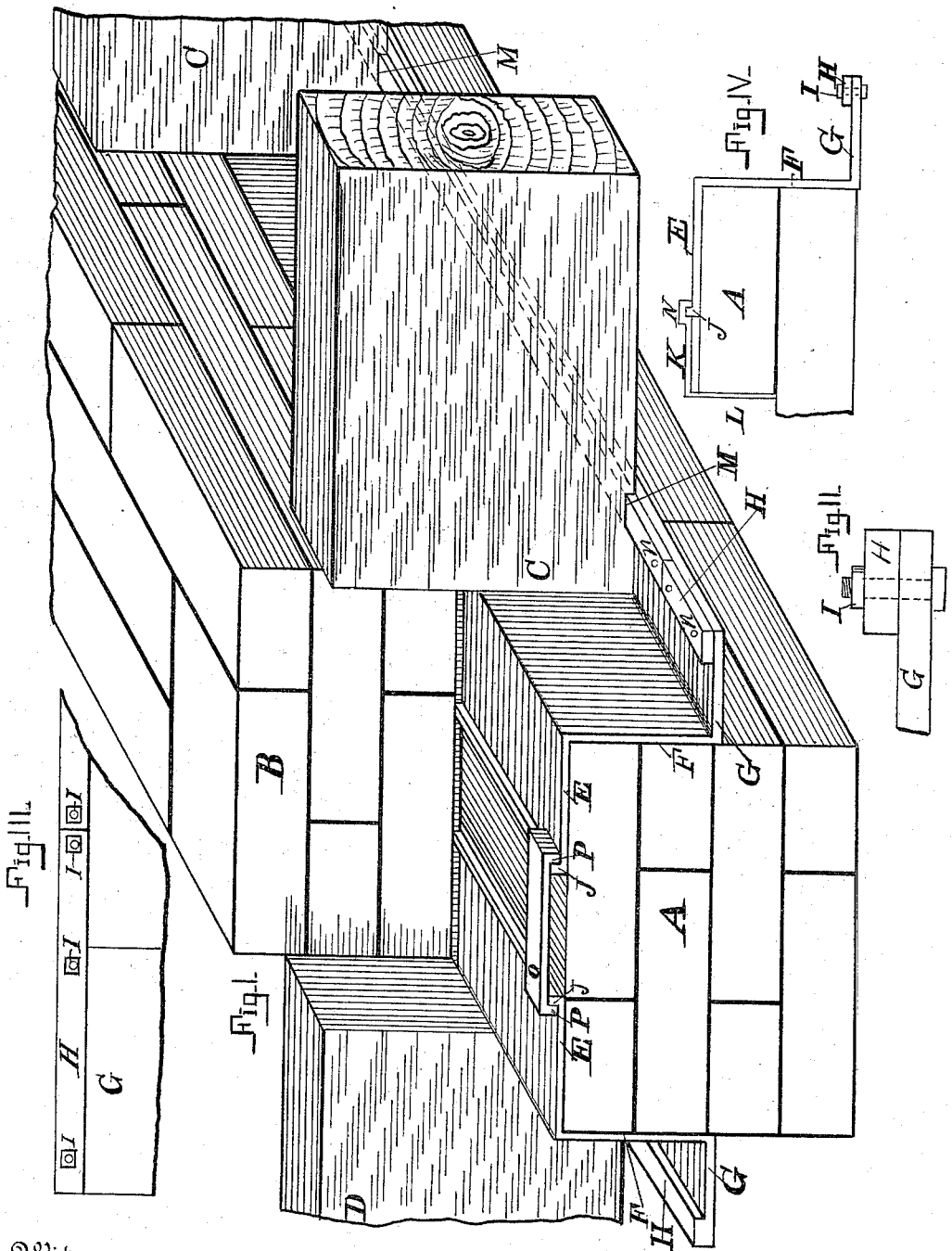
(No Model.)

W. H. DRAKE.

CONTINUOUS METAL JOIST SUPPORT.

No. 526,302. Patented Sept. 18, 1894.



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WILLIAM H. DRAKE, OF CHICAGO, ILLINOIS.

CONTINUOUS METAL JOIST-SUPPORT.

SPECIFICATION forming part of Letters Patent No. 526,302, dated September 18, 1894.

Application filed July 2, 1894. Serial No. 516,315. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DRAKE, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented new and useful Improvements in Continuous Metal Joist-Supports, of which the following is a specification, reference being had to the annexed drawings, making a part hereof, in which—

Figure 1, is a perspective representation of a portion of a brick wall, my improved supports connected therewith and joists thereon; Fig. 2, a modification in the construction in end elevation; Fig. 3, a plan view of Fig. 2; Fig. 4, an end elevation showing how one continuous support is secured to a wall.

This invention relates to an improvement in metal joist supports by which the joists have their bearing wholly between the walls. It has been the custom to employ metal seats which are inserted in the walls and the ends of the joists inserted in the seats, but a serious objection to their use is the seats weaken the wall more than the joist without the seats, for the seats require about double the space whereby on a two-brick wall, when the seats are employed it has but narrow and poorly constructed piers standing between the metal seats. Any wall is weakened by the projection of joists into it; and observation proves that joists commence first to decay at their ends within the walls. A further objection to the use of seats and supporting joists within the wall is the difficulty in obtaining uniform level seats; and there is a special objection to inserting joists in partition walls, in that fire from one building follows the joists through to the other building. I remedy all these objections by what I term **Z**-plates, which are of wrought iron and of such lengths as are convenient to be formed in a mill, and suitable for the building. One portion of the **Z**-plate E, is formed to lie level on one width of brick in the wall. Its connecting plate F extends down on the inner face of the wall about two thicknesses of brick, and then turns inward at G at right angles to the plate F, and has an extension of about four inches from the wall A, and terminates in a square cornered bar H, which in practice is a half inch to an inch high according to size of the building and tying strength required. The joists are at M notched onto the bar H so that their inner ends will come to the plate F and their lower edges will bear on the plate G. Where but one **Z**-plate is employed on a wall, an anchor L, K, N is placed over the flange J and down onto the brick A as shown at Fig. 4, but when two **Z**-plates are employed, as at Fig. 1, a suitable number of anchor-clamps O are placed over the flanges J, convenient for supporting the ends of the **Z**-plates. In line are the bars H in one or more pieces breaking joints with the sections of **Z**-plates and secured to the bars to the plates by nuts and bolts as shown in Figs. 2, 3, and 4, or rivets as shown at *n*, *n*, but preferably the bars H, and the **Z**-plates E, F, G, are to be formed of a single piece of metal by the ordinary rolling process, as shown at H, at the left of Fig. 1. In case the wood work of a building be burned out new joists can be set in place without interfering with the walls. The top portion E of the **Z**-plates may be rolled not to exceed three-eighths of an inch thick for a three or four story building. The plates F may be a half inch thick, and five-eighths of an inch in thickness will be sufficient for the supports G, the angles between the plates F and G being somewhat thicker. The space between the under side of support G and the under side of the joists C, D, will be taken up by the furring secured to the joist, whereby the lath will run parallel with the joists and extend to the wall A.

B, is also a brick wall, and is simply an extension of wall A from the tops of plate E, E.

Having thus described my invention, I claim and desire to secure by Letters Patent—

A continuous joist support formed of one or more sections of metal and consisting of a plate projecting into the wall and anchored substantially as shown, a vertical plate portion extending down out on the inner face of the wall, and a supporting portion extending at right angles to pendent portion and provided with a rigid square angled bar, and a recess between the bar and the pendent portion; as and for the purpose specified.

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