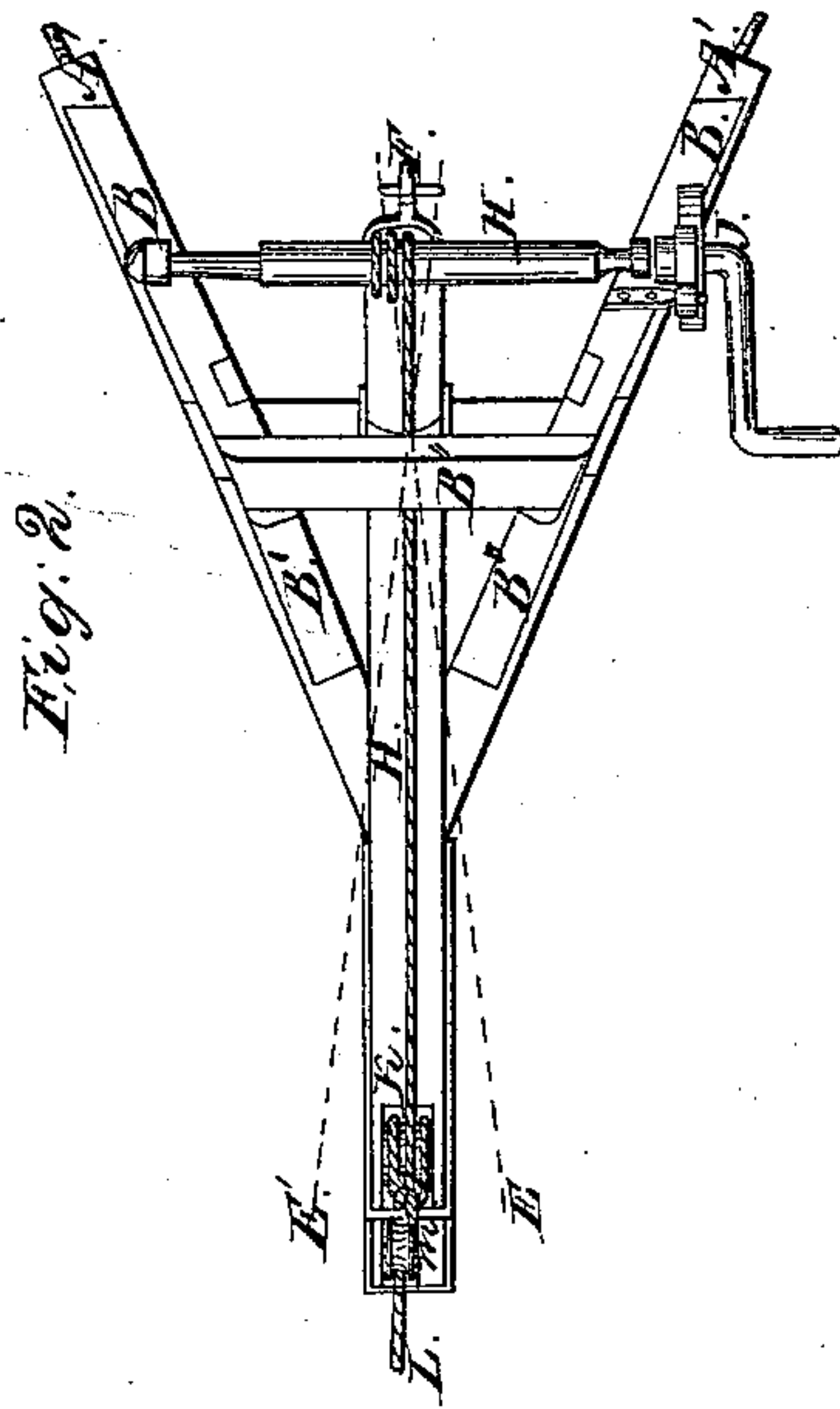
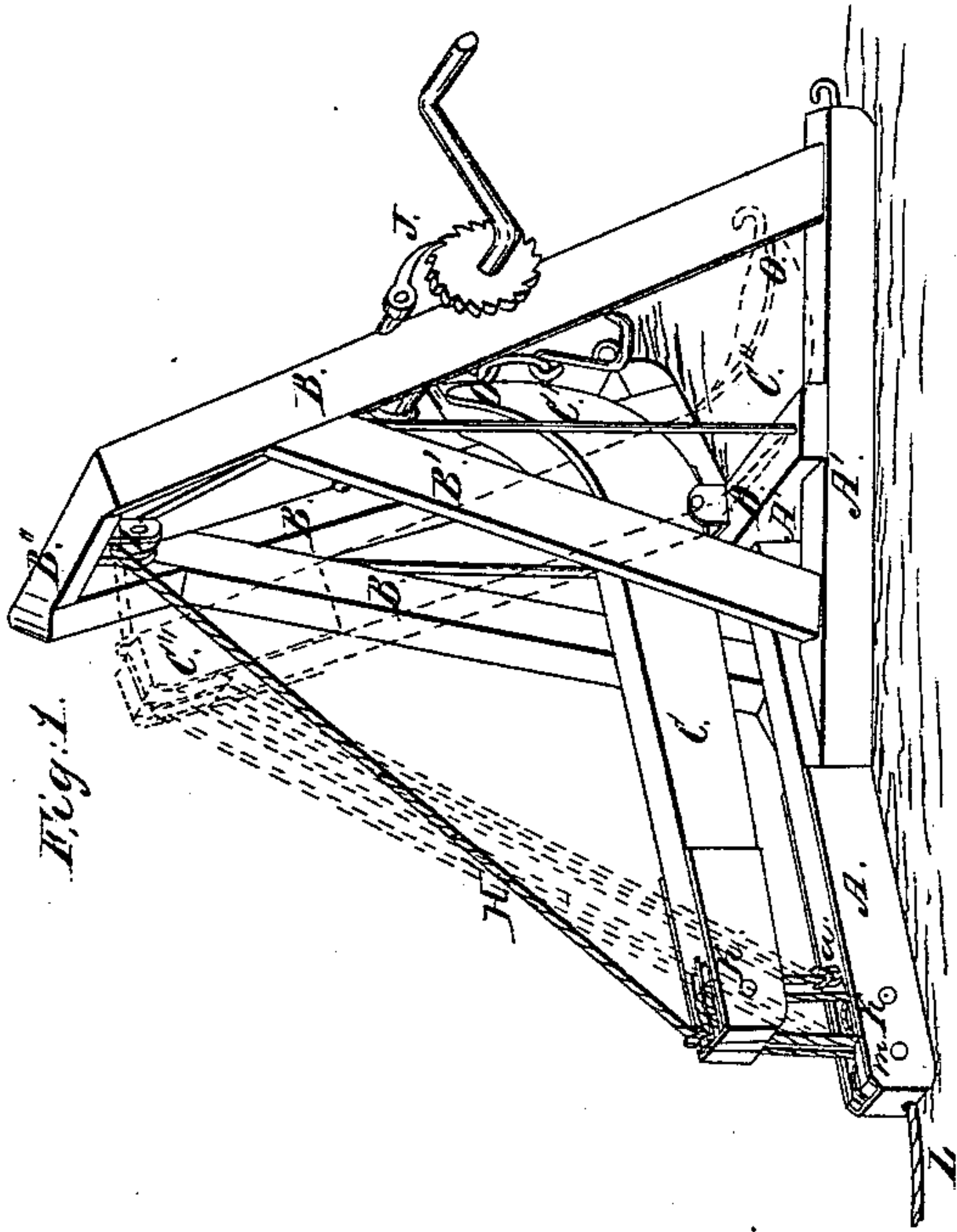
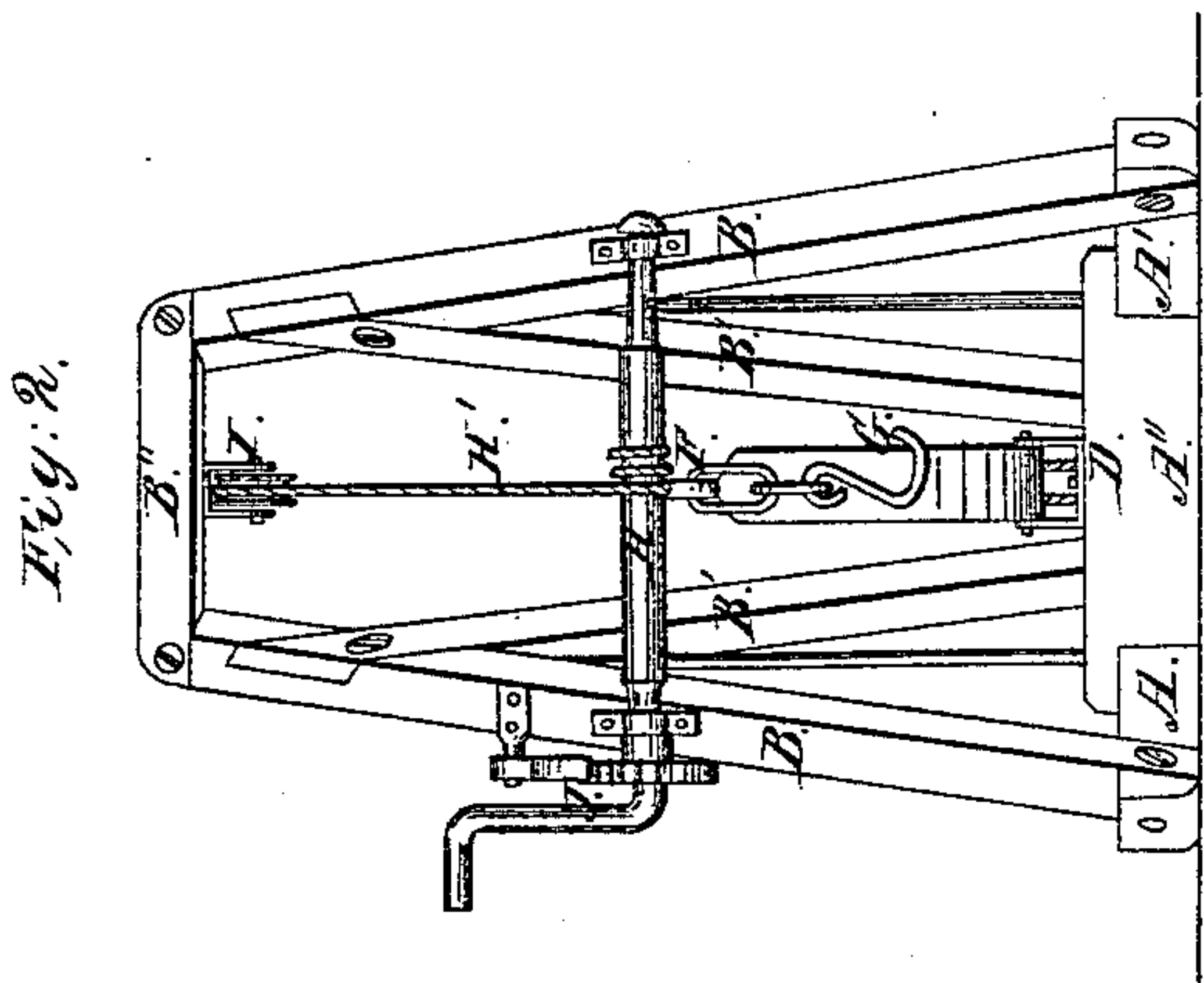


S. H. Richardson,

Stump Elevator,

No 36,671,

Patented Oct. 14, 1862.



UNITED STATES PATENT OFFICE.

S. H. RICHARDSON, OF CLEVELAND, OHIO.

IMPROVEMENT IN STUMP-PULLERS.

Specification forming part of Letters Patent No. 36,671, dated October 14, 1862.

To all whom it may concern:

Be it known that I, S. H. RICHARDSON, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Stump-Pullers; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view. Fig. 2 is a front view, and Fig. 3 is a top view.

My invention relates to a portable frame of peculiar construction, in combination with a pivoted fulcrum and lever, with pulleys, windlass, and ropes for elevating and depressing the same.

The frame-work consists of bed-pieces, posts, and braces. The bed-piece A is about seven feet long and a foot square, and has two side pieces that branch off from the middle upon each side at an angle of about twenty-five degrees and extending some three or four feet forward of the forward end of the bed-piece A. A cross-piece, A'', is framed upon the head of the piece A and to the middle of the pieces A', whose forward ends diverge sufficiently to embrace the stump, and are provided with hooks or rings by which the machine is drawn from place to place. The posts B are framed into the forward ends of the bed-pieces A'. They are from six to eight feet high and incline backward, as seen in Fig. 1, and are supported by the braces B'.

C represents the lever. This rests upon the fulcrum D, which is pivoted to the center of the bed-piece A''. This allows the lever C a lateral movement, as indicated by the dotted lines E E' in Fig. 2. The object of this movement is for convenience of hitching the short arm of the lever C to the stump at any desired point without the necessity of moving the frame of the machine. The short arm of the lever C is bent upward, or, rather, is made of a timber having a natural crook, as seen at C' in Fig. 1, and the extreme end is provided with a hook, F, to which the lifting-hook G is attached. The lever C is raised to the posi-

tion indicated by the dotted lines C'' by means of a windlass, H, attached to the posts B, the rope H', and pulley I. The pulley I is attached to the under side of the cross-piece B'' upon the top of the posts. The lever is held at any desired point of elevation by means of the pawl and ratchet J.

K K' represent pulleys in the end of the lever C and in the outer end of the bed-piece A, and L represents the rope that works upon them, and it is by means of these that the long arm of the lever C is depressed in raising a stump. The rope L is attached to the bed-piece A at a, passes over one of the pulleys K in the end of the lever C, beneath and around a pulley, K', in the bed-piece A, upward and around another pulley, K, in the arm C, and under another pulley, m, in the bed-piece A, and backward, as seen at L, Figs. 1 and 2. Tension upon this rope by means of a team or otherwise depresses the long arm of the lever C and raises the short arm from O to O' with a force sufficient for all practical purposes.

In using this machine the frame is drawn forward so that the diverging ends of the bed-pieces A' extend upon each side of the stump. The hook G is detached from the hook F and driven under a strong root of the stump, and then hooked onto F, the pivoted fulcrum D allowing the lever C to swing around from E to E' to facilitate hooking on without moving the frame, which is heavy. Now, by applying tension to the rope L the lever is drawn down from C'' to C and the short arm elevated from O to O', carrying with it the stump to which it is attached.

What I claim as my improvement, and desire to secure by Letters Patent, is—

The herein-described arrangement of the bed-pieces A A' A'', in combination with the pivoted fulcrum D, lever C, windlass H, pulleys K, K', and m, and rope L, all operating as and for the purpose set forth.

S. H. RICHARDSON.

Witnesses:

W. H. BURRIDGE,
HENRY VOTH.