

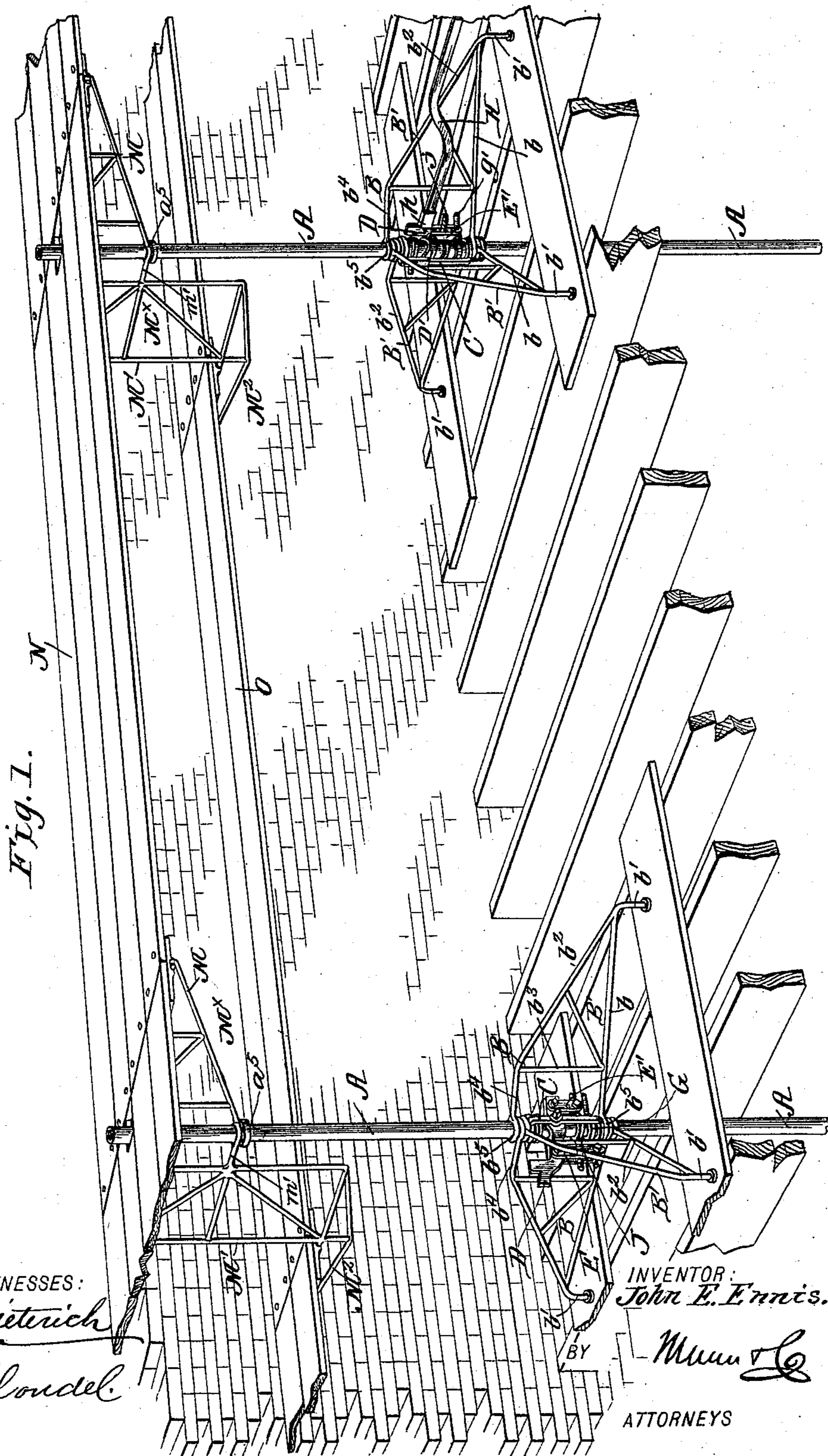
(No Model.)

2 Sheets—Sheet 1.

J. E. ENNIS.
BUILDER'S SCAFFOLD.

No. 485,463.

Patented Nov. 1, 1892.



WITNESSES:

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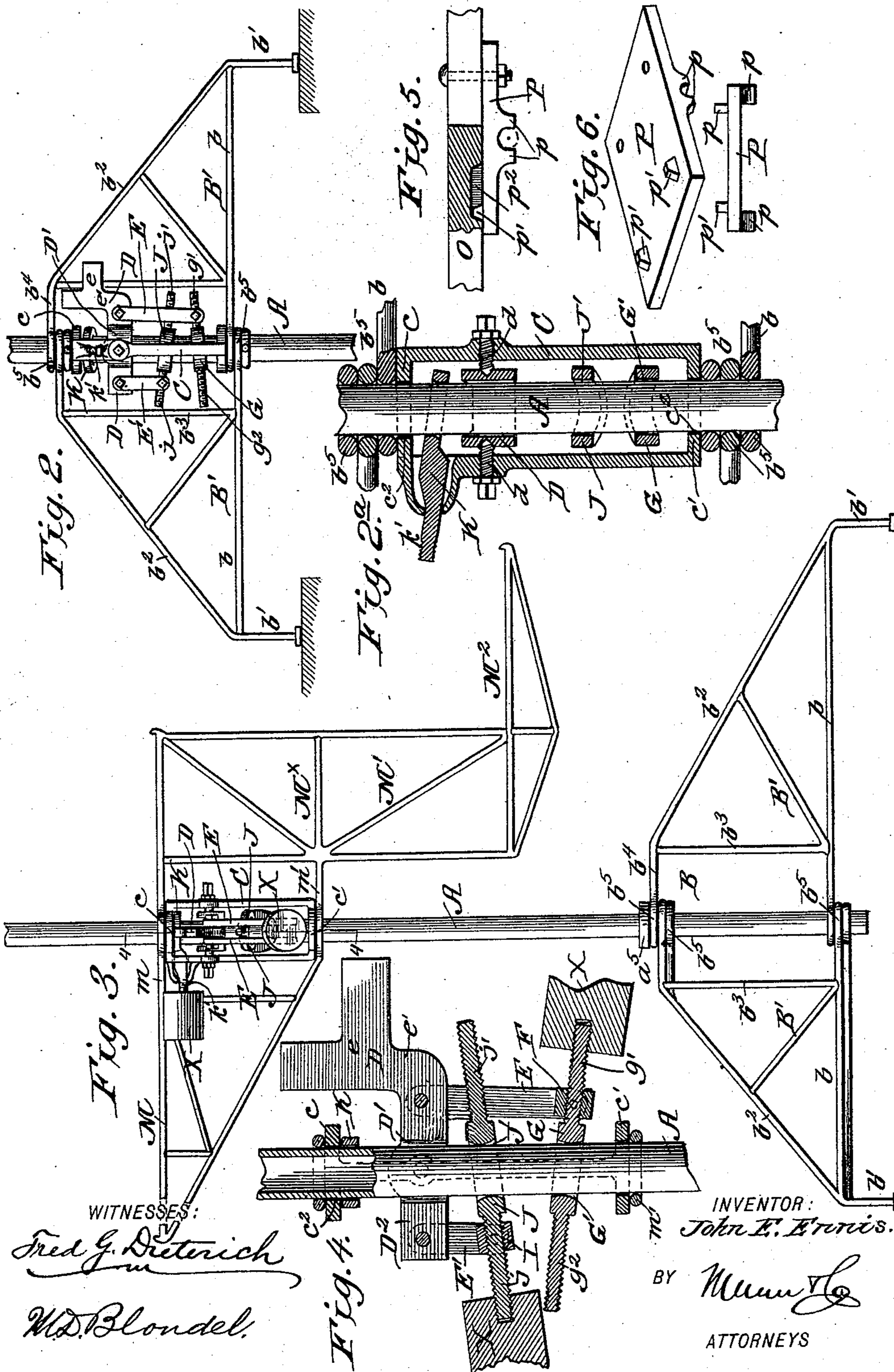
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UNITED STATES PATENT OFFICE.

JOHN E. ENNIS, OF DULUTH, MINNESOTA.

BUILDER'S SCAFFOLD.

SPECIFICATION forming part of Letters Patent No. 485,463, dated November 1, 1892.

Application filed October 19, 1891. Serial No. 409,212. (No model.)

To all whom it may concern:

Be it known that I, JOHN ELZEAR ENNIS, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Builders' Scaffolds, of which the following is a specification.

My invention relates to portable builders' scaffolds; and it has for its object to provide a scaffold of this character which will be of great strength, simple in construction, easy to manipulate, and in which the parts are systematically assembled, whereby they can be bodily transferred from one floor to the other, and in which the workman and material supporting platforms can be raised while the work is going on, so as to keep the material and the wall at substantially the same levels.

With other minor objects in view, and which will hereinafter be referred to, my invention consists in the peculiar combination and novel arrangement of parts, all of which will hereinafter be fully described in the specification and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved scaffold, the parts being in a position for raising the supporting-shaft, with the brackets and the platforms supported thereon. Fig. 2 is a side view; and Fig. 2^a is a vertical longitudinal section of the support, the standard, and the elevating devices, the parts being in the position shown in Fig. 1. Fig. 3 is a side view of the supporting-shaft, the base-frame, the bracket, and the lifting devices, such devices being shown in the position for traveling on the rigid shaft to raise the bracket. Fig. 4 is a section on the line 4-4, Fig. 3. Figs. 5 and 6 are detail views hereinafter specifically referred to.

In the accompanying drawings, A indicates the main support, which consists of a shaft formed of a tubular rod, which is supported in the base B, which base consists of a number of sections, each formed of a horizontal member *b*, terminating at its outer end in a foot portion *b'*, and such member has cast integral therewith a diagonal member *b*², which is further braced by the cross-bars *b*³, the upper end *b*⁴ of such member *b*² being

bent horizontally and parallel with the horizontal member *b*, such end *b*⁴ and the inner end of the member *b* being formed into ring-like portions *b*⁵, through which the supporting-shaft is passed, the several sections B' of the base being joined together to swing about the said shaft A in a manner clearly understood from the drawings.

About the shaft A, at a point between the upper and lower ringed portions of the sections B', are disposed the lifting devices, which are most clearly shown in Figs. 2 and 4 of the drawings and which consist of a rectangular yoke member C, the upper and lower cross-bars *c c'* of which rest against the under side of the upper and the upper face of the lower ring members of the base-sections and are apertured at *c*² *c*² to readily slip onto the shaft A.

D indicates the operating-lever, which is pivoted between the yoke C by the screw-pivots *d d*, the body portion D' of which has an elongated opening, through which the shaft A passes, such portion being capable of free movement vertically about such shaft. The forward end of the lever has pivoted thereto a pair of link-arms E, in the lower ends of which is pivotally journaled a nut F, in which fits the screw-threaded shank *g'* of a clutch-collar G, which is also provided with an oppositely-projecting screw-shank *g*², for a purpose presently described. The forward end *e* of the lever is curved up at *e'* and forms a stem, on which is adapted to fit the socketed end *h* of an operating-lever H, as shown.

The lever D has a short rearwardly-extending member D², to which are pivotally connected short link-arms E' E', in the lower ends of which is pivotally journaled a nut I, in which fits the screw-shank *j* of a clutch-collar J, which is disposed about the shaft A at a point above the collar G, it being also provided with a screw-shank *j'*, which projects between the link-arms E, as shown.

It will be noticed by reference to the drawings that the clutch-collars G and J have their apertures G' and J' of a size to admit of a free passage of the shaft when they are brought to a plane at right angles to the shaft A. It will be noticed, however, by reference to Fig. 2 that the collars G and J are normally held

diagonally to the shaft and in reverse inclinations, whereby the opposite edges of their apertures will bite against the shaft and hold it from descending.

5 K indicates a third clutch-collar, which is in the nature of a safety-clutch and holds the rod to its position while the other clutch-collars are being adjusted.

The shaft A is formed with a collar a^5 at a point near its upper end, upon which end is
10 mounted the scaffold-bracket proper, which consists of a trussed frame formed of an upper portion M, which extends to each side of the shaft, and a downwardly-extending portion M', from the lower end of which projects
15 an inwardly-extending bar M², which in practice is disposed adjacent the wall being built and forms the support for the workman's floor or platform O. It will be noticed that by providing a bracket constructed with an upper
20 member and extending such member to each side of the shaft A a broad platform N can be supported thereon, the inner portion of which forms the material dump, while the
25 outer portion forms the way for the operator's or material carrier, the said platform N being at a convenient height from the operator's platform O.

By referring to Fig. 1 of the drawings the
30 general arrangement of my improved scaffold will be clearly understood. When used on buildings which have an underground story, my scaffold is employed after the first-floor joists have been laid. The base members are
35 then supported on the joists, as shown, and the shaft adjusted to its lowest position, its lower end extending down into the cellar or basement. Planks are then laid to connect the several scaffold-supports to form the plat-
40 forms. Now when the condition of the work requires a rise of the platforms the attendant inserts the handle H on the lever D and works it up and down, thereby causing the collars G and J to alternately clutch the rod and lift
45 it, the collar J, owing to its normal inclination to the rod, operating on the downward movement of the lever, and the collar G operates on the upward movement.

To make the clutch-collars grip the rod A in
50 a more positive manner, they have convex biting-faces, as shown most clearly in Fig. 4 of the drawings.

When my improved scaffold-supports are to be used on solid floors or on the ground, I
55 arrange the parts as shown most clearly in Figs. 3 and 4 of the drawings. In this case the shaft A becomes a rigid standard and the lifting devices are movable vertically thereon. By reference to the said Figs. 3 and 4 it will
60 be noticed that the shaft A is reversed, its upper end fitting in the ringed members of the base-section B', its collar a^5 resting on the upper ones of such ringed members. The lifting devices are in this case removed from between the upper and lower members of the
65 sections B' and are disposed between the up-

per and lower horizontal bars $m m'$ of the section M of the bracket M^x, which bracket and the lifting devices are slipped over the upper
70 end of the shaft A and are held to move vertically thereon, resting when at their lowest position on the collar a^5 . When used in this manner the screw-shanks j , g' , and k' of the
75 clutch-collars J, G, and K are provided with weights X, which serve to hold the said collars down in their biting or operative position.

In operation when it is desired to elevate the platform-bracket M the operator moves the lever H in the same manner as before.

By arranging the clutch-collars in the man-
80 ner shown they alternately form a loose and tight connection with the shaft A, the tight one of such collars and the link-arms connected therewith forming the rigid bearing on which the lever is swung. Thus should
85 the lever H be on its upward movement the upper clutch-collar will retain its rigid grip on the shaft, its link-arms forming a rigid bearing for the end fulcrum of the lever D. Such lever as its front end is elevated by the
90 lever H lifts the weighted end of the collar G upon the shaft. Now when the lever H is depressed the weight on the collar G will immediately drop and cause the collar to assume a diagonal or gripping position. At this time
95 such collar and its link-arms form a rigid connection or fulcrum-bearing for the lever D, which when depressed raises the oppositely-disposed weighted end of the collar J and lifts it upon the rod to its operative po-
100 sition, it being obvious that as the lever D is oscillated each movement thereof, owing to the manner in which it is connected with the yoke C, will raise such yoke, and with it the
105 platform-bracket M^x. If desired, the weights may also be applied to the collars when the lifting devices are so arranged that the yoke C remains rigid, as shown in Figs. 1 and 2. In such case, however, they are secured on
110 the ends of the shanks j' and g^2 , which throws the collars in reverse diagonal direction to that shown in Fig. 3 and makes them operate in a reverse manner—i. e., when the lower collar is lifted it does not move loosely on the
115 shaft, but has a tight frictional contact and carries the said shaft with it, it moving loose on the shaft on its down movement.

By arranging the clutch or lifting mechanism as described a very desirable object is
120 obtained in that I am enabled to utilize my scaffold-supporting device in the two ways stated.

As a number of my platform-supports are used to support the platforms and as but
125 one of the brackets M^x is to be raised at a time, I provide means whereby the platform-planks are held from slipping as the brackets are elevated. To this end I provide plates P, having concave bearing-lugs p , which rest on
130 the bearing-bars of the bracket, to which are bolted the ends of the boards, as shown in Figs. 5 and 6, such plates being also cast with

lugs p' , which fit elongated recesses p^2 in the bottom of the planks, as shown.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A builder's-scaffold support comprising a main frame or support, a shaft having a collar near one end reversibly mounted on said frame, a bracket loosely mounted on the shaft, and a clutch mechanism adjustably mounted on the shaft, said mechanism including reversible clutch-members, whereby such mechanism is adapted to move the shaft and the bracket or be movable on the shaft to raise the bracket, substantially as and for the purpose described.

2. In a builder's scaffold, in combination with a main frame or support, a shaft movable vertically in such frame, a platform-bracket supported on the upper end of the shaft to turn thereon, and a clutch mechanism located within the main frame, engaging the shaft, substantially in the manner and for the purpose described.

3. In a builder's scaffold, substantially as described, the combination, with the shaft A, of the lifting mechanism consisting of the yoke C, the lever D, pivoted therein, the oppositely-inclined clutch members G and J, having screw-shanks projected from opposite sides thereof, the link-arms E and E', the screw-nuts F, and the detachable weights, all

arranged substantially as shown, and for the purpose described.

4. The combination, with the base B, formed of the swinging sections B', having upper and lower apertured bearing members $b^4 b'$, of the shaft A, vertically movable in the members $b^4 b'$, the yoke C, held about the shaft between the members $b^4 b'$, the oppositely-inclined clutch-collars G and J, the lever D, pivoted in the yoke, and the link-arms E and E', connected at their upper ends with the lever D on opposite sides of the pivot and with the opposite ends of the collars G and J, substantially as shown and described.

5. In a scaffold-support, substantially as described, the combination, with the shaft A, of the bracket M^x , supported thereon, consisting of an upper section M, a downwardly-extending portion M', and an outwardly-extending section M^2 , as and for the purpose described.

6. The combination of a pair of supporting-shafts, the brackets held thereon, the plates P, having concaved portions adapted to fit the bearing-bars of the said brackets and upwardly-projecting lugs p' , and the planks held on said plates P, all arranged as shown and described.

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Witnesses:

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