

[54] **SINGLE-THICKNESS SEAT HANGER**
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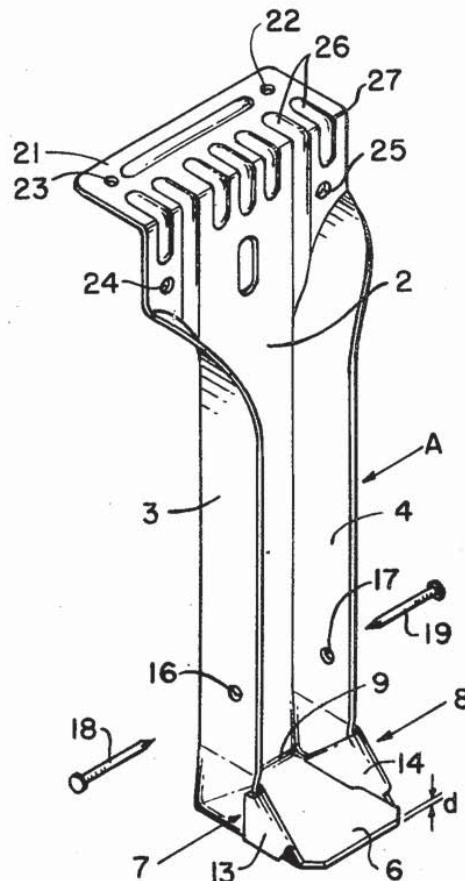
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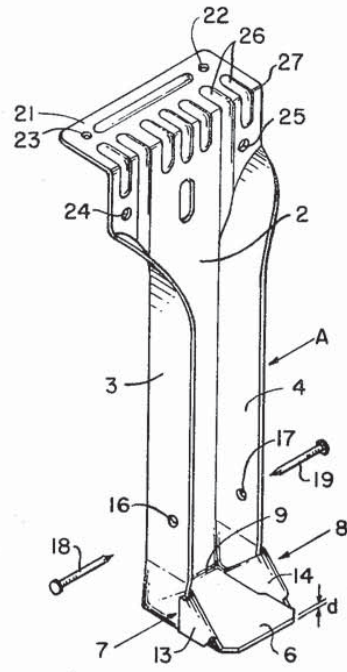
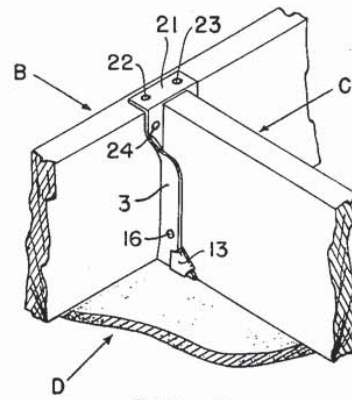
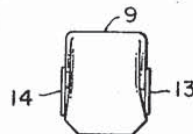
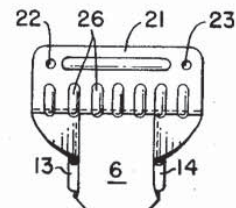
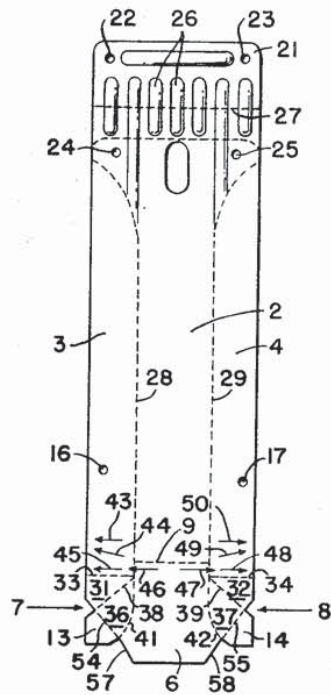
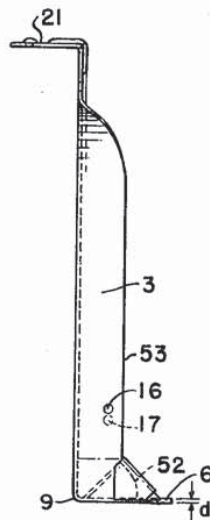
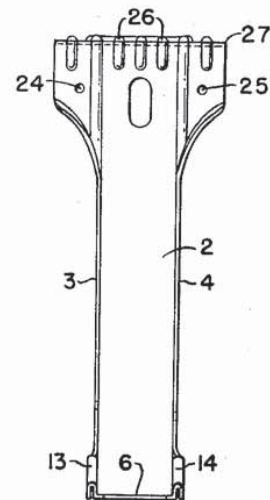
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[57] **ABSTRACT**

A metal hanger for use in wood frame construction adapted for attachment to a support such as a carrying beam for receiving a joist member. The hanger consists of a back, a pair of sides, a seat and a uniquely folded connecting area connecting the sides and the seat. The seat consists of a single thickness of material and the distance between the bottom of the joist and the bottom of the hanger constitutes no more than a single thickness of said material.

1 Claim, 7 Drawing Figures





SINGLE-THICKNESS SEAT HANGER

BACKGROUND OF THE INVENTION

It has become general practice in the light, wood frame building construction industry to attach the ceiling joist members to the carrying beams by means of metal hangers. These hangers are formed from a single sheet of flat metal, but in order to obtain the required loading requirements, it has been necessary to bend the material so that in the seat area there is at least a double thickness of material at the edges. This thickening in the seat area causes a problem in sheet rocking of the ceilings. The ceiling sheet rock must bend over each of the lower portions of the hangers causing a bulge in the sheet rock and giving a slight ripple effect to the ceiling. Further, the bending of the sheet rock places a strain on the sheet rock nails and popping of nails or the plaster around the nails in the vicinity of the building sheet rock is a common problem.

SUMMARY OF THE INVENTION

The gist of the present invention is a unique forming of the hanger which limits the distance from the top of the seat to the bottom of the hanger to a single thickness of material. Thus the ceiling sheet rock can be affixed to the ceiling joist with little or no interference from the hangers.

An object of the present invention is to provide a joist hanger with a single-thickness seat which meets or exceeds the strength requirements of the Uniform Building Code and other governmental building requirements, uses a minimum amount of material, may be machine mass produced and competitively priced.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an isometric view of the device constructed in accordance with the present invention.

FIG. 2 is a plan view of the sheet material before folding into the shape shown in FIG. 1.

FIG. 3 is a side view of the device shown in FIG. 1.

FIG. 4 is a front view of the device shown in FIG. 1.

FIG. 5 is a top view of the device shown in FIG. 1.

FIG. 6 is a bottom view of the device shown in FIG. 1.

FIG. 7 is an isometric view of the device shown as it would appear in a typical frame building. A portion of the ceiling sheet rock is indicated by the letter D.

BRIEF DESCRIPTION OF THE PREFERRED EMBODIMENTS OF THE INVENTION

The present invention consists of a hanger A adapted for attachment to a support B and adapted for receiving a wood joist C and being constructed from a single flat sheet of bendable material, the sheet being divided into areas constituting a back 2, a pair of sides 3 and 4, a seat 6, and connecting areas 7 and 8 connecting the respective sides and the seat, the improvement comprising: the seat being formed from a single thickness of material by folding the material along a line 9 dividing the back from the seat, the connecting areas being folded to form substantially right angles between the sides and the base with all folded areas occurring at the sides of the hanger; a pair of tabs 13 and 14 formed in the connecting areas and being positioned at the sides and folded to frictionally engage the folded portions of the connecting areas; and each of the sides being formed with an opening 16 and 17 set at staggered ele-

variations above the seat and adapted for receiving fasteners 18 and 19 so as to join the sides to the joist to prevent unfolding of the folded connecting areas. The hanger is so constructed that the distance between the bottom of the joist and the bottom of the hanger constitutes no more than a single thickness d of the material.

The construction of the upper portion of the hanger is standard design and consists of an offset 21 formed with openings 22 and 23 through which nails are driven into the carrying beam. Openings 24 and 25 are formed in the upper portion of the back of the hanger through which nails are driven into the carrying beam. Embossments 26 are formed at the bend line 27 to strengthen the hanger.

The manner in which the hanger is constructed may be more easily understood by referring to FIG. 2. In this figure, the material is shown in flat sheet form. The sides are formed by folding 90 degrees along fold lines 28 and 29.

In the connecting areas, portions 31 and 32 are folded up 180° along respective fold lines 33 and 34 portions 36 and 37 are folded down 180 degrees along respective fold lines 38 and 39 and portions 36 and 37 are folded upwardly 90 degrees along fold lines 41 and 42.

After the above folds are made, portions of the sides in the vicinity of arrows 43-50 are drawn in the directions indicated by said arrows so that the lower portions of the sides have edges 52 which extend beyond the leading edge 53 of the upper portion of the sides for additional frictional area in engagement with the flap portions. After the cold drawing, the tab portions are folded down 180° along fold lines 54 and 55.

Note in FIG. 2 that each connecting area is cut at an angle to the sides forming edges 57 and 58.

The tabs are forced into frictional engagement with the connecting areas of the hanger but no other connection of the folded area is required. In order to prevent the seat from unfolding, it is necessary to keep the sides 3 and 4 of the hanger in parallel relationship and in close association with the carried joist member. This may be accomplished by affixing the sides to the beam by nails 18 and 19 or other suitable fasteners. Thus the nails perform their usual function of preventing withdrawal of the joist but their primary function is to coact with the construction of the hanger to prevent failure of the hanger in the seat area due to unfolding of the hanger in the connecting areas. This rather unique fact changes the loads attained in a given series of hangers from the barely adequate range of 5,500 to 6,000 lbs to the very adequate range of 7,500-8,000 lbs.

The hanger thus described may be constructed in various sizes and various gages. As an example, the hanger may be made according to the following specifications: seat = $1 \frac{9}{16} \times 2$ inches; top flange $1 \frac{5}{16} \times 3 \frac{1}{2}$ inches, distance from seat to top flange may range from about 5% to 13 1/4 inches, material = 18-gage galvanized steel.

I claim:

1. A hanger adapted for attachment to a support and adapted for receiving a wood joist and being constructed from a single flat sheet of bendable material; said sheet being divided into areas constituting a back, a pair of sides, a seat and a connecting area connecting said sides and said seat; the improvement comprising:

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- a. said seat being formed from a single thickness of said material by folding said material along a line dividing said back from said seat;
- b. said connecting area being folded to form a substantially right angle between said sides and said base, and all folded areas occurring at the sides of said hanger;
- c. each connecting area is cut at an angle to said sides with a pair of tabs formed in said connecting area having their bend lines coextensive with said angle and being positioned at the sides and folded to frictionally engage the folded portions of said connecting areas;
- d. each of said sides being formed with an opening spaced above said seat adapted for receiving a fastener adapted to join said sides to said joist to prevent unfolding of said folded connecting area;
- e. said material being folded and positioned so that the distance between the bottom of the joist and

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- the bottom of the hanger constitutes no more than a single thickness of said material; and;
- f. said sides being folded 90 degrees to said back along fold lines wherein the seat and adjacent side portions are formed by folding each of the connecting areas as follows;
 1. starting at a first point below and substantially in alignment with said side fold lines and extending along a line outwardly to the outer edge of said side, fold the portion below said line 180° upwardly;
 2. starting at said first point and extending diagonally downwardly along a line substantially coincident with a line forming the upper edge of said tab, fold the area below said line 180° downwardly along said line; and
 3. along a line coincident to the edge formed by said angular cut, bend said tab downwardly 180°.
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