Nov. 10, 1942. C. HELTNESS 2,301,178

WALL ANCHOR

Filed June 7, 1940

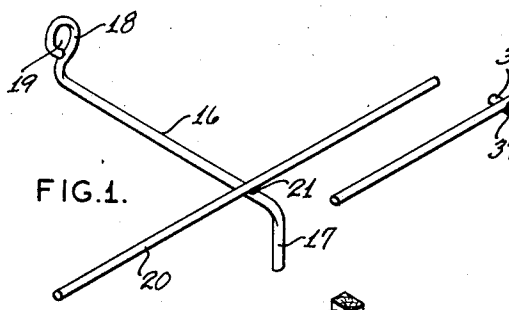


FIG. 1.

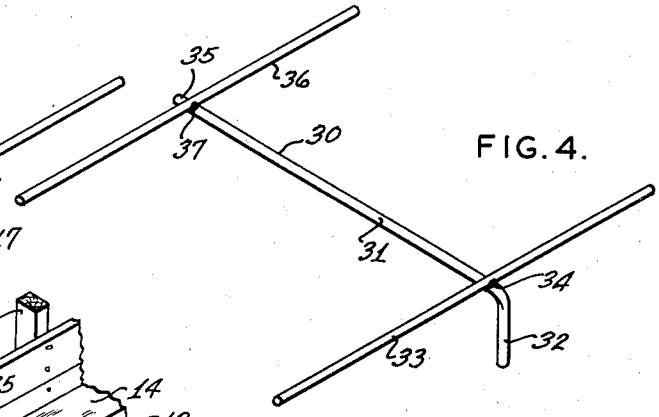


FIG. 4.

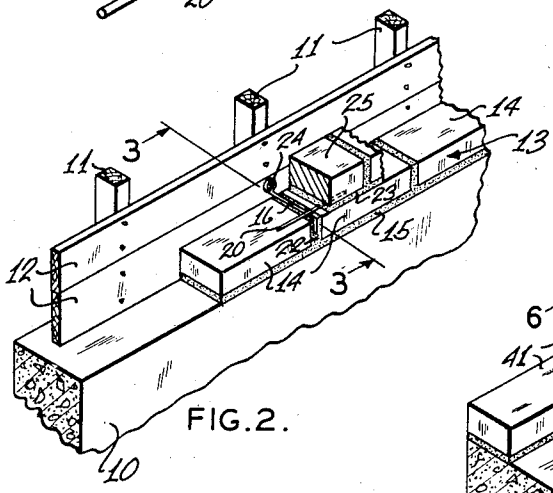


FIG. 2.

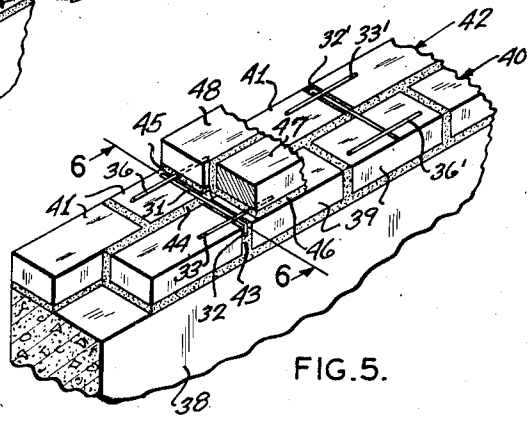


FIG. 5.

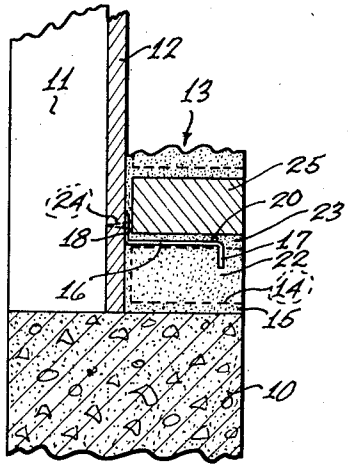


FIG. 3.

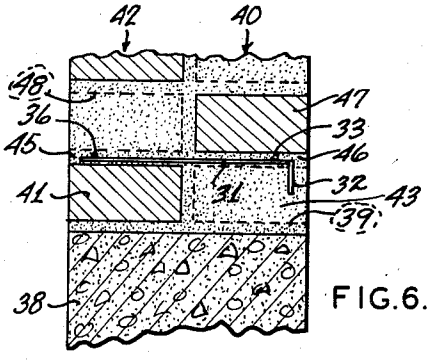


FIG. 6.

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WALL ANCHOR

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4 Claims. (Cl. 72—103)

This invention relates to improvements in anchors or wall-ties for block walls of brick, stone or the like, and has particular reference to an improved anchor which is constructed of connected or integrally joined wire or rod sections, providing in assembly a unitary device for the purpose indicated.

An object of the invention resides in the provision of an improved anchor for the purpose described, which is constructed of wire or rod sections joined in assembly to form a unitary device, and which is markedly superior in its effectiveness and wall-holding power, to existing and prevailing wall anchors.

A further object is to provide an improved wall-tie or anchor for the purpose described, which is characterized by simplicity, economy of manufacture, and a ready and easy application to wall structures of brick or stone.

Other objects and advantages of my invention will appear readily from the following description of preferred embodiments of the improved wall tie or anchor, as illustrated by the accompanying drawing, in which:

Fig. 1 is an assembly elevation in perspective, of one form of wall anchor embodying the improvements of the present invention; Fig. 2 is a fragmentary elevation in perspective, of a wall structure illustrating the application thereto, of the anchor shown by Fig. 1; Fig. 3 is an enlarged sectional elevation as taken transversely through the wall structure of Fig. 2 and along the line 3—3 thereof, further illustrating the application of the improved anchor thereto; Fig. 4 is an assembly elevation in perspective, of another form of my improved anchor; Fig. 5 is a fragmentary elevation in perspective, of a wall structure, showing the manner of applying the anchor of Fig. 4 to the same, and Fig. 6 is an enlarged sectional elevation transversely through the wall of of Fig. 5, as viewed from line 6—6 thereof, further illustrating the anchor of Fig. 4 as applied thereto.

Referring to the drawing by suitable characters of reference, the improved anchor of Fig. 1 is particularly adapted for use in connection with brick walls of the single course type, as shown by Fig. 2, wherein 10 indicates a foundation structure or wall base of concrete or other construction, 11 the vertical inner wall frame members or studding, 12 the siding boards, and 13 the single course of bricks 14. The brick course 13 providing the outer wall face, may be constructed in the usual manner, as by laying the bricks 14 in suitable brick-mortar, indicated at 15; with the bricks arranged in a vertically staggered relation according to the prevailing practice.

As shown by Fig. 1, the anchor as adapted for use in a single course brick wall, comprises a rectilinear member 16 of a predetermined length, formed from suitable gauge wire stock and shaped in any well known manner, to provide a terminal prong 17 at one end of the member, and an anchor securing lug or eye element 18 at the opposite end thereof. The prong 17 projects laterally of and substantially normal to the member 16, while the eye element 18 projects laterally of the member and preferably, oppositely relative to the prong 17, with the eye portion 19 of the element disposed to lie in a plane normal to the member 16. Arranged to extend transversely of the member 16, is a second member 20 of substantial rectilinear extent, which may be formed from wire stock of a gauge corresponding substantially to that of the wire member 16. The member 20 is secured at a point intermediate its ends, to the member 16 inwardly adjacent the prong 17 and on the side of member 16 opposite the prong, the securement being effected in the present example, by spot-welding as at 21. As indicated by the drawing, the member 20 is arranged such that it is substantially normal to both the member 16 and the prong 17.

In the application of the anchor as illustrated by Figs. 2 and 3, it is set and pressed into the brick mortar in the course of laying the bricks, such that the prong 17 projects downwardly in the joint mortar 22 between horizontally adjacent bricks 14, with the member 16 disposed horizontally and transversely of the bricks, in the upper portion of the joint mortar 22. The transverse member 20 being on the upper or top side of member 16, is thus disposed longitudinally over the adjacent bricks (Fig. 2) and is in turn, embedded in the layer mortar 23 placed on top of the bricks. According to the present example, it is preferred to predetermine the dimensions and assembly arrangement of the anchor parts with regard to the usual size of bricks commonly employed in brick wall constructions, such that in the placement of the anchor, the prong 17 and member 20 will be disposed inwardly adjacent the outer margins of the bricks 14, as appears in Fig. 2, while the anchor eye element 18 projects inwardly beyond the inner faces of the bricks to facilitate securement or attachment of the anchor to the adjacent siding 12. As shown by Fig. 3, a screw, brad or the like, indicated at 24, is extended through the eye 19 and entered into the siding 12, so that through the anchor,

the brick wall section affected thereby, is firmly and effectively anchored to the siding.

As appears in Fig. 3, the brick 25 in the line of bricks next above the anchor shown, will overlie the anchor by reason of its staggered relation to the adjacent, underlying bricks 14. Thus in the laying of the brick 25, the anchor member 20 will be thereby effectively set or embedded in the surrounding layer mortar 23 between the bricks 14 and 25.

From the foregoing, it now will be observed that the improved anchor as adapted for single course brick walls, provides a device for the purpose described, which may be readily and easily applied to the brick wall in the position hereinabove described. Moreover, by reason of the construction and arrangement of its parts, the anchor when embedded in the brick mortar in the position shown, effects a highly desirable distribution of the holding or anchoring pressure exerted thereby, throughout the brick layer and joint mortar sections 23 and 22 in the zone of the anchor. With respect to this feature, as well as to the general effectiveness and holding power of the anchor, it is markedly superior to prevailing wall ties as provided for a similar purpose.

It will be understood, of course, that a plurality of the improved anchors are to be employed throughout the single course wall structure, in order to assure a positive anchoring of the entire wall. Further, the relative spacing of the anchors, both horizontally and vertically throughout the brick wall, may be predetermined for a given wall construction, or may be adapted to particular conditions existing at the time of, or occurring during the construction of the wall.

Referring to Figs. 4, 5 and 6, there is shown an anchor 30 of form similar to that of Fig. 1, but modified in certain respects, to adapt the same for use in brick walls of the double course type. The modified anchor as in the anchor of Fig. 1, is constructed of suitable gauge wire sections, and includes a rectilinear member or bar 31 of substantial length, formed at one end to provide a prong 32. Extending transversely of the member 31 is a second rectilinear member 33, secured intermediate its ends, to the bar 31 at a point inwardly adjacent the prong 32 and on the upper or opposite side of the bar. The securement may be effected by welding, as at 34, or in any other suitable manner. The relative relations of the members 31, 33 and the prong 32, may be and preferably correspond to the same obtaining in the anchor of Fig. 1, as this will appear by comparing the anchors shown by Figs. 1 and 4.

Arranged inwardly adjacent the opposite end 35 of member 31, is a third member 36. The member 36 extends substantially parallel to the member 33, and hence normal to the bar 31, and is secured intermediate its ends, to the bar 31 by welding at 37. The bar or member 36 as shown, may correspond in length to the member 33, and is located on the same side of the bar 31.

Fig. 5 illustrates the application of the modified anchor to a two-course brick wall based on a concrete or other foundation support 38. According to prevailing practice, the bricks 39 of the outer or face course 40, are horizontally staggered relative to the bricks 41 of the inner course 42, while the bricks in each course are vertically staggered, as indicated by Fig. 6. In applying the anchors to the two-course wall, one thereof is arranged as shown in Figs. 5 and 6, such that the prong 32 projects downwardly in the joint mortar 43 between the ends of adjacent bricks 39 of the outer course 40, while the member or bar 31 extends horizontally and laterally of the wall, through the upper portion of the joint mortar 43 and the mortar 44 between the brick courses, and over the central upper surface of the adjacent brick 41 in the inner course. The portion of the bar 31 overlying the brick 41 as described, and the anchor member 36 are embedded in the layer mortar 45 on top of the brick 41, while the anchor member 33 is similarly embedded in the layer mortar 46 on top of the adjacent bricks 39 in the outer course. Further, in the vertical continuation of the wall, the member 33 will have immediately overlying the same, a single brick 47 of the outer course, while immediately overlying the member 36 will be the adjacent ends of bricks 48 in the inner course, one such brick being shown in outline in Fig. 6.

As clearly appears in Figs. 5 and 6, the dimensions and relative locations of the several elements comprising the improved anchor 30, are by preference, such that in assembly to the wall structure, the prong 32 and member 33 are disposed inwardly adjacent the face of the outer course 40, while the member 36 at the opposite end of the anchor, is disposed inwardly adjacent the face of the inner course 42.

Another one of the anchors, as the next adjacent anchor 30' shown in Fig. 5 may be applied to the wall structure in a relatively reversed position, such that the prong 32' and member 33' appear in the inner wall course 42 and the member 36' in the outer course 40. Thus, the anchors may be relatively reversed throughout the wall structure, according to the relative horizontal and vertical spacing thereof.

It will be observed now, that the modified anchor 30 serves to anchor one wall course to the other, and to securely tie both courses together in a highly effective manner. Although it is not necessary to the effective anchoring of the two-course wall, that the anchors be applied in relatively reversed positions as shown, the adaptation of the anchors for such preferred arrangement thereby enables the attainment of a more secure anchoring connection of the wall courses, and also, facilitates a ready adaptability of the anchor to particular conditions occurring during construction of the wall.

The general effectiveness, pressure distribution and holding power characteristics of both forms of my improved wall anchor, are similar in all major respects. While I have illustrated but a single preferred embodiment of each, it is to be understood that alterations or modifications in the construction and arrangement of the parts of each form of anchor may be readily effected without departing from the full scope and intendment of the invention.

I claim:

1. In combination with a brick or stone wall facing and a backing therefor, the brick or stone wall elements being bound in assembly by cementitious material, anchoring means for said wall facing, comprising a rectilinear member arranged transversely of the wall and including a down-turned prong at one end, said member and prong being embedded in the cementitious material between the opposed ends of an adjacent pair of wall elements, means securing the opposite end of said member to said backing, and a second rectilinear member arranged normal to and extending horizontally over the first

said member and being rigidly secured to the latter member, said second member being embedded in the cementitious material between vertically adjacent wall elements in the zone of the anchoring means.

2. In combination with a frame structure and a brick or stone wall facing for said frame, wherein the brick or stone elements are held in assembly by cementitious material, anchoring means for said wall facing, comprising a rod arranged horizontally and transversely of the wall and including a down-turned prong at one end, said rod and prong being embedded in the cementitious material between the opposed ends of an adjacent pair of wall elements, means securing the opposite end of said rod to said frame, and a second rod arranged normal to and extending over the first said rod and rigidly secured to the latter rod, said second rod being embedded in the cementitious material between vertically adjacent wall elements in the zone of the anchoring means.

3. In combination with a brick or stone wall having at least two contiguous wall courses and wherein the brick or stone wall elements thereof are bound in assembly by cementitious material, anchoring means for said wall, comprising a rectilinear member arranged horizontally and transversely of the wall, and including a down-turned prong at one end, a portion of said member and said prong being embedded in the cementitious material between the opposed ends of an adjacent pair of wall elements in one course, the remainder of said member being embedded in the cementitious material of the other wall course, and a second rectilinear member arranged normal to and extending horizontally over the first said member and being rigidly secured thereto, said second member being embedded in the cementitious material between vertically adjacent wall elements of said one wall course.

4. In combination with a brick or stone wall having at least two contiguous wall courses and wherein the brick or stone wall elements thereof are bound in assembly by cementitious material, anchoring means for said wall, comprising a rectilinear member arranged horizontally and transversely of the wall, and including a down-turned prong at one end, a portion of said member and said prong being embedded in the cementitious material between the opposed ends of an adjacent pair of wall elements in one course, the remainder of said member being embedded in the cementitious material of the other wall course, an element secured to said member near its opposite end and embedded in the cementitious material of said other wall course, and a second rectilinear member arranged normal to and extending horizontally over the first said member and being rigidly secured thereto, said second member being embedded in the cementitious material between vertically adjacent wall elements of said one wall course.

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