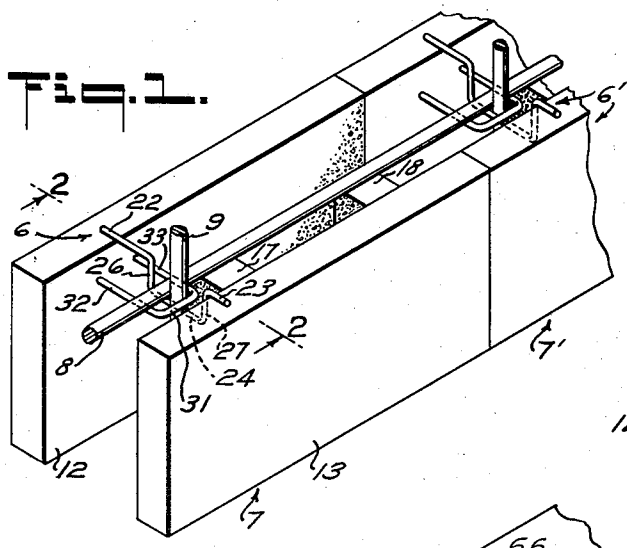
Aug. 25, 1964 I. G. CORNELIUS 3,145,505

REINFORCEMENT ROD POSITIONING AND SUPPORT CLIP

Filed Nov. 30, 1960

Fig. 1.



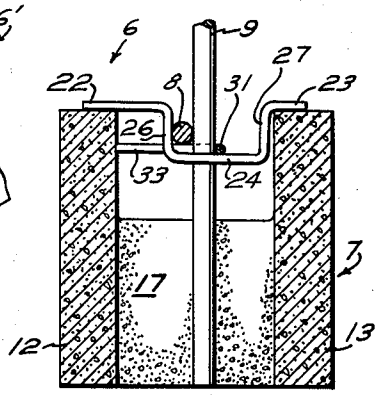


Fig. 2.

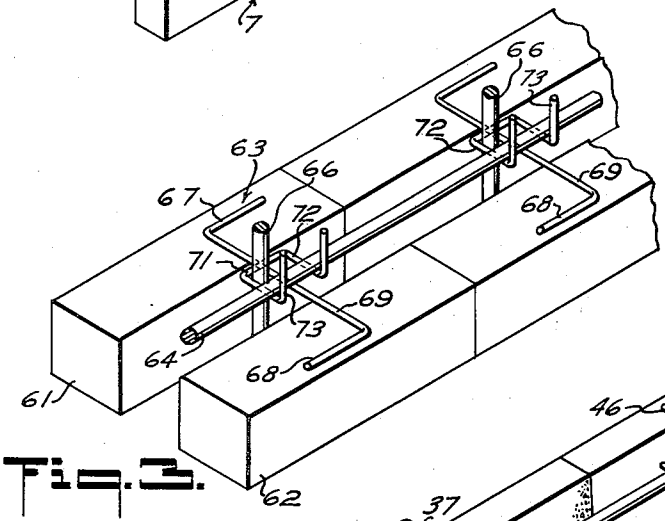


Fig. 3.

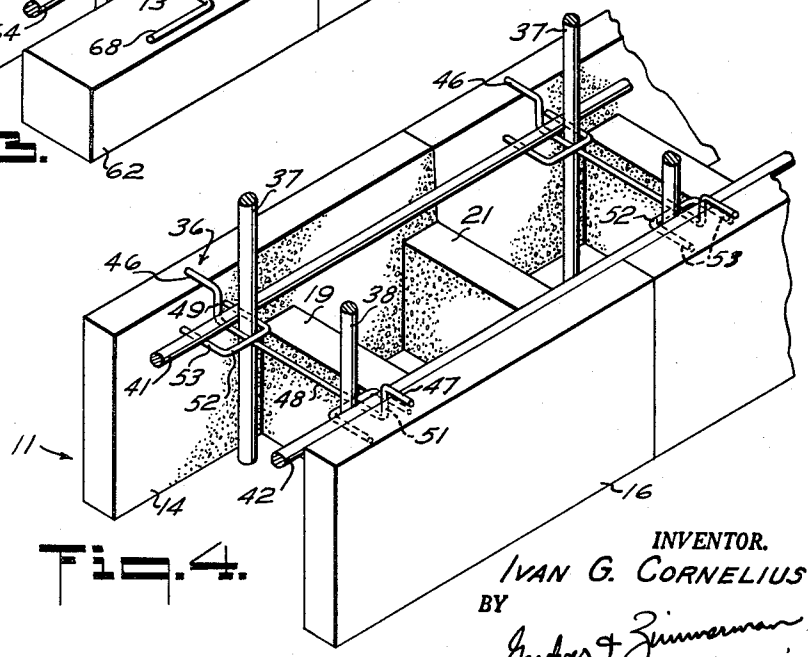


Fig. 4.

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REINFORCEMENT ROD POSITIONING AND SUPPORT CLIP

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4 Claims. (Cl. 50—479)

The present invention relates in general to hollow block wall construction, and is more particularly directed to means for positioning and retaining reinforcement rods within concrete filled block walls prior to and during the pouring of the concrete.

The use of hollow blocks filled with concrete is a well known type of wall construction which provides exceptional strength as well as economical and other advantages. In general, hollow blocks are disposed on top of one another in the conventional manner of masonry.

Rather than achieving primary strength from mortar between the blocks, the hollow blocks after being tiered and stacked, are filled with concrete which communicates generally throughout the wall to provide a substantially integral structure. To provide even further strength, steel reinforcement rods are frequently disposed throughout the concrete filled interior of the wall, extending in both horizontal and vertical directions.

With regard to these steel reinforcement rods, a problem has been encountered in properly positioning them within the concrete filled voids of the blocks. In order that the rods achieve their intended purpose, viz., reinforcement, it is important that they be spaced from the opposed interior surfaces of the blocks and substantially medially thereof. One method which finds general usage is to tie the reinforcement rods together at their points of intersection. This method has the significant disadvantage of being relatively time consuming, thus increasing the labor cost which is already a major expense of construction, and likewise does not insure proper retention of the rods during the pouring of the concrete.

The present invention provides a novel means for properly positioning reinforcement rods within a hollow block wall prior to pouring the cement. Moreover, the invention is relatively inexpensive, and requires substantially no more time to use than it takes to position the rods themselves. Briefly, the invention in general comprises a rigid support member which is disposable across the upper opening of a hollow block. The support member is adapted to receive two rods, one substantially horizontally disposed and the other substantially vertically disposed. The invention then retains these rods in their respective orientations centrally disposed between the interior surfaces of the hollow blocks. A plurality of these support members are employed throughout the wall in a manner to retain relatively long rods both horizontally and vertically disposed and with the rods in general contact at their points of intersection. In like fashion, the rod positioning and supporting member of this invention can be utilized in connection with walls constructed of bricks, wherein concrete is poured between horizontally spaced stacks of bricks, and thus where the term "hollow block" is used, it may equally apply to such brick wall structures.

It is accordingly a primary object of the present invention to provide a simple support means for positioning and retaining reinforcement rods within a hollow block wall prior to and during the pouring of concrete therein.

It is another object of the invention to provide support means for properly positioning and supporting a horizontal reinforcement rod in contiguous relation to a previously positioned vertical rod during erection of a wall structure.

An even further object is to provide a reinforcement rod support means which is simply and quickly applied and actually assists the workman in placing the rods.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawing accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawing and description may be adopted within the scope of the invention as set forth in the claims.

Referring to said drawing:

FIGURE 1 is a perspective view of a preferred embodiment of the invention as employed within a portion of a hollow block wall.

FIGURE 2 is a cross-sectional view through section 2—2 of FIGURE 1.

FIGURE 3 is a perspective view of an alternative embodiment of the invention as employed within a portion of a hollow brick wall.

FIGURE 4 is a perspective view of another embodiment of the invention as employed within a wall composed of hollow blocks similar to those shown in FIGURE 1 but having a larger width.

With general reference now to FIGURES 1 and 2 of the drawing, there is shown a reinforcement rod positioning and support clip 6 supported on the upper edge portion of a hollow block 7. Clip 6, and substantially identical clips 6', etc., are spaced apart along a horizontal row of hollow blocks 7, 7', etc. It is seen that the clip 6 receives and supports a substantially horizontally disposed rod 8 and restrains it from vertically downward movement. Another rod 9, which is substantially vertically disposed, is also engaged by clip 6 in such manner that both rods 8 and 9 are disposed and maintained in contacting intersecting relation.

Before proceeding with a description of the details of the clip construction, it is instructive at this point to more fully describe the block 7. Reference is now also made to FIGURE 4 wherein is shown a block 11 having generally the same structure as block 7, except that block 11 has a greater width. It is seen that block 7 is comprised of a vertical side wall 12 which is parallel to and spaced apart from another side wall 13. Block 11 similarly has a pair of spaced apart vertical side walls 14 and 16. The walls 12 and 13 of block 7 are rigidly connected together by a pair of vertical interior transverse walls 17 and 18, and similarly, the two walls 14 and 16 of block 11 are connected by two interior walls 19 and 21, the walls 18 and 21 being positioned at one end of the respective blocks, and the walls 17 and 19 being spaced inwardly from the other end. The lower edges of walls 17, 18, 19 and 21 are substantially coterminous with the lower edges of the respective side walls while the upper edges thereof terminate medially of the height of the side walls. Although two embodiments of the invention are specifically described herein with regard to the blocks 7 and 11, it will be apparent to those skilled in the art that these blocks are typical of other similar blocks with which the clip of this invention can be readily employed.

Referring again and in more detail to the clip 6, for reasons of economy and simplicity of manufacture, the same is preferably fabricated from substantially rigid wire or small diameter rod, e.g., 3/16 inch. As herein shown the clip is formed from a first generally integral member having axially aligned spaced end portions 22 and 23, the latter being shorter in length than the former. When the clip is operatively positioned on the block 7, these end portions are disposed in a horizontal position and are adapted to be supported on the upper edges of

block walls 12 and 13 respectively. As will be understood, as the wall is being built up, the portions 22 and 23 will be positioned between the upper edges of one tier of blocks and the lower wall edges of the succeeding tier. An intermediate portion 24 of the member is positioned in downwardly spaced parallel relation to end portions 22 and 23 and is secured to the latter by vertically extending portions 26 and 27. The portions 22, 23, 24, 26 and 27 all lie in a common plane transversely of the block 7 when positioned thereon, and as best illustrated in FIGURE 2 define a U-shaped configuration with the portions 22 and 23 extending outwardly from the upper ends thereof. It will also be noted that the vertical portion 27 generally abuts block wall 13, and consequently restricts lateral movement of the clip in one direction, i.e., towards such wall.

A second integral member is provided and is secured to the above described first member to define the entire clip structure. This second member is of U-shaped form and includes a web 31 and a pair of legs 32 and 33 extending from the ends of the web. The web 31 is disposed normally to the intermediate portion 24 and is secured to the central portion thereof by welding or the like with the legs directed towards the end portion 22. The ends of legs 32 and 33 are thus positioned adjacent the block wall 12 and consequently restrains lateral clip movement towards such wall.

With the construction above described, the mode of operation of the clip should be readily understood. As will be appreciated, in the erection of this type of wall structure, the lower tier of blocks are placed on a base of concrete or the like from which the vertical rods 9 extend. The blocks are inserted from an end with the rod 9 disposed in the space between the lateral wall 17 and its adjacent end of the block. When the tier is reached which requires the positioning of a horizontal rod 8, the clip is inserted from the side of the block in such manner that the rod 9 will be positioned between the portion 24 and one of the legs 32 or 33 and against the web 31, and the end portions 22 and 23 of the clip will be seated on the upper edges of walls 12 and 13. The horizontal reinforcing rod 8 may then be laid upon the legs 32 and 33 and between the vertical portion 26 and the rod 9. With this arrangement, the rod 8 is clearly supported and restrained against lateral displacement since it is wedged between the rod 9 and clip portion 26. Preferably, the rods are positioned centrally of walls 12 and 13 and the lowermost portions of the clip are positioned above the upper edges of the transverse walls of the block to provide maximum reinforcement. It will be apparent that where a double curtain, i.e., two closely adjacent vertical rods are utilized the other vertical rod will be positioned on the other side of portion 24 and its adjacent leg 32.

Where rather wide hollow blocks are used, such as the block 11 shown in FIGURE 4, it is often desirable to have a plurality of horizontal and vertical reinforcing rods disposed within the cavity of each such block. In FIGURE 4 there is thus shown a support clip 36 which is adapted to engage two vertical rods 37 and 38 and support and retain two horizontal rods 41 and 42. In most respects, the clip 36 is similar to the clip 6. More specifically, the cooperating rods 37 and 41 are retained in substantially the same manner as are the rods 8 and 9, while the second set of rods 38 and 42 are likewise retained in such manner.

As seen in FIGURE 4, the horizontal rods 41 and 42 are desirably positioned adjacent to but spaced from the respective block walls 14 and 16 with the vertical rods 37 and 38 positioned against the opposed inner surfaces of rods 41 and 42 at any desired spacing along the length of the tier of blocks. To provide for the foregoing, the clip constitutes a first member having aligned end portions 46 and 47 adapted to seat upon the upper edges of

block walls 14 and 16, an intermediate downwardly offset portion 48 parallel to portions 46 and 47, and vertical portions 49 and 51 interconnecting the ends of portion 48 to the end portions. Adjacent each end of the member there is provided a U-shaped member having a web 52 and legs 53, similar to the web 31 and legs 32 and 33 of the clip previously described. The webs 52 are welded or otherwise secured to portion 48 with the legs directed towards the respective walls, the ends of the legs serving as stop members limiting lateral displacement of the clip on the block.

In use, the horizontal rods 41 and 42 are supported on the legs 53 and sandwiched between the vertical clip portions 49 and 51 and the respective vertical rods 37 and 38. The vertical rods are again positioned relative to the clip so as to be engaged by portion 48 and one of the legs, and against the web.

Another type of wall structure very similar to that utilizing hollow blocks is formed from a pair of transversely spaced walls of brick, filled with concrete subsequently poured between them. Such a wall is also increased in strength by the use of reinforcement rods and hence another embodiment of a clip utilizing the principles of this invention can be employed to retain the rods. Referring now to FIGURE 3 of the drawing, there is seen a pair of bricks 61 and 62 which are spaced apart and form the respective side portions of laterally spaced walls. A clip 63 disposed on bricks 61 and 62 is seen to engage a vertical rod 66 and support and retain a horizontally disposed rod 64 in contiguous relation thereto.

In this embodiment, a first member of the clip is of generally Z-shaped configuration, with the ends 67 and 68 extending longitudinally of and supported on the upper surfaces of bricks 61 and 62. An intermediate portion 69 connects the ends together into an integral form. Secured medially to portion 69 by welding or the like is the web 71 of a second member having legs 72 positioned in parallel relation on opposite sides of portion 69 and upstanding extensions 73 at the ends of the legs. With the ends of portion 69 and the ends 67 and 68 seated as above mentioned, the horizontal rod 64 is supported on the legs 72 and against the extensions 73, while the vertical rod 66 passes through the space defined by web 71, leg 72, portion 69 and the horizontal rod. Since the opposed side walls in this embodiment do not have lateral connections, blow-outs frequently occur during the setting of the concrete but by means of the end portions 67 and 68 of the clip which are of course embedded in mortar placed between successive tiers of bricks, additional lateral reinforcement is provided.

In all of the described embodiments, it will be appreciated that the clips may be simply laid in position, and when the horizontal and vertical rods are positioned thereon, they will be interconnected against relative displacement at their points of intersection as well as being properly located relative to the walls.

What is claimed is:

1. A substantially unitary clip comprising a rod-like member having coplanar end portions adapted to be seated upon laterally spaced horizontal wall surfaces and an intermediate portion adapted to horizontally traverse such walls, a first rod-like element extending from said intermediate portion generally coplanar therewith, a rod-like stop element spaced from said first element along the length of said intermediate portion and disposed on said member generally normal to the plane defined by said first element and said intermediate portion, and a leg extending from the end of said first element towards said stop element in parallel spaced relation to said intermediate portion and coplanar therewith, said leg extending beyond said stop element and terminating at a point short of the end of the adjacent end portion.

2. A clip for engaging a vertical reinforcing rod and for supporting and retaining a horizontal reinforcing rod

against said vertical rod and between wall surfaces, comprising a first rod-like member having axially aligned opposed end portions adapted to be seated on the upper edges of said surfaces and a downwardly offset intermediate portion, a U-shaped clip traversing said intermediate portion and having legs parallel to and spaced from said intermediate portion, said legs each extending beyond said intermediate portion and terminating at a point short of the end of the adjacent end portion.

3. A clip for supporting and retaining vertical and horizontal reinforcing rods between spaced wall surfaces comprising a first rod-like member having axially aligned opposed end portions adapted to be seated on the upper edges of said surfaces, said member having an intermediate portion bent normally at the ends thereof, said bent ends of said intermediate portion joining said end portions, and a pair of U-shaped members having webs secured to and traversing said intermediate portion adjacent the ends thereof and legs directed towards the adjacent of said end portions, said legs extending beyond said intermediate portion and terminating at a point short of the end of the adjacent end portion.

4. A clip of the character described comprising a rod-like member having opposed aligned end portions adapted for seating on spaced coplanar horizontal surfaces, said member having an offset intermediate portion disposed in a plane parallel to that of said end portions and a pair

of spaced elements disposed adjacent the ends of said intermediate portion connecting the latter with the respective end portions, said elements being disposed generally perpendicular to said intermediate portion and end portions, and a second U-shaped rod-like member secured adjacent its intermediate portion to the intermediate portion of said first member and having a pair of spaced leg portions disposed generally parallel to the intermediate portion of said first member, said leg portions extending longitudinally beyond one of said elements and terminating at points longitudinally short of the end of said end portion corresponding to said one element.

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