United States Patent

[11] 3,623,755

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[54] **JOIST HANGER**
5 Claims, 2 Drawing Figs.

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[51] Int. Cl. F16b 9/00
[50] Field of Search ..... 287/20.94, 20.95, 20.92 C, 20.92, 189.35, 189.36 A; 52/665, 702, 703, 712

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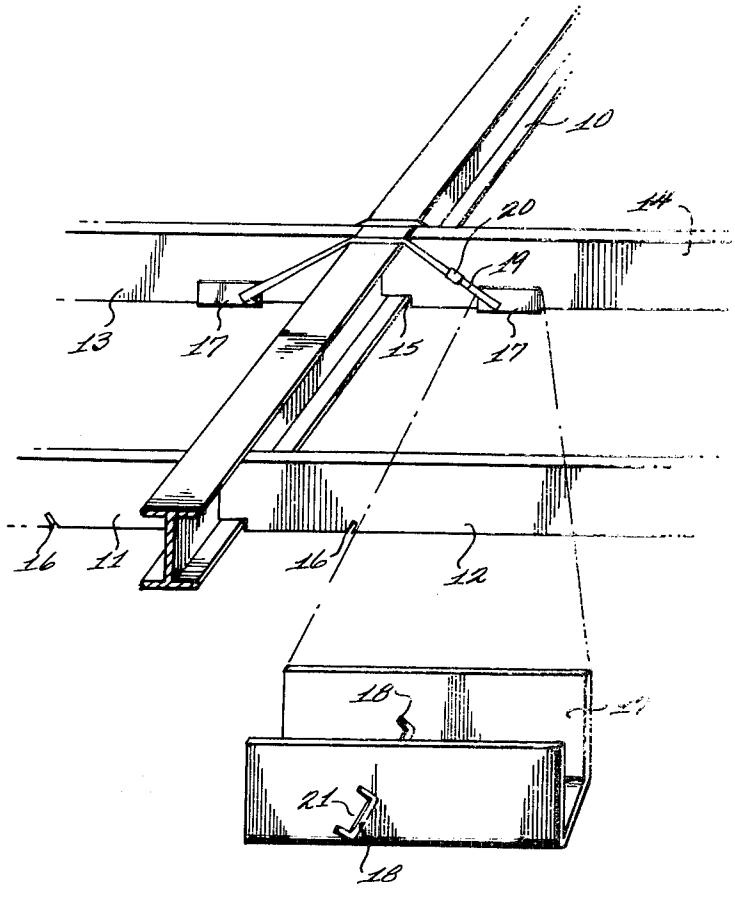
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ABSTRACT: An improved joist hanger for supporting steel, wooden or other joists from beams, such as I-beams, wherein a separate bracket is attached at a distance from the beam to each of a pair of conventional joists abutting opposite sides of a conventional girder or beam, and a strap with its ends fastened together links the two brackets over the beam so that both joists are supported vertically by the beam and continually pulled toward it to improve the load distribution of the joists as well as to generally improve the support characteristics of a floor or other structure comprised of such joists and beams.

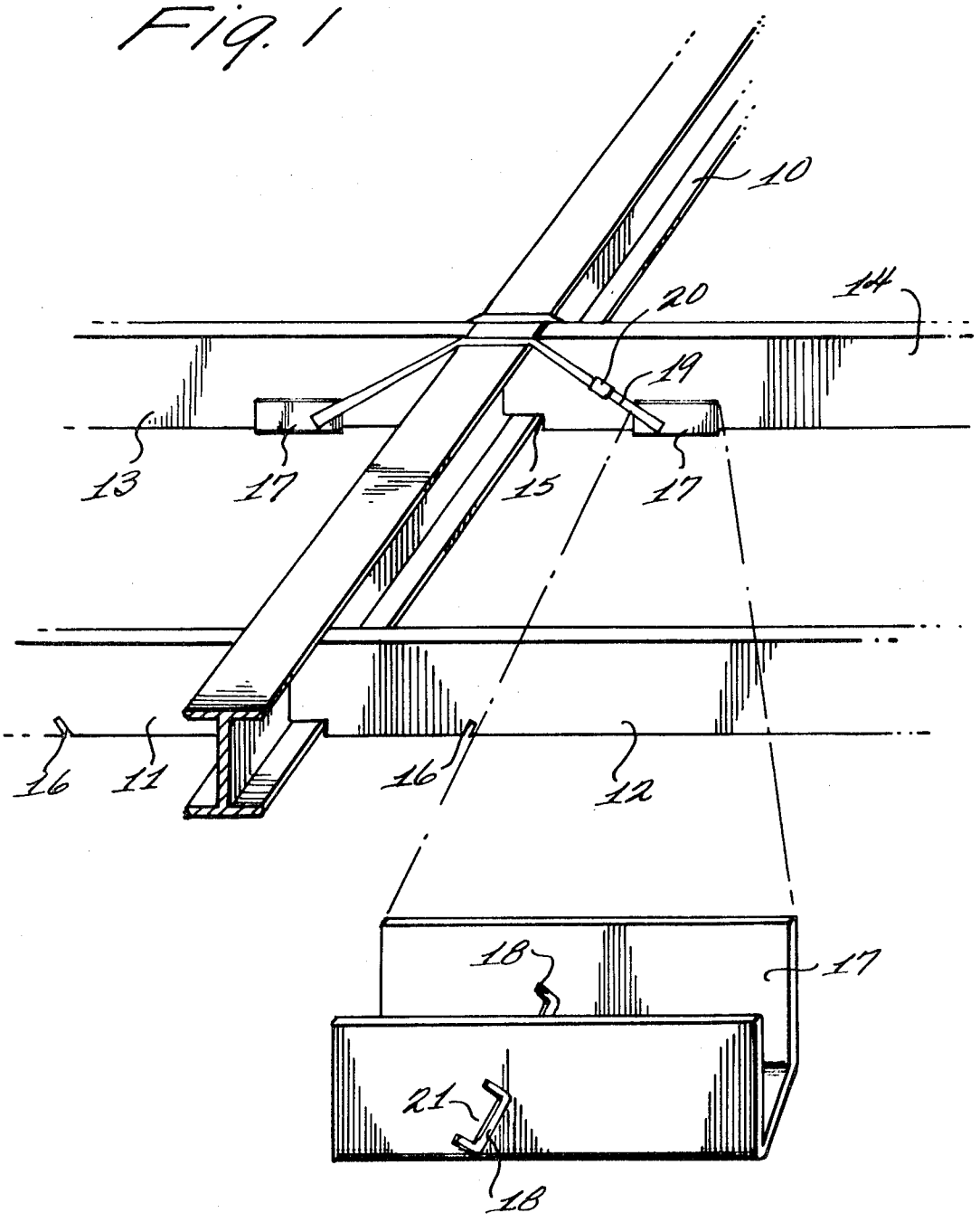


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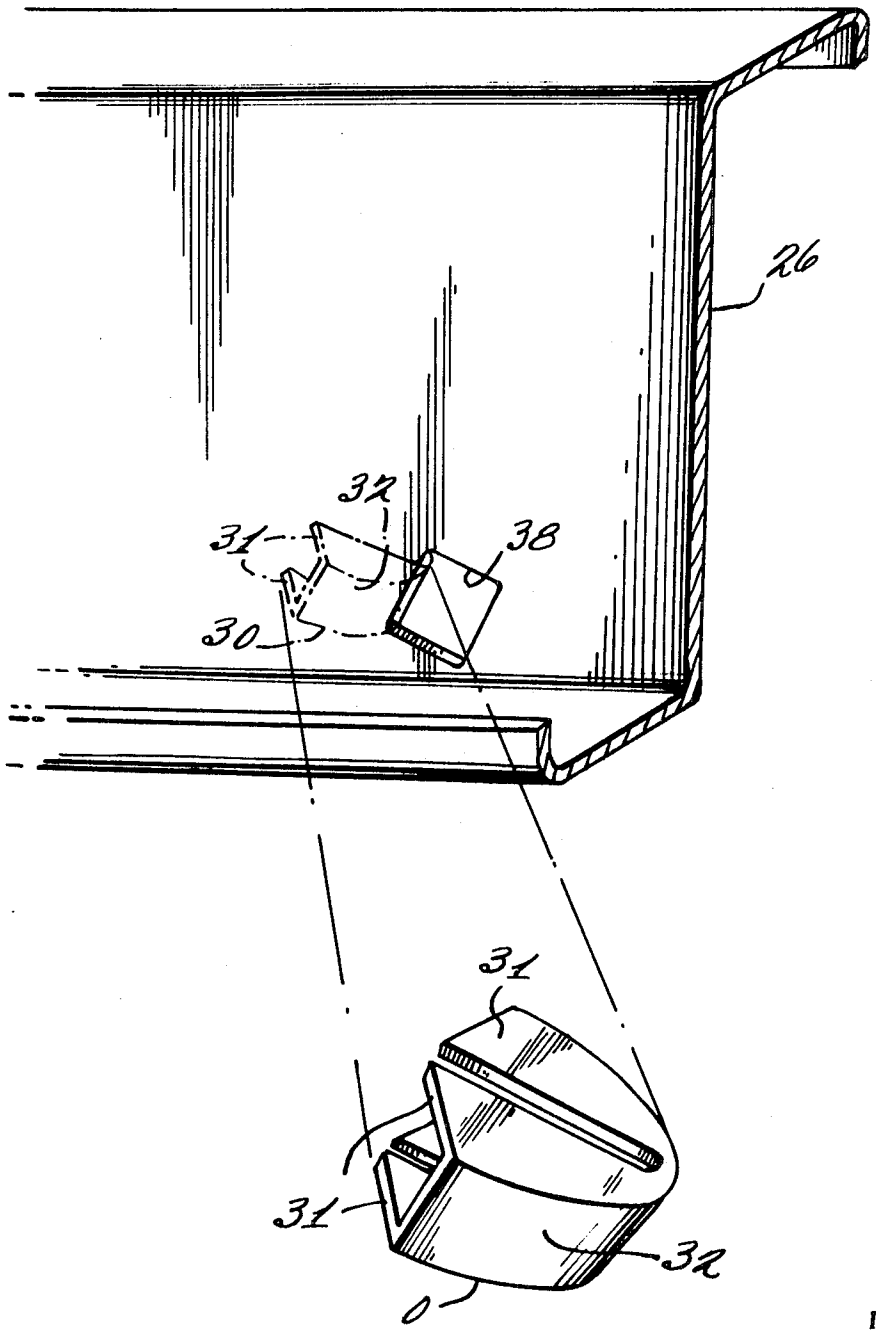
Fig. 1



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Fig. 2



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JOIST HANGER

BRIEF DESCRIPTION OF THE PRIOR ART AND SUMMARY OF THE INVENTION

The invention to a joist hanger for supporting wood, steel or other joists from girders, beams or the like.

In constructing buildings, it is conventional to form floors, ceilings and the like by first placing girders or beams extending parallel to each other and then to attach or hang wood or steel joists from such girders and at right angles to such girders or beams to form a grid upon which the floor, ceiling or other structure can then be placed. For example, when the ground floor of a conventional house is constructed, the usual practice is to simply place the floor joists atop and at substantially right angles to the basement girders. This procedure, while simple and structurally satisfactory, unfortunately causes the basement girders to protrude into the basement and to waste space which could otherwise be used. Further, such an arrangement does not provide optimum support for the floor joists and hence the floor and frequently results in a weight distribution pattern which requires more joists and hence greater expense than would be necessary if the joists were better supported.

To relieve the problem of wasted space by supporting the joists in the same plane as the girders, support brackets, commonly termed joist hangers, have in the past been used to hand the joists from the girders rather than simply placing the joists atop the girders. For example, the U.S. Pat. Nos. to Lally, 1,742,210, Ham, 247,050 and Taylor et al., 1,720,104 show typical prior art arrangements.

While these known supports do mount the joists and beams in the same plane, they do not improve the support characteristics of the joists and indeed may result in less satisfactory characteristics. The present invention relates to an improved joist hanger or support which not only enables to joists and beams to be mounted in the same plane but also results in much better support characteristics than previous devices. These improved characteristics reduce the number of joists required for any given application and accordingly reduce substantially the cost of building construction.

In the embodiment of the invention described below, these advantageous results are obtained by attaching a separate bracket or anchor to the lower portion of each of two joists which are caused to abut opposite sides of a girder at substantially the same location and form right angles with the girder. One or more straps are then used to link the two brackets over the girder so that both joists are not only vertically supported but are also pulled toward the girder resulting in the above-described superior characteristics.

Other objects, aspects and purposes of the invention will become clear after reading the following detailed description of the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows an embodiment of the invention with two joist beams supported from a girder by the joist hanger of this invention.

FIG. 2 shows a view of a steel joist with a bracket mounted therein which can be attached to a strap and hung from a girder as illustrated in FIG. 1.

DETAILED DESCRIPTION OF THE DRAWINGS

Reference is now made to FIG. 1 which shows a joist hanger of this invention installed and supported by a girder **10** which is an I-beam of the type which is conventionally employed in building construction. In forming a floor, of course, several of these girders would be placed in parallel, with joists running between them to form a grid. It should be obvious that many other types of girders and similar supporting structures can be used in combination with the joist hanger of this invention to support abutting joists in the manner described below.

A plurality of joists **11**, **12**, **13** and **14**, which may be simply wooden joists, are shown supported from the single girder **10** and preferably these joists, together with the girder **10** and other girders, form a grid which supports a floor or ceiling. As can be seen in FIG. **1**, the pair of joists **13** and **14** as well as the pair of joists **11** and **12** abut opposite sides of the girder **10** at roughly the same location, and these pairs of joists are each connected to each other and to the girder **10** as follows. Each of these joists **11**, **12**, **13** and **14** has had a square cut **15** made from its bottom end, as shown, so that it abuts solidly against the I-beam girder **10** and rests upon the lower portion of the I. Even further, an angled saw cut **16**, slanting away from girder **10**, is made in each of the joists **11**, **12**, **13** and **14** at a distance from the point at which the joists **14** abut the girder **10**. The magnitude of this distance depends on the materials employed as well as the support characteristics desired.

After the angled saw cut **16** has been made in a joist, for example joist **14**, a bracket or anchor **17**, is fitted over the lower portion of the joist, for example, joist **14** as shown, and fastened to joist **14** by nails, barbs or any other suitable means so that the bracket **17** fits snugly against the sides of the joist **14** with the slots **18** in the bracket **17** matching the cut **16** in the joist **14**. Small barbs on the bottom and sides of bracket **17**, which can be easily hammered into the joist when the bracket is slipped onto the joist, are preferably employed to fasten the joist and bracket together. A similar bracket is then fitted and fastened in place on the joist abutting the opposite side of the girder, in this example joist **13**, and a single steel strap or band **19** is threaded through the slots **18** and cuts **16** on one of the brackets **17**, for example joist **14**. This strap **19** is then passed over the girder **10** and likewise threaded through the slots **18** and cuts **16** of the other bracket **17**, which in the example would be on joist **13**. The two ends of the strap **19** are then joined over girder **10** by conventional strapping techniques, after tightening, and a seal **20** is applied so that joists **13** and **14** are supported vertically from girder **10** and in addition are pulled toward each other. Of course two straps which can be joined together on opposite sides of girder **10** can be alternately employed. When the strap **19** is tightened, a tab **21** on each side of bracket **17** which curves inward as shown, crushes the wood about the cuts **16** of joists **13** and **14** and produces rounded bearing surfaces for the steel strap **19**.

This particular arrangement has been shown to have particular advantages and benefits which are not attainable with conventional joist hangers and discussed briefly above.

As should be apparent, this invention can be used not only with wooden joists as in the above example, but can be also advantageously employed with joists made of steel or any other material. For example, FIG. **3** shows a view of a steel joist **26** which is a conventional Z-shaped joist with a substantially square hole **38** cut in the lower portion as shown. The hole is used to support and position a bracket or saddle **30** in the same manner as the cuts **16** shown in FIG. **1**. To hang a joist, for example, joist **26** and bracket or saddle **30** is fitted in place on joist **26** as shown and the joist abutted against a girder which would be to the left in the drawing of FIG. **2**. A similar joist is then abutted against the opposite side of the girder as in FIG. **1** and a bracket or saddle similarly fitted to it. Next, a steel strap or band (not shown) is passed through hole **38** and about the outside of one of the saddles **30** and then passed over the girder to be passed about the outside of the other saddle and then joined together as in FIG. **1**. The braces or struts **31** which define the U-shaped path through which the band passes brace the saddle bearing surface **32** and also bear against and stiffen the web of the joist. The same advantageous results which come about for the use of this joist hanging arrangement with wood joists are discussed above are also obtained with steel and other joists, and the joist used for any application, of course, depends upon the structural and engineering requirements of the building.

The above embodiments of the invention are intended to be only exemplary and the scope of the invention is limited by the scope of the appended claims.

What is claimed is:

1. A joist hanger for supporting two joists abutting opposite sides of a girder at approximately the same location on said girder and extending approximately at the right angles to said girder comprising:

a first bracket attached to one of said joists at a location at a distance from said girder,

a second bracket attached to the other of said joists at a location at a distance from said girder and

at least a single flexible strap with one end connected to and in direct contact with the other end to form a continuous loop for connecting said first bracket to said second bracket and over said girder so as to support said two joists in approximately the same plane as said girder and to pull said two joists toward said girder so as to abut said girder.

2. A hanger as in claim 1 wherein said single strap passing over said girder is adjustable in length.

3. A hanger as in claim 2 wherein said joists are wooden and have a saw cut at a distance from said girder slanting away from said girder and wherein said first and second brackets are U-shaped members fitted about said joists with closed slots for alignment with said saw cuts so that said strap passes through the saw cuts and slots of each said bracket and joist.

4. A hanger as in claim 3 wherein each said bracket includes tab means adjacent to said slot for crushing the wood of said saw cut when said strap is tightened to form a bearing surface for said strap.

5. A hanger as in claim 1 wherein each of said joists is metal and each includes a closed aperture at a distance from said girder so that said brackets fit in said apertures.

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