

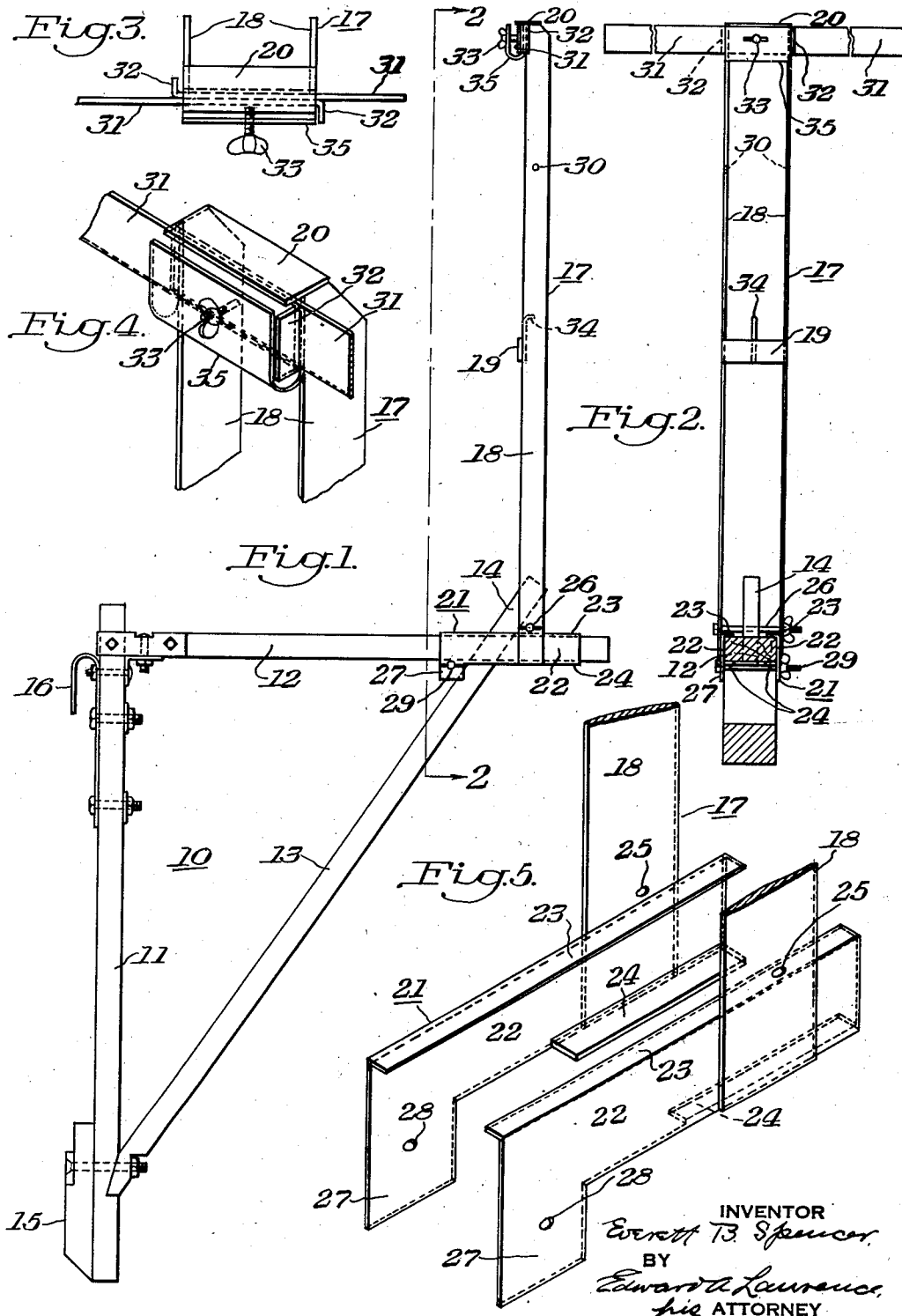
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GUARD POST AND RAIL STRUCTURE FOR SCAFFOLDS

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GUARD POST AND RAIL STRUCTURE FOR
SCAFFOLDS

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The present invention relates to scaffolding and consists in certain new and useful improvements in guard post and guard rail structure for the same.

While the invention is highly useful in connection with various types of scaffolding, it is particular adapted to the type of scaffolding used in the repair and wrecking of chimneys, such as high smoke stacks.

In such operations it is usual to employ a plurality of triangular brackets, usually made of wooden elements, which are arranged about the perimetral surface of the chimney and suspended by means of hooks from a cable stretched around the chimney, and floor boards supported by the brackets. When it is necessary to elevate the scaffolding, a second cable is stretched about the chimney at the proper higher elevation, a second set of brackets is suspended therefrom and the floor boards are raised to the upper set of brackets. When it is again necessary to raise the level of the scaffold, the first set of brackets is lifted up to the new level and suspended on a cable stretched at the proper elevation and the floor boards are again raised, and these operations are repeated until the final elevation is obtained. This is known as "scaling" the chimney.

When the scaffolding has attained a considerable elevation, it is frequently desirable to provide and some localities require the provision of guard rails to prevent accidents due to the fall of workmen or the dropping of bricks, tools and other materials or debris. Such guard rails are frequently used to support canvas or netting shields to prevent the fall of debris and the like.

In chimney work it is important that the triangular brackets be relatively light so that they may readily be raised and handled by the workman and thus the permanent attachment of metal guard posts to support the guard rails or shields, as has been proposed in the art, is objectionable as it renders the brackets heavy and awkward to handle, and also inconvenient to store and transport.

Again, in some instances the use of metal posts, whose lower ends are threaded and screwed into metal sockets mounted on the horizontal beams of the brackets has been suggested. The fixing of such posts in place and their removal from the sockets takes too much time and care and the threads are likely to become so damaged as to be hard to screw into the sockets and the latter are likely to become filled with dirt or mud.

One of the principal objects of the present invention is the provision of a guard post which

may be conveniently mounted on and dismounted from the bracket or other scaffold support, so that when the guard rails are not required, as where the scaffold is near the ground, the posts are not in place to add to the weight of the brackets or interfere with the work but may be left piled on the ground until needed but may be quickly raised to the scaffold and put in place when required. In scaling the chimney such posts may be readily dismounted from the scaffold and raised to the newly installed brackets and mounted in place, no unscrewing from or screwing into brackets being required.

The guard post hereinafter described and illustrated in the accompanying drawing accomplishes the above object.

Another object in view is the provision of a satisfactory guard post which is of lighter weight and therefore more convenient and safe to handle in the scaling operation than those now in use or proposed in the art.

This object is accomplished by the type of post hereinafter described.

Another object is the provision of a more convenient and reliable form of guard rail and connection between the guard rail and the guard posts; that lends itself to more rapid adjustment in place, and removal after use, and which will be of a stronger and more reliable structure.

This object is attained by the use of the improved guard rail and attachment thereof to the posts hereinafter described.

Other novel features of construction and also of arrangement of parts will appear from the following description.

In the accompanying drawing, wherein is illustrated a practical embodiment of the principles of the present invention, Fig. 1 is a side elevation of a triangular scaffold bracket with a guard post mounted thereon and hand rails supported by the guard post;

Fig. 2 is an elevation of the same looking from the left in Fig. 1 and showing the horizontal beam and the brace of the bracket in section along the line 2—2 in Fig. 1.

Fig. 3 is an enlarged plan view of the top of the post and the overlapping ends of two guard rails;

Fig. 4 is an enlarged perspective of the same;

Fig. 5 is an enlarged perspective of the lower end of the post and the boxing carried thereby.

Referring to the drawing, 10 represents the triangular bracket comprising the vertical post 11, the horizontal beam 12 attached at one end to the post, and the inclined brace 13 whose lower end

is attached to the post 11 near the lower end of the latter and whose upper end is reduced in cross section to extend through a hole cut in the beam 12 and spaced inwardly from the outer end of the beam, the upper end of the brace extending above the beam to form an upwardly extending nose 14 of less width than the beam. This nose serves to form an abutment which prevents the flood boards sliding off the end of the brackets, and it also serves another purpose hereinafter explained.

15 represents a block attached to the rear face of the post 11 near the lower end of the latter, and 16 represents the hook attached to the rear face of the post 11 near the top of the latter. In use the hook engages the cable looped about the chimney while the block bears against the peripheral surface of the chimney.

The triangular bracket 10 is usually formed of wooden elements to obtain the necessary lightness in weight.

17 represents the guard post comprising two steel bars 18 held in parallel relation to each other. 19 represents a flat steel strut welded at its ends to the inner edges of the bars 18 intermediate of their length and at the top of the post the bars are held together by the cap strut 20 welded to the tops of the bars and wide enough to overhang the bars inwardly sufficiently to cover the overlapping ends of two hand rails.

The lower end of the post 17 is provided with a boxing 21 which is arranged to slip over the protruding outer end of the beam 12 to mount the post 17 in vertical position on the bracket 10.

35 The boxing 21 comprises two inwardly spaced and complementary steel channels 22 welded to the lower ends of the bars 18 and of the proper dimensions and spaced sufficiently apart so that they may be slid onto the end of the beam 12 with their webs bearing against the sides of the beam and their upper flanges 23 and their lower channels 24 bearing against the upper and lower surface of the beam, respectively. The fit of the boxing on the beam is such that it may readily be slid onto or off from the beam. Toward the inner end of the boxing the bottom flanges 24 are cut away to provide clearance for the brace 13 as the boxing is slid onto the beam.

Above the boxing the bars 18 are provided with registering bolt holes 25 through which a bolt 26 is inserted. This bolt is intended primarily to draw the channels 22 together to tighten them on the beam 12.

At their inner ends the channels 22 are provided with downwardly extending ears 27 provided with registering holes 28 through which a bolt 29 may be inserted. By contact with the under face of the beam 12 the bolt prevents any upward rocking of the inner end of the boxing, and by contact with the brace 13 the bolt prevents any outward accidental movement of the boxing along the beam. The contact of the inner ends of the bottom flanges 24 limits the inward movement of the boxing on the beam 12.

65 In practice the post 17 when mounted in place is usually arranged to incline upwardly and outwardly slightly, or it may be vertically disposed as shown.

The threaded end of the bolt 26 may be preened or enlarged so that the nut while free to be tightened or loosened on the bolt, cannot drop off and be lost.

When the boxing 21 is to be mounted on or dismounted from the beam, the bolt 29 must be removed. To prevent this bolt from being lost

when not in use for holding the boxing on the beam, registering holes 30 in the bars 18 are provided through which the bolt may be inserted and its nut screwed on.

When the boxing has been mounted in place the nuts on the bolts 26 and 29 are tightened, thus clamping the channels 22 into rigid engagement with the beam 12.

It is obvious that the post 17 is of relatively light weight and may thus be quickly and conveniently mounted on and dismounted from the beam, and when mounted in place forms a stout support for the hand rails and the like.

Welded to the inner edges of the bars 18 just below the cap strut 20 is the trough member 35 in which the overlapping ends of the flat metal hand rails 31 are received, the trough being wide enough so that the rails may be dropped into the trough in front of the overhanging front edge of the strut 20. The extremities of the two rails are flanged in opposite directions as at 32, which flanges, by engaging the side of the post and the end of the trough, respectively, prevent the longitudinal withdrawal of the rails from the trough.

33 represents an abutment bolt working in a threaded hole in the front wall of the trough 35 and arranged to impinge against the overlapping ends of the rails 31. Thus by screwing in the bolt 33 the rails are forced under the overhanging portion of the cap strut 20 and wedged rigidly against the back wall of the trough 35. Thus the rails are held against accidental movement both longitudinally of the rails and also vertically. By backing off the abutment bolt the rails are loosened in the trough and may be lifted out of the same.

34 represents a vertically disposed cleat welded to the face of the intermediate strut 19 to enable a rope or other safety device or shield to be adjusted to the post intermediate of the height of the latter.

It is evident from the foregoing that the guard post and guard rail structure hereinbefore described is of inexpensive yet rigid construction; that it may be readily mounted on the brackets after the latter have been mounted on the chimney and may as readily be removed and shifted to a higher scaffold during the scaling operation. The structure may be stored and transported in small compass and because of its light weight may be conveniently lifted and handled by the workman.

While, for the sake of illustration, the invention has been described as applied to chimney scaffolds, it is evident that it is equally applicable to other forms of scaffolding with great advantage.

I claim:

1. A guard post, for use with a scaffold support which is provided with a projecting element, said post comprising an upwardly extending member, a clamping means carried by said member and comprising a pair of channel members facing each other arranged to be slid onto said element, and means connecting said members and arranged to be contracted for compressing said members toward each other on said element to prevent movement of said post relative to said element.

2. A guard post, for use with a scaffold support which is provided with a projecting element, said post comprising an upwardly extending member, a two-part clamping means carried by said member and arranged to be slid onto the element to straddle the latter, and means comprising a clamping bolt connecting said members for com-

pressing said parts together to fix the post relative to the element.

3. A guard post, for use with a scaffold support which is provided with a projecting element, said post comprising an upwardly extending member, a pair of complementary channel irons carried by the member and arranged to straddle the element, and means connecting said members and arranged to be contracted for clamping said irons toward each other to clasp and to removably fix the post to the element.

4. A guard post, for use with a scaffold support, and comprising a pair of parallel metal bars, struts holding the upper portions of said bars in spaced relation while the lower portions of said bars are free to be caused to converge, and contacting clamping means carried by the lower ends of said bars and arranged to straddle the scaffold support and to be compressed against opposed surfaces of the latter to mount the post in position.

5. A guard post, for use with a scaffold support, and comprising a pair of parallel metal bars, struts holding the upper portions of said bars in spaced relation, complementary boxing parts carried by the lower ends of the bars and arranged to clasp a portion of the scaffold support between them, and means for forcing said parts toward each other to clamp the post in position.

6. In scaffolding, the combination with a triangular bracket comprising a vertical member, a horizontal beam and an inclined brace connecting the lower portion of the vertical member with the beam adjacent the outer end of the latter, of a guard post, and a two-part clamping means attached to the lower end of the post and arranged to be slid onto the outer end of the beam, and a bolt connecting the parts and arranged to be tightened to cause the parts to converge against the beam from either side to mount the post in position.

7. In scaffolding, the combination with a triangular bracket comprising a vertical member, a horizontal beam and an inclined brace connecting the lower portion of the vertical member with the beam adjacent the outer end of the latter, of a guard post, a two-part clamping means attached to the lower end of the post and arranged to engage the beam to mount the post in position, and means carried by the first mentioned means

and arranged to engage the inclined brace from within the triangular bracket to prevent accidental relative movement between the post and the bracket.

8. In a guard post and rail structure, the combination with a post and a pair of rails to be attached thereto, of an upwardly open trough member secured to the post and in which the ends of the rails are received in overlapping relation, the ends of the rails being enlarged to prevent withdrawal of the rails longitudinally from the trough, and means mounted on the front wall of the trough and arranged to clamp the rails against the rear wall of the trough.

9. In a guard post and rail structure, the combination with a post and a pair of rails to be attached thereto, of an upwardly open trough member secured to the post and in which the ends of the rails are received in overlapping relation, the ends of the rails being enlarged to prevent withdrawal of the rails longitudinally from the trough, means mounted on the front wall of the trough and arranged to clamp the rails against the rear wall of the trough, and means to prevent the upward movement of the rail ends relative to the trough.

10. In a guard post and rail structure, the combination with a post and a pair of rails to be attached thereto, of an upwardly open trough members secured to the post and in which the ends of the rails are received in overlapping relation, a cover extending from the post and partially overhanging the trough, the rails being inserted downwardly into the trough in front of the cover, and means for holding the rails in the trough beneath the cover.

11. In a guard post and rail structure, the combination with a post and a pair of rails to be attached thereto, of an upwardly open trough member secured to the post and in which the ends of the rails are received in overlapping relation, a cover extending from the post and partially overhanging the trough, the rails being inserted downwardly into the trough in front of the cover, and means for holding the rails in the trough beneath the cover, the extremities of the rails being enlarged to prevent their withdrawal longitudinally from the trough.

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