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F. N. ROPP

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COMBINATION JOIST HANGER AND TIE

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Fig. 6

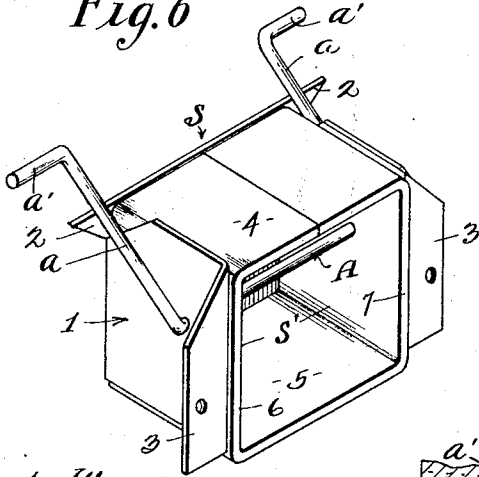


Fig. 5

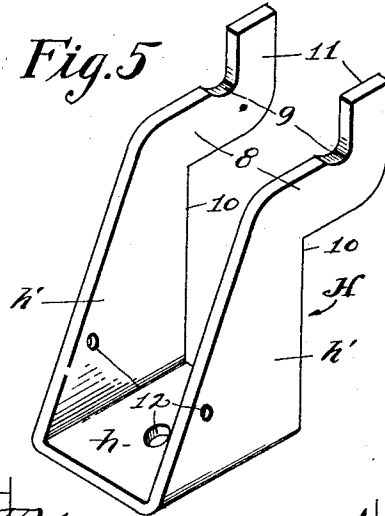


Fig. 4

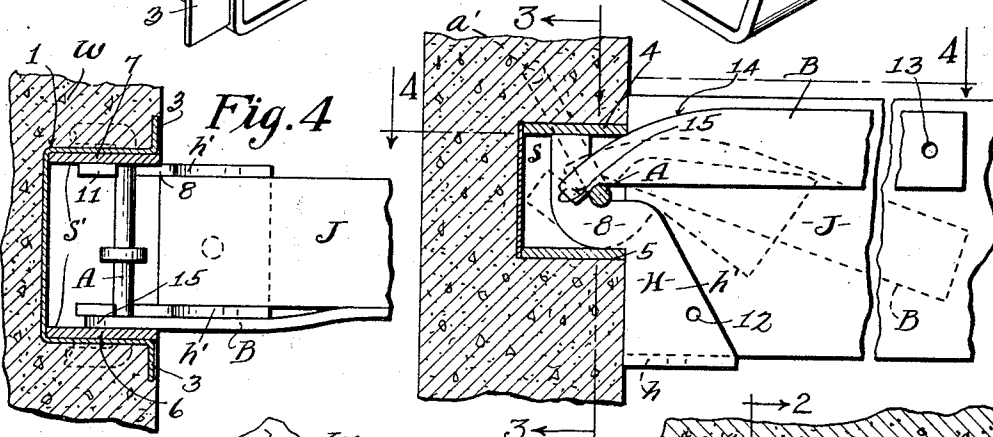


Fig. 2

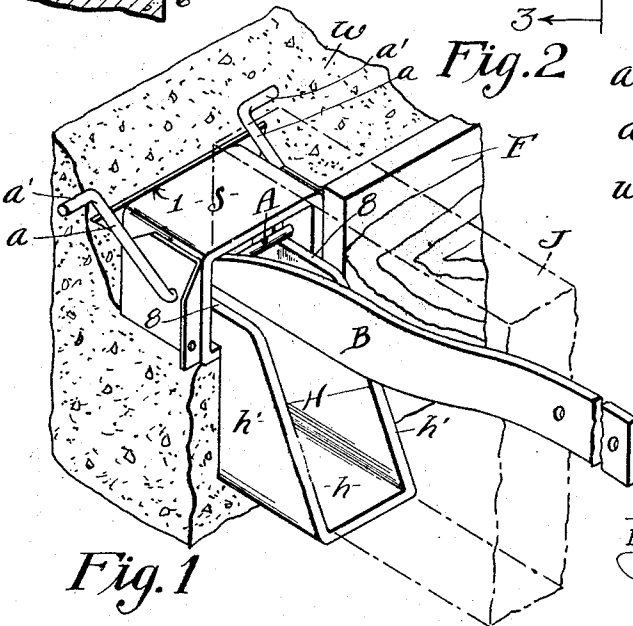


Fig. 1

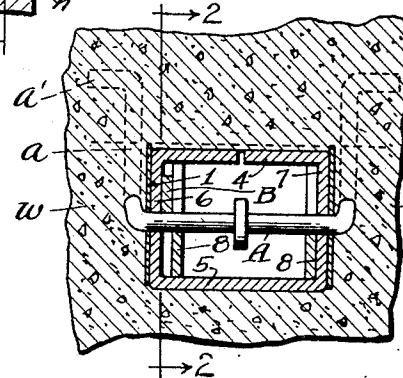


Fig. 3

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COMBINATION JOIST HANGER AND TIE

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This invention relates to combination joist hangers and ties of the character shown in my pending application for patent filed April 30, 1927, Serial No. 187,736, and the principal object is to provide means associated with hangers for tying the ends of the joists to the walls, whereby the walls may be bonded together and a building structure rendered substantially proof against damage by reason of earthquakes or other calamities which would tend to spread the walls apart.

A more detailed object of invention is to provide means including a socket member adapted to be embedded in and anchored to a wall, a hanger detachably supported in said socket member and projecting inwardly therefrom and in contact with the inner face of the wall, and one or more members adapted to be attached to a joist for rigidly connecting the joist with the anchored socket member and hanger.

I have shown a preferred embodiment of my invention in the accompanying drawings, in which—

Fig. 1 is a perspective view of a combination anchored socket member joist hanger and tie strap for supporting and rigidly connecting the joist with a wall structure.

Fig. 2 is a sectional elevation of the same on line 2—2 of Figs. 3.

Fig. 3 is a sectional elevation of the same on line 3—3 of Fig. 2.

Fig. 4 is a sectional plan of the same on line 4—4 of Fig. 2.

Fig. 5 is a perspective view of a suitable form of joist hanger.

Fig. 6 is a perspective view of a suitable form of a socket member adapted for use in connection with my improvements.

The joist hanger and socket member will be but briefly described, as they are substantially of the form shown in my said application for patent.

The socket member S is of rectangular form with a recess S' therein, and provided on its back and two of its sides with a sheet metal cover 1, as shown in Fig. 6. Said cover has projections 2, 2 at the back and 3, 3 at the front, so that when the member S is properly positioned between the forms F of a concrete

wall as at W, the socket member will be firmly and rigidly anchored in the concrete of the wall. The flanges 3, 3 of the cover 1 additionally serve to support the members S on the forms before the concrete walls are formed. The members S are so positioned in the wall that the open ends of the sockets S' will be flush with the face of the wall.

A U-shaped anchor bar A is provided in the member S, the central portion of which extends transversely through the socket S' and in a plane intermediate the top 4 and bottom 5 of the socket member. The anchor bar A extends through the sides 6 and 7 of the member S and is bent to provide inclined portions *a*, *a* which are extended upwardly and rearwardly from the member S and terminate in right angularly bent portions *a'*, *a'*. A hanger H, as shown in Fig 5, formed of a single piece of sheet metal and bent into a U-shaped cross section is provided for detachable connection with the socket member S. Said hanger has a bottom portion *h* and side portions *h'*, *h'* which extend upwardly and have continuing portions 8, 8 extending inwardly from and at right angles to the rear edges 10, 10 of the portions *h'*, *h'* for engagement with the central portion of the anchor bar A. To this end the upper edges of the portions 8, 8 are provided with recesses 9, 9 adapted to underlie the bar A and portions 11, 11 extend upwardly from said recesses behind the bar A.

The hanger H is so positioned in the wall that the rear edges 10 of the sides *h'*, *h'* rest against the face of the wall while the lower edges of the portions 8 rest upon the upper surface of the bottom 5 of the member S. The hanger H may be quickly attached to or detached from the bar A by swinging the hanger about the axis of the bar A. The sides *h'*, *h'* and the bottom *h* of the hanger H form a seat for a joist J, as shown in Fig. 2, and the hanger may be nailed or bolted to the ends of the joist through perforations, as at 12, 12, etc. The width of the socket S' is sufficiently wider than the hanger H to accommodate a bar B which is adapted to be attached to one side of the joist J and to be inserted at its inner end in

the socket S' between one of the sides h' of the hanger H and the adjacent side of the member S, as shown in Fig. 4.

The bar B constitutes a tie by means of which the joist J may be anchored to the wall at its end, said bar being adapted for attachment to the joist and to the anchor after the joist has been positioned in the hanger. The bar B is provided with a plurality of perforations 13, 13 by means of which it may be attached to the joist J by nails, bolts or otherwise. The inner end of the bar B is curved downwardly on its upper edge at 14 so as to engage the top 4 of the socket S, and is further provided with a reduced end portion 15 which extends downwardly at an angle around and behind the anchor bar A, as shown in Fig. 2. This form of bar B provides means to prevent a vertical movement of the joist J relative to the wall, and the inner end thereof is so formed as to prevent a longitudinal movement relative to the wall. The form of bar B, however, is such that when the bar B is detached from the joist it may be easily inserted in and removed from the socket S.

It will be readily understood that I may use either one or two of the members B for each of the joists J. If two such members are used the socket S' must of necessity be wide enough to accommodate two members B adjacent the opposite sides of the member S.

It will be observed that I have provided a simple, efficient and economical means for preventing the weaving of the joists relative to the walls, and buildings constructed in accordance with my improvements will be more proof against damage by earthquakes, winds or other causes than when otherwise constructed.

What I claim is:

1. In a device of the character described, the combination of a socket member adapted to be imbedded in a wall, a hanger anchored in said socket member and having a joist receiving portion externally of the wall, a joist held in said hanger, and a member attached to said joist and connected with said socket member, for preventing the vertical or longitudinal movement of the joist relative to the wall.

2. A combination joist hanger and tie comprising an anchor adapted to be imbedded in a wall, a hanger detachably connected with and supported on said anchor, a joist carried in said hanger, and a tie member attached to said joist and connected with said anchor, for the purpose described.

3. A combination joist hanger and tie comprising a socket member adapted to be anchored in a wall, a hanger detachably connected therewith, a joist carried in said hanger, and a bar attached to said joist and having a portion extending into and en-

gaging said anchor so as to prevent the movement of the joist relative to said wall.

4. A combination joist hanger and tie comprising a socket member adapted to be imbedded in a wall, an anchor extending through said socket, a hanger having an attaching portion extending into said socket and connected with said anchor, a joist carried in said hanger, and a tie bar attached to said joist and having its end extending into said socket member and detachably connected with said anchor, for the purpose described.

5. A combination joist hanger and tie comprising a metallic socket member adapted to be anchored in a wall, a member extending therethrough intermediate the ends, top and bottom of the socket and forming an anchor, a hanger detachably connected with said anchor and said socket member, a joist carried in said hanger, and means connecting said joist and said socket and engaging said anchor, for the purpose described.

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