

June 27, 1933.

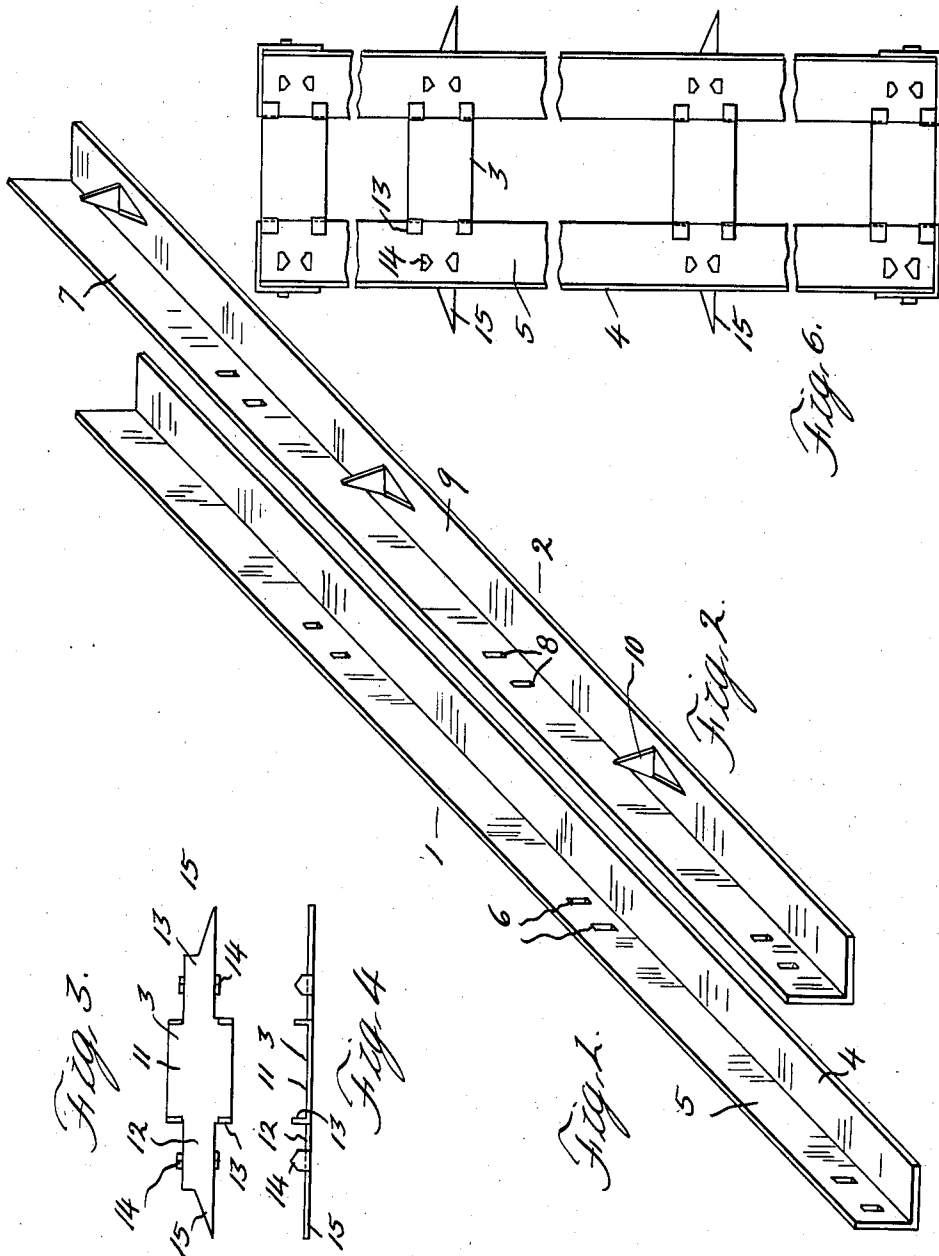
C. A. ROBINSON

1,915,697

STRUCTURAL MEMBER

Filed April 29, 1929

2 Sheets-Sheet 1



INVENTOR

Claude A. Robinson

BY

Whittmore Hulbert

Whittmore Hulbert

ATTORNEY

June 27, 1933.

C. A. ROBINSON

1,915,697

STRUCTURAL MEMBER

Filed April 29, 1929

2 Sheets-Sheet 2

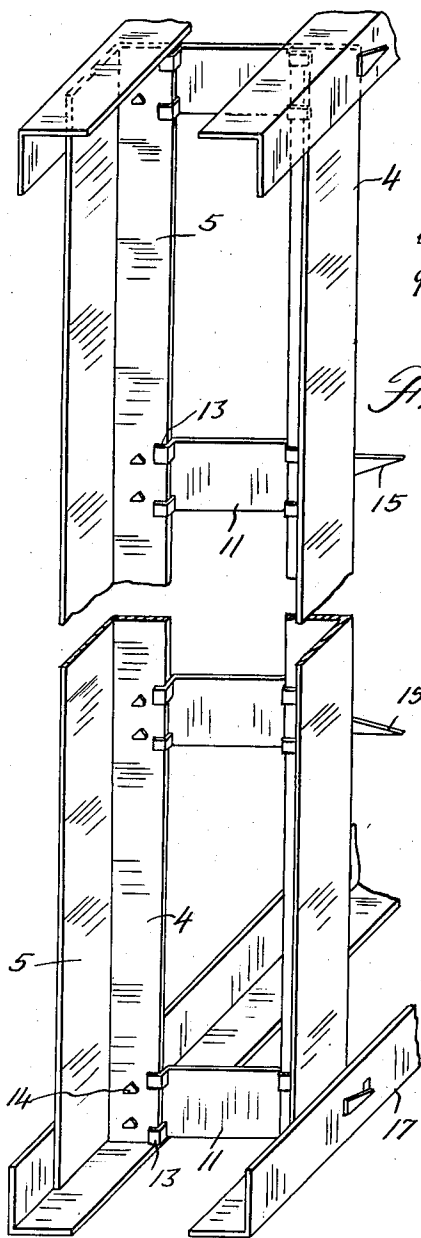


Fig. 5.

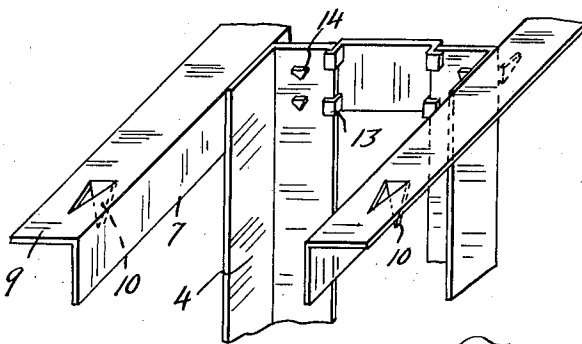


Fig. 7.

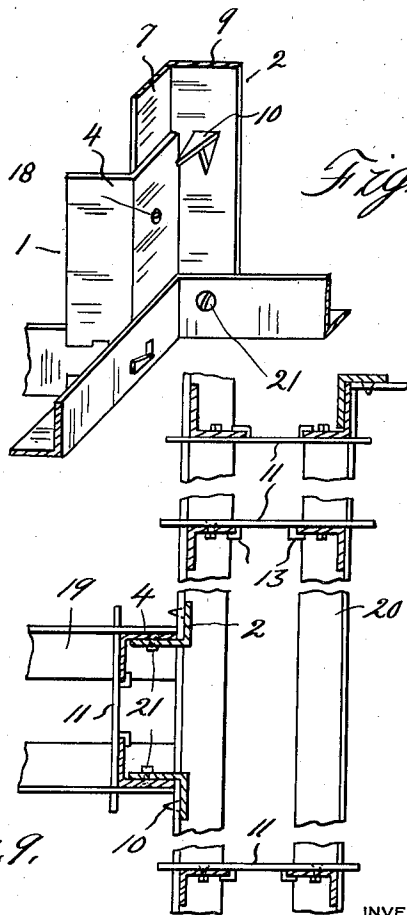


Fig. 8.

Fig. 9.

INVENTOR
Claud A. Robinson

BY *Whittmore Halbrit*
Whittmore & Belknap

ATTORNEYS

UNITED STATES PATENT OFFICE

CLAUDE A. ROBINSON, OF DETROIT, MICHIGAN, ASSIGNOR TO DETROIT STEEL PRODUCTS COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN

STRUCTURAL MEMBER

Application filed April 29, 1929. Serial No. 359,149.

The invention relates to structural members and has for one of its objects the construction of a structural member the parts of which may be readily assembled in the field. Another object is to so construct the parts of the structural member that they may be used in different ways and for different purposes. With these as well as other objects in view, the invention resides in the novel features of construction and combinations and arrangements of parts as more fully hereinafter set forth.

In the drawings:—

Figures 1 and 2 are perspective views and Figure 3 is a plan view of different parts used in connection with the structural member embodying my invention;

Figure 4 is a edge elevation of the part shown in Figure 3;

Figure 5 is a perspective view of the structural member shown as forming a partition wall stud in combination with top and bottom plates;

Figure 6 is an elevation thereof taken transversely of the partition wall;

Figure 7 is a view similar to the upper portion of Figure 5 showing a modification;

Figure 8 is a perspective view of a partition wall corner stud assembly;

Figure 9 is a horizontal section through a partition wall formed according to my invention.

As shown in Figures 1, 2, 3 and 4, the parts designed to be used in conjunction with the structural member embodying my invention are the angle bars 1 and 2 and the tie plate 3. The angle bar 1 has the plain flange 4 and the apertured flange 5 having the pairs of openings 6 equally spaced longitudinally of the bar. The angle bar 2 has the apertured flange 7 which is formed in the same manner as the apertured flange 5 with the pairs of openings 8 equally spaced longitudinally of the bar. This angle bar 2 also has the flange 9 from which are struck out the pointed or V-shaped tongues 10 which extend transversely of the flange 9 adjacent to the flange 7 and in the direction taken by this flange. These tongues are equally spaced longitudinally of the bar and intermediate the pairs of open-

ings 8. The tie plate 3 has the main portion 11 and the reduced end portions 12 at the ends of the main portion and on opposite sides of the end portions there are the pairs of aligned tongues 13 extending transversely from the main portion. Each reduced end portion has the oppositely positioned tongues 14 extending transversely therefrom at its opposite edges and intermediate its ends and also the tongue 15 at its outer end. The tongues 14 and 15 are preferably pointed or V-shaped. The angle bars 1 and 2 and also the tie plate 3 are formed of sheet metal and the tie plate is preferably a stamping.

As shown particularly in Figures 5, 6 and 9, the parts 1 and 3 are assembled to form a partition wall stud which comprises the spaced vertically extending angle bars 1 having their flanges 4 extending substantially parallel to each other and their apertured flanges 5 extending inwardly toward each other and in alignment. These angle bars are tied in fixed relation to each other by the tie plates 3 which are spaced longitudinally of the angle bars. These tie plates extend transversely of the apertured flanges 5 of the angle bars and contact with the sides thereof opposite the flanges 4. The tongues 13 of these tie plates are located adjacent to the inner edges of the flanges 5 and their ends are bent over thereagainst. The tongues 14 of these tie plates extend through the pairs of openings 8 in the apertured flanges 5 and their ends are also bent over against the inner sides of these flanges, the arrangement being such that the tongues 13 and 14 operate to space the angle bars 1 in fixed relation to each other, as well as to fixedly secure these angle bars to the tie plates thereby forming a unit. The tongues 15 at the ends of the tie plates extend laterally beyond the flanges 4 for the purpose of securing either wall ground work, such as metal lathing or plaster board or the like, or the top and bottom plates of the partition wall to the partition wall stud.

As also shown in Figures 5, 6 and 9, the partition wall stud has secured to its upper and lower ends the top and bottom plates 16 and 17, respectively. Each of these plates

comprises a pair of angle bars 1 having their imperforate flanges 4 at the ends of the angle bars 1 forming the stud and their apertured flanges 5 at the sides of and contacting with the flanges 4 of the angle bars 1 forming the stud, the tongues 15 upon the top and bottom tie bars extending through a registering opening 6 and then being bent over against the outer faces of the flanges 5.

10 In the construction shown particularly in Figures 7, the top plate, instead of being formed of a pair of angle bars 1, is formed of a pair of angle bars 2, this construction being particularly adapted for use when the partition wall runs parallel with the floor joists. As shown in this figure, the flanges 7 of the angle bars 2 extend adjacent to the flanges 4 of the angle bars 1 and are secured against their outer faces by means of the prongs 15 upon the top tie plate which extend through the registering apertures 8 and are then bent over against the outer faces of the flanges 7. The flanges 9 of the angle bars 2 extend laterally outward flush with the upper ends of the angle bars 1 and the struck out tongues 10 are depending and adapted for engagement with the wall ground work for securing this wall ground work in place.

As shown in Figures 8 and 9, I preferably use an angle bar 2 at a partition wall corner for the purpose of securing the wall ground work in place. The partition wall stud is made up in the same manner, as previously described, and mounted upon the bottom plate, also as previously described. However, the flanges 4 of the angle bars 1 are arranged to extend from the flanges 5 to the ends of the plates so that the flange 7 of an angle bar 2 may extend parallel and adjacent to the flange 4 of the inner angle bar 1 and be rigidly secured thereto as by means of the stove bolts 18 and nuts upon these stove bolts, thereby providing for the flange 9 of the angle bar 2 extending transversely of and forming with the flange 4 of the inner angle bar 1 a right angled corner. The tongues 10 upon the flange 9 extend inwardly for engaging the wall ground work and firmly securing the wall ground work to the angle bar 2.

The angle bars 2 may also be used for securing wall ground work in place where transverse partition walls are used. As shown in Figure 9, 19 is a partition wall extending transversely of the partition wall 20 and located intermediate the structural studs of the latter partition wall. The structural studs of the partition wall 19 are formed in the same manner with the stud adjacent to the partition wall 20 having the flanges 4 of its angle bars 1 terminating toward and extending adjacent to the partition wall 20. In this case the angle bars 2 have their flanges 7 extending adjacent to the inner sides of the flanges 4 and secured thereto by the stove

bolts 21 and nuts thereon. The flanges 9 of the angle bars extend laterally from the partition wall 19 and parallel to the partition wall 20 to locate their tongues 10 in proper position to engage and secure the wall ground work in place.

What I claim as my invention is:

1. A structural member comprising spaced bars, a tie plate extending transversely of the bars in overlapping relation therewith and having tongues projecting laterally therefrom at the inner edges of the bars and adapted to be bent over the said inner edges upon the bars, and means for securing the portions of the tie plate overlapping the bars to the latter intermediate the longitudinal edges thereof.

2. A structural member comprising substantially flat bars arranged in spaced relation and in alignment with each other, a tie plate extending transversely of the bars in overlapping relation therewith and having tongues projecting laterally therefrom at the inner edges of the bars and adapted to be bent over the said inner edges upon the bars and tongues projecting laterally from the portions of the tie plate overlapping the bars, said tongues extending through openings in the bars intermediate the longitudinal edges thereof and adapted to be bent over the bars.

3. A structural stud member comprising, transversely spaced bars, cooperating bars abutting the bars aforesaid, and means for securing the bars together as a unit comprising, a tie plate extending transversely of and secured to said first mentioned bars and having tongues projecting laterally beyond the latter bars, said tongues arranged to extend through openings in the second mentioned bars and adapted to be crimped over the latter.

4. A structural stud member comprising, transversely spaced bars, cooperating transversely spaced bars abutting the bars aforesaid, means for securing the bars together as a unit comprising, a tie plate extending transversely of and having tongues projecting through openings in said first mentioned bars and adapted to be bent over the latter, and tongues extending laterally beyond the bars arranged to project through openings in the second mentioned bars and adapted to be crimped over the latter.

5. A structural stud member comprising, transversely spaced bars having substantially aligned flanges extending toward each other and having flanges projecting laterally from the outer edges of the flanges aforesaid and disposed substantially parallel to each other, cooperating transversely spaced bars abutting the said parallel flanges, and means for securing the bars together as a unit comprising, a tie plate extending transversely of the first mentioned bars and secured to the aligned flanges thereof, and tongues project-

ing from opposite ends of the tie plate beyond the first mentioned bars through openings formed in said second mentioned bars and adapted to be crimped over the latter.

posite ends of the tie plate beyond the first mentioned bars, said tongues arranged to extend through openings formed in said second mentioned bars and adapted to be crimped over the latter bars.

5 6. A structural stud member comprising, transversely spaced bars having substantially aligned flanges extending toward each other and having flanges projecting laterally from the outer edges of the flanges aforesaid
10 and disposed substantially parallel to each other, cooperating bars abutting the parallel flanges, means for securing the bars together as a unit comprising, a tie plate extending transversely of said first mentioned bars and
15 having tongues projecting therefrom adapted to be crimped over the inner edges of said latter bars, and tongues projecting from op-

70
7. A structural member comprising, bars formed with openings therein intermediate the longitudinal edges thereof and a tie plate having portions overlapping said bars and openings therein, tongues at the inner edges
75 of said tie plate adapted to be bent over said bars, and tongues extending laterally from the overlapping portions of the tie plate through said openings and also adapted to be bent over said bars. 80

In testimony whereof I affix my signature.
CLAUDE A. ROBINSON.

20

85

25

90

30

95

35

100

40

105

45

110

50

115

55

120

60

125

65

130