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C. F. LONG ET AL

2,658,803

SCAFFOLD

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2 Sheets-Sheet 1

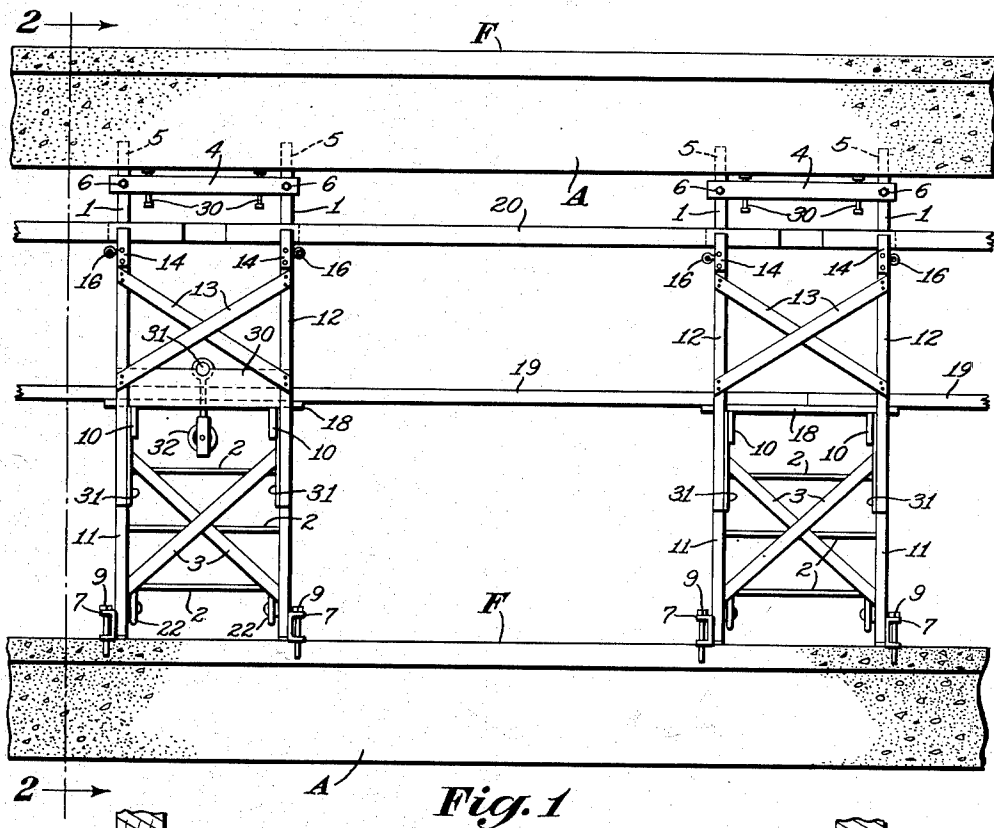


Fig. 1

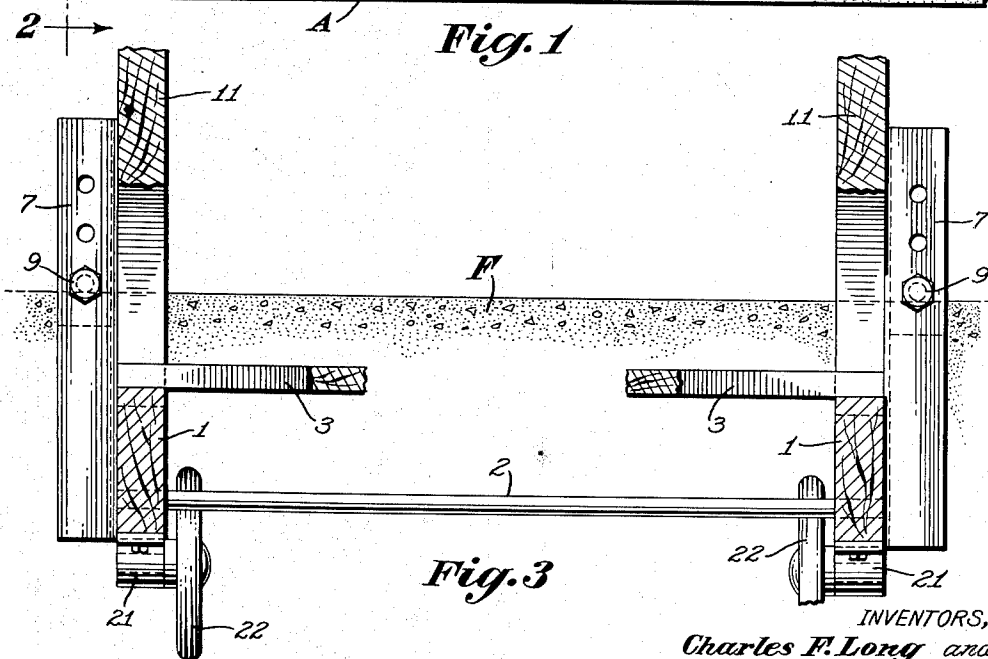


Fig. 3

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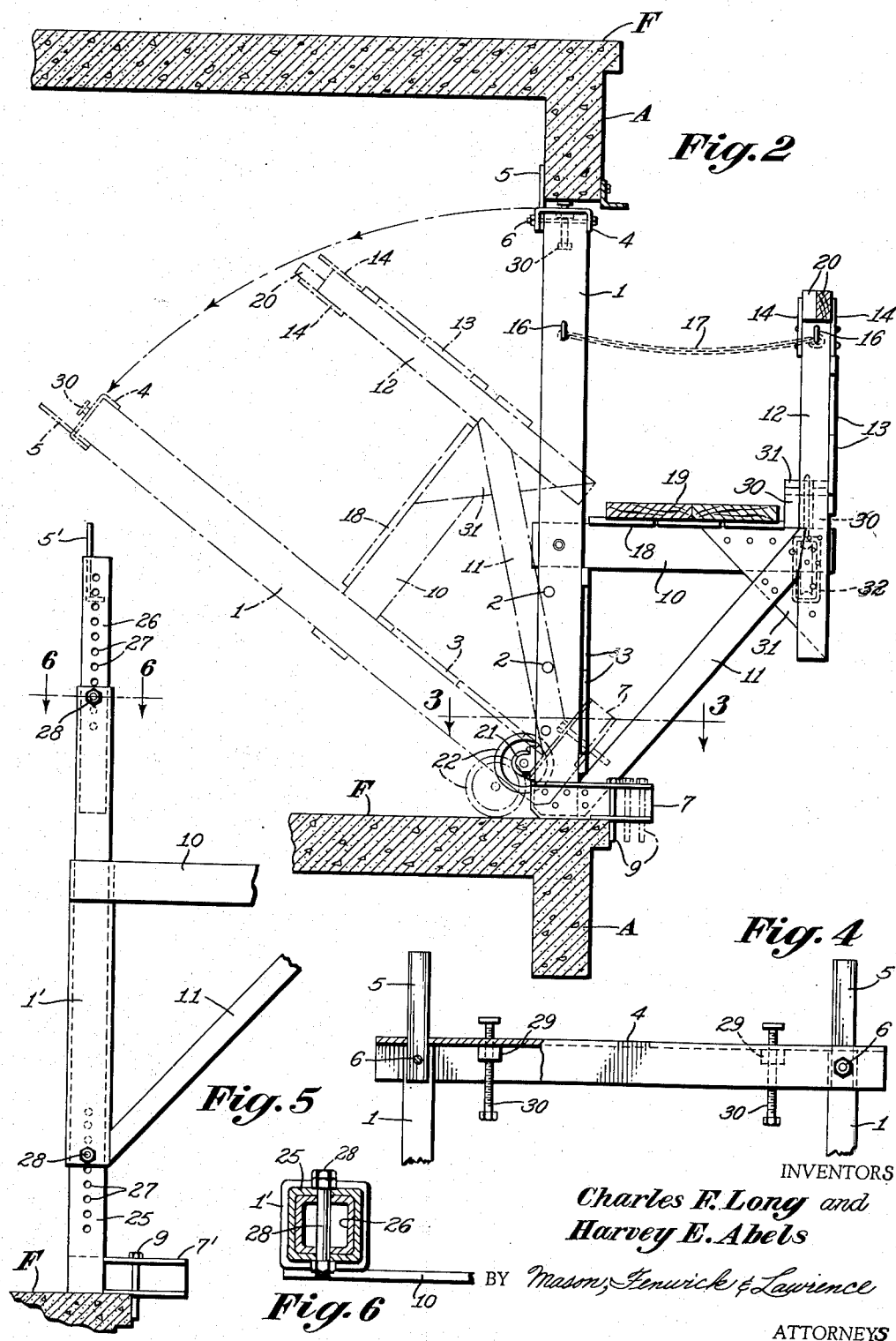
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UNITED STATES PATENT OFFICE

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SCAFFOLD

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2 Claims. (Cl. 304—24)

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This invention relates to scaffolding, and more particularly to a portable scaffold adapted to be readily shifted by a single unskilled laborer from place to place with complete security in operation, thereby eliminating the necessity for skilled riggers or carpenters.

In connection with modern construction practices and building business, it is customary to construct concrete buildings in the form of a succession of concrete floors spaced and positioned by piers, each concrete floor being associated with a depending apron as a monolithic unit constituting a spandrel beam, which with the similar beam immediately beneath, defines the floor heights in the building. It is customary in connection with such construction to secure lintel beams to such spandrel beams and overlay or veneer such spandrel beams to form the finished exterior of the building, and in connection with that work it is necessary to have scaffolding securely positioned exteriorly of the building in alignment with such openings or spaces. Various expedients have been resorted to, but the most common practice is to utilize scaffolds depending from upper floors or scaffolding erected from the ground, and in either case skilled mechanics are essential and the cost of the scaffolding is high.

An object of the present invention is to provide an improved and simplified scaffold unit which, in conjunction with other similar units, can be successively positioned as the work progresses along the face of a building by the utilization of movable floor boards and railings so that as the work progresses one unit can be removed as the work adjacent thereto is finished and shifted to a position in advance, thus permitting the work to continue successively the full length of a building on a floor, and only unskilled labor is necessary for such shifting of the scaffold units and extension of the scaffolding progressively throughout the length of the building.

Other objects will more particularly appear in the course of the following detailed description.

The invention consists in the novel construction, arrangement and combinations of parts hereinafter more particularly described and claimed.

Two sheets of drawings accompany this specification as part thereof, in which like reference characters indicate like parts throughout.

In the drawings:

Figure 1 is a fragmentary front elevation of a portion of a building showing the window open-

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ing space and two units of the improved scaffolding in position;

Figure 2 is a transverse cross section taken on line 2—2 of Figure 1;

Figure 3 is a horizontal cross section taken on line 3—3 of Figure 2;

Figure 4 is a fragmentary rear view partially broken away of the upper end of the improved scaffold unit;

Figure 5 is a side elevation of a modified form of the standard used in the improved unit; and

Figure 6 is a transverse cross section taken on line 6—6 of Figure 5.

Referring more particularly to the drawings, the reference character F indicates a portion of a concrete floor structure, while the reference character A indicates a depending apron integrally cast with the floor F and constituting a spandrel beam. This type of structure is commonly utilized in the modern construction of office, apartment and other large buildings. In connection with such buildings the floors F are supported by spaced piers (not shown), but these piers are spaced relatively far apart so as to define with the spandrel beams relatively large openings in which are subsequently positioned wall structure and a plurality of window frames, and it is also customary to overlay or veneer the outer face of the suitably waterproofed spandrel beams with marble or other ornamental material, to present an attractive face to the building.

The present invention relates to a readily portable scaffold unit which can be selectively positioned within the opening described at successive positions throughout the width of the building, adapted to support scaffold boards 19 which can be shifted as the work progresses, from one end of the building to the other, it being contemplated that a plurality of such scaffold units will be utilized and that as the work progresses from one side of the building to the other, the rearmost unit will be withdrawn and moved ahead so that the scaffold can be progressively extended from one side of the building to the other, as desired.

With a view to simplifying such shifting of the scaffold units while at the same time maintaining absolute security for the scaffolding and the workers employed thereon, this movable scaffold unit is constructed of two spaced standards 1—1 herein illustrated as being secured in fixed parallel relationship, as by a plurality of rung members 2, and braced to assure their parallelism as by brace members 3. The upper ends of the

vertical standards 1 are bridged by a header 4, herein illustrated as of channel cross section, and this header is slotted adjacent each of its ends to permit the passage of a plate or strap 5, the lower end of which abuts against the rear face of the standard 1 and is secured in rigid position by means of a bolt 6 which also secures the header 4 to each of the standards 1.

At the bottom of each of the standards 1 is positioned a journal 21 for a ground contacting wheel 22 and these journals 21 are so positioned on the standards 1 that when the standard is in its operative vertical position the wheels 22 will be out of contact with the floor F, but that by tilting the entire scaffold unit rearwardly, as illustrated in dotted lines in Figure 2, the ground contacting wheels 22 will be brought in contact with the floor F interiorly of the building, thus permitting an unskilled laborer to wheel the unit backwardly and shift it along the floor to its new position.

To the bottom end of each of the standards 1 is also secured a forwardly projecting arm 7, herein illustrated as of channel cross section, the forward end of this arm being formed with a plurality of transversely aligned holes 8 in its flanges through which a pin or bolt 9 can be inserted in parallel relationship to the standard 1, this pin 9 being adapted to engage the outer face of the floor F or the apron A to resist effectively any inward thrust against the lower end of the standard 1. It will be understood that each of the standards is provided with such a forwardly projecting arm 7.

The two standards support intermediate their ends forwardly projecting joists 10 which joists are herein illustrated as rigidly secured in perpendicular relationship to the standards 1 as by diagonal braces 11 and angle plates 31. The joists 10 are further secured by a permanent platform 13 extending from joist to joist and upon which can be laid scaffold boards 19 adapted to extend from scaffold unit to scaffold unit, as illustrated in Figure 1. At the outer end of the joists 10 are rigidly secured rail posts 12 which are suitably braced as by diagonals 13, and adjacent the upper end of each rail post are secured on its inner and outer faces rail plates 14-14 which extend above the end of the post 12, providing a seat within which rail members 20 can be positioned, such rail members 20 also extending from scaffold unit to scaffold unit. Eye-bolts 16 are preferably associated with the standard 1 and the rail post 12 in parallel relationship to the platform 13, and a chain or similar guard 17 can, if desired, be hung between such eye-bolts.

Each of these units can also be provided with spaced beams 30 resting on the joists 10-10 adjacent the rail posts, which beams are spanned by a bridge member 31 supporting a block and fall 32 by means of which supplies can be readily raised or lowered, thus permitting use of each unit as a portable outrig for hoisting.

To permit the use of the same scaffolding units with a plurality of different buildings of varying room heights, the modified form illustrated in Figures 5 and 6 for the standards may be conveniently employed. In this form the standard 1' is formed of tubular cross section with tubular members 23 and 25. These tubular members 1', 25 and 26 are telescoped and adjustably positioned with respect to each other, as by means of bolts 28 extending through complementary holes 27 passing through the mem-

ber 1' and the extension members 25 and 26, so that these extension members can be adjusted to vary the length of the effective standard and the position of the platform as desired. In this construction the forwardly projecting arms 7' are secured to the bottom extension members 25, while the extension straps or cleats 5' are secured to the upper extension members 26. The platform and bracing members will be secured, as in the previously described form, to the central main portions 1' of the standards.

To prevent any lateral tilting of the scaffold unit which could never amount to much, but which might give a sense of insecurity, nuts 29 can be welded within the header member 4 in association with orifices in the web in said header member to permit the operation of bolts 30', one positioned adjacent each of the vertical standards 1-1, and by tightening of these bolts 30' against the under face of the apron A, any possible slight movement of the scaffold unit is effectively prevented. The device is entirely stable and secure without the use of such tightening bolts, and their use is optional.

In operation, a scaffolding unit is rolled by an unskilled laborer in the position illustrated in dotted lines in Figure 2 to the position illustrated in that figure, and thereafter tilted into vertical position, thus bringing the upwardly projecting straps 5 into contact with the inner face of the apron A associated with the floor above. Conversely, the scaffold unit is removed by tilting the unit rearwardly as indicated by the arrows in Figure 2, thus bringing the ground contacting wheels 22 into engagement with the floor, thereby permitting the withdrawal of the unit and its removal to a position further down the building.

Variations in the structural details of the unit will readily suggest themselves to those skilled in the art, but within the scope of the present invention as claimed.

Having thus described the invention, we claim:

1. Scaffold comprising spaced parallel standards, bearings for ground contacting wheels mounted at the lower ends of said standards, ground contacting wheels supported by said bearings in parallel relationship, said wheels being arranged to contact the ground only when the standards are inclined at an angle to the vertical, arms secured one to the bottom of each standard and projecting forwardly perpendicularly to said standard, each of said arms being provided with pin receiving holes arranged to secure a pin parallel with but spaced forwardly of the adjacent standard, a header of channel cross-section connecting the upper ends of the standards, said header being formed with slots adjacent the rear face of each standard, plates secured to the rear face of each standard and projecting through the slots in the header above and parallel with each standard, arms rigidly secured to each standard intermediate its ends and projecting forwardly thereof, a platform mounted on said arms, rail posts secured to the outer ends of said arms, rail cleats secured to the outer and inner faces of each rail post to form a seat for removable rail sections and locking bolts screwable through said header adjacent each of the standards adapted to exert upward pressure against overlying building structure to stabilize the scaffold against lateral tilting.

2. Scaffold comprising spaced parallel standards, ground contacting wheels supported in bearings adjacent the lower ends of said stand-

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ards at the rear sides thereof, so positioned that said wheels make ground contact only when said standards are inclined at an angle to the vertical in the direction of said wheels, arms of channel cross-section rigidly secured one to the lower end of each standard and projecting forwardly perpendicularly thereto, arranged with their flanges extending laterally, each of said arms being provided with registering holes through both flanges axially parallel to said standards, pins through said holes projecting below said arms, a header of channel cross-section connecting the upper ends of said standards having its flanges embracing the opposite sides of said standards, with the rear flange slightly spaced from the adjacent side, a slot in the web of said header back of each standard opening into the space between the rearward flange and said adjacent side, plates extending through said slots into said space and projecting above said header, a bolt through the flanges of said header, each plate, and the embraced end of each standard, for securing said

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plates, arms rigidly secured to each standard intermediate its ends projecting perpendicular thereto, forwardly thereof, and a platform mounted on said arms.

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References Cited in the file of this patent
UNITED STATES PATENTS

Number	Name	Date
337,225	Anderson -----	Mar. 2, 1886
786,054	Roy -----	Mar. 28, 1905
980,532	Johnson -----	Jan. 3, 1911
989,466	Wright -----	Apr. 11, 1911
1,086,348	Bolognesi -----	Feb. 10, 1914
1,707,894	Bergesen -----	Apr. 2, 1929
2,392,584	Falkenstein -----	Jan. 8, 1946

FOREIGN PATENTS

Number	Country	Date
2,935	Great Britain -----	1881
278,749	Italy -----	Oct. 18, 1930