12 are provided with dovetail interfitting means for horizontally interlocking with adjacent blocks in a row for the formation of the building construction. Such means include male dovetails 29 formed in each of the end portions 28 and project outwardly. The dovetail projections 29 are vertically oriented and have vertical parallel and longitudinally inwardly convergent sides 30.

The top and bottom portions of corner blocks 12 are provided with means for interfitting with other corner blocks disposed thereabove and therebelow in adjacent rows. Such means include upwardly projecting and longitudinally extending inserts 31 on the top portion of block 12 having vertical and parallel sides 32. The insert 31 extends between the opposite ends 28 of the block 12 and has a configuration substantially identical to the block 12, or substantially L-shaped. The bottom portion of the block 12 has a downwardly opening and longitudinally oriented insert-receiving recess 33 formed in the lower edge portions of the side walls 25 and the recess 35 has vertical and parallel sides 34. Recess 33 has a complementary shape with relation to the insert 31 for cooperatively interfitting with such an insert of the corner block disposed therebelow in the building construction.

Connecting blocks 13 are provided for use in the wall structure between the wall blocks 11 and the corner blocks 12. As best seen in Fig. 1, the connecting blocks 13 will vary in length, and certain of the connecting blocks 13 are substantially half the length of other connecting blocks. The length of each connecting block is different from the length of the connecting block disposed thereabove and in adjacent rows. With the exception of the length, all of the connecting blocks are substantially identical in construction and are formed with a pair of upright and transversely spaced side walls 35 and a pair of transverse end walls 36 which are formed integrally of the side walls and which extend downwardly from the upper edges of the side walls through only a portion of the height of the block. The side and end walls of the connecting block 13 define an enlarged interior chamber or dead air space 37 which extends substantially through the length of the block and which opens in both vertical and longitudinal directions through the block for communication with similar chambers of other blocks disposed adjacent thereto in the building construction. The top and bottom portions of the connection block 13 are formed in a manner substantially identical to the wall blocks 11 with dovetail male and female interfitting means for interlocking with blocks disposed thereabove and therebelow in adjacent rows. An upwardly projecting and longitudinally oriented dovetail insert 38 is formed in the top of block 13 and has downwardly convergent and longitudinally parallel sides 39 which are spaced inwardly from the outer surfaces of side walls 35. A downwardly opening and longitudinally oriented dovetail recess 40 is formed in the bottom of block 13 and has a shape complementary in relation to the insert 38 for cooperative interfitting with such inserts of blocks therebelow in the building construction. The recess 40 has downwardly convergent and longitudinally parallel sides 41 in the opposite side wall 35.

The opposite ends of block 13 are formed for cooperative interfitting with the ends of wall block 11 and corner block 12 respectively. One end of the wall block 13 is provided with a longitudinally projecting and vertically oriented insert 42 which has upright and parallel sides 43 spaced inwardly from the outer surfaces of the block side wall 35. The insert 42 is complementary in shape with relation to the recess 19 of the wall block 11 for interfitting therewith in the building construction.

The other end portion of connecting block 13 has a longitudinally outwardly opening and vertically oriented dovetail recess 44 formed therein. The recess 44 has ver-

tically parallel and longitudinally outwardly convergent sides 45 for horizontal interlocking with the male dovetails 29 of the corner blocks 12. The recess 45 is complementary in shape in relation to the dovetail projection 29 of the corner block.

As best seen in Figs. 1, 13 and 14, the wall construction is placed upon a concrete floor or footing construction which is indicated in general by the letter F, at the corner of the footing upon which the wall structure is to be placed, a straightsided upwardly projecting tongue F₁ may be formed integrally of the footing F or may, if desired, be constructed of wood or other rigid material and then bolted to the concrete footing. In spaced relation from the corner of the footing, and beneath the linear portion of the wall structure is formed an upwardly projecting dovetail male insert F₂ which is adapted to project into the recess 23 and the recess 40 of the side-wall blocks 13 and 11.

In the assembling of the blocks 11, 12 and 13, the first course of blocks is laid by first lowering a block 11 onto the footing F adjacent the corner thereof and the block 11 is slid along the dovetail male insert F₂ to approximately the center of the length of the wall. Subsequent blocks 11 are similarly laid until the first course is substantially complete. Then the end block 13 is finally put into position adjacent the corner of the footing. Before the corner block 12 is laid in this course of blocks, the first course of blocks in the adjacent wall, that is, the next wall around the corner will be laid in a manner identical to that already described.

Subsequently the second course of blocks in these same walls will be laid, and when the second course of blocks has been completed, the corner blocks 12 will be dropped into the first course of the wall. The 3rd course of blocks 11 and 13 are then slipped into place and when this is accomplished the corner block 12 of the second course may be slipped downwardly into place.

It will be understood that when doors and windows are to be formed in the door construction, end blocks 13 are used to terminate the courses of the wall at the sides of the window frames and then a vertical framing member constructed of wood or the like and having a male dovetail insert will be slipped downwardly through aligned recesses 44 in the blocks 13 in several courses of blocks.

It will be noted that when the blocks have been assembled in the manner described, to form a wall structure, the interior chambers of each of the blocks communicates with the chambers of blocks adjacent thereto in the same row and in rows disposed thereabove and therebelow. A substantially continuous dead air space is thereby provided throughout the entire wall structure which provides insulation for the wall and which also facilitates the ready and easy insertion of loose fill insulating materials such as rock wool and also facilitates the ready and easy installation of utility features such as wires, conduits, pipes and the like.

It should also be noted that the blocks are interfitted and interlocked in mutual self-supporting and reinforcing relation and the wall structure may be constructed without the need for bonding material between adjacent blocks. When the wall structure is completed, the blocks define substantially continuous and smooth inner and outer wall surfaces which may be finished in any desired manner. Of course it should be understood that only part of a wall structure is shown in Fig. 1 to illustrate the method by which a wall structure may be constructed and that the building construction disclosed herein may be utilized for forming a complete enclosure.

The form of the invention shown in Figs. 9-13 includes wall blocks 50 and corner blocks 51 and 52 for forming a wall structure which may be indicated in general by numeral 53 and seen in Fig. 9. The wall blocks 50 have transversely spaced and upright side walls 54 and transverse end walls which interconnect the side walls 54 and

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which are formed integrally thereof in substantially the same manner set forth in connection with the description of block 11. The side and end wall 54 and 55 of block 50 define an enlarged interior chamber 58 which extends substantially through the length of the block and which opens vertically therethrough. The wall blocks 50 are provided at the top and bottom portions thereof with means for interfitting the blocks with adjacent blocks thereabove and therebelow. The top portion of block 50 has an upwardly projecting and longitudinally oriented insert 56 which has vertical and parallel sides 57 spaced inwardly from the outer surfaces of the side walls 54. The bottom portion of block 50 has a downwardly opening and longitudinally oriented recess 59 which is of complementary shape with relation to insert 56 for cooperatively interfitting of such inserts of blocks disposed therebelow in the wall structure 53. The sides of the recess 59 are also vertically disposed and spaced inwardly from the outer surfaces of the side walls 54.

The opposite ends of the block 50 are provided with dovetail means for horizontally interlocking adjacent blocks together in a row. One end of the block 50 is provided with a longitudinally projecting and vertically oriented dovetail insert 60 which has vertically parallel and longitudinally and inwardly convergent sides 61. The other end portion of block 50 has a longitudinally outwardly opening and vertically oriented dovetail recess 62 which has vertically parallel and longitudinally outwardly convergent sides 63. Recess 62 is complementary in shape with relation to the dovetail inserts 60 for cooperative interfitting with such inserts of adjacent blocks in a row.

The corner blocks 51 and 52 are similar in construction and have upright and transversely spaced side walls 64 and end walls 65 which define an interior chamber 66 in each of the corner blocks extending substantially throughout the length thereof and opening vertically therethrough. The corner blocks 52 are provided with means for interfitting with blocks disposed thereabove and therebelow in adjacent rows. The upper portions of corner blocks 51 and 52 are provided with upwardly projecting and longitudinally oriented inserts 67 which have vertical and longitudinally parallel sides 67a. The bottom portions of blocks 51 and 52 have downwardly opening and longitudinally oriented recesses 68 therein shaped in complementary relation to the inserts 67 for cooperative interfitting with such inserts of blocks disposed therebelow in the wall structure.

The corner blocks 51 and 52 are provided at one end and at one side and adjacent the other end with male and female dovetails for horizontal interlocking with adjacent blocks in a row. Corner block 51 has a dovetail insert 69 projecting transversely outwardly from one side of the block and adjacent one end thereof, and the dovetail insert 69 is provided with vertically parallel sides 70 which converge transversely inwardly of the block. The other end of block 51 has a longitudinally outwardly opening and vertically oriented dovetail recess 71 which has vertically parallel and longitudinally outwardly converging sides 72. The dovetail inserts 69 and recess 71 are shaped complementary in relation to the recess 62 and insert 60 of the wall block 50 for cooperative interfitting therewith in horizontal interlocking relation.

Corner block 52 has a transversely outwardly opening and vertically oriented dovetail recess 73 formed in one side thereof adjacent one end. Recess 73 has vertically parallel and transversely outwardly convergent sides 74. Block 52 also has a longitudinally projecting and vertically oriented dovetail insert 75 at the other end thereof. Insert 75 has vertically parallel sides 76 which converge longitudinally inwardly of the block. The recess 73 and insert 75 are shaped in complementary relation with the insert 60 and recess 62 of block 50 for cooperative interfitting therewith in horizontal interlocking relation.

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The bottom walls 64 of blocks 51 and 52 have recesses 77 therein immediately below the dovetails therein for receiving the top inserts 67 of the corner blocks when the same are laid one upon another in transversely extending relation relative to each other.

The wall structure 52 is built by initially laying a corner block and then interlocking wall blocks 50 thereto by sliding the wall blocks downwardly in interfitting relation at the dovetails. When another corner is to be formed a corner block will be employed so that blocks forming the adjacent wall may be secured thereto. When the second row of the wall structure is to be formed, a corner block of the opposite type as compared to the corner block in the first row, will be laid upon the corner block of the first row and will extend in transverse relation thereto. Wall blocks will then be interlocked to the corner block of the second row and the wall blocks will thereby be disposed in staggered relation with respect to the wall blocks in the first row. The openings 58 and 66 of the wall and corner blocks will be disposed in communication with each other to provide a substantially continuous dead air space throughout the wall structure. The interior chambers of adjacent blocks in a row communicate with each other through the chamber of a block partially overlying each of the lower blocks for horizontal intercommunication between all of the block chambers is thereby provided. The substantially continuous dead air space in the wall structure facilitates the ready and easy insertion of loose fill insulation such as rock wool and also facilitates the ready and easy installation of utilities such as wires, pipes, conduits and the like. The wall structure 53 may be quickly and easily formed without the need for bonding materials between the blocks and the blocks will be interlocked in mutual supporting relation to eliminate the need for reinforcing apparatus. The blocks define substantially smooth and continuous inner and outer wall surfaces which may be finished in any desired manner.

It will be seen that I have provided a new and improved building construction for producing a wall structure in a simple and easy manner.

It will also be apparent that I have provided a new and improved building construction utilizing interfitting and interlocking blocks which support each other and which provide substantially continuous dead air space in the wall structure to facilitate ready installation of insulating materials or necessary building utilities.

It will, of course, be understood that various changes may be made in the form, detail, arrangement and proportion of the parts without departing from the scope of my invention which consists of the matter described herein and set forth in the appended claims.

What I claim is:

1. A building construction comprising a plurality of generally L-shaped corner blocks having dovetail end portions disposed at an angle with each other, said corner blocks also having top and bottom portions with vertically disposed and complementarily shaped inserts and recesses for cooperative interfitting with similar blocks thereabove and therebelow; a plurality of wall blocks having opposite end portions with longitudinally disposed and complementarily shaped inserts and recesses for cooperative interfitting with similar blocks adjacent thereto in a row, said wall blocks also having dovetail top and bottom portions of complementary shape for cooperative interfitting with similar blocks disposed thereabove and therebelow in adjacent rows, said wall blocks being disposed in staggered relation relative to similar blocks thereabove and therebelow; and a plurality of connecting blocks having dovetail top and bottom portions of complementary shape for cooperative interfitting with similar connecting blocks thereabove and therebelow and with wall blocks disposed thereabove and therebelow in adjacent rows, each of said connecting blocks being disposed between a wall block and a corner block and each of

said connecting blocks having opposite end portions formed for cooperative interfitting with the end portions of said wall and corner blocks, one of the connecting block end portions being dovetailed for cooperative interlocking with the corner block end portion, whereby to form a wall structure the blocks of which are co-operatively interlocked in mutual supporting relation.

2. The structure recited in claim 1 wherein said corner block end portions having longitudinally protruding and vertically oriented male dovetail portions thereon, and said connecting blocks each having a longitudinally recessed and vertically oriented female dovetail formed in one end thereof for cooperative interlocking with the male dovetail of the corner block, and each of said connecting blocks having a length different than the length of connecting blocks disposed thereabove and therebelow to establish a staggered relation between wall blocks disposed above and below each other.

3. A building construction comprising a plurality of generally L-shaped corner blocks having end portions disposed at an angle with each other, said corner blocks having top and bottom portions with vertically disposed and complementary inserts and recesses for cooperative interfitting with similar corner blocks thereabove and therebelow, a plurality of elongated wall blocks each having a top and bottom with vertically disposed and longitudinally oriented male and female dovetail interfitting portions for cooperative interlocking with similar blocks thereabove and therebelow, said wall blocks having opposite end portions, one of said wall block end portions having a longitudinally projecting insert with substantially parallel sides and the other having a longitudinally recessed receiving portion with parallel sides and complementary in shape with said insert for complementary interfitting with adjacent wall blocks in a row, said wall blocks being arranged in vertically aligned rows and each block being offset with similar blocks disposed thereabove and therebelow in adjacent rows, and a plurality of elongated connecting blocks each having a top and bottom with vertically disposed and longitudinally oriented male and female dovetail interfitting portions for coop-

erative interlocking with other similar connecting blocks and wall blocks disposed thereabove and therebelow in adjacent rows, each of said connecting blocks being disposed in end-to-end relation with a wall block and a corner block, one end of each corner block being formed for cooperative interfitting with the end portion of the adjacent wall block and the other end of the connecting block and the corresponding end of the corner block being cooperatively constructed in a vertically oriented and longitudinally projecting and recessed male and female dovetail interconnection to facilitate vertical movement relative to each other for interlocking and separating the corner block and connecting block relative to each other, whereby the wall blocks and connecting blocks are assembled and interfitted by sliding the blocks in longitudinal directions upon similar blocks, and the corner blocks are lowered into interfitting relation with the connecting blocks to produce a substantially integral and self-supporting wall structure.

4. The structure recited in claim 3 wherein the corner blocks are provided with vertically oriented male dovetail inserts projecting longitudinally outwardly from said end portions thereof, and each of said connecting blocks is provided with a vertically oriented and longitudinally recessed female dovetail receiving portion for cooperatively interfitting with the male dovetail insert of the corner block.

5. The structure recited in claim 1 wherein each of said blocks has an enlarged dead air space therein and opening vertically and horizontally endwise therethrough, the air space of each block communicating in multi-directions with the spaces of other blocks adjacent thereto.

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