No. 644,138. Patented Feb. 27, 1900.

E. KETCHUM.

BUILDING WALL OR PARTITION.

(Application filed Oct. 4, 1899.)

(No Model.)

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Witnesses:

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EDMUND RETCHUM, OF MONTCLAIR, NEW JERSEY, BUILDING WALL OR PARTITION.

SPECIFICATION forming part of Letters Patent No. 644,138, dated February 27, 1900.

To all whom it may concern:

Be it known that I, EDMUND KETCHUM, a citizen of the United States, residing in Upper Montclair, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Building Walls or Partitions, of which the following is a specification.

This invention relates to building walls or partitions; and it has for one object the provision of an improved structure of this class in which the several elements thereof may be assembled to form a solid wall without the use of the usual binder, such as mortar, for maintaining building blocks or bricks in their proper assembled positions.

A second object of the invention is to furnish an improved building block or brick for use as an element of a wall constructed in this manner, and the several blocks will preferably be interchangeable with one another and capable of interlocking with one another at their edges. In connection with these blocks I also make use of an improved locking member or tie-piece, by means of which adjacent blocks may be clamped or tied together at their adjacent edges by merely inserting the blocks in position in the tie-piece at the edges or corners of the blocks.

My invention is in the nature of an improvement upon that shown, described, and claimed in my Patent No. 620,594, dated March 7, 1899, to which reference may be made.

A feature of my present invention which distinguishes it from that set forth in my prior patent is a building-wall formed without the use of mortar or a similar binder to secure the several elements thereof, and the blocks constituting said wall are clamped together by tie members engaging their side faces, which members will resist outward or lateral pressure in substantially the same manner that the tie-rods for connecting the opposite walls of a building resist the same influence. Moreover, in the present case all of the blocks are preferably interchangeable and are so constructed that the tie members, which will usually be in the form of metallic spools having large heads or plates, will pass through openings formed by recesses in the edges or corners of the blocks and intersecting the side faces thereof. By employing building-blocks and tie members constructed in this manner, having all of the blocks interchangeable with one another and the tie-pieces of the same type, it will be seen that a wall may be formed by assembling only two different kinds of elements, one of which is the block and the other the means for holding the block in position, and that these parts may be put together rapidly and at a strong and stable wall or partition erected without requiring the services of skilled workmen.

In the drawings accompanying and forming part of this application, Figure 1 is a perspective view of a portion of a wall or partition constructed in accordance with my present invention. Fig. 2 is an enlarged perspective view of one of the building blocks or bricks used in the formation of such wall. Figs. 3 and 4 are opposite side elevations of one corner of such block. Fig. 5 is a transverse section of a portion of the wall, illustrating the manner in which the tie member clamps the blocks together. Fig. 6 is a perspective view of the tie member which I prefer to employ, and Fig. 7 is a perspective view of a detail illustrating a means for preventing sideways movement of the wall. Similar characters of reference designate like parts in all the figures of the drawings.

In my patent hereinafter referred to I have illustrated one type of building wall or partition in which the blocks or bricks are interchangeable with one another and are united at their edges by suitable locking means; but in the construction shown in such patent the blocks in different courses are not positively clamped together by tie-pieces that will positively prevent sideways movement of a block of one course relative to adjacent blocks of another course, nor does said patent illustrate a construction in which all of the blocks are united by joints regardless of how they may be secured in place by the intermediate holding members. In the present case, however, the blocks and tie-pieces are so constructed that when assembled each block, preferably at all sides thereof, will overlap or fit into the edges of other blocks adjacent thereto, and the overlapping edges will be clamped together by means of the tie-pieces in such a way that any strain which
tends to cause a sidewise movement of any block relative to another will be resisted and such movement prevented.

For the purpose of securing the results just mentioned I prefer to make use of a building-block substantially of the type shown herein and designated in a general way by A. Each of these blocks will usually be formed from fireproof material and will preferably be substantially square and constructed so as to be interchangeable with all the others, as before stated.

In order that the blocks may be united at all sides by joints, I deem it desirable to provide at each edge of the block a tongue, such as 2, and when the block is square, as is the case herein, these tongues will be substantially similar in construction. Said tongues may be formed in any desired manner, but usually by grooving or rabberting the edges of the block, as at 3, in such a way as to form a lap-joint or rabbit-joint.

One of the principal features of the invention is the manner in which it is constructed to receive and be held by the tie members that clamp the blocks together. These tie members are intended to be passed through openings formed by recesses in the edges of the blocks A, these recesses intersecting with the side walls of each respective block in order to form an opening entirely through the wall when the parts are assembled. These recesses may be located at any suitable point in the edge of the block, but I prefer that they be cut in the corners thereof, as indicated herein at 4. All of these recesses may be of the same size and contain a point in the present case are rectangular, so that complementary recesses will form square openings extending through the wall. In addition to having these recesses in the edges thereof I deem it desirable to so form the blocks A that when said blocks and the tie members are assembled to form a wall the combined faces of the tie-pieces will be flush with the faces of the blocks. For this reason I have shown herein a block in which countersinks are provided, each of a depth sufficient to receive the end plate of the tie member that I prefer to use. Said countersinks should, of course, be so located as to be substantially concentric with the openings through the wall formed by the recesses 4, and, moreover, the peripheral walls of the countersinks may advantageously be circular in order to permit the use of a tie-piece having a circular head, and thus prevent chipping of the blocks during the assembling of the wall or after it has been completed. As the area of one side face of the block is less than that of the other, it will of course be evident that if the heads of the tie-pieces are to be of the same size, as is preferable, the corner of that face of the block which has the greater area will be cut away more than the other to form the countersink, although the peripheries of both countersinks will of course be described by arcs of the same circle. The major countersink is illustrated herein at 5 and the minor countersink by 5', there being four of each for each block.

The means that I prefer to employ for the purpose of clamping the blocks together is illustrated herein most clearly in Fig. 6, although it should be understood that any suitable means for holding the blocks of different courses in such a manner that they cannot move relatively to each other may be employed. Here, however, the tie member is preferably a spool formed either from sheet metal or cast metal, as may be desired, and having substantially flat ends or plates 7, 8, the spools should fit snugly over the corners of these blocks.

When the parts are assembled, the blocks will be placed edge to edge in such a manner that adjacent blocks will face in opposite directions and overlap each other to form rabbit-joints, and the tie members will be inserted in position at the corners of individual blocks or pairs of blocks and the other blocks slid into place, substantially as illustrated in Fig. 1. When four blocks are assembled in this way, with a tie member passed through the opening at the intersecting corners, said tie member will positively engage the opposite faces of these four blocks and will tend to maintain a rabbit-joint at this point.

For the purpose of preventing swaying of the wall and obtaining greater stability I may make use of holding members for the lower edge of the wall substantially similar to the tie-spool C, except that in contour each may be substantially a half-spool cut longitudinally. These tie members or feet at A not only lock the lower edges of the wall positively, but also clamp the edges of adjacent blocks together in the same way as the tie-spoons C. These auxiliary fastening devices are designated by C and will usually be fastened to the floor or other suitable support in some well-known manner. In connection therewith I may also make use of holding members, such as the U-shaped metallic piece D, these being employed in the present case to give stability to the vertical ends of the wall as well as the base thereof. After the wall has been assembled in this manner and is complete one or both faces thereof may be covered to a proper depth with a coating of plaster, as shown at 10, and this will serve to cover up, the joints and firmly unite the blocks into one common mass by filling the apertures in the spools, and thus forming a union between the outside coatings.

Having described my invention, I claim:

1. A wall or partition comprising a plural-
ity of blocks interlocked between their adjacent sides and having at the corners thereof complementary recesses intersecting the sides of the blocks, and tie members passed through the openings formed by said recesses and engaging and overlapping the side faces of adjacent blocks.

2. A wall or partition comprising a plurality of interlocking blocks having in their edges complementary recesses intersecting the sides of the blocks, and tie-spools having apertures for the passage of plaster and contained in the openings formed by said recesses and engaging and overlapping the side faces of adjacent blocks.

3. A wall or partition comprising a plurality of blocks held together by rabbet-joints and having in their edges complementary recesses intersecting the sides of the blocks, and tie members passed through the openings formed by said recesses and engaging and overlapping the side faces of adjacent blocks and interlocked therewith.

4. A building-block having longitudinally extending tenons on two of its edges and transverse tenons extending the width of the block at the ends thereof, and also having in its edges recesses intersecting the sides of the block.

5. A building-block having longitudinally extending tenons on two of its edges and transverse tenons on its ends, said block having recesses at its corners, and also having countersinks substantially concentric with said recesses.

6. A building-block having in its opposite corners recesses intersecting the sides of the block, and also having in the corresponding corners of its side faces countersinks substantially concentric with said respective recesses and also intersecting the sides of the block.

7. A building-block having in one of its edges a recess intersecting the sides of the blocks, and also having in its opposite side faces countersinks substantially concentric with said respective recesses and also intersecting the sides of the block.

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Witnesses:

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