Sept. 6, 1966 K. W. GETHMANN 3,270,997

SCAFFOLD DEVICE

Filed March 19, 1964 2 Sheets-Sheet 1

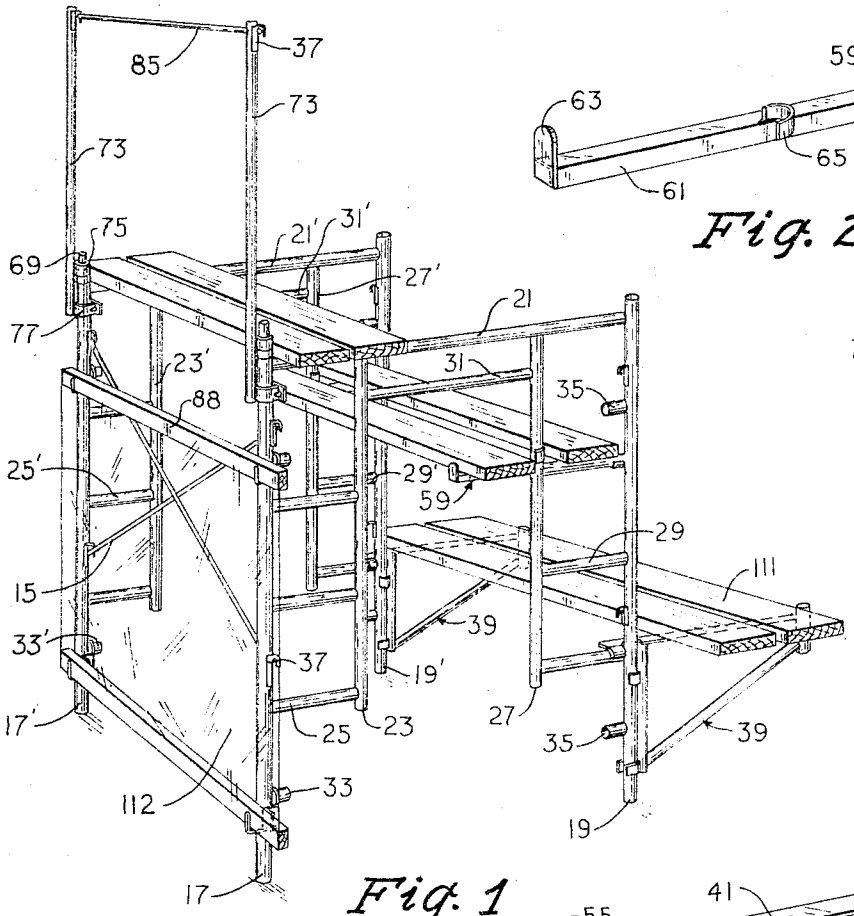


Fig. 1

Fig. 2

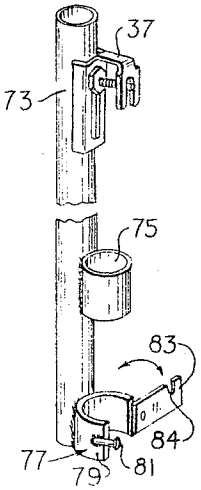


Fig. 3

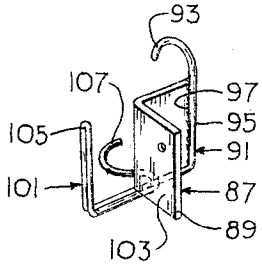


Fig. 4

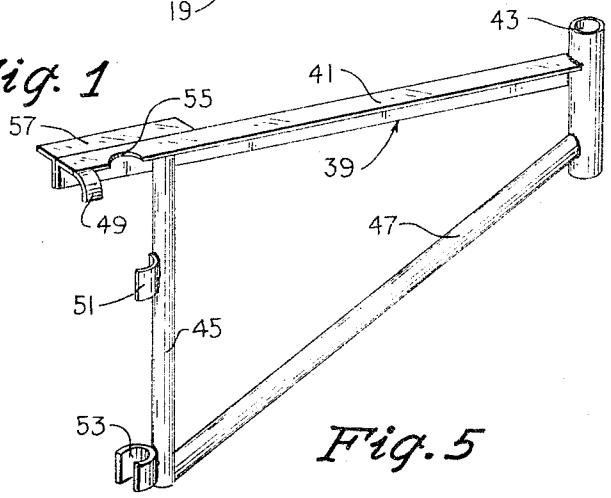


Fig. 5

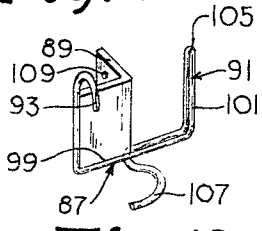


Fig. 10

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SCAFFOLD DEVICE

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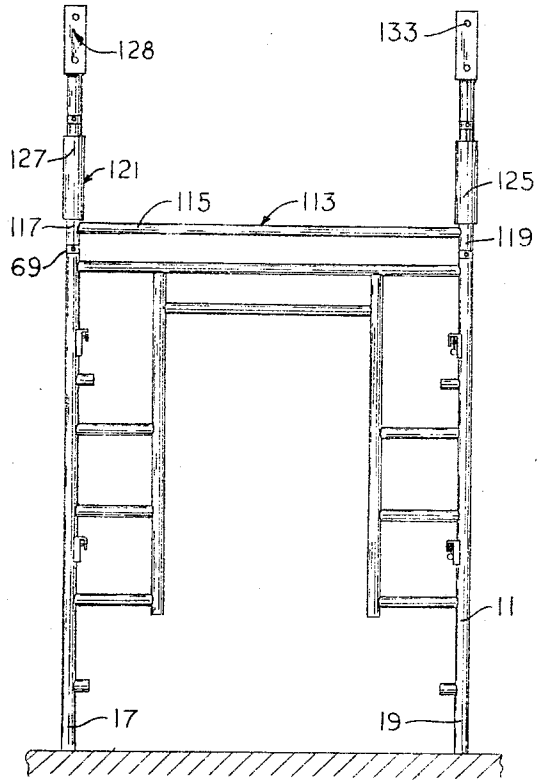


Fig. 6

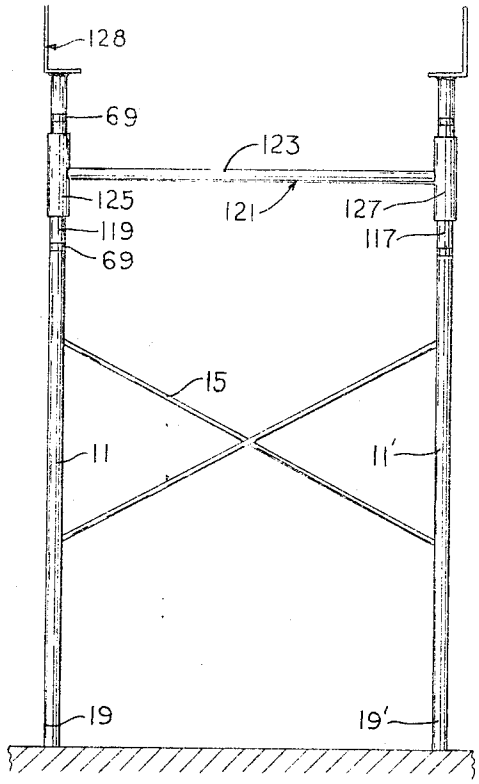


Fig. 7

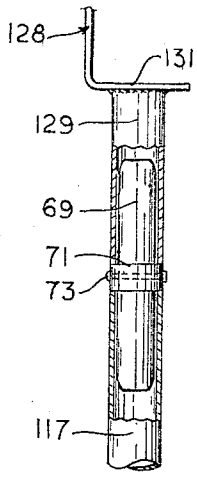


Fig. 8

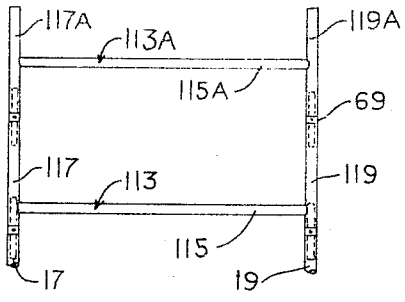


Fig. 9

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SCAFFOLD DEVICE

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Filed Mar. 19, 1964, Ser. No. 353,192
6 Claims. (Cl. 248—235)

Scaffolds per se are well known in the building industry. The major problem associated with present scaffolds is that there is no convenient walk means thereon for construction purposes. Additionally, there is no convenient means for storing materials such as blocks, bricks, mortar, etc., prior to their usage.

Saffolds are usually stacked in tiers, sometimes to great heights. A danger exists with this arrangement in that a workman may possibly fall from the structure.

The building industry has become a year around project as of late. A problem which does exist with this winter work is in winterizing the scaffolds or enclosing the working area.

Scaffolds are quite frequently used to shore a ceiling or the like which is under construction. The ceiling or ceiling 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 has associated therewith an adjustable convenient walk means.

A further object of this invention is to provide a scaffold device which has associated therewith an adjustable, convenient material supply support means.

A further object of this invention is to provide a scaffold device which prevents workmen from falling from the scaffold.

A further object of this invention is to provide a scaffold device which permits convenient enclosure of the scaffold structure.

A further 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.

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 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** and 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**.

An elongated cylindrical member **69** having a collar **71** secured thereto intermediate its length by means of pin **73** 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 member **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 other suitable material mounted thereon for enclosing 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 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 tie brace **113**.

Frame extension **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.

A shoring bracket **128** can be detachably 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** 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.

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 to 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 unit and otherwise accomplishes 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 invention 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 material support bracket,

an elongated horizontal member,

a plank retaining means extending upwardly from one end of said horizontal member,

a first sleeve segment secured to one side of said horizontal member adjacent to its other end,

and a second sleeve segment secured to said horizontal member at one side thereof intermediate its length

said first sleeve segment being arcuate about a horizontal axis and being open at its upper portion to receive a horizontal tubular member,

said second sleeve segment being arcuate about a vertical axis and having an open portion which opens in a direction towards said plank retaining means to receive a vertical tubular member.

2. The device of claim **1** wherein said first sleeve segment is secured to the lower side of said elongated member, and the second sleeve segment is secured to the upper side of said elongated member.

3. In a walk support bracket,

an elongated horizontal member,

a vertical arm member secured to said horizontal member intermediate its length and extending downwardly therefrom,

a diagonal arm member secured at one of its ends to said vertical arm member and secured at its other end to said horizontal member,

a first arcuate sleeve segment secured to said horizontal member adjacent one of its ends, said elongated horizontal member having a notched cut-away area formed therein adjacent said first arcuate sleeve segment,

and a second arcuate sleeve segment secured to said vertical arm member adjacent its lower end,

the axis of said first arcuate sleeve segment being perpendicular to that of said second arcuate sleeve segment.

4. In a purlin bracket,

a vertically disposed angle member, said angle member being comprised of a vertically disposed first member having opposite vertical side edges and a vertically disposed second member extending from one of the side edges of said first member transversely to said first member,

an L-shaped member secured to the lower end of said angle member,

a vertically extending hook element secured to the upper end of said angle member,

and a horizontally extending hook element secured to the lower end of said angle member.

5. In a purlin bracket,

a vertically disposed angle member,

a rod secured to said angle member,

said rod comprising a vertical portion secured to one edge of said angle member; and a horizontal portion connected to the lower end of said vertical portion and secured to the lower end of said angle member,

said vertical portion terminating in an upwardly extending vertical hook element,

said horizontal portion terminating in an L-shaped member positioned at one side of said angle member and then being formed into a laterally extending horizontal hook element.

6. In a walk support bracket,

an elongated, horizontal member,

a vertical arm member secured to said horizontal member intermediate its length and extending downwardly therefrom,

a diagonal arm member secured at one of its ends to said vertical arm member and secured at its other end to said horizontal member,

a first arcuate sleeve segment secured to said horizontal member adjacent one of its ends,

said elongated horizontal member having a semicircular cut-away area formed therein adjacent said first arcuate sleeve segment,

a second arcuate sleeve segment secured to said vertical arm member adjacent its lower end,

and a third arcuate sleeve segment secured to said vertical arm member intermediate its length,

the axis of said first arcuate sleeve segment being perpendicular to that of said second and third arcuate sleeve segments,

said cut-away area and said second and third arcuate sleeve segments being vertically aligned.

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