

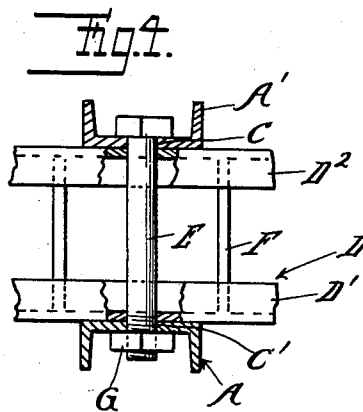
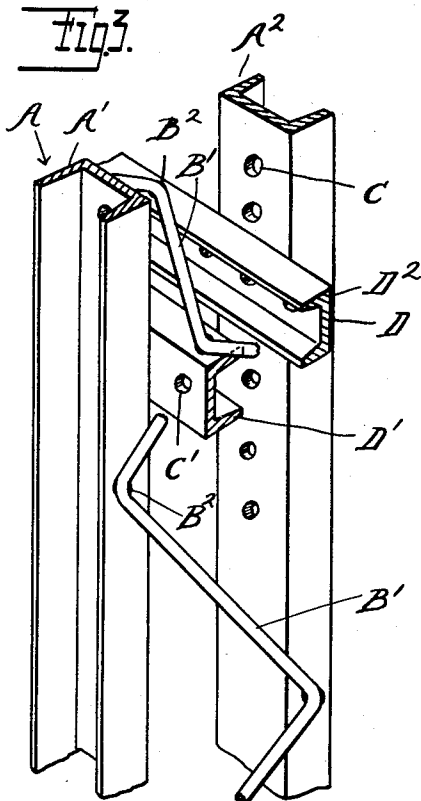
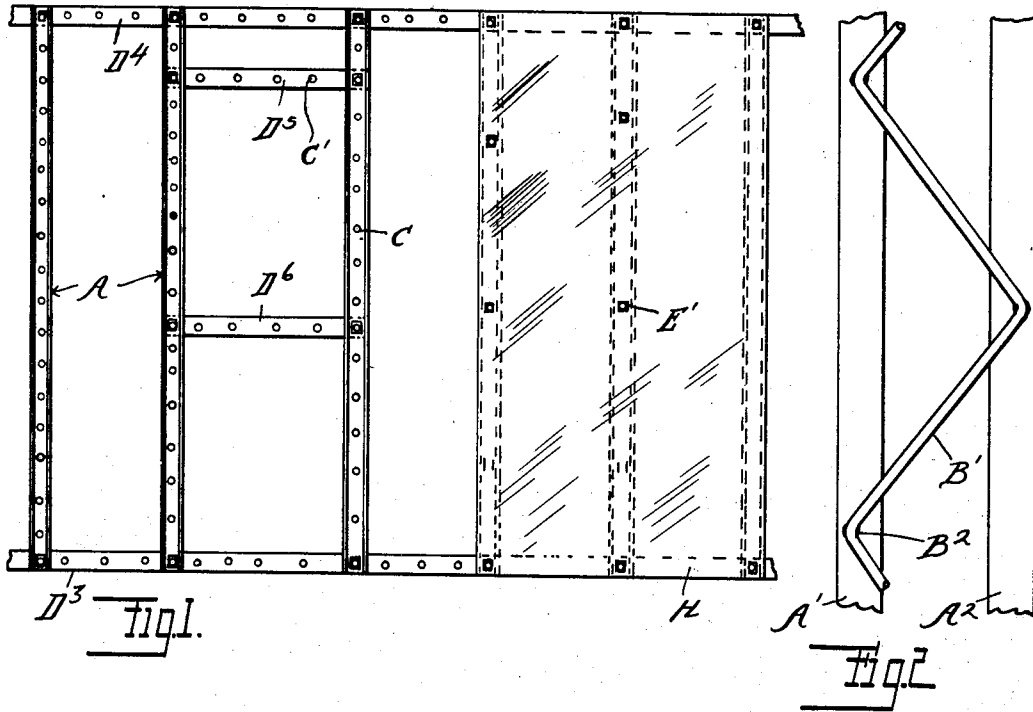
June 19, 1934.

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1,963,395

METALLIC BUILDING CONSTRUCTION

Filed Dec. 15, 1930



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1,963,395

METALLIC BUILDING CONSTRUCTION

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Application December 15, 1930, Serial No. 502,574

3 Claims. (Cl. 189—34)

The invention relates to metallic building constructions and it is the object of the invention to provide standard structural members from which the frame of the building may be readily and quickly assembled and which permit of variation in the positioning of individual members according to conditions either in the design or arising during erection in the field. It is a further object to obtain a construction of these standard members which is inexpensive to manufacture and which have various other advantages as hereinafter set forth.

In the drawing:

Figure 1 is an elevation showing a portion of a frame of a building composed of my improved standard members and in the process of erection;

Figure 2 is an elevation of one of the standard members illustrating the construction of the same;

Figure 3 is a perspective view illustrating the engagement between a standard vertical member and a standard horizontal member;

Figure 4 is a cross section through the joint.

The structural bars from which my units are formed may be of any suitable cross section but preferably are channel bars which are assembled to form two cooperating units. The vertical members A such as used for the studs of the building are formed of a pair of channel bars A', A² spaced from each other with their webs parallel and their flanges extending outward. These bars are then connected to each other by a webbing formed of a small metallic member of a size that may readily be cut by a hand tool. As shown, this webbing is formed of a wire beam bent into zigzag form and having the apex of each bend welded to the side flange of the channel. By proper design the required strength is obtained with the use of a wire of small cross section which permits of readily snipping with pliers to remove any section for engagement with another member. The webs of the bars are also provided with a series of uniformly spaced apertures C arranged in the neutral axis and of a size to receive the securing bolts for attaching the members to cooperating members. The spacing of the apertures is comparatively close as for instance two inches from centers.

A second unit D used for the horizontal members of the frame is also composed of a pair of spaced channel bars D', D² but arranged with their flanges extending inward and the dimension of the spacing is such that the outer faces of the webs will fit between the inner faces of the webs of the member A. The construction is otherwise the same as in the member A being provided with

spaced apertures C' and with the zigzag wire webbing B' welded at the apices B².

With these two units cut to suitable lengths the greater portion of the building frame may be formed. Thus the units D may be used as a footing bar on the foundation as indicated at D³, as a plate D⁴ at the upper ends of the studs and as horizontal members D⁵, D⁶ for enclosing a window or door opening. Wherever a horizontal member joins a vertical member the wire webbing of the latter may be cut to provide clearance, this operation being performed on the field at the time of erection. The close spacing of the apertures C permits of varying the positions of members as is frequently necessary during erection to avoid some obstacle or for some other purpose.

When the members A and D are to be connected to each other they are disposed transversely with respect to each other and bolts E are passed through the registering apertures C and C', a spacer F being placed between the bars D', D² and a nut G engaging the bolt being then tightened. In the same manner the frame may be readily attached to other parts of the structure such as the facing sheets H. These are preferably formed of fibrous material which has heat insulating properties and which also possesses a considerable structural strength. Thus as the sheets may be of any desired width and can be fastened as frequently as desired by bolts E' to the members A or D, they will hold the frame rectangular without the necessity of any other diagonal bracing.

As has been stated, these two members A and D are sufficient for forming most parts of the building frame and may be used with various types of construction of floor joists, roof rafters, etc., according to the type of floor or roof to be applied to the building. Thus the necessity of designing a large number of special members for use in different buildings is avoided, which considerably reduces the cost of construction.

What I claim as my invention is:

1. In building construction, cooperating units each formed of a pair of spaced structural bars having parallel web portions provided with uniformly spaced apertures in the neutral axis thereof, the flanges of said bars of the respective units being turned respectively outward and inward from the webs thereof and the webs of the bars with the inward flanges fitting between the webs of the bars with the outward flanges, and webbing for each of said units formed of zigzag metallic elements of such size that it may be easily cut by a hand tool and having its apices

welded to the flanges of the bars, said units being engageable with each other at any point by the cutting away of interfering webbing and bolts engaging registering apertures in said members
5 for securing the same to each other.

2. In a building construction the combination of a first member, a second member disposed transversely to said first member and connected thereto, said connected members each including
10 channel bars having uniformly spaced bolt receiving apertures in the neutral axis of the web portion thereof, one of said members having a pair of said channel bars spaced from each other and a connecting webbing between said channels removable at any point and cut away for
15 the passage of the other transversely extending member and a securing bolt passing through the registering apertures in adjacent portions of said

transversely extending members to secure the same.

3. In a building construction the combination of a first member, a second member disposed transversely to said first member, said members
80 each including a channel bar having uniformly spaced bolt receiving apertures in the neutral axis of the web portion thereof, one of said members having a pair of said channel bars spaced
85 from each other with their flanges extending oppositely from the webs, a connecting webbing between said spaced bars removable at any point and cut away for the passage of said transverse members, and securing means for connecting adjacent portions of said transversely extending
90 members engageable with registering apertures in said webs at the point of crossing.

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