

Sept. 15, 1942.

C. K. LAMB

2,295,995

SAFETY SCAFFOLD

Filed April 17, 1940

2 Sheets-Sheet 1

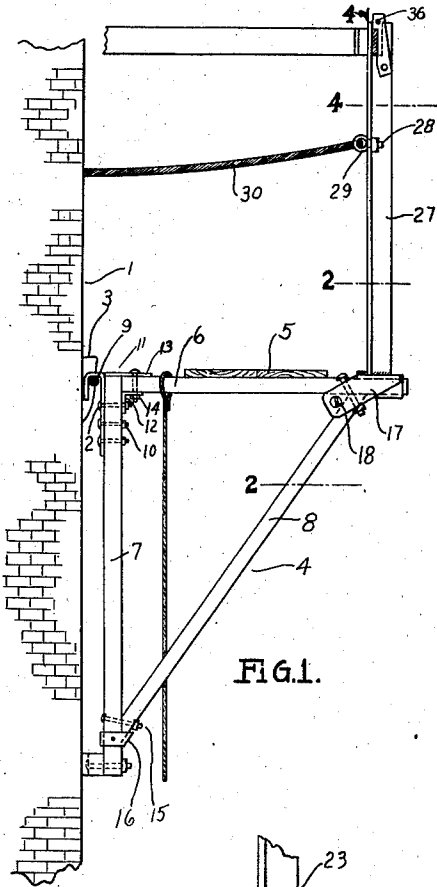


FIG. 1.

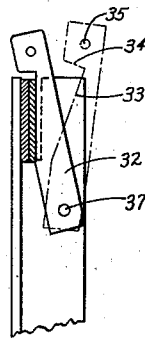


FIG. 4.

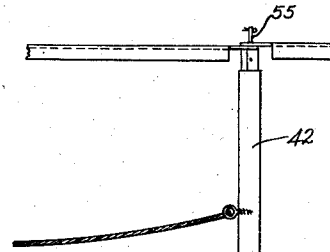


FIG. 5.

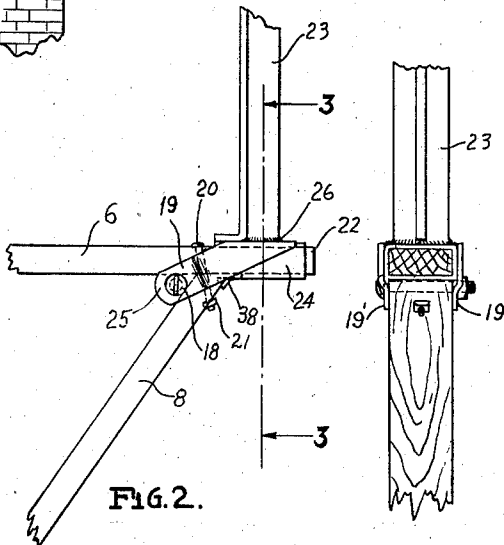


FIG. 2.

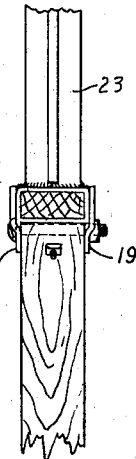


FIG. 3.

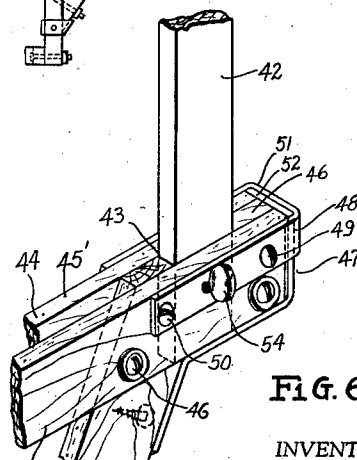


FIG. 6.

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2 Sheets-Sheet 2

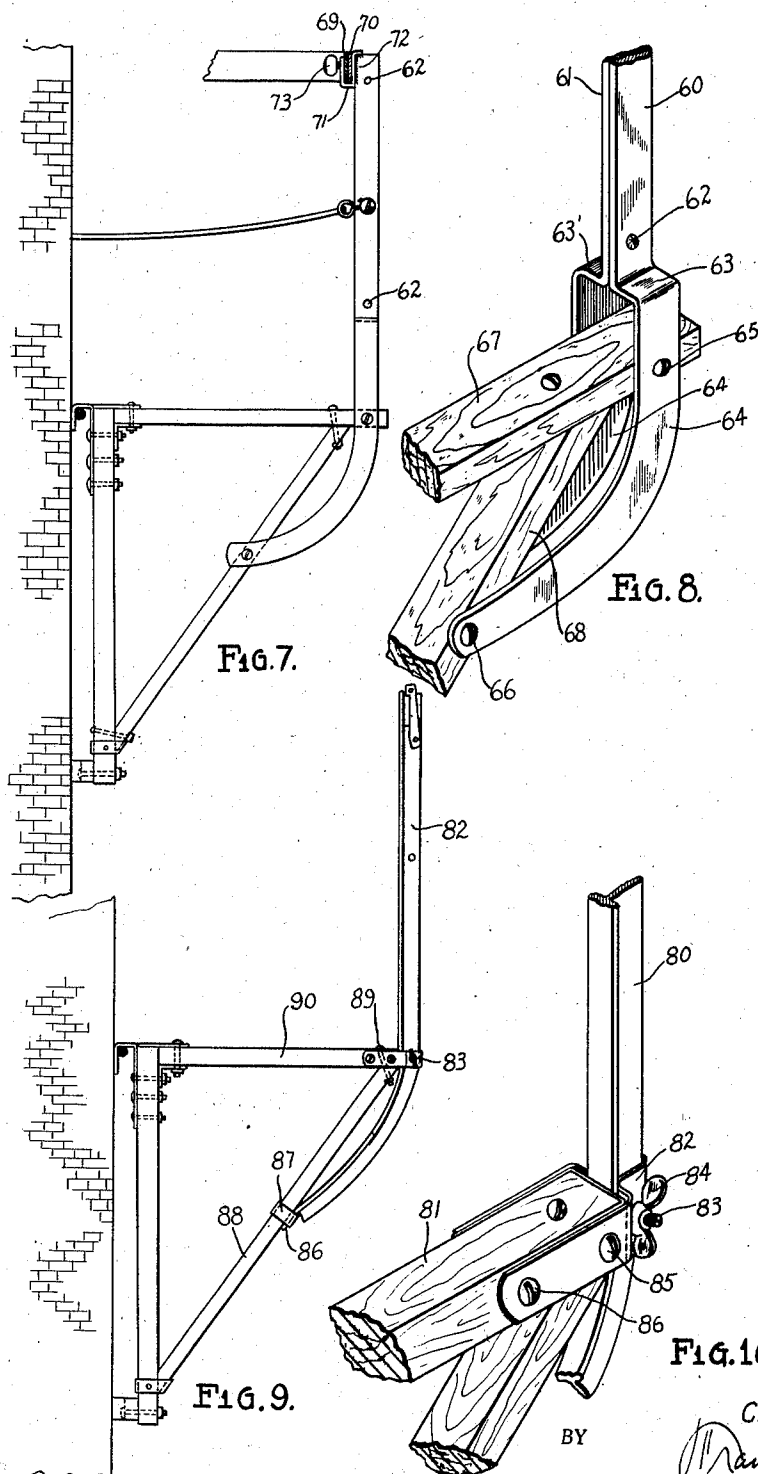


FIG. 10.

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UNITED STATES PATENT OFFICE

2,295,995

SAFETY SCAFFOLD

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Application April 17, 1940, Serial No. 330,133

17 Claims. (Cl. 304—14)

My invention relates to safety scaffolds and relates more particularly to the provision of scaffolds particularly adapted for use on stacks, chimneys and tanks, in erecting, constructing, repairing, maintaining, etc., such structures.

An object of my invention is to provide a scaffold adapted for such use which will afford the utmost efficiency in use and maximum safety to workers engaged in work upon such structures.

Another object of my invention is to provide such improved scaffold adapted to be mounted for use quickly and easily.

Another object of my invention is to provide an improved scaffold of the type referred to having a wide range of adjustment for mounting the same on different shaped structures.

Other objects of my invention and the invention itself will become increasingly apparent with a consideration of the following description and drawings wherein:

Fig. 1 is a fragmentary elevational view of a chimney and a portion of a scaffold embodying my invention;

Fig. 2 is an enlarged fragmentary view taken from the plane 2—2 of Fig. 1;

Fig. 3 is a detailed view taken substantially on the line 3—3 of Fig. 2;

Fig. 4 is an enlarged detailed view taken substantially on the line 4—4 of Fig. 1;

Fig. 5 is an elevational view of a bracket and part of the guard rail associated therewith of another embodiment of my invention;

Fig. 6 is a detailed perspective view of a portion of the bracket and post structure of Fig. 5;

Fig. 7 is a fragmentary elevational view of another embodiment of my invention;

Fig. 8 is an enlarged perspective view of a portion of the post and bracket structure of Fig. 7;

Fig. 9 is a fragmentary elevational view of another embodiment of my invention; and

Fig. 10 is an enlarged perspective view of a portion of the bracket and post structure of Fig. 9.

Referring to the drawings in all of which like parts are designated by like reference characters, in Figs. 1 to 4 inclusive, I show a preferred embodiment of my invention. At 1, I have illustrated generally the outline of a chimney, or the like, which is to be repaired, dismantled or to have an operation performed thereon requiring the use of a scaffold. A supporting cable 2 having a plurality of spaced blocks 3 secured thereto encircles the chimney but is maintained slightly spaced therefrom by the blocks 3 and is drawn taut by the use of a turnbuckle or the like.

Supported by the cable 2 are a plurality of generally triangular shaped brackets 4, the number of brackets being optional and largely dependent upon the cross sectional contour and

size of the chimney. The brackets 4 form supports for a preferably continuous platform 5 surrounding the chimney formed by laying boards over the horizontally extending arms 6 of adjacent brackets. The brackets illustrated are preferably formed of wood, although metal may be employed if desired, and each bracket comprises an upright portion or brace 7, an interconnecting brace of hypotenuse portion 8, and the said horizontally extending arm 6. A hook 9 engageable with the cable 2 is secured to the upright 7 by bolts 10 and the horizontal arm 6, as indicated at 11, is preferably belted by means of an angle 12 to the upright 7.

In the form shown, I contemplate that the hook 9 could be integrally formed with a piece of metal such as the band 13 which is perforated to receive a bolt 14 projecting through the angle 12 and the horizontally extending arm 6. The interconnecting brace 8 which forms the hypotenuse of the triangle of the bracket is connected in the form shown to the upright portion 7 by means of a bolt 15 and an encircling metal band 16 and is connected to the arm 6 by means of post securing means indicated generally at 17, having portions 19 and 19' which overlap said arm 6 and which are adapted to have pin means 18 projected therethrough securing the opposite arms 19 and 19' or said overlapping portions together, which pin means are adapted to be interposed between said horizontally extending arm portion 6 and said brace 8.

In the form shown in Figs. 1 to 4 inclusive, the brace 8 is further adapted to be secured to the horizontally extending arm portion 6 by bolt means 20 and 21 adapted to be projected therethrough. The outer end 22 of the arm 6 is preferably secured to the post means 23 by means of a socket 24 having extensions or tongues 25, said tongues 25 having the securing means 18 previously referred to projected through the arms 19 and 19' thereof. Said tongues or extensions may be integral with said socket or separate means secured thereto. In the form shown, the socket and tongues are integrally united therewith and are shown welded as at 26 to said post means, which post, in the form shown, is comprised of a T-shaped metal member 27 provided with a perforation at 28 whereby a ring 29 is adapted to be secured thereto, said ring being provided to accommodate a safety cable 30 which may be slipped therethrough.

At its upper end, said post is provided with a U-slot through which a guard rail or guard rail sections are adapted to pass, as shown in Fig. 1, and latch means 31, more particularly illustrated in Figs. 1 and 4, formed of a pair of flat metal sections 32 having inclined neck portions 33 and shoulders 34 projecting at an angle to said inclined portions 33, the portions immediately above

said shoulders being of substantially the same width as the lower portion of said latch and having perforations 35 therein, through which pin means 36 are adapted to project whereby when said latch is moved into solid line position, shown in Figs. 1 and 4, the guard rail section or sections, as shown in Fig. 4 is adapted to be locked within said post and prevented from upward displacement therefrom. Said latch means are secured at their lower ends by pin means 37 to the post.

In assembling said post and bracket means, said post 23, which is welded or otherwise integrally secured to the socket member 24, is slipped over the outer end 22 of the horizontally extending arm portion of the bracket, previously assembled, and screw or bolt means 18 then projected through perforations in said extensions 18 and a wing nut or other securing means tightened to secure said extensions together. The screw or bolt 18 being interposed between said brace 8 and arm 6 together with the socket member 24 securely unite the bracket and post means together. As shown in Fig. 2, an extension or lip of said socket 24 may be provided to bear against the upper end of said brace 8 and to aid the pin means 25, disposed on the opposite side of said upper end of the brace, in retaining the brace 8 in rigid position.

Although various forms of posts may be utilized in connection with the post securing means 17 and various size and manner of securing triangle brackets might further be provided in connection with said post and bracket securing means described, it is to be understood that these are contemplated and come within the spirit of my invention.

Figs. 5 and 6 illustrate another embodiment of my invention wherein the bracket means 40 are similar to the bracket means illustrated in Figs. 1 to 4 inclusive but wherein the brace 41 is secured in a somewhat different manner to the post means 42 which in this form is formed preferably of wood and projected in a perforation or seat 43 provided in the outer end of the horizontally extending arm 44 which, in these figures, is illustrated as consisting of substantially parallel side portions 45 and 45' having an insert 46 disposed between the ends of said side portions, the brace 41 together with said insert forming the seat 43 for said post. The brace 41 is preferably secured to said horizontally extending arms 45 and 45' by screw means 46 projected through threaded aligned perforations in said brace and arm portions.

In a manner similar to that employed in connection with Figs. 1 to 4 inclusive, a socket or box portion 47 is provided adjacent the end of said arm portions and the upper end of said brace portion. This consists of a metal band 48 adapted to be secured to the ends of said arm portions by bolt or screw means 49 projected through aligned perforations in said ends and through said insert or plug 46 and bolt means 50 adapted to be projected through said brace 41. This band is preferably telescoped at its yoke portion 51 over a second metallic band 52 adapted to be telescoped in turn over the ends of said arms and the exposed end of said insert or plug, to be bent around the outwardly projecting ends of said arms and to underlie the seat provided at 43 and again to be bent at an incline thereto, in much the same manner as the lip or extension 38 provided in Figs. 1 to 4 inclusive, and having

contact with the brace, being secured thereto by screw means 53.

In the form shown, the bolt or screw means 45 could be disposed as the screw or bolt means 18 in Fig. 1, forwardly of said brace and projected through said arm portions, so that when these means are securely tightened, the said bolt 46 would press against the upper end of said brace and together with the socket or box 47 securely unite the bracket and post means together. A wing nut 54 is provided to more securely retain the post in the seat between said arms.

In the form shown in Figs. 5 and 6, a bolt 55 is preferably threaded into the upper end of the post 42 to form a pivotal mounting for hand guard rail members in the manner shown in Letters Patent granted to me November 15, 1938, Patent No. 2,136,696.

Figs. 7 and 8 illustrate another embodiment of my invention, the bracket being formed in a manner substantially identical with the bracket of Figs. 1 to 4 inclusive but the post means in this form consisting in a pair of metal uprights 60 and 61 secured together by bolts or rivets 62, said uprights diverging at the lower ends to form shoulders 63 and having downwardly extending, inwardly curved, portions 63-63' and 64-64' which are adapted to be secured by bolts 65 and 66 to the outwardly extending projecting end of the horizontally extending arm 67 and to the brace 68, respectively.

The hand guard rail sections shown adjacent the upper end of said uprights 61 and 62 are flat metal sections 69 and 70 adapted to be telescoped within a hook or loop 71, secured as by welding indicated generally at 72 to the posts, and a thumb screw 73 is preferably provided to securely hold said hand guard rail sections in position and at the same time to permit adjustment thereof, if the same should be desired.

In use the form shown is highly efficient and the removal of either the bolt 65 or 66 alone permits the post 60 to be swung downwardly or upwardly, if desired, for carrying and transporting said brackets.

The embodiment shown in Figs. 9 and 10 is similar to that shown in Figs. 7 and 8 but utilizes a T-shaped metal upright 80, similar to that used in Figs. 1 to 4 inclusive, for the post means and secures said post to the horizontally extending arm 81 by a screw and wing nut 83 and 84 and bolts or screws 85 and 86. The post adjacent its lower end is sheared to provide a flat extension 86 which is inserted within a metallic band 87 adapted to act as a socket and to embrace the brace 88. Bolt means 89 preferably aid in securing the horizontally extending arm 90 and the brace 88 together adjacent their outer end portions and said band 82 may be provided with extensions as shown in connection with the post securing means of Fig. 1 whereby additional reinforcing means may be provided interposed between the horizontally extending arm portion and the brace as shown at 18 in Fig. 1.

I am aware that numerous and extensive departures may be made from the embodiments herein illustrated and described without however departing from the spirit of my invention.

I claim:

1. In a scaffold of the character described, a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, posts extending upwardly from said brackets, guard rail sections connecting adjacent posts, each bracket being generally tri-

angular in form and comprising an upright portion, a horizontally extending portion and an interconnecting brace, each of said posts adapted to be secured to a different of said brackets at its lower end adjacent an outer end of said horizontally extending portion of said bracket and means interposed between said brace portion and said horizontally extending portion forwardly of said post and of said post securing end of said horizontally extending portion, adapted to hold said brace and said horizontally extending portions securely against movement whereby said post and said horizontally extending portions are adapted to be engageably secured during use of the scaffold and the upper end of each post being adapted to engage guard rail sections.

2. In a scaffold of the character described, a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, posts extending upwardly from said brackets, each bracket being generally triangular in form and comprising an upright portion, an outwardly extending horizontally disposed portion and an interconnecting brace, each of said posts adapted to be secured to a different of said brackets at its lower end adjacent the outer end of said horizontally disposed portion, and means interposed between said brace portion and said horizontally disposed portion forwardly of said post and of said post securing end of said horizontally extending portion, adapted to hold said brace and said horizontally extending portions secured against movement whereby said post and said horizontally extending portions are adapted to be engageably secured during use of the scaffold.

3. In a scaffold of the character described, a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, posts extending upwardly of said brackets and adapted to have engagement therewith, each bracket being generally triangular in form and comprising an upright portion adapted to be disposed adjacent the structure, a horizontally disposed portion engageable with said upright portion and extending outwardly therefrom and an interconnecting brace securing the free ends of the upright and horizontal portions, means adapted to be associated with said horizontally disposed portion at its outer end adapted to have contact with said posts to retain the same against displacement, and means interposed between said brace and horizontal portions forwardly of said post and of said post securing end of said horizontally extending portion adapted to hold said brace and said horizontally extending portions secured against movement whereby said post and said horizontally extending portions are adapted to be engageably secured during use of the scaffold.

4. In a scaffold of the character described, a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, posts extending upwardly of said brackets and adapted to have engagement therewith, each bracket being generally triangular in form and comprising an upright portion adapted to be disposed adjacent the structure, a horizontally disposed portion engageable with said upright portion and extending outwardly therefrom and an interconnecting brace securing the free ends of the upright and horizontal portions, means adapted to be associated with said horizontally disposed portion at its outer end adapted to have contact with said posts to retain

the same against displacement, a portion of said means superposed over an upper portion of said brace, and means carried by said superposed portion interposed between said brace and horizontal portions adapted to hold said portions secured against movement whereby said post and said horizontally extending portions are adapted to be engageably secured during use of the scaffold.

5. In a scaffold of the character described, a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, each bracket being generally triangular in form and comprising an upright portion, an outwardly extending horizontally disposed portion and an interconnecting brace, means adapted to be telescoped over the outer end of said horizontally disposed portion and adapted to seat a post extending upwardly of said bracket, and means interposed between said brace and said horizontally disposed portion adapted to hold said portions against movement whereby said post and said horizontally extending portions are adapted to be engageably secured during use of the scaffold.

6. In a scaffold of the character described, a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, each bracket being generally triangular in form and comprising an upright portion, an outwardly extending horizontally disposed portion and an interconnecting brace, means adapted to be telescoped over the outer end of said horizontally disposed portion and adapted to seat a post extending upwardly of said bracket, said means having downwardly extending portions adapted to be positioned between said brace and said horizontally disposed portion whereby said portions may be secured against movement.

7. In a scaffold of the character described, a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, each bracket being generally triangular in form and comprising an upright portion, an outwardly extending horizontally disposed portion and an interconnecting brace, means adapted to be telescoped over the outer end of said horizontally disposed portion and adapted to be integrally secured to a post extending upwardly of said bracket, and means interposed between said brace and said horizontally disposed portion adapted to hold said portions against movement whereby said post and said horizontally extending portions are adapted to be engageably secured during use of the scaffold.

8. In a scaffold of the character described, a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, each bracket being generally triangular in form and comprising an upright portion, an outwardly extending horizontally disposed portion and an interconnecting brace, means adapted to be telescoped over the outer end of said horizontally disposed portion and adapted to be integrally secured to a post extending upwardly of said bracket, said means having downwardly extending portions adapted to be positioned between said brace and said horizontally disposed portion whereby said portions may be secured against movement.

9. In a scaffold of the character described, a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, each bracket being generally tri-

angular in form and comprising an upright portion, an outwardly extending horizontally disposed portion and interconnecting brace, post means adapted to be telescoped over the outer end of said horizontally disposed portion, said post means consisting of a post extending upwardly of said bracket and a socket telescoped over the outer end of said bracket, said post and socket means being integrally united whereby said post means are telescoped over the outer end of said bracket and adapted to be detachably removed therefrom, means interposed between said horizontally extending portion and said brace and adapted to be secured to said socket means whereby said bracket and said post means are secured against movement.

10. A scaffold of the character described consisting of a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, each bracket being generally triangular in form comprising an upright portion, an outwardly extending horizontally disposed portion and interconnecting brace, post means consisting of an upright portion integrally united to a socket portion, said socket portion having projections adapted to be disposed at either side of the interconnecting brace and securing means interposed between said interconnecting brace and said horizontal portion securing said projections together and maintaining the bracket and post securely against movement.

11. A scaffold of the character described consisting of a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, each bracket being generally triangular in form comprising an upright portion, an outwardly extending horizontally disposed portion and interconnecting brace, post means adapted to be retained within a seat disposed in the rear of said horizontally extending portion and means interposed between said brace and said horizontally disposed portion adapted to hold said portions against movement whereby said post and said horizontally extending portions are adapted to be engageably secured during use of the scaffold.

12. A scaffold of the character described consisting of a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, each bracket being generally triangular in form comprising an upright portion, an outwardly extending horizontally disposed portion and interconnecting brace, said horizontally extending portion consisting of a pair of spaced substantially parallel portions, said portions being secured together adjacent their outwardly extending end portions, said interconnecting brace being securely retained between said horizontally extending portions, said brace and said last named portions providing a seat for post means extending vertically therefrom.

13. In a scaffold of the character described, a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, posts extending upwardly from said brackets, guard rail sections connecting adjacent posts, each bracket being generally triangular in form and comprising an upright portion, a horizontally extending portion and an interconnecting brace, each of said posts adapted to be secured to a different one of said brackets at its

lower end adjacent an outer end of said horizontally extending portion of said bracket and means interposed between said brace portion and said horizontally extending portion to hold said portions against movement when said scaffold is in operative use, latch means adapted to be associated with a notched upper end of each post whereby guard rail sections are adapted to be securely retained by said posts.

14. In a scaffold of the character described, a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, posts extending upwardly from said brackets, guard rail sections connecting adjacent posts, each bracket being generally triangular in form and comprising an upright portion, a horizontally extending portion and an interconnecting brace, each of said posts adapted to be secured to a different of said brackets at its lower end adjacent an outer end of said horizontally extending portion of said bracket and means interposed between said brace portion and said horizontally extending portion to hold said portions against movement when said scaffold is in operative use, latch means adapted to be associated with a notched upper end of each post whereby guard rail sections are adapted to be adjustably positioned with respect to said post.

15. In a scaffold of the character described, a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, each bracket comprising a post rising vertically from said bracket, said post being composed of a vertically extending upright portion and a pair of depending leg portions, said leg portions adapted to be secured each to an opposite side of said horizontally extending members and said brace, means interposed between said horizontally extending portion and said brace and adapted to secure the same together.

16. In a scaffold of the character described, a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, each bracket comprising a post rising vertically from said bracket, said post secured adjacent the end of a horizontally extending portion of its associated bracket and to be secured to a brace interconnecting said horizontally extending portion and an upright portion of said bracket, means securing the brace and post together adjacent the lower end of said post, socket means telescoped over said post and the end of said horizontally extending portion whereby said post and said portion may be fixedly secured together.

17. In a scaffold of the character described, a plurality of floor board supporting brackets adapted to be mounted upon a structure to be worked upon, each bracket comprising a post rising vertically from said bracket, said post secured adjacent the end of the horizontally extending portion of its associated bracket and to be secured to a brace interconnecting bracket, means securing the brace and post together adjacent the lower end of said post, socket means telescoped over said post and the end of said horizontally extending portion whereby said post and said portion may be fixedly secured together, said post adapted to be detachably removed from said bracket.

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