

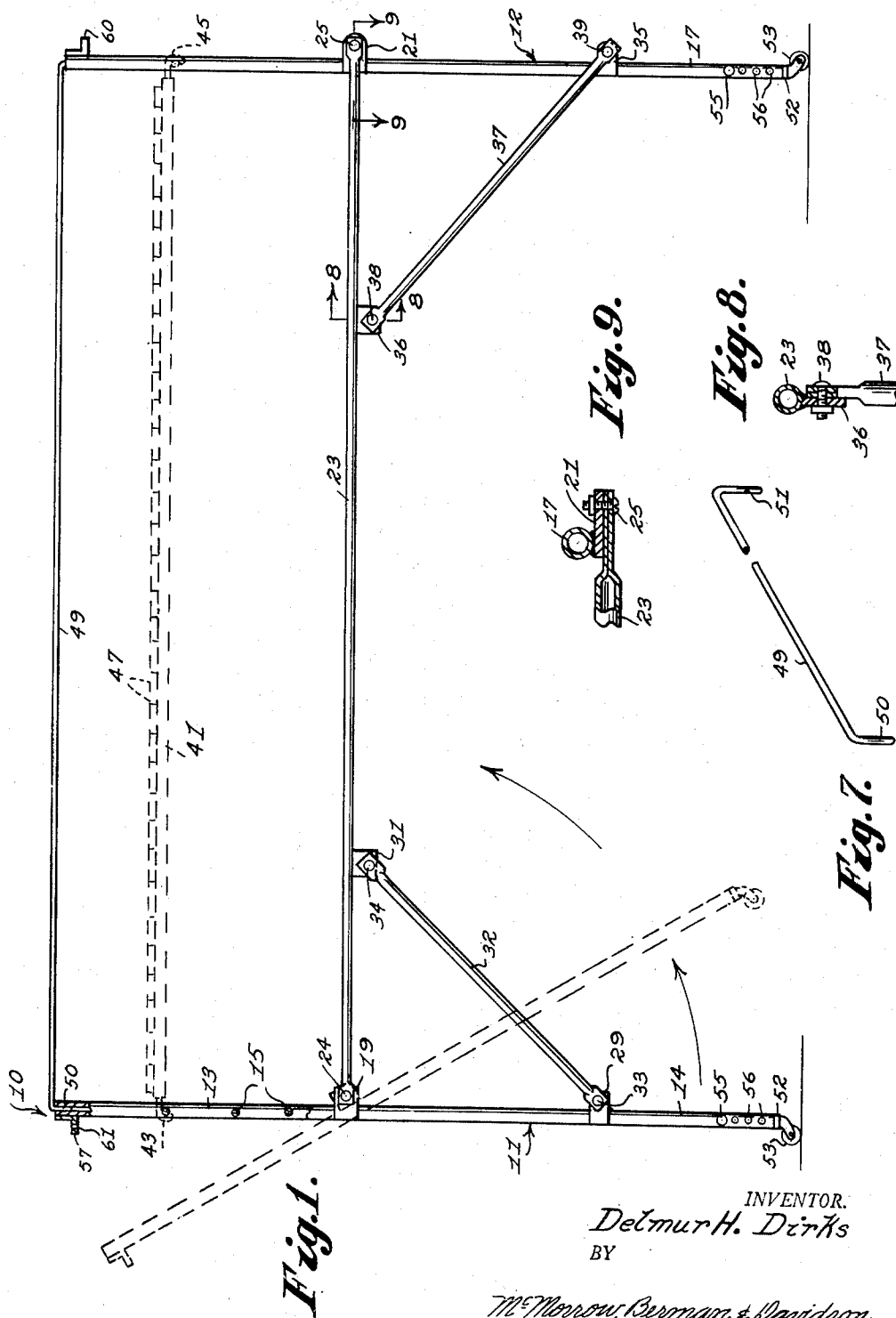
April 15, 1952

D. H. DIRKS
FOLDING SCAFFOLD

2,593,386

Filed May 21, 1948

2 SHEETS—SHEET 1



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2 SHEETS—SHEET 2

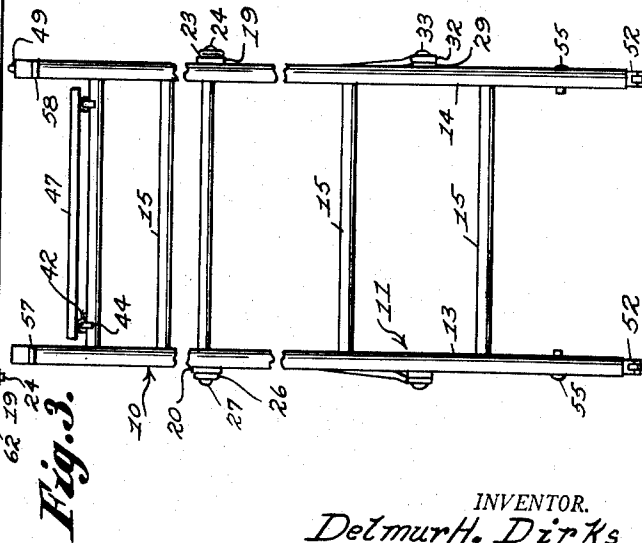
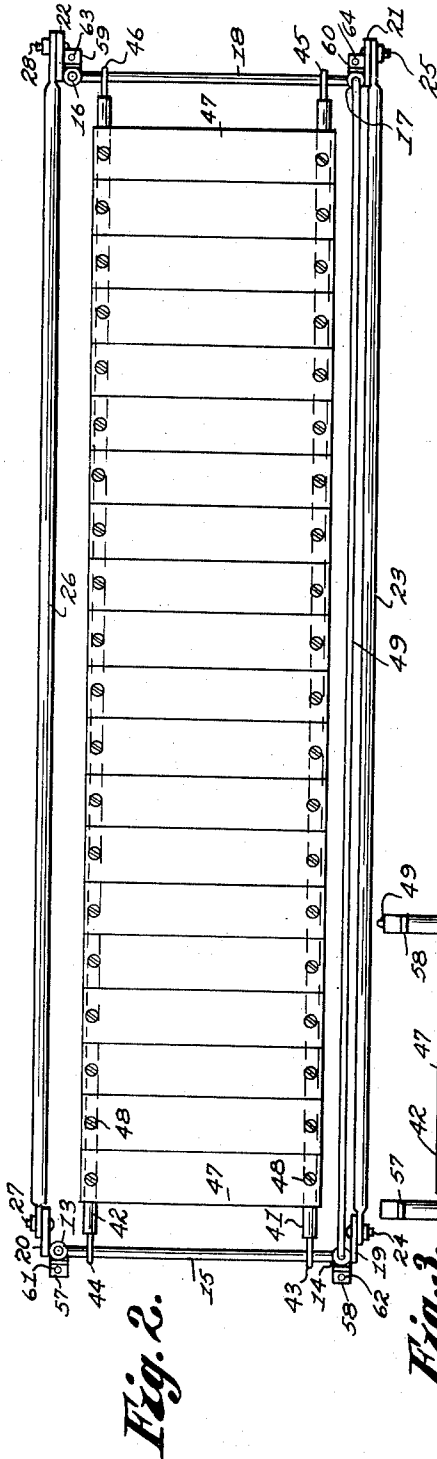


Fig. 4.

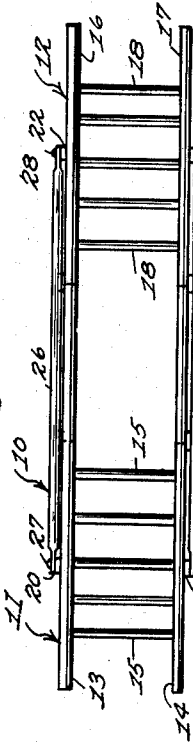


Fig. 5.

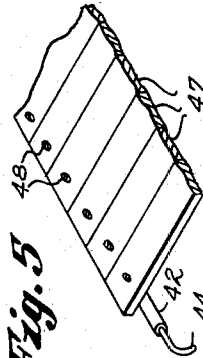
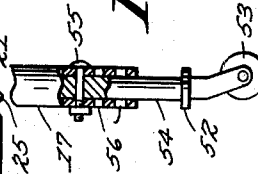


Fig. 6.



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FOLDING SCAFFOLD

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1 Claim. (Cl. 304—2)

1

This invention relates to a folding scaffold or stand, and particularly to a scaffold having two end supports hinged to longitudinal frame members and capable of being folded flat beneath the latter for portability.

The main object of the invention is to provide a folding scaffold of the character indicated which is sturdy and safe for use when erected and which may be collapsed into a minimum compass for transporting to the place of use.

Another object is to have such a folding scaffold which is provided with a plurality of spaced bars for supporting the scaffold proper at different levels without adjusting the supports.

A further object is to provide a folding scaffold with detachable guard rails upon one or both sides of the scaffold.

It is also an object to provide the supports of a folding scaffold of the indicated type with means for supporting a ladder against the same.

An ancillary object is to provide such a folding scaffold with angular members upon the supports thereof for engaging with and supporting cross-bars or the like associated with extension ladders and also allowing the scaffold to be extended upward beyond its normal height.

It is even an object to produce such a folding scaffold which is of simple construction and as simple to use and likewise reasonable in cost.

Other objects and advantages of the invention will appear in further detail as the specification proceeds.

In order to facilitate ready comprehension of the features of this invention, the latter is illustrated on the accompanying drawings forming part hereof, and in which:

Figure 1 is a side elevation of a folding scaffold embodying the present invention in a practical form and showing the scaffold proper in broken lines occupying one of several possible positions thereof;

Figure 2 is a plan view of the folding scaffold of Figure 1 including the scaffold proper in full lines;

Figure 3 is an end elevation of the folding scaffold of Figure 1, as seen from the left in the latter view.

Figure 4 is a plan view on a reduced scale showing the supporting stand of the folding scaffold with the scaffold proper removed.

Figure 5 is a fragmentary view of the scaffold proper which normally is supported by the stand shown in collapsed form in Figure 4;

Figure 6 is a fragmentary sectional view of

2

one of the lower leg portions of the stand or scaffold shown in Figure 1;

Figure 7 is a broken perspective view of the guard rail adapted to be mounted on the upper ends of the end supports of the scaffold of Figure 1;

Figure 8 is a partial sectional view taken on line 8—8 in Figure 1;

Figure 9 is also a sectional view taken on line 9—9 in said Figure 1.

Throughout the views, the same reference numerals indicate the same or like parts.

Usually, standing scaffold structures are limited to a given height and are limited also to use as scaffolds and as nothing more. On the other hand, as a rule such standing scaffolds are likewise lacking in guard rails or any other facilities for guarding the safety of painters and other workmen who may have occasion to use the scaffold structure. It should also be noted that as heretofore practiced, such scaffold structures have mainly been made of wood and this wood during use would sooner or later begin to warp so that the scaffold would before long become rickety and actually unsafe. Upon due consideration of this problem, I have found quite feasible to provide a scaffold which is not only convenient and capable of being used for various purposes with the scaffold proper thereon supported at different levels to suit the work in hand, but also capable of being folded together so as to occupy a minimum of space and become entirely portable due to its compact condition, as will now be specifically set forth.

Hence, in the practice of my invention, and referring again to the drawings, a folding scaffold generally indicated at 10 primarily includes a folding stand and upon the same a detachably-mounted scaffold proper, each of which will be detailed hereinafter.

The mentioned folding stand comprises a pair of normally vertical end frames 11 and 12, viewing Figure 1, the end frame 11 consisting of two upright tubular members or posts 13, 14 spaced apart by a vertical series of horizontal bars or tubular members 15, 15, etc., secured at the ends thereof to members 13 and 14 by welding or brazing, etc., so as to form a rigid unit. In similar fashion, the end frame 12 includes the posts 16 and 17 spaced apart by transverse bars or tubes 18 brazed or welded thereto.

At a given distance down from the top, each of the posts 13 and 14 are provided with anchoring plates 19 and 20 welded or brazed thereto and directed toward frame 12, while the posts 16 and

17 of the latter are similarly provided with anchoring members or plates 21 and 22 welded or brazed thereto and facing away from frame 11.

To the plate 19 of post 14 is pivotally connected one end of an elongated frame member 23 by means of a bolt 24, while at the other end member 23 is similarly connected to plate 21 on post 17 by a bolt 25. Parallel to elongated frame member 23 is a further elongated frame member 26 pivotally connected at one end thereof to the plate 20 upon post 13 by means of a bolt 27, the other end of member 26 being similarly connected by a bolt 28 to plate 22 on post 16. The ends of the elongated members 23 and 26 are flattened and may be squared to receive the bolts 24, 25, 27 and 28 just described.

In order to determine proper upright positions for the end frames 11 and 12 and thus provide a rigid stand for the scaffold immediately to be described, the posts 13 and 14 of frame 11 are provided a distance from the lower ends thereof with additional anchoring plates 29 and 30, the latter plate being invisible in the views and in correspondence thereto the elongated frame members 23 and 26 are also provided upon the lower portions thereof and spaced a distance from frame 11 with anchoring plates similar to 31 (one shown), brace members 32 being connected at the ends thereof by means of bolts 33 and 34 to plates 29 and 31 in detachable manner. In similar fashion, the posts 15 and 17 are provided with lower anchoring plates 35 (one shown), and the elongated members 23 and 26 with anchoring plates 36 (one shown) to which the ends of a pair of brace members 37 are attached by means of bolts 38, 39, with the result that the end frames 11 and 12 are rigidly held in upright position with the longitudinal members 23 and 26 likewise retained rigidly in horizontal position and all the members together constituting a rigid unit forming a stand adapted to support the scaffold proper now to be described.

The scaffold as such includes a pair of elongated hollow tubular members 41, 42 from the ends of which rigidly protrude hooks 43, 44, 45, 46 formed of rods or bars secured within the elongated members, the hooks being turned downwardly so that when the scaffold-supporting stand is erected as already described, these hooks may be mounted upon the transverse bars 15 and 18 of end frames 11 and 12 from the lowest to the uppermost of these cross-members according to the height at which it is desired to dispose the scaffold. Across the elongated tubular members 41 and 42 are a series of substantially equal boards 47, 47, etc., which are secured to members 41 and 42 by means of screws 48, 48 so that the elongated members with their end hooks and the boards secured upon said members together constitute an elongated platform serving to support the workmen upon the scaffold. When the platform or scaffold is located upon the uppermost cross-members 15 and 18, for example, the lower cross-members leading up to the uppermost will serve as rungs upon a ladder by which to climb upon either end frame 11 or 12 to reach the scaffold proper. In order to contribute to the safety of whatever workman is working upon the scaffold, a guard rail 49 consisting of a long bar having the ends thereof turned down at 50 and 51 may have these ends inserted into the upper ends of the hollow posts 14 and 17 on the near side of the stand as viewed in Figure 1, and a second similar rail also attached by having the

ends thereof inserted into the remote posts 13 and 16.

In order to facilitate shifting the scaffold from one position to another, the four posts thereof are provided at the lower ends with casters 52, 52 having wheels 53 and upwardly-extending shanks 54, and each shank secured by means of a bolt 55 extending through one of a series of holes 56 in each post, this type of construction allowing adjustment of the height of the post with respect to the caster supporting it. It is thus evident that if the bolt 55 is removed and the shank 54 of the caster structure 52 drawn partly out of the lower end of any one of the posts and the bolt replaced through one of the lower holes 56, the post will, of course, be raised or extended thereby.

On the other hand, at the upper ends of all four posts are secured angle members 57, 58, 59, 60 by welding or brazing and these members have slots or openings 61, 62, 63, 64, these angle members representing a series of different attachments that may be welded or brazed to the upper ends of the posts and to which may be connected portions of ladders which extend above the level of the top of the stand of the scaffold and particularly may engage a pair of rungs or a cross-bar upon an extension ladder to allow the ladder to project a distance above the entire structure. The apertures 61 to 64 will serve to hook or tie the cross-bar or rung of whatever ladder is placed against the end frame concerned so that the ladder may lean at an inclined angle above the end frame and reach to whatever height is required.

The various tubular members of which the apparatus is built may be of steel, aluminum alloy, or any other material suitable for the purpose, and especially a light material is favored in order to facilitate carrying or transporting the structure when collapsed.

If it is considered that the bolts 34 and 38, for example, attaching the braces 32 and 37, etc., to the elongated horizontal frame members 23 and 26 are removable, it is evident that when bolts 34 are removed and braces 32 are released, the end frame 11 may be swung into the position indicated in broken lines in Figure 1, and in fact, may be drawn up about bolts 24 and 27, as a pivoting center, in the direction of the arrows to lie beneath the elongated frame members 23 and 26, as indicated in Figure 4. The same procedure may be followed with the end frame 12 by releasing the braces 37 through removal of bolts 38 and folding under end frame 12, so that the entire framework will lie substantially flat and the scaffold proper consisting of the elongated members 41 and 42 with its platform of boards 47 may be laid upon the collapsed frame and both carried or carted away to the new location where the scaffold may be required. When in the folded position, the end frame 12 will lie in a plane slightly above the end frame 11, due to the disposition of the plates 21 and 22. These plates 21 and 22 extend laterally outwardly of the end frame 12, Figure 2, and therefore swing upwardly in the clockwise direction when the frame 12 is folded under the members 23 and 26, Figure 1. The plates 19 and 20 project laterally inwardly of the end frame 11, and swing downwardly beneath the members 23 and 26, when the frame 11 is folded under. However, when both end frames 11 and 12 have been folded under, the entire device will lie substantially flat, as previously stated. Manifestly, variations may be resorted to and

5

parts and features may be modified or used without others within the scope of the appended claim.

Having now fully described my invention, I claim:

A knockdown scaffold comprising a pair of opposed upstanding end frames, each end frame including a pair of upstanding tubular posts having their top ends open and a pair of apertured plates secured to the tubular posts of each end frame and projecting laterally of the end frames, elongated substantially horizontal brace bars extending between the upstanding end frames and having apertured ends disposed adjacent to the apertured plates, pin means hingedly connecting the apertured plates and said apertured ends, the apertured plates and brace bars being disposed near the longitudinal centers of the end frames and spaced a substantial distance below the tops of the tubular posts, readily removable substantially horizontal guard bars extending between the top ends of the tubular posts and provided with depending end extensions en-

6

gageable within the open top ends of the tubular posts, the guard bars bracing the top ends of the end frames against pivotal movement about said pin means, and a platform extending between the end frames and having its ends detachably connected therewith and supported by the end frames.

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