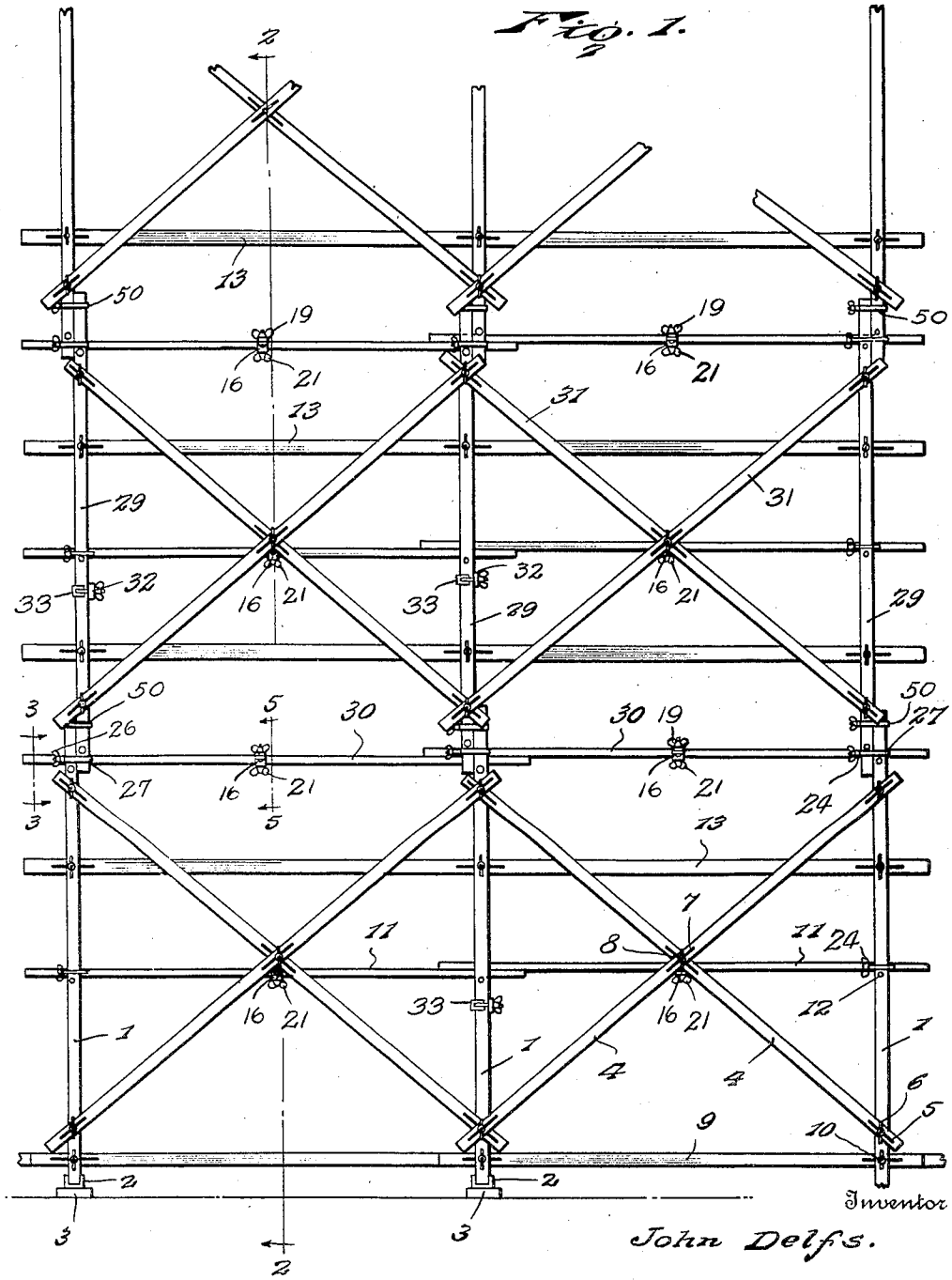
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Fig. 1.



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Fig. 2.

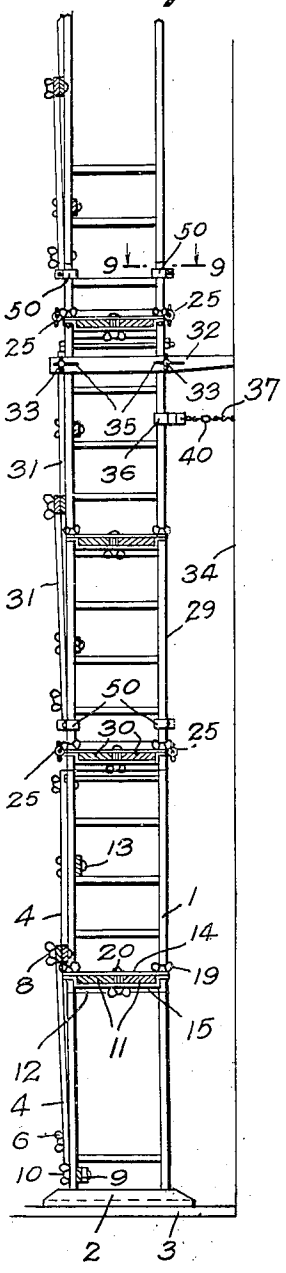


Fig. 6.

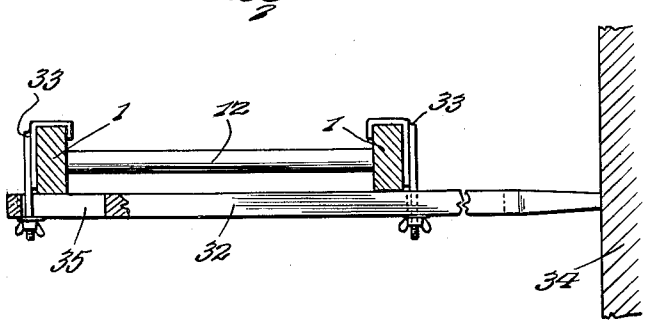


Fig. 7.

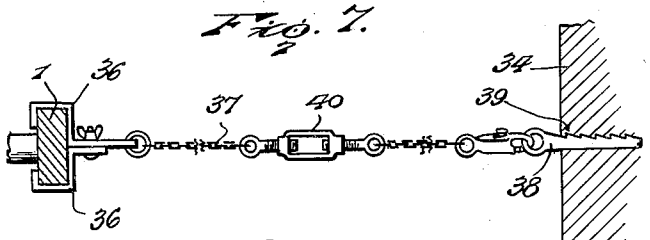


Fig. 9.

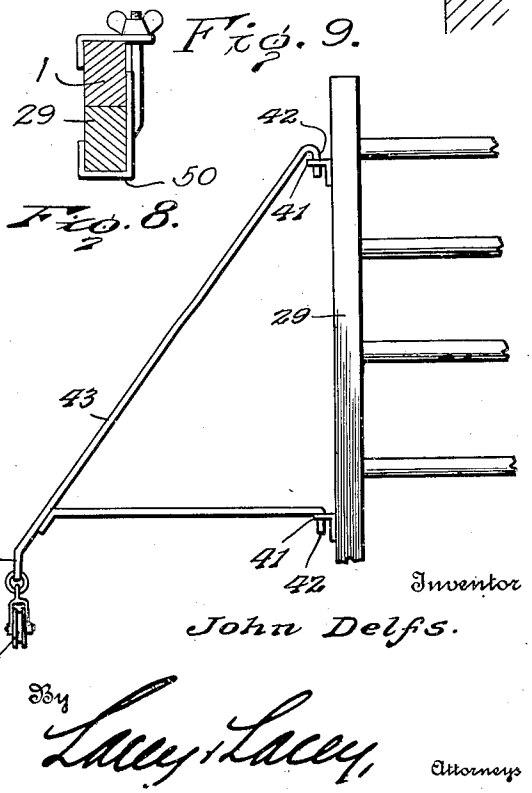


Fig. 8.

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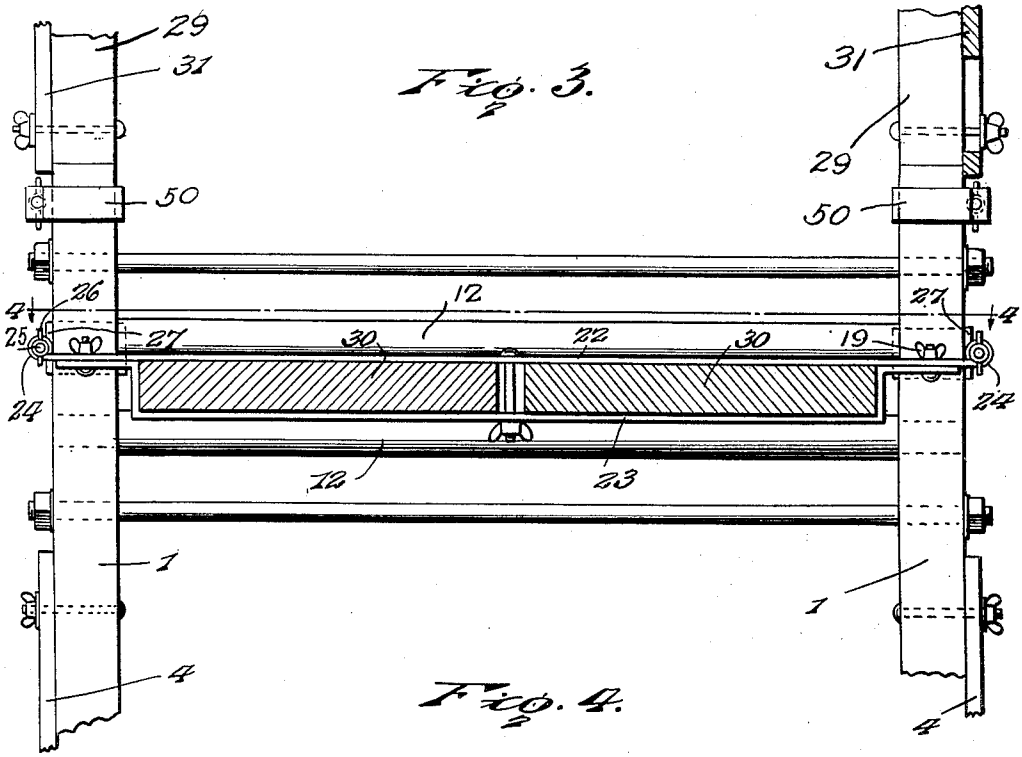


Fig. 3.

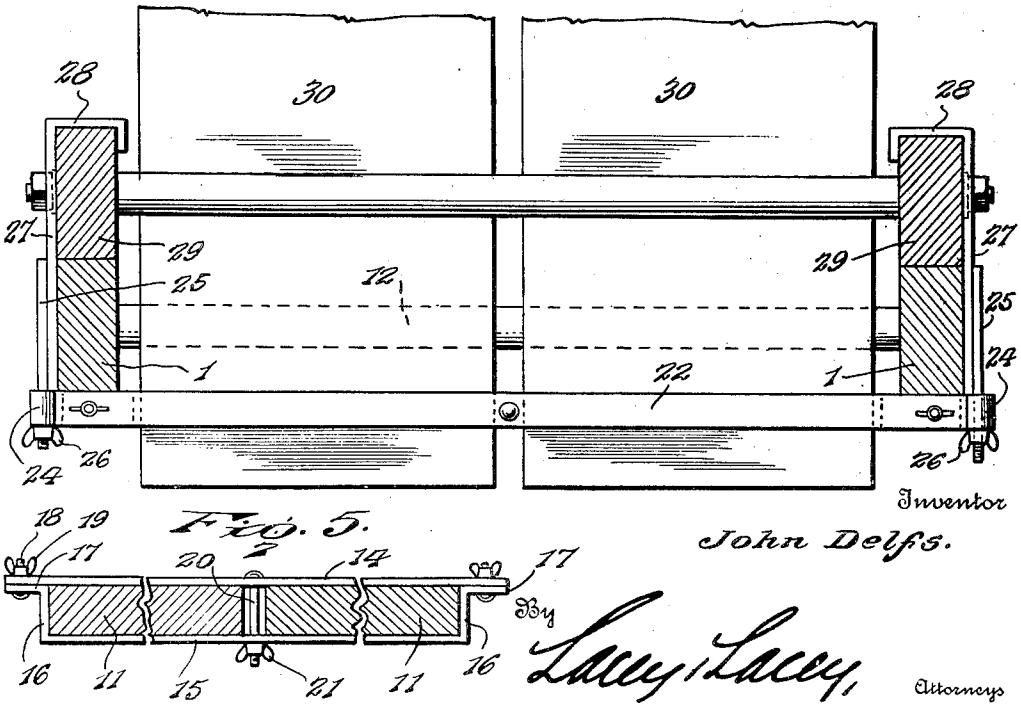


Fig. 4.

Fig. 5.

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Patented Dec. 6, 1932

1,890,029

UNITED STATES PATENT OFFICE

JOHN DELFS, OF WEST SPRINGFIELD, MASSACHUSETTS

SCAFFOLD

Application filed November 5, 1930. Serial No. 493,638.

This invention has for its object the provision of scaffolding which can be very quickly and easily erected for use and which, when erected, will be firm and strong and will accommodate workmen in such a manner that they may move about without inconvenience and in safety while at the same time they will have ample accommodations to perform their allotted tasks. The invention is illustrated in the accompanying drawings and will be hereinafter first fully described and then particularly defined in the appended claims.

In the drawings:

Figure 1 is a front elevation of a scaffold embodying the present invention,

Fig. 2 is an elevation, with parts in section, on the line 2—2 of Fig. 1,

Fig. 3 is an enlarged detail section on the line 3—3 of Fig. 1.

Fig. 4 is a horizontal section on the line 4—4 of Fig. 3.

Fig. 5 is an enlarged detail section on the line 5—5 of Fig. 1,

Fig. 6 is a detail showing means for spacing the scaffold from a building,

Fig. 7 is a detail of an anchoring device provided to secure the scaffold to a building so that it will be held firmly in its desired position, and

Fig. 8 is a detail illustrating an attachment whereby material or tools may be raised from the ground to the top of the scaffold or lowered from the scaffold to the ground.

Fig. 9 is an enlarged detail section on the line 9—9 of Fig. 2.

In carrying out the present invention, ladders 1 are erected at a stated distance apart and adjacent the wall of a building upon which work is to be done, the lower ends of the ladders being set in shoes 2 which may conveniently be channel irons, as shown clearly in Fig. 1, within which the ends of the side bars of the ladders will fit closely so that they will not be apt to twist therein after being set up. The shoes may, if desired, be placed upon base blocks 3 so that a firm support for the ladders will be provided and sinking of the same into the ground will be avoided. The ladders 1 are braced in position by diagonal struts or braces 4 which are each secured at its lower end to one ladder adjacent the bottom of the same and at its upper end is secured to another ladder adjacent the upper end thereof, as shown in Fig. 1. The braces are provided with longitudinal slots 5 at their ends and bolts are inserted through said slots and through the side bars of the ladder and equipped with wing nuts 6 so that the braces may be adjusted to the distances between successive ladders and be firmly secured thereto. Similar slots 7 and fastening bolts 8 are provided at the centers of the braces so that two braces may be firmly secured together at their points of intersection. This arrangement very effectually resists relative sidewise movement of the ladders. Beams or rails 9 are provided just above the shoes 2 and extend horizontally through the full length of the scaffolding and are adjustably secured to the respective ladders by slot and bolt connections, as shown at 10. Boards 11 are placed through the ladders so as to rest on rungs 12 thereof and provide cat walks for the workmen, the boards being provided at a proper height to accommodate a workman at his labors, as will be understood, and at a proper distance above the boards 11 guard rails 13 are extended along the scaffold and are secured to the side bars of the ladders so as to furnish a back rest and also a guard to prevent the workmen accidentally falling outward from the scaffold. The boards 11 are arranged in pairs, as shown in Figs. 2, 3, 4 and 5, and they may be held in proper relation by clamping devices which are fitted around the boards so as to prevent relative sidewise movement of the same. These clamps each comprise an upper bar 14 which passes across and rests on the tops of the boards and a lower bar 15 which is disposed under the boards and has upturned ends 16 which fit against the outer edges of the boards, as clearly shown in Fig. 5. At the upper ends of the upturned portion 16 are lugs 17 which bear against the projecting ends of the upper clamping bar 14 and are firmly secured thereto by bolts 18 and wing nuts 19 in an obvious manner. Between the inner edges of the boards, bolts 20 are inserted through the clamping bars 14 and 15 and

equipped with wing nuts 21 to be turned home against the lower bar 15 so that the boards will be very securely clamped between said bars. The clamps may be provided at such intervals and at such points in the lengths of the boards as may be preferred and adjacent the ends of the boards or may be omitted, the clamping bars 22 and 23 at the ends of the boards, as shown in Figs. 3 and 4, being longer than the bars 14 and 15. The extended bars are provided at their ends with eyes 24 which receive the threaded ends of bolts 25 which are equipped with wing nuts 26 adapted to be turned home against the eyes, as shown most clearly in Fig. 4. The bolts or threaded rods 25 are welded or otherwise intimately and permanently attached to hooks 27 which are disposed against the side bars of the ladders and engage around the edge of the side bars of one ladder, as shown at 28, while the ends of the clamping bars 22, 23 abut the edge of the side bar of a companion ladder, as clearly shown in Fig. 4. When the wing nuts 26 are turned home, the companion ladders will be very firmly clamped together.

After the ladders 1 have been placed in position and connected through the described braces and equipped with the foot boards and guard rails, a second set of ladders 29 are brought into position with their lower ends against and overlapping the upper ends of the ladders 1, as shown in Fig. 1, foot boards 30 being disposed upon the uppermost rungs of the ladders 1 and the lowest rungs of the ladders 29 being caused to rest on said boards 30. The boards 30 are the same in all respects as the boards 11 and are connected by clamps of the described structure where desired, the clamping hooks 27 being fitted around the overlapping upper ends of the lower ladders and the lower ends of the upper ladders, as shown in Figs. 1 and 4 so that the cooperating ladders will be firmly clamped together. The upper ladders 29 are connected by braces 31 the same in all respects as the braces 4 and the arrangement may be repeated until the scaffold has been erected to the entire height of the building upon which work is to be done. At the upper extremities of the lower ladders, hook clamps 50 are fitted around the side bars of the ladders and operate in the same manner as the hooks 28 to hold the ladders against lateral separation.

At intervals in the height of the scaffold, spacer or spreader bars 32 are secured to the ladders by hooks 33 having threaded shanks inserted through the spreader bars and their hooked ends engaged around the side bars of the ladders, as shown in Fig. 6. These bars serve as gages to properly space the scaffold from the building, it being noted upon reference to Figs. 2 and 6 that the bars project inwardly beyond the ladders or scaffold with their ends bearing against the wall of the building, indicated at 34, and it will be also noted that the spreader bars are provided with longitudinal slots 35 through which the shanks of the clamping hooks 33 pass to thereby permit adjustment of the spreader or gage bar to obtain the desired spacing of the scaffold from the building. Below the spreader or spacer bar 32, a pair of hooks 36 is clamped about the inner side bar of the ladder and a chain 37 is carried by said clamping hooks, as shown most clearly in Fig. 7. The opposite end of the chain 37 is provided with an anchor bolt 38 which is adapted to be driven into the wall of the building and is equipped with shoulders or teeth 39 which will engage in the mortar or other material of the wall so that it will be firmly anchored therein. The chain is equipped between its ends with a turnbuckle 40 so that the tension or length of the chain may be readily adjusted in an obvious manner and the scaffold, consequently, firmly held to the building in the desired spaced relation thereto.

The ladders which are used at the top of the scaffold may be equipped on the outer sides of their side bars with perforated lugs or brackets 41 in which are pivotally engaged the down-turned ends or pintles 42 of a support or arm 43 which is provided at its outer end with a hook or the like, indicated at 44, from which is suspended a pulley 45. A hoisting cable may be run over this pulley to facilitate the hoisting or lowering of tools and material and the pivotal mounting of the bracket or arm 43 permits it to be swung readily from side to side so that the workmen may remove the tools or material which has been drawn up to them.

From the foregoing description, taken in connection with the accompanying drawings, it will be seen that I have provided an exceedingly simple but strong scaffold which may be easily erected and carried to any desired height. The scaffold constructed according to my invention will provide ample room for the workmen to move about in the performance of their duties while at the same time they will be guarded against falls and will be located close to the building so that the necessary work may be done without inconvenience and with dispatch.

Having thus described the invention, I claim:

1. A scaffold comprising a series of ladders arranged in spaced relation, the lower ends of upper ladders being disposed against the sides of the upper ends of lower ladders in overlapping relation, clamps fitted about the overlapping ends of the ladders to secure them together, and foot boards carried by the rungs of the several ladders, the uppermost rungs of lower ladders supporting the foot boards and the lowest rungs of upper ladders resting on the foot boards.

2. A scaffold comprising ladders, braces securing the ladders in spaced relation, foot boards resting upon rungs of the ladders, upper and lower clamping bars secured about the foot boards transversely thereto with their ends bearing against the edges of the side bars of the ladders, and means for securing the ends of said clamps to the side bars of the ladders.

3. A scaffold comprising ladders, braces connected to the ladders to maintain them in upright spaced relation, foot boards resting upon rungs of the ladders, clamping bars secured together transversely of the foot boards and extending around the same, said clamping bars being provided at their ends with eyes, anchoring hooks engaged around the overlapping ends of upper and lower ladders, and anchoring bolts permanently united with said hooks and extending through the eyes of the clamping bars to be secured therein.

In testimony whereof I affix my signature.

JOHN DELFS. [L. S.]