March 6, 1934. A. L. EPPS 1,950,167

PORTABLE SCAFFOLD AND LADDER

Filed May 10, 1933 2 Sheets-Sheet 1

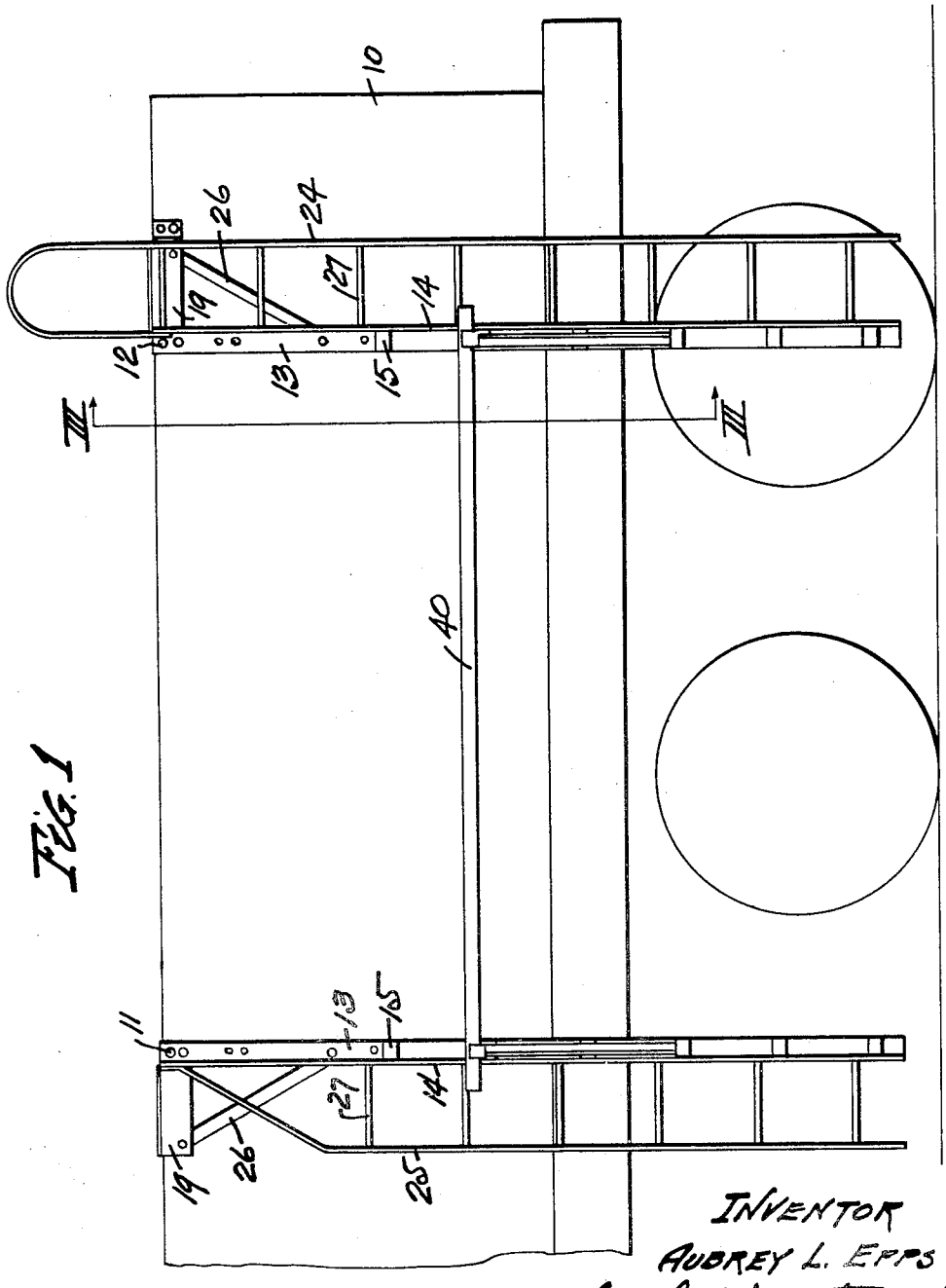


Fig. 1

INVENTOR
AUBREY L. EPPS
by J. H. Wescott Ford
ATTORNEY.

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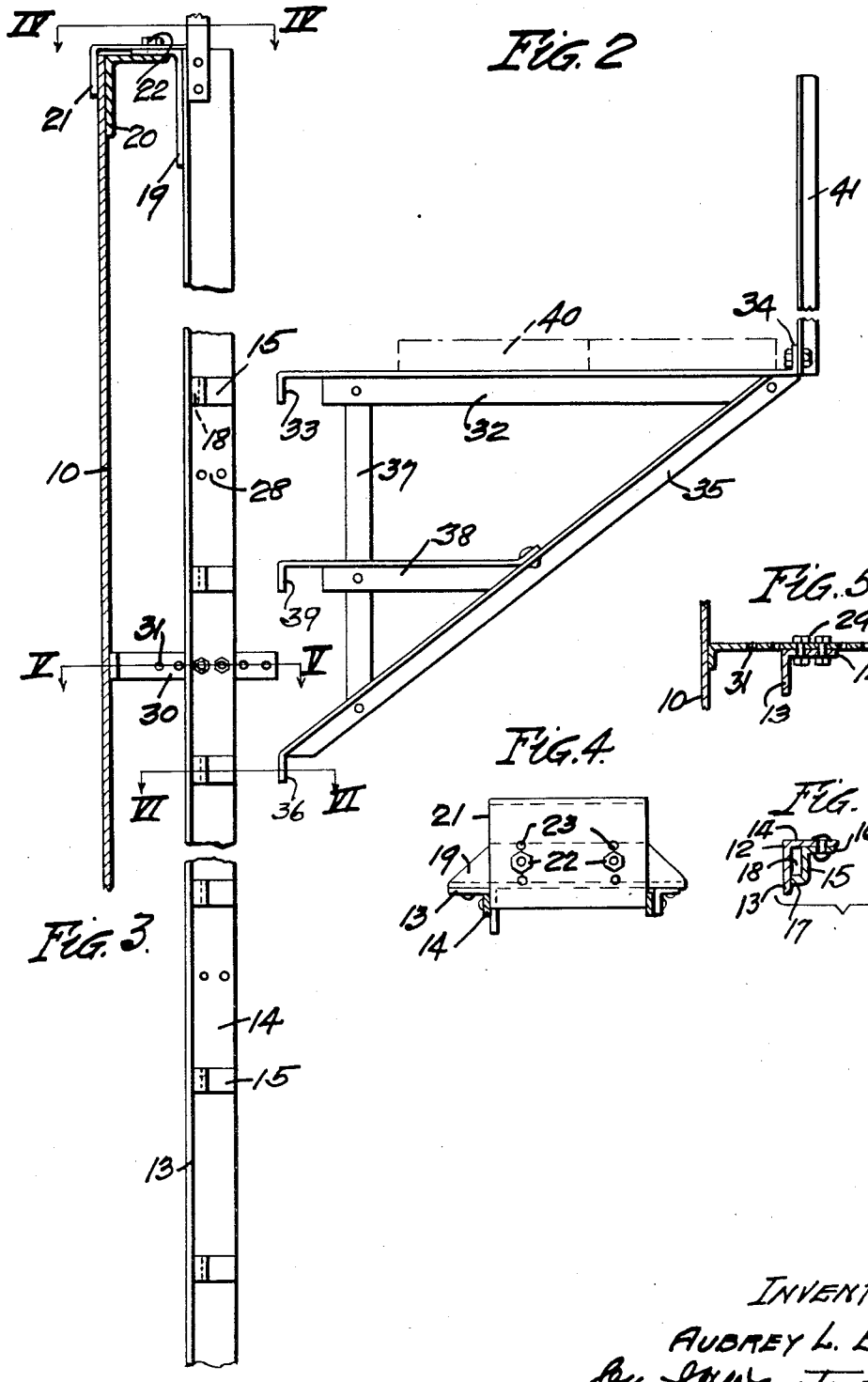


FIG. 2

FIG. 3

FIG. 5

FIG. 4

FIG. 6

INVENTOR
AUBREY L. EPPS
By J. H. Wealterford
ATTORNEY.

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PORTABLE SCAFFOLD AND LADDER

Aubrey L. Epps, Memphis, Tenn.

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3 Claims. (Cl. 304—14)

This invention has general reference to scaffolds or stagings such as are used by painters and other artisans; but specific reference will be made herein to a form of scaffold, having a ladder associated therewith, which is particularly adapted for use in painting, cleaning, or otherwise working upon, the sides of railway cars and/or barges or other vessels, and/or as loading and/or unloading platforms.

In the structure such as is contemplated by the present invention, provision should be made for quick and easy adjustment of the height of the platform; ready portability of the entire structure; free accessibility to the platform from either above or below; and safeguarding workmen both while on the platform and while ascending or descending to it. Some or all of these features are lacking in the portable scaffolds or stagings known heretofore; and the primary object of the present invention is to improve upon, and overcome the objection to, the prior structures of this character, particularly in the following respects:

By providing a portable scaffold or staging comprising vertical standards and means for hanging them from any substantially horizontal surface.

By providing such a structure having adjustable means for maintaining such standards in a substantially vertical position.

By providing such a structure having a ladder or ladders extending throughout the height of and reinforcing one or more of such standards.

By providing such a structure in which the platform is supported upon brackets which readily may be adjusted to vary the position of the platform as to its height relative to the standards.

By providing such a structure having adjustable means for regulating the distance of the platform from the side of the structure from which it is supported.

The means by which the foregoing and other objects are accomplished by the present invention, and the manner of their accomplishment, readily may be understood from the following description on reference to the accompanying drawings, in which:—

Fig. 1 is a front elevation of a structure embodying a preferred form of the invention as used with a railway car of the gondola type, which is illustrated conventionally and is partly broken away; two different forms of ladder being shown.

Fig. 2 is an end elevation of a bracket of the scaffold or staging shown in Fig. 1, on an enlarged scale.

Fig. 3 is a fragmentary section as on line III—III of Fig. 1, on the same scale as Fig. 2.

Fig. 4 is a sectional plan, the section being taken on line IV—IV of Fig. 3.

Fig. 5 is a section on line V—V of Fig. 3.

Fig. 6 is a section on line VI—VI of Figs. 2 and 3.

Referring now to the drawings in detail, the reference numeral 10 indicates the side wall of a metal gondola freight car, which has been selected to illustrate a typical use of the invention. Two similar standards 11 and 12 constitute the supports for the brackets on which the platform is carried. Said standards preferably are structural steel angles, each having one leg 13 disposed parallel with the side wall 10, and the other leg 14 at right angles thereto, the legs 13 being directed toward each other. In the same relative positions on the standards 11 and 12, a plurality of substantially Z-shaped metal clips 15, 15 are secured to each standard, as by having one leg 16 of the clip riveted to leg 14 of the standard, and the other outer leg 17 of the clip welded to leg 13 of the standard, thus forming a closed rectangular slot 18, as clearly shown in Fig. 6.

At the top of each of the standards, a metal angle clip 19 is secured thereto, as by having one of its legs riveted or welded to leg 13 of the standard, the other leg of the clip projecting away from leg 13 toward the side wall 10 of the car, and resting upon the frame angle 20 of said wall, and one end of the clip extending a considerable distance beyond the outer face of leg 14 of the standard. Upon clip 19 an angle bracket 21 is adjustably secured thereto, as by means of cap screws 22 which may be entered selectively in holes 23, a plurality of which are provided in bracket 21 in such positions that the depending leg of the bracket may be adjusted to different distances from leg 13 of the standard, to provide for different widths of the horizontal leg of the car-frame angle 20, or other support for said bracket.

In Fig. 1, two alternate forms of ladder are shown at the respective ends of the platform. In both of these forms the leg 14 of the standard constitutes one side of the ladder. In the form of ladder shown on the right-hand side of Fig. 1, the outer side 24 of the ladder extends above the angle clip 19 a considerable distance, and is bent toward the standard and then downward and its end secured to the inner face of the leg 14. In the form of ladder shown on the left-hand side of Fig. 1, the outer side member 25 is bent in near the top toward the standard, and its end is secured to the outer face of leg 14. In both forms of the ladder a diagonal brace 26

extends from the standard to the outer end of the angle clip 19, and serves to give added strength and rigidity to the ladder. The rungs 27 of each of the ladders extend between and are suitably secured to the two sides of the ladder. At suitable points in the length of each of the standards pairs of holes 28 are punched or otherwise formed in the leg 14 to provide for securing to said leg, as by bolts and nuts 29, a spacing member 30. Said member has a plurality of holes 31 therein so that it may be adjusted to vary the distance between the short leg of said member and the outer surface of the leg 13 of the standard, to conform to adjustments of bracket 21 at the top of the standard, and maintain the standard parallel with the side wall 10 of the car.

As most clearly shown in Fig. 2, each of the two bracket supports for the platform is triangular in form, having a horizontal member 32, which preferably is a structural steel angle, and which has its vertical leg cut away at each end, and the horizontal leg bent at right angles, thus forming at the inner end of the support a downwardly-turned flange 33 and at the outer end an upwardly-turned flange 34. The diagonal member 35 of the support also preferably is an angle, and has its vertical leg cut away at the lower end and its horizontal leg bent to form a hook member 36, similar to the hook member 33. A vertical bar 37 extends between and is secured to the members 32 and 35 near their inner ends. Approximately at the middle of bar 37, a horizontal angle 38 is secured to said bar and to angle 35, and has its vertical leg cut away and its horizontal leg bent downwardly to form a hook member 39, corresponding to the hook members 33 and 36.

In Figs. 2 and 3, the bracket support is shown as being detached from the standard; but it may be seen from said figures that, by moving the support toward the standard, and inserting the hook members 33, 39 and 36 in the respective ones of the slots 18 in those of the brackets 15 which will hold the support at the desired height, the support will be retained firmly in place. Suitable planking 40 extends between the two bracket supports, and is removably secured to the upper leg of the horizontal angles 32 of the supports, so that the lateral stability of the whole structure is insured.

In Fig. 2, a vertical stanchion 41 is shown as being secured to the upturned end portion 34 of angle 32, the purpose of this showing being to indicate that, if desired, railing may be provided at the outer side of the platform.

From the foregoing description, it readily may be seen that the present invention provides a form of scaffold which is adapted to accomplish all of the desirable objects set out hereinbefore. The whole structure may be placed at any desired point in the length of a car, vessel or other structure with which it may be used, and the platform readily may be adjusted for height. Also, the provision for adjustments of the angle bracket 31 and the thrust member 30, renders it feasible to insure that the standards will be maintained in vertical positions, and that they may be hung from beams or other supports of different width. It is contemplated that, if it should be desired to support the standards from a flat surface, such as the deck of a barge, the angle bracket 21 may be inverted to turn the downward leg of the bracket upward, and thus give it a plane supporting surface.

In Fig. 1, a ladder is shown at each end of the platform, but this is for the purpose of illustrating two different forms of ladder, rather than of making it appear that two ladders are required. However, the use of two ladders is preferred, because they add to the rigidity of the structure, as well as facilitating access to the platform. Since the structure readily may be knocked down and/or assembled, one of the standards and its attached ladder may be used for any purpose for which a ladder may be required.

Various modifications of minor details of the structure disclosed herein doubtless readily will occur to those skilled in this art, and I therefore do not desire that my invention shall be construed as being limited to any details not specifically claimed.

Having now fully disclosed the invention, what is claimed is:

1. A scaffold-supporting standard, comprising an elongated structural angle having detachably secured at its upper end a suspension bracket having a downwardly-turned flange; means for adjusting the position of said bracket to vary the distance of said flange from the standard; a thrust member detachably secured to said angle intermediate its ends; means for adjusting the position of said member longitudinally of the standard, and in the direction of adjustment of said suspension bracket; a plurality of substantially Z-shaped clips secured to the standard at equally-spaced distances apart, each of said clips forming with the standard a rectangular slot; and a side piece and rungs, forming with the standard a ladder of greater length than the standard.

2. A scaffold-supporting bracket, comprising an upper frame member; a side frame member secured at right angles near one end of said upper member; a diagonal member secured to both of said first two members near the free ends thereof; and an intermediate member disposed parallel with said upper member, spaced therefrom, and having its end portions respectively secured to said side member and said diagonal member; one end of each of said upper, intermediate and diagonal members extending beyond said side member, and terminating in a downwardly-turned suspension flange.

3. A structure of the character described, comprising a pair of structural angle standards, each having outwardly-and-downwardly-turned suspension means detachably secured at its upper end, said means being adjustable to vary the distance of the downwardly-turned portion from the standard; a thrust member for each standard, detachably secured intermediate the ends thereof, and adjustable to vary its height on the standard, and also adjustable in the direction of adjustments of said suspension means; a plurality of substantially Z-shaped clips for each of the standards, secured thereto at equally-spaced intervals, and each forming with the standard a rectangular slot; bracket supports, one for each standard, provided with a plurality of attachment members so shaped and dimensioned as to fit in said slots to secure the support detachably to the standard; a platform extending between the supports, and removably secured thereto; and a ladder one side of which is formed by one of said standards, and which extends a considerable distance above the upper ends of the standards.

AUBREY L. EPPS.