

[54] SCAFFOLD

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[51] Int. Cl. E04g 1/20

[58] Field of Search. 182/132, 178, 179

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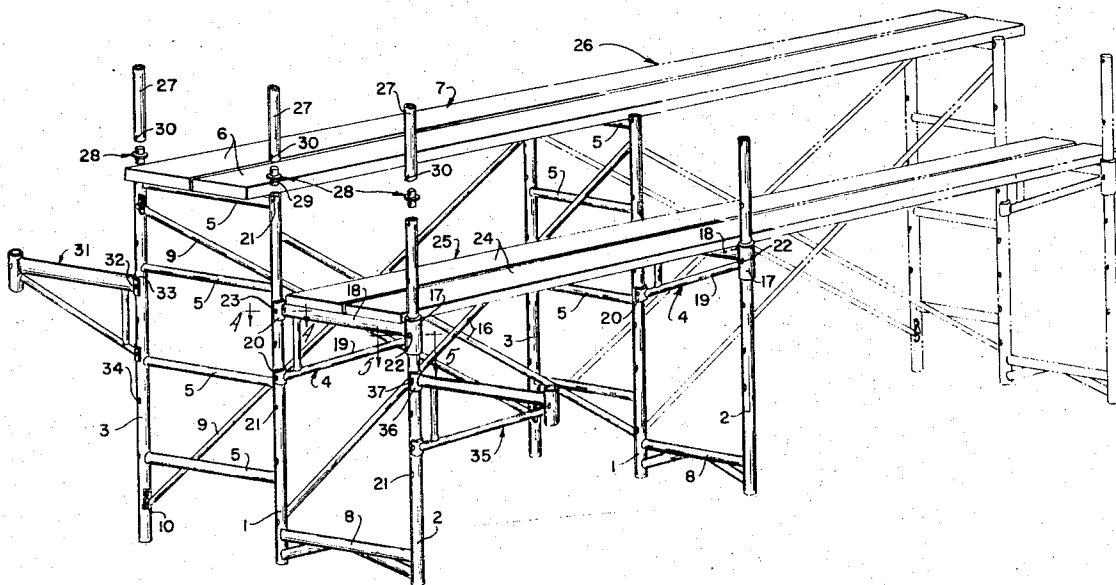
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[57] ABSTRACT

This invention is directed to a scaffold which may be

readily assembled and adjusted for use by a workman or workmen having to work at different heights. The scaffold has a scaffold frame of three legs at each end comprising a center leg, an outer leg and an inner leg. Readily removable diagonal braces extend between the outer end legs and the respective center end legs and horizontal structural members are welded at different heights to each outer leg and the adjacent center leg to provide a rigid structure and also a ladder for use by the workman in climbing onto the scaffold. The horizontal structural members support planking or the like for holding work material at different height levels. The inner end legs are secured to the center legs at the bottom portions thereof by a reinforcing member. In addition, telescoping frames are provided of somewhat V-shape consisting of a pair of braces welded to a tube at one end which telescopes over the inner legs and U-shaped brackets at the other end of the braces which embrace the respective center legs. The frames are secured to the inner legs and center leg at different heights and support planking to provide a walking platform to support a workman.

6 Claims, 5 Drawing Figures



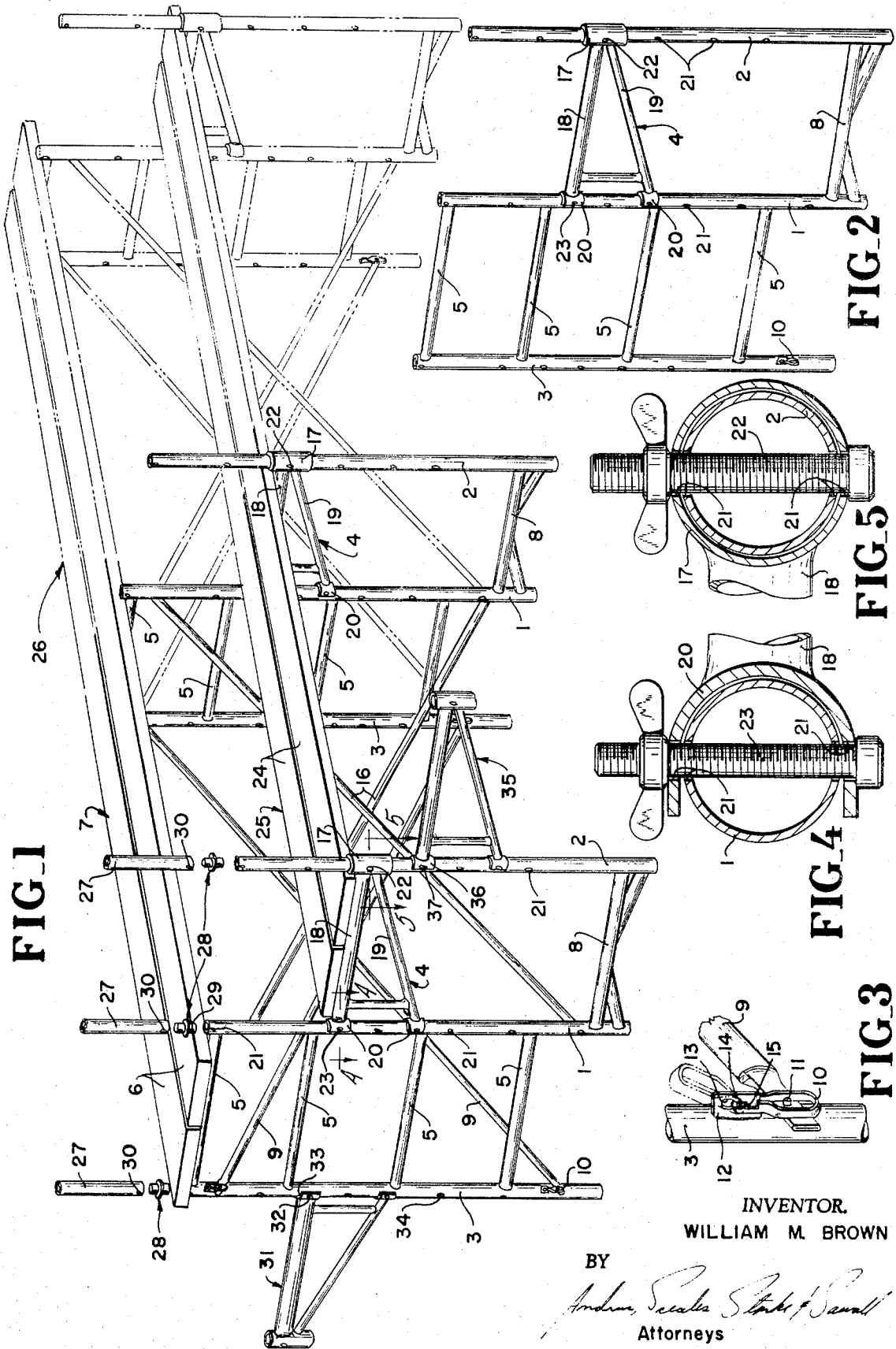


FIG. 1

FIG. 2

FIG. 5

FIG. 4

FIG. 3

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SCAFFOLD

BACKGROUND OF THE INVENTION

Representative of the prior art is the U.S. Pat. to Mann No. 1,577,835, where a scaffold having three legs at each end is described and shown. The frame holding the support for the workman and for the working material is in one piece so that the support for the workman cannot be separately moved.

The purpose of the present invention is to provide a scaffold which can be readily assembled and disassembled and wherein the walking platform supporting the workman can be moved independently of the work holding platform. Furthermore, a number of the scaffolds may be readily assembled together one on top of the other or lengthwise and the frame supporting the walking platform for the workman can be used to provide an extension on each side of the scaffold should that be desirable in certain uses of the scaffold. The U-shaped attachment of the frames to the center legs which support planking to provide a walking platform for the workman permits the frames to readily slide by the cross members securing the center and outer legs of the scaffold together and the height of the walking platform can then be readily adjusted without removing the scaffold planking. By having the walking platform movable independently of the work material holding platform, a workman can work at the most convenient height when working beneath a ceiling or overhanging structure. Furthermore, the load of material on the work holding platform need not be removed to adjust the height of the walking platform.

SUMMARY OF THE INVENTION

In general, the scaffold has a scaffold frame at each end made up of three upright legs consisting of a center leg, an inner leg which is located adjacent the work area, and an outer leg located away from the work area. The legs of the scaffold frame are longitudinally spaced from each other. The respective center legs and respective outer legs are joined together by pairs of diagonally extending braces which extend from near the top of one outer end leg to near the bottom of the corresponding outer end leg and similarly from near the top of one center leg to adjacent the bottom of the opposite center leg. The braces are secured to the legs by a locking clasp which permits the end legs to be readily assembled with each other. In addition, the respective end legs consisting of the center and outer legs are connected together by structural horizontal members vertically spaced from each other to form a support for receiving the planking forming the materials supporting platform and also providing a ladder for access by the workman to the upper parts of the assembled scaffold. A reinforcing member is secured to each center leg and each adjacent inner leg near the lower ends of each set of the end inner and center legs to secure them together.

A walking platform for the workman is provided by telescoping frames at each end of the scaffold which have a tube adapted to telescope over the inner leg and a pair of structural braces extending therefrom which are joined to U-shaped brackets that engage the respective center legs. The telescoping frame at each end of the walking platform is secured to each respective inner leg and each respective center leg by bolts or the

like which extend through holes provided in a bracket and tube of each frame and in the respective legs at varying vertical positions to locate the frames at different heights. The telescoping frame supports planking to complete the walking platform for the workman, and the U-shaped brackets permit the frames to slide by the structural horizontal members holding the center and outer legs together to readily locate the telescoping frames at different heights.

In addition, a plurality of scaffolds may be secured together end-to-end to provide a scaffolding of the length desired. Furthermore, scaffolds may be assembled on top of one another by coupling the respective legs of the scaffolds together. The telescoping frames in such case may be removed from the lower scaffold and telescoped over the top of the legs of the upper scaffold to the position desired to provide a walking platform in the upper assembled scaffold. In addition, the frames may be secured on each side of the main scaffold by the brackets to the inner legs or by the brackets to the outer legs to receive planking for providing a material holding platform or walking platform extension on each side of the scaffold, should that be desirable.

BRIEF DESCRIPTION OF DRAWINGS

The drawing furnished herewith illustrates the best mode presently contemplated for carrying out the present invention and discloses the above advantages and features as well as others which will be readily understood from the following description of the drawings:

In the drawings:

FIG. 1 is a perspective view of the scaffold of the invention with a section of a second scaffold shown in phantom to illustrate assembly of two scaffolds together and also illustrating the coupling of one scaffold on top of another and location of the walking platform frame outwardly on each side of the scaffold;

FIG. 2 is a perspective view illustrating the connection together of a scaffold frame by a telescoping frame;

FIG. 3 is a perspective view illustrating the locking clasp holding a brace in place against a leg;

FIG. 4 is a section taken on line 4—4 of FIG. 1; and

FIG. 5 is a section taken on line 5—5 of FIG. 1.

Referring to the drawings, the scaffold frame of the invention, as illustrated in FIGS. 1 and 2, has three legs at each end consisting of a center leg 1, inner leg 2 facing the work area, and outer leg 3 located opposite the work area. The telescoping frame 4 is mounted between legs 1 and 2. The legs are of high strength steel tubing and of the same height.

The center leg 1 and outer leg 3 of the respective end legs are rigidly secured together by vertically spaced horizontally extending braces or bars 5, such as of structural steel tubing, which may be welded to legs 1 and 3. The braces 5 provide, in effect, a ladder in the scaffold, and the upper brace 5 secured adjacent the top of legs 1 and 3 normally receives the planking 6 to provide a material holding platform 7 to receive the materials to be applied by the workman using the scaffold. The planking also may be supported on the lower braces 5 or the intermediate braces should this be desirable.

The end legs are completed as a unit by the respective inner legs 2 which are joined adjacent the lower portion to the center leg 1 by the reinforcing member 8. The outer leg 3 of one scaffold frame is joined to the outer leg 3 of the opposite scaffold frame by the braces 9 which extend respectively from near to top of one outer leg 3 to the bottom of the other outer leg 3 and cross at an area generally centrally of the outer legs 3. The braces 9 are secured to the legs 3 by a readily removable gravity clasp 10, such as that described and claimed in the copending application of the present applicant entitled "Pivotal Locking Clasp," filed Apr. 30, 1970, Ser. No. 33,356. The clasp, as shown in FIG. 3, comprises a pin 11 which is secured to leg 3, as shown in FIG. 3, and a bracket 12 is welded to leg 3 at a position above pin 11. The brace 9 has an aperture in it so that the brace can be slid over pin 11. Clasp 10 is lodged within a hole 13 by a key 14 joining the ends of the clasp, and a slot 15 extends downwardly from hole 13. Key 14 is disposed within slot 15 when clasp 10 is in downwardly locking position to hold brace 9 in place. The clasp 10 can be readily unlocked by moving it to the dotted position shown in FIG. 3 to remove brace 9 from pin 11.

The center legs 1 are also connected in the same manner as the outer legs 3 by diagonally extending braces 16 crossing at an area between the legs 1 and which in turn are connected to the respective legs at their lower and upper end portions by a readily removable clasp such as clasp 10, illustrated in FIG. 3.

The telescoping frame 4 mounted between legs 1 and 2 at each end of the scaffold provides a support in the scaffold for workmen. The telescoping frame members 4 each has a small tube 17 at one end which telescopes over inner legs 2. A pair of braces extend from tubes 17 toward center legs 1 and consist of an upper brace 18 extending in a horizontal plane and a lower brace 19 which extends diagonally in a downward direction from tube 17. Each brace 18 and 19 terminates in a generally U-shaped bracket 20 which engages the center legs 1.

The center leg 1 and inner leg 2 are provided with holes 21 therethrough at predetermined heights. The tube 17 of the frame 4 is secured to each inner leg 2 by the bolts 22 which extend through a predetermined hole 21 in tube 17 and corresponding hole 21 in each leg 2. The upper bracket 20 of brace 18 of each frame 4 is connected to a corresponding center leg 1 by the bolt 23 which extends through a selected hole 21 in bracket 20 corresponding to selected hole 21 in the center leg 1. The lower brace 19 may also be secured to a center leg 1. By employing U-shaped brackets, the brackets 20 may readily slide past the horizontal braces 5 when the telescoping frames 4 are moved upwardly or downwardly on the legs 1 and 2.

The telescoping frames 4 located between legs 1 and 2 at each end of the scaffold receive the planking 24 to provide the walking platform 25 to support the workman thereon at the height desired. Since the inner legs 2 are not connected by diagonal cross braces to each other, the workman on walking platform 25 has a free, unimpeded space through which he can work.

In order to increase the usage of the scaffold of the invention, FIG. 1 illustrates in phantom lines the attachment of a second scaffold 26 to the one described, and any number of scaffolds can be added in the

manner shown to provide a scaffold of the length desired.

In addition, the scaffolds may be assembled on top of the other, as illustrated in FIG. 1 with respect to one end of the upper scaffold. As there shown, the end legs 27 of the upper scaffold are shown spaced from end legs 1, 2 and 3 of the scaffold described, and the legs 27 are joined to legs 1, 2 and 3 by the coupling 28. The coupling has holes 29 which are aligned with uppermost holes 21 in legs 1 and 2 and a corresponding hole, not shown, in leg 3, and holes 30 in legs 27 of the upper scaffold. Bolts or the like, not shown, extend through the holes in the respective legs and the holes in the coupling to bolt the upper scaffold legs 27 and lower scaffold legs 1, 2 and 3 together.

It is also possible to provide an extension platform on each side of the scaffold. FIG. 1 illustrates a telescoping frame 31 secured to the outer leg 3 by bolts 32 extending through bracket 33 and leg 3. A similar telescoping frame 31, not shown, would be secured to the opposite outer leg 3 to support planking, not shown, for use as an extension platform. Holes 34 are provided in outer legs 3 for securing the bracket 33 of telescoping frame 31 to legs 3 at different heights. Similarly, the telescoping frame 35 is shown as bolted to the inner legs 2 through brackets 36 by bolts 37 and a corresponding telescoping frame 35, not shown, would be secured to the opposite inner leg 2. Planking can then be laid onto the frame members 35 to form an extension platform on the inner side of the scaffold.

In assembling the scaffold of the invention, two sets of end legs 1, 2 and 3, which are joined together as described by the horizontal braces 5 secured to legs 1 and 3, and reinforcing member 8 welded to legs 1 and 2 are connected together in longitudinal spaced relation by the braces 9 which extend diagonally between the outer legs 3 and the braces 16 which extend diagonally between the center legs 1. The braces 9 and 16 are secured to the respective legs by the locking clasps 10 which are readily latched and unlocked to readily assemble and disassemble the braces.

Thereafter, tubes 17 of frames 4 are telescoped over the upper ends of inner legs 2 and bolted to legs 2 at the height desired. The U-shaped brackets 20 of frames 4 supported by braces 18 and 19 have in the meantime telescoped over the free side of center legs 1. The upper braces 18 are then bolted to the center legs 1 and inner leg 2, and, if desired, the lower braces 19 can be similarly secured to the center legs. Planking may then be laid over the upper braces 5 secured to legs 1 and 3 to provide the material holding platform 7 and over the horizontal braces 18 of the frames 4 to provide the walking platform for use by workman. Because there is no fixed horizontal braces between legs 1 and 2, except for reinforcing member 8, the workman has a clear span for the entire length of the platform when several scaffolds are assembled together. The reinforcing member 8 can be used to receive planking when the telescoping frame is not in place to support workman at a low level above the ground so that the workmen need not stand on uneven or muddy ground.

The invention provides a rigid generally lightweight scaffold which can be readily assembled and disassembled and transported with the added feature of independently adjustable telescoping frame members to

provide a working platform at various heights. Furthermore, when adjusting the telescoping frame members to different heights, it is not necessary to remove the planking.

Various modes of carrying out the invention are contemplated as being within the scope of the following claims particularly pointing out and distinctly claiming the subject matter which is regarded as the invention.

I claim:

1. A scaffold, comprising a scaffold frame having upright legs spaced from each other and consisting of an outer leg, a center leg and an inner leg, a second scaffold frame having corresponding three upright legs longitudinally spaced from the first-named three legs and correspondingly consisting of an outer leg, a center leg and an inner leg, a plurality of horizontal bars secured to each center leg and the adjoining outer leg with the bars disposed to receive planking to provide a material holding platform at various desired heights for receiving work materials, readily removable diagonal bracing members extending between the respective outer legs and between the respective center legs, bracing means secured to the center legs and adjoining inner legs adjacent the bottom portions of said legs, a telescoping frame extending between each center leg and the adjoining inner leg above the bracing means with the frames disposed to receive planking to provide a walking platform to support a workman thereon, and means to secure the frames at different heights to the respective center legs and inner legs independently of the locating of the height of the material holding platform to locate the workman at the working height desired.

2. The scaffold of claim 1, wherein each frame is constructed of a tube which telescopes over the inner leg and a pair of braces extending from the tube with one of the braces being below the other, a U-shaped

bracket secured to the free end of each brace and semi-encircling a respective center leg to permit movement over said leg to various heights, and readily removable bolts extending through each tube and each outer leg and through at least one of the brackets and a respective center leg to secure the frames to the legs with holes being provided in the center legs and inner legs at predetermined heights to receive the bolts and effect the location of the frames at different heights.

3. The scaffold of claim 1, with each leg of the scaffold having a horizontally extending hole at the top and bottom, a coupling member disposed to be inserted within the top of each leg of one scaffold and within the bottom of the legs of a second scaffold stacked on top of the first-named scaffold, and holes in the coupling member registering with holes in the legs of the scaffolds, and bolts extending through the registered holes to secure the scaffolds together.

4. The scaffold of claim 1, wherein an extension platform is provided on the outer side of the scaffold comprising a telescoping frame member removably secured to each inner end leg to support planking to provide either a platform for supporting work materials or a walking platform for a workman.

5. The scaffold of claim 1, wherein an extension platform is provided on the inner side of the scaffold comprising a telescoping frame member removably secured to each inner end leg to support planking to provide either a platform for supporting work materials or a walking platform for a workman.

6. The scaffold of claim 1, wherein the bracing means secured adjacent the bottom portions of the inner legs and center legs is disposed to receive planking when the telescoping frame is not in place so that a workman can work at a low level and is not required to stand on uneven or muddy ground.

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