C. B. CUTLER.

WALL TIE.

APPLICATION FILED APR. 17, 1917.

1,280,173. Patented Oct. 1, 1918.

Fig. 1

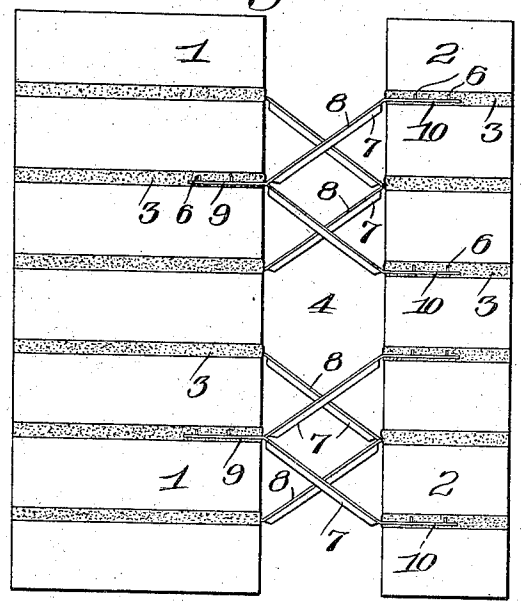


Fig. 2

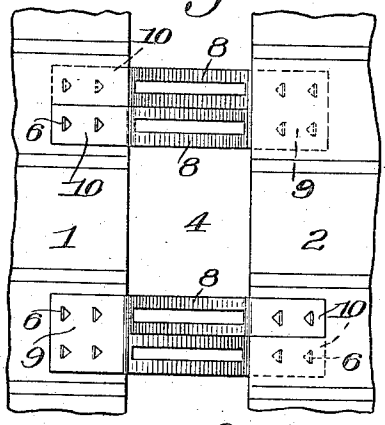


Fig. 5

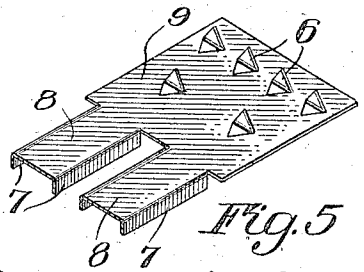


Fig. 3

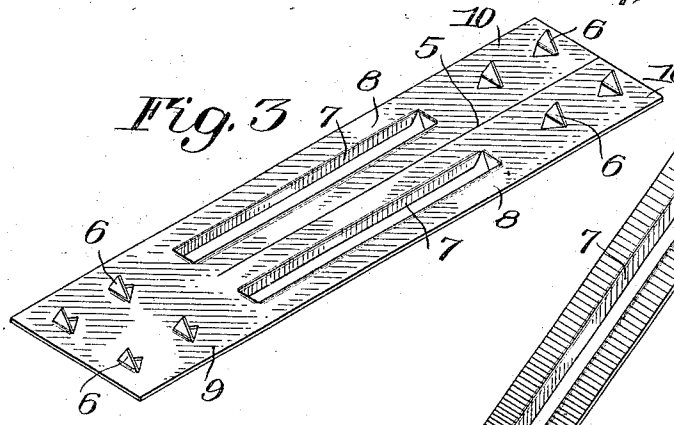
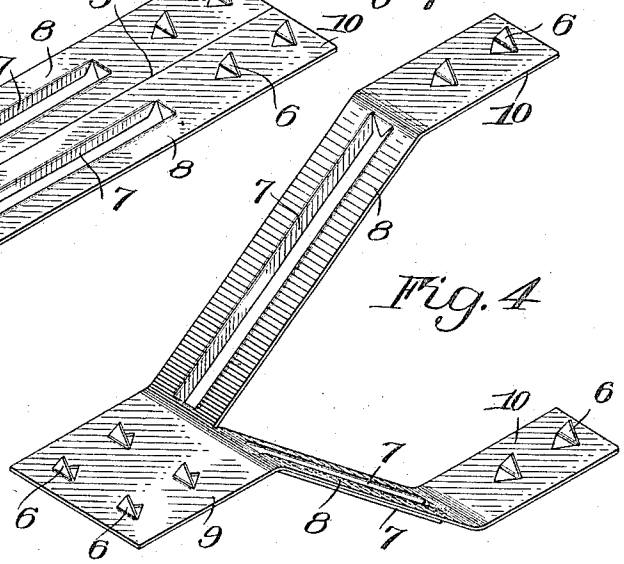


Fig. 4



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WALL-TIE.

1,280,173. Specification of Letters Patent. Patented Oct. 1, 1918.

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To all whom it may concern:

Be it known that I, CLARENCE B. CUTLER, of Schodack, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Wall-Ties; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference characters marked thereon.

My invention relates to a wall tie or brace and has for its object to provide an improved structural member for uniting and bracing the opposite sections of a hollow wall. A further object of the invention is to provide a unitary structural connection for the spaced sections of a hollow wall, which, while serving as a means for uniting the sections, is of such formation as to render it an exceedingly strong compression member capable of preventing the collapse of the sections in a direction toward each other and serving to unite the two sections or planes of a hollow wall in such manner as to form a lattice truss calculated to sustain heavy superimposed loads. To these and other ends the invention consists in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Figure 1 is an elevation showing the application of my improved tie to the spaced sections of a hollow wall;

Fig. 2 is a plan view illustrating on an enlarged scale, the preferred manner of spacing the ties between the opposite sections of a wall;

Fig. 3 is a detail perspective view of the tie or brace after the same has been cut longitudinally thereof;

Fig. 4 is a perspective view of the brace as it appears when completed and ready for application to the sections of the wall, and

Fig. 5 is a view in perspective of one end of a modified form of brace, the legs of which are of channel shaped construction.

Similar reference characters throughout the several views indicate the same parts.

It is the purpose of the present invention to construct a wall tie or brace in such a manner as to secure the greatest amount of strength and rigidity in a member of this kind with the use of as little material as possible, whereby the cost of production is kept down to a comparatively low figure and at the same time, to so simplify the construction as to render the device readily applicable to hollow walls when placed in the hands of unskilled labor.

The advantages of a hollow wall, as compared with one of solid construction, are well known, but the difficulty heretofore has been in tying and bracing the spaced sections of the walls in such a manner as to resist the excessive strains and stresses set up therein by the loads superimposed thereon.

It has been determined that a hollow wall of a given thickness, the sections of which are properly tied and braced, is capable of resisting a greater stress than a wall of solid construction of the same thickness and in addition to this the cost of construction of the hollow wall is, of course, considerably less than that of a solid wall.

In carrying out my invention I have provided a tie or brace of the truss type which is preferably formed of comparatively light sheet metal, such as galvanized iron, and when properly ribbed or flanged and bent to the angular form shown in Fig. 4, affords a strong and rigid brace which may be readily applied to the opposite sections of a hollow wall as shown in Figs. 1 and 2.

The tie is preferably of V-shaped construction, the converging legs of which form with one of the hollow wall sections a triangular brace, serving to brace two points of said section against one part of the opposite section. This form of tie not only serves as a tension member, but as a rigid compression member also.

Referring to the drawings, 1 and 2 represent the spaced sections of a hollow wall formed of brick or other suitable material united by cement as indicated at 3, the opposite ends of the ties being embedded in the cement as shown. The air space 4 between the sections 1 and 2 of the wall is spanned at suitable intervals by the ties, the legs of which are preferably extended above and below the point at which they are connected as indicated in Fig. 1.

The detail construction of the preferred form of the tie is best shown in Fig. 4. The cut 5, shown in Fig. 3, is preferably made previous to the formation of the cleats or projections 6 and strengthening ribs or

flanges 7 of the legs 8. The cleats 6 serve to prevent lateral displacement of the tie when the connecting end 9 of the legs and the spaced ends 10 thereof are projected between the bricks or blocks of the wall and embedded in the cement or binding material 3. Obviously the shape or formation of the projections 3 and ribs or flanges 7 of the legs may be changed if desired without effecting the scope of the invention.

The ties after being cut and formed as shown in Fig. 3 are preferably left in this condition to facilitate shipping and are bent as shown in Fig. 4 after they reach their destination and at the time they are to be placed in service.

In the application of the tie or brace to hollow walls I prefer to have the legs of the adjacent ties extend in a reverse direction as shown in Figs. 1 and 2, instead of in parallel relation, for the reason that a more advantageous bracing system is thereby effected.

While I have shown the sectional forms which I prefer to embody in the legs of the brace I do not wish to be limited to these particular shapes, as other forms may be readily substituted.

I claim as my invention:

1. A wall tie comprising a plate member split longitudinally throughout the greater part of its length, said split portions being extended at an angle to each other to form divergently arranged struts, the free extremities of which are bent to extend in parallel relation with the uncut extremity of the tie whereby when said tie is placed between the spaced sections of a vertical wall with its ends embedded therein, said ends will be horizontally disposed, one of the spaced ends engaging one of the wall sections at a point above the other and the uncut end engaging the opposite wall section at a point intermediate said spaced ends.

2. A blank for a wall tie comprising a plate member split longitudinally throughout the greater part of its length from one end to form two legs, cleats projecting from the solid end and the free ends of each of the legs and laterally projecting stiffening flanges punched from said legs and extending longitudinally thereof.

CLARENCE B. CUTLER.