

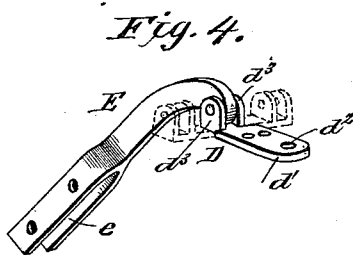
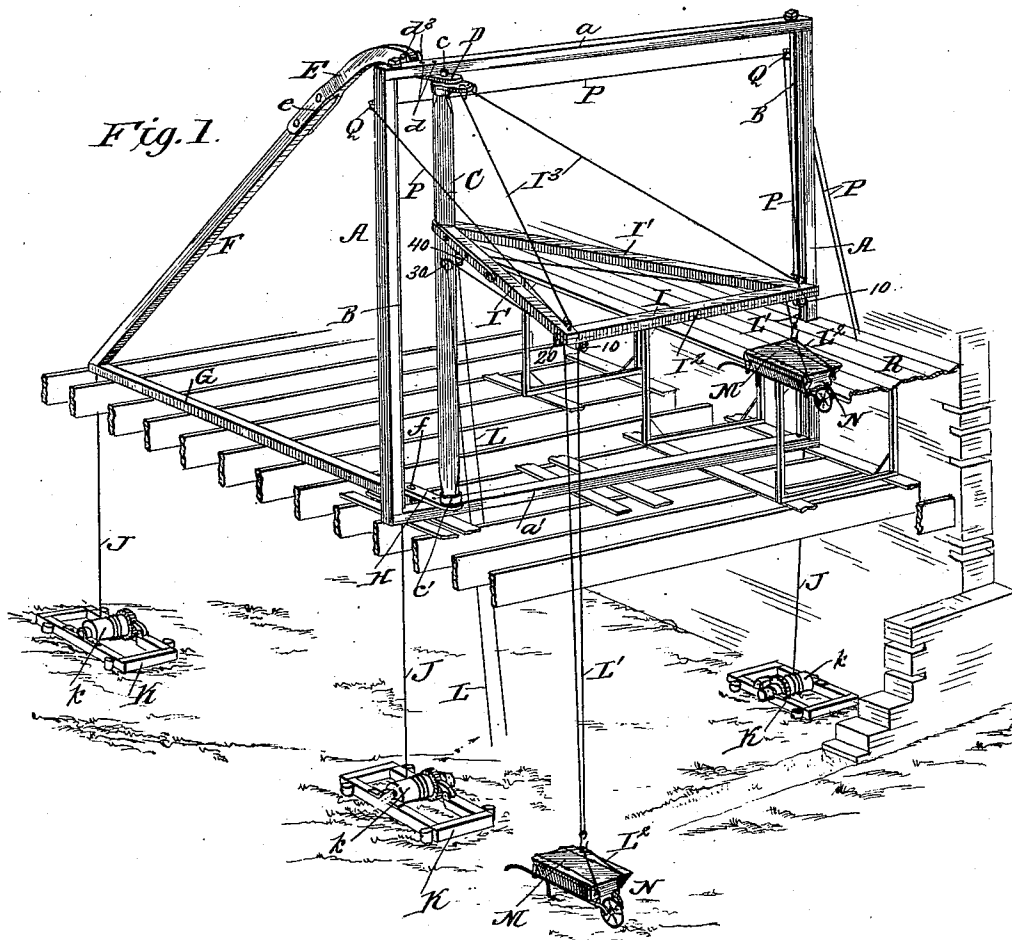
(No Model.)

2 Sheets—Sheet 1.

J. COSGROVE.
HOISTING MACHINE.

No. 471,955.

Patented Mar. 29, 1892.



WITNESSES:
Fred G. Dietrich
W.D. Blondel

INVENTOR:
John Cosgrove.
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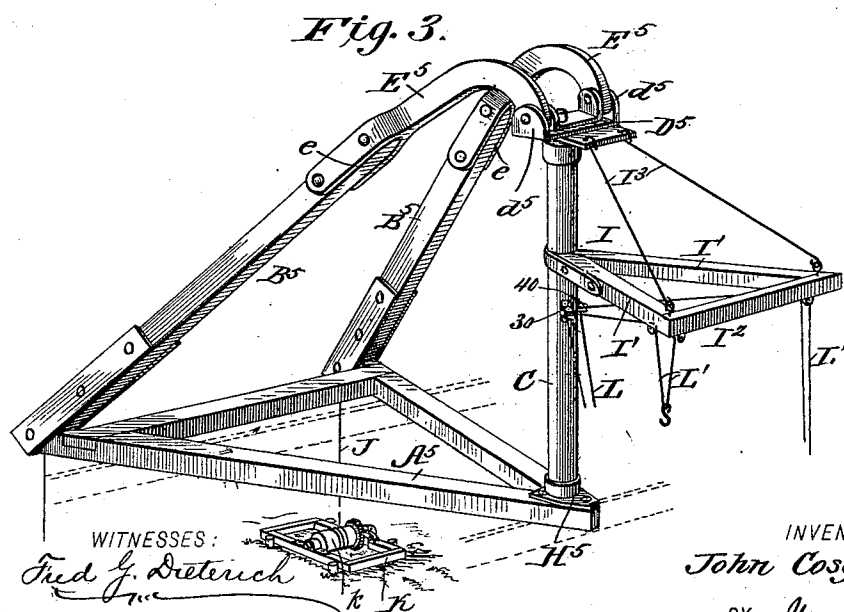
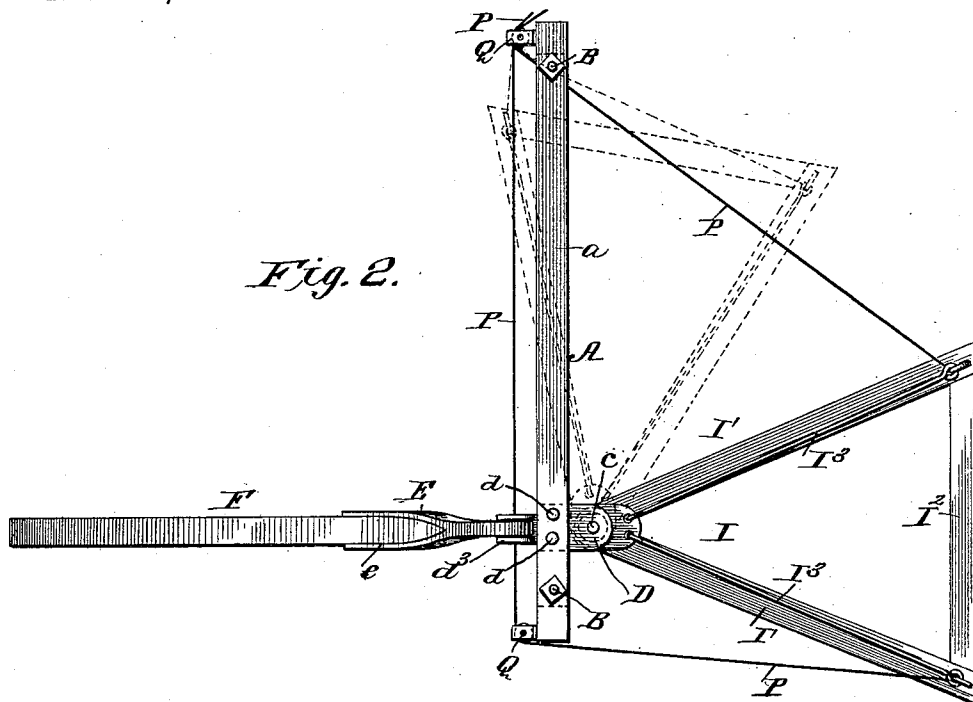
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UNITED STATES PATENT OFFICE.

JOHN COSGROVE, OF ROANOKE, VIRGINIA.

HOISTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 471,955, dated March 29, 1892.

Application filed August 14, 1891. Serial No. 402,686. (No model.)

To all whom it may concern:

Be it known that I, JOHN COSGROVE, residing at Roanoke, in the county of Roanoke and State of Virginia, have invented certain new and useful Improvements in Hoisting-Machines, of which the following is a specification.

My invention relates more especially to that class of hoisting-machines used in the construction of buildings for elevating the material to the workmen; and it has for its object to provide a machine of this character which will combine the elements of simplicity, strength, cheapness, and effectiveness.

My invention consists in the peculiar combination and novel arrangement of parts, all of which will hereinafter be fully described in the annexed 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 machine. Fig. 2 is a top plan view of the same. Fig. 3 is a perspective view of a modified arrangement of my improved machine, and Fig. 4 is a detail perspective view hereinafter referred to.

Referring to the accompanying drawings, A A indicate a wooden frame made of light timber, such as four inches by four inches, and which, when of the construction shown in Figs. 1 and 2, is made the width of the building and about as high as it is wide, the frame being held and braced by the stay-bolts B B, as shown.

C indicates a mast, which is journaled at its upper end in a plate D, which is detachably secured to the under face of the upper cross-beam *a* by means of the bolts *d*. Such plate, which is clearly illustrated in Fig. 4, has a forwardly-projecting member *d'*, apertured at *d''* to receive the upper gudgeon *c* of the mast, and with upwardly-projecting apertured ears *d'''* at its rear end, in which is pivoted a goose-neck member E, which is bifurcated as at *e*, and is secured to the upper end of a diagonal brace-beam F, fastened at its lower end to a horizontal brace-beam G, projected rearwardly from the lower brace-beam *a'* and detachably connected to such beam by means of the plate H, which is detachably secured to the upper face of the beam *a'*, and

is projected to the front and rear, as shown, its front end being apertured to form the bearing for the lower gudgeon *c'* of the mast, while its rear end is apertured to receive the connecting pin or bolt *f*.

I indicates a boom secured to and projected at right angles from the mast at a point about two-thirds the height thereof, such boom consisting of the diverging members I', the front ends of which are held apart by a cross-piece I², brace-rods I³ I³, which connect said front ends of the members I', being employed to strengthen and support the said boom.

It will be noticed by reference to Fig. 1 that arranging the mast to one side of the main frame permits of a longer boom being used than could be used if it were disposed in the center of the frame. It may, however, be placed in the center of the frame when necessary. By detachably connecting the mast to the main frame in the manner before described and shown it can be readily changed from one side of the frame to the other, whereby to adapt the boom to work toward the scaffold on either side of the building.

J indicates stay-lines, which are secured to the back brace F and to the corner-posts of the frame A, which lead to anchor-frames K, located and held fast in the cellar or ground floor of the building, and in such frames K are journaled windlasses *k*, on which the stay-ropes are wound when not in use or when the building is low and unwound as the building goes up and the frame A is raised from floor to floor. This manner of bracing the frame is very effective when it is desired to lift very heavy material, as additional weight can be applied to the rear brace-beams without applying any weight on the building proper. When the mast is shifted from one side to the other, the rope J is detached from the rear braces and the frame K is anchored at the other side of the building in line with the mast.

L indicates the hoisting-rope, which is formed into loops L' L', to which are connected the rope-slings I² L², to which are connected cover-plates M M, which serve to close over the wheelbarrows N N, when they are attached to the slings, in a manner clearly shown in Fig. 1. It will be observed that the loops

L' L' and the hoist-rope are so arranged that as one barrow is elevated the other is lowered, the said hoisting-rope passing over sheaves 10 and 20 on the outer end of the boom and 5 guide-sheaves 30 and 40 on the mast, and thence to the hoisting-power, which may be horse, steam, or any other power available. By widening the front end of the boom and arranging the supporting and guide sheaves 10 as shown the barrows will be held apart and kept from knocking against each other during the operation of lifting them.

P P indicate the tag or pull ropes, which are attached to the outer ends of the boom 15 and passed over guide-sheaves Q Q, arranged on the main frame, as shown, and extended to within convenient reach of the helper, who by pulling on either rope can guide the boom to that part of the scaffold desired.

20 R indicates the scaffold, which in practice is made wide enough to permit of the barrows being wheeled along to any part thereof without interfering with the masons at work.

From the foregoing description in connection with the drawings, the manner in which 25 my improved hoisting-machine operates will be clearly understood. Arranging the goose-neck connection in the manner shown allows the back-brace to set to any angle desired 30 without its being reheated and bent, as is usually done with the old style of goose-neck.

When it is desired to use my improvements in connection with buildings of a great width, where the construction thereof in the manner 35 shown in Figs. 1 and 2 would be objectionable owing to the same becoming too bulky to handle conveniently, I construct and arrange the hoist in the manner clearly shown in Fig. 3, by reference to which it will be seen that 40 the frame consists of the diverging base-frame A⁵, the diverging upwardly-inclined braces B⁵, the lower ends of which are connected to the base A⁵, while their upper ends have goose-neck members E⁵, which are pivoted between 45 ears d⁵ d⁵ of a spider or top plate D⁵, in which is journaled the upper gudgeon of the mast, the lower end of which is journaled in a socket-plate H⁵ on the apex end of the base-frame, as shown. It will be noticed that by arranging 50 the hoist in this manner it can be conveniently used in buildings forty or fifty or more feet wide, thereby permitting the boom to be of greater length and to be swung to the scaffold on either side of the building. When 55 great strength is required of the hoist, three

or more diagonal brace-bars B⁵ and goose-necks E⁵ may be employed and a plate similar to that shown in Fig. 4, with three or more apertured ears used.

My improved hoist can be readily taken 60 apart and takes up but a small amount of room when packed.

The modified form of hoist shown in Fig. 3 would not do in a narrow building, as the back 65 braces would take up too much room and be in the way of the mason's scaffold and prevent the use of wheelbarrows thereon. It avoids the necessity of employing hod-carriers and also the necessity of cutting out joists for the 70 construction of the elevator towers or machines now in common use.

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

1. The combination, with the main frame 75 A, the plates D H, detachably secured to the beams a' and a, of the frame A, the plate D, formed with a forwardly-projecting member d' and apertured ears d³ at its rear end, of the boom-carrying mast C, journaled at its lower 80 end in the plate H and at its upper end in the member d', of the plate D, a rearwardly-extending horizontal brace-beam G, detachably secured at its front end to the plate H, and an inclined brace-beam F, secured at its lower 85 end to the outer end of the beam G, and provided at its upper end with a goose-neck member E, pivoted between the ears d³ of the plate D, all arranged substantially as and for the purpose described. 90

2. The combination of the main frame A, the diagonal brace-beam F, the horizontal brace-beam G, the mast C, and the boom I, arranged substantially as shown, of the anchor-frame J, carrying a windlass K, and an anchor-rope adapted to be secured to the rear 95 end of the beams F and G, substantially as and for the purpose described.

3. The combination, with the main frame A and the brace-beams F and G, connected 100 therewith, substantially as shown, of the mast C, the boom I, formed of outwardly-diverging members, the hoist-rope L, the guide-sheaves on the boom I and mast C, and the tag-rope P, all arranged substantially as shown and 105 described.

JOHN COSGROVE.

Witnesses:

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T. R. TILLET.