Dec. 4, 1962 H. W. PETTY 3,066,451

MASONRY WALL JOINT AND COVER THEREFOR

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Fig. 1.

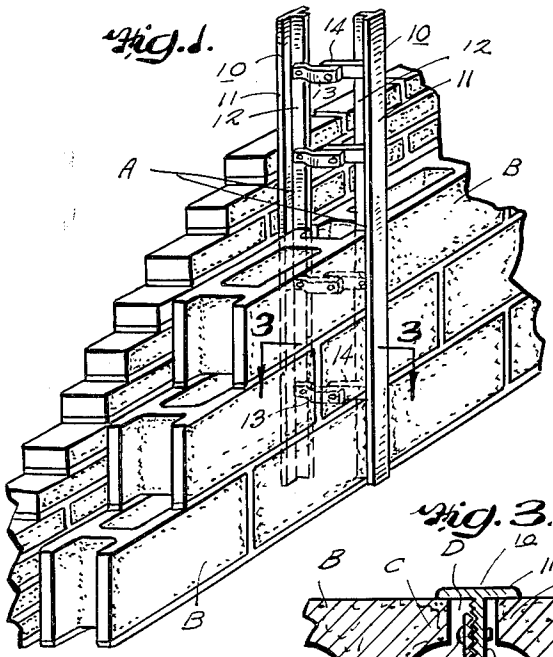


Fig. 4.

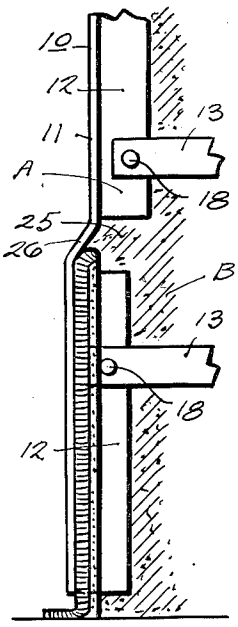


Fig. 3.

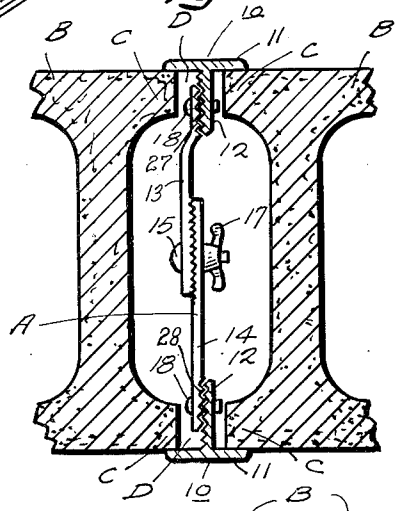


Fig. 5.

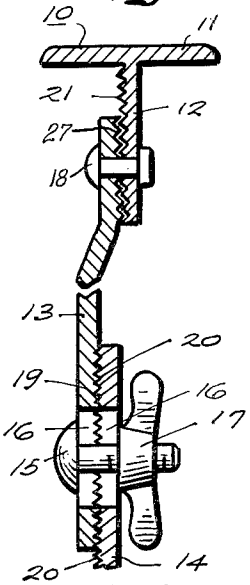
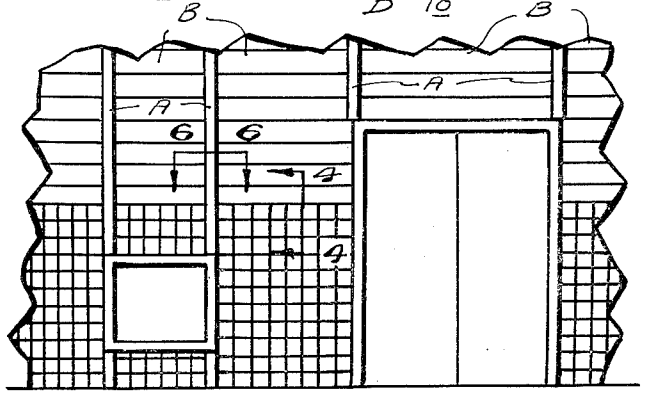


Fig. 2.



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Fig. 6.

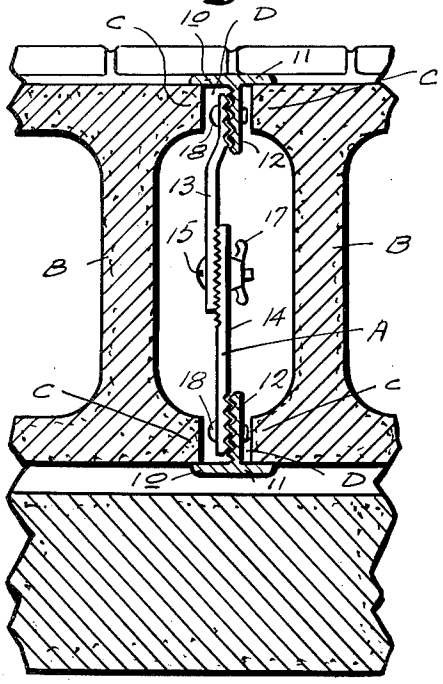


Fig. 7.

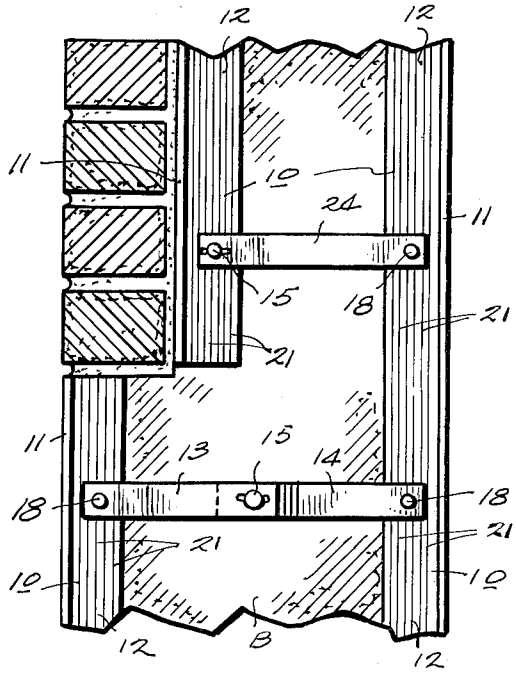
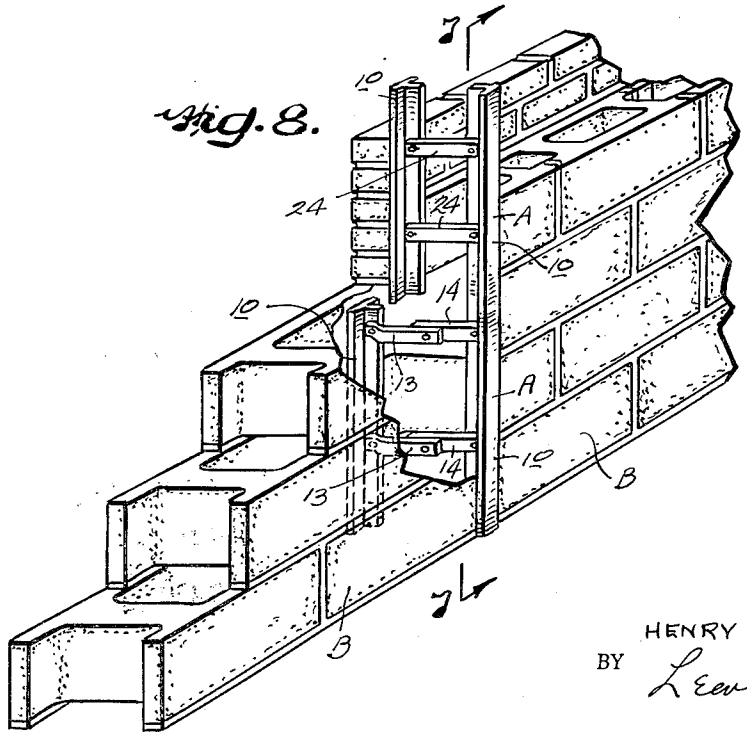


Fig. 8.



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MASONRY WALL JOINT AND COVER THEREFOR

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7 Claims. (Cl. 50—212)

This invention relates generally to means for constructing joints between adjoining sections of building walls, and more particularly to improved means for covering such joints and thereby enhancing the appearance of the wall.

A principal object of the present invention is to provide a frame structure unit adapted for use in both vertically and horizontally extending joints and which, while allowing some movement of the wall sections in a direction parallel to the wall, effectively secures the wall sections against movement laterally relative to one another.

Another principal object of the present invention is to provide such a frame structure unit which may be conveniently utilized to construct a masonry wall in a series of attractively arranged panels, whereby shrinkage cracks are controlled to a point where the exposed masonry may present an attractive appearance, thus eliminating the necessity for plastering and painting the wall.

Other objects and advantages of the present invention will appear more fully hereinafter, it being understood that the present invention consists substantially in the combination, construction, location and relative arrangement of parts, as more fully described hereinafter, as shown in the accompanying drawings and as finally pointed out in the appended claims.

In the accompanying drawings:

FIGURE 1 is a perspective view of a masonry wall illustrating the use of an exemplary frame structure unit constructed in accordance with and embodying the principles of the present invention.

FIGURE 2 is an elevation of a masonry wall having door and other openings and illustrating the use of the frame structure units of the present invention in vertically extending joints between adjoining wall sections.

FIGURE 3 is an enlarged section on line 3—3 of FIGURE 1, the brick facing of the wall being omitted.

FIGURE 4 is an enlarged vertical section on line 4—4 of FIGURE 2.

FIGURE 5 is an enlarged partial transverse section of the frame structure unit of the present invention.

FIGURE 6 is an enlarged horizontal section on line 6—6 of FIGURE 2.

FIGURE 7 is an enlarged vertical section on line 7—7 of FIGURE 8.

FIGURE 8 is a perspective view illustrating the use of the frame structure units of the present invention in a masonry wall of uniform thickness and partially faced with brick on one side.

Referring to the drawings, and particularly to FIGURES 1, 3, 5 and 7, the exemplary structure constructed in accordance with and embodying the principles of the present invention includes a pair of elongated rigid members 10—10 of uniform T-shape in transverse section. These members 10—10 are disposed in laterally spaced parallel relation, the head or flange parts, designated 11—11, being disposed respectively in laterally spaced parallel planes, and the stem or web parts, designated 12—12, being disposed in coplanar relation.

For tying the T-shaped members 10—10 together, the structure is provided with a plurality of elongated rigid members that are located at convenient intervals along the length of the structure. Each tie member includes a pair of flat bar parts 13 and 14 that conjointly bridge

corresponding portions of the members 10—10. The bars 13 and 14 are disposed in longitudinal continuation of one another with meeting end portions in side abutting overlapping relation and secured together by a bolt 15 that is projected through elongated openings or slots 16—16 formed respectively in the members 13 and 14, and which is drawn tight through the medium of a wing nut 17. Each opposite terminal portion of the tie member is disposed in side abutting overlapping relation to the web 12 of the associated T-shaped member 10, being secured thereto by a rivet 18.

Each of the confronting surface areas of the overlapping meeting ends of the tie bars 13 and 14 is provided with a series of serrations that extend transversely thereof, the serrations of the member 13, designated 19, and the serrations of the member 14, designated 20, being closely internested and operative conjointly with the bolt 15 for securing the tie member against axial shifting movement of the bars 13 and 14 relative to one another. Each end of the tie bars 13 and 14 which engages the web 12 of a T-shaped member 10 is also provided with a series of serrations that extend transversely thereof. The serrations of the member 13, designated 27, and the serrations of the member 14, designated 28, closely internest with the serrations 21 on the web 12 of the T-shaped member 10 and thereby, when secured by the rivets 18, prevent shifting movement of the tie bars 13 and 14 relative to the web 12.

Referring particularly to FIGURES 7 and 8, in lieu of the sectional tie member illustrated in FIGURES 1, 3 and 5, the structure may be provided with tie members each consisting of a single bar 24 essentially the same in every respect to the tie member bar 13 described hereinbefore. In this case the slotted end portion of the bar 24 is connected directly to the web of the associated T-shaped member by the bolt 15 and wing nut 17, as shown.

Referring particularly to FIGURES 1, 2 and 8, in the construction of masonry walls, units of the frame structure of the present invention, designated A, may be utilized to facilitate formation of vertically extending construction joints. First the units are adjusted to the size of the desired wall. This is effected through the medium of the tie members, which are adjusted to an effective length that affords a suitable clear distance between the flanges 11—11 of the T-shaped members 10—10, depending upon the thickness of the wall desired. Then the units are erected at selected locations where construction joints are desired, being temporarily supported in any suitable manner. Now a section of the masonry wall designated B, is built up between each successive pair of the units A.

Referring particularly to FIGURES 3 and 6, on each side of each unit A the associated vertically extending end portion of the masonry wall section, designated C, extends into the unit and nests snugly between the flanges 11—11, and close up to the webs 12—12, of the T-shaped members 10—10, in consequence of which the webs 12—12 of the T-shaped members and the tie members are disposed within the vertically extending break between adjoining wall sections B—B, which break, designated D, is covered and completely concealed from view by the flanges 11—11 respectively on opposite sides of the wall, as shown.

The frame structure of the present invention may be utilized with equal facility to form horizontally extending construction joints. A masonry wall section is built up to a desired height. Then a unit of the frame structure, adjusted to the thickness of the wall, is fitted over the top of the wall section. Now a second wall section is built upon the first frame structure unit and capped with a second frame structure unit, etc., until the desired

height is attained. The webs 12—12 of the T-shaped members and the tie members are disposed within the horizontally extending break between adjoining wall section, which break is covered and completely concealed from view by the flanges 11—11 respectively on opposite sides of the wall, in the same manner as described hereinbefore in the case of vertically extending breaks in masonry walls.

If desired, both vertically and horizontally extending frame structure units may be incorporated in the same wall to advantage, whereby to subdivide the wall into rectangular panels arranged in an attractive pattern.

It will be appreciated that wall cracks that normally develop in masonry walls due to shrinkage of the material and expansion and contraction due to temperature changes are effectively controlled by the liberal use of the frame structure units of the present invention, in consequence of which the appearance of the masonry is enhanced, and it can be exposed to view without being plastered, painted or otherwise dressed, which of course makes for economy of construction.

Wherever a frame structure unit of the present invention is utilized, the ends of walls built into opposite sides thereof are free to shift somewhat relative to the unit in a direction parallel to the wall, but the unit is operative to secure said wall ends against becoming misaligned by shifting laterally relative to one another. Thus, in addition to affording a wall that is more attractive and economical to construct, these frame structure units afford a wall that is effectively reinforced against bulging. Certain other advantages are inherent in the frame structure units of the present invention.

For example, such units may be used to advantage over the tops and/or bottoms of door and other openings in the wall, as best shown in FIGURE 2, to prevent the development of cracks that normally appear in these areas. Such units may be made to follow irregular wall contours. For example, as best shown in FIGURES 2 and 4, where a wall, otherwise uniform in thickness, is provided with facing or any other outward projection on one side thereof, a section of the web of the T-shaped member on the side of the wall provided with the facing or projection may be cut out, as at 25, and the portion of the flange opposite the cut out, designated 26, may then be fitted to the irregular contour. Then the tie members above and below the top of the cut out are adjusted to the different wall thicknesses.

While the frame structure units of the present invention preferably are made of suitable metals, such as aluminum, bronze, brass, steel, etc., it will be understood that other materials, for example, plastic materials, may be found suitable, depending upon the particular application.

It will be understood, of course, that the present invention is susceptible to various changes and modifications which may be made from time to time without departing from the real spirit or general principles thereof, and accordingly it is intended to claim the same broadly, as well as specifically, as indicated by the appended claims.

What is claimed as new and useful is:

1. An open frame structure for use in securing together individual sections of masonry walls comprising a pair of rigid elongated members of uniform T-shape in transverse section disposed in laterally spaced parallel relation to one another respectively upon opposite sides of said frame structure, with the flange parts of said members disposed respectively in laterally spaced parallel planes and the web parts of said members extending inwardly respectively from said flanges toward one another, and a plurality of rigid elongated tie members bridging between and having opposite terminal ends secured to the facing web parts of said T-shaped members, said tie members being disposed laterally in longitudinally spaced parallel relation to one another at intervals along the length of the web parts, each of said tie members including a pair of parts having end portions disposed in end-overlapped lateral continuation of one another and having a bolt and slot type connection between the overlapped end portions whereby the effective length of each of each tie member may be independently varied, the interior spacing between the flanges of said elongated members being adjusted by said tie members to correspond to the thickness of the masonry wall sections, the wall sections faces at the ends thereof being thereby adaptable for clamping between the flanges of said elongated members, whereby a pair of adjacent wall sections endwise aligned with their corresponding faces in common planes are fixedly securable in such alignment by said frame structure but are non-fixedly securable for wall section movement in directions parallel to said common planes.

2. An open frame structure as defined in claim 1 wherein the confronting surface areas of the overlapping tie member end portions are provided with internested serrations extending transversely of said parts.

3. An open frame structure as defined in claim 1 wherein each of the opposite terminal ends of the tie member is disposed in side abutting overlapping relation to the web part of the associated T-shaped member, and the confronting surface areas of the overlapping end portions of each tie member and of each tie member terminal end and the web part of the associated T-shaped member are provided with internested serrations extending lengthwise of said frame structure.

4. In a masonry structure of the character described comprising, in combination, a pair of vertically standing masonry wall sections in spaced-apart endwise alignment with corresponding wall faces in common planes, a pair of elongated members of T-shape in transverse section disposed with their web portions projecting toward each other between the spaced-apart ends of said wall sections and with their flange portions overlying and bearing against the corresponding faces of said endwise aligned wall sections to reinforce said wall sections and cover the end space therebetween while allowing for shifting movement of said wall sections relative to said T-shaped members in the plane of the wall faces, the web portions of said T-shaped members being interconnected at spaced points along the length thereof by parallel independently adjustable tie member assemblies secured to and extending therebetween, each such tie member assembly including relatively shiftable parts laterally changing the spacing between the T-shaped members and lockable to one another in any relatively shifted position, said parts being connected to the web portions of said T-shaped members to thereby permit selective adjustment of the spacing between said T-shaped members at each tie member assembly location, each said wall section having contiguous vertically positioned wall areas of different thickness but wherein correspondingly located wall areas in both wall sections are of the same thickness, and at least one of said T-shaped members is provided with a cut-out web region to facilitate crumping the flange area associated therewith to conform to the wall face where the wall thickness changes.

5. In a masonry structure of the character described comprising, in combination, a pair of vertically standing masonry wall sections in spaced-apart endwise alignment with corresponding wall faces in common planes, a pair of elongated members of T-shape in transverse section disposed with their web portions projecting toward each other between the spaced-apart ends of said wall sections and with their flange portions overlying and bearing against the corresponding faces of said endwise aligned wall sections to reinforce said wall sections and cover the end space therebetween while allowing for shifting movement of said wall sections relative to said T-shaped members in the plane of the wall faces, the web portions of said T-shaped members being interconnected at spaced points along the length thereof by parallel independently adjustable tie member assemblies secured to and extending therebetween, each such time member assembly including relatively shiftable parts laterally changing the spacing be-

tween the T-shaped members and lockable to one another in any relatively shifted position, said parts being connected to the web portions of said T-shaped members to thereby permit selective adjustment of the spacing between said T-shaped members at each tie member assembly location, each said wall section having contiguous vertically positioned wall areas of different thickness but wherein correspondingly located wall areas in both wall sections are of the same thickness, and at least one of said T-shaped members is transversely cut into lengths corresponding to the extent and number of wall areas of different thickness in each wall section, each such cut length being secured to the other of said pair of T-shaped members by the tie members as aforesaid to cover the endspace between said wall sections throughout the vertical extent thereof regardless of wall area thickness.

6. An open frame structure as defined in claim 1 wherein the terminal ends of said tie members are each connected to the web parts of the T-shaped members by a fastener element projected through said terminal ends and web parts, and internested formations on confronting surface areas of said terminal ends and web parts operate conjointly with said fastener element to secure said tie members and web parts against movement relative to one another.

7. A masonry wall structure, comprising in combination, a pair of vertically standing masonry wall sections in spaced apart endwise alignment with corresponding wall faces in common planes, each such wall section being progressively built up of horizontal courses of masonry blocks bonded together so that the unbonded ends of the terminal blocks in all courses of each wall section are in substantially vertical alignment, a pair of elongated solid members of T shape in transverse section disposed with their solid web portions projecting toward each other between the spaced-apart unbonded facing ends of the terminal blocks of said pair of wall sections and with the flanges of their solid head portions overlying and bearing against the corresponding faces of said endwise aligned wall sections to reinforce said wall sections and cover the end space therebetween while allowing for shifting movement of said wall sections relative to said T-shaped members in the plane of the wall faces, the web portions of said

T-shaped members being interconnected at spaced points along the length thereof by parallel independently adjustable tie member assemblies secured to and extending therebetween, each such tie member assembly including relatively shiftable parts laterally changing the spacing between the T-shaped members and lockable to one another in any relatively shifted position, said parts being connected to the web portions of said T-shaped members to thereby permit selective adjustment of the spacing between said T-shaped members at each tie member assembly location, said tie member assemblies being successively individually adjusted as the courses of the wall sections are built up to each point where an assembly is secured between the webs to thereby move the flanges of the T-shaped members toward one another and clamp the faces of the wall sections therebetween, said tie member assemblies being thereafter concealed completely from external view between the wall sections as the latter are built up therebeyond because of the outwardly overlying solid head portions of the T-shaped members.

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