

(No Model.)

2 Sheets—Sheet 1.

W. R. THATCHER.

HOISTING MACHINE.

No. 365,107.

Patented June 21, 1887.

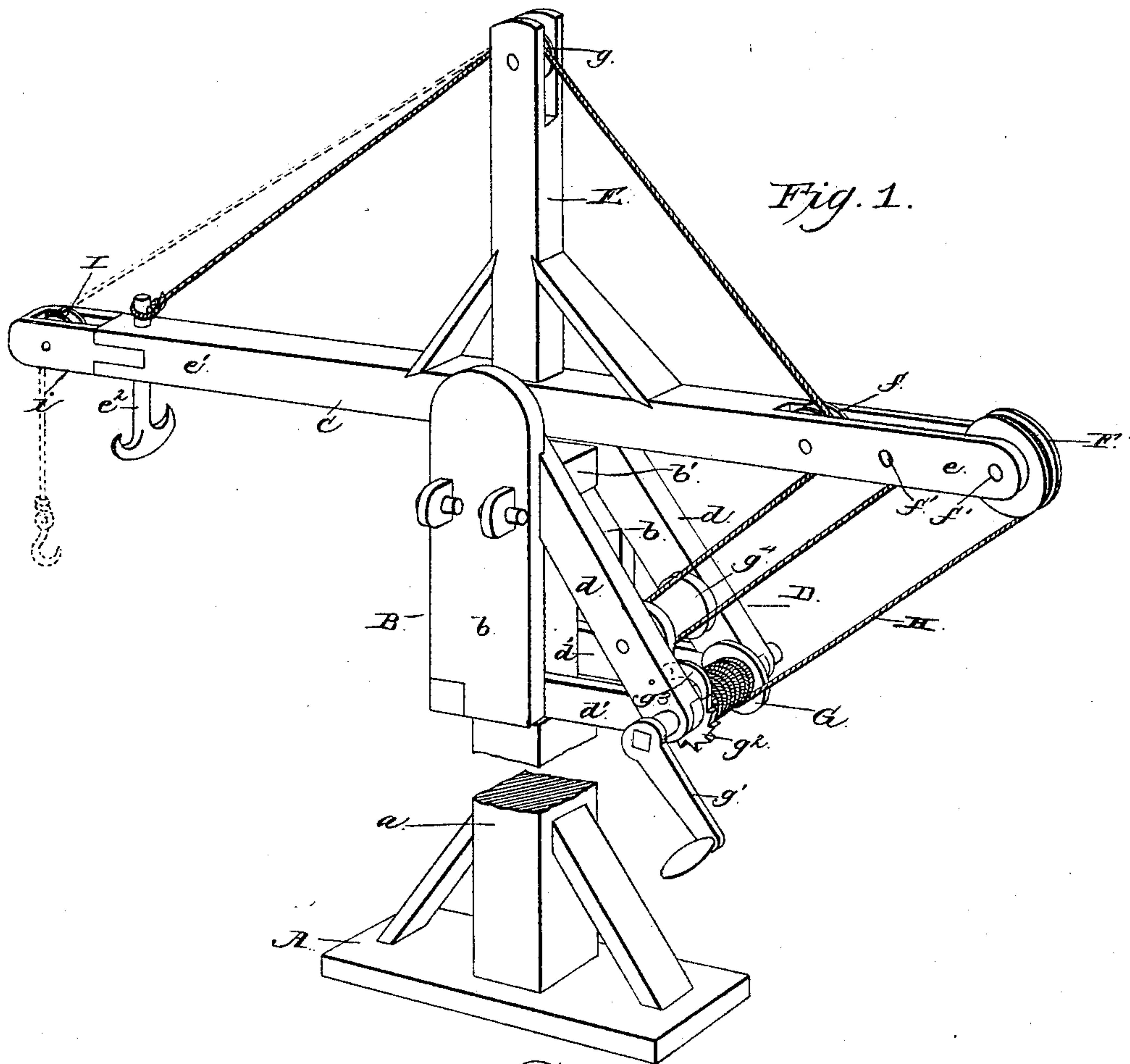
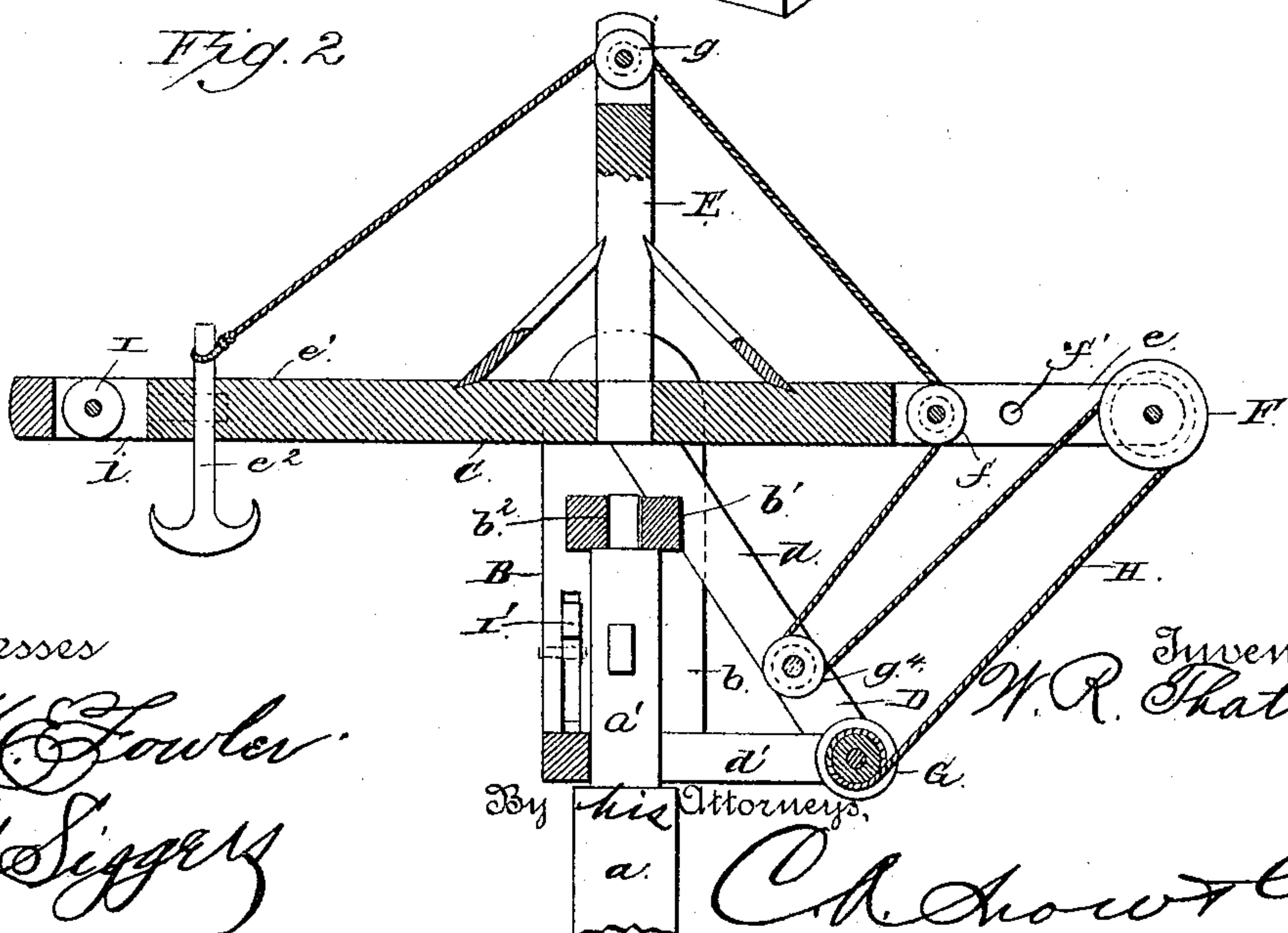


Fig. 2



Witnesses

M. E. Fowler
E. G. Siggers

Inventor

W. R. Thatcher

By *his* Attorneys,

C. A. Howells

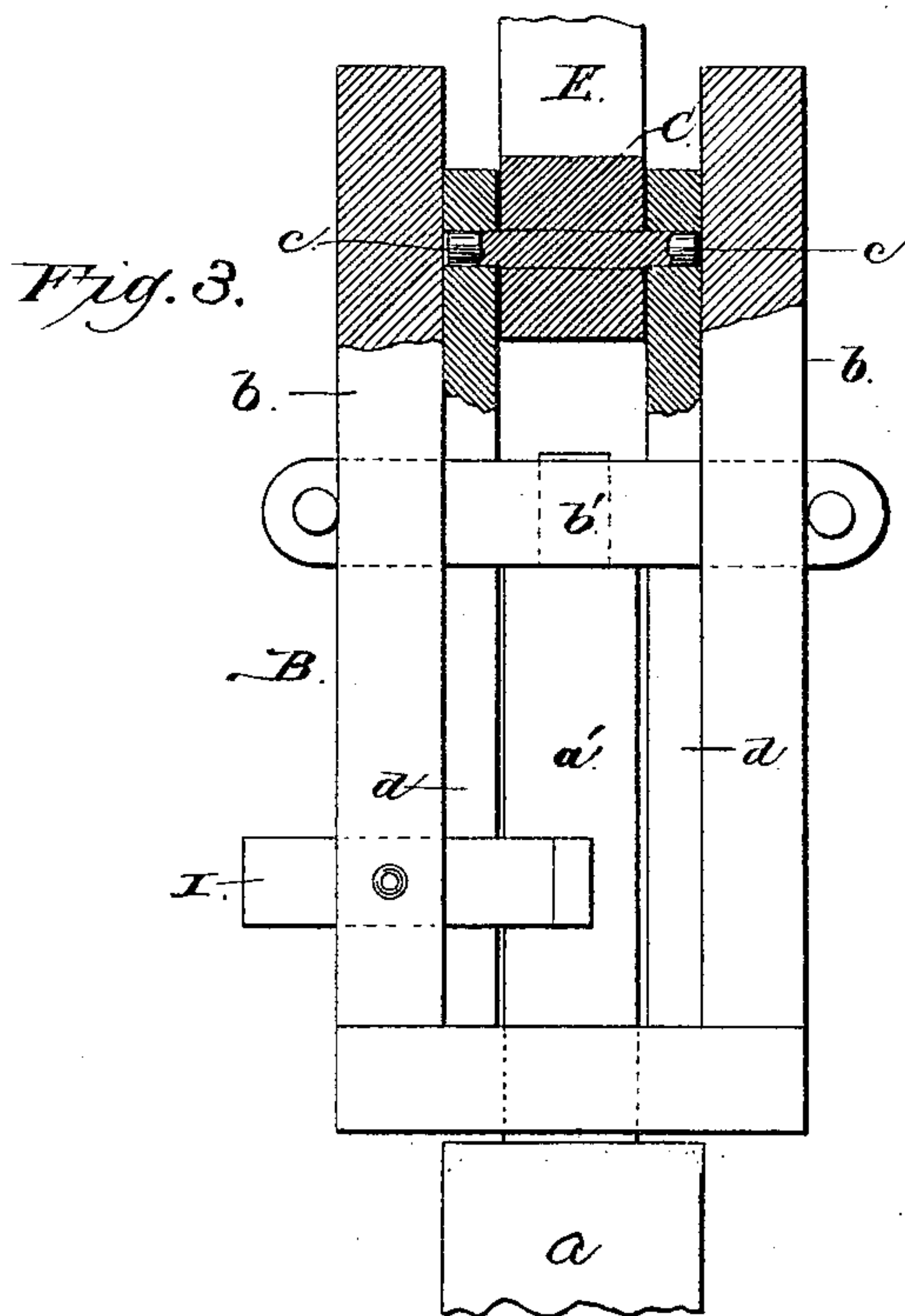
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C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

WALTER RUDOLPH THATCHER, OF OSKALOOSA, IOWA.

HOISTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 365,107, dated June 21, 1887.

Application filed March 23, 1887. Serial No. 232,748. (No model.)

To all whom it may concern:

Be it known that I, WALTER RUDOLPH THATCHER, a citizen of the United States, residing at Oskaloosa, in the county of Mahaska and State of Iowa, have invented new and useful Improvements in Lifting and Hoisting Machines, of which the following is a specification.

The invention relates to improvements in lifting and hoisting machines, the object being to provide a machine of strong, compact, and simple construction, that will not need frequent repair, and will do its work certainly and effectively; and it consists in the construction and novel arrangement of parts, hereinafter described, illustrated in the drawings, and pointed out in the claims hereto appended.

In the accompanying drawings, Figure 1 is a perspective view of the machine. Fig. 2 is a central vertical section of the same, passing longitudinally through the walking-beam. Fig. 3 is a detail sectional view to show the means by which the walking-beam is connected to the main frame.

Referring to the drawings by letter, A designates a bed or base-block having a strong vertical post, *a*, rising from it.

B is the main frame of the machine, composed of the side plates, *b b*, secured together by a suitable transverse block near its lower end, and by the socket-block *b'*, which stands between said plates and has its side edges provided with tenons, which pass through corresponding openings in said plates, and are pinned, as shown, on the outside thereof.

*b*² is a central socket or step formed in the block *b'* for the upper end of the post *a*, upon which the main frame is turned.

C is a walking-beam provided about centrally on its sides with the trunnions *c c*, which turn in bearings in the upper end of the inclined beams *d d*, which, with the horizontal beams *d' d'*, form a frame, D, with the ends of the said beams *d d'* secured to the inner sides of the plates *b b*.

E is a beam standing vertically from the upper surface of the walking-beam immediately above the trunnions *c c*, and stayed thereon by side bars, as shown. The end of the inner arm, *e*, of the walking-beam above the windlass is deeply bifurcated, and has pivoted between its arms the pulley F, near the ends of the arms,

and the pulley *f*, near the inner end of the bifurcation. *f' f'* are adjusting-holes in said arms to move the pulley *f* farther in or out, as desired. The end of the outer arm, *e'*, of the walking-beam is provided with a depending double hook, *e*², for the attachment, by ropes, chains, or otherwise, of the weight to be raised. The upper end of the shank of said hook projects through the beam and forms a point of attachment for the actuating rope or chain, hereinafter described.

g is a pulley journaled between the arms of the bifurcated end of the beam E, and G is the windlass-roller having its shaft journaled in bearings formed in the outer corners of the frame D, the said shaft having one end extended outside of its journal, and squared for the attachment of a crank-handle, *g'*.

*g*² is a ratchet-wheel secured upon the end of the roller of the windlass, and prevented from turning in the wrong direction by the pawl *g*³, which is pivoted upon the corresponding beam, *d*, of the frame D.

*g*⁴ is a pulley journaled between the beams *d* at a suitable distance above the roller G.

H is a rope or chain secured at one end to the windlass-roller, passing thence upward, outward, and over the pulley F, thence downward and inward and around the pulley *g*⁴, thence again upward and outward and around the pulley *f*, thence over the pulley *g*, to have its other end secured to the shank of the hook *e*².

To raise a weight, it is attached, as explained, to the said hook and the windlass turned by its crank-handle. The rope then winds on the roller G, and the arm *e'* of the walking-beam is gradually raised with the attached weight, the power being increased by the windlass, pulleys, and walking-beam in the well-understood manner. When the weight is raised, the main frame is rotated on the post *a* until the weight is over the desired point of delivery. It is then lowered and detached.

For lifting weights a great distance—such as buckets of water from a well or coal from a mine—a bifurcated block, *i*, having a pulley, I, journaled between its arms, is secured to the end of the arm *e'* of the walking-beam, which is blocked or wedged in a horizontal position on the main frame. The end of the rope or chain H is then detached from the shank of the hook *e*², passed over the pulley

I, and has a hook, dog, or other attaching device secured to its lower end. This device is lowered into the well or mine and a bucket containing the material to be raised attached to it. The mechanism is then operated as before; but in the other instance articles could only be raised to a height limited by the swing of the walking-beam.

I' is a button, which is pivoted in a slot in one side plate of the main frame, and which can be turned on its pivot and caused to bear against one side of a squared projection, a' , on the post a , so as to prevent the main frame from rotating thereon.

If desired, the machine may have its supporting-post planted directly in the ground, and the small portable machine must have its base-block braced when placed in position.

To increase the power when the device is used for well or mine purposes, the walking-beam is reversed, so that only one pulley is over the windlass, a pulley is placed on the bail of the bucket, the rope or chain passed thereunder, and, ascending, has its end secured to the end of the walking-beam. This lessens the draft.

Having described my invention, I claim—

1. In a lifting and hoisting machine, the combination, with the base-block and the post rising vertically therefrom, of the main frame journaled upon the upper end of said post, so as to turn horizontally thereon, the walking-beam journaled about centrally on the main frame, the beam rising vertically from the walking-beam at a point vertically above its

trunnions, the pulleys pivoted in the bifurcated end of said vertical beam, and the end of the walking-beam above the windlass, the windlass journaled in an extension of the main frame, the pulley journaled in said extension of the main frame above the windlass, the hook attached to the outer end of the walking-beam, and the rope running over said pulleys, substantially as described, and secured to the end of the walking-beam above the hook, substantially as specified.

2. The combination, with the main frame and extension D, secured thereto, both rotating together on the top of the post a , of the walking-beam C, turning on the trunnions c , the beam E, standing vertically from the walking-beam above said trunnions, the pulleys Ff, journaled in the bifurcated end of the arm e of the walking-beam, the pulley I, journaled in a block, i , secured to the end of the arm e' of the walking-beam, the hook e^2 , attached to said end, the pulley g , journaled in the end of the beam E, the windlass and pulley g^4 , journaled between the beams d of the frame D, the windlass being provided with a crank-handle, ratchet-wheel, and pawl, and the rope H, running or rendering over the pulleys in the way substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WALTER RUDOLPH THATCHER.

Witnesses:

B. F. HOSTETTER,
C. M. DIXON.