

(No Model.)

H. A. GOETZ.  
JOIST HANGER.

No. 522,829.

Patented July 10, 1894.

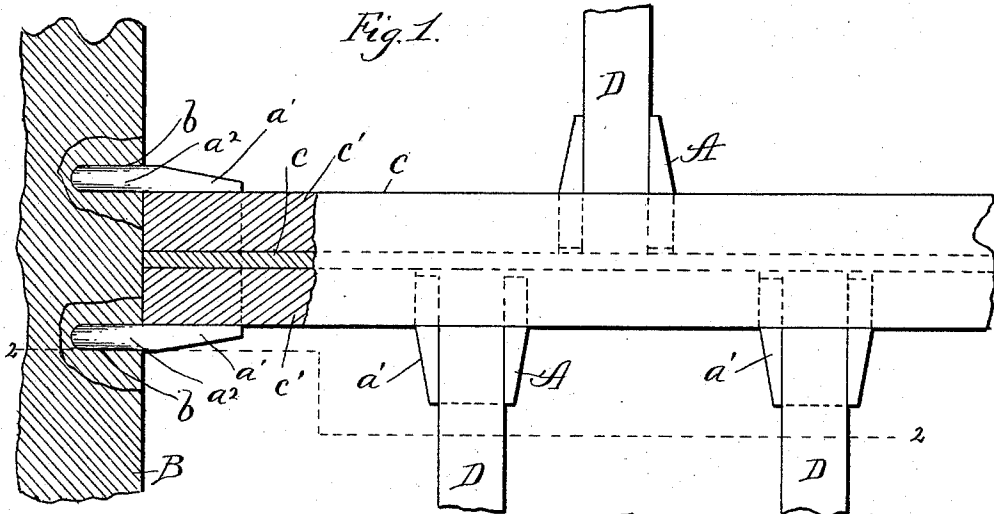


Fig. 2.

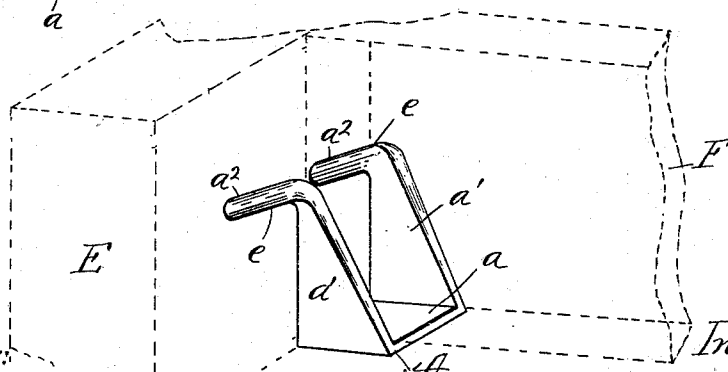
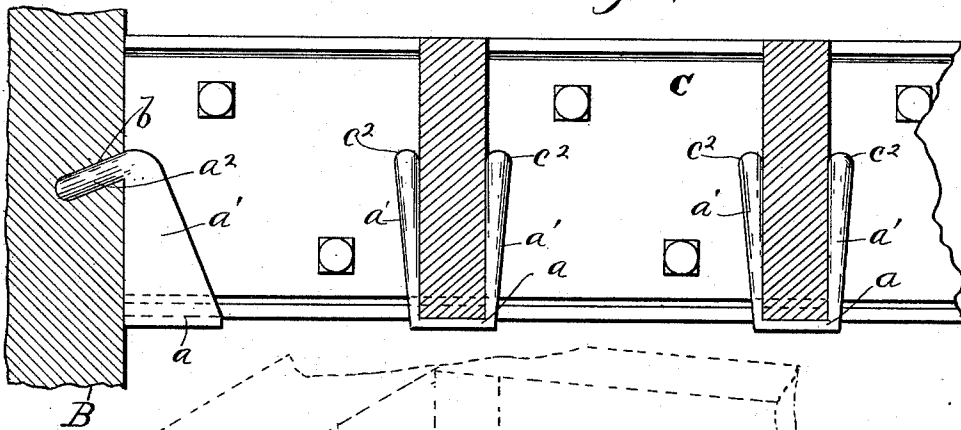


Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## JOIST-HANGER.

SPECIFICATION forming part of Letters Patent No. 522,829, dated July 10, 1894.

Application filed May 1, 1893. Serial No. 472,638. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY A. GOETZ, a citizen of the United States, residing at New Albany, in the county of Floyd and State of Indiana, have invented certain new and useful Improvements in Joist-Hangers, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a detail plan, showing a section of wall, girder and joists with my invention applied thereto, parts being broken away; Fig. 2, a section of the same taken on the broken line 2. 2 of Fig. 1; and Fig. 3, a perspective view showing a girder and joist at the point of junction, with my invention applied thereto, parts being broken away.

My invention relates to supports for joists in buildings.

The invention consists in a certain construction of such supports, whereby they are adapted to firmly hold in place the joists without mortising the sills, girders, headers, or other parts to which joists are connected, and without cutting away the latter; and also to securely tie the parts together, but in such manner that, in case of fire, the joists will be self-releasing without danger of destroying or disturbing other parts to which they may be connected.

My improved hanger is to be made of wrought iron or steel, and from a round bar, which is shaped into the form required in suitable dies.

In the drawings, A represents one of these hangers completed, in which condition it consists of a flat seat, *a*, from the ends of which rise side or cheek pieces, *a'*, and at the upper ends of these latter are projecting arms, *a<sup>2</sup>*, by means of which the supports are secured in place. The seat, *a*, is sufficiently wide to give the ends of the joist a good support, the upright sides, *a'*, are inclined at their front edges from base to the upper ends thereof, as seen in Fig. 3, and the arms or projections, *a<sup>2</sup>*, are bent directly from the upper ends of said sides, so as to stand in about the same plane as the latter.

In making this hanger, a round bar of wrought iron of suitable size and length is provided and heated for bending; this rod is then flattened and formed in a suitable die,

which is adapted to flatten out the central portion of the rod; this flattened portion is bent so as to form the seat and cheeks mentioned, while the extremities of the rod are left round and bent back into the position described above. These projecting ends at the upper part of the hanger are the means by which the latter is secured to its support and suspended thereby; and for this purpose round holes must be provided in the said support adapted to receive the ends of the hanger. If the supports are wood, these holes are readily made with an auger; if of metal, they must be drilled out or formed in advance, and if of stone or brick, are provided in any suitable way.

The hangers are intended to extend up only part way of the joists, and so the points of support are in the sides of the supporting pieces, whatever they may be. These round ends of the hanger may be bent at right angles to the side pieces; preferably, they are turned down slightly so as to make an acute angle with the sides, as seen in the drawings, which construction provides for fastening the hangers in their supports.

In the drawings, the application of this hanger to supports of different construction is illustrated.

In Figs. 1 and 2, B, represents the wall of a building and one of these hangers is shown applied thereto. This is accomplished by drilling two holes, *b*, in the wall, which are intended to be just large enough for the round ends of the hanger; if desired, the ends may be wedged in with wood. A girder, C, is represented as resting in this hanger, and it will be seen that it has a broad base support at the bottom, and is held laterally by the cheek pieces extending up far enough at the sides thereof for this purpose. This girder may be entirely of wood, or entirely of metal, or composed of both; in the drawings I have shown a composite construction, the main body, *c*, being of H shaped or channeled metal, filled in on each side with strips of wood, *c'*, secured to the body in any well known and suitable way. Hangers of my improved construction are secured to these wooden strips on each side of the girder for the reception of joists, D, which are supported in the same way as the girder itself. In this instance, holes, *c<sup>2</sup>*,

are simply bored in the wooden side pieces of the girder for the reception of the bent round ends of the hangers.

In Fig. 3 the hanger is shown attached to a main support, E, entirely of wood, holes, e, being bored therein for the ends of the hanger, and a wooden girder, F, is supported by the hanger, as seen in Fig. 1. Joists will, of course, be connected to and supported on this girder by hangers, as already described, the ends of which will be inserted in suitable holes in the sides of the girder the same as in the connection described for Figs. 1 and 2. This arrangement shown in Fig. 3 is suitable for trimming flues, stairways, elevators, light-shafts, &c., and in the construction shown in all of these figures provision may be made for an unbroken ceiling by simply cutting the girders and joists slightly to drop them flush with the under side of the hanger seat.

Now, with this improved hanger, I secure a number of advantages. The holes for the round ends of the hanger are small and quickly and easily made. The downward bend of these fastening ends serve to lock the hanger in position when the girders or joists are set in place. Furthermore, as this hanger extends only part way of the sides of the pieces it supports, it can be removed without disturbing the floor above; this is impossible with any previous hanger, so far as I know. In this hanger the same amount of metal is found in cross section at any point, so that it is equally strong at all points; at the same time, it is formed from a round rod into the shape described more easily and at less cost than with the well known style of flat metal and twisted hanger, and is, therefore, cheaper to manufacture while equally strong. It also simplifies the production of hangers of assorted size, bringing down the number of such sizes required, because, owing to the side attachment and support thereof, they are regulated only by the different widths of the joist, while with previous hangers there must be an assortment of sizes, not only for different widths, but for different heights of the joists and beams. In the old style of hangers with a strap stirrup passing over the top of the supporting beam, the stirrup will, of course, follow the full shrinkage of the beam, and, therefore, there is a liability

of dropping the joist below the girder or other beam, which may result in breaking and cracking the ceiling, and will always produce an uneven floor; in my construction the point of support is at the center of the beam, and the effect of shrinkage is, therefore, little or nothing, thereby obviating the objections above mentioned. With the suspending ends of the hanger bent downward as suggested and shown, a kind of hook is formed whereby the hangers are locked into their supports, and the locking force is increased as the weight is increased upon the joist resting in the hanger. A lock may be obtained by bending the ends of the hanger upward instead of downward, but it is not as good as the latter, which is shown in the drawings.

Having thus described my invention, what I believe to be new, and desire to secure by Letters Patent, is—

1. A metal hanger for supporting joists and other beams, consisting of two parallel sides, flattened and joined at their lower ends to form a socket seat, but otherwise disconnected from each other and two parallel projecting arms joined respectively and separately to the upper ends of said sides at an angle thereto, and separated a distance substantially equal to the width of the seat and adapted to enter socket holes in the sides of the supporting parts, substantially as described.

2. A metal hanger, A, for joists and other beams, consisting of a flat bearing plate, a, two upright parallel sides, a', and two parallel projections, a<sup>2</sup>, extending back from and in the same plane with the latter and bent down at an acute angle thereto, substantially as described.

3. A metal hanger for joists and other beams, composed of a flat seat, a, two parallel side pieces, a', rising and gradually tapering therefrom, and two parallel projections, a<sup>2</sup>, extending back from the latter, round in cross section, and bent down at an acute angle to the sides, whereby they are adapted to be entered in similar sockets in the sides of suitable supports, substantially as described.

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Witnesses:

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