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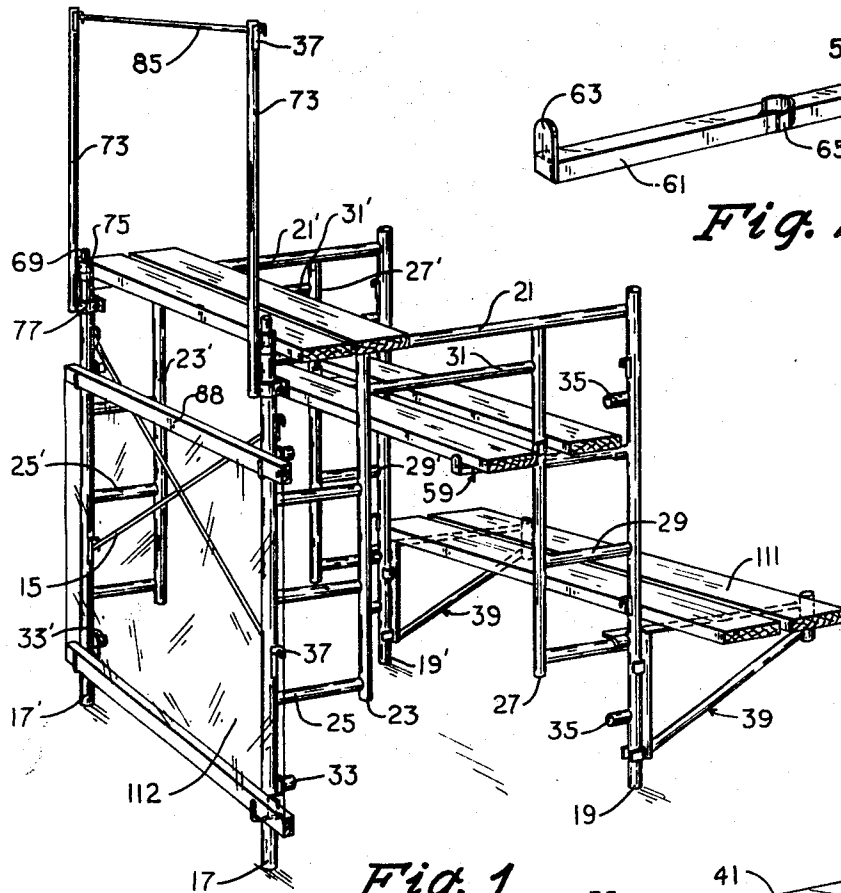
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3,392,801

SCAFFOLD DEVICE

Original Filed March 19, 1964

2 Sheets-Sheet 1



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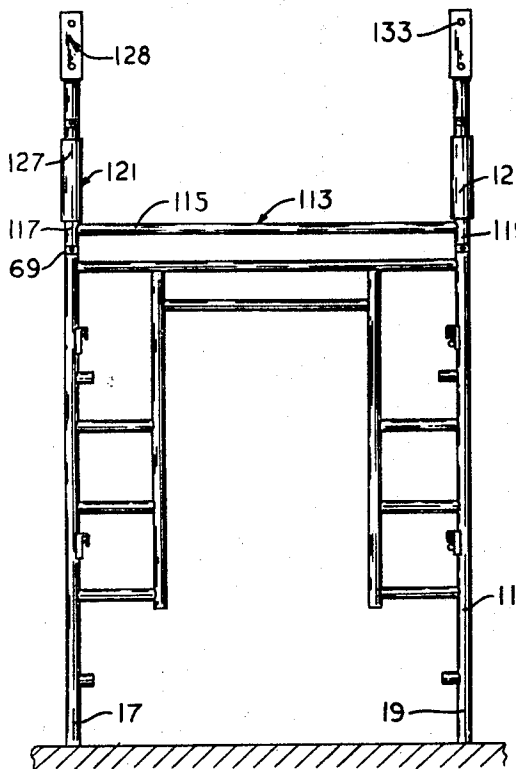


Fig. 6

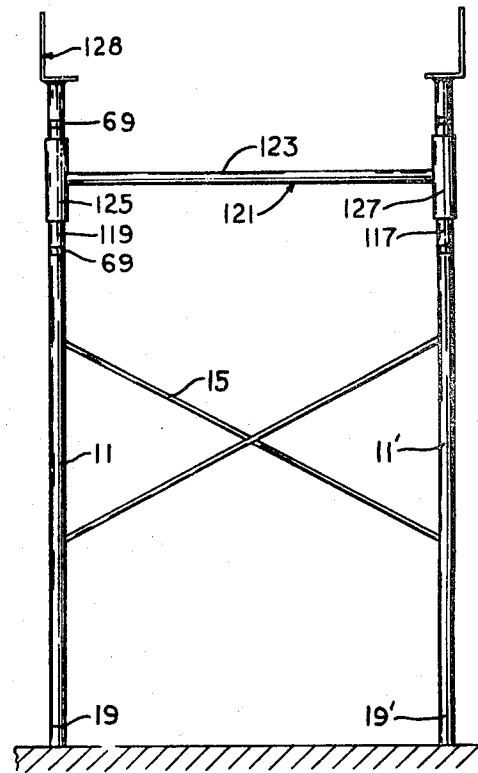


Fig. 7

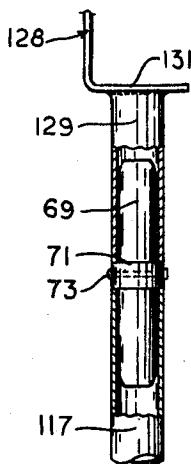


Fig. 8

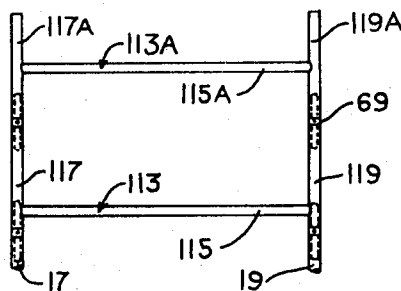


Fig. 9

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3,392,801

SCAFFOLD DEVICE

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Original application Mar. 19, 1964, Ser. No. 353,192, now
Patent No. 3,270,997, dated Sept. 6, 1966. Divided and
this application June 6, 1966, Ser. No. 555,486
6 Claims. (Cl. 182—178)

ABSTRACT OF THE DISCLOSURE

A scaffold device comprising a first scaffold section having opposite upright ends and brace means extending from one upright end to the other upright end, a pair of vertically disposed hollow tubular members on the upper portion of the upright ends, a second scaffold section comprised of two tie braces and two scaffold members, all four of which are comprised of a horizontal member connecting two vertically disposed tubular members. The tubular members of the scaffold members are detachably secured to the upright ends of the first scaffold section, and the tubular members of the tie braces slidably engage the tubular members of the two scaffold members, thereby interconnecting them.

This application is a divisional application of co-pending application Ser. No. 353,192 filed Mar. 19, 1964, now Patent No. 3,270,997.

Scaffolds per se are well known in the building industry. They are usually stacked in tiers, sometimes to great heights and they are quite frequently used to shore a ceiling or the like which is under construction. The ceiling or ceilings forms will usually be shored by placing beams on the upper portion of the scaffold underneath the structure to be supported. A difficulty is encountered in so doing due to the fact that the individual scaffold members are 6 to 8 feet high and no intermediate shoring means are available. This means that the structure can only be shored at the levels corresponding to the upper portion of each scaffold member.

Therefore, a principal object of this invention is to provide a scaffold device which permits an overhead structure or the like to be shored regardless of variations in the height of the structure, and which permits a scaffold to be built to a variety of heights.

Still further objects of this invention are to provide a scaffold device that is economical in manufacture, durable in use, and refined in appearance.

These and other objects will be apparent to those skilled in the art.

This invention consists in the construction, arrangements, and combination, of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, specifically pointed out in the claims, and illustrated in the accompanying drawings, in which:

FIGURE 1 is a perspective view of the assembled device;

FIGURE 2 is a perspective view of the material support bracket portion of the device;

FIGURE 3 is a fragmentary perspective view of the guard post portion of the device;

FIGURE 4 is a perspective view of the purlin bracket portion of the device;

FIGURE 5 is a perspective view of the walk support bracket portion of the device;

FIGURE 6 is an end elevational view of a scaffold device having shoring means associated therewith;

FIGURE 7 is a side elevational view of a scaffold device having shoring means associated therewith;

FIGURE 8 is a side elevational view illustrating the means of installing the shoring bracket on a scaffold device with a portion thereof cut away;

FIGURE 9 is a side view of a scaffold device having extension frames mounted thereon; and

FIGURE 10 is a perspective view of the purlin bracket portion of the device.

The numeral 10 generally designates a scaffold having opposite upright ends 11 and 11' and detachable cross braces 15 extending therebetween. Upright end 11 is comprised of vertical legs 17 and 19 having a cross brace 21 extending horizontally therebetween at their upper portions. Upright ends 11 and 11' will not be separately described as they are identical. The component parts of 11' which are identical to 11 will be indicated by "'". A brace 23 extends vertically downwardly from brace 21 and has a plurality of braces 25 extending horizontally therefrom to leg 17. A brace 27 extends vertically downwardly from brace 21 and has a plurality of braces 29 extending horizontally therefrom to leg 19. Brace 31 extends horizontally between the upper portions of braces 23 and 27. Legs 17 and 19 have a plurality of pipe stubs 33 and 35 respectively secured thereto which extend inwardly therefrom parallel to brace 21. The uppermost stubs 33 and 35 are positioned above the uppermost horizontal braces 25 and 29, respectively, and the lowermost stubs 33 and 35 are positioned below the lowermost braces 25 and 29, respectively. Legs 17 and 19 have a plurality of brackets 37 secured thereto for receiving a cross brace 15.

Legs 19 and 19' each have detachably secured thereto a walk support bracket 39. Walk support bracket 39 is comprised of normally horizontal elongated angle member 41 having a vertical tubular member 43 secured at one of its ends. A brace 45 is secured to and extends downwardly from angle member 41 at substantially a right angle. Diagonal brace 47 extends from the lower end of brace 45 to tubular member 43. An arcuate sleeve segment 49 is secured to angle member 41 adjacent the free end thereof and extends transversely outwardly and downwardly therefrom. An arcuate sleeve segment 51 is secured to brace 45 as illustrated in FIGURE 5 intermediate its length and is adapted to partially embrace leg 19 at times. A U-shaped sleeve segment 53 is secured to brace 45 adjacent its lower end and is adapted to partially embrace leg 19 at times. Sleeve members 51 and 53 are in vertical alignment and are perpendicularly disposed to the axes of sleeve segment 49. Angle member 41 has an arcuate cut-away portion 55 adjacent sleeve member 49 adapted to receive leg 19 at times. A shorter angle member 57 is secured to angle member 41 by welding or the like as illustrated in FIGURE 5.

Upright ends 11 and 11' each have secured thereto a material support bracket 59. Bracket 59 is comprised of an elongated angle member 61 having an upstanding flange 63 secured to one of its ends. Arcuate sleeve segment 65 is secured to the upper portion of angle member 61 intermediate its length and at one side thereof. An arcuate sleeve segment 67 is secured to the other end of angle member 61 at one side thereof with its axis being perpendicular to that of segment 65. Sleeve segment 65 is adapted to partially embrace brace 27 as illustrated in FIGURE 1 while sleeve member 67 is adapted to partially embrace the bottom surface of one of braces 29.

A plug is comprised of an elongated cylindrical member 69 having a collar 71 secured thereto intermediate its length by means of pin 73. The plug can be slidably inserted into the open upper ends of legs 17 and 17'. Collar 71 limits the downward movement of cylindrical member 69 by engaging the upper end of legs 17 or 17'.

A guard post 73 having a sleeve member 75 and clamp 77 secured thereto adjacent its lower end can be secured to the upper end of legs 17 and 17' as illustrated in FIGURE 1. Post 73 is mounted on members 69 as will be described hereafter. Clamp 77 is comprised of a U-shaped sleeve member 79 which has a pin 81 secured to one of its free ends and a latch 83 hingedly secured at its other end. Latch 83 has a notch 84 formed therein adapted to engage pin 81 at times. Sleeve member 75 slidably embraces the exposed end of cylindrical member 69 while clamp 77 embraces the upper portion of leg 17.

Guard post 73 has a bracket 37 mounted thereon adjacent its upper end. FIGURE 1 illustrates a guard post 73 in leg 17 and leg 17' with a guard rail 85 extending therebetween and secured to bracket 37 at its ends.

Legs 17 and 17' have secured thereto a plurality of purlin brackets 87 for supporting elongated wooden members 88, which in turn have a sheet of plastic or cured at its other end. Latch 83 has a notch 84 formed the scaffold structure. Purlin bracket 87 is comprised of an angle member 89 and a continuous rod 91 secured thereto. Rod 91 has its upper end terminating in a vertically extending arcuate hook element 93. Rod 91 extends downwardly from hook element 93 in a vertical portion 95 which is welded to edge 97 of angle 89. Rod 91 then extends at right angles from the lower end of vertical portion 95 across the bottom end 99 of angle 89 and is secured thereto by welding. An L-shaped bracket 101 is then formed by extending rod 91 beyond face 103 of angle 89, thence bending the rod upwardly and thence back upon itself at point 105, thence back along the bottom edge 99 of the angle to its midpoint. Rod 91 then terminates in a second arcuate hook element 107 which extends laterally outwardly from edge 99 and has its longitudinal axis perpendicularly disposed with respect to hook element 93. Angle member 89 is provided with a hole 109 in face 103 to receive a securing means for elongated wooden member 88.

The numeral 113 represents a substantially U-shaped frame extension or scaffold member having a horizontal tubular member 115 with vertical tubular members 117 and 119 secured at its ends. Vertical tubular member 117 is adapted to slidably embrace cylindrical member 69 of FIGURE 8 as shown in FIGURES 8 and 9. A tie brace 121 has a horizontal tubular portion 123 and vertical tubular members 125 and 127 secured at its ends. Vertical tubular member 125 and 127 is adapted to slidably embrace vertical tubular members 117 and 119, respectively, of scaffold members 113. The lower ends of members 125 and 127 engage and rest on the ends of horizontal member 115 of scaffold member 113.

Frame extension or tie brace 113A (FIGURE 9) is similar to frame extension 113 except that its corresponding parts 115A, 117A and 119A form the shape of an H rather than the shape of a U as was the case for frame extension 113. In practice, frame extension 113 is usually one foot in height and frame extension 113A is usually two feet in height.

The scaffold 10 represents one scaffold section, and the scaffold members 113 with the tie braces 121 represent a second scaffold section. A shoring bracket 128 can be detachably and rotatably secured to the upper end of cylindrical member 69 as illustrated in FIGURES 6 and 7. Shoring bracket 128 is comprised of a tubular member 129 having an L-shaped member 131 with horizontal and vertical flanges secured thereto at its upper end. L-shaped member 131 is provided with holes 133 and is adapted to receive a wooden beam or joist. A nail or the like can be driven through holes 133 into a beam to secure the beam to the L-shaped member 131. Since the member 129 is rotatably mounted on member 69, the bracket 128 can be adjusted to align itself to a beam.

The normal method of operation of the scaffold of this invention is as follows. Upright ends 11 and 11' are

set up as illustrated in FIGURE 1 with cross-brace 15 maintaining the same in upright position. A walk support bracket 39 is mounted on upright end 11 by simply placing arcuate sleeve segment 49 on the upper portion of one of braces 29 while maintaining vertical tubular member 43 in a somewhat elevated position. The outer end of walk support bracket 39 is then lowered thereby bringing sleeve segments 51 and 53 into engagement with leg 19. Cut-away area 55 will embrace a portion of leg 19. The precise arrangement of the sleeve segments prevent any movement of bracket 39. Sleeve segment 49 being in engagement with brace 29 prevents horizontal movement of bracket 39 in one direction. Sleeve segment 51 prevents horizontal movement of bracket 39 in the opposite direction. Sleeve segment 53 prevents accidental pivotal movement of bracket 39 by partially embracing leg 19. Therefore, the only method by which bracket 39 may be removed from upright end 11 or moved in any direction is to pivot the outer end upwardly, thence rotating the bracket in a clockwise direction, as viewed in FIGURE 1. Such arrangement of the sleeve segments provides the bracket with an extremely important safety feature. Another bracket 39 is mounted on leg 19' in a similar manner, and planks 111 extended therebetween. Planks 111 thereby provide a convenient walk for bricklayers, etc. Brackets 39 may be raised as the building progresses by simply moving the bracket up to a higher brace 29. It should be noted that sleeve segment 49 can be mounted on pipe stubs 35 when it is desired to mount the bracket 39 at intermediate elevations.

A material support bracket 59 is also mounted on upright ends 11 and 11'. Bracket 59 is simply placed in position so that sleeve 65 engages brace 27 and sleeve segment 67 engages the lower surface of brace 29 as illustrated in FIGURE 1. Planks 111 may then be extended between brackets 59 thereby providing a convenient material supply area for bricks, blocks, mortar, etc. Brackets 59 may also be raised or lowered if so desired.

Guard posts 73 and rail 85 are a safety means to prevent workmen from falling from the scaffold when the top thereof is used as a walkway. Guard post 73 is quickly installed by simply placing sleeve member 75 over cylindrical member 69 in the manner described above, and placing clamp 77 around the upper portion of leg 17.

Purlin brackets 87 are installed on scaffold 10 by simply placing arcuate hook element 95 on a pipe stub 33 or 35, or on a horizontal brace 25 or 27. Arcuate hook element 107 is placed in engagement with leg 17. Elongated wooden members 88 are then inserted in bracket 87 within the L-shaped bracket 101. Wooden members 88 can then be nailed or screwed in place by utilizing holes 109 in face 103 of angle 89. A sheet of plastic 112 or the like may be secured to wooden members 88 to enclose the scaffolding structure during inclement weather.

Frame extensions 113 and tie braces 121 may be mounted on the top of scaffold 10 in the manner described to vary the height of the scaffold without adding a complete scaffolding unit. This feature permits the scaffolding to be easily constructed to varying heights and adds great versatility to the scaffold as a whole.

If the top of the scaffold is to be used for shoring purposes (FIGURES 6, 7 and 8) instead of as a walkway (FIGURE 1), the shoring brackets 128 are mounted on elements 69 in the manner described above. The height of the scaffold may be adjusted by using various combinations of frames 11, 113 and 113A as previously indicated. A supporting beam or joist is received within the L-shaped members 131 on pairs of brackets 128, and holes 133 can receive spikes or the like of effect the temporary connection between the joist and the brackets 128.

Thus, from the foregoing it is seen that the device of this invention provides a completely versatile scaffolding

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unit and otherwise accomplished all of its stated objectives.

Some changes may be made in the construction and arrangement of my scaffold device without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim:

1. In a scaffold device,
a first scaffold section comprising opposite upright ends and brace means extending from one upright end to the other upright end,
each of said upright ends including at least a pair of spaced hollow tubular members on the upper portion thereof and being disposed in a substantial vertical position,
a second scaffold section comprising a pair of tie braces interconnecting a pair of scaffold members, said scaffold members having two vertical tubular members interconnected by a single horizontal member,
said tie braces having a pair of parallel vertical tubular members interconnected by a single horizontal member,
one each of said vertical tube members of said tie braces slidably embracing one of said vertical tube members of said scaffold members,
and one each of the tubular members on said scaffold members being detachably secured to one of the tubular members on said upright ends of said first scaffold section.
2. The device of claim 1 wherein the lower ends of the tubular members of said tie braces engage and rest on the ends of the horizontal member that interconnects the tubular members on said scaffold members.
3. The device of claim 1 wherein a plug element extends into the pairs of interconnected tubular members of said scaffold members and said first scaffold section.
4. The device of claim 1 wherein each of said upright ends include a plurality of inwardly extending horizontal support members, at least some but less than all of said

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support members being longer than the remainder of said support members and being supported at their inward ends by a substantially vertical member whereby the longer support members can serve as ladder rungs to permit easy access from said first scaffold section to said second scaffold sections.

5. The device of claim 1 wherein a shoring bracket is secured to each of the tubular members of said tie braces, said shoring brackets comprising an upright tubular member, and an L-shaped bracket element secured to the upper ends of the tubular members of said shoring brackets, said L-shaped bracket including an upright flange having at least one small hole therein to permit a shoring beam to be secured thereto by means of a nail or like extending through said hole into a beam on said L-shaped bracket.

6. The device of claim 1 wherein a shoring bracket is rotatably secured to each of the tubular members of said tie braces, said shoring brackets comprising an upright tubular member, and an L-shaped bracket element secured to the upper ends of the tubular members of said shoring brackets, said L-shaped bracket including an upright flange having at least one small hole therein to permit a shoring beam to be secured thereto by means of a nail or like extending through said hole into a beam on said L-shaped bracket.

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