

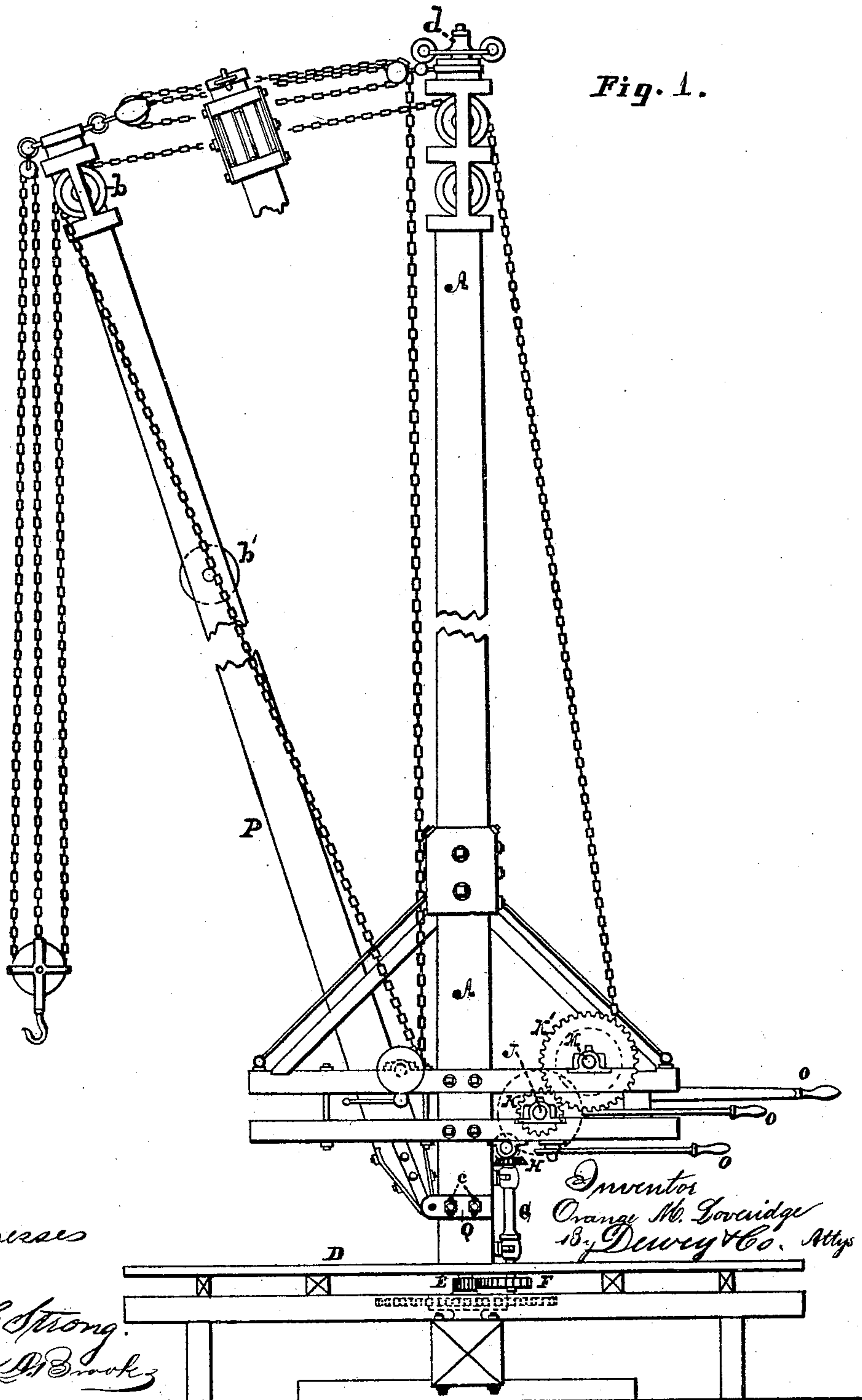
(No Model.)

2 Sheets—Sheet 1.

O. M. LOVERIDGE.
HYDRAULIC DERRICK.

No. 248,938.

Patented Nov. 1, 1881.



Witnesses

Geo. H. Strong.
Frank A. Brooks.

Inventor
Orange M. Loveridge
By Dewey & Co. Atty

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Fig. 2.

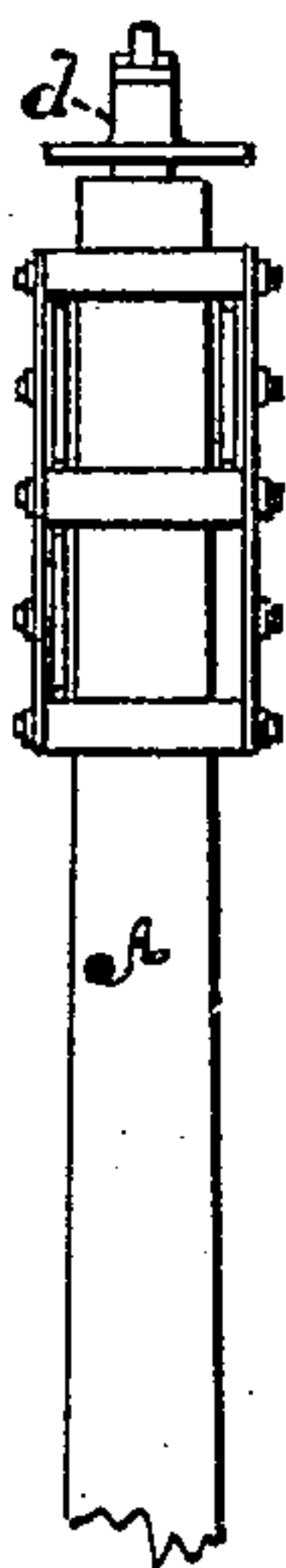
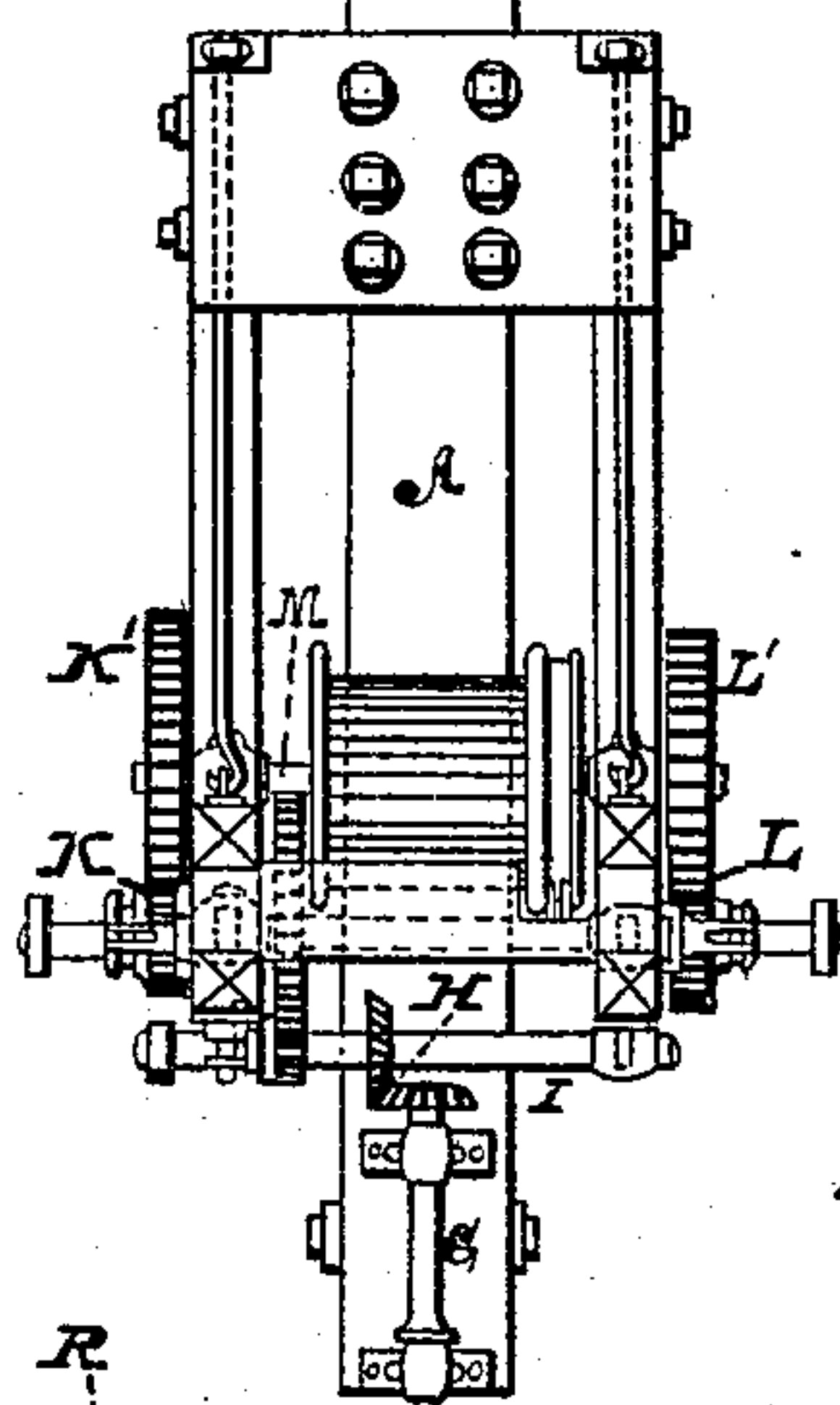
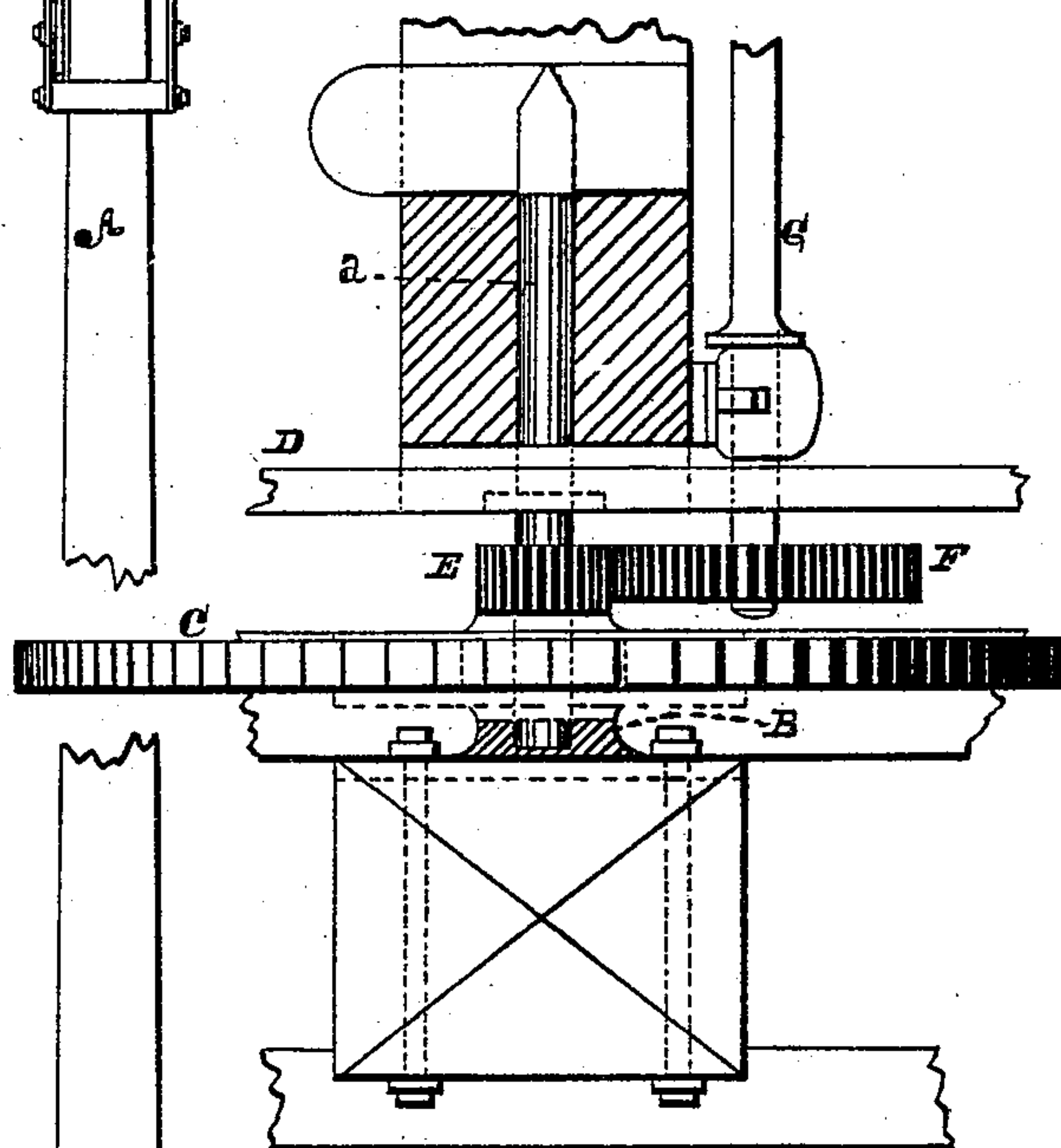


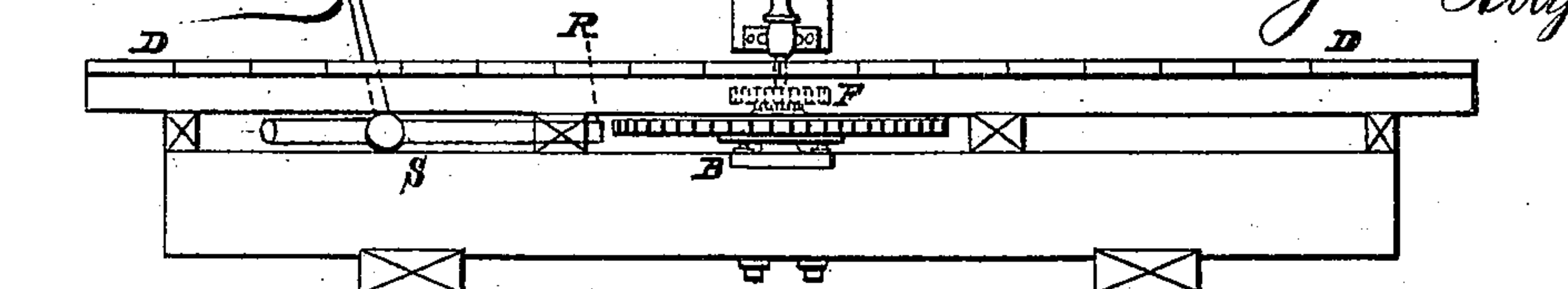
Fig. 3.



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UNITED STATES PATENT OFFICE.

ORANGE M. LOVERIDGE, OF WEAVERVILLE, CALIFORNIA.

HYDRAULIC DERRICK.

SPECIFICATION forming part of Letters Patent No. 248,938, dated November 1, 1881.

Application filed August 15, 1881. (No model.)

To all whom it may concern:

Be it known that I, ORANGE M. LOVERIDGE, of Weaverville, county of Trinity, State of California, have invented an Improved Hydraulic Derrick, of which the following is a full, clear, and exact description.

My invention relates to a novel combination of a horizontal water-wheel and a derrick with certain intermediate gearing, so that the direct force of a stream of water may be brought to act upon the wheel to drive the hoisting-drum at a slow or fast speed. The apparatus is controlled by suitable levers, and from the position of the wheel is entirely protected from wet, while the derrick may be turned in any direction.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a side elevation of my apparatus. Fig. 2 is a rear view. Fig. 3 is an enlarged view of the driving-wheel, gudgeon, and gear and pinion below platform.

A is the mast, which has a gudgeon, *a*, at its lower end, turning in a step, B. This step is fixed upon a timber of suitable size and length, and it has a steel button or washer at the bottom, upon which the gudgeon rests or turns when the mast moves. The gudgeon is of steel, and preferably square where it fits into the foot of the mast. The lower part of the gudgeon is turned off round and passes through a hole in the center of the water-wheel C, thus serving as a guide or spindle around which the wheel turns.

The water-wheel C lies horizontally below a platform, D, and its lower flange rests directly upon the step or casting. The upper flange has a spur-pinion, E, fixed to turn with it. This pinion meshes with and drives a gear-wheel, F, which is keyed to the lower end of a vertical shaft, G. The upper end of this shaft has a bevel-gear wheel, H, secured to it, and this engages with a similar gear upon the winch-shaft I.

An intermediate shaft, J, is mounted upon the frame, and this shaft has a sliding pinion, K, upon one end, and a larger gear-wheel, L, upon the other end. The reel-shaft M has a corresponding gear-wheel and pinion upon it, and when the load to be raised is heavy the

pinion K is caused to engage with the gear-wheel upon the reel-shaft. If the load is light, the larger wheel is thrown into gear with the pinion upon the reel-shaft, while the other is thrown out of gear. Suitable levers, O, serve to operate these devices. The bevel-pinion may also be thrown out of gear, if desired, so that the apparatus may be thrown into or out of gear in two places, if necessary.

The boom P is secured to the mast by plates Q, which are slotted at *c*, so as to be adjusted. This is done because the timber will often wind or twist in seasoning, and thus throw the sheaves out of line. The boom has a sheave, *b*, at the top and one, *b'*, in the middle, so that when the work is close to the derrick the middle sheave may be used, making a short reach, and when the work is at a distance the upper one may be used. The upper end of the mast has a sleeve or socket, into which the upper gudgeon enters, so as not to be cut when turning.

The water-wheel receives water through a nozzle, R, which is provided with a gate, S. This gate is operated by a lever extending to a point within convenient reach of the operator.

By this construction I provide a combination of a derrick and a power-wheel which is easily handled, and the wheel is entirely out of the way beneath the platform, so as not to throw water to splash the operator or machinery.

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

1. In combination with a derrick consisting of the mast A, boom P, and the rope drum or reel and operating-gears, the horizontal water-wheel C beneath the platform, spur-gear and pinions F E, vertical shaft G, and bevel-gears, substantially as and for the purpose herein described.

2. The mast A of a derrick, having a gudgeon secured in its foot and passing loosely through the hub of the water-wheel C into the supporting-step B, said gudgeon serving to support the mast and as a shaft for the water-wheel, substantially as herein described.

3. In a derrick having the mast A, boom P, 100

and tackle, the reel-shaft M, having large and
small gears upon opposite ends, the intermedi-
ate shaft, J, with corresponding gears and oper-
ating-levers, and the driving or winch shaft I,
5 with its gear, in combination with the vertical
shaft G, bevel-gears H, spur-gears E F, and
the horizontal water-wheel C, substantially as
herein described.

In witness whereof I have hereunto set my
hand.

ORANGE M. LOVERIDGE.

Witnesses:

WILLIAM W. YOUNG,
FRANK A. BROOKS.