Nov. 15, 1938. C. K. LAMB 2,136,696

SCAFFOLD

Filed April 17, 1937 2 Sheets-Sheet 1

FIG. 1.

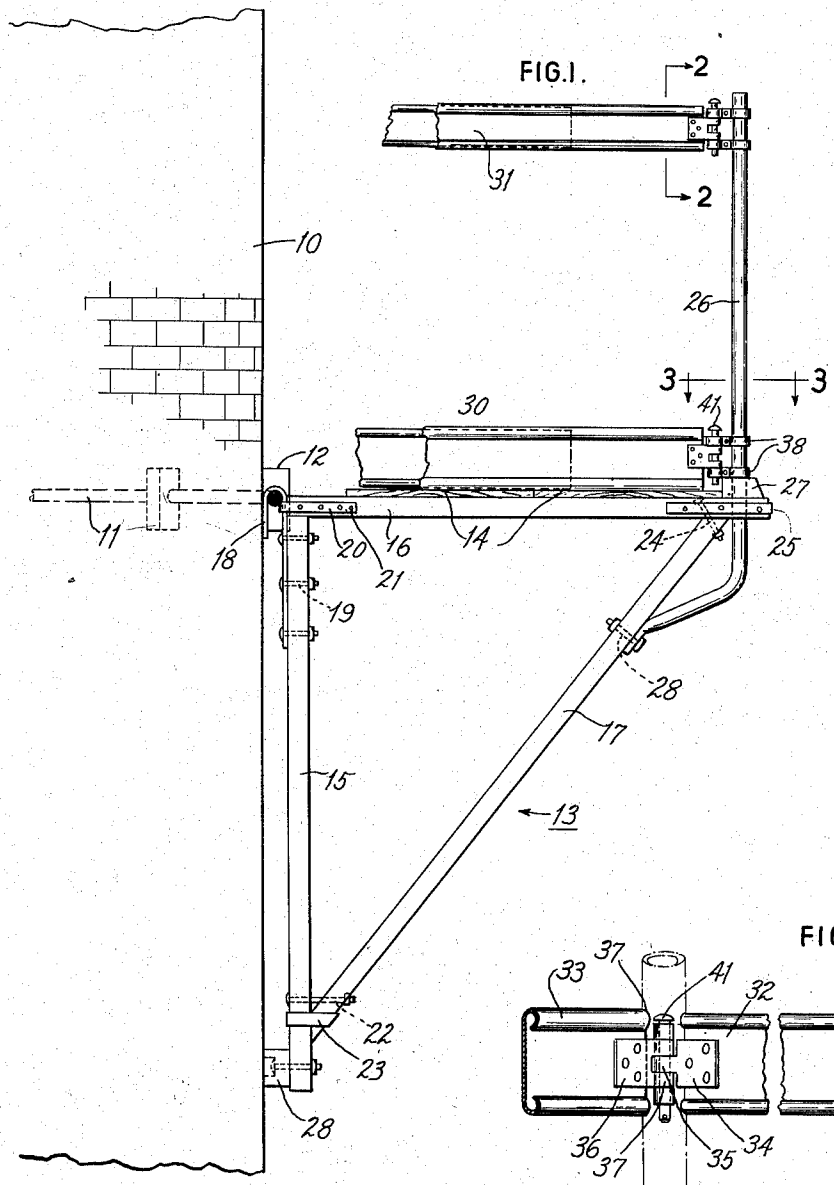
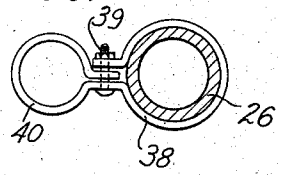


FIG. 2.

FIG. 3.



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Filed April 17, 1937 2 Sheets-Sheet 2

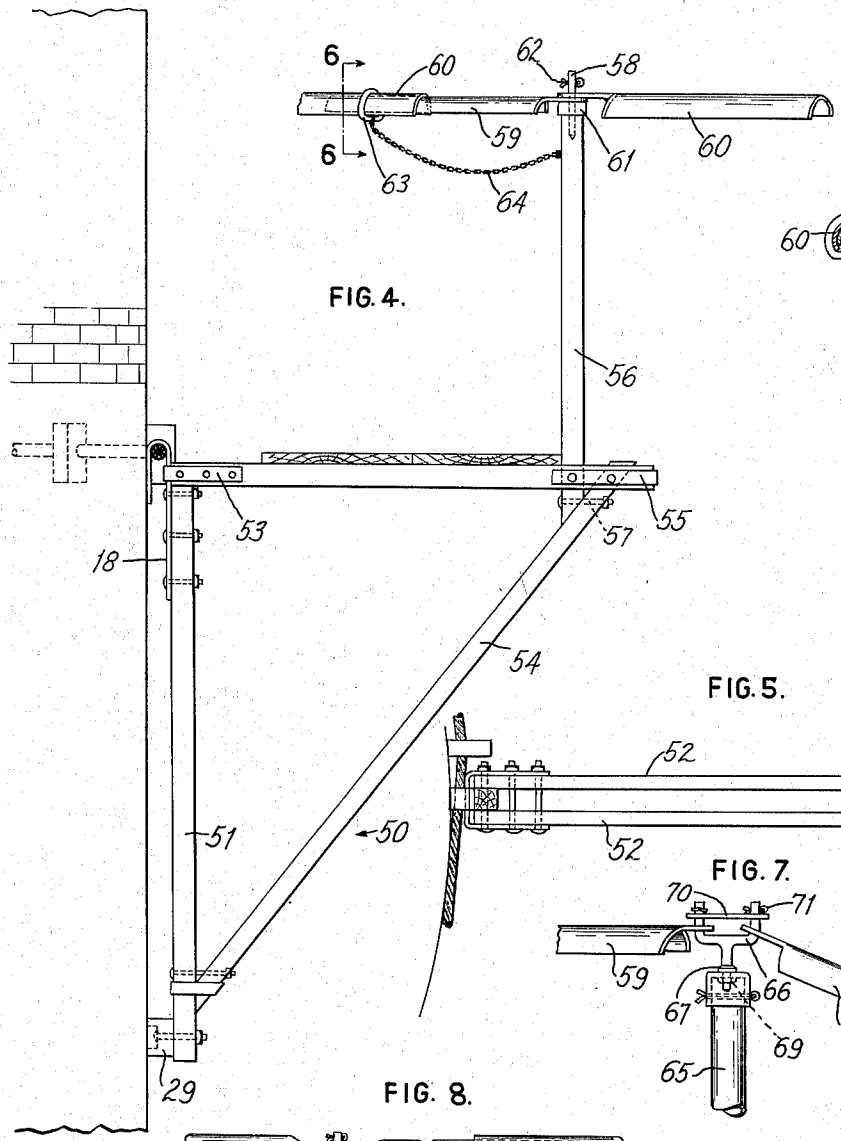


FIG. 4.

FIG. 6.

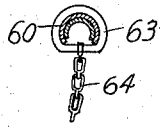
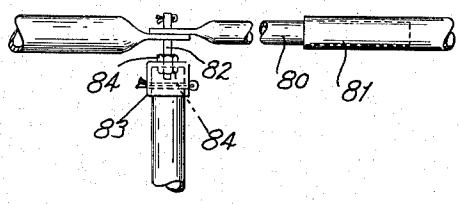


FIG. 5.

FIG. 7.

FIG. 8.



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UNITED STATES PATENT OFFICE

2,136,696

SCAFFOLD

Clyde K. Lamb, Cleveland, Ohio, assignor to The Safety Scaffold Corporation, Cleveland, Ohio, a corporation of Ohio

Application April 17, 1937, Serial No. 137,447

4 Claims. (Cl. 304—14)

This invention relates to scaffolds and more particularly to a scaffold adapted for use in chimney repair work and the like.

The scaffold hereinafter described is generally similar to that disclosed in U. S. Patent No. 2,066,984 to myself issued January 5, 1937. The structure described in the aforementioned patent has a plurality of brackets provided with upstanding posts and supported by a cable encircling a chimney or the like. The posts are interconnected by a safety guard rail having hingeable end portions. In the present construction herein described, a different form of bracket and hand rail is provided and preferably additional safety means comprising a toeboard preventing articles disposed on the scaffold platform from being dislodged and also preventing an accidental misstep from the platform by a workman.

It is an object of my invention therefore to provide a scaffold of the above type having improved safety means over scaffolds now generally employed.

Another object of my invention is to provide a scaffold of the above type having a novel form and construction of guard rail.

Another object of my invention is to provide a scaffold of the above type having a toeboard of improved construction.

Another object of my invention is to provide a scaffold of the above type having a bracket of improved construction.

Another object of my invention is to provide a scaffold for chimneys and the like and which is adaptable to chimneys of varying cross sectional contour and size.

Other objects of the invention and the invention itself will become increasingly apparent from 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 from plane 2—2 of Fig. 1 showing the manner of connecting a hand guard rail or toeboard to a post;

Fig. 3 is a section taken along line 3—3 of Fig. 1;

Fig. 4 is a view generally similar to Fig. 1 showing a modified form of hand guard rail and bracket;

Fig. 5 is a plan view of the bracket of Fig. 4;

Fig. 6 is an enlarged sectional view taken along line 6—6 of Fig. 4;

Fig. 7 illustrates a modified method of securing the hand rail of Fig. 4 to a post; and

Fig. 8 is a fragmentary elevational view of a modified form of hand rail.

Referring now to the drawings, and particularly Figs. 1 to 3 inclusive, I have illustrated generally at 10 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 11 having a plurality of spaced blocks 12 secured thereto encircles the chimney but is maintained slightly spaced therefrom by the blocks 12 and is drawn taut by means of a turnbuckle or the like.

Supported by the cable 11 are a plurality of generally triangular shaped brackets 13, the number of brackets being optional and largely dependent upon the cross sectional contour and size of the chimney. The brackets 13 form supports for a preferably continuous platform surrounding the chimney provided by laying boards 14 over the horizontally extending arms of adjacent brackets.

The bracket illustrated is formed of wood although metal may be employed, if desired, the bracket comprising an upright 15, a horizontal arm 16 and an interconnecting brace 17. A hook 18 engageable with cable 11 is secured to upright 15 by bolts 19 and also by a U-shaped strap 20 preferably bolted both to upright 15 and horizontal arm 16 as indicated at 21, the strap 20 also securely uniting upright 15 and arm 16.

Brace 17 is connected to upright 15 by a bolt 22 and also by an encircling metal band 23 and is connected to arm 16 by a bolt 24.

The outer end of arm 16 is preferably reinforced by a U-shaped metal strap 25 bolted thereto, the arm being bored to permit a preferably tubular post 26 to be projected therethrough and also through a block 27. The lower end of post 26 is curved inwardly and flattened at the tip whereby it may be secured to brace 17 by a bolt 28. The block 27 preferably secured to arm 16 functions to both support the post 26 in the zone of juncture with arm 16 and to limit outward movement of boards 14. The cable 11 is maintained spaced from the chimney or the like at least adjacent blocks 12 to accommodate the hooks 18 and to maintain the lower end of uprights 15 spaced from the chimney, I provide transversely extending blocks 29 bolted to the uprights and preferably extended laterally a slight distance on either side of the uprights.

Post 26 provides a mounting for a toeboard 30 and a hand rail guard 31 similarly constructed but the toeboard is preferably greater in width

than the guard rail. Each guard rail and toeboard comprises two telescoping members indicated at 32 and 33, the members being preferably of U-form with longitudinally extending curled edge portions providing a construction of considerable strength against lateral thrust. As best illustrated in Fig. 2, member 32 has a hinge element 34 secured thereto provided with a central loop 35 and member 33 has a cooperating hinge element 36 secured thereto provided with spaced loops 37—37. A pair of securing elements 38, best illustrated in Fig. 3, each preferably formed from a continuous metal strip bent to the form of a figure eight are clamped in spaced relation along the post by means of bolts 39. The small loops 40 of each element 38 are axially aligned and are also axially aligned with the loops of the hinge elements 34 and 35 whereby a pin 41 may be projected through the aligned loops to hingingly interconnect members 32 and 33 with each other and post 26.

It will now be understood that after a pair of brackets have been mounted on cable 11 in spaced relation that telescoped members 32 and 33, forming one guard rail, may be longitudinally adjusted to properly align the hinge elements to connect the members with cooperating members of adjacent guard rails.

A second pair of elements 38 are clamped in a similar manner in spaced relation above block 27 whereby the toeboard 30 may be connected in a similar manner to the post, the toeboard preferably abutting the platform boards 14 and preventing any article on the platform from being inadvertently removed therefrom and also preventing an accidental misstep from the platform by workmen.

It will be apparent that in assembling or disassembling the hand rail 31 and toeboard 30 that it is only necessary to unhinge the members 32 and 33 from alternate posts to permit disengagement of cooperating telescoped members, if desired. In moving the scaffold upwardly along a chimney, a second cable 11 may be employed and clamped at a desired height above the supporting cable and a spare set of brackets 13 may be then hooked to the upper cable. Boards 14 from a particular part of the scaffold are then placed on the upper set of brackets and the hand guard rail and toeboard for this upper set of brackets assembled. A boatswain's chair or similar contrivance is supported from the upper set of brackets or the upper cable and the remaining portions of the scaffold are elevated and assembled in a similar manner. The lower cable is then removed and stored on the scaffold in its new position. The hand guard rail and toeboard are particularly valuable when assembling the scaffold in a new position as described, since a workman standing on a partially assembled scaffold has a convenient support to grasp and is limited in outward movement from the chimney on the platform. In a generally similar manner, the scaffold may be moved downwardly along the chimney section by section.

The boatswain's chair may be used for reaching the scaffold and descending therefrom and when the top zone of the chimney is reached at the completion of the repair or like work the scaffold parts may be lowered by a block and tackle. An eye is hooked to the chimney top and the supporting rope for the chair is run therethrough and withdrawn after the descent is made permitting the eye to remain.

Although I have only illustrated a top hand guard rail, I contemplate that a guard rail similar in construction to rail 31 may be disposed intermediate the rail 31 and the toeboard 30, or if desired, a rope or similar contrivance may be strung from post to post as an additional safeguard in this intermediate zone.

The pin 41 detachably interconnecting the members 32 and 33 may be secured by wire or the like to either one of the members or to the post 26 to prevent loss when the guard rail members are disassembled.

Referring now to Figs. 4 to 6 inclusive, I have illustrated a generally similar scaffold but of modified form in the bracket construction and the guard rail construction. The bracket of this modification is generally indicated at 50 and comprises an upright 51 to which two spaced horizontally extending arms 52—52 are secured by a U-strap 53 which also encircles hook 18, the strap being bolted both to the upright 51 and the arms 52. A brace 54 is secured at its lower end to the upright 51, as previously described in connection with bracket 13 and its upper end is extended and projected intermediate the horizontal arms 52 and secured therebetween by means of a U-strap 55, bolted to arms 52 and to brace 54. A post 56 preferably formed of wood, is projected intermediate arms 52 and is bolted therebetween and is also secured to brace 54 by means of a bolt 57.

A block or abutment 29, similar to that described in connection with bracket 13, is secured to the lower end of upright 51 to maintain the bracket spaced from the chimney or the like.

A bolt 58 having wood threads thereon is threaded into the upper end of post 56 and forms a pivotal mounting for hand guard rail members indicated at 59 and 60. I preferably provide a metal cap 61 fitted over the end of post 56 to provide a bearing for the hand rail sections and prevent splitting of the post end. Each of these members 59 and 60 are generally semi-circular in cross section with the member 60 being slightly larger to permit the members to be relatively telescoped, as indicated in Fig. 6. An end portion of each member is flatted and perforated for the reception of bolt 58 and, after being projected over bolt 58, the members may be secured against removal by a cotter pin or the like 62 projected through bolt 58.

In order to maintain the members 59 and 60 in their telescoped relation, I provide rings 63 slideable along the members and, for convenience, secured either to one of the members or to the post 56 by a chain or the like 64.

The hand guard rail described can be quickly assembled or disassembled and forms a simple but effective protective means.

Fig. 7 illustrates a hand guard rail generally similar to that shown in Figs. 4, 5 and 6 and comprising telescoping members 59 and 60 secured in assembled relation by rings 62 but secured to a post 65 in a somewhat different manner. Post 65 is preferably of tubular construction and is secured to bracket 13 as illustrated in Fig. 1, the upper end of the post having a forked pin 66 secured therein. The shank of pin 66 may be provided with a collar 67 which abuts a cap 68 secured to the upper end of post 65, the pin being secured by a nut 69 threadedly engaging the pin shank. The members 59 and 60 each have one end flatted and perforated to receive the forks of pin 66 and are secured by a bar 70 perforated to project over the fork arms and secured against removal by cotter pins or

the like 71. It will be noted that the construction of Fig. 7 permits both a pivotal and hinging connection.

Although I have described the post 65 as being of tubular construction, it will be understood that a wood post is equally adaptable and the shank of pin 66 may be threaded thereinto.

Referring now to Fig. 8, I have illustrated a further modified form of hand rail generally similar to that illustrated in Fig. 4 but wherein the sections indicated at 80 and 81 are tubular and slideably inter-engaged, the end of the sections being flatted and pivotally secured to the post by a pin 82. The pin 82 is mounted on a removable cap 83 by lock nuts 84—84 threaded to the pin shank.

I contemplate that any of the hand guard rail members shown may be enlarged and used as a toeboard by employing elements 38 clamped to the posts whereby a pin may hingingly connect the members forming adjacent toeboards.

Although I have shown and described modifications of my invention, I contemplate that numerous and extensive departures may be made therefrom without departing from the spirit of my invention or the scope of the appended claims.

Having thus described my invention what I claim is:

1. In a scaffold of the character described, a plurality of floor board supporting brackets adapted to be mounted on a structure to be worked upon, vertically extending posts secured to each of said brackets, a pair of spaced loop elements adjustably secured to each post adjacent the top thereof, guard rail sections connecting adjacent posts, each guard rail section comprising a pair of rigid members having their inner ends telescoped, the outer ends of an associated pair of members each having a loop secured thereto to receive a vertically extending pin, and a pin projected vertically through the loop and loop elements to pivotally secure the guard rail section to a post.

2. In a scaffold of the character described, a plurality of floor board supporting brackets adapted to be mounted on a structure to be worked upon, a vertically extending post secured to each of said brackets, a pair of spaced elements associated with each post and vertically adjustable therealong, including a loop portion spaced from the post, guard rail sections connecting adjacent posts, each guard rail section comprising a pair of telescoped rigid members, each member having an abutting loop portion at the end adjacent a post disposed between the spaced elements, and a removable pin projected through a loop portion of each element and each member to secure the sections to the posts.

3. In a scaffold, the combination with a bracket adapted to be mounted on the structure to be worked upon and having an upwardly extending post secured thereto, a pair of clamp elements vertically adjustable along the post and each having a loop portion spaced from the post, a pair of guard rail sections adapted to be secured to the post, each guard rail section comprising a pair of rigid telescoping members, and one of said members of each guard rail section including a loop portion adapted to be vertically aligned with the loop portions of the clamp elements and disposed between the clamp elements, and a pin projected through the loop portions of the members and the clamp elements.

4. In a scaffold of the character described, a plurality of floor boards supporting brackets adapted to be mounted on a structure upon which work is to be done, vertically extending posts secured to each of said brackets, a vertically adjustable clamp element secured to each post adjacent the top thereof, a second clamp element secured to each post adjacent the brackets, guard rail sections connecting adjacent posts, each guard rail section comprising telescoped rigid members having the non-telescoped end of each member pin connected to an upper clamp element, toe board sections connecting adjacent posts, and each toe board section comprising telescoping rigid members pin connected to the lower clamp elements.

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