

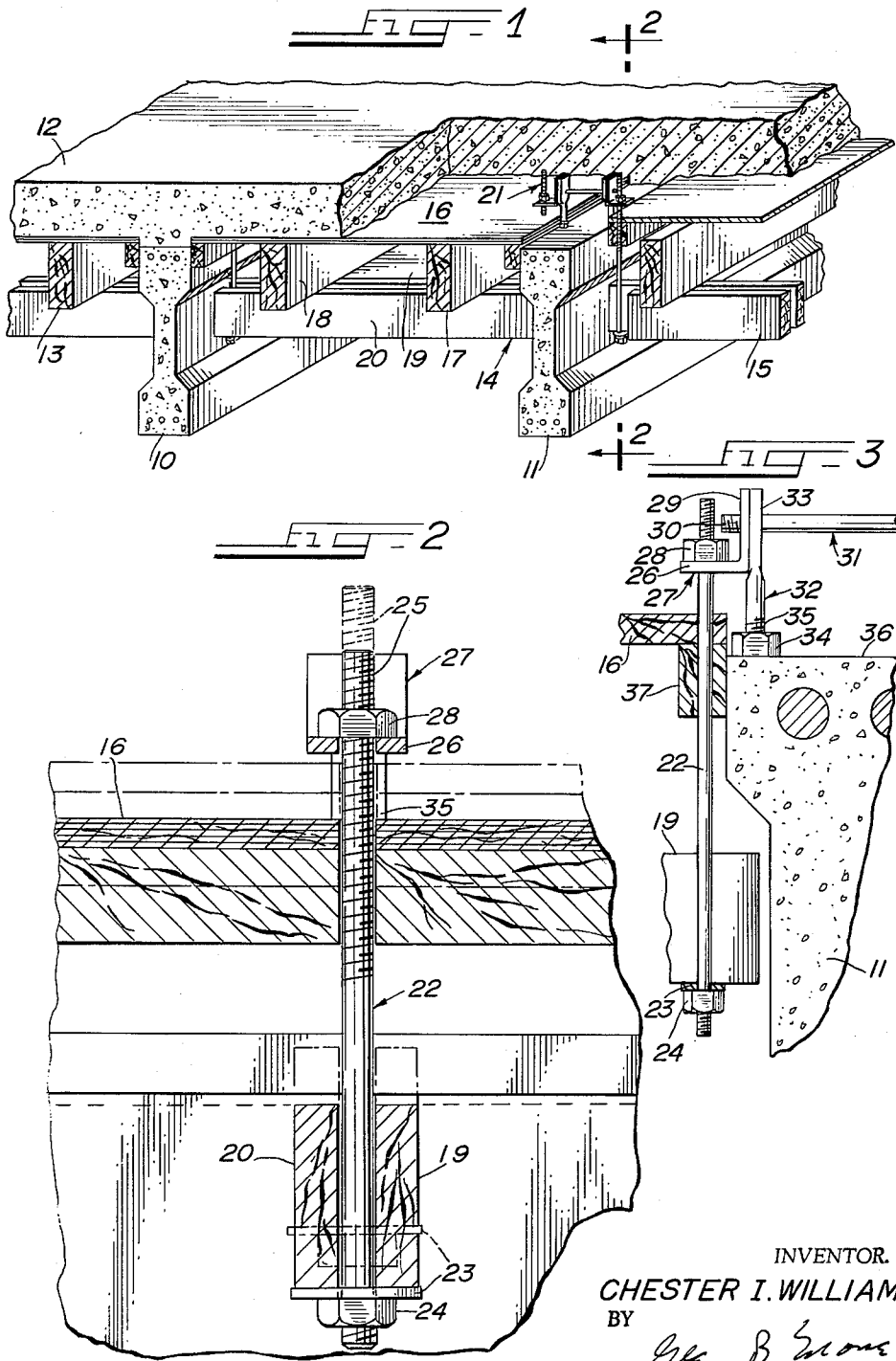
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TOP-ADJUSTMENT BEAM HANGER

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TOP-ADJUSTMENT BEAM HANGER
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This invention relates to equipment for supporting form panels in connection with the casting of concrete floors and decks. It is common practice to design bridges and other heavy-duty floor structures as a group of parallel steel or reinforced concrete beams supporting a cast panel approximately coplanar with the top of these beams. The beams are usually placed on their end supports, and a set of form panels is positioned between the beams so that concrete can be poured and spread over the entire surface to provide a floor or roadway.

It is desirable that these interposed form panels be properly positioned with respect to the beams to control the thickness of the poured material, and it is also desirable that the panel supports be adjustable to facilitate the alignment of the usual series of panel units. For considerations of economy, there should be a minimum of equipment value that must of necessity remain embedded in the concrete.

The present invention provides a very economical adjustable form support that has the adjustment accessible from above, so that the workman can walk along the top of the beams and align the forms (prior to pouring) without requiring scaffolding underneath the structure. In summary, the form support system provided by this invention includes a group of devices each having a leg normally bearing on the top of a beam, and a bracket extending laterally from this leg out beyond the edge of the beam. A normally vertical suspension rod has a preferably threaded upper end engaged by a nut above the horizontal leg of the bracket, and the suspension rod extends down to a suitable connection with the studs or walers of the form panel assembly. A similar leg and bracket is disposed on the opposite side of the beam, and these paired assemblies are interconnected by a rod. The arrangement obviously presents the nut at the upper end of the suspension rod in a position that is readily accessible to a workman walking along the top of the beam or on the form itself. Adjustment of this nut will result in varying the vertical position of the form panel assembly with respect to the beam, and correspondingly varying the position of the underside of the poured material.

The several features of the invention will be analyzed in further detail through a discussion of the particular embodiment illustrated in the accompanying drawing. In the drawing:

FIGURE 1 is fragmentary perspective view showing the relationship of a group of reinforced concrete beams, form panels suspended from the beams, and the poured concrete positioned by the form panels.

FIGURE 2 is a section on the plane 2—2 of FIGURE 1, on an enlarged scale.

FIGURE 3 is a section normal to the axis of the reinforced concrete beam at the position of the supporting device, on an enlarged scale over that of FIGURE 1.

Referring to the drawing, the completed floor structure shown in FIGURE 1 includes a group of parallel reinforced concrete beams, two of these being designated at 10 and 11. The mass of poured concrete indicated at 12 is superimposed on top of these beams to be supported by them, and the pouring of this material is made possible by the presence of the form panel units generally indicated at 13, 14, and 15. These may be of various types of construction, the illustrated arrange-

ment being considered typical. A heavy plywood panel 16 is reinforced by a group of studs as shown at 17 and 18, and transverse beams known as walers extend across these studs and extend to a position adjacent the beams. Preferably, these walers are in pairs as shown at 19 and 20.

The supporting device provided by this invention is generally indicated at 21, and includes a suspension rod 22 extending down through a suitable hole in the panel 16 to a cross-plate 23 bridging across between the walers 19 and 20. The rod 22 extends in the space between these walers. The rod 22 may be in the form of a bolt with a forged head, or the lower extremity of this rod may be threaded and engaged with a suitable nut 24. The upper ends of the rods 22 are threaded as shown at 25, and are received in a suitable hole in the horizontal leg 26 of the angle brackets 27. A nut 28 engages the threaded end 25 and is supported by the horizontal leg 26, and the adjustment of this nut with respect to the rod 22 will alter the vertical position of the form assemblies.

The vertical leg 29 of the bracket 27 is preferably provided with a threaded hole engaging the threaded end 30 of the horizontal spacer rod 31. This rod extends to a similar assembly at the opposite side of the beam. A leg 32 has a flattened upper end 33 provided with a threaded hole receiving the end 30 of the rod 31, and the bracket 27 and leg 32 may be securely "set" on the threads 30 to maintain a relatively fixed position on the rod 31. Preferably, the legs 32 are provided with an enlarged head either as an integrally forged portion, or in the form of a nut 34 engaging a threaded lower portion 35.

Where the adjusted position of the panel 16 is somewhat above the top surface 36 of the supporting beams, it is desirable to secure a barrier strip as shown at 37 to the underside of the panel 16 adjacent the side of the beams to prevent flow of concrete around the edge of the panel 16 in this area. In this construction, the hole for receiving the suspension rods 22 is simply extended on through the barrier strips 37 as best shown in FIGURE 3.

Reference to FIGURE 2 will illustrate the adjustability of the form panels provided by the suspension device, the rotation of the nut 28 causing a movement of the cross-plate 23 from the full line to the dotted line position. This adjustability can be made entirely from above; or, if it happens to be desirable to do so, can also be accomplished by manipulation of the head or nut 24 from underneath. If desired, suitable lock washers or other anti-rotational devices could be incorporated with either the nuts 24 or 28. After the poured material 12 has set, the rods 22 can either be unscrewed or cut off. Removal of the nuts 24 will permit the forms to be removed (or "stripped"), followed by disposition of the rods 22.

The particular embodiments of the present invention which have been illustrated and discussed herein are for illustrative purposes only and are not to be considered as a limitation upon the scope of the appended claims. In these claims, it is my intent to claim the entire invention disclosed herein, except as I am limited by the prior art.

I claim:

1. An adjustable device for supporting a form structure from a substantially horizontal beam, said device comprising:

a pair of legs each having an enlargement at the normally lower extremity thereof, and a flattened upper end provided with a threaded transverse hole;
a rod having threaded ends engaging said holes;
a pair of angle brackets each having a normally ver-

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tical portion normal to said rod and provided with a threaded hole engaging the threaded ends of said rod, respectively, with said legs disposed between said brackets, said brackets each also having a normally horizontal portion extending outwardly and provided with a hole;

a pair of suspension bolts each normally secured to a form structure at the lower extremity thereof, and having a threaded upper end engaging said horizontal bracket portion holes, respectively; and
nut means engaging said suspension bolt upper ends above said horizontal bracket portions.

2. An adjustable device for supporting a form structure from a substantially horizontal beam, said device comprising:

a pair of legs each having an upper end provided with a threaded transverse hole;

a rod having threaded ends engaging said holes;

a pair of angle brackets each having a normally vertical portion normal to said rod and provided with

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a threaded hole engaging the threaded ends of said rod, respectively, with said legs disposed between said brackets, said brackets each also having a normally horizontal portion extending outwardly and provided with a hole;

a pair of suspension bolts each normally secured to a form structure at the lower extremity thereof, and having a threaded upper end engaging said horizontal bracket portion holes, respectively; and
nut means engaging said suspension bolt upper ends above said horizontal bracket portions.

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