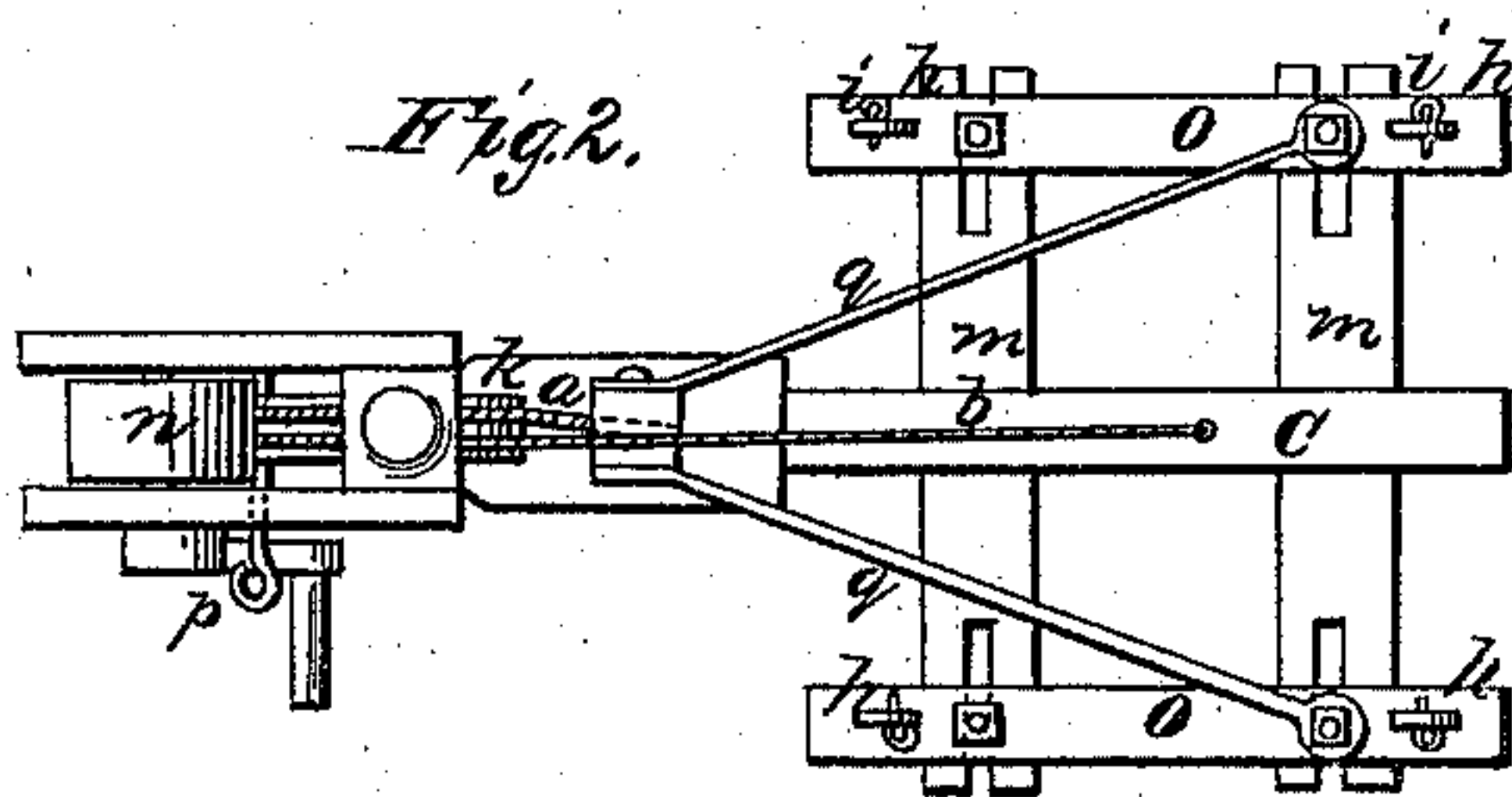
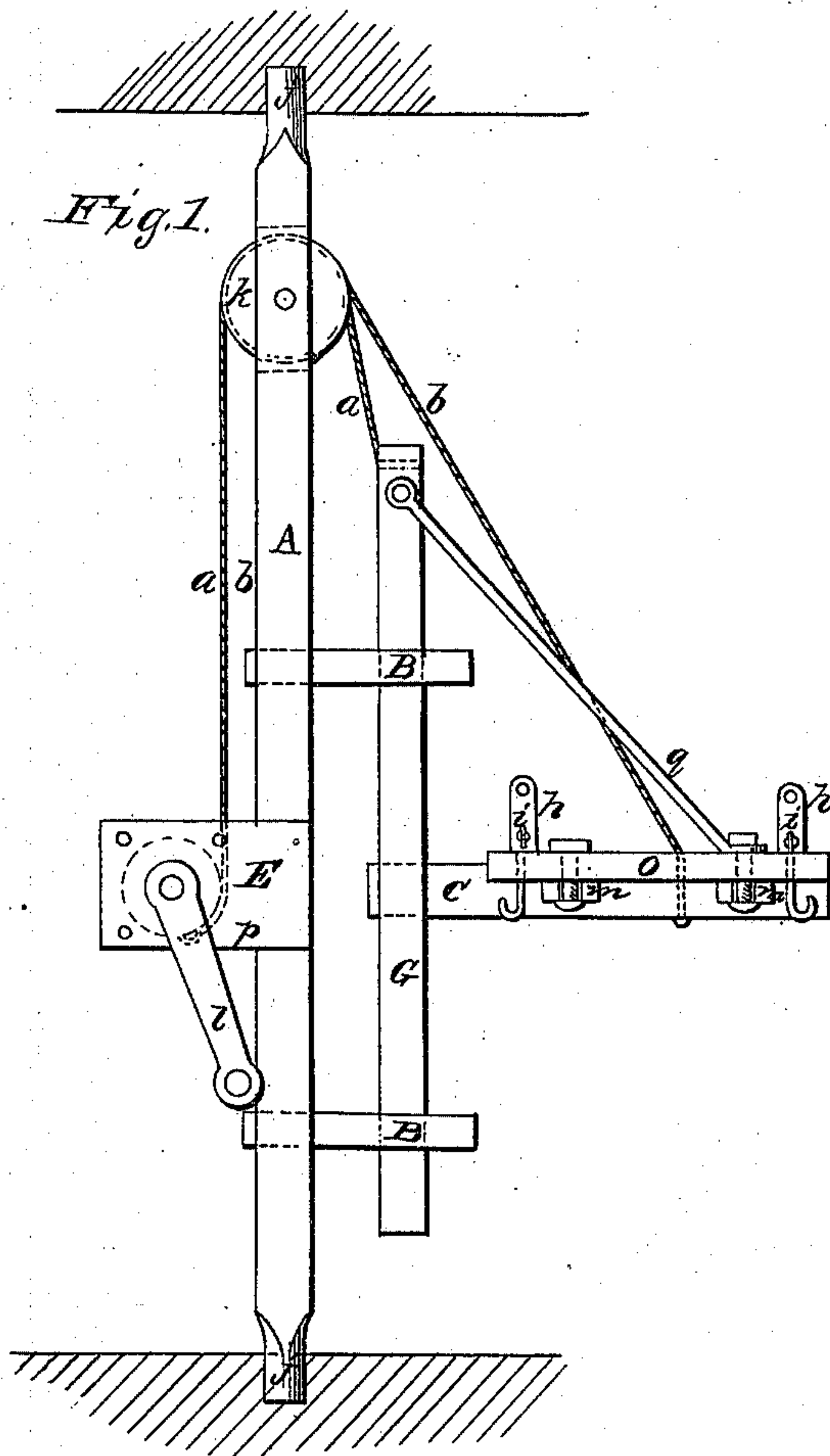


J. D. Ayers, <sup>2 Sheets-Sheet 1.</sup>

*Sugar Derrick.*

N<sup>o</sup> 83,356.

*Patented Oct. 27, 1868.*



Witnesses  
 Wm A Morgan  
 G C Gottons

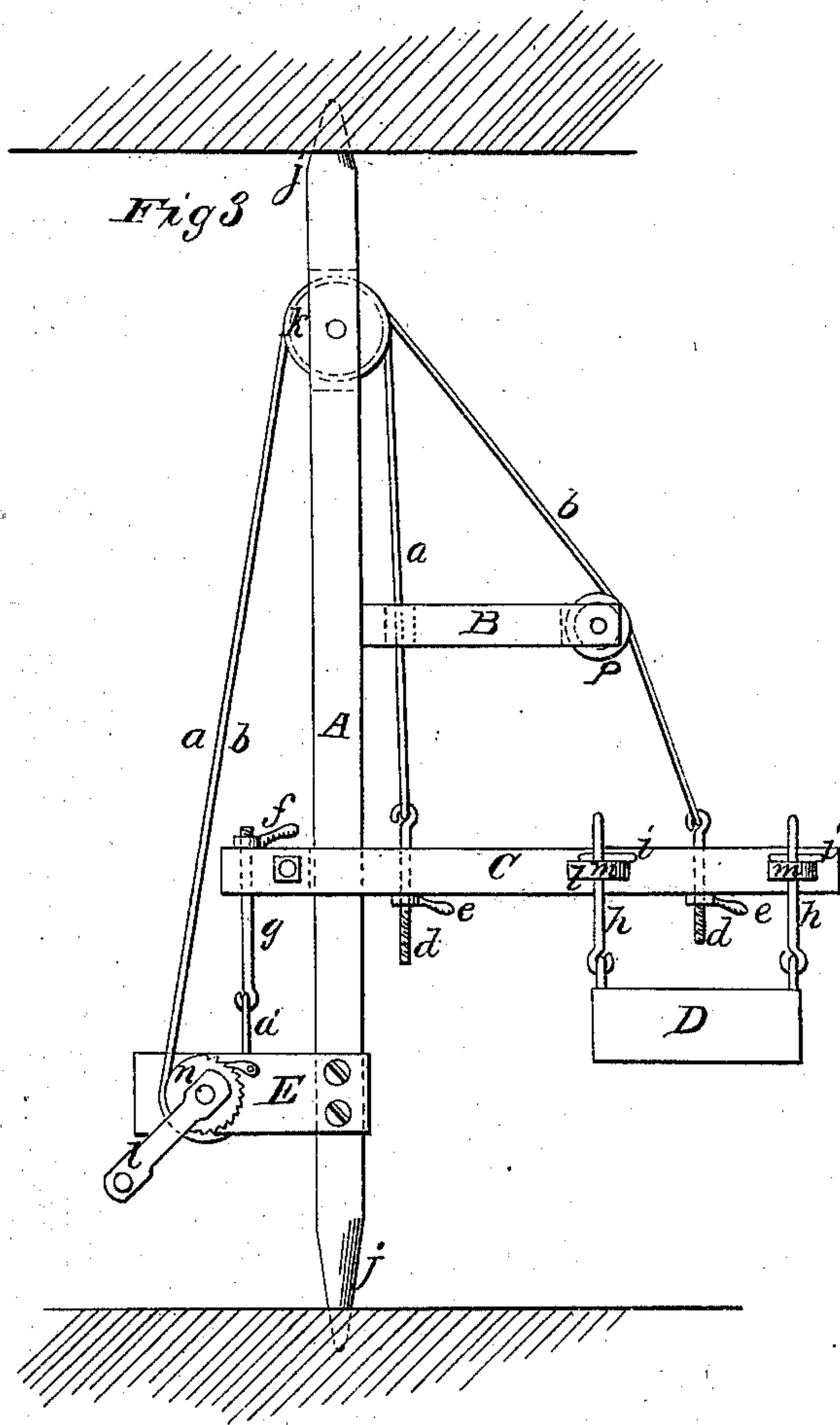
Inventor  
J. O. Ayers  
per *Wm. S. Ayers*  
Attorney

2 Sheets-Sheet 2.

J. D. Ayers,  
Sugar Derrick.

No 83,356.

Patented Oct. 27, 1868.



Witnesses  
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G. C. Cotton

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J. D. Ayers  
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Attorneys



# United States Patent Office.

JOSEPH D. AYERS, OF EAST GREENSBOROUGH, ASSIGNOR TO J. O. CUTTER AND WILLIAM WALLACE GOSS, OF GREENSBOROUGH, VERMONT.

Letters Patent No. 83,356, dated October 27, 1868.

## IMPROVEMENT IN SUGAR-PAN DERRICK

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOSEPH D. AYERS, of East Greensborough, in the county of Orleans, and State of Vermont, have invented a new and useful Improvement in Sugar-Pan Derricks; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a side view of my invention.

Figure 2 is a plan view of the same.

Figure 3 is a side view of a modification of the same.

Similar letters of reference indicate like parts.

The object of this invention is to provide a simple and superior method of lifting the sugar-pans from the furnace-arches.

It consists of the construction or arrangement of parts set forth in the following:

A is a rotating upright, having its upper and lower ends J J reduced, and made circular, to fit in a socket in the ceiling, or any overhead-beam, and in a suitable step on the floor.

This upright supports a horizontal derrick-beam, C, by means of short projecting guide-beams, B B', mortised into the upright, A, and having mortises for receiving a vertical guide-post, G, which slides freely in the mortises in the said guide-beams B B', and to which the derrick-beam C is rigidly affixed, and braced by iron rods, q q, connecting the upper part of the guide-post G with the frame m m, o o, which latter is affixed on the derrick-beam, and is provided with hook-rods, h, for suspending the pans, which are usually rectangular shallow vessels of sheet-iron.

The frame bearing the hook-rods is composed of the cross-bars m m, affixed to the derrick-beam, and provided with cross-bars, o o, which bear the hook-rods h.

The bars o o are secured to the bars m m by means of bolts, which pass through the former, and through slots in the latter, thus providing a means of adjusting the hook to pans of different lengths.

The derrick-beam is raised and lowered by means of two cords or chains, a b, which lead from the derrick-beam and the top of the guide-post, and pass over a double-grooved pulley, k, and thence down to a drum, n, having bearings in the cheeks E, affixed to the upright, A.

The drum is operated by a crank-handle, l, by means of which the cords are wound or unwound, to raise or lower the derrick-beam and frame, when lifting or lowering the sugar-pans attached thereto.

The cheeks are provided with holes for the reception of stop-pins, p, to hold the crank and drum at any point.

When the pan is raised from the arches, it is swung off by means of the rotating upright. The drum is then unwound to lower the pan to the rest or stand on which it is to be placed.

The hook-rods are provided with holes and pins, i, adjust their height, as circumstances require.

A modification of my invention is shown at fig. 3, and, for some situations, it may be preferable to the one above set forth.

It differs somewhat in the details of construction, as is shown in the following description:

A is the rotating upright, upon which the derrick-beam C slides, by means of a mortise in the said beam, and is thus guided in its vertical motion.

The pan D is sustained by means of metal hook-rods, h, which pass directly through the cross-bars m m.

The pins i i, passing through holes in the hook-rods as before, serve to hold the same from drawing through the cross-bars m m, and to adjust the height of the hooks.

The beam C and the suspended pan are also raised and lowered by means of the cords a b, which pass over the double-grooved pulley k, working in a mortise near the top of the post A, as previously set forth.

The cords pass down, and are wound on a drum, u, which latter is provided with a ratchet-wheel and pawl, o; and the crank-handle l.

The drum has bearings in cheeks, E, affixed to the post as before.

A pulley-beam, B, having a pulley, p, is added for the purpose of bearing off the cord b, so that it may lift more vertically on the derrick-beam, and not occasion so much friction of the mortise against the post A.

The cords are connected with the derrick-beam by means of hook-bolts, d d, having burrs, e e, by means of which the actual operating-length of the cords, may be raised as circumstances require, or the beam adjusted horizontally, so that the mortise of the same shall not cramp on the post.

One of the cords does not terminate on the drum, but passes through a hole in the same, and passes upward, as shown at a', and is connected with a screw-bolt, g, in the derrick-beam, as shown, whereby the latter is held more steadily, and drawn down when cords a b are unwound from the drum.

The bolt g is provided with a burr, f, to adjust the tension on the part a', in accordance with the adjustment of the bolts d d, to keep the beam perfectly horizontal.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

1. The combination, in a sugar-pan derrick, of the guide-beams B B', guide-post G, rotating upright A, pulley k, cords a b, derrick-beam C, drum and crank-handle l, all constructed and operating substantially as shown and described, and for the purpose set forth.

2. The frame m m, o o, hook-rods h h h h, and braces q q, with the parts specified in clause first of the claim, all substantially as shown and described, and for the purpose set forth.

JOS. D. AYERS.

Witnesses:

JOHN A. SAWYER,

CHARLES G. THOMPSON.