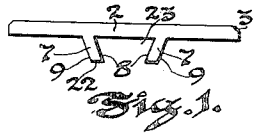
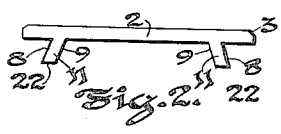
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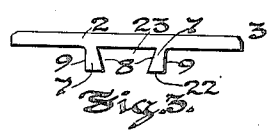
CONCRETE OR LIKE BUILDING BLOCK OR SLAB.

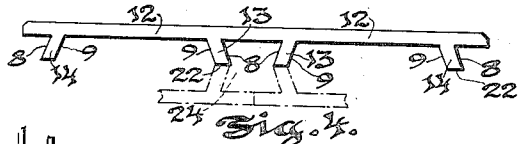
APPLICATION FILED SEPT. 14, 1920.

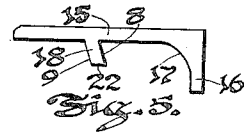
1,377,718. Patented May 10, 1921.

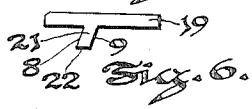

Fig. 1.


Fig. 2.


Fig. 3.


Fig. 4.


Fig. 5.


Fig. 6.

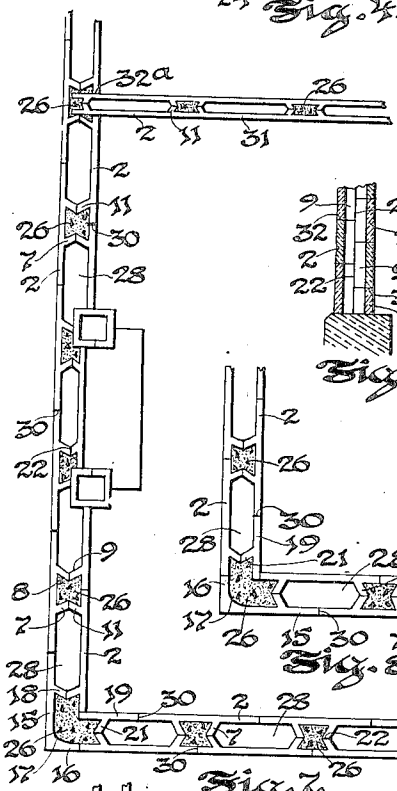
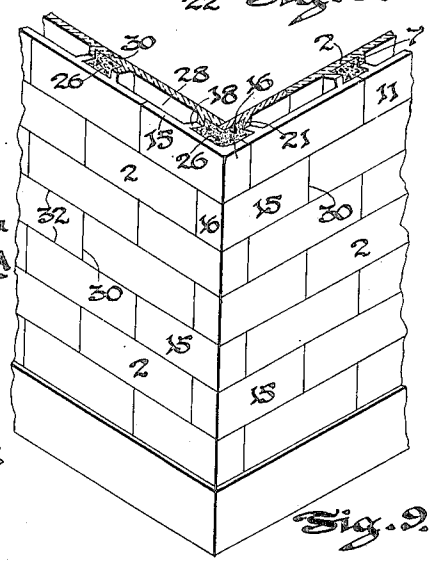
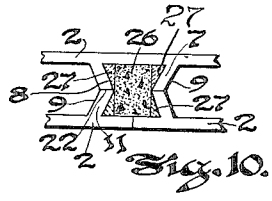
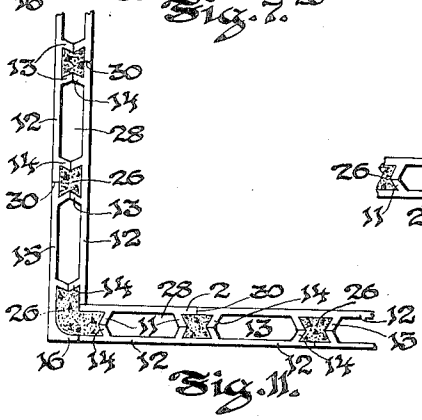

Fig. 7.

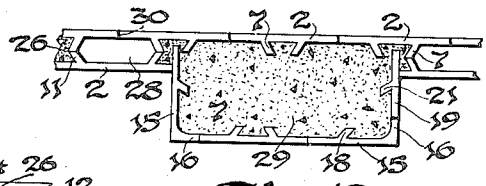
Fig. 8A.

Fig. 8.


Fig. 9.


Fig. 10.


Fig. 11.


Fig. 12.

Inventor.

J. Morgan.

by [signature]

Atty.

UNITED STATES PATENT OFFICE.

JOHN MORGAN, OF MELBOURNE, VICTORIA, AUSTRALIA, ASSIGNOR TO DANIEL MURRAY, OF MELBOURNE, VICTORIA, AUSTRALIA.

CONCRETE OR LIKE BUILDING-BLOCK OR SLAB.

1,377,718. Specification of Letters Patent. Patented May 10, 1921.

Application filed September 14, 1920. Serial No. 410,255.

To all whom it may concern:

Be it known that I, JOHN MORGAN, contractor, trading as THE CONCRETE BUILDING COMPANY, a subject of the King of Great Britain and Ireland, residing in the city of Melbourne, in the county of Bourke, State of Victoria, Commonwealth of Australia, and whose post-office address is 401 Flinders street, in the said city of Melbourne, have invented certain new and useful Improvements in and connected with Concrete or like Building Blocks or Slabs, of which the following is a specification.

This invention relates to building blocks or slabs of concrete, cement or like material, and its object is to provide an improved slab and method of assembling and uniting a series of such slabs whereby a building may be rapidly constructed with a minimum of labor and expense.

The outstanding feature of the invention resides in the formation on one side of the slab of a suitable number of vertically extending locking pieces or ribs which are adapted to form dovetail grooves or recesses extending vertically from the upper to the lower edges of the slabs. By arranging a series of these slabs opposite each other to form the double wall of a building and with the outer end faces of the opposite locking pieces abutting against each other, the dovetail grooves or recesses of the two opposite series of wall slabs are disposed directly opposite and in communication with each other thereby forming double or opposed dovetail passages to accommodate vertical columns of corresponding shape by which the slabs are securely locked together in assembled position.

The invention also embodies various other features such as modified blocks for use at the corners of walls, and other details hereinafter referred to.

Referring to the drawings which form part of this specification:—

Figure 1 is a plan of a building block having an intermediate pair of locking pieces or ribs in accordance with my invention.

Fig. 2 shows a block having end locking pieces or ribs and adapted for use in conjunction with the block seen in Fig. 1.

Fig. 3 shows a modification in which the locking pieces are diagonally inclined to the body of the slab on one side only, the other side being square or at right angles to the body.

Fig. 4 shows an elongated block having intermediate and end locking pieces thus combining in one the two blocks seen in Figs. 1 and 2. In dotted lines the adjoining ends of two opposite blocks are shown in position to form the double or opposed dovetail passage.

Fig. 5 illustrates a right angled block for use at the corners of buildings and the like.

Fig. 6 shows a shortened or making up block for use in the inner walls of corners and in other parts of buildings and the like.

Fig. 7 is a reduced plan of a course of blocks assembled to form the double wall of a building and showing also portion of an interior wall or partition, a window opening, and a fire place.

Fig. 8 is a plan of portion of a course of blocks directly above or below the course seen in Fig. 7 and showing the alternate arrangement of the blocks whereby the vertical joints between the blocks of the adjoining courses are disposed out of alinement.

Fig. 8^A is a vertical section of portion of a double wall showing the stepped arrangement of the blocks whereby the horizontal joints of the inner and outer walls are disposed out of alinement.

Fig. 9 is a perspective view of the corner of the wall seen in Figs. 7 and 8.

Fig. 10 is an enlarged sectional plan showing the use of a rectangular core or column, the corners of the dovetail passage being filled in by grouting or key pieces.

Fig. 11 illustrates the use of the block seen in Fig. 4.

Fig. 12 is a plan of a course of blocks assembled to form a vertical buttress or pier on the outside or inside of a wall.

Similar numerals of reference indicate similar or corresponding parts where they occur in the several views.

In the drawings the numeral 2 indicates the block or slab body the side edges of which may be chamfered as at 3 or otherwise treated for ornamental purposes. As seen in Fig. 1 the block may be provided with an intermediate pair of locking pieces or ribs 7. These locking pieces are formed integral with the slab body and their one sides are

diagonally inclined thereto as at 8. The other sides 9 of the locking pieces are also preferably inclined parallel to the sides 8 as seen in Figs. 1, 2, 4, 5 and 6 but may be formed at right angles as seen in Fig. 3 or otherwise suitably disposed in relation to the slab body.

In combination with the block seen in Fig. 1 I employ blocks having end locking pieces 11 as seen in Fig. 2. The sides 8 of these locking pieces are diagonally inclined to the body of the block in the same manner as the corresponding sides of the locking pieces seen in Fig. 1 while the other sides 9 of the locking pieces may also be diagonally inclined or square to the body as previously described.

In lieu of the blocks seen in Figs. 1 and 2 the elongated block 12 seen in Fig. 4 may be employed. Such blocks are provided with an intermediate pair of locking pieces or ribs 13 corresponding to the locking pieces 7 as seen in Fig. 1. The end locking pieces 14 correspond to the locking pieces 11 in Fig. 2. Each of these locking pieces is diagonally inclined to the body of the slab at one side 8 while the other sides 9 thereof may be diagonally inclined or otherwise suitably disposed as above mentioned.

The corner block seen in Fig. 5 consists of a major body portion 15 and a minor body portion 16 disposed at right angles to the major body portion. At the junction of the two body portions is a reinforcing fillet 17 which strengthens the structure at the corner. The corner slab is also provided with a locking piece 18 having an inclined side 8 and an inclined or square side 9 as previously described.

The shortened or making up slab 19 seen in Fig. 6 may be used at corners in the inner wall of the double walled structure as seen in Figs. 7, 8 and 9 or in other suitable positions as in Fig. 12. It is provided with a locking piece 21 having an inclined side 8 and an inclined or square side 9 similar to the other locking pieces.

Each of the locking pieces is also provided with an outer abutting edge or face 22 disposed parallel to the body of the block and adapted to engage the corresponding edge of the opposite locking piece of another block when a series of the blocks are assembled to form a wall as in Fig. 7.

It will be seen from the foregoing that a vertical dovetail groove or recess indicated at 23 (Figs. 1 and 3) is formed between the inclined sides 8 of the intermediate locking pieces seen in Figs. 1 and 4 and likewise when two of the slabs such as seen in Fig. 2 are placed side by side a corresponding dovetail groove is formed between the sides 8 of the adjoining end locking pieces 11 of the two slabs as clearly seen in Fig. 7. It will also be evident that when a series of slabs are arranged opposite each other to form a double wall as in Figs. 7, 8, 9 and 11 the dovetail grooves of the opposite sets of slabs are thus disposed opposite and in communication with each other, thereby forming a double or opposed dovetail passage indicated at 24 (Fig. 4). These double dovetail passages are adapted to accommodate vertical columns or cores 26 by which the blocks are locked together in assembled position. These cores or columns are preferably inserted by introducing plastic concrete or the like into the passages 24 as each course of blocks is built up or assembled. On the other hand the columns or cores 26 may be erected before the blocks are placed in position. In this case the columns when first erected are of substantially rectangular section as seen in Fig. 10 and of slightly less width than the narrowest part of the dovetail grooves, so that the slabs may be pushed sidewardly on to the columns and the angles of the dovetail grooves afterward filled in by grouting or pouring in liquid material or by inserting appropriately shaped key pieces 27 so that the slabs are securely locked to the columns. Obviously the columns or cores 26 may be reinforced or unreinforced as desired.

By arranging a series of blocks of the kind seen in Figs. 1 and 2 to form the inner and outer walls of a double wall as in Figs. 7, 8 and 9 it will be apparent that the vertical joints 30 between the side edges of the blocks of the inner wall will be disposed out of alinement with or midway between the corresponding joints of the same course of slabs of the outer wall thereby obviating the chance of moisture passing from the outside to the interior of the building. It will also be seen that the vertical joints between the blocks of the type seen in Fig. 2 are disposed opposite the vertical cores or columns 26 thus providing an additional safeguard against the entry of moisture.

By the use of blocks such as seen in Fig. 4 the vertical joints 30 are not only disposed out of alinement as above mentioned but in all cases the vertical joints 30 of both inner and outer walls are disposed opposite the columns or cores 26 as shown in Fig. 11. This entirely prohibits moisture passing through said joints into the insulating air spaces 28 which are formed between the blocks of the inner and outer walls as shown, or from said air spaces into the interior of the building.

As shown in Fig. 8[A] the blocks forming the inner and outer walls of the double wall are arranged in stepped relationship by the introduction, at the bottom of either the inner or outer walls, of blocks 31[a] of half the height of the ordinary blocks. By this means the horizontal joints 32 between the

blocks of the inner and outer walls are disposed out of alinement with obvious advantages.

Where buttresses or piers are required to be formed in the length of a wall to reinforce the same these buttresses may be constructed by assembling a series of blocks as seen in Fig. 12 and filling in the space formed thereby with concrete or the like as indicated at 29.

It will be seen from Fig. 7 that the improved blocks are also suitable for the construction of interior walls or partitions such as 31. In this instance the locking pieces may project to a less distance from the body of the slab as shown so that the wall or partition is reduced in thickness. The ends of such internal walls or partitions may be joined to the external or main walls of a building by passing them between the adjacent ends of the blocks forming the inner section of the double or main wall as at 32^a, Fig. 7, the ends of said blocks being for this purpose slightly cut away or shortened as shown. The end of the partition is thus accommodated by one of the double or opposed dovetail passages which when filled with the plastic material forming the respective core 26 thereby locks the end of the partition securely in place.

The side, top and bottom edges of the blocks may be united by mortar or cement in the usual manner.

Having now described my invention what I claim as new and desire to secure by Letters Patent is:—

1. A wall structure comprising an outer wall and an inner wall, the outer wall including alternate layers formed with a plurality of blocks, each block having a pair of locking ribs formed thereon in the central portion and inclined toward each other, the blocks forming the intermediate layers having a single locking rib near each end inclined away from each other, the joints between blocks of successive layers being broken, so that relatively inclined ribs will register forming continuous ribs, the inner wall being formed of layers exactly the same as the outer wall, having the ends of the ribs contacting with the ends of the ribs on the outer wall and having the joints between layers at a plane intermediate the planes of the joints of the outer layers, and a filler between the pairs of inclined ribs forming columns for locking the blocks in place.

2. A wall structure comprising an inner portion and an outer portion formed of layers of blocks, alternate layers of each portion being formed with blocks having pairs of ribs inclined toward each other formed in the central portion, the intermediate layers having blocks formed with inclined ribs near each end thereof, the joint between blocks being intermediate the joints of the blocks in the alternate layers, so that similar ribs will be in alinement, the corresponding alined ribs of each wall portion contacting at the ends and forming columns, and a filler for the columns for reinforcing the wall portions and locking them together.

3. A wall structure comprising an inner portion and an outer portion formed of layers of blocks, alternate layers of each portion being formed with blocks having pairs of ribs inclined toward each other formed in the central portion, the intermediate layers having blocks formed with inclined ribs near each end thereof, the joint between blocks being intermediate the joints of the blocks in the alternate layers, so that similar ribs will be in alinement, the corresponding alined ribs of each wall portion contacting at the ends and forming columns, a corner block for the outer wall portion having a lateral projection at one end and an inclined rib formed thereon intermediate the ends, so that in meeting walls the alternate layers of blocks in one wall will meet an intermediate layer in the other wall, the major portion of the corner block being alternately in one wall and the other adjoining the end of a row of alternate blocks, an inner slab formed of a block having an inclined rib, said inner slab coöperating with the alternate rows of the inner wall portions in forming the corner, the ribs on the several blocks forming a column at the corner, and a filler for the columns.

In testimony whereof I affix my signature.

JOHN MORGAN.

Witness:
CECIL MCELESTINE.