

(No Model.)

2 Sheets—Sheet 1.

H. W. ROOP.
EXCAVATOR.

No. 370,970.

Patented Oct. 4, 1887.

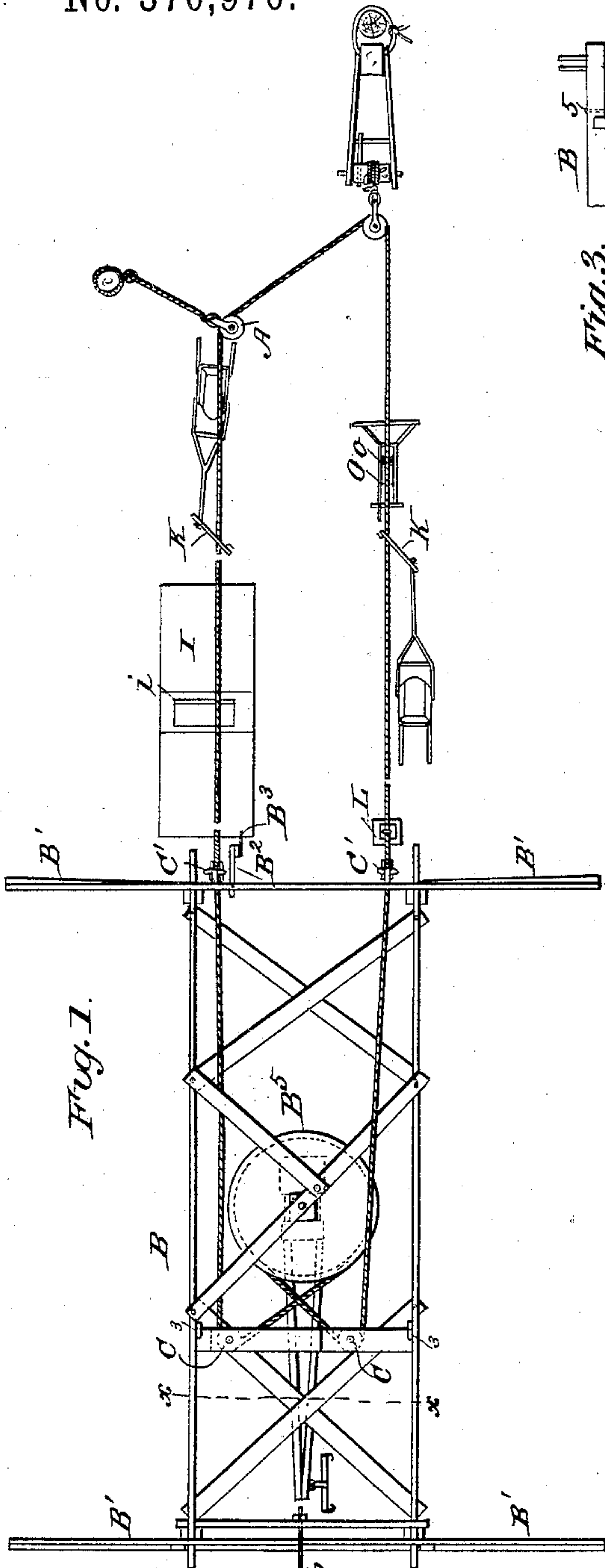


Fig. 1.

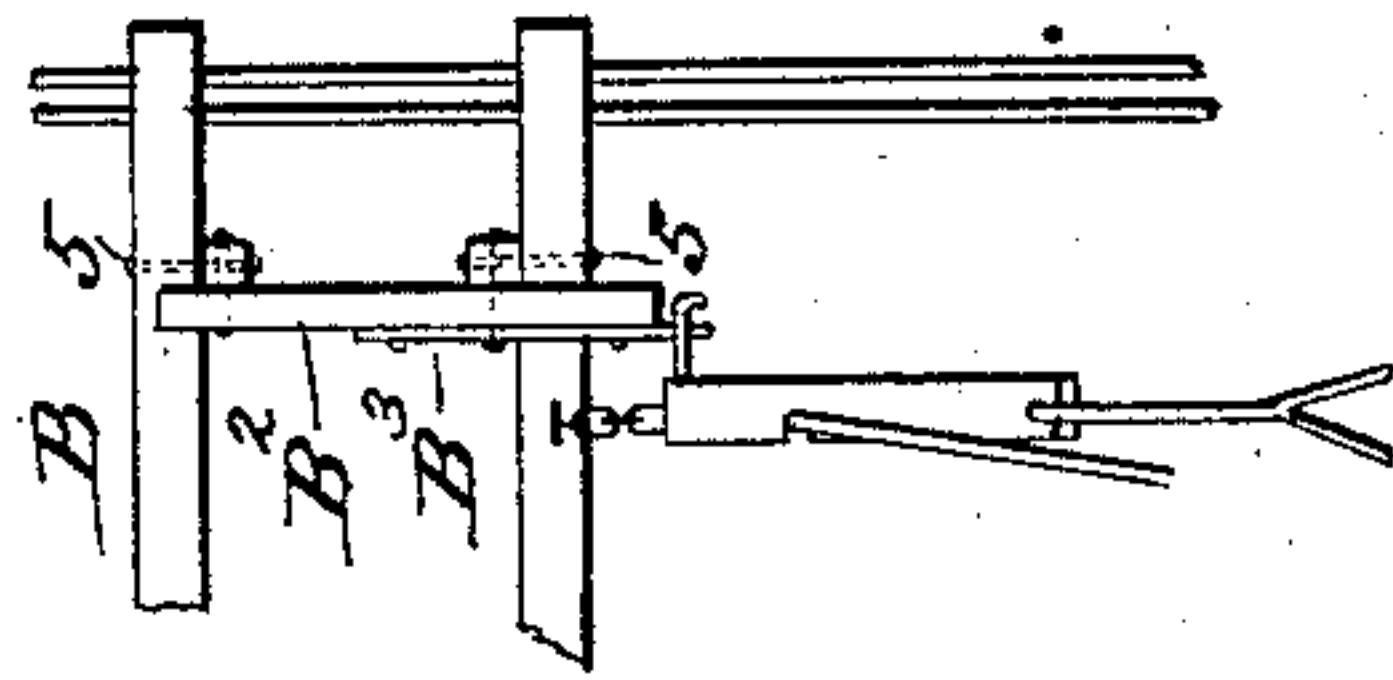


Fig. 3.

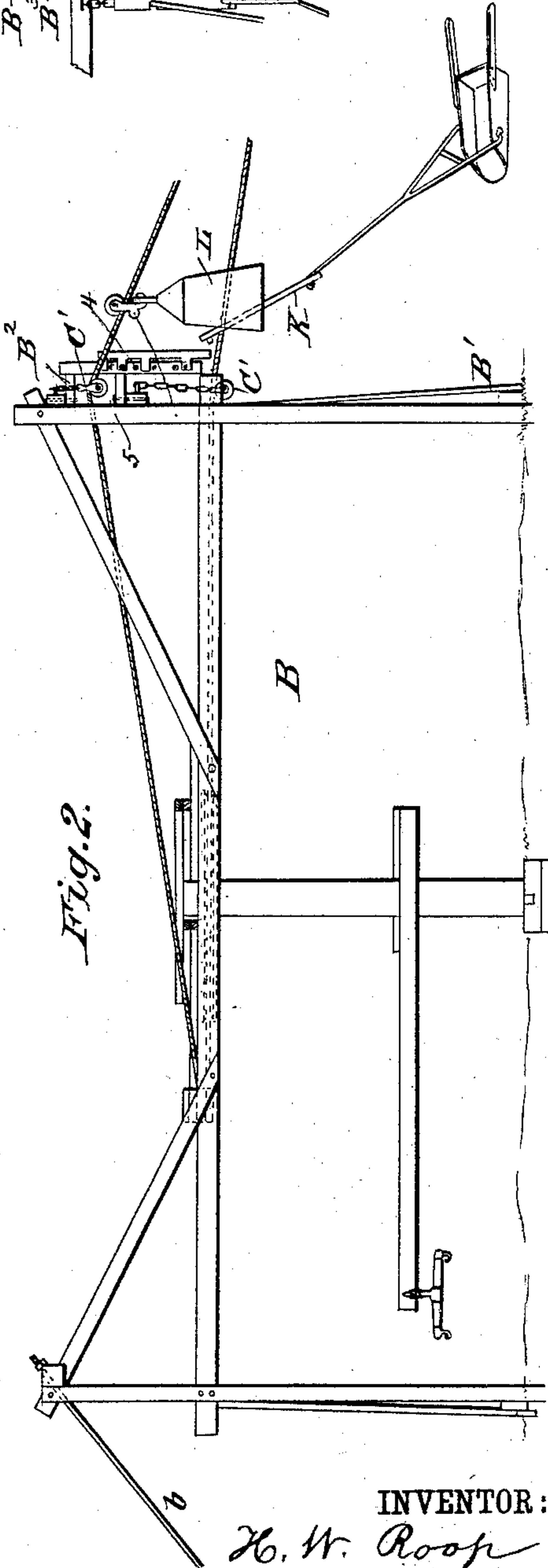


Fig. 2.

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ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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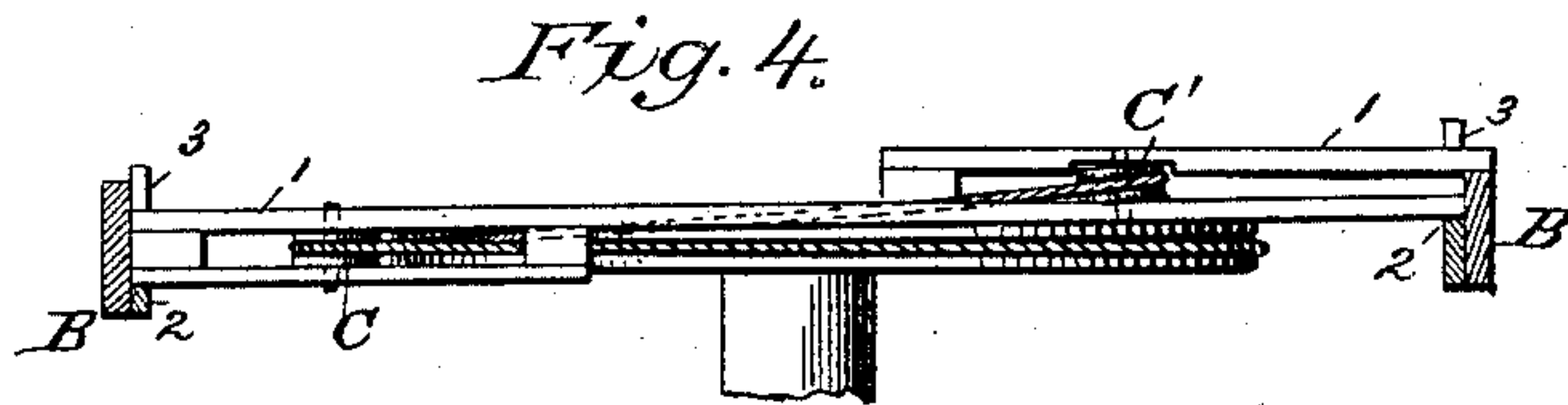
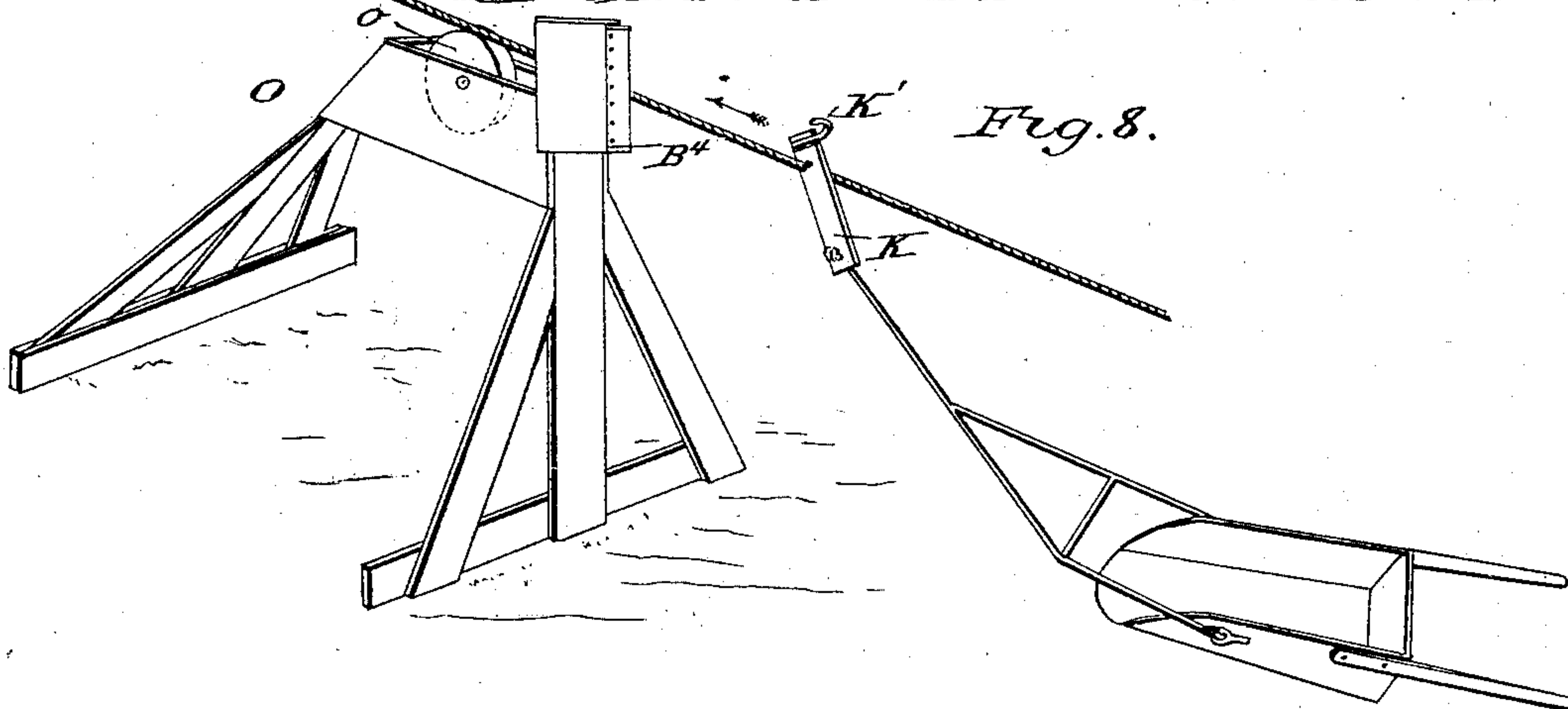
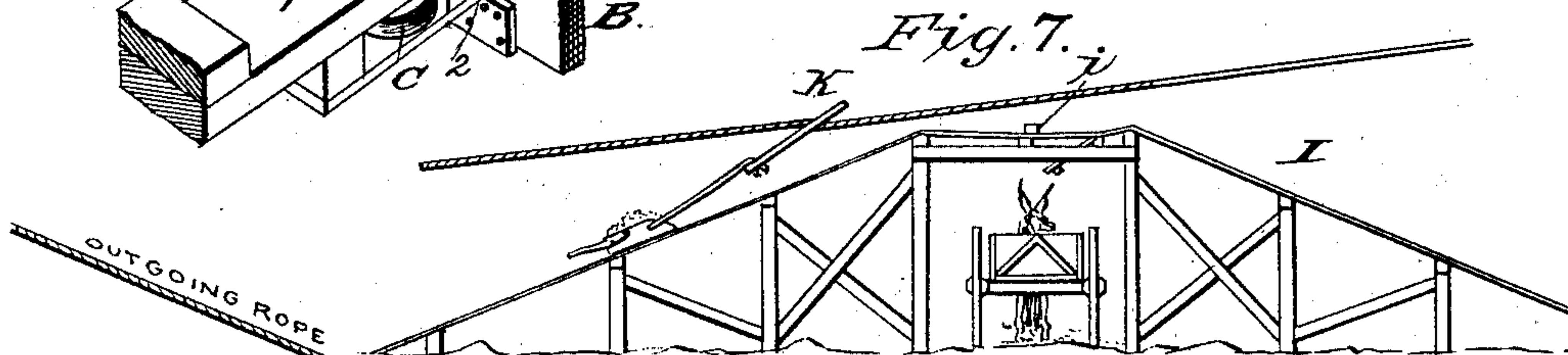
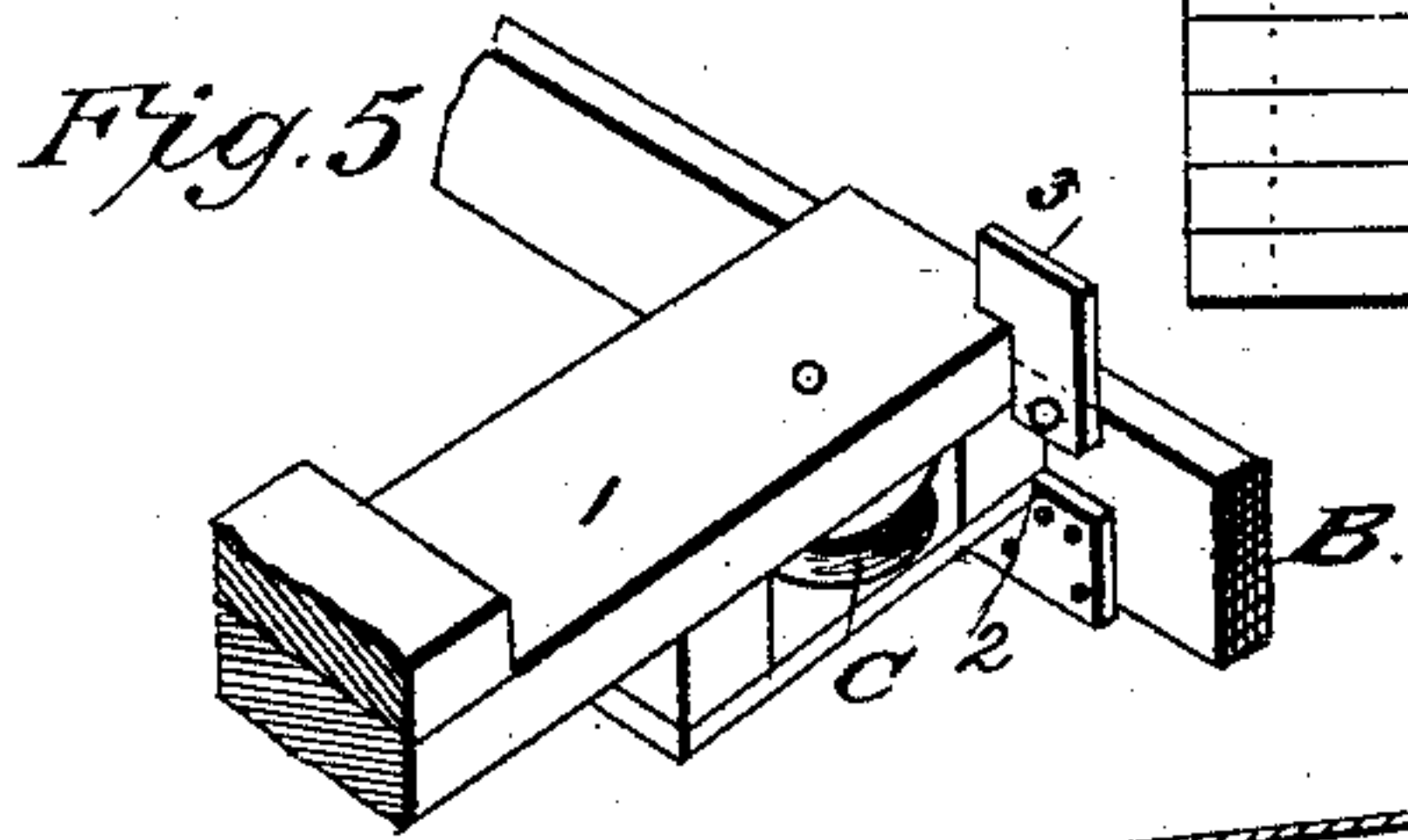
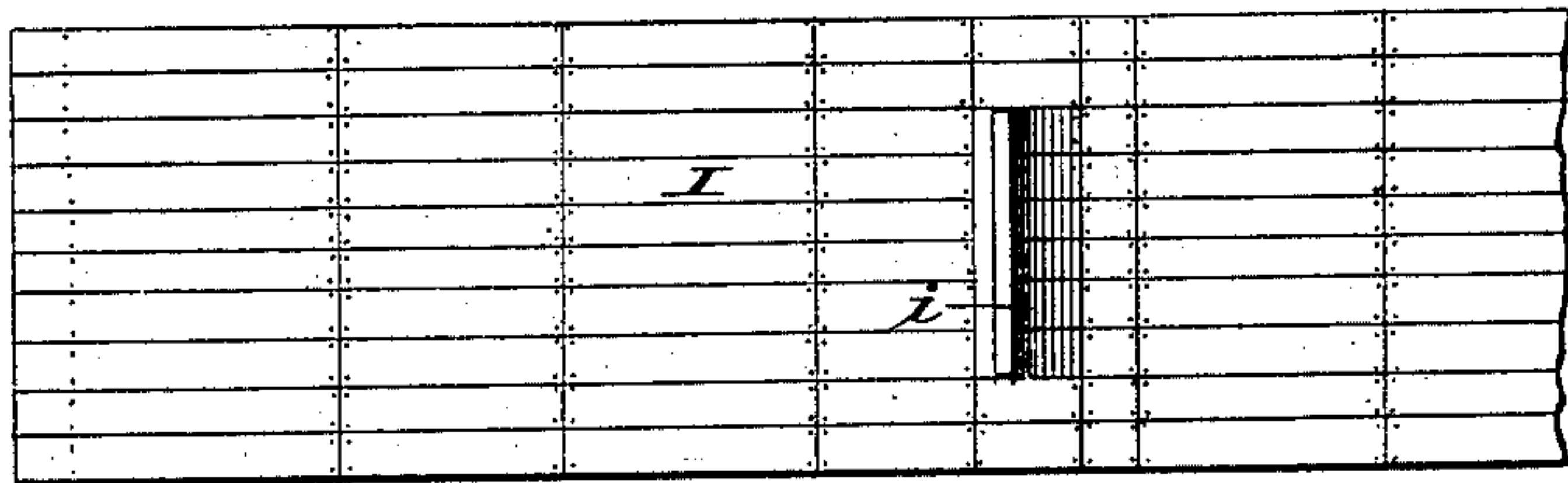


Fig. 6.



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UNITED STATES PATENT OFFICE.

HOWARD WILSON ROOP, OF McMEEKIN, FLORIDA.

EXCAVATOR.

SPECIFICATION forming part of Letters Patent No. 370,970, dated October 4, 1887.

Application filed July 7, 1887. Serial No. 243,638. (No model.)

To all whom it may concern:

Be it known that I, HOWARD WILSON ROOP, of McMeekin, in the county of Putnam and State of Florida, have invented a new and useful Improvement in Excavators, of which the following is a specification.

This invention is an improved excavator, and seeks especially to provide improvements on the excavating apparatus covered by Patent No. 361,895, granted me April 26, 1887.

The present invention consists in certain constructions and combinations of parts, as will be described and claimed.

In the drawings, Figure 1 is a plan view of my invention, the same being represented somewhat in diagrammatic form. Fig. 2 is a partial side elevation thereof. Fig. 3 is a detail partial front view of the main frame. Fig. 4 is a detached section on about line *x x*, Fig. 1. Fig. 5 is a detail view showing the means for securing the end of the removable pulley-supporting bar. Figs. 6 and 7 are detail views of the dumping-incline, and Fig. 8 shows the carrier-frame.

The improved apparatus comprises a shore pulley and driving mechanism therefor, a bog anchor and its pulley, an endless cable, and excavator-bowls, which may be similar to the same parts shown in my former patent above referred to. In the present case I provide a guide-pulley, A, for the endless cable, arranged near the bog anchor. It may be for guiding the incoming or outgoing portion of the cable. Such pulley serves to hold the incoming and outgoing portions sufficiently apart to prevent the contact of the excavator-bowls moving in opposite directions.

The shore frame B consists of beams bolted together, so it can be conveniently set up and taken apart for moving from place to place, and is in practice braced by a guy rope or cable, *b*, extended rearwardly from the frame and staked to the ground. This frame has at its front and rear ends lateral wings at B', which extend the base, and so serve to support the frame without necessitating the driving of any posts into the ground.

In the present instance, instead of supporting the pulleys C C in the main frame proper, as in the former case, they are journaled in a beam or block, 1, resting in seats 2 in said main frame proper, and secured by latches 3.

The pulley C for the incoming portion of the cable is on a line with the driving-pulley B⁵, while the pulley C for the outgoing part of the cable is elevated, so the cable will not rub or chafe where its portions cross in rear of the drive-pulley. This last pulley is also set at an angle to the horizontal, so that the rope plays true to its face and does not chafe the edge of the pulley. I also place this pulley for the outgoing cable nearer the center of the block 1 with respect to the width of the machine, so that it more readily takes the rope from the driving-pulley. The cable passes from the pulleys C over pulleys C' C' in the front of the shore frame proper, and on the outgoing portion of such cable, in advance of the pulley C', I suspend the slack weight L, using in the present instance only one of such weights.

The main shore frame is provided with an auxiliary frame, B², which extends forward alongside of the incoming portion of the cable, and on it I support the detacher B³, which is shown as a plate secured to the framing B² adjacent the said incoming portion of the cable. This detacher B³ on the shore frame is adjustable, being secured by bolts, so it can be moved or swung to position to be properly engaged by the hook of the grip, and this adjustment may be vertical by means of the bolt-holes 4 in the frame B² and the adjustment of the bolts securing the detacher therein, as well as lateral by turning the frame B² on the bolts 5, connecting it with the main frame.

It will be understood that this adjustment is desirable, as in putting muck in piles as the muck accumulates it becomes necessary from time to time to change the line of draft as the pile gets higher at different points.

A frame, O, which for convenience of reference I term the "carrier-frame," has a pulley, *o*, over which passes the outgoing portion of the rope. This carrier keeps the rope off the ground and is movable, and may be set farther back as the excavating proceeds. To this frame I secure the detacher-plate B⁴, which serves to detach the outgoing excavator. The detacher in this carrier-frame is usually stationary.

The grip-bar K is similar to that shown in my former patent, except that at its slotted end a hook, K', is provided, which, by engage-

ment with the detachers, serves not only to free the grip from a binding engagement with the cable, but also detaches the grip from the cable, as will be understood from the drawings. Where
5 desired, the detachers may be arranged on opposite sides of the cable, so that particular care need not be taken in applying the grips to the cable. In case the detachers are doubled the hooks are also doubled.

10 On the shore where the excavators or scrapers are emptied I provide an inclined plane, I, under the incoming portion of the rope, and up which the excavators proper are drawn in the practice of the invention. At the crown of this
15 incline I provide a cleat, *i*, or other suitable trip which is engaged by the excavators, and the latter are turned to dump, if desired, into wagons or carts driven below. Now, it will be seen that by such construction the dump-
20 ing of excavators may be automatically effected.

The general operation is similar to that described in my former patent before referred to, the excavators being filled and drawn in by the
25 incoming portion of the cable and returned empty on the outgoing portion of the said cable.

Having thus described my invention, what I claim as new is—

30 1. In an excavating apparatus, the combination of the bog anchor, the endless cable, the shore pulley, the shore frame proper, a beam or block provided with guide-pulleys for said cable, and a latch for securing said beam or block to the shore frame proper, substantially
35 as set forth.

2. In an excavating apparatus, the combination of the shore frame, a bog anchor, an endless cable, and grips for connecting the scrapers

with the cable, and a detacher connected with the shore frame adjacent to the cable and adjustable, substantially as set forth. 40

3. In an excavating apparatus, a grip for attaching the scraper to the cable, consisting of the bar having a slot to fit over the cable and a hook for engaging the detacher, combined with
45 a detacher, substantially as set forth.

4. An excavating apparatus, substantially as described, comprising the bog anchor, the shore pulley, the endless cable having incoming and outgoing portions, the carrier-frame
50 having a guide for the outgoing rope, and the incline having a trip for the scraper and located under the incoming portion of the cable, said carrier-frame and incline being arranged between the bog anchor and the shore pulley,
55 substantially as and for the purposes specified.

5. In an excavating apparatus, the combination, with the shore pulley and the bog anchor, of the cable and the carrier-frame having a pulley for the cable, and arranged between the pulley and anchor and movable, substantially as
60 set forth.

6. The improved excavating apparatus described, consisting of the shore frame having a detacher-plate and guide-pulleys for the cable,
65 the shore pulley, the cable, the scrapers, grips for connecting them with the cable, the carrier-frame having a detacher-plate and provided with a pulley for supporting the cable, the incline having a trip for dumping the scrapers,
70 and the bog anchor, substantially as set forth.

HOWARD WILSON ROOP.

Witnesses:

J. McMEEKIN,
L. J. STOKES.