Dec. 20, 1938. R. L. HOHL 2,140,999

WALL OR THE LIKE

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Fig. 1.

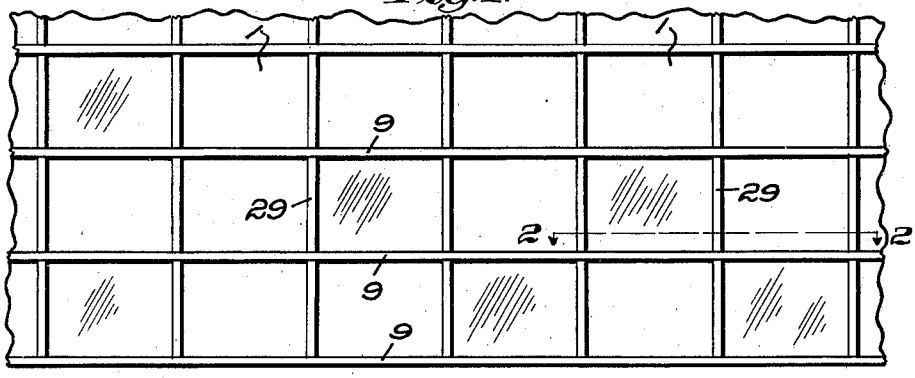
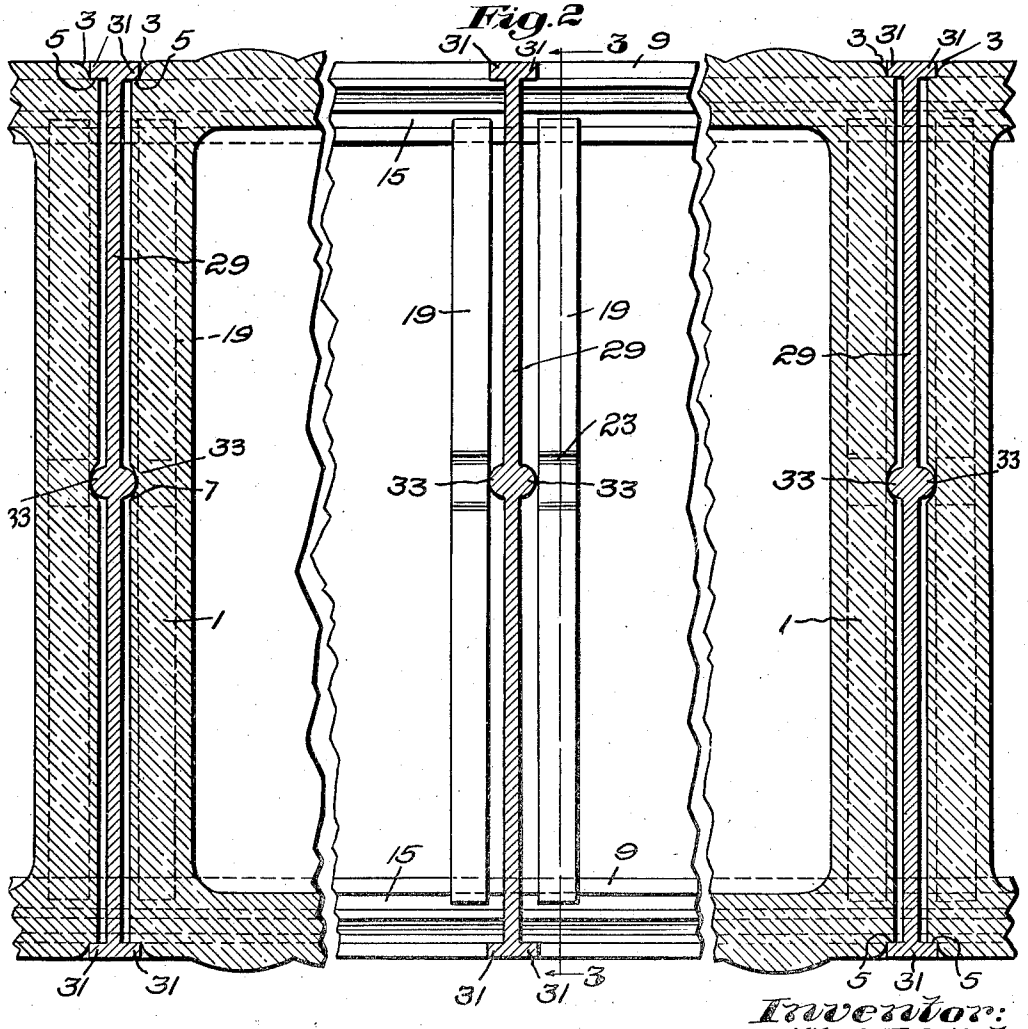


Fig. 2



Inventor:
Russell L. Hohl,
by Emery, Booth, Townsend, Miller & Wheeler
Attys.

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Fig. 3

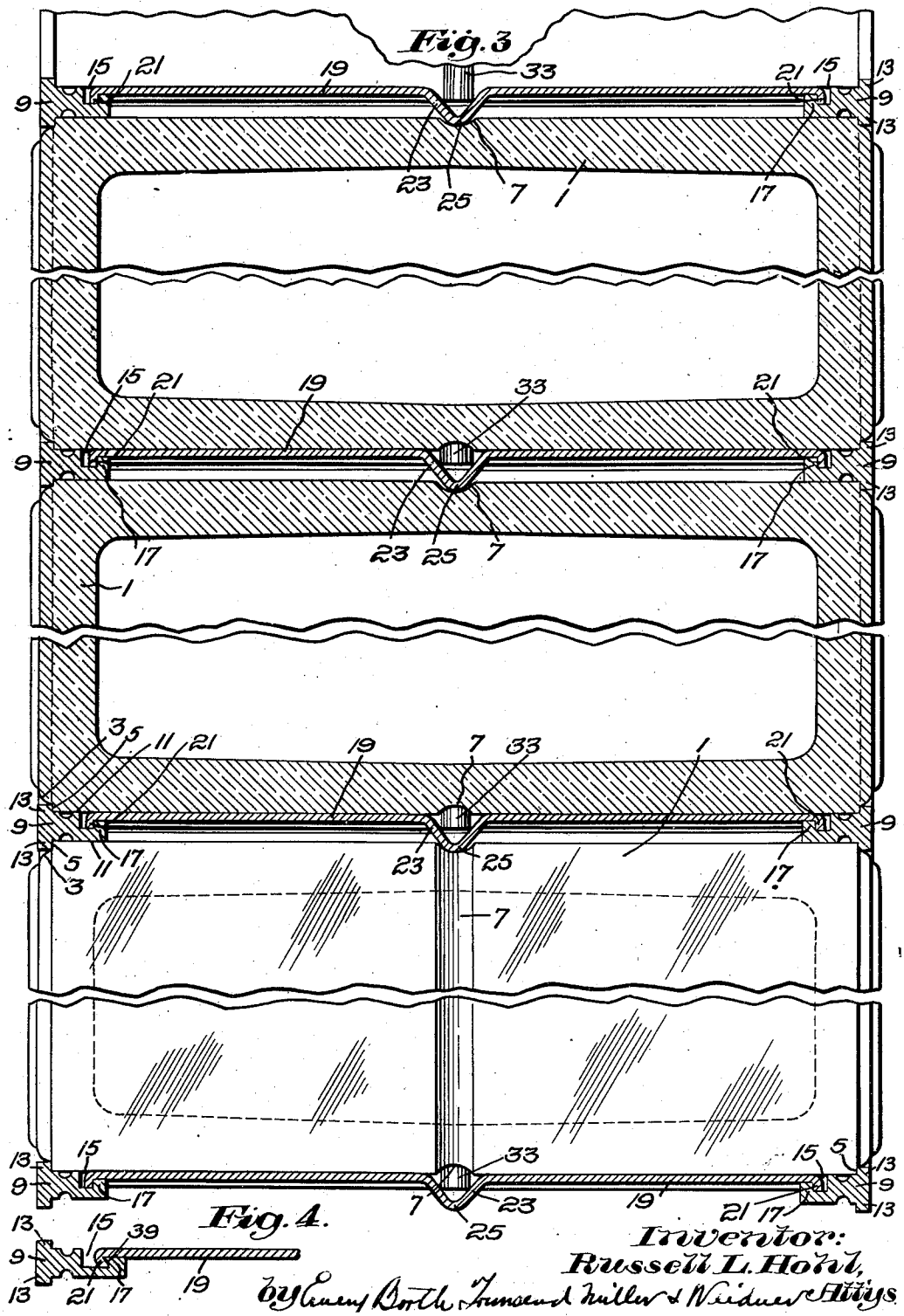


Fig. 4.

Inventor:
Russell L. Hohl,
By Emery Booth Townsend Miller & Weidner Attys

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Fig. 5.

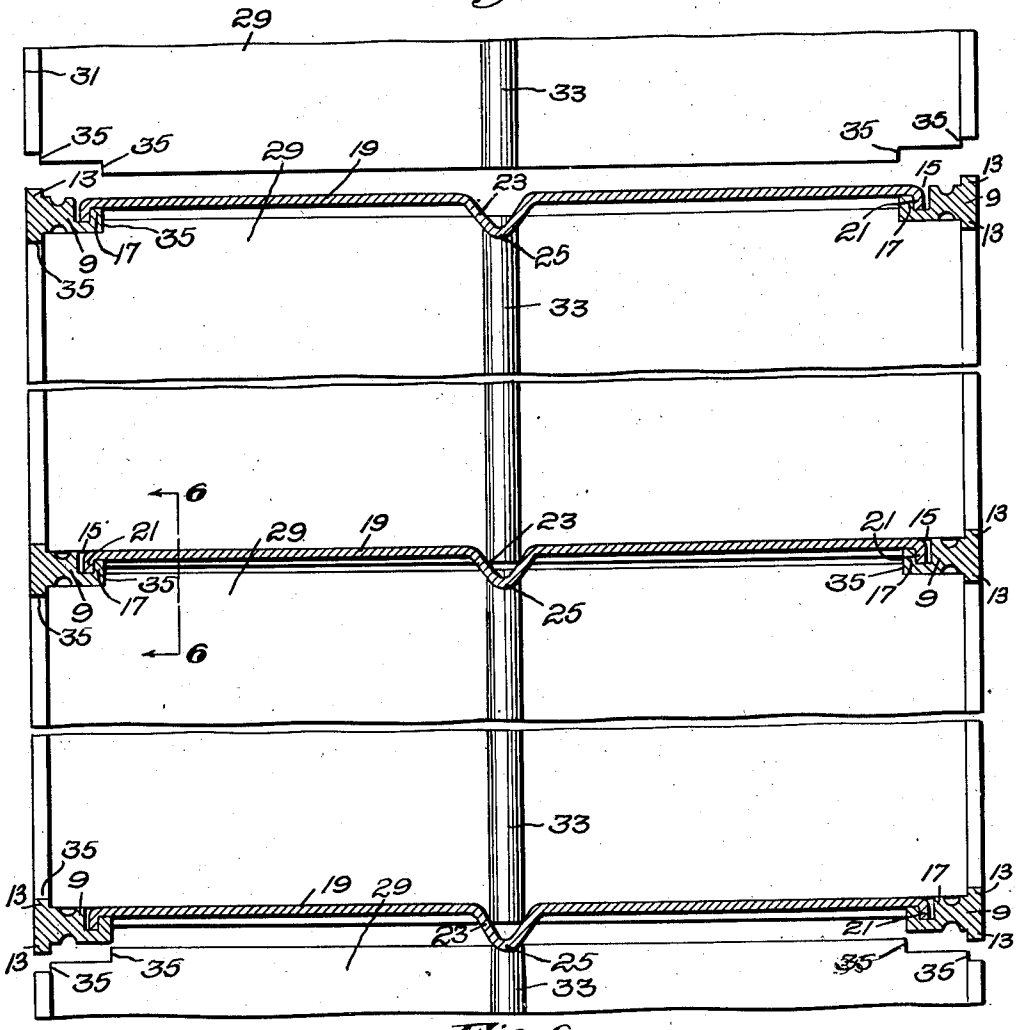
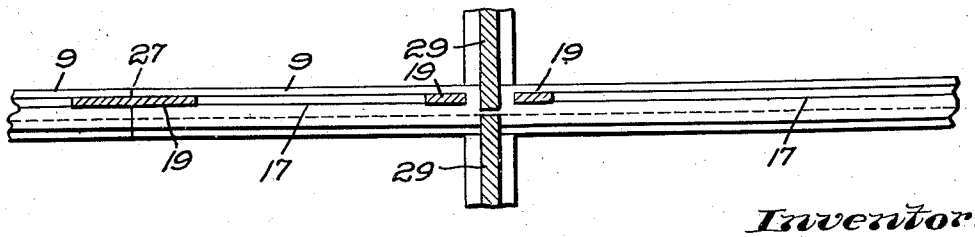


Fig. 6.



Inventor:
Russell L. Hohl
by Cowley, Booth & Townsend, Miller & Weidner
Attys

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2,140,999

UNITED STATES PATENT OFFICE

2,140,999

WALL OR THE LIKE

Russell L. Hohl, New York, N. Y., assignor to Revere Copper and Brass Incorporated, New York, N. Y., a corporation of Maryland

Application March 12, 1938, Serial No. 195,562

23 Claims. (Cl. 72—42)

My invention relates to building constructions, and particularly, but not exclusively, is concerned with walls made of blocks held together by preformed bonding means.

The invention, which has among its objects the provision of an improved wall construction of the above mentioned character and improved bonding means for use in connection with the same, will be best understood from the following description when read in the light of the accompanying drawings of a wall embodying the invention, the scope of which latter will be more particularly pointed out in the appended claims.

In the drawings:—

Fig. 1 is a fragment of a wall constructed according to the invention;

Fig. 2 is a section on the line 2—2 of Fig. 1 on an enlarged scale and with parts broken away;

Fig. 3 is a section on the line 3—3 of Fig. 2 with parts in elevation;

Fig. 4 illustrates a fragment of a modified form of bonding means;

Fig. 5 is a section corresponding to Fig. 3 with the blocks omitted and the upper and lower vertical bonding members moved into disassembled relation with the other parts; and

Fig. 6 is a section on the line 6—6 of Fig. 5.

Referring to the drawings, the wall illustrated comprises blocks 1 which preferably are formed of glass and, as indicated in Figs. 2 and 3, preferably are hollow, although it will be understood that, if desired, the blocks may be formed of other material and may be solid.

As shown, the exterior surfaces of the blocks at the front and back of the wall are so formed as to present recesses 3 providing shoulders 5, which shoulders extend continuously about the four edges of the block at the front and back of the wall. As shown, the blocks also are formed with a groove 7 extending uninterruptedly around those four sides of the block which are transverse to the wall.

According to one embodiment of the invention, positioned between the horizontal rows of blocks at the edges of said rows are horizontal members 9, the latter being coextensive in length with the plurality of blocks. These members conveniently are formed of long lengths of material such as aluminum or bronze or other metal which can be rolled or extruded to give the members the desired cross-section. Herein, the body portions of the members have substantially flat upper and lower surfaces 11 which contact with the blocks and act to space them apart, and are integrally formed at their outer edges with upwardly and downwardly projecting elongated flange portions 13 which engage with the shoulders 5 of the blocks. As shown in Figs. 3 and 5, upper faces of the body portions of the members 9 are provided with longitudinally extending grooves 15, the wall portions 17 at the inner sides of the grooves being of reduced height throughout the lengths of the members to accommodate tie members 19.

The members 19 just referred to, as illustrated, are in the form of strips or narrow plates preferably of metal, opposite edges of which plates are bent downwardly to form flanges 21 which enter the grooves 15 of the members 9 so that in effect the ends of the plates are hooked over the inner walls 17 of those grooves.

Each of these plates 19, as shown, is bent to provide intermediate its length a V-shaped bead 23 having an apex portion 25 which coacts with the upper surface of the block immediately below it to act as a foot preventing undue downward flexure of the plates, which flexure, if it occurred, might cause one or the other of the flanges 21 at the ends of the plate to snap out of the groove 15 which normally receives it. The apex 25 of the bead 23 need not touch the adjacent block, but may be spaced therefrom so long as the space between them will prevent undue flexure of the plate.

If desired, and as shown, the apex portions of the beads 23 enter the grooves 7 of the blocks and thus act to cause the beads to aid in preventing displacement of the blocks relative to each other transversely of the wall. The bead 23 also serves the purpose of providing ready means for increasing or decreasing the distance between the flanges 21 of each plate 19, which may be necessary or desirable to compensate for slight discrepancies in manufacture of the blocks. By striking the apices of the beads with a hammer the angles between the sides of the beads will be increased to spread the flanges 21 farther apart. On the other hand, by pressing the sides of the beads toward each other, say by use of pliers, the angles between the sides of the beads will be decreased and the flanges 21 drawn toward each other.

Although in the present embodiment of the invention the plates 19 are shown as of relatively short length in the direction of the length of the wall, they may, however, be coextensive in length with the members 9. Where it is necessary to make a joint in the members 9 as indicated at 27 in Fig. 6, a plate 19 positioned at said joint so as to engage the abutting end portions of the

two members 9 will hold said members at said joint in alignment. As will be clear from Fig. 3, when the blocks are assembled, the blocks immediately above the plates 19 will hold them in assembled relation with the associated members 9.

As illustrated, between the vertical faces of adjoining blocks of each row are placed bonding members which are in the form of plates 29 having at opposite ends at each side thereof a longitudinally extending flange 31, these flanges engaging with the vertical shoulder portions 5 of the exterior surfaces of the blocks. If desired, and as shown, these plates at the intermediate portions thereof at each of their sides are formed with raised beads 33 which enter the grooves 7 of the blocks and coact with the oppositely facing shoulders presented by the sides of said grooves to aid in bonding the blocks together. Preferably, plates 29 at the upper and lower corners thereof are notched as shown at 35 in Fig. 5 to fit the adjacent surfaces of the members 9 so that the plates 29 will be interlocked with those members and thereby be prevented from moving transversely of the wall by reason of the plates 19 which hold the opposite members 9 against relative separation.

In Fig. 4 is shown a modified form of the member 9. In this modification the inner surface 39 of the groove 15 is tapered relative to the opposite surface of the groove so as to make the grove narrower at the top, while the flange 21 of the plate 9 is so bent as to hook over the overhanging portion of the wall 39. This construction it has been found facilitates ready assemblage of parts in building up the wall and acts to insure that the plates 19 will remain in cooperative relation with the members 9.

In building up the wall the pair of members 9 may be laid along the floor and locked together with the plates 19 which, when of short length, are preferably positioned so as to extend across the blocks adjacent the joints between them. As each block is placed on these lowermost members 19 a plate 29 is positioned at the end of the block prior to placing the next block in position. When the lower course is laid members 9 are placed at the top of that course and locked together with the plates 19. The operation is then repeated to lay the subsequent courses.

If it is desired to make the wall water and air tight, mastic or any suitable plastic material may be placed on the members 9 and 29 adjacent the inner faces of the flanges 13 and 31, respectively, as the blocks are being laid, or, if desired, the mastic may be so placed as to fill the spaces between the blocks between these flanges.

It will be observed that the members 9 and plates 29 act to finish the joints of the wall, and that as these parts are all locked together and to each block about its four corners, each block is securely held against displacement relative to all the surrounding blocks.

It will of course be understood that the vertical and horizontal bonding means shown may be interchanged and that the "blocks" described may be narrow so as to be in the nature of sheets. The entire wall may be made of the blocks, or the blocks may sheath a separate wall.

The members 9 and 29 conveniently are extruded in long lengths of aluminum or bronze. They may however be formed of materials such as Bakelite, wood, or other poor conductors of heat. The members 19 conveniently are formed of sheet metal by a rolling operation.

It will be understood that within the scope of the appended claims wide deviations may be made from the forms of the invention described without departing from the spirit of the invention.

I claim:

1. A wall or the like having, in combination, adjacent preformed blocks constituting part of said wall, separate longitudinally extending members between said blocks at opposite edges thereof respectively, which members have block-retaining portions cooperating with the exterior surfaces of said blocks, and means interengaging with said members for holding them against separation.

2. A wall or the like having, in combination, adjacent preformed blocks constituting part of said wall, separate longitudinally extending members between said blocks at opposite edges thereof respectively, which members have block-retaining portions cooperating with the exterior surfaces of said blocks, and means positioned between said blocks interengaging with said members for holding them against separation.

3. A wall or the like having, in combination, adjacent preformed blocks constituting part of said wall, separate longitudinally extending members between said blocks at opposite edges thereof respectively, which members have block-retaining portions cooperating with the exterior surfaces of said blocks, a plate-like member positioned between said blocks, said plate-like member at each of opposite edge portions thereof having means interengaging with cooperating means on said longitudinally extending members respectively for holding the latter against separation.

4. A wall or the like having, in combination, adjacent preformed blocks constituting part of said wall, separate longitudinally extending members between said blocks at opposite edges thereof respectively, which members have body portions holding said blocks in spaced relation and are provided with block-retaining flanges cooperating with the exterior surfaces of said blocks, and a separately formed member connecting the first mentioned members for holding them against separation.

5. A wall or the like having, in combination, adjacent preformed blocks constituting part of said wall, separate longitudinally extending members between said blocks at opposite edges thereof respectively, which members have body portions holding said blocks in spaced relation and are provided with block-retaining flanges cooperating with the exterior surfaces of said blocks, and a separately formed plate-like member between said blocks having its opposite edge portions connected to the first mentioned members respectively for holding the latter against separation.

6. A wall or the like having, in combination, adjacent preformed blocks constituting part of said wall, separate longitudinally extending members between said blocks at opposite edges thereof respectively, which members have body portions holding said blocks in spaced relation and are provided with block-retaining flanges cooperating with the exterior surfaces of said blocks, said body portions being provided with longitudinally extending grooves, and a member between said blocks having, at opposite end portions thereof, parts received in said grooves for holding said longitudinally extending members against separation.

7. A wall or the like having, in combination, a pair of rows of adjacent blocks, longitudinally extending members between said rows at opposite edges thereof common to a plurality of blocks,

which members have portions cooperating with the exterior surfaces of said blocks, and means between said rows interengaging with said members for preventing separation thereof.

8. A wall or the like having, in combination, a pair of rows of adjacent blocks, longitudinally extending members between said rows at opposite edges thereof common to a plurality of blocks, which members have portions cooperating with the exterior surfaces of said blocks, and a plurality of spaced means between said rows interengaging with said members for preventing separation thereof.

9. A wall or the like having, in combination, a pair of rows of adjacent blocks, longitudinally extending members between said rows at opposite edges thereof common to a plurality of blocks, which members have portions cooperating with the exterior surfaces of said blocks, and a plate-like member positioned between said rows, which member at each of opposite edge portions thereof has means interengaging with cooperating means on said longitudinally extending members respectively for holding the latter against separation.

10. A wall or the like having, in combination, a pair of rows of adjacent blocks, longitudinally extending members between said rows at opposite edges thereof common to a plurality of blocks, which members have portions cooperating with the exterior surfaces of said blocks, and a plurality of spaced plate-like members positioned between said rows, which members at each of opposite edge portions thereof have means interengaging with cooperating means on said longitudinally extending members respectively for holding the latter against separation.

11. A wall or the like having, in combination, adjacent preformed blocks forming part of said wall, and separate longitudinally extending members between said blocks at the opposite edges thereof holding said blocks in spaced relation and finishing the joints between them.

12. An elongated member for use between the joints of preformed blocks or the like assembled to form a wall comprising a relatively narrow body portion adapted to extend between such blocks at the edges thereof, and, at one edge of said body portion at each of opposite sides thereof, a longitudinally extending block-retaining flange.

13. An elongated member for use between the joints of preformed blocks or the like assembled to form a wall comprising a relatively narrow body portion adapted to extend between such blocks at the edges thereof, and, at one edge of said body portion at each of opposite sides thereof, a longitudinally extending block-retaining flange, said body portion at one side thereof having a longitudinally extending groove adapted to receive a tie member for attachment thereto.

14. A wall or the like having, in combination, adjacent preformed blocks constituting part of said wall, separate longitudinally extending members between said blocks at opposite edges thereof respectively, which members have block-retaining portions cooperating with the exterior surfaces of said blocks, said blocks being formed with shoulder means on the facing surfaces thereof, and means interengaging with said members and with the shoulder means of said blocks for holding said members against relative separation and said blocks in assembled relation.

15. A wall or the like having, in combination, adjacent preformed blocks constituting part of said wall, separate longitudinally extending members between said blocks at opposite edges thereof respectively, which members have block-retaining portions cooperating with the exterior surfaces of said blocks, said blocks being formed with shoulder means on the facing surfaces thereof, and a plate-like member positioned between said blocks, which member at each of opposite edges thereof has means interengaging with cooperating means on said longitudinally extending members respectively and has means interengaging with said shoulder means of said blocks for holding said longitudinally extending members against relative separation and said blocks in assembled relation.

16. A tie member for use in preformed block walls comprising a metal sheet-like article shaped to form a flange at one side thereof at each of opposite edges thereof, and, at an intermediate portion thereof, being shaped to provide a projection for engaging the groove of a grooved block.

17. A wall or the like having, in combination, preformed blocks arranged in vertical and horizontal rows, separate longitudinally extending members between rows of said blocks at the edges thereof having portions cooperating with the adjacent exterior surfaces of the blocks forming such rows for interlocking said rows together, means between the same rows as said members interengaging with the latter for preventing their separation, and means between the blocks forming said rows having portions interlocking with said members and other portions cooperating with the adjacent exterior surfaces of the blocks for locking said blocks together.

18. A wall according to claim 17 in which the blocks have shoulder means on the four faces thereof opposed to other blocks, and said means which interengages with said members between the rows and said means between the blocks forming said rows both have portions cooperating with said shoulder means for interlocking the blocks together.

19. A wall or the like having, in combination, vertical and horizontal rows of blocks, the rows extending in one direction having between them at opposite edges thereof respectively separate longitudinally extending members coextensive with a plurality of blocks, which members space the rows between which they lie and are provided with flanges engaging the exterior surfaces of the blocks forming such rows; flattened members between the same rows having, at each of opposite edges thereof, means interengaging with cooperating means on said members for holding the latter against separation; and, between the blocks forming the last mentioned rows, plate-like members having at opposite edge portions thereof flanges engaging with the exterior surfaces of the blocks, said plate-like members at each end thereof being notched to engage with the first mentioned members.

20. An elongated member, for locking together the blocks of a wall, comprising an elongated plate-like part provided, at each side thereof at opposite edges thereof, with a longitudinally extending flange, which flanges are so formed as to make substantially square corners with the body of said part, and, at an intermediate portion thereof, at each side thereof, being formed with a longitudinally extending raised bead.

21. A wall or the like having, in combination, adjacent preformed blocks constituting part of said wall, said blocks being formed adjacent op-

posed surfaces thereof with spaced oppositely facing shoulder means, separate longitudinally extending members each cooperating with a pair of the adjacent shoulder means presented by a pair of blocks, and means other than said blocks cooperating with said longitudinally extending members for retaining them in operative relation to said shoulder means.

22. A wall or the like having, in combination, adjacent preformed blocks constituting part of said wall, said blocks being formed adjacent opposed surfaces thereof with spaced oppositely facing shoulder means, separate longitudinally extending members each cooperating with a pair of the adjacent shoulder means presented by a pair of blocks, and means between said blocks cooperating with said members for retaining them in operative relation to said shoulder means.

23. A bonding device for a block wall having transversely spaced portions forming shoulders for cooperation with shoulders on the block, and having a plate-like portion between said spaced portions for connecting the latter formed to provide a lateral bead having spaced side walls.

RUSSELL L. HOHL.