

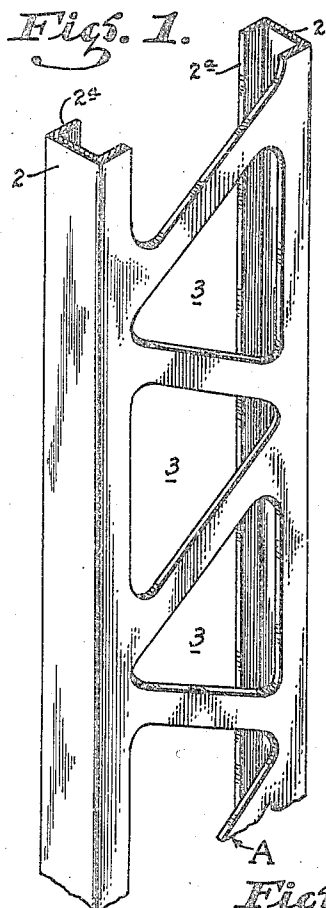
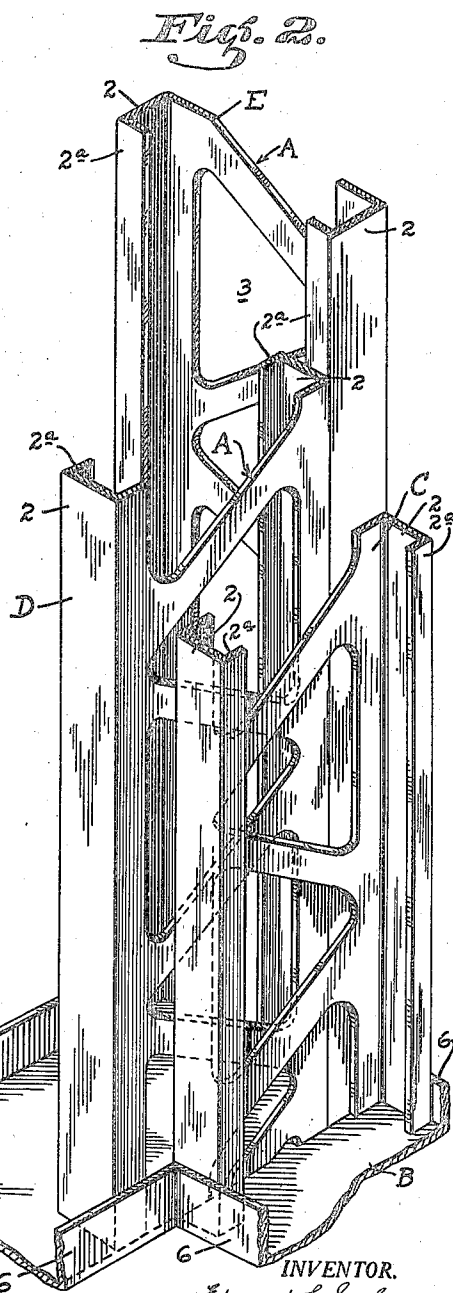
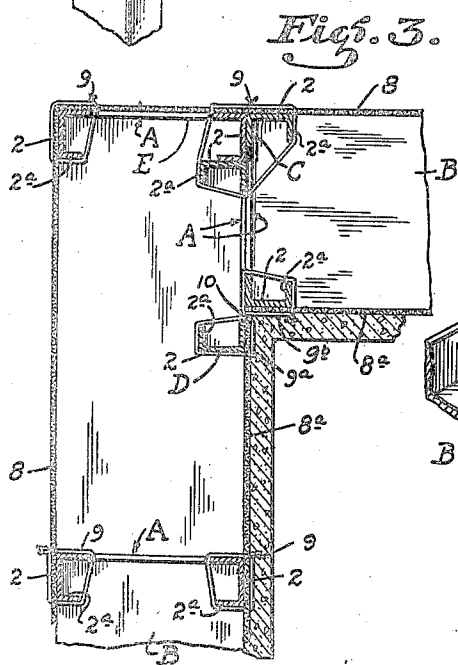
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E. L. SOULE

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BUILDING CONSTRUCTION

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INVENTOR.
Edward L. Soule.
BY
Chas. E. Townsend,
ATTORNEY

UNITED STATES PATENT OFFICE

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BUILDING CONSTRUCTION

Edward L. Soule, Berkeley, Calif., assignor to
Soule Steel Company, San Francisco, Calif., a
corporation of California

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This invention relates to a steel structure, and more particularly to a structural member formed from sheet metal and particularly adapted for use as a wall or partition stud in dwelling houses, garages, small buildings and like structures.

The general tendency at the present time is to resort to light-weight steel construction in dwellings, garages and other small buildings, due to the advantages of fire- and vermin-proofing, greater resistance to earthquake shocks, greater opportunities for insulation, air conditioning, etc., but the disadvantages heretofore encountered are higher first cost, when compared with a wood frame building, due to lack of standardization of the steel employed; and lack of flexibility when it is desired to vary the floor plans and general designing of buildings.

The object of the present invention is generally to improve and simplify the construction and operation of structural members for the purpose described; to provide a structural member which overcomes the objections above specified; to provide a standardized structural member which may be used as a stud both in exterior walls and in interior walls and partitions; to provide a structural member which permits almost unlimited variations in floor design and exterior appearance of buildings; to provide a structural member which permits ready installation of wiring or running of pipes, conduits, etc., through the walls and partitions; to provide a structural member to which metal lath or like material may be readily applied; and further, to provide a structural member which permits the construction of rigid corner members for a building or like structure.

The structural member, together with walls and corners built therefrom, is shown by way of illustration in the accompanying drawing, in which

Fig. 1 is a perspective view of a portion of the structural member employed;

Fig. 2 is a perspective view showing the assembly of three structural members to form a rigid corner structure; and

Fig. 3 is a cross section of two adjoining walls and the corner structure connecting them.

Referring to the drawing in detail, and particularly to Fig. 1, A indicates the web portion and 2-2 the side flanges of a channel-shaped structural member which is formed from sheet metal of comparatively light gauge. The structural member shown is particularly intended for use as a stud in walls and partitions, but it may also be used for other purposes in the construc-

tion of a building: for instance, as ceiling joists, roof rafters, etc. The web portion is materially lightened in the present instance without affecting the rigidity thereof, this being accomplished by punching out a series of triangular openings, as shown at 3. This reduces weight, and at the same time forms a series of truss arms 4 whereby the flanges 2-2 are connected, without any material reduction in strength or loss of rigidity. The side flanges 2-2 are preferably bent at right angles, as indicated at 2a, and this further increases the strength and rigidity of the structural member.

When a wall is to be constructed, a sill plate in the form of a channel such as shown at B is first placed and securely anchored to the foundation of the building. Studs of the type shown in Fig. 1 are then placed crosswise of the channel, between the flanges 6-6 thereof, and when suitably spaced, they are welded or otherwise secured.

In order to provide a rigid corner structure where two walls join, as shown in Fig. 3, three studs are employed; these are generally indicated at C, D and E. The stud C is placed between the flanges 6-6 of the sill plate, and the stud D is next placed against the face of the stud C, and offset laterally with relation thereto a distance equal to the depth of the flanges formed on the structural members. The members C and D are reversed with relation to each other, so that their flanges will face in opposite directions. The structural member or stud E is next placed in the position shown in Fig. 3, and all three studs are welded with relation to each other and to the flanges on the sill. The stud E has one flange welded to the face of the member C and to one flange of the member D. The members C and D are welded where their faces contact each other, and a rigid corner structure is thus formed.

It was previously pointed out that the webs of the structural members or studs disclosed had triangular openings 3 formed therein by cutting, punching, or otherwise. This is of very considerable importance. First, it lightens the weight of the studs and reduces the amount of material required. Secondly, it forms openings through which pipes, conduits, wiring, etc., may be run through the walls, and it also permits circulation of air where air conditioning is desired. Thirdly, but not least, it forms an ideal but simple method of securing metal lath to the flanges of the studs.

The metal lath is indicated at 8. It is se-

cured by simply running a wire around the flange of a stud and through one of the triangular openings 3 and then out through the metal lath, where the ends of the wire may be twisted and bent down. This is clearly shown at 9 in Fig. 3. Great difficulty has heretofore been encountered in tying or securing the lath at the inner corners of the wall. This is entirely avoided in the present instance, by offsetting the studs C and D, as such offsetting exposes the openings 3 in the stud D at the inner corner, as indicated at 10 in Figs. 2 and 3. A tie-wire may thus be run around the channel 9a and the opening 10 in the stud D, to tie the metal lath 8a of one wall to the inner corner. The metal lath 8 of the other wall is similarly tied by a wire 9b, by passing it around the flange of the stud D, said wire being also passed through the opening 10 in the stud D. Plainly speaking, any number of tie-wires may be passed through the metal lath of each wall at the inner corner, and clean, sharp corners can thus be produced when the plaster is finally applied. The offsetting of the studs C and D in forming the corner is thus of material importance, as it provides a ready means whereby the metal lath, when it reaches the inner corner of the wall, can be readily fastened to the studs. The offsetting furthermore provides a recess for the reception of one end of the stud E, thereby interlocking all three studs when they are welded together.

While certain features of the invention have been more or less specifically described and illustrated, I nevertheless wish it understood that changes may be resorted to within the scope of the appended claims, and that the specific materials and finish of the members may be such as the maker desires or varying conditions demand.

Having thus described and illustrated my invention, what I claim and desire to secure by Letters Patent is:

1. In a steel-framed building a wall corner structure comprising a first and a second stud formed from sheet metal, and channel-shaped in cross section, said studs being placed with the outer faces of their webs in contact with each other, and offset laterally a distance equal to the depth of the flanges forming the sides of the studs, a third stud disposed at right angles to the first and second named studs, said third stud engaging the web face of the first stud and one side flange of the second stud, said three studs being welded together, and said studs having a plurality of openings formed in their webs to permit tie-wires to be passed therethrough when metal lath is applied to the faces of the studs.

2. In a steel-framed building a wall corner structure comprising a first and a second stud formed from sheet metal, and channel-shaped in cross section, said studs being placed with the outer faces of their webs in contact with each other, and offset laterally a distance equal to the depth of the flanges forming the sides of the studs, a third stud disposed at right angles to the first and second named studs, said third stud engaging the web face of the first stud and one side flange of the second stud, said three studs being welded together, and said studs having a plurality of openings formed in their webs to permit tie-wires to be passed therethrough when metal lath is applied to the faces of the studs, a channel-shaped sill plate forming a support for the three studs and said studs being welded to the side flanges of the sill plate.

EDWARD L. SOULE.