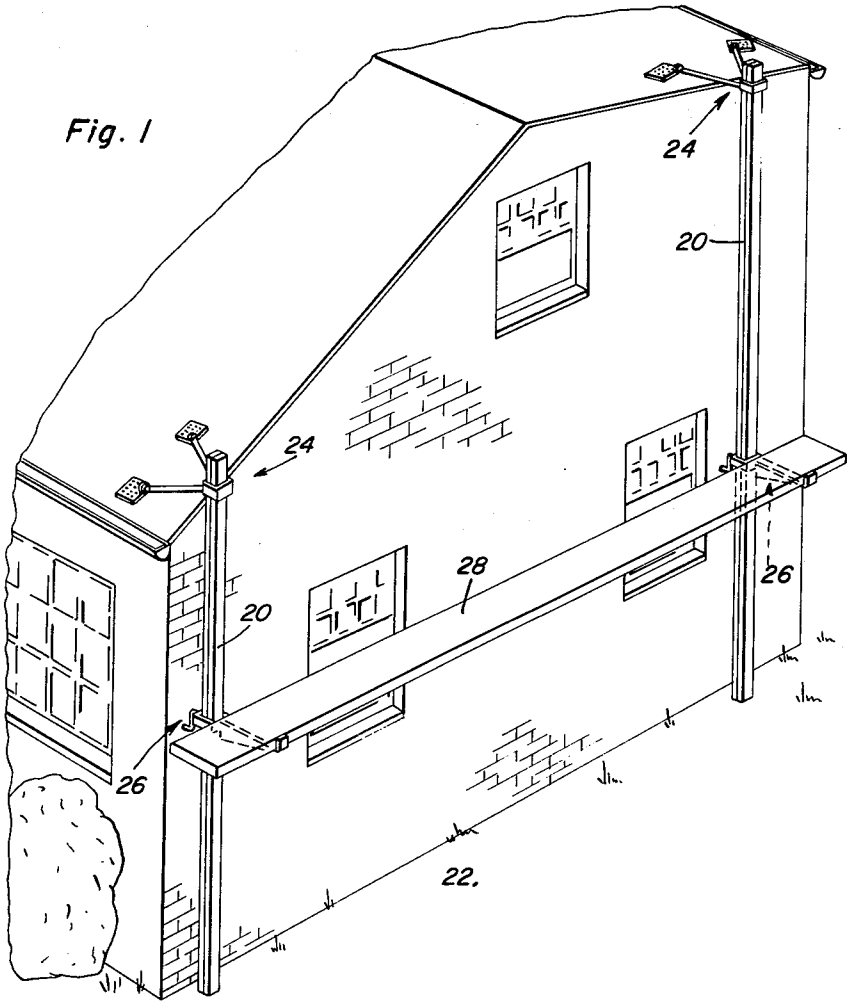
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Fig. 1



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Fig. 2

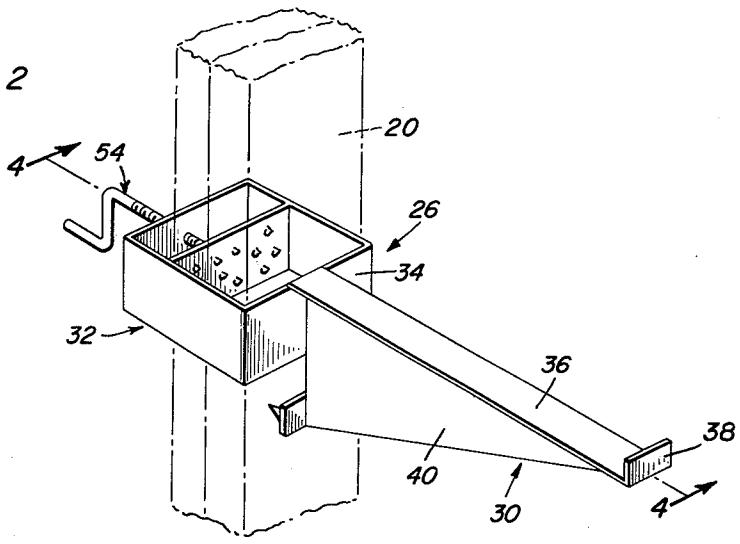


Fig. 3

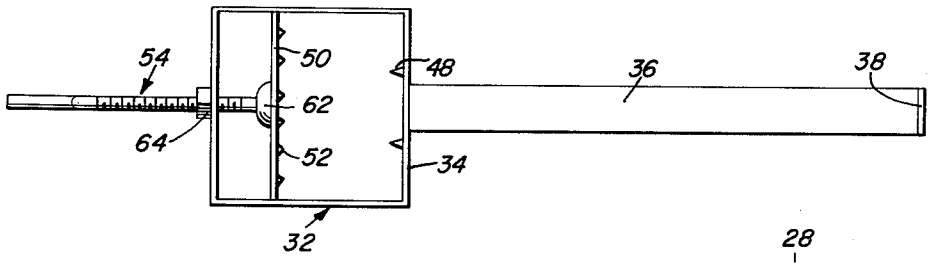
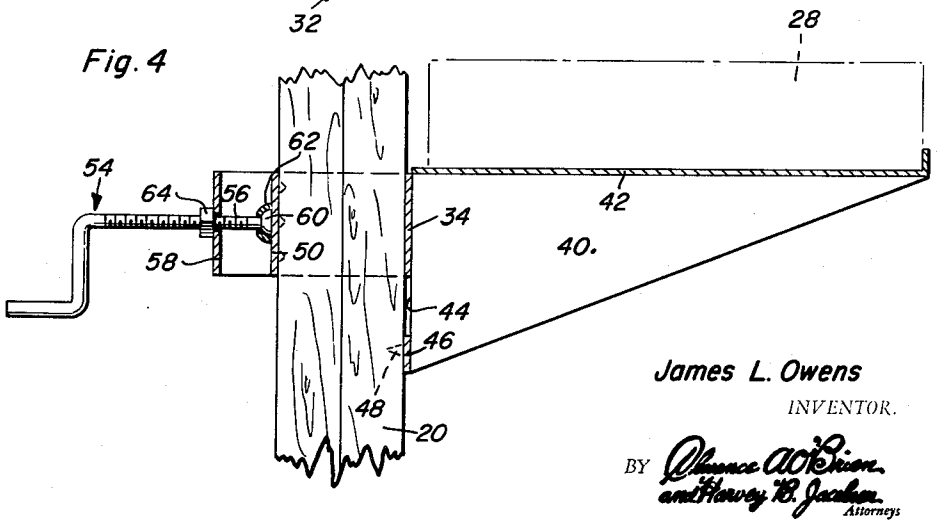


Fig. 4



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Fig. 5

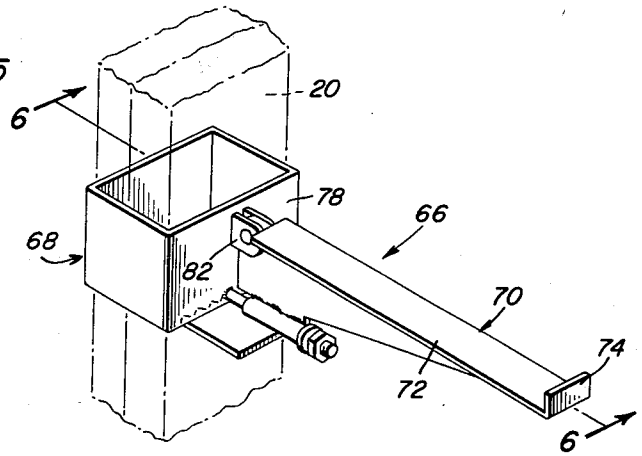


Fig. 6

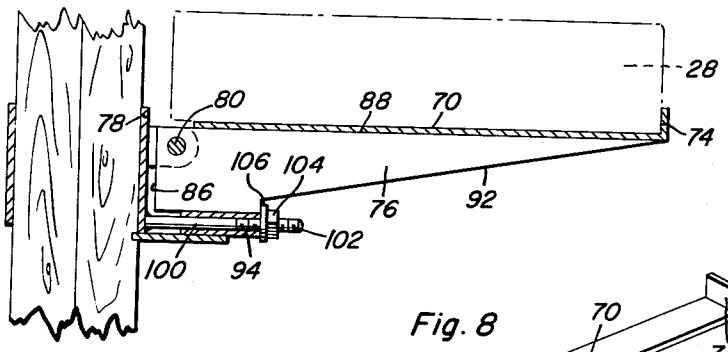


Fig. 8

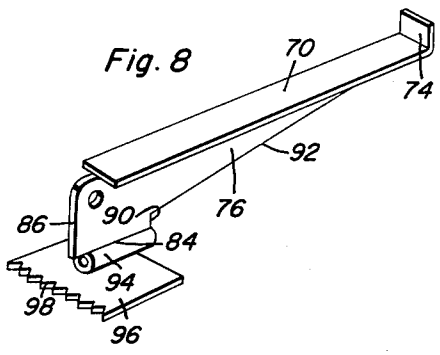
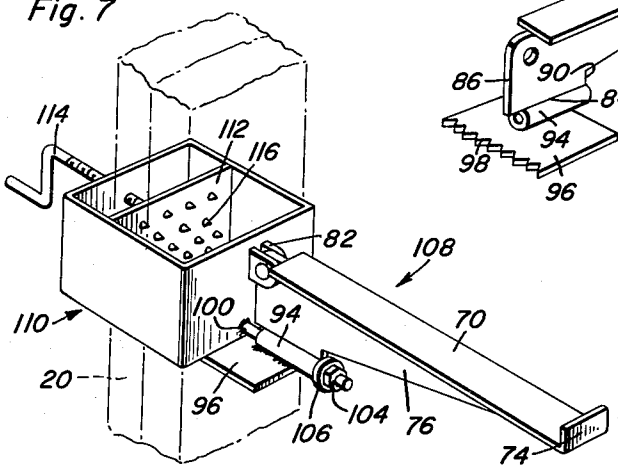


Fig. 7



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3,198,470

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Filed Feb. 18, 1963, Ser. No. 259,152
4 Claims. (Cl. 248—245)

The present invention generally relates to scaffolds, and more particularly relates to novel scaffold brackets utilized in conjunction with conventional size lumber so as to form a rigid completely adjustable building scaffold.

One of the primary objects of the present invention is to provide a scaffold combining all the desirable features of being easily erected and dismantled, extremely portable, capable of adjustment throughout an almost unlimited range of angles and heights, and both rigid and safe in its erected condition.

In achieving the above benefits, the scaffold of the present invention is constructed basically of two or more uprights, each upright consisting preferably of two two-by-fours, the lower end of each upright being firmly engaged with the ground or similar supporting surface and the upper end of the upright being rigidly interconnected to the building in a manner so as to position the upright vertically and substantially parallel to the building. The supporting platform consists of one or more conventional scaffold planks, these planks being supported either horizontally or at a reasonable slope by means of scaffold brackets, one on each upright, the brackets being completely adjustable along the uprights and capable of being rigidly affixed in any adjusted position in a manner which eliminates any possibility of an accidental release or loosening of the bracket.

In regard to the scaffold bracket, it is an object of the present invention to provide a bracket wherein any superimposed load on the scaffold platform will, rather than weaken the bracket, tend to increase the rigidity of the bracket and upright engagement, the bracket being provided with positive gripping teeth which are embedded within the word of the upright.

Furthermore, it is an object of the present invention to provide scaffold brackets which are, though relatively simple in construction, of an extremely durable nature.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view illustrating the manner in which the scaffold of the present invention is to be mounted;

FIGURE 2 is an enlarged perspective view of one of the scaffold brackets with the upright being shown in phantom lines;

FIGURE 3 is a top plan view of the bracket shown in FIGURE 2;

FIGURE 4 is a longitudinal cross-sectional view taken substantially on a plane passing along line 4—4 of FIGURE 2;

FIGURE 5 is a perspective view of modified form of scaffold bracket;

FIGURE 6 is a longitudinal cross-sectional view taken substantially on a plane passing along line 6—6 in FIGURE 5;

FIGURE 7 is a further modified form of scaffold bracket; and

FIGURE 8 is a perspective view of the scaffold bracket support arm used in the modifications of FIGURES 5 and 7.

Referring now more specifically to the drawings, reference numeral 20 is used to generally indicate the uprights or support standards, these uprights 20, while not limited thereto, are preferably formed of two two-by-fours abutting each other in the manner illustrated in the drawings so as to form a standard having an approximate four inch square cross-section.

The scaffold is constructed by first engaging the lower ends of each upright 20 with the ground 22, or any other suitable substantially horizontal supporting surface, next, stabilizing braces 24 are engaged with the upper portion of each upright 20 at the desired height along the upright 20 and then fixedly secured to the building, preferably the roof as illustrated, in a manner so as to produce a vertical positioning of the upright 20, the stabilizing braces 24 preventing lateral movement of the upright 20 while the major force of the superimposed load is transferred through the upright 20 to the ground 22. Finally, the scaffold brackets 26, one on each upright 20, are vertically adjusted along the uprights 20 and fixedly secured thereto in a predetermined adjusted position for the reception of a scaffold plank or planks 28 thereon. While the scaffold plank 28 has been illustrated as being orientated substantially horizonal, it will be appreciated that in view of the fact that each scaffold bracket 26 is individually adjustable, this plank 28 can be arranged at any desired slope or angle such as might be desired when painting or working on the eave of a sloping roof.

Referring now specifically to the scaffold bracket 26, illustrated in FIGURE 2, it will be noted that this bracket 26 consists basically of a support arm 30 and an upright receiving collar 32. The collar 32 is rectangular in shape conforming substantially to the rectangular shape of the corresponding upright 20. The support arm 30 projects forwardly from the forward side 34 of the collar 32 and consists of a horizontal flat support plate 36 terminating at its forward end in an upturned flange 38, the scaffold plank 28 being supported upon the flat plate 36 and retained thereon by the upright 20 on one side thereof and the upturned flange 38 on the other side thereof. The support arm 30 also includes a longitudinally extending vertically orientated rigidifying plate 40, this plate 40 being substantially triangular in shape with one side 42 thereof coextensive with and secured, as by welding, to the undersurface of the plate 36, a second side 44, at right angles to the first side 42, having the upper portion thereof rigid with the front side 34 of the collar 32 and the lower portion thereof extending below the collar 32 and having a transverse plate 45, of a width substantially equal to the width of the collar sides, this plate 46 having a plurality of rearwardly extending biting or gripping teeth 48 capable of penetrating the upright 20.

As will be appreciated, vertical adjustment of the scaffold bracket 26 is accomplished by raising the forward end of the support arm 30 so as to disengage the teeth 48 and subsequently moving the bracket 26 along the upright 20. When the desired position is reached, the forward end of the support arm 30 is lowered so as to engage the teeth 48. Further, in order to insure that the teeth 48 be fixedly engaged with the upright 20, and to also provide an additional clamping and gripping of the upright 20, a vertically orientated adjustable clamping plate 50 is provided parallel to the front side 34 of the collar 32 within the collar 32, this clamping plate 50 being adjustable forwardly into engagement with the rear of the upright 20 so as to tightly engage the upright between the front plate 34 and the clamping plate 50, this also tending to increase the penetration of the teeth 48 into the upright and prevent accidental withdrawal of the teeth 48. The front face of the adjustable clamping plate 50 is provided with a plurality of forwardly projecting piercing points, these points 52 biting into the upright 20 in a manner similar to the teeth 48.

Forward and rearward adjustment of the clamping

plate 50 is effected by means of a crank type control handle 54 having an elongated threaded shank 56 extending through an aperture in the rear plate 58 of the collar 32. The inner end of the shank 56 is rotatably received within a socket 62 integral with and projecting rearwardly from the rear face of the clamping plate 50 whereby rotation of the handle 54, the threaded portion of the shank 56 being received within an internally threaded nut 64 welded to the rear side plate 58, results in a forward or rearward movement of the clamping plate 50 into or out of engagement with the rear surface of the upright 20.

In effecting an adjustment of this scaffold bracket, the clamping plate is withdrawn, the teeth 48 disengaged by a slight raising of the forward end of the support arm 30, the bracket moved vertically on the upright 20, to the desired position, the support arm lowered to substantially a horizontal position so as to engage the teeth 48, and the clamping plate 50 moved into engagement with the opposite surface of the upright 20 so as to drive the piercing points 52 and simultaneously further pull the teeth 48 into the upright 20, the support bracket 26 thus being rigidly fixed to the upright 20.

Turning now to the modified form of scaffold bracket illustrated in FIGURES 5, 6 and 8, and generally referred to by reference numeral 66, it will be appreciated that this bracket 66 is generally similar to the bracket 26 in that it consists basically of a rectangular upright receiving collar 68 and a forwardly projecting support arm 70 secured thereto. The collar 68 is to be made so as to closely conform to the upright 20 while at the same time allowing free vertical sliding of the collar 68 on the upright 20.

The support 70 includes a flat upper support plate 72 terminating at its forward end in an upturned flange 74 for the same reason as discussed supra in regard to the support arm 30. Also similar to the support arm 30, a longitudinally extending vertically orientated substantially triangular plate 76 is provided having the upper side thereof rigidly secured to the plate 70. However, contrary to the manner in which the plate 40 is secured to the collar 32, the plate 76 is pivotally mounted on the front side 78 of the collar 68 by means of a transversely extending rod 80 extending through aligned apertures in both the upper rear portion of the rigidifying plate 76 and two forwardly projecting ears 82 on the collar 68, the rear of the plate 76 being received between the ears 80.

It will be noted that the rear of the horizontal plate 70 stops short of the rear of the vertical plate 76 so as to allow for an upward pivoting of the support arm 70 without interference from the ears 82.

The lower side or edge of the plate 76, rather than being inclined throughout the entire length of the plate 76 as was the case with the plate 40, consists of a first horizontal portion 84 extending forwardly from the rear edge 86 and paralleling the top edge 88, a second vertically extending portion 90 extending parallel to the rear edge 86 from the forward end of the section 84, and an inclined section 92 extending from the upper end of the vertical section 90 to the forward end of the arm 70. Rigidly affixed to the lower edge section 84, as by welding, is a longitudinally extending hollow sleeve 94 which in turn has, secured to the lower surface thereof, a horizontally orientated plate 96 having a plurality of rearwardly extending biting or piercing teeth 98, these teeth 98 being located rearwardly of the rear edge 86 of the plate 76 and below the lower edge of the collar 68 so as to allow for engagement of these teeth 98 with the upright 20 in the manner illustrated in FIGURE 6.

In addition to the forwardly projecting ears 82, the collar 68 also includes a forwardly projecting bolt 100 welded to the forward face 78 thereof, this bolt 100 having a threaded outer end 102, is positioned so as to project through and beyond the sleeve 94 upon a pivotal mounting of the arm 70. A suitable nut 104 and washer 106 are threaded on the outer end 102 of the bolt 100, this nut 104, upon an engagement of the teeth 98 resulting from a slight downward pivoting of the forward end of the arm 70, being tightened into engagement with the forward end of the sleeve 94 and edge section 90 so as to prevent any accidental upward movement of the support 70 and disengagement of the teeth 98. It will of course be appreciated that the teeth 98, while being capable of rigidly affixing the scaffold bracket 66 to the upright 20, are of a relatively short length so as to enable their engagement and disengagement upon a relatively small range of pivotal movement, the bolt 100 being slightly flexible so as to allow for the necessary range of movement.

With reference to the modification of FIGURE 7, it will be appreciated that the scaffold bracket 108 illustrated therein is quite similar to the bracket 66, and as such, like parts have been referred to by the same reference numerals, with the explanation of the features indicated by these reference numerals applying equally to the modification of FIGURE 7. The only distinction between the bracket 108 and the bracket 66 is the fact that the collar 110 in the bracket 108 is slightly larger than the collar 68, this collar 110 having a clamping plate 112 incorporated therein and adjustable forwardly and rearwardly by a control handle 114, the clamping plate 112, as in the case of the clamping plate 50, being provided with a plurality of piercing points 116. It will be appreciated that the use of an adjustable clamping plate 112, mounted and adjustable in the same manner as the plate 50, enables a variation in the specific size of the upright 20 and additionally provides for a firm clamping of the upright 20 in addition to the piercing and engaging of the upright by the teeth 98 on the plate 96.

From the foregoing, it is considered to be readily apparent that a novel scaffold has been defined, this scaffold incorporating unique scaffold brackets which enable the rapid and safe erection of a scaffold while at the same time containing all the desirable features of portability and adjustability needed so as to adapt the scaffold to a wide variety of conditions.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

I claim:

1. A scaffold bracket comprising a collar for engagement about a scaffold upright, a platform support arm fixed to and projecting outwardly from one side of the collar, piercing teeth on said bracket, said teeth being located below and inward of said one side, and means for moving the teeth and an upright within the collar toward each other for engagement of the teeth within the upright, said teeth being movably mounted relative to said one side, said means being fixed to said collar and associated with said teeth for varying the degree of projection of said teeth inward of said one side, said platform arm being pivotally fixed to said one side for swinging movement in a vertical plane, said teeth being fixed to said platform arm and orientated therebelow for movement with said platform arm, said means consisting of an elongated rod having one end fixed to said one side and extending therefrom generally parallel to said platform arm, and means adjustably mounted on said rod for assuming fixed positions at a plurality of points therealong, said last-mentioned means engaging said platform arm and causing a pivotal movement of the platform arm in response to an adjustment along said rod.

2. A scaffold bracket comprising a collar for engagement about a scaffold upright, a platform support arm projecting outwardly from said collar, said support arm

including a longitudinally extending vertically orientated plate, means pivotally securing the upper inner end of said plate to said collar for pivotal movement of the lower inner end of the plate toward and away from the collar, a longitudinally extending sleeve secured to the lower edge of the plate adjacent the inner end thereof, a horizontally orientated plate secured to the lower surface of said sleeve, said last-mentioned plate having the rear edge thereof located rearward of the rear edge of the vertically orientated plate, said rear edge having rearwardly directed teeth formed therein, a bolt fixed to the collar and projecting therefrom through and beyond said sleeve, and an adjustable nut threaded on the outer end of the bolt and engageable with the outer end of the sleeve.

3. A scaffold bracket comprising a collar for engagement about a scaffold upright, a platform support arm pivotally fixed to and projecting outwardly from one side of the collar, piercing teeth fixed to said platform arm and projecting generally parallel thereto below said one side of the collar, said teeth extending inwardly of said one side, and adjustable means fixed to said collar and engaged with the platform support arm for pivoting said support arm downwardly and locking the teeth into engagement with the upright.

4. The structure of claim 1 including a clamping plate within said collar in spaced relation to said one side, and means for adjustably positioning said plate relative to said one side for clamping the upright therebetween.

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