

(No Model.)

F. B. GILBRETH.
SCAFFOLD.

No. 479,591.

Patented July 26, 1892.

Fig. 1.

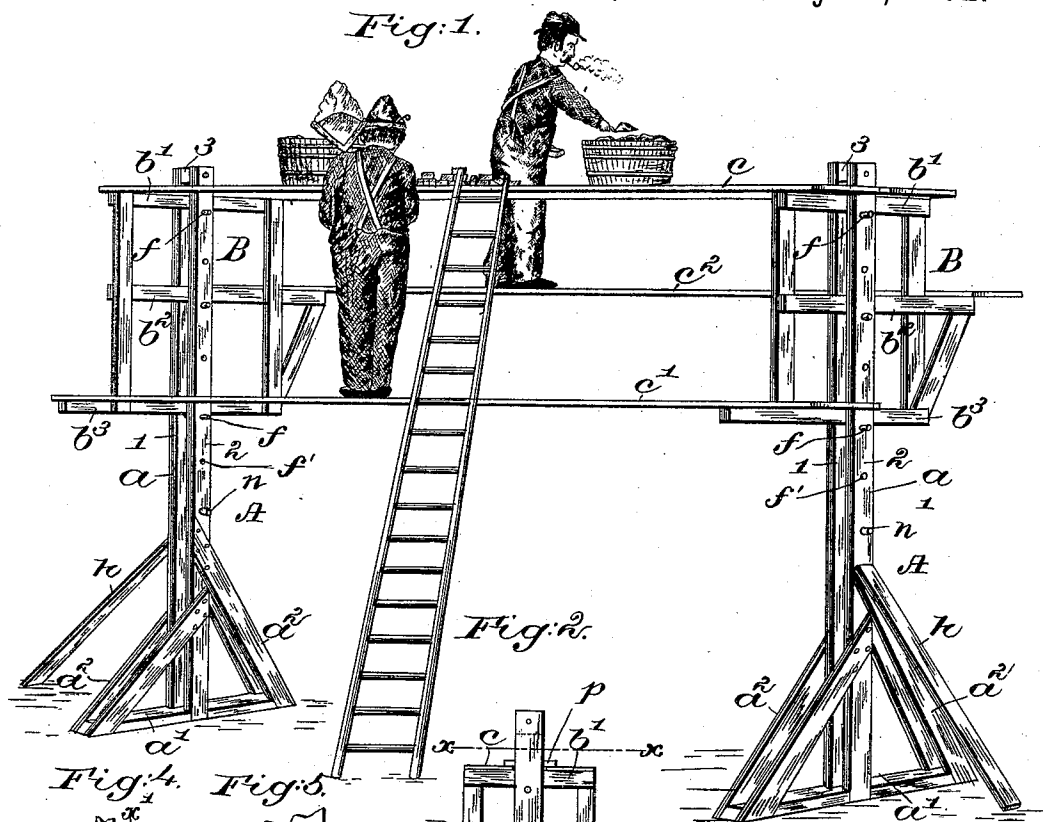


Fig. 2.

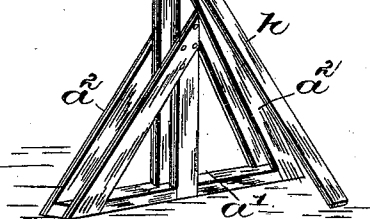


Fig. 4. Fig. 5.

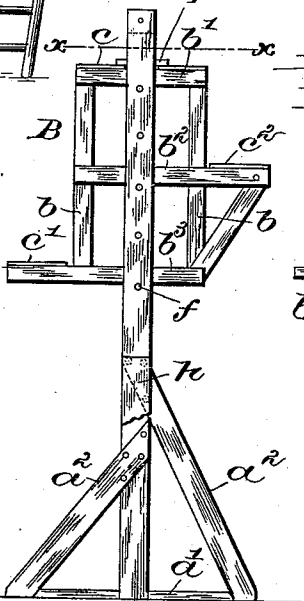
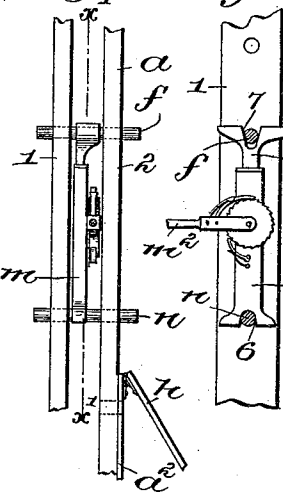


Fig. 3.

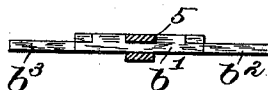
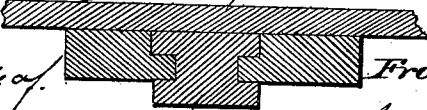


Fig. 6.



Witnesses.

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SCAFFOLD.

SPECIFICATION forming part of Letters Patent No. 479,591, dated July 26, 1892.

Application filed February 13, 1892. Serial No. 421,361. (No model.)

To all whom it may concern:

Be it known that I, FRANK B. GILBRETH, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Scaffolds, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

In the erection of buildings it is frequently customary for the masons to work from scaffolds erected upon the floor or floors of the building inside the walls, the scaffold being raised from time to time as necessary to bring the masons into proper working position with relation to the rising walls.

This invention relates to scaffolds of this class, and has for its object to simplify and improve the same.

The prime feature of this invention is a scaffold having three platforms located, respectively, at three different levels, the middle or stock platform being the highest, the other two platforms being arranged at opposite sides of and below the stock-platform, one for the masons and the other for the laborers, the platform for the masons being at such a level below the stock-platform that the masons may conveniently pick up the stock as necessary, while the laborers' platform is arranged still lower or at such a level that a hod of stock may be dumped upon the stock-platform by the laborer without dropping the stock or bending to avoid dropping it. These three platforms will preferably be supported by frames carried by a single line of standards, which are thus calculated to offer the least inconvenience to the masons in picking up the stock, such standards forming a second important feature of this invention.

One part of this invention therefore consists in a scaffold having three platforms arranged at three different levels, the middle platform being the highest, substantially as will be described; also, in a scaffold, the combination, with a series of frames and platforms supported thereby, of a single line of supporting-standards for the said frames, substantially as will be described.

Other features of the invention will be hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 represents in per-

spective a scaffold embodying this invention; Fig. 2, an end view of the same; Fig. 3, a section on the dotted line xx , Fig. 2; Fig. 4, a detail face view of a portion of one of the standards, showing the lifting-jack in position; Fig. 5, a sectional view of the same on the dotted line $x'x'$, and Fig. 6 a sectional detail illustrating a modified construction to be described.

Referring to the drawings, A A represent horses, each of which consists, as herein shown, of a vertical standard a , having a foot a' , suitably braced by the diagonal braces a^2 , these horses being arranged in a single line along the wall being erected. The standards a of each horse preferably consist of two members 1 2, separated from each other by a suitable spacing-block 3 to receive between them the frames B, having supports for three different platforms. Each standard a supports a frame B, consisting, as herein represented, of the vertical side bars $b b$, connected by the three cross-bars $b' b^2 b^3$, all of which pass through the space between the members 1 2 of the standard, the said cross-bars being preferably cut away, as at 5, to receive the inner member of the standard which thus acts as a guide to prevent tipping of the frame when in use. The upper cross-bars b' of the frame B serve to support the planks constituting the stock-platform c , a plank being laid upon the cross-bars at each side of the standards a , the latter thus projecting upwardly the middle of the platform. The opening left between the two planks thus laid upon the top cross-bars b' may be closed by planks p , extending between the standards, as shown. The lower cross-bars b^3 are extended at one side beyond the side bars b to support the planks constituting the laborers' platform c' , while the intermediate cross-bars b^2 , located, preferably, at or about midway between the upper and lower cross-bars, are also extended at one end, but at that side of the frame opposite the extended ends of the lower cross-bars b^3 , said intermediate cross-bars serving as supports for the masons' platform c^2 .

By reference to Fig. 1 it will be seen that the laborers' platform c' , reached by a ladder or inclined plane, is at such a level below the stock-platform c that the laborer may dump

a hod of stock from his shoulder upon the stock-platform without dropping the stock or bending to deposit it without dropping, thus effecting a considerable saving in time, and the laborer is obliged to travel up the ladder or inclined plane no higher than is absolutely necessary to deposit his load. On the other hand it will be seen by reference to Fig. 1 that the masons' platform is at such a level intermediate the stock and laborers' platform that a mason at work on the platform may pick up his stock most readily, as the stock-platform is arranged at the most convenient level for him. Again, the single line of standards *a*, projecting, as they do, through the middle of the stock-platform *c*, are in such positions that they offer the least possible inconvenience to the masons and laborers while engaged in their work.

The frames *B* may be moved up and down in the standards *a* to the desired height to best accommodate the mason at work by any suitable means or devices, the frames being held in proper fixed position by pins *f*, inserted through suitable holes *f'* in the standards *a* beneath the cross-bars of the frames, as shown. In practice, however, I prefer to employ lifting-jacks to raise the frames *B* and the platforms carried thereby, and referring to Figs. 1, 4, and 5 I have shown lifting-jacks arranged for this purpose, the jack being of any suitable construction. I prefer, however, to employ jacks of substantially the construction shown, they consisting of a base *m*, in which the toothed lifting-bar *m'* is movable by a suitable pinion actuated by a handle *m²*. The bases of the jacks are recessed at *6* to receive pins *n*, inserted through holes in the standards *a*, while the upper ends or hubs of the lifting-bars *m'* are shaped to straddle the pins *f*, which support the frames *b*, carrying the platforms, the said hubs being preferably extended at one side, as at 10, beneath the frames *B* to better sustain the weight of the workmen upon the scaffold as the latter is lifted.

When it is desired to raise the platforms, the jacks will be manipulated by the handles *m²* to raise the frames *B* slightly to take the weight of the frames and the platforms thereon off from the pins *f*, when the pins will be withdrawn from the standards and the jacks further manipulated to raise the frames *B* up to the next set of pin-holes, when the pins *f* will be inserted in the said pin-holes to hold the frames and the platforms thereon in adjusted position. The lifting-bars of the jacks will then be tripped and permitted to return to their normal contracted condition, the pins *n* withdrawn, and the jack raised to the next set of pin-holes and the pins *n* again inserted to sustain the jacks in their new positions in readiness to raise the platforms another step when necessary.

While I prefer to employ jacks arranged as shown, yet I do not restrict my invention to this particular method of raising platforms.

In practice two or more horses may be arranged in line in front of a wall, the planks forming the platforms being strung along from one horse to another, and end braces *h* may be hinged to the upper ends or edges of the upper diagonal braces *a²*, attached to the horses to prevent endwise movement of the scaffold. By hinging the end braces *h* to the ends of the upper braces *a²*, as shown in Fig. 4, the end braces *h* may be turned in either direction, either upwardly against the standard or downwardly against the braces.

The space-blocks 3 may be removed when it is desired to remove the frames *B* from the horses, as for transportation or storing.

This invention is not limited to the particular shape and construction of the various parts herein shown, as the same may be varied, the principal features of this invention being, first, a scaffold having three platforms arranged at different levels, and, second, a series of platform-supporting frames and a single line of supporting-standards therefor.

The standards, instead of being formed of two members, may, if desired, be formed of a single member *o* only, the platform-supporting frame being suitably carried by them, as shown in Fig. 6.

I claim—

1. A scaffold having a central platform and two platforms arranged at different levels on opposite sides of and below said central platform, substantially as and for the purposes set forth.

2. A scaffold comprising a single line of standards and supporting-frames thereon carrying two platforms at different levels and upon opposite sides of the said standards and a third platform located above the said platforms, substantially as described.

3. A scaffold comprising a series of horses, each having a single vertical standard, a series of frames carried by and adjustable on said standards, each frame having three platform-supports arranged each at a different level, one of the supports being above and between the other two, substantially as described.

4. In a scaffold, a horse having a vertical standard composed of two members secured to each other and constituting a single standard, and a frame supported entirely by said standard and fitted to move vertically between and guided by said members, the said frame having supports for three platforms arranged at different levels, substantially as described.

5. A scaffold comprising a series of horses, each having a single vertical standard, and a series of platform-supporting frames carried by and adjustable on said standards, each supporting-frame having supports for two or more platforms arranged at different levels, substantially as described.

6. In a scaffold, a series of horses arranged in line, each having a single vertical standard, a platform-supporting frame carried solely by each standard, and a lifting-jack sustained

by a pin inserted in the standard and acting against and to lift the supporting-frame carried by said standard, substantially as described.

5 7. In a scaffold, a series of horses having vertical standards comprising two members each, platform-supporting frames arranged between said members and supported by pins extending through said members, combined with
10 lifting-jacks for the said frames, arranged between the members of the said standards and supported upon pins passed through said members, substantially as described.

8. In a scaffold, a series of horses compris-

ing vertical standards, feet a' , and diagonal 15
braces a^2 , and platform-supporting frames carried by said standards, combined with the end braces h , hinged to the ends of the diagonal braces a^2 , whereby they may be turned upwardly against the standards or outwardly 20
against the braces, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK B. GILBRETH.

Witnesses:

FREDERICK L. EMERY,
FRANCES M. NOBLE.