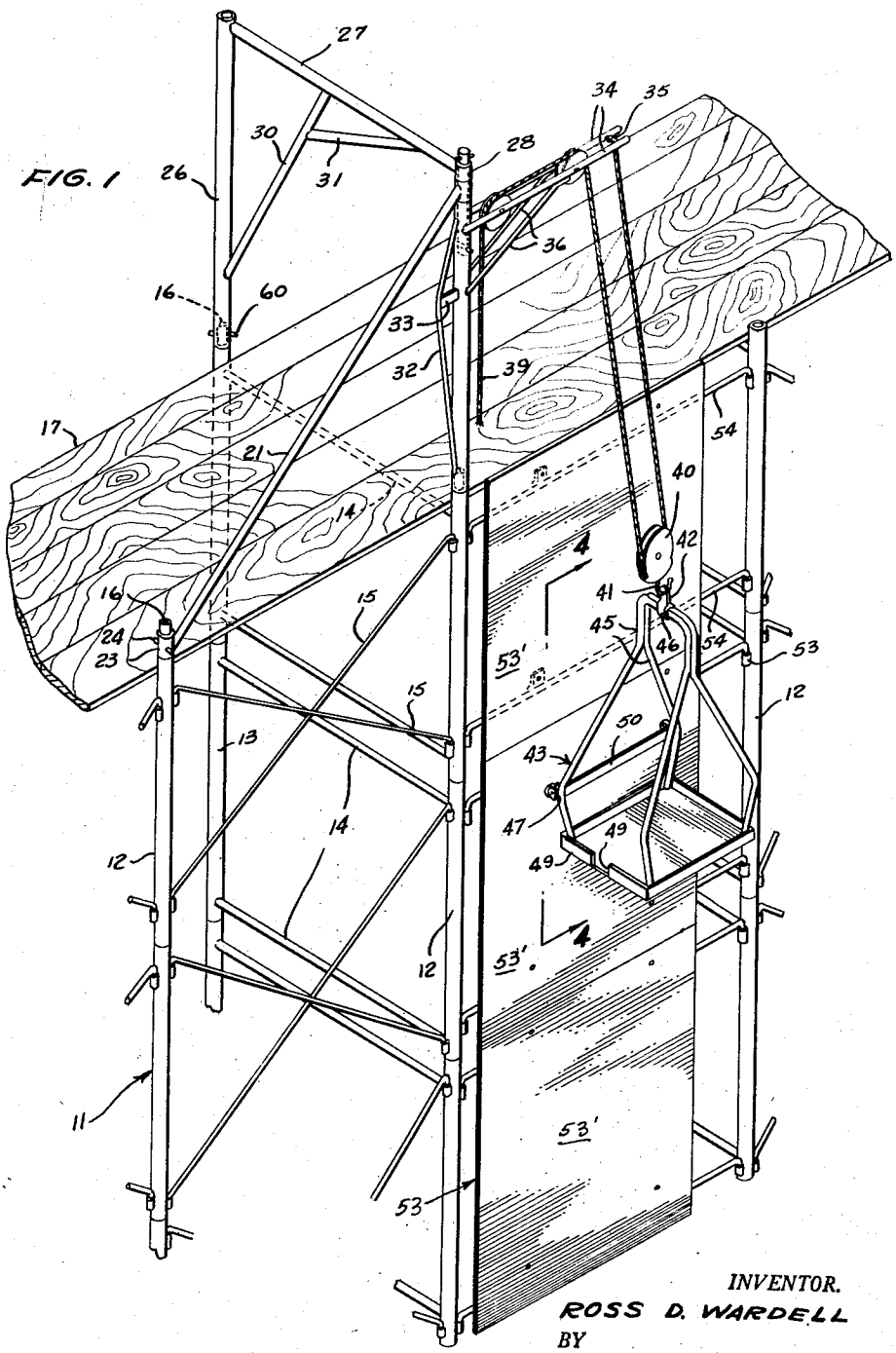
July 9, 1957 R. D. WARDELL 2,798,574

SCAFFOLD AND HOIST STRUCTURE

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FIG. 1



INVENTOR.
ROSS D. WARDELL
BY

McMorrow, Berman & Davidson
ATTORNEYS

July 9, 1957 R. D. WARDELL 2,798,574

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FIG. 2

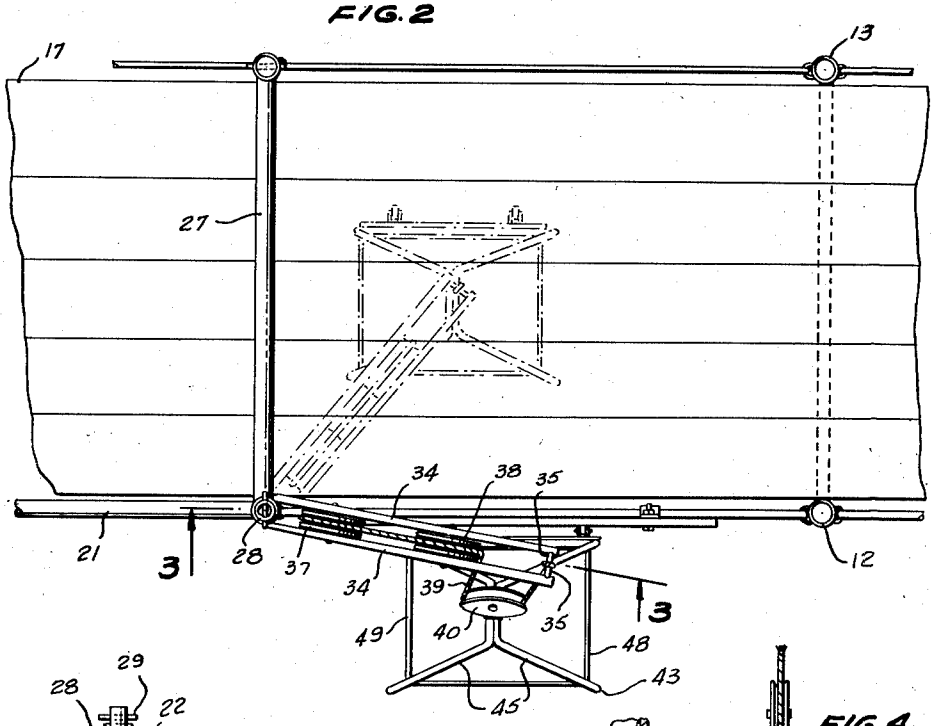


FIG. 3

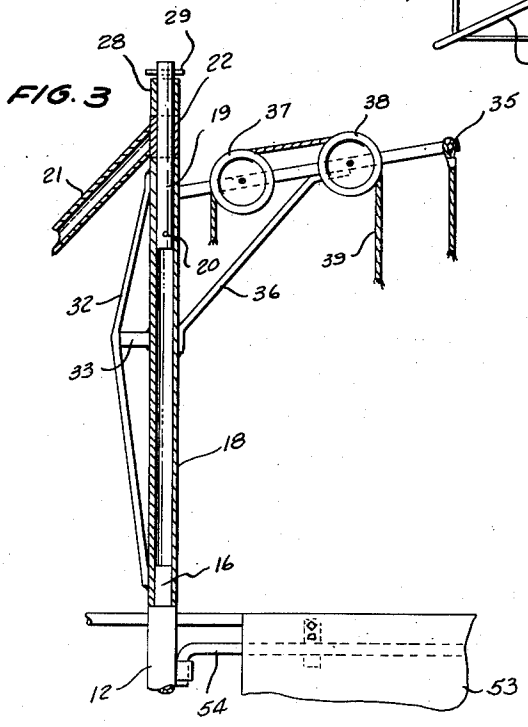
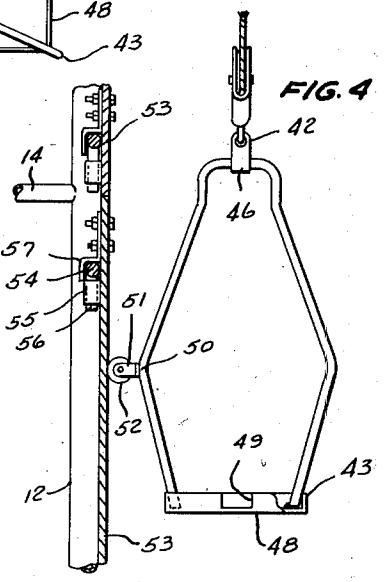


FIG. 4



INVENTOR.
ROSS D. WARDELL
BY

McMorrow, Berman & Davidson
ATTORNEYS

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SCAFFOLD AND HOIST STRUCTURE

Ross Dalton Wardell, Otto, Wyo.

Application May 21, 1954, Serial No. 431,409

2 Claims. (Cl. 187—2)

This invention relates to scaffolds, and more particularly to an improved scaffold and hoist structure mounted thereon.

A main object of the invention is to provide a novel and improved scaffold hoist structure which involves simple components, which is easy to install in operating position, and which is arranged so that material or vehicles such as wheelbarrows or the like may be readily elevated by the hoist structure to the top of the scaffold associated with the hoist structure with a minimum amount of undesired swinging movement of the material or wheelbarrow, whereby the material or wheelbarrow vehicle containing same may be elevated to the top of the scaffold with minimum danger of dropping same off the hoist.

A further object of the invention is to provide an improved scaffold structure and hoist to be employed thereon, the improved structure involving inexpensive components, being rugged in construction, being light in weight, and being adaptable for use with scaffolds of existing design.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

Figure 1 is a perspective view of a fragmentary portion of a scaffold provided with an improved hoist structure constructed in accordance with the present invention.

Figure 2 is a top view of the scaffold and hoist structure shown in Figure 1.

Figure 3 is an enlarged vertical cross sectional view taken on the line 3—3 of Figure 2.

Figure 4 is an enlarged vertical cross sectional detail view taken on the line 4—4 of Figure 1.

Referring to the drawings, the scaffold is designated generally at 11 and comprises a plurality of pairs of front post members 12 arranged in longitudinal aligned spaced relation and a plurality of rear post members 13 arranged in tandem spaced relation with respect to the front post members 12, the post members being arranged in transverse alignment and being connected by suitable means, including transverse horizontal cross rods 14. The front post members 12 are also connected by diagonal brace rods 15, and the rear posts 13 are likewise connected by diagonal brace rods, not shown. Thus, the post members 12 and 13 are connected in a manner to support said post members in vertical positions. The post members 12 and 13 comprise a plurality of connected sections, as shown in Figure 1, whereby the post members may be extended to any desired height. As shown in Figure 3, each section is formed with a reduced top end portion 16. The top end portion of each subjacent post section is received in the lower end portion of the next post section, whereby the successive post sections are telescopically connected.

The structure thus far described is conventional and forms no part of the present invention.

Mounted on the transverse horizontal rod members 14 at the top of the scaffold structure is the platform 17, said platform being of substantial width and being substantially the same width as the length of the transverse cross rods 14.

Designated at 18 is a vertical tubular post element which has its lower end engaged over the reduced top portion 16 of the uppermost section of the intermediate one of the front post members 12, as shown in Figure 3, the top portion of the tubular member 18 receiving a vertical coupling rod 19, the lower end portion of said coupling rod 19 being secured in the upper portion of the tubular member 18 by a transverse pin 20. Designated at 21 is a diagonal tubular brace bar having a vertical sleeve element 22 at its upper end and a vertical sleeve element 23 at its lower end. The vertical sleeve element 22 is engaged with the coupling rod 19, as shown in Figure 3. The vertical sleeve element 23 is engaged on the reduced upper portion 16 of the adjacent front post member 12, as shown in Figure 1, and is secured thereto by a transverse locking pin 24.

Engaged on the reduced top portion 16 of the rear post member 13 positioned in tandem spaced relation with respect to the intermediate front post member 12 carrying the member 18 is a vertical tubular member 26 to the top end of which is rigidly secured the transversely extending horizontal arm 27. The arm 27 is formed at its end with a sleeve element 28 which is engaged on the coupling pin 19 immediately above the sleeve member 22, as shown in Figure 3. A locking pin 29 is engaged through the top portion of the vertical coupling member 19 immediately above the sleeve element 28 to secure the sleeve element 28 against upward movement on the vertical coupling member 19.

The horizontal arm 27 is braced to the vertical tubular member 26 by the diagonal brace elements 30 and 31, as shown in Figure 1.

Thus, the vertical member 18 is supported for rotational movement around the common axis of the upstanding reduced lower element 16 received in the lower portion of the tubular member 18 and the coupling member 19 which is rigidly secured to the top portion of the member 18 by the transverse pin 20 but which is rotatable in the sleeve elements 22 and 28.

The member 18 is rigidified, as shown in Figure 3, by the bowed rod 32 and the strut member 33 connecting the bowed portion of the rod 32 to the intermediate portion of the tubular member 18.

A pair of arm elements 34, 34 arranged in lateral spaced relation are positioned so that they are substantially transversely disposed with respect to the post element 18 and have the adjacent one ends thereof rigidly secured to the post element 18 intermediate the ends of the latter, the arm elements being connected together by a transverse connecting bar 35 adjacent the other ends thereof. The arm elements 34, 34 are braced to the tubular member 18 by the respective diagonal brace rods 36, 36. Supported between and carried by the arm elements 34, 34 is a pulley and cable means, such means including the pulleys 37 and 38 which are journaled between the arm elements 34, 34 and over which extends the hoist cable 39, the end of the hoist cable being secured to the transverse connecting bar 35 at the end portions of the arm elements 34, 34. The cable 39 is engaged with a pulley 40 having a depending hook 41 engaged with an apertured lug 42 carried by the top of the hoist cage 43.

The hoist cage 43 comprises a pair of U-shaped frame members 45, 45 whose bight portions are secured together by a bracket 46 carrying the apertured lug 42, as shown in Figure 1. The arm portions of the U-shaped frame elements 45 are inclined outwardly and downwardly, and the legs of the frame elements 45 are bent at 47 and are inclined inwardly, the lower end of each leg being se-

cured in the corner of a tray member 48 which is adapted to receive the material to be handled, or to receive a vehicle such as a wheelbarrow or the like carrying such material. For this purpose, the wall of the tray is notched away at 49 to facilitate the entry of the wheelbarrow onto the tray.

Connecting the bent portions 47 of the side arms of the frame elements 45 at one side of the cage is a horizontally extending bracket member 50 formed at its ends with the outwardly projecting lugs 51 on which are carried bearing means or rollers 52. A vertically disposed flat backing member 53 extends between and is carried by the intermediate front post member 12 and the other adjacent post member 12. The rollers 52 engage the outer face of the backing member 53, the member embodying a plurality of plate members 53' which are detachably secured, one above the other, on horizontally extending supporting rods 54 detachably secured to the sections of two adjacent front post elements 12, as shown in Figure 1. Thus, the post sections may be formed with vertically apertured lugs 55 receiving the downwardly bent end portions 56 of the horizontal rods 54, and each plate section 53 may be provided with respective horizontally aligned pairs of hooked brackets 57 engageable on the respective horizontal rod members 54 in the manner illustrated in Figure 4, whereby the plate members 53 are detachably engaged on the horizontal supporting rods 54 and are positioned one above the other, as shown in Figure 1.

The rollers 52 of the cage are thus engageable with the continuous vertical surface defined by the guide plate 53 as the hoist cage 43 is elevated, guiding the said hoist cage in its vertical movement and restraining the cage against rotation as it is being raised or lowered.

When the cage has been elevated above the level of the platform 17, the cage may be swung over the platform by rotating the arm elements 34 and vertical supporting member 18 to swing the cage over the platform, whereupon the cage may be lowered onto the platform for the discharge of its contents.

The vertical rear support member 26 and its arm 27 are rigidly held against rotation by engaging a transverse locking pin 60 through the lower portion of the member 26 and the upstanding reduced stud portion 16 with which it is engaged, as shown in Figure 1.

As shown in Figure 1, the cable 39 is connected at its end to the cross member 35, is then engaged around the pulley 40, and then extends upwardly and over the pulleys 38 and 37, the cable then depending adjacent to the vertical supporting member 18 and extending to the ground, where it may be manipulated by a person operating the hoist. As will be apparent from Figure 1, the depending portion of the cable 39 is spaced substantially from the hoist cage 43 and the operator may raise or lower the cage without any danger of injury from the cage.

While a specific embodiment of an improved scaffold and hoist structure have been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may occur to those skilled in the art. Therefore, it is intended that no limitations be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. In a scaffold structure, at least three post members arranged in longitudinal aligned relation, a post element superimposed upon the intermediate one of said post members and having the lower end connected to said intermediate post member for rotary movement about said last mentioned post member as an axis, a pair of arm elements arranged in lateral spaced relation positioned so that they are substantially transversely disposed with respect to said post element and having adjacent one ends thereof rigidly secured to said post element intermediate the ends of the latter, a vertically disposed flat backing member extending between and carried by said intermediate post member and an adjacent post member, a hoist cage positioned on the outer face of said backing member, pulley and cable means carried by said arms and operatively connected to said cage for raising and lowering said cage, bearing means on said carriage engaging the outer face of said backing member for preventing the rotation of the cage as it is being raised and lowered, and a brace bar extending between another adjacent post member to said intermediate post member and said post element and having one end connected to the upper end of the last mentioned post member and having the other end connected to the upper end of said post element.

2. In a scaffold structure, at least three post members arranged in longitudinal aligned relation, a post element superimposed upon the intermediate one of said post members and having the lower end connected to said intermediate post member for rotary movement about said last mentioned post member as an axis, a pair of arm elements arranged in lateral spaced relation positioned so that they are substantially transversely disposed with respect to said post element and having adjacent one ends thereof rigidly secured to said post element intermediate the ends of the latter, a vertically disposed flat backing member extending between and carried by said intermediate post member and an adjacent post member, a hoist cage positioned on the outer face of said backing member, pulley and cable means carried by said arms and operatively connected to said cage for raising and lowering said cage, bearing means on said carriage engaging the outer face of said backing member for preventing rotation of the cage as it is being raised and lowered, a brace bar extending between another adjacent post member to said intermediate post member and said post element and having one end connected to the upper end of the last mentioned post member and having the other end connected to the upper end of said post element, another post member arranged in tandem spaced relation with respect to said intermediate post member, and a brace means connecting said another post member to the upper end of said post element.

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