Feb. 23, 1954

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SCAFFOLD BRACKET

Filed Oct. 1, 1951

2,670,248

FIG. 1

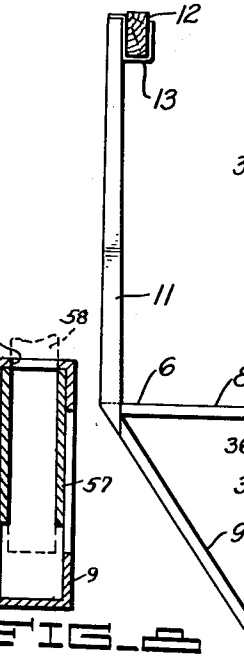


FIG. 7

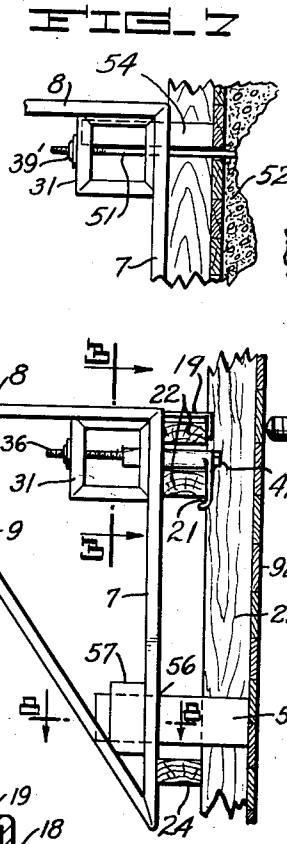
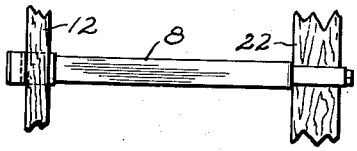


FIG. 2



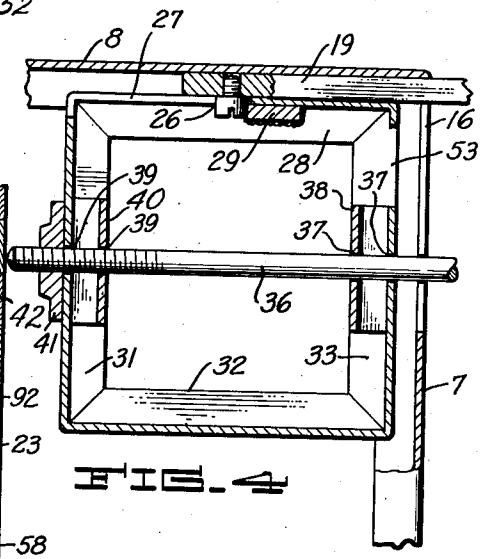


FIG. 4

FIG. 8

FIG. 3

FIG. 5

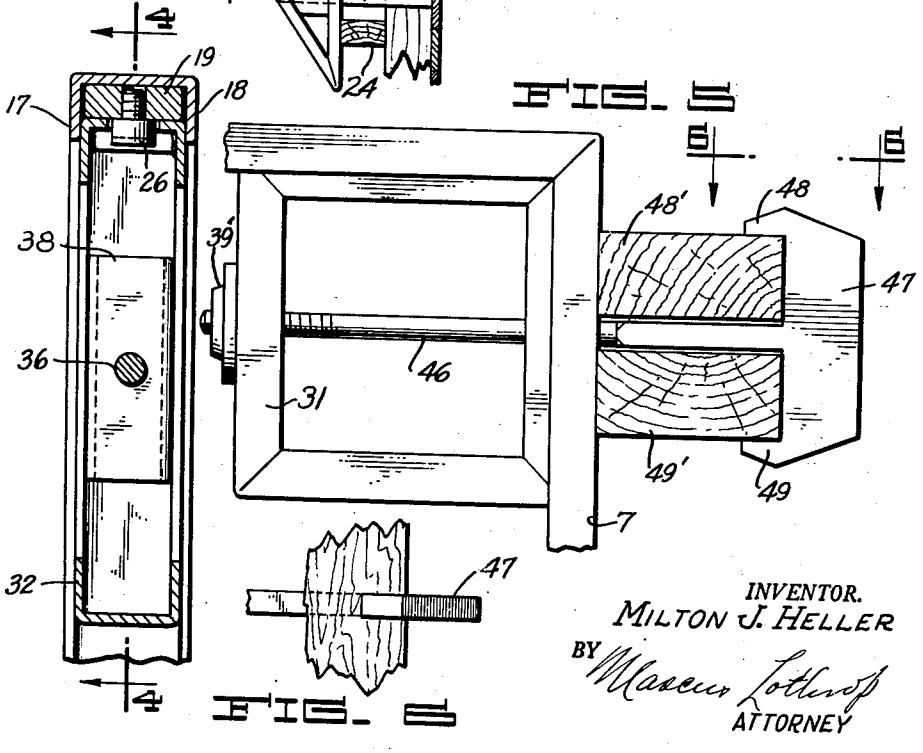


FIG. 6

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Patented Feb. 23, 1954

2,670,248

UNITED STATES PATENT OFFICE

2,670,248

SCAFFOLD BRACKET

Milton J. Heller, Sacramento, Calif.

Application October 1, 1951, Serial No. 249,171

2 Claims. (Cl. 304—14)

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My invention relates to structures for use in assisting builders and workmen to operate on the side of buildings, particularly on the side of concrete buildings having wall forms or walls in position or being erected. The general subject matter is similar to that disclosed in my co-pending application entitled Scaffold Jack, filed October 31, 1949, with Serial Number 124,561.

In the use of a scaffold bracket in connection with building operations, particularly those related to concrete walls, it is advisable to have a light, portable, simple scaffold bracket that can be attached to various parts of the walls or of the forms, especially that can be attached to the walers, or horizontal timber members for retaining some of the forms in position. Under some circumstances, however, it is not possible to use horizontally extending walers to serve as supports for the bracket and it is therefore an object of my invention to provide a scaffold bracket which is readily attachable to a wall by means other than the walers.

A still further object of the invention is to provide a scaffold bracket which can be attached to a vertical wall with or without forms and with only slight changes in the equipment utilized with the scaffold bracket.

Another object of the invention is to provide a scaffold bracket which can be positioned at any desired distance from a vertical surface, within rather wide limits, and without substantially altering the scaffold bracket itself.

A still further object of my invention is in general to simplify and improve scaffold brackets.

While the scaffold bracket of my invention can be embodied in a number of different modifications and forms, it has successfully been fabricated as described in the accompanying description and as shown in the accompanying drawing, in which

Figure 1 is a side elevation of a scaffold bracket in accordance with my invention, certain portions of an adjacent form being shown in cross-section on a vertical plane.

Figure 2 is a fragmentary plan of part of the scaffold bracket shown in Figure 1.

Figure 3 is a large scale cross-section, the plane of which is indicated by the line 3—3 of Figure 1.

Figure 4 is a fragmentary cross-section, the plane of which is indicated by the line 4—4 of Figure 3, the scale being somewhat reduced.

Figure 5 is an enlarged side elevation showing in detail an arrangement of a scaffold bracket supporting structure.

Figure 6 is a fragmentary plan, the plane of which is indicated by the line 6—6 of Figure 5.

Figure 7 is a fragmentary view somewhat like Figure 1, but showing a different mounting of the scaffold bracket.

Figure 8 is a fragmentary sectional view taken substantially along the line 8—8 of Fig. 1.

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While the scaffold bracket is susceptible to embodiment in a number of different forms, it is conveniently fabricated as illustrated in the several figures, and normally includes a triangular frame, generally designated 6, comprised of an abutment bar 7, a floor bar 8, and a strut bar 9. These bars are conveniently of any suitable cross-section and in the present instance are metal channels which are coped at the corners and are either of one length bent and welded or are separate pieces welded together to form a rigid, light, planar, right triangular frame. It is preferred to provide an upright 11, at the outermost corner of the frame as a support for safety rail 12, conveniently made up of a length of lumber and held in position in a clip 13, also welded to the upright 11.

The abutment bar 7, near its intersection with the floor bar 8, is provided with any of several forms of fasteners. For this reason an opening 16, substantially of rectangular configuration is cut to extend preferably from one of the side walls 17 to the other side wall 18 of the abutment bar. Shown in Figure 1 as one form of fastener and passing through the opening 16 and slidable along the under surface of the floor bar 8, is a hook 19, adapted to overlie and to abut the side of one of a pair of walers 22, included as part of a wall form 23. When the scaffold bracket is put into position, as shown in Figure 1, the abutment bar 7 is in contact with a lower waler 24, and the hook 19 is in engagement with an upper waler 22 and is in tension.

The tension is resisted by a removable set screw 26, extended into the shank of the hook 19. The set screw is designed to operate in a longitudinal slot 27, cut in a frame bar 28, nested within the floor bar 8 and secured to the walls 17 and 18 thereof, for example, by welding. The frame bar 28 and the floor bar 8 together serve to enclose a channel within which the hook is slidable, the end of the slot 27 serving as a stop for the set screw 26. An additional abutment 29 disposed at the end of the slot and secured by welding to the frame bar 28, adds to the rigidity of the structure.

When the hook is extended as shown, it is effective to overlie an upper waler 22. When the bracket is removed from the waler, for convenience in packing and storing, the hook 19 can be slid into position so that its downturned portion lies within the opening 16.

It is often desirable to provide a different form of hook mounting for the structure, either as an addition or as an alternate. For that reason I extend from the floor bar 8, as shown especially in Figure 1, a depending backing bar 31, preferably also fabricated of a metallic channel. The bar 31 is in part butted against and is secured by welding to the reinforcing bar 28 and also nests within and is secured to the side walls 17 and 18 of the floor bar 8. The backing bar 31 is substan-

tially parallel to the abutment bar 7, and at its lower depending end is supported by and jointed to a brace bar 32 extending substantially parallel to the floor bar 8 and joined to the side walls of the abutment bar 7. The bar 32 is joined also to a liner bar 33, nested within the abutment bar 7, and joined not only to the spacer bar 32, but likewise to the bar 28. In effect, the bars 28, 31, 32 and 33 form a rectangular frame received within the right angle of the triangular frame and serving to reinforce that part of the scaffold bracket.

A threaded and headed tension rod 36 passes through the tubular shank of a hook 21, through the opening 16 and through aligned apertures 37, in the liner bar 33, and in an inverted channel 38 which spans the walls of the bar 33. The tension rod also passes through aligned apertures 39, one in an inverted spacer channel 40 spanning the walls of the backing bar 31, and the other in the backing bar itself. All of the mentioned apertures are on an axis parallel with the floor bar 8. A threaded nut washer 41 is screwed on the outer end of the rod 35. When the nut washer is tightened, the rod is tensioned and the head 42 on the inner end of the rod draws the depending hook 21 tightly into contact with the lower one of the upper walers 22, translating the hook if the waler is small. The tensioned rod 36 imposes a load on the backing bar 31, which is transmitted to the frame 6, since the spacer bar 32 and the floor bar 8 and the frame bar 28 are placed in compression. Slight deformation of the fastening members takes place so that a tight grip on the waler 22 is afforded and the scaffold bracket is held against sidewise turning and against other displacement.

Other uses of the scaffold bracket are readily accomplished. By removal of the set screw 26 the hook 19 can be removed. Also the rod 36 and the hook 21 can be withdrawn following removal of the nut washer 41. When that change has been effectuated, a special T-headed tension rod 46 can be introduced in place of the small headed screw tension rod 36 and the hook 21. The special rod 46 has a flat, T-shaped head 47 on one end with inturned fingers 48 and 49, designed so that the flat head 47 can be turned horizontally and can be introduced between a pair of walers 48' and 49'. The rod 46 then can be revolved into the vertical plane, as shown in Figure 5 following which, upon tightening of the nut washer 39' a firm grip is afforded. Tensioning of the rod 46 clamps the abutment bar 7 firmly against the walers 48' and 49' and also against any lower waler such as 24.

Additionally, as shown in Figure 7, and after removal of the tension rod 36, it is entirely feasible to utilize as a tension rod 51 the extended reinforcing rod which customarily is embedded in a concrete wall 52. In this environment it is not necessary to have any walers whatsoever or any form of material since the concrete form tie or rod 51, when appropriately provided with a nut washer 39', serves firmly to anchor the scaffold bracket against the wall or the sheathing of the wall with the abutment bar 7 in firm contact therewith.

Under some circumstances it is desired to anchor the scaffold bracket by any of the foregoing means, but with the abutment bar 7 spaced somewhat from the closest vertical planar surface. That is accomplished by making the opening 16 in the abutment bar 7 of a rectangular configuration and supplementing it by a comparable

opening 53 through the bar 33, in registry therewith, and extending from wall to wall of the bar, so that a standoff member 54 (Figure 7), preferably a short length of timber such as a 2 x 4, can be introduced through the openings 16 and 53. The timber is preferably in sliding engagement with the side walls of the bars, and extends into bottom abutment with the bottom wall of the backing bar 31. Similarly the abutment bar 7 in its lowermost portion is provided with a rectangular opening 56, preferably supplemented by reinforcing side plates 57 (see Figs. 1 and 8). The opening 56 is in registry with the strut bar 9 so that a standoff member 58 can be positioned through the opening 56 and can be in part supported and guided by the walls 57 into abutment with the strut bar 9. If the lengths of the standoff members 54 and 58 are chosen at the desired value, then when tension is put on the tension rod 51, the abutment bar 7 is held exactly at the predetermined distance from the adjacent supporting surface.

In any form of the arrangement, the scaffold bracket herein disclosed is effective to serve as a mounting for floor boards or planks resting upon the floor bar 8 and extending from one of the scaffold brackets to an adjacent similar bracket. The scaffold bracket can be utilized either with a single waler or pairs of walers, or can be fastened directly to tension rods 51 which serve also as tie rods or the like in a reinforced concrete wall, either with or without forms or walers. The structure is light, easy to fabricate, affords means for utilizing standoff members, and is in general effective to assist substantially in building construction operations.

I claim:

1. A scaffold bracket comprising a rigid triangular frame including an abutment bar, a strut bar and a floor bar; a backing bar depending from said floor bar parallel to said abutment bar and having a surface facing said abutment bar but spaced therefrom, an opening in said abutment bar in alignment with said surface and adapted to receive a stand-off member extending through said opening and abutting said surface, aligned apertures in said abutment bar and said backing bar; a tension rod passing through said apertures and having means on its outer end for engaging a supporting structure, and tensioning means on said rod engaging the side of said backing bar remote from said abutment bar.

2. A scaffold bracket comprising a rigid triangular frame including an abutment bar, a strut bar and a floor bar; means forming spaced opposed walls extending from a position adjacent said abutment bar in a direction generally parallel to the plane of said bracket, a fixed stop spaced from said abutment bar and located between the planes of said opposed walls, said walls and stop defining a guide for the reception of a stand-off member passing between said walls and abutting said stop, and means for drawing said abutment bar toward a supporting structure.

MILTON J. HELLER.

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