

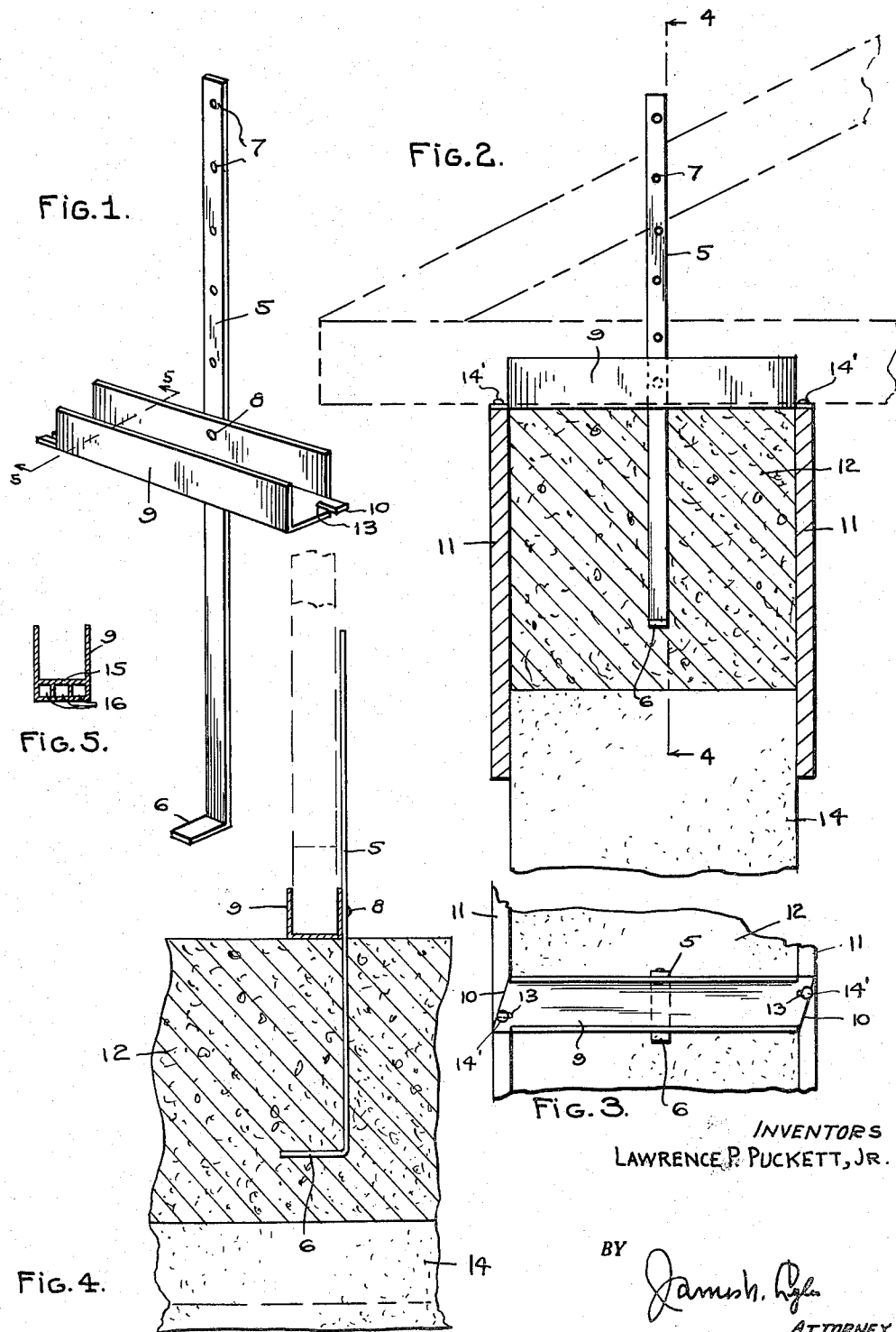
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ANCHORED TIE-DOWN DEVICE FOR RAFTERS

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ANCHORED TIE-DOWN DEVICE FOR RAFTERS

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This invention relates to an anchored tie-down device for roof rafters or floor joists and whereby to securely position the rafter or joist in accurate anchored relation to a poured concrete lintel.

The invention contemplates a saddle that is nailable to inner and outer form boards that constitute the mold wherein the concrete lintel is to be poured and whereby to accurately position the saddle at predetermined points for reception of the rafters or joists and with the saddle being connected to an anchor strap that projects above and below the saddle and whereby the lower end will be supported in a position to be anchored within the concrete to be poured within the form and with the upper end of the strap being apertured at spaced apart points for nailing engagement or bending engagement with the floor joists or rafters to be secured.

The invention contemplates an anchoring and seating device that includes a saddle and an anchoring strap and with the saddle at its opposite ends being inwardly slotted for the reception of securing nails whereby the saddle will span the distance between form boards constituting the mold and with the form boards being subsequently removable by pulling the same away from the concrete lintel without the necessity of drawing the nails outwardly, thus supporting the saddle in a position to lie flat upon the top of the lintel for the reception of the rafters or joists.

It has been customary heretofore to inject a plurality of anchor bolts into the freshly poured concrete and with their threaded ends projecting above the line of the top of the lintel to be poured and whereby to anchor a wood plate around the lintel to which is connected in various ways the rafters or joists and it is the purpose of this device to form a saddle and an anchoring strap in a simple and expeditious manner, completely eliminating the wood plate and resulting in a very considerable saving in material and labor.

Novel features of construction and operation of the device will be more clearly apparent during the course of the following description, reference being had to the accompanying drawings wherein has been illustrated a preferred form of the device and wherein like characters of reference are employed to denote like parts throughout the several figures.

In the drawings:

Figure 1 is a perspective view of a tie-down device constructed in accordance with the invention.

Figure 2 is a transverse section taken through the upper portion of a preformed block wall having form boards disposed upon the inner and outer sides thereof and with the form boards projecting upwardly above the wall a distance corresponding to the depth of the lintel to be cast and showing the invention in operative relation thereto.

Figure 3 is a fragmentary top plan view of the structure of Figure 2.

Figure 4 is a fragmentary longitudinal section taken on line 4—4 of Figure 2, and

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Figure 5 is a transverse section taken substantially on line 5—5 of Figure 1, but illustrating a slightly modified form of saddle.

Referring specifically to the drawings the numeral 5 designates an elongated metallic strap that is bent at a right angle at its lower end to form a foot portion 6 that is to be embedded within the concrete of a lintel to be poured. The upper portion of the strap 5 is apertured at spaced apart points as at 7 to provide nail holes whereby the strap may be nailed to the sides of floor joists, roof rafters or the like. Substantially intermediate the length of the strap 5, there has been pivotally supported as at 8 a channeled saddle 9. The saddle 9 is upwardly opening and its opposite ends are angularly projected as at 10 for overlying engagement with form boards 11 that constitute the forms for a lintel 12, of poured concrete. The angularly disposed ends 10 are notched as at 13 for the passage of nails 14' that are employed to temporarily support the saddle in supporting engagement upon the upper edges of the boards 11 during the pouring of the concrete. The saddle 9 has a transverse width capable of receiving a conventional wood beam that constitutes the floor joist or the roof rafter. The form boards are supported against the opposite sides of a preformed and preferably concrete block wall 14 to project thereabove a distance corresponding to the depth of the lintel to be poured. Thus the saddle will be supported in a position defining the top plane of the lintel.

In the form of the invention illustrated in Figure 5, the saddle is provided with a double ventilated bottom wall 15 wherein air passages 16 are provided throughout the length of the saddle to prevent the passage of moisture to the beam that is being anchored. In this form of the invention, the saddle is preferably extruded from metal to provide the multiple air passages.

In the use of the device, the form boards 11 are positioned against the inner and outer sides of the wall 14 and clamped thereto in any well known manner. It then being determined the proper spacing of the floor joists or rafters, the saddles and their connected straps are positioned on the top of the form boards in the position where the rafter or floor joist will normally rest. Nails 14' are then driven into the form boards through the notches 13 and anchors the saddle in a correct position of alignment for receiving the rafters or joists. With the saddle nailed in position, the strap 5 will be accurately spaced intermediate the width of the form and with the lower portion depending into the form, with the legs 6 in spaced relation to the top of the wall 14. Concrete is then poured into the form to the level of the upper edges of the form boards and the bottoms of the saddles. When the concrete has sufficiently set, the form boards may be stripped away, pulling the nails out of the notches 13, and leaving the saddles securely held upon the upper side of the lintel 12 and with the strap 5 securely anchored into the concrete. The rafters or floor joists are then laid in a conventional manner and with their ends being disposed within the saddles. The upper portion of the strap 5 is then nailed to the adjacent sides of the rafters or joists and if desired, the strap may be bent over a rafter or a floor joist after nailing to avoid cutting the extended end thereof.

It will be apparent from the foregoing that a very simple and highly efficient anchoring means has been provided for floor joists and roof rafters. The device is quickly installed with a minimum of effort and in accurate spacing relation to each other and forms a definite saddle for the resting support of the ends of the floor joists or rafters. The use of the device avoids the relatively expensive use of wood plates and the labor necessary in first installing anchor bolts, then drilling the plate

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in order to engage over the several bolts that project above the lintel. Difficulty has been experienced with the use of anchor bolts, since it becomes necessary that the anchor bolts be forced into the poured concrete prior to the setting thereof and it becomes difficult to properly position the bolts and maintain them in alignment for subsequent bolting engagement with the wood plate. The device results in a very considerable saving in labor and presents an extremely novel and effective tie-down device for building structures. As before stated the slotted ends of the saddle permit the stripping away of the form boards without the necessity of withdrawing the nails 14'.

It is to be understood that the invention is not limited to the precise arrangement shown, but that changes are contemplated as readily fall within the spirit of the invention as shall be determined by the scope of the subjoined claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An anchoring device for anchoring roof elements to the concrete continuous top beam of concrete block structures wherein the said beam is poured in place between form-constituting side members; said anchoring device comprising an elongated upright strap having a lower bent portion adapted to be positioned in the poured concrete and having an upper end portion of a length sufficient to permit its attachment to a rafter or beam, a saddle in the form of an upwardly facing channel like member of moisture proof material comprising a bottom and upstanding side walls, connecting means between one of said side walls and the said strap holding the saddle and strap against separation while permitting movement of the saddle to a position substantially transverse to the said strap, whereby to permit the saddle to extend across and to bear upon the top of the poured beam, extended end portions on said saddle adapted to rest upon the top edges of said form-constituting side members, the distance between the said walls of the saddle being such as to receive the lower edge portion of a roof beam to position said roof beam and to hold it against movement away from the said strap.

2. A structure as recited in claim 1 wherein the outer ends of the bottom of the saddle are provided with means through which the saddle may be secured to the top edges of the form-constituting side members.

3. An anchoring device for anchoring roof elements to the continuous top beam of concrete structures; said anchoring device comprising an elongated upright strap having a lower bent portion adapted to be positioned in the poured concrete and having an upper end portion of a length sufficient to permit its attachment to a rafter or beam, a saddle in the form of an upwardly facing

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channel like member of moisture proof material comprising a bottom and upstanding side walls, connecting means between one of said side walls and the said strap holding the saddle and strap against separation while permitting movement of the saddle to a position substantially transverse to the said strap whereby to permit the saddle to extend across and to bear upon the top of the poured beam, extended end portions on said saddle, the distance between the said walls of the saddle being such as to receive the lower edge portion of a roof beam to position said roof beam and to hold it against movement away from the said strap.

4. An anchoring device for anchoring roof elements to the continuous top beam of concrete buildings of the type wherein the concrete forming said beam is poured in place between form constituting elements, to constitute the top of the side walls of such buildings, whereby to form a continuous and endless beam; said anchoring device comprising an elongated upright strap having a lower bent portion of a length to adapt it to be positioned in the poured concrete before said concrete hardens, said strap having an upper end portion of a length sufficient to permit its attachment to a roof supporting rafter or beam, a saddle in the form of an upwardly facing channel like member of moisture proof material comprising a bottom and spaced upstanding side walls, connecting means between one of said side walls and the said strap holding the strap and the saddle against separation while permitting movement of the saddle to a position to extend substantially transverse to the said strap, the saddle being of a length to extend across the concrete being poured and to rest upon the form constituting elements until the concrete hardens, the bottom of said saddle bearing upon the top of the poured beam after the concrete hardens, the distance between the side walls of the saddle being such as to receive the lower edge portion of a roof beam to position said roof beam and to hold it against movement away from said strap.

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