

Aug. 7, 1951

R. J. LAABACK

2,563,682

VERTICAL LIFT SCAFFOLD

Filed June 11, 1948

3 Sheets-Sheet 1

Fig. 1.

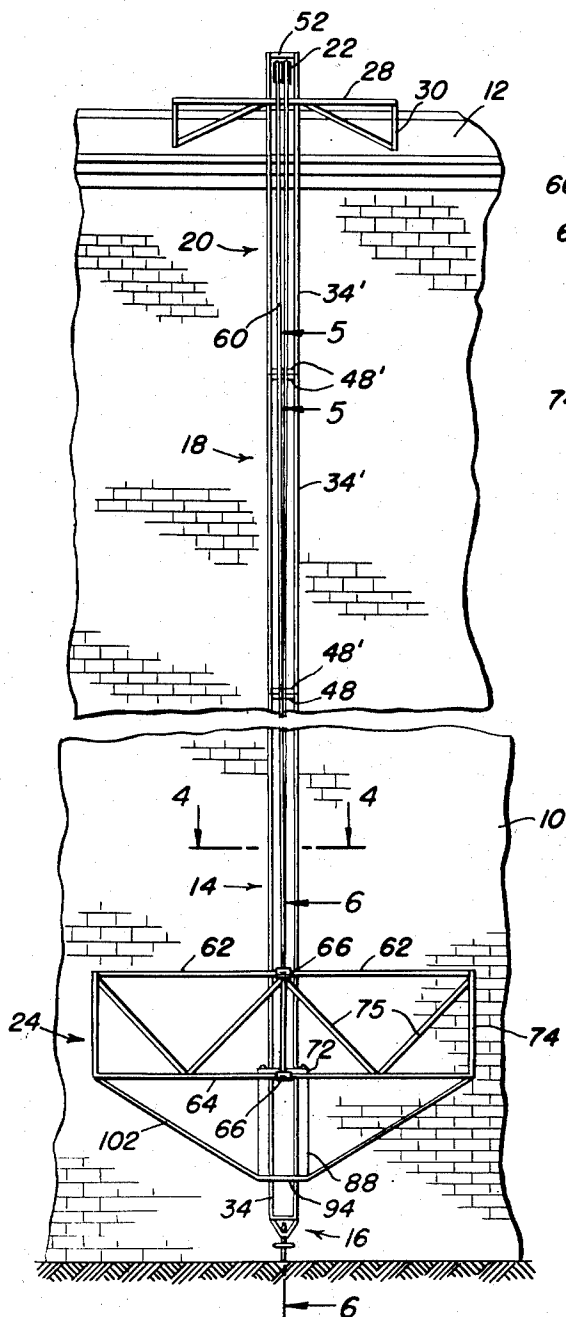
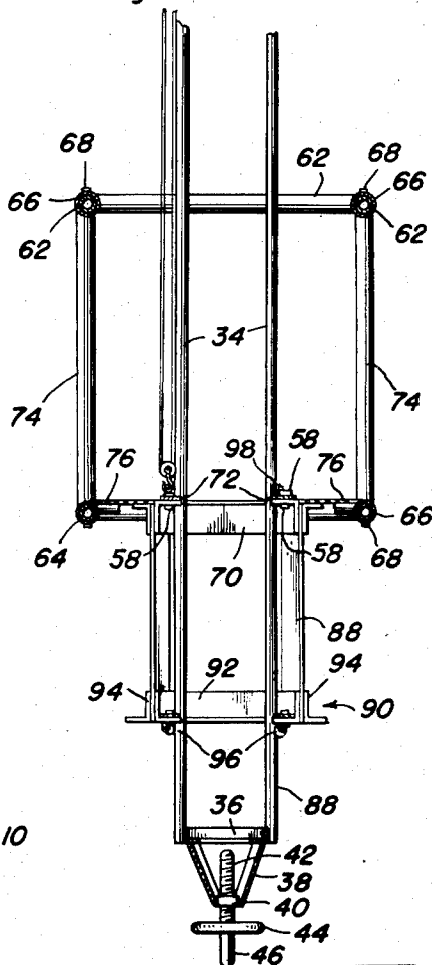


Fig. 6.



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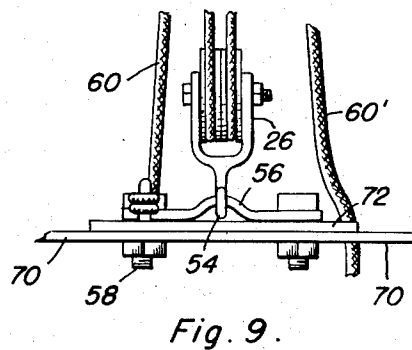
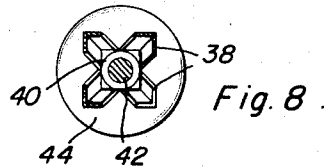
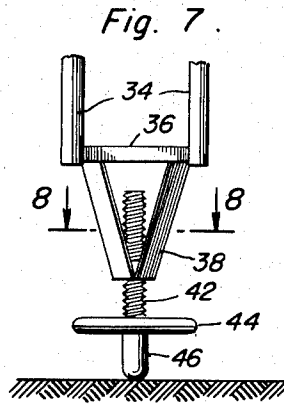
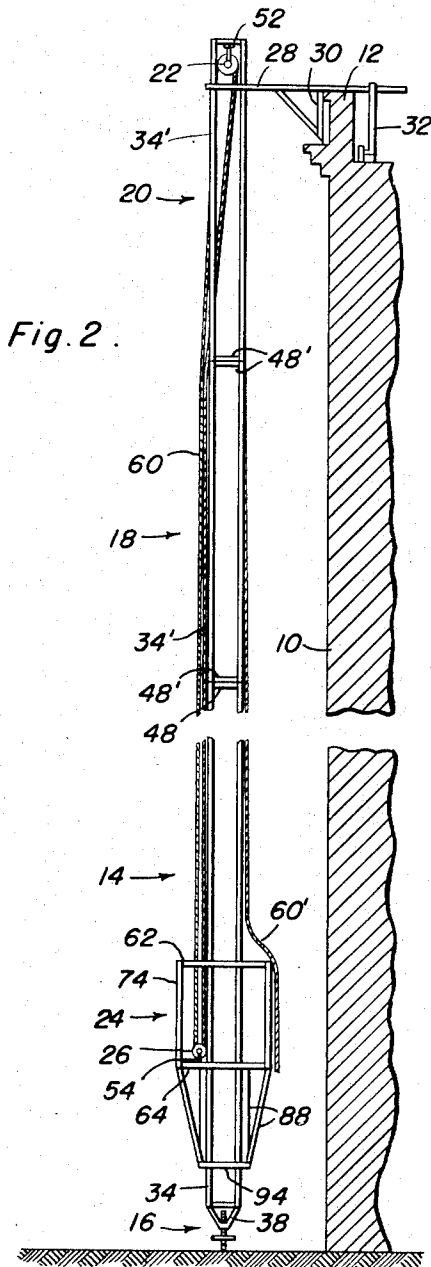
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3 Sheets-Sheet 2



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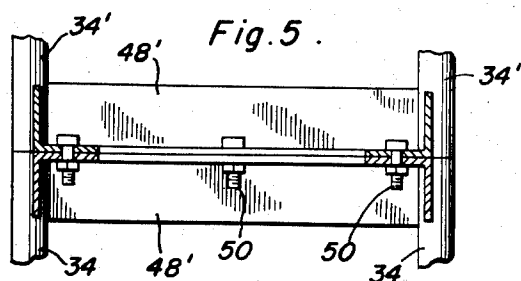
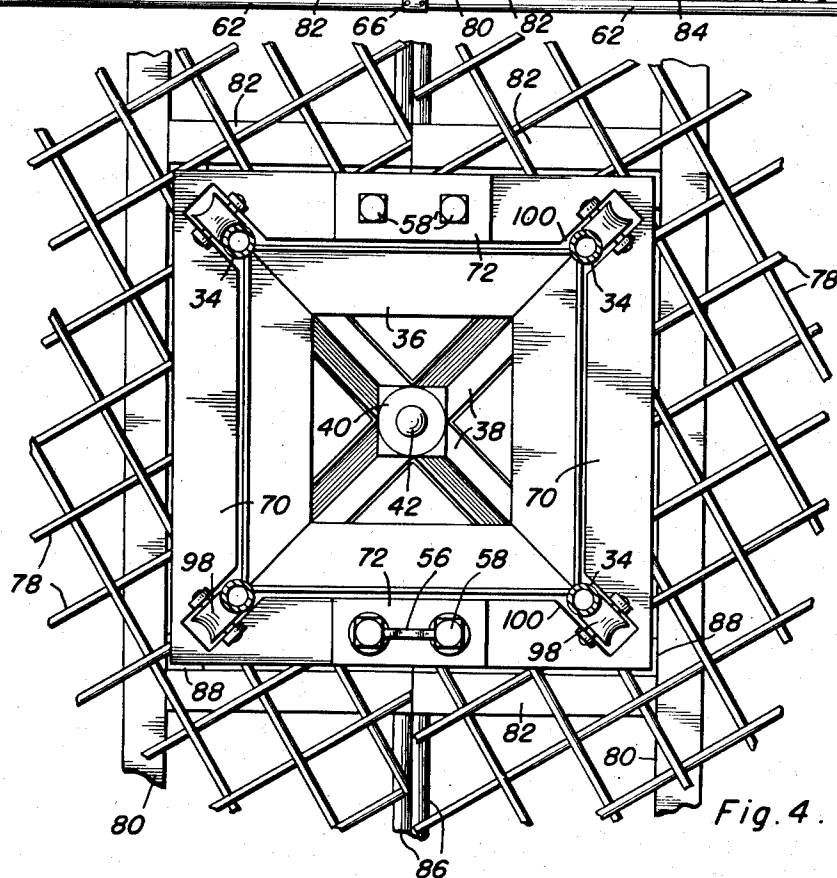
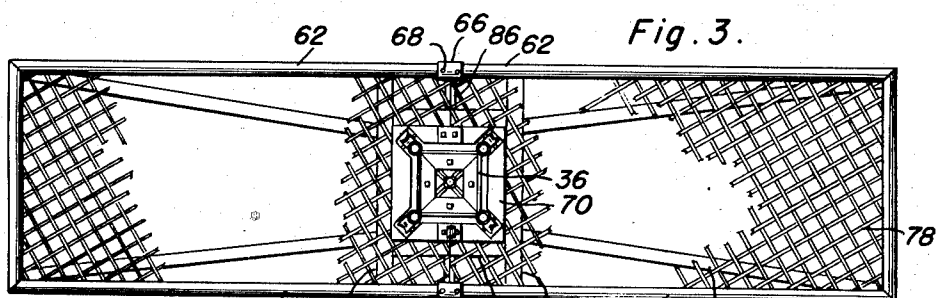
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VERTICAL LIFT SCAFFOLD

Filed June 11, 1948

3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

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VERTICAL LIFT SCAFFOLD

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Application June 11, 1948, Serial No. 32,400

2 Claims. (Cl. 304—38)

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This invention relates generally to scaffolds, and more particularly to that type of scaffolds used by builders, painters and others and having a tower disposable vertically adjacent one wall of a building, and a vertically shiftable cage.

The primary object of this invention is to provide a scaffold structure which is adaptable for use in connection with work on either relatively small buildings, as well as tall buildings, the tower provided by this invention being sectioned and the cage being capable of traveling from one section to the other, when more than one section is used.

Another object of this invention is to provide an improved cage structure in which the cage is constructed in two complementary parts or sections, securable together upon the tower, after the latter has been secured in position, thus facilitating the assembly of the scaffold structure into operative position.

Still another object of this invention is to provide a scaffold structure in which the tower is adjustable within limits vertically.

Yet another object of this invention is to provide a guide frame structure for a cage for use with a scaffold tower, which guide frame is of very simple design and light weight but which will positively prevent tilting of the scaffold cage.

And the last object to be mentioned specifically is to provide a scaffold structure which is relatively inexpensive and practicable to manufacture, which is very safe and convenient to erect, use and disassemble, which is sectionalized both as to the tower and the cage per se, so that the transportation of the scaffold on one site to another is simplified, and which give generally efficient and durable service.

With these objects definitely in view, this invention resides in certain novel features of construction, combination and arrangement of elements and portions as will be hereinafter described in detail in the specification, particularly pointed out in the appended claims, and illustrated in the accompanying drawings which form a material part of this application, and in which:

Figure 1 is a front elevational view of this scaffold structure in operative position as related to a building, the latter being shown fragmentarily in elevation;

Figure 2 is another elevational view, which may be considered as a side elevational view of the scaffold structure, the building with which the scaffold structure is associated being shown in vertical section and fragmentarily;

Figure 3 is a top plan view of the scaffold structure;

Figure 4 is an enlarged fragmentary detail view, largely in top plan, but technically a horizontal section taken on the line 4—4 in Figure 1;

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Figure 5 is an enlarged fragmentary vertical sectional view, taken on the line 5—5 in Figure 1;

Figure 6 is a vertical sectional view, taken substantially on the line 6—6 in Figure 1;

Figure 7 is an enlarged fragmentary view of the foot assembly of the tower, the view being elevational and fragmentary in character;

Figure 8 is a horizontal sectional view, taken through the foot assembly, on the line 8—8, in Figure 7; and

Figure 9 is an enlarged fragmentary view showing the lower block of the block and tackle assembly and means for securing the same to the cage.

Similar characters of reference designate similar or identical elements and portions throughout the specification and throughout the several views in the drawings.

Referring now to the drawings in detail, the environment wherewith this invention is adapted to be used is illustrated by a building having a wall 10 and a cornice 12, and briefly stated this invention may be considered as comprising a sectioned tower having a base section indicated generally at 14 in Figure 1 and having a foot assembly 16, intermediate sections 18 as required, and a top section 20 carrying the upper block 22 of a block and tackle system, together with a cage 24 vertically slidably mounted on the tower and having the lower block 26 of the system secured to this cage.

The top section 20 will be secured against swaying by any suitable means of conventional character diagrammatically represented in Figures 1 and 2 as including a horizontal member or members 28 secured to the section 20 and vertical members 30 and 32, one or both of which may be adjustable to engage the cornice 12, the exact form of this structure being dictated by the character of the building and adapted according to individual preferment and mechanical expediency.

The base section 14 and foot assembly 16 are not separable and include vertical tubular standards 34, connected as by welding to a frame 36 constructed of angle bars and shown to advantage in Figures 5 and 6. The horizontal flanges of the frame 36 are preferably welded to inclined angle bars 38 of the foot assembly. These bars 38 converge downwardly and are integrated with a nut 40 which receives the threaded shank 42, and the latter is provided with a hand wheel 44 and an axial member 46 adapted to rest on the ground or pavement at the base of the building, suitable planks or other means being used to prevent penetration of the member 46 into the supporting surface, when necessary. The upper ends of the standards 34 are joined together by a frame 48 similar to the angle bar frames 48' which are shown in detail

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in Figure 5. These frames are welded to the upper ends of the standards 34 and to both ends of the standards 34' of each section 18 and 20. Bolts 50 are used to secure the frame 48 to the lowermost frame 48' and to secure adjacent frames 48' together.

A top plate 52, secured to the upper ends of the standards in the top section 20, is used to support the top block 22, while the other block 26 is secured by its hook 54 to a bar 56 bolted as at 58 to the cage 24 which will be described immediately below, and a cable 60 is operatively engaged with said blocks, the cable being illustrated in untautened position in the drawings with the free end indicated at 60', in the interest of clarity of representation.

The cage 24 is in two similar sections, the tubular top railing sections 62 and lower railing sections 64 being connected together by sleeves 66 and set screws 68 or the like, while the divided angle iron frame sections 70 are connected by plates 72 and bolts 58 and 58'. The cage also includes vertical tubular members 74, angle bracing members 75, a floor 76 constructed of reticulated rods or heavy wire 78 welded to the lower railing section 64 and frame sections 70, and it is preferred that this reticulated structure 78 should also be welded to floor reinforcing members 80 and 82 which are used to box the frame sections 70, further floor reinforcing members 84, indicated in Figure 3, being terminally secured to the lower railing section 64 and to the members 80. The adjacent ends of the reticulated rod or wire members 78 of each section of the cage are joined by reinforcing rod members 86.

Corner vertical angle bars 88 have their upper terminals secured to and between the cage frame sections 70 and the adjacent portions of the members 80 and 82, and these angle bars 88 depend for rigid connection to the corners of a very similar frame which may be denoted as a guide frame 90 comprised of inner and outer angle frame bars 92 and 94 having the inner and outer sides of the vertical flanges thereof welded to the lower ends of the bars 88.

The guide frame 90 carries anti-friction rollers 96 and similar rollers 98 are mounted on the frame sections 70, each of these rollers being disposed within diagonal slots such as those slots 100 in the sections 70 indicated to advantage in Figure 4, so to engage the corresponding standards 34 and 34'. Braces 102 may be added for further connection of the guide frame 90 to the cage 24.

The operation of this invention will be clearly understood from a consideration of the foregoing description of the mechanical details thereof, taken in connection with the recitation of objects and the drawings. In recapitulation, the tower may be raised or lowered slightly after erection by means of the hand wheel 44, and the frames 48 and 48', with their attaching bolts 50, allow the use of any desired number of sections 18 intermediate the lower section 14 and the top section 20. The cable 60 will, of course, be threaded through the blocks 22 and 26 and the end 60' of the cable will ordinarily be tied to the cage or to some fixed structure other than the cage when it is desired to retain the cage in fixed position, lowering of the cage being accomplished simply by slackening the cable end 60' and raising of the cage being accomplished by pulling downwardly on this portion of the cable, all according to conventional

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practice and accomplished either by hand or by winch means. The assembly of the scaffold structure will ordinarily be accomplished by first establishing the tower in place, whereafter a sectioned cage may be assembled on the tower, the sleeves 66 and the plates 72 being the chief means for holding the two sections of the cage together in operative position.

Obviously many minor variations may be made in the construction of the various details and the proportionment of the elements of this invention without departure from the spirit thereof. Accordingly, the scope of this invention should be limited only as determined by a proper interpretation of the terms used in the subjoined claims.

Having described the invention, what is claimed as new is:

1. A cage for a vertical lift scaffold vertically divided into two complementary sections securable together in operative position on opposite sides of a tower, whereby the assembly of the scaffold upon a tower in position is facilitated, said cage including top and lower railing sections and sleeves connecting the sections together, horizontal frame sections defining an open centered rectangle, plates connecting said frame sections together, corner vertical members connecting the top and lower railings in said railing sections, floor sections secured to said lower railing sections and said frame sections, vertical members having their upper ends secured to said frame sections, guide frame sections similar to said frame sections and secured to the lower ends of said last-mentioned vertical members, and scaffold tower engaging rollers on both frames.

2. A cage for a vertical lift scaffold vertically divided into two complementary sections securable together in operative position on opposite sides of a tower, whereby the assembly of the scaffold upon a tower in position is facilitated, said cage including top and lower railing sections and sleeves connecting the sections together, horizontal frame sections defining an open centered rectangle, plates connecting said frame sections together, corner vertical members connecting the top and lower railings in said railing sections, floor sections secured to said lower railing sections and said frame sections, vertical members having their upper ends secured to said frame sections, guide frame sections similar to said frame sections and secured to the lower ends of said last-mentioned vertical members, and scaffold tower engaging means of anti-friction character on both frames.

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