

Aug. 28, 1945.

H. H. CLARK

2,383,449

SCAFFOLD SYSTEMS

Filed June 15, 1942

6 Sheets-Sheet 1

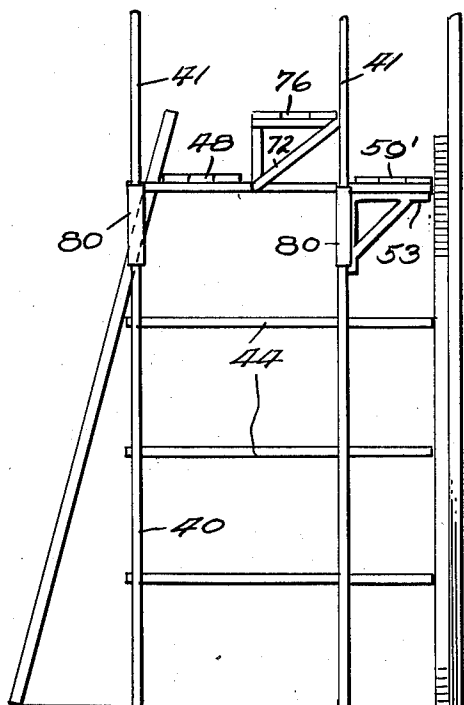


Fig. 1

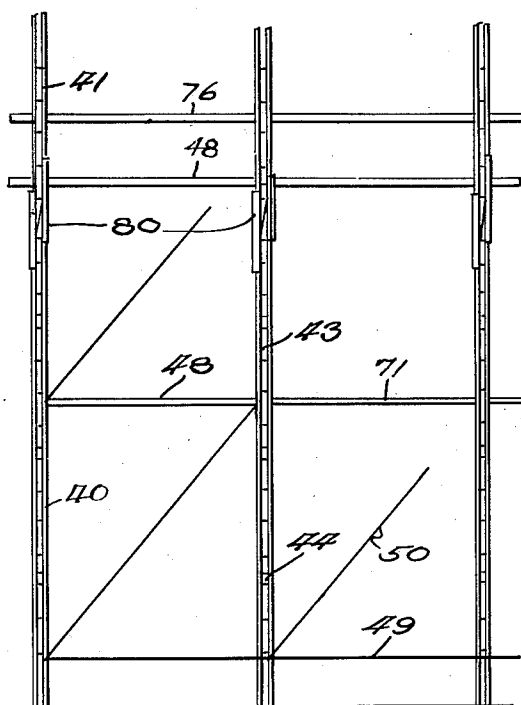


Fig. 2

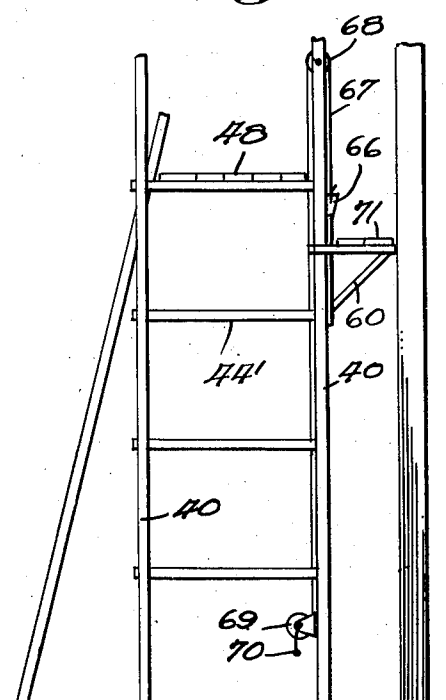


Fig. 3

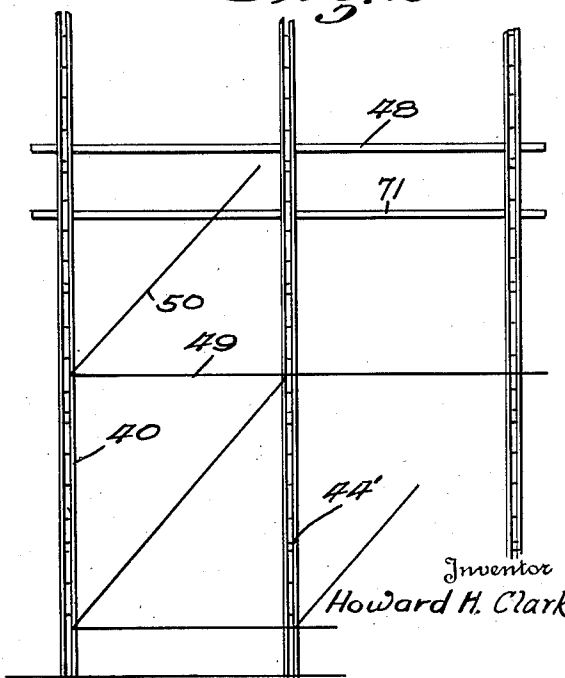


Fig. 4

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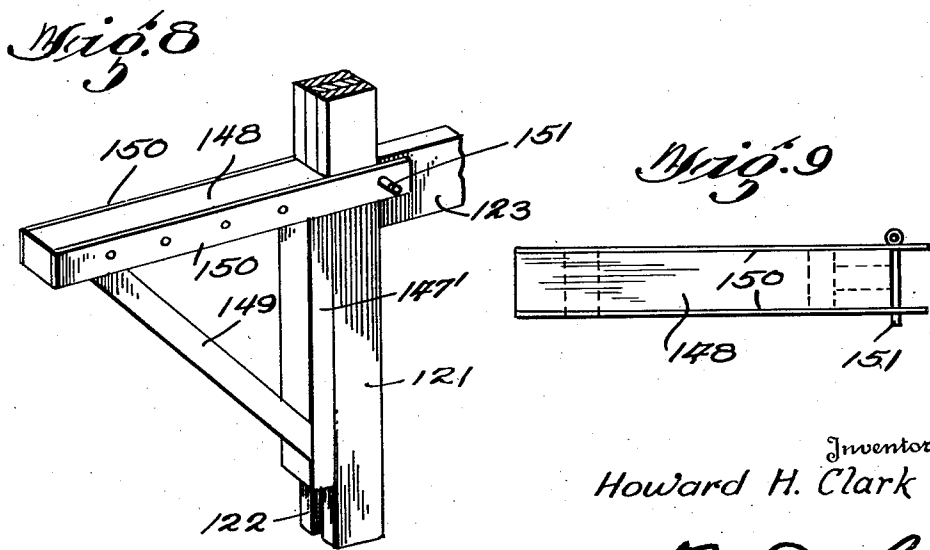
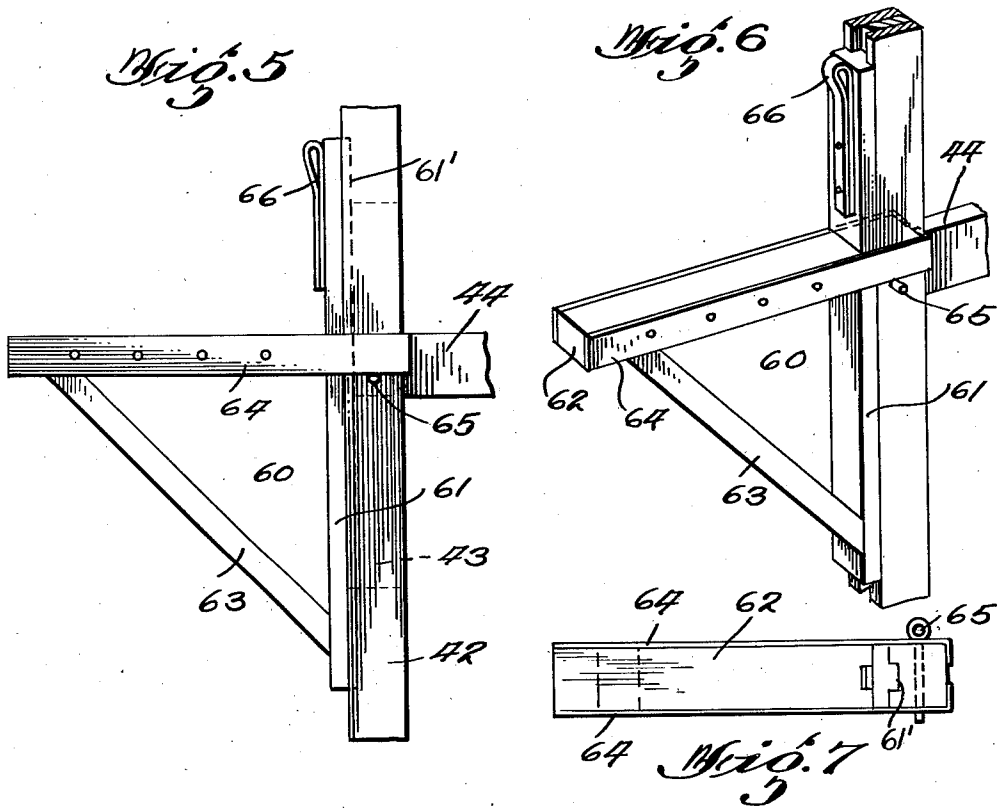
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SCAFFOLD SYSTEMS

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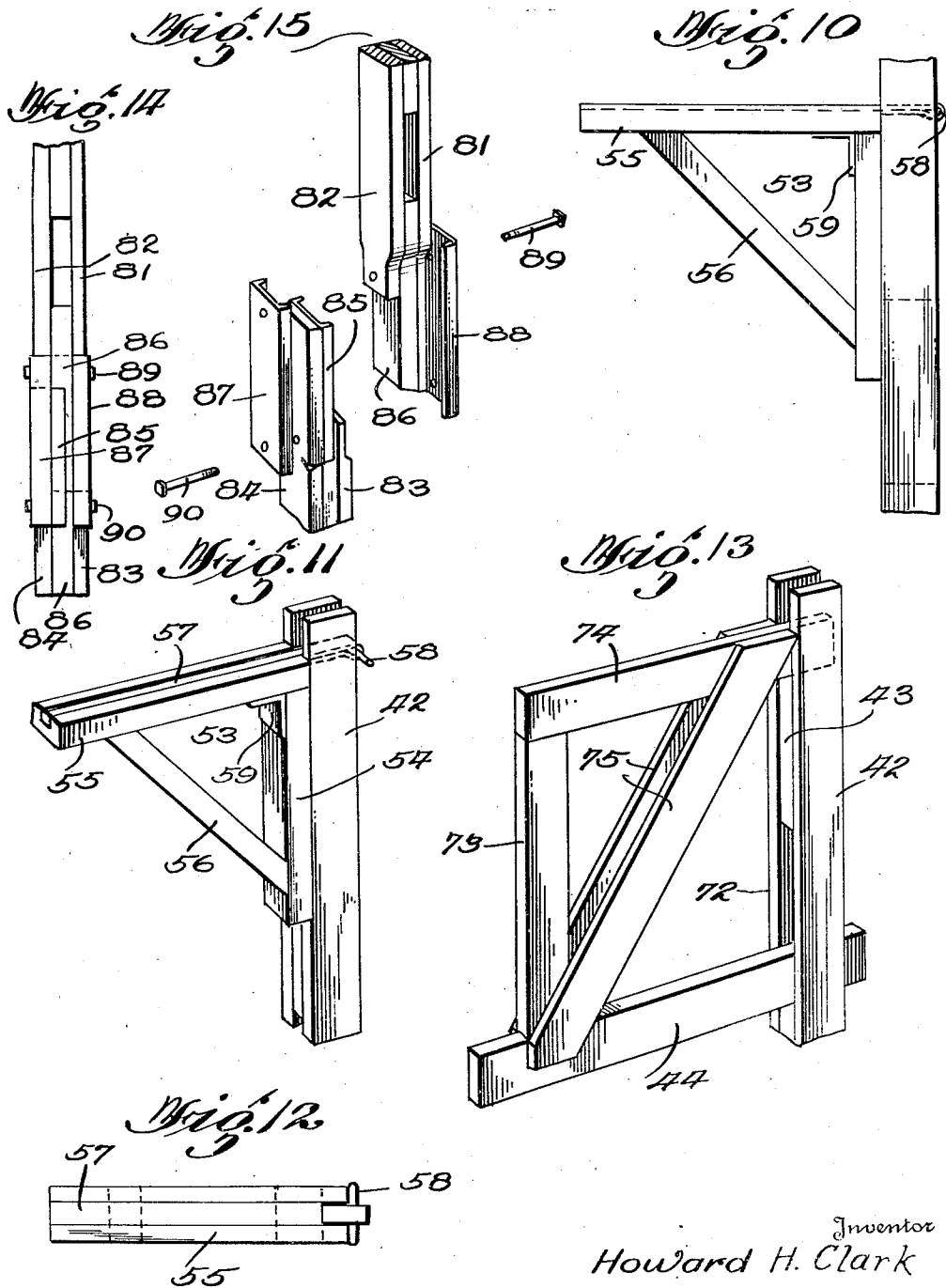
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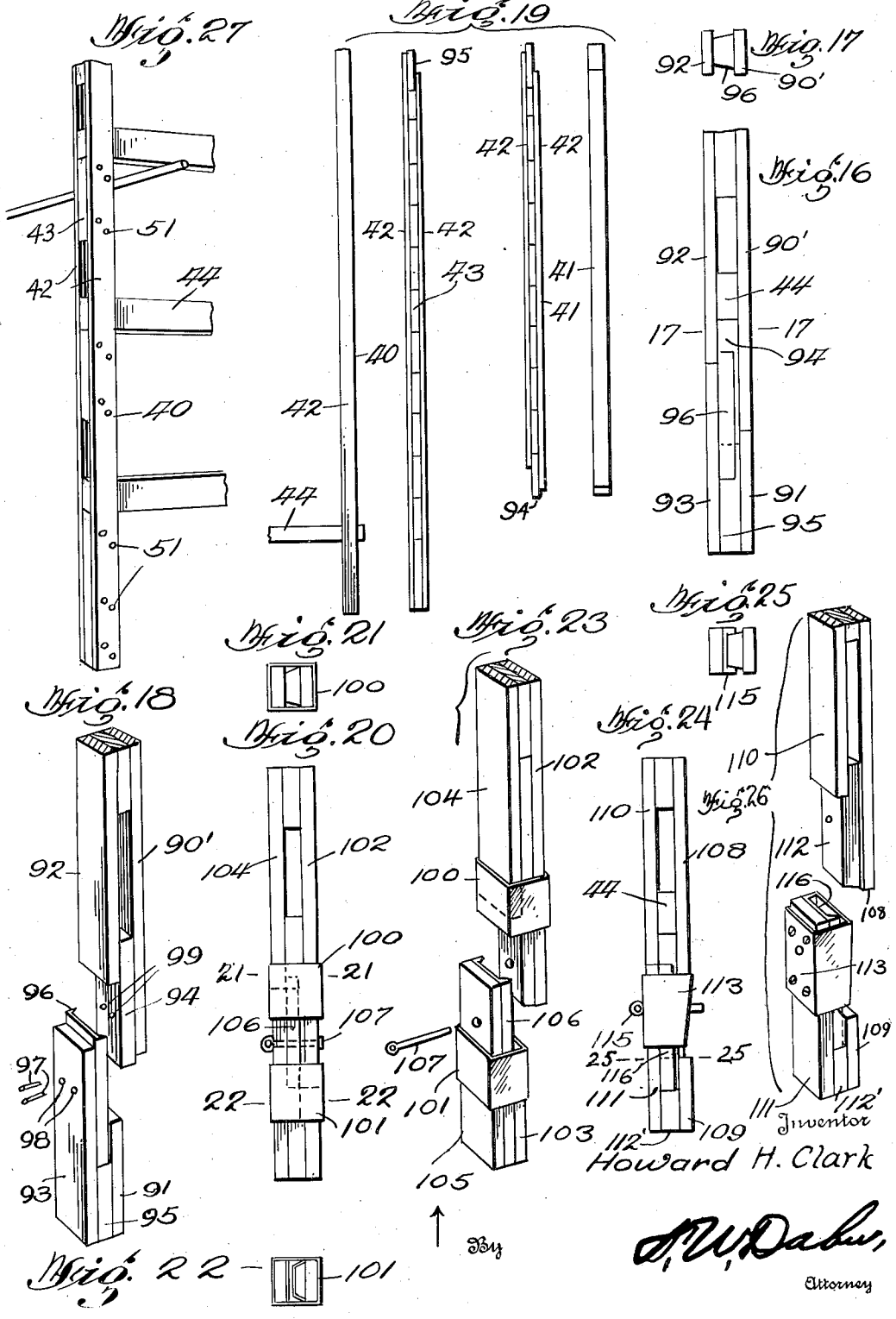
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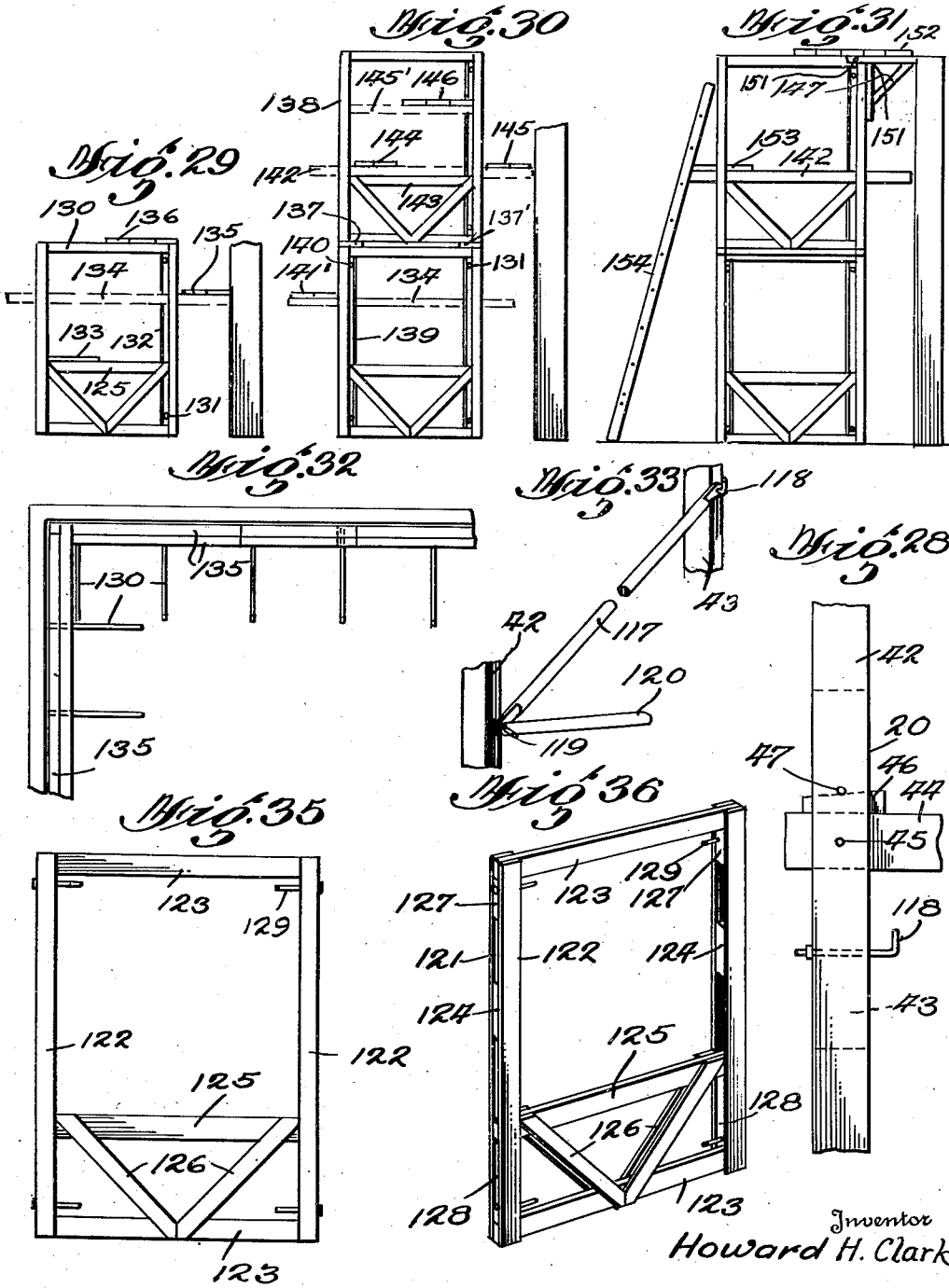
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SCAFFOLD SYSTEMS

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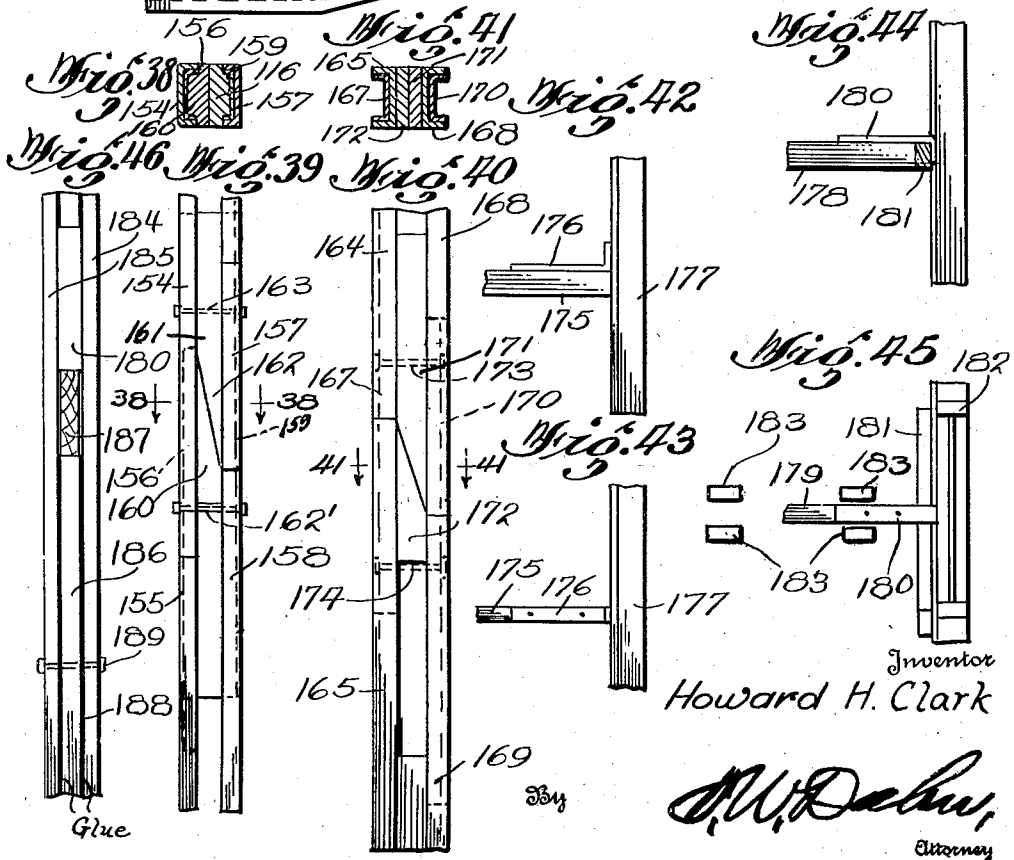
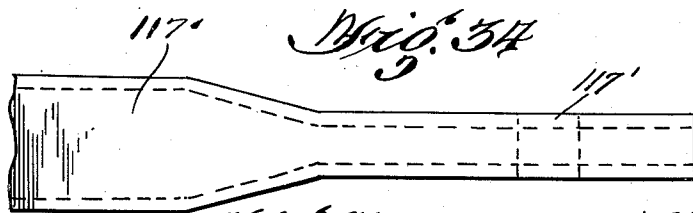
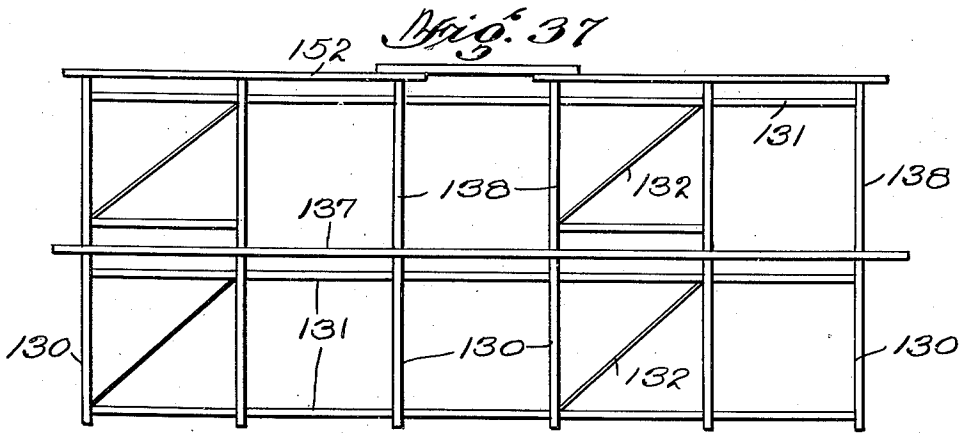
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UNITED STATES PATENT OFFICE

2,383,449

SCAFFOLD SYSTEM

Howard H. Clark, Kent, Ohio

Application June 15, 1942, Serial No. 447,113

20 Claims. (Cl. 304—2)

My invention relates to scaffold systems, and specifically to certain improvements in the scaffold system as set forth in my Patent No. 2,267,638. An object of the same is to provide scaffolding that shall be simple and rugged and inexpensive, that can be put up or taken down quickly and shall not be liable to get out of order, and that shall save the strength of the workmen by eliminating many stooping, lifting and other motions heretofore required in the course of the work.

Another object is to provide improved joints between superposed pole sections in a scaffold.

Another object is to provide improved readily adjustable brackets for use with the scaffold system of my invention.

Another object is to greatly increase the strength of the poles for resistance to strains, and more particularly to increase the resistance to tearing or rending strains tending to separate cross members from uprights.

Another object is to provide improved bracing means adapted for quick assembling or taking down of a scaffolding.

Another object is to provide improvements in "buck" scaffolds.

Another object is to provide a raised material platform for use in either pole type or buck type scaffolds.

Another object is to provide constructions in either pole type or buck type scaffolds which shall provide a separate runway for the helpers.

Referring to the drawings, which are made a part of this application, and in which similar reference characters indicate similar parts;

Fig. 1 is an end elevation of a scaffold, illustrating the use of certain features of novelty of my invention, in a scaffold set up for veneering with bricks,

Fig. 2, a rear elevation of the same,

Fig. 3, an end elevation of a modified form of scaffold,

Fig. 4, a rear elevation of the same,

Fig. 5, a side elevation of a bracket shown in Fig. 3,

Fig. 6, a perspective of the same,

Fig. 7, a plan of the same,

Fig. 8, a perspective of a bracket used with the form of the invention illustrated in Fig. 31,

Fig. 9, a plan of the same,

Fig. 10, a side elevation of a bracket shown in Fig. 1,

Fig. 11, a perspective of the same,

Fig. 12, a plan of the same,

Fig. 13, a perspective of another bracket shown in Fig. 1,

Fig. 14, an elevation of a joint forming part of my invention,

Fig. 15, an unassembled view of the parts of said joint,

Fig. 16, an elevation of a modified form of joint,

Fig. 17, a section on line 17—17 of Fig. 16,

Fig. 18, an unassembled perspective of the parts of Fig. 16,

Fig. 19, detail side and face elevations of a bottom pole member and the next higher pole member, as shown in Fig. 16,

Fig. 20, an elevation of another modification,

Fig. 21, a section on line 21—21 of Fig. 20,

Fig. 22, a section on line 22—22 of Fig. 20,

Fig. 23, an unassembled perspective of the parts shown in Fig. 20,

Fig. 24, an elevation of another modification,

Fig. 25, a section on line 25—25 of Fig. 24,

Fig. 26, an unassembled perspective of the parts of the joint in Fig. 24,

Fig. 27, a detail perspective of a preferred form of pole used in my scaffold system,

Fig. 28, a detail elevation showing parts used in my scaffold system,

Figs. 29 to 31, end elevations illustrating steps in the use of a "buck" type scaffolding embodying the basic idea of my invention in a scaffolding system,

Fig. 32, a plan view of my buck scaffolding applied to an angle return,

Figs. 33 and 34, details of bracing means employed in my system,

Fig. 35, an elevation of my improved buck,

Fig. 36, a perspective of the same, and

Fig. 37, a rear elevation of the buck scaffolding according to my system, as shown in Fig. 31, but with parts omitted,

Fig. 38, a transverse section on line 38—38 of Fig. 39, showing one method of use of a pole having metallic side bars,

Fig. 39, an elevation of the same,

Fig. 40, an elevation of a modified form,

Fig. 41, a section on line 41—41 of Fig. 40,

Fig. 42, a fragmentary side elevation showing means for securing a putlog to a wall,

Fig. 43, a plan of the same,

Figs. 44 and 45, similar views showing a method of attaching a putlog at a window in a wall, and

Fig. 46, a rear elevation of an upright, which may be either a safety pole as in Fig. 27 or part of a buck as in Fig. 36.

In the drawings, reference character 40 indicates generally a bottom pole section that stands

on the ground or other supporting surface and supports one or more upper pole sections 41, according to the same general system as in my Patent No. 2,267,638. Each pole section includes side bars 42, 42 (Fig. 19) connected by spacers 43 which hold said members in spaced relation so that putlogs 44 resting on said spacers may fit closely between the side bars so as to be readily removed or replaced. The putlogs may be temporarily fixed in place by small nails 45, as indicated in Fig. 28, but as a preferred mode of preventing accidental movement in the direction of their length I prefer to drive a wedge 46 between a putlog and a fixed pin 47 on the pole, thus clamping the putlog between the pin and the spacer 43 below the putlog. The putlogs, as usual, support planks or the like 48. The poles are braced by means of horizontal braces 49 and diagonal braces 50.

The side bars 42, 42 are secured to the spacers 43 by means of conventional nails 51 (Fig. 27), or by bolts or the like, though the spacers might obviously be integral, the posts being merely perforated like those used in making rail fences of a well-known type. These connections are subjected in use to strains due to compression, bending, and rending or tearing strains tending to separate the side pole members from each other and from their spacers, and I have discovered that by applying suitable glue to the contacting faces of the spacers and the side bars the strength and therefore the useful life of the parts is increased amazingly. Thus laboratory tests made on pole sections constructed according to my invention with nails alone, as against joints using both nails and glue, have shown an increase of about 50% in resistance to compression when glue was thus applied (of course over the entire contacting surfaces) but an increase of 1400% in resistance to rending or tearing apart of the members in question when the joint was thus improved by the application of glue. Since rending or tearing strains are the major factor in weakening a scaffolding of this type, the importance of this discovery will be evident. As compared with a bolted joint, laboratory tests of resistance to rending show an increase of about 500% when glue is used.

Another feature of importance in the new development is an improved bracket 53 (Figs. 1, 10, 11 and 12) comprising an upright part 54 and a horizontal part 55, both resting against the adjacent faces of a pole on which the bracket is supported, and a diagonal brace 56. The part 55 is slotted to receive a metal holding member 57 fixed thereto in any convenient manner and provided at its outer end with an eye to receive a pin 58 that bears against the outer faces of the side bars and holds the bracket in place. Upon mere removal of the pin it will be seen that the bracket may be shifted to any desired position along the pole and again fixed in place upon replacement of the pin. An L-shaped brace 59 may be applied to the angle between members 54 and 55 to strengthen the bracket. This bracket is intended for supporting planks for the workmen, but may be used for other purposes. The planks 59' provide a walkway for the workmen. In Fig. 1 the workmen's platform 59' is carried directly by the putlogs, brackets 53 being placed under their ends for increased security, or the bracket may form the sole support for the platform if the putlogs are drawn back or if short putlogs are used.

A modified form of shiftable outer bracket is shown at 60 in Figs. 3, 5, 6 and 7, this bracket comprising an upright portion 61 and a horizontal portion 62 connected by a brace 63. The upright

portion of the bracket has its rear side next to the pole a flange 61' for guiding and steadying the bracket, said flange running in the slot between the side bars 42, 42, and the spacers being reduced as shown in Figs. 5 and 7 to provide a continuous track for the flange. At opposite sides of the part 62 metal straps 64 are secured to said part and these straps have their outer ends bent so as to embrace the side bars 42. A pin 65 will be inserted in holes provided at suitable points in the poles for holding the brackets. An upward extension of the upright member 61 carries an eye member 66 to which there is attached a rope or the like 67 passing over a pulley 68 (Fig. 3) on a pole 40 or 41, and thence to a winch 69 provided with a crank 70. Obviously the parts will ordinarily be so arranged that all the brackets which support a set of planks may be raised or lowered at the same time, and it will also be obvious that other means may be substituted for the raising and lowering means shown. Instead of using the pins 65 the winch may be arranged to hold the bracket in place and may be relied on for that purpose. It will be seen that the putlogs 44' in this form of my invention are relatively short, as they need not extend inward beyond the poles.

Another feature of my invention is the bracket 72 (Fig. 13). This bracket consists of an upright member 73 standing on a putlog, a horizontal member 74 projecting between a pair of side bars 42 and resting on a spacer 43, and a pair of diagonal braces 75, 75, arranged one at each side of the bracket 72, all parts being suitably secured together by means of nails, screws or other fastening means. The parts 75, 75 project at their lower ends so as to straddle the putlog 44, and thus the bracket is self-sustaining, with its upper surface at about one-half the distance between the putlogs shown in Figs. 1 to 4. Putlogs may be inserted at every level where spacers are located, as shown in these figures and in Fig. 27, but by the use of this bracket it will be seen that they need to be located only at alternate spacers, or about four feet apart, thus saving material and expense, as well as saving the time of workmen and making their work easier.

An important advantage of the bracket 72 is that in its use the helpers do not get in the way of the workmen, this for the reason that they have a separate walkway on planks 48, entirely out of the way of the workmen, and so they can bring materials to position for the workmen without even coming near the walkway formed by the planks 59'.

Assuming that the wall has been laid as high as can be conveniently done with the set-up of Fig. 1, putlogs are then located at the next level, i. e., on the second spacer above the level of the putlog on which the brackets 72 are shown, then a suitable number of planks 48, 76 are placed on the newly-positioned putlogs, then the brackets 72 are put in place, planks placed on the brackets, and the remaining plank or planks are raised to the new level. Of course the order of operations may be varied according to preference, and the brackets such as 53 and 60 for supporting the workmen while at regular work may be raised at will. But in any event the materials for the work are supported at a convenient level for the workmen to take them and use them with a minimum of stooping and lifting, instead of being at the workmen's feet.

It will be seen in Fig. 19 that the lower pole member 40 is square at the bottom and preferably 75 has a long spacer extending down to the lower

end of the member, while the upper end of this member as well as both ends of the intermediate members such as 41 are formed as complementary stepped members adapted to fit together so as to form linear poles with aligned faces. Figs. 14 to 18 and 20 to 26 show four novel types of inter-fitting means for pole members whereby the separable parts are safely held in alinement when superposed in a scaffold.

The joints shown at 80, 80 in Figs. 1 and 2 may be as in my patent above referred to, but they may also be as in any of the forms now to be described. Thus, as in Figs. 14 and 15, the long side bar 81 abuts against the upper end of the short side bar 83 and the short side bar 82 abuts at its end against the long lower side bar 84. A channel iron 85 is permanently attached to the inner faces of the upper end portion of bar 84 (which portion is reduced in thickness to receive said iron) so as to embrace the lower end portion of the two-piece spacer 86 when the joint is assembled with the side bars abutting as above stated, the middle portion of said spacer being reduced in width to fit said iron. An external channel iron 87 fits over the abutting ends of side bars 82 and 84, both of which are reduced in width at their abutting ends. Another external channel iron 88 fits at the opposite side of the pole over the abutting ends of bars 81 and 83, which are also reduced in width, and bolts 89 and 90 are passed through the several parts and hold them all rigidly in engagement with each other.

Figs. 16 to 18 show another form of joint, wherein the stepped relation is as in Figs. 14 and 15, the abutting ends of side bars 90' and 91 meeting at a level higher than that where the ends of the spacer sections 94 and 95 abut, but lower than the point at which the ends of side bars 92 and 93 meet. In this form there are no outer channel irons, but a single internal channel iron is affixed to the bar 93 and fits over the spacer members 94 and 95, both of which are beveled off to fit in the channel iron (Fig. 17) the intermediate part of the spacers being also reduced in thickness sufficiently to accommodate said iron. Screws 97 are inserted in holes 98, 99 in the respective sections of the pole to complete the joint.

Another form of the joint is shown in Figs. 20 to 23, wherein the arrangement and construction may be as in Figs. 16 to 18 except that this form has added a pair of sleeves 100, 101 which are permanently secured to the respective pole sections in such manner that the one covers the meeting point of bars 102 and 103, while the other covers the meeting point of bars 104 and 105, thus adding to the security of the connection, the ends of the channel iron extending into the respective sleeves. With this construction a single bolt 107 will usually be sufficient to insure the permanency of the joint for so long as desired.

The form of joint shown in Figs. 24 to 26 may also be as in Figs. 16 to 18, except that here a single sleeve 113 is located about the joint, this sleeve being above the meeting point of bars 108 and 109, but below the meeting points of the bars 110 and 111 and of the spacer sections 112 and 112'. The sleeve has an inclined wall at the right side in Figs. 24 and 26 and the lower end of the bar 108 is reduced in thickness to enable it to enter easily into the sleeve. A single bolt 115 passes through the sleeve 113, the channel iron 116, the spacer section 112, and the respective ends of the bars 108 and 111.

A preferred form of brace and its method of use are illustrated in Figs. 28, 33 and 34, taken

in connection with assembly views. The brace 117 is a hollow tube that is flattened at its ends, and has transverse perforations 117' in the flattened parts, as shown in Figs. 33 and 34. Bolts 118, which are bent into an L-shape with their bent ends extending upward, are inserted in spacers 43 to engage one end of braces 117. A workman who is placing braces in a scaffold in process of erection can reach out with a brace and hook one end over such a bolt at a considerable distance from him and then place the other end on an adjacent bolt, as at 119 in Fig. 33, bolt 119 being straight, and thus can avoid much climbing. Or he can reach points otherwise inaccessible at the moment, and so expedite the assembly and the tearing down of scaffolds. The identical idea is applicable to a horizontal brace, as at 120 (Fig. 33) in like manner, and the L-shaped bolts as well as the straight bolts will be long enough to receive both a diagonal brace and a horizontal brace, as shown in Fig. 33. Such braces may be used at 49, 50 in Figs. 2 and 4, or any conventional or desirable braces may be used instead. The same applies to the buck type of scaffold now to be described, as well as to other types.

Figs. 8, 9, 29 to 32, and 35 to 37 illustrate improvements in a buck scaffold. According to my construction a buck, as best shown in Figs. 35 and 36, comprises at each side of a rectangular frame a pair of side bars 121 and 122, said pairs being connected at the top and bottom by cross pieces 123 which serve also to space the members 121 and 122 of each pair. These members are additionally spaced and connected by intermediate spacers 124 and a cross bar 125, so arranged that a putlog may rest on either the spacers 124 or the bar 125. Pairs of braces 126 at opposite sides of the members 125 and lower bar 123 further brace the buck these braces being shown as consisting of strips of wood connected to other parts by nailing and/or gluing, as are also other parts of the buck, though other means may be employed for securing the parts together. Upper spacer blocks 127, and lower spacer blocks 128 extending from the lower bar 123 to the cross bar 125, further strengthen the buck and serve also to carry bolts 129 for the scaffold braces later described. Hooks, as shown at 118 (Fig. 28) may be substituted for one half of said bolts.

In the use of the buck scaffold of my design a series of lower bucks is first set up, these bucks being indicated at 130 in Figs. 29 and 37. As they are set up, the individual bucks are each connected to adjacent ones by means of horizontal upper and lower braces 131 and diagonal braces 132, connected to bolts 129 at the ends of the bucks next the wall. The outer ends may be left unbraced at this time for more convenient access to the space between them. Material supports, such as planks 133, may be placed directly on the cross members 125, and the work may be carried up to a convenient height. Then putlogs are inserted above the spacers 124, as at 134, the planks 133 are moved back to the position shown in Fig. 29, and other planks laid at 135 and 136 for the workmen and the materials respectively, the work being now continued up so far as convenient.

At the next step in the operation planks 137 and 137' are placed on top of the bucks 130, and a second set of bucks, indicated generally at 138, is positioned on the planks, each buck of the second set being preferably directly above a lower

buck. Braces 139 and 140 are placed on the lower bucks at the outer end of the scaffold before placing the upper bucks, and the upper bucks are also connected by braces at their ends adjacent the wall, as in the case of the lower row. Now the putlogs 134 are drawn outward and the planks placed thereon at 141' and putlogs are positioned at 142 lying directly on the cross bar 143. Inner and outer sets of planks 144 and 145 are placed on the putlogs 142, and another set of putlogs is placed at the level of 145', with planks 146 upon them to hold material. The planks 141' now provide a convenient runway for helpers to hand materials to other helpers on the platforms 144, who in turn can place materials on the material shelf 146 without getting in the way of the workmen on the shelf 145.

A third stage in the work is shown in Fig. 31, where the work is to be carried beyond the height provided for by the arrangement of Fig. 30. Here brackets 147 are positioned on the upper bucks, such brackets being shown in Figs. 8 and 9 and comprising uprights 147', a horizontal part 148 and a brace 149 connecting their outer ends. This bracket can also be used at lower levels as the sole support for the platforms 135, 145 if desired, or as auxiliary to the putlogs, as in Fig. 1. Straps 150 are fixed to each side of the member 148 and project rearwardly beyond member 147. These straps are perforated at such a distance from the member 147 as to permit insertion of a pin 151 at the opposite side of the side members 121, 122 of a buck. When located at the top of the buck, as in Fig. 31, a hole will be made in the upper cross member 123 of the buck to receive the pin 151. Planks 152 are positioned on the bracket 147 and on top of the bucks, as indicated, and all other putlogs save those at the level of 142 may be removed with their planks, but planks being placed on the putlogs 142 at 153 and a ladder 154 being placed as shown, so that material may now be readily placed on the platform 152 by helpers on platform 153, after which the work may be carried upward another stage. Buck scaffolding is conventionally used only for low work—usually not over two tiers in height of bucks being used. The use of my buck scaffold system enables workmen to carry on the work with more convenience, and to a height greater than has heretofore been practicable with buck scaffolding, i. e., to a height of about 16 feet with bucks that are each about six feet, four inches in height.

Fig. 22 illustrates the arrangement of bucks 130 for a return angle, with platforms 135 of overlapping and abutting planks or the like.

In Figs. 38 to 41 I have shown modifications of the safety poles, wherein the side bars are metal channel shapes. Thus in Figs. 38 and 39 the long side bar 154 extends down to and rests on short side bar 155, and a splice bar 156 is secured to the short side bar 155 and extends across the joint between bars 154 and 155. Similarly, a short side bar 157 at the right side of Fig. 39 rests on a long side bar 158 and a splice bar 159 is secured to the inside of the short channel bar 157 and extends across the joint between bars 157 and 158. Between the bars there is a spacer comprising two parts 160 and 161 meeting at inclined surfaces at 162. Bolts 162' 163 secure the parts together.

In Figs. 40 and 41 the channel bars face outward and include a short side bar 164 and a long side bar 165 at one side, with a channel splice bar 167 secured to short bar 164 covering the joint between bars 164 and 165. At the opposite side

a long side bar 168 rests on a short side bar 169 and a splice bar 170 connects them. A divided spacer 171, 172 separates the side bars and bolts 173, 174 secure the parts of the joint together.

In Figs. 42 and 43 there is shown a slidable putlog 175 which may be like those shown in various other figures, but which has a metallic strap 176 affixed thereto by means of nails or the like and which is bent up at one end, so as to be readily attached to a wall 177 as by nailing. A similar putlog 178 has a strap 180 fixed thereto with an end bent downward over a 2 x 4 181 fixed to or spanning a window frame 182 secured to a wall of a building. The putlog 179 is shown as located between pairs of side bars 183, 183 forming parts of a pole or buck scaffold.

Fig. 46 shows a safety pole such as used in my scaffold system, with side bars 184, 185, having spacers 186 to support putlogs 187, the spacers being connected to the side bars by glue indicated at 188, in addition to nails or bolts, as at 189.

The parts referred to as channel bars or shapes may, of course, be of any suitable material, aluminum being preferred on account of its lightness and strength.

It will be obvious to those skilled in the art that many changes may be made in the system herein disclosed, all without departing from the spirit of the invention; therefore I do not limit myself to what is shown in the drawings and described in the specifications, but only as indicated in the appended claims.

Having thus fully described my invention, what I claim is:

1. Scaffolding comprising pairs of upright holes arranged in spaced relation, the poles of each pair being spaced from each other, putlogs each supported by one of said pairs of poles, a workmen's platform supported on said putlogs at one side of said scaffold, an elevated material platform on said putlogs, and a helper's runway on said putlogs at the side of the material platform remote from the workmen's platform, the helper's platform and the workmen's platform resting directly on said putlogs while said material platform is located at a substantial height above said putlogs.

2. Scaffolding as in claim 1, said helper's platform being unobstructed throughout its length.

3. Scaffolding comprising poles each having a pair of upright members separated by spacers fixed to said members and adapted to support putlogs, a bracket bearing against one side of a pole, a horizontal wooden member on said bracket, and one or more metallic straps extending from the outer end of said wooden member and hooked about said pole, said straps being secured to said wooden member throughout its length.

4. Scaffolding as in claim 3, said bracket being slidable up and down on said pole and having a flange extending into a groove running lengthwise of the pole for guiding and steadying the bracket.

5. Scaffolding including poles each having a pair of upright side bars separated by spacers fixed to said bars and adapted to support putlogs, a wooden bracket bearing against one side of a pole, said bracket having a horizontal member with a groove extending lengthwise of its upper face, a metallic strap in said groove having a tongue projecting between said side bars, and a pin extending through said tongue and bearing against the opposite side of the pole.

6. Scaffolding including upright poles each having a pair of parallel side bars separated by

spacers fixed to said bars and adapted to support putlogs, a wooden bracket bearing against one side of a pole, metallic reinforcing straps extending alongside a horizontal member of the bracket at opposite faces thereof and having tongues extending past the pole, and a pin extending through said tongues and bearing against the side of the pole opposite to the bracket.

7. Scaffolding including poles having spaced side bars, spacers between them, putlogs resting on said spacers, a bracket having a platform supporting member, and means for holding the bracket in place, including an upper projection extending between the side bars and lower projections straddling a putlog.

8. In a scaffold system, an upright pole, a triangular bracket slidably mounted on said pole, said bracket having wooden upright, horizontal and diagonal brace members and metallic side reinforcing straps extending rearward beyond said pole, and means on the rearward extensions of said straps for holding the bracket in place on the pole.

9. A scaffold system comprising sets of poles, each pole having parallel adjacent side bars, spacers between said side bars and secured thereto, quickly-detachable putlogs each supported by spacers of one of said sets of poles material-supporting means supported between sets of poles on a plurality of putlogs at a substantial height above said putlogs, a helper's platform on said putlogs at one side of the elevated material supporting means, and a workmen's platform on said putlogs at the other side of said material supporting means at the level of the helper's platform.

10. Scaffolding comprising inner and outer rows of poles arranged in pairs alongside the work, a horizontal row of putlogs on said poles, each putlog being mounted on a pair of said poles so as to be movable toward and from the work, a workmen's platform carried by the said row of putlogs adjacent the work, a helper's runway on the same row of putlogs and at the same level but remote from the work, and a material platform on the same row of putlogs between the other two platforms but at a substantially higher level.

11. Scaffolding as in claim 10, all of said platforms consisting of readily separable and removable parts to facilitate changes in their position and arrangement on a scaffold system.

12. Scaffolding comprising uprights adapted to be arranged in inner and outer rows alongside the work, a horizontal row of demountable putlogs on said uprights, each putlog being mounted on a pair of uprights so as to be slidable toward and from the work, a workmen's platform on said row of putlogs between said inner row of uprights and the work, a helper's runway on the same row of putlogs at a point remote from the workmen's platform, and a material platform between the other two platforms.

13. Scaffolding comprising inner and outer rows of poles arranged in pairs alongside the work, each pole having spaced side bars, a horizontal row of putlogs on said poles each putlog being mounted on a pair of said poles so as to be movable toward and from the work, a workmen's platform on said row of putlogs next to the work, a helper's runway on said row of poles remote from said workmen's platform, a material platform between the other platform and said runway, and brackets supporting said material platform at a materially higher level than that of

said runway and workmen's platform, each bracket including a horizontal supporting member, an upper projection extending between the spaced side bars of a pole, and lower projections straddling a putlog.

14. A scaffolding comprising inner and outer rows of poles arranged in pairs alongside the work, putlogs arranged in a horizontal row on said poles, each putlog being carried by a pair of poles, a workmen's platform on said putlogs between the inner poles and the work, brackets supported on the putlogs and each resting against the outer face of one of the inner row of poles but unattached to either said putlogs or said poles, and a material platform supported on said brackets about two feet above the putlogs.

15. Demountable scaffolding comprising inner and outer rows of poles adapted to be arranged in pairs alongside the work, a horizontal row of putlogs each demountably carried by a pair of said poles, a workmen's platform on projecting ends of the putlogs adjacent the work, a helper's runway on said putlogs adjacent the outer row of poles, and a material platform supported by said putlogs adjacent the inner row of poles, said workmen's platform and helper's runway being at substantially the same level and the material platform being at a substantially higher level.

16. Buck scaffolding comprising a series of rectangular frames or bucks arranged in parallelism, and means on the front and rear members of the frames for supporting slidable putlogs in horizontal position on each buck, whereby said putlogs may be positioned to support platforms at the front of the series of bucks or at their rear or between their front and rear members, the top members of the frames also being adapted to support a platform.

17. In a scaffold, a bracket including members lying in a common plane at right angles to one another and having an end of each secured to an end of the other, diagonal members fixed to said first-named members at opposite sides thereof, said last-named members projecting beyond the end of one of the first-named members, and the other of said first-named members projecting beyond the adjacent parts of said diagonal members.

18. A bracket for use with scaffolding of the type including upright poles having side bars secured together with spacers between them and having horizontal putlogs supported by corresponding spacers of a pair of poles, said bracket comprising rigidly connected members lying in the same plane but at right angles to one another, parallel diagonal members fixed to opposite sides of said connected members adjacent their ends, said diagonal members projecting beyond the free end of one of said rigidly connected members so as to be capable of straddling an adjacent putlog but terminating short of the free end of the other one of said rigidly connected members so as to permit the last-named free end to be inserted between a pair of side bars of a pole.

19. A scaffold buck comprising parallel upper and lower members, a pair of side bars at each side of the buck, each pair of said bars being spaced apart by said upper and lower members and being fixed thereto, spacers between the side bars of each pair said spacers being arranged to leave openings between the side bars for supporting a slidable putlog at about two thirds of the height of the buck, a crossbar fixed between said pairs of side bars and being arranged parallel to said upper and lower members so as to

support a slidable putlog at about one-third of the height of the buck, and diagonal braces connecting the ends of said crossbar to said lower member, the space between said crossbar and the upper member being open and free of braces.

20. A scaffold buck comprising parallel upright apertured side bars, cross bars fixed to said upright bars, and horizontal putlogs slidably mount-

ed in the apertures similarly located in the side bars of a buck, so that the putlogs may be made to project either at the side of the buck next to the work for supporting a workmen's platform or at the side remote from the work for supporting a helper's runway or the like.

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