

(No Model.)

3 Sheets—Sheet 1.

B. JACKSON & G. W. BONDS.

HOISTING APPARATUS FOR WAGON DERRICKS, &c.

No. 285,903.

Patented Oct. 2, 1883.

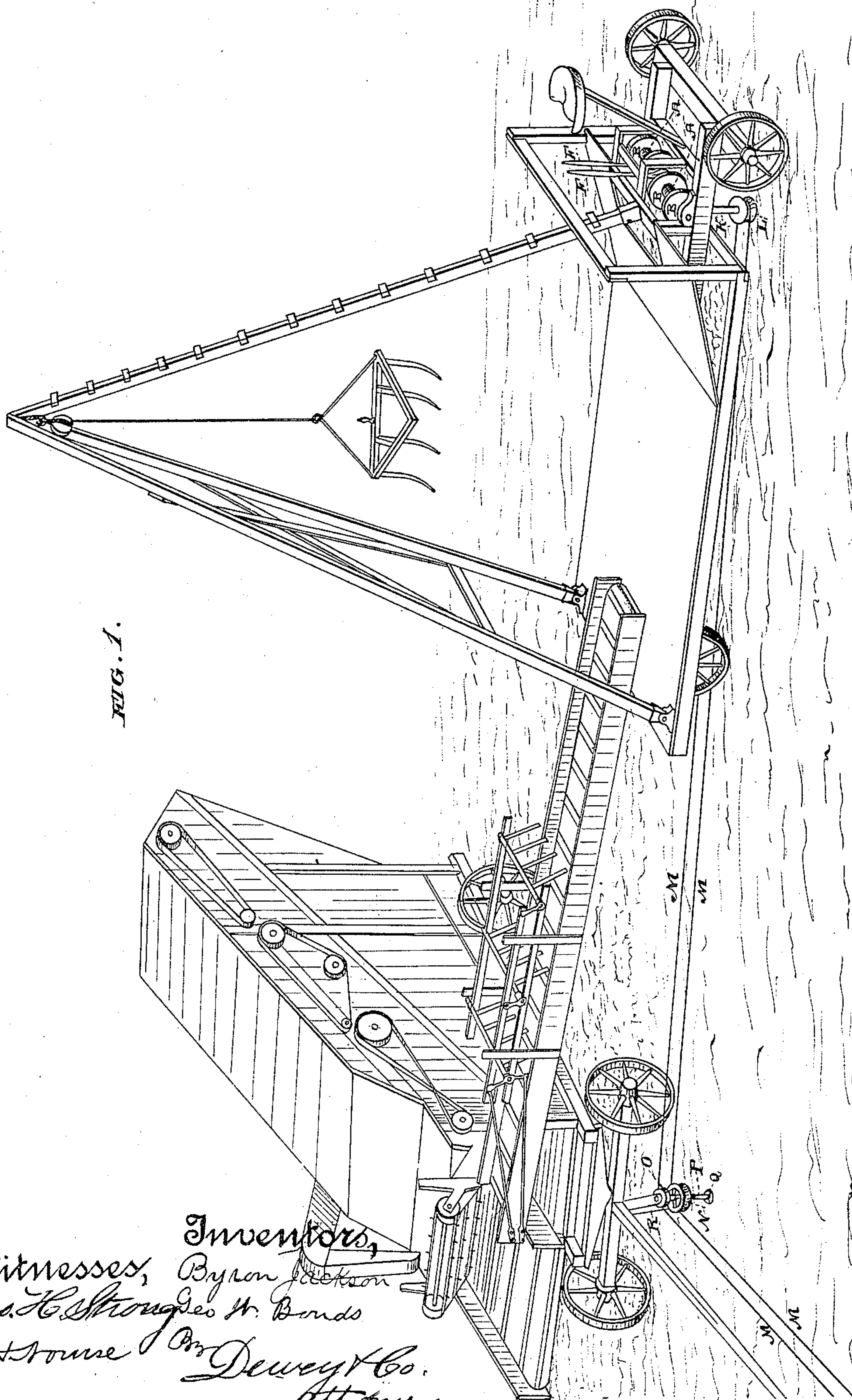


FIG. 1.

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Fig. 2.

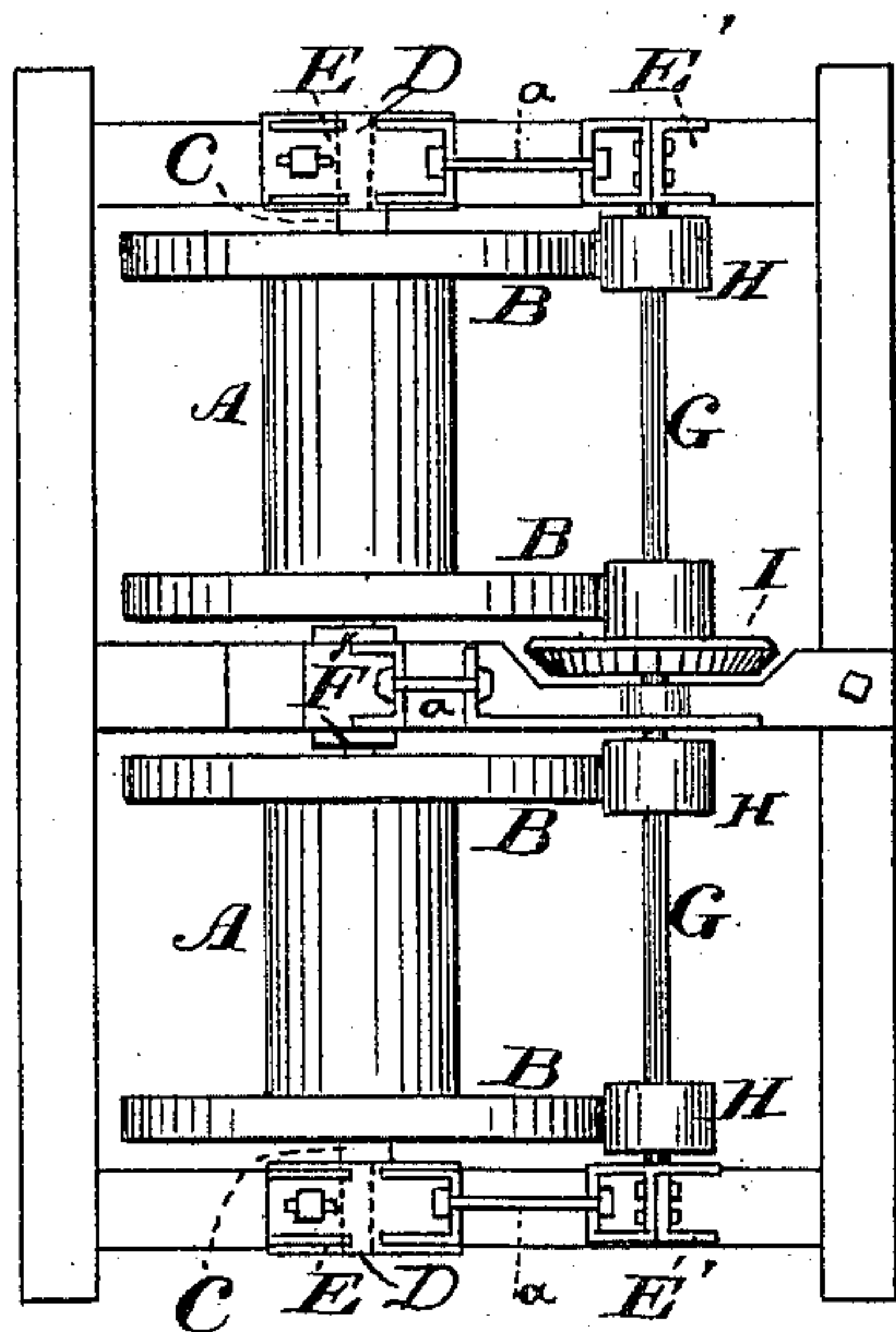


Fig. 4.

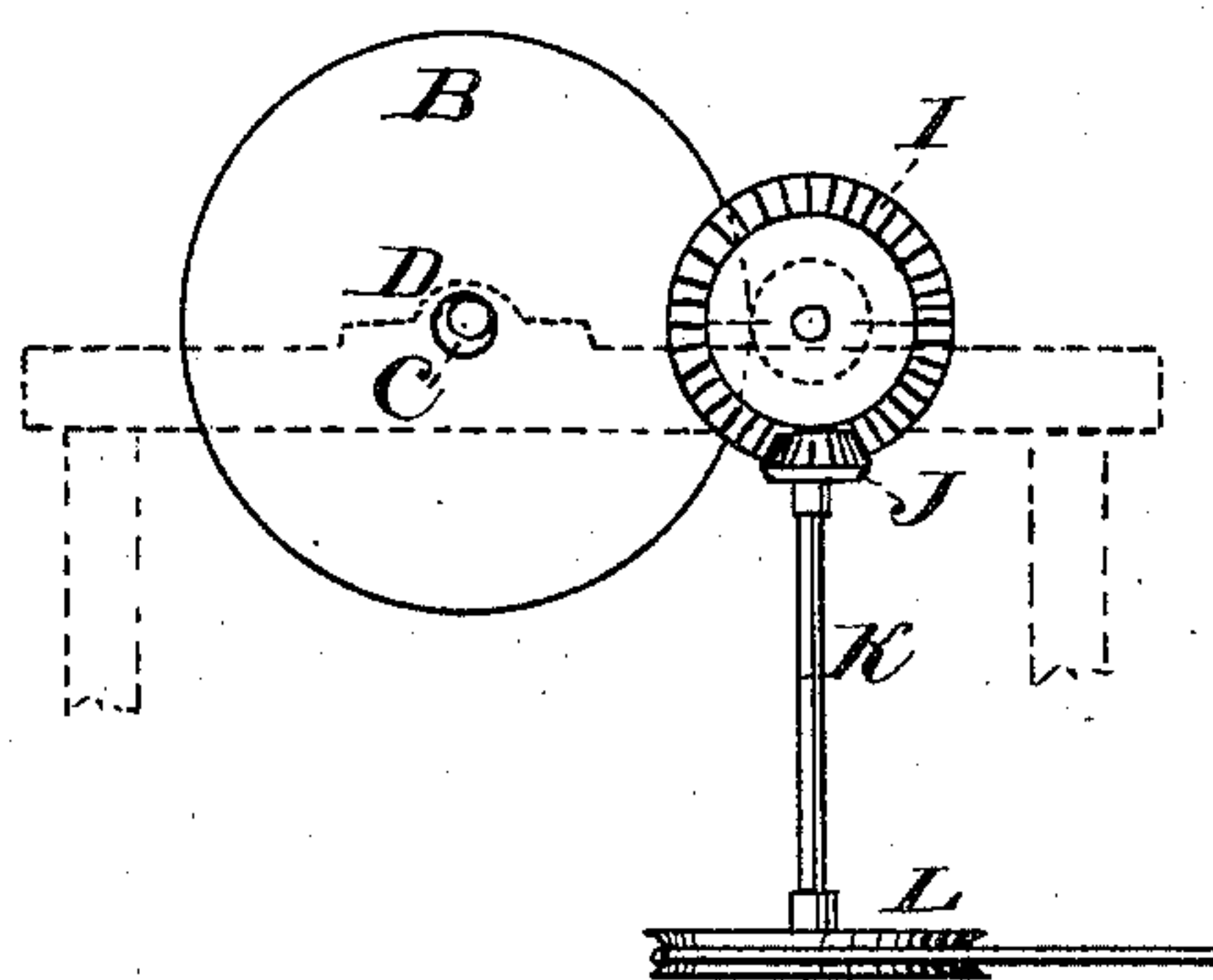


Fig. 3.

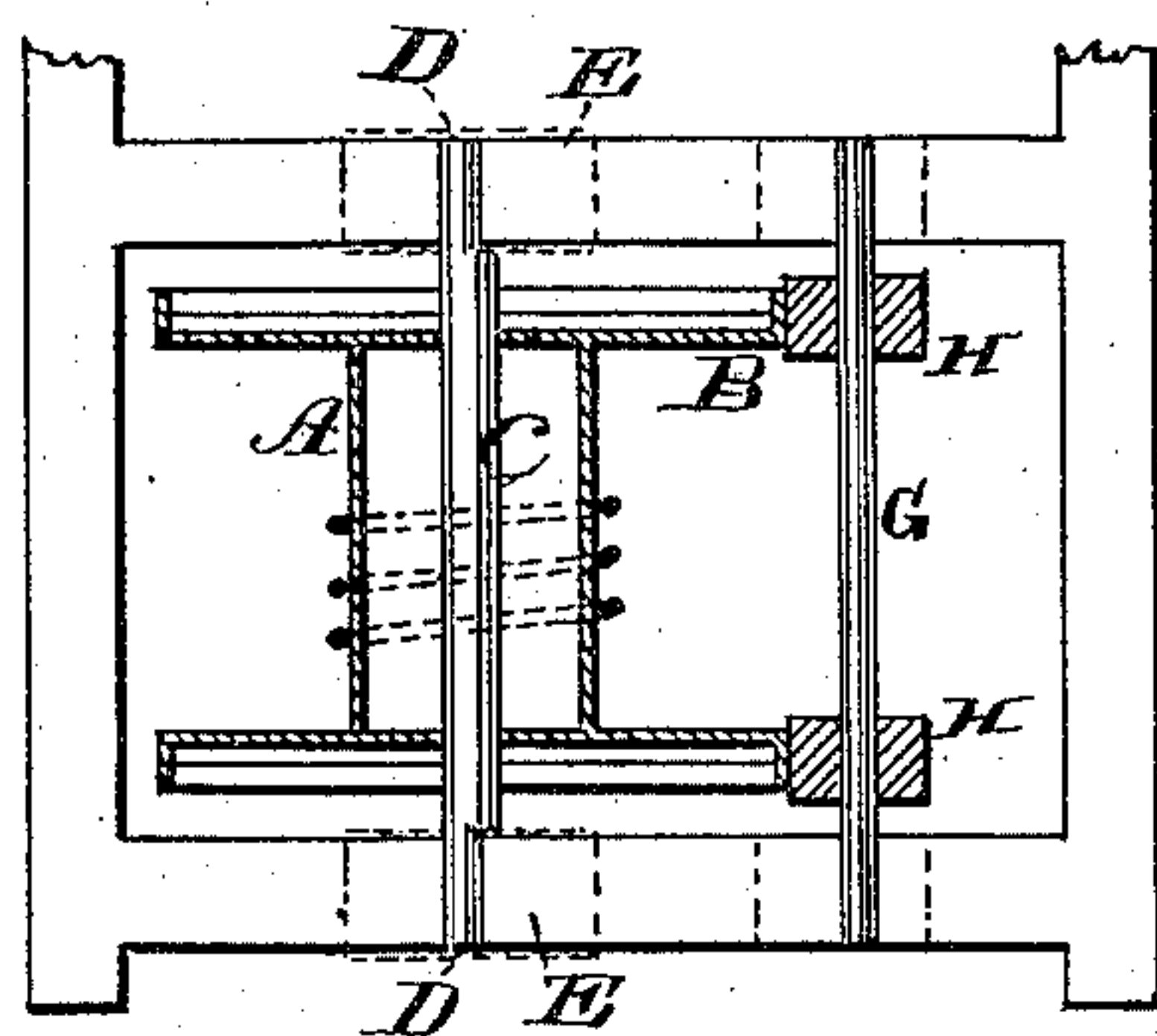
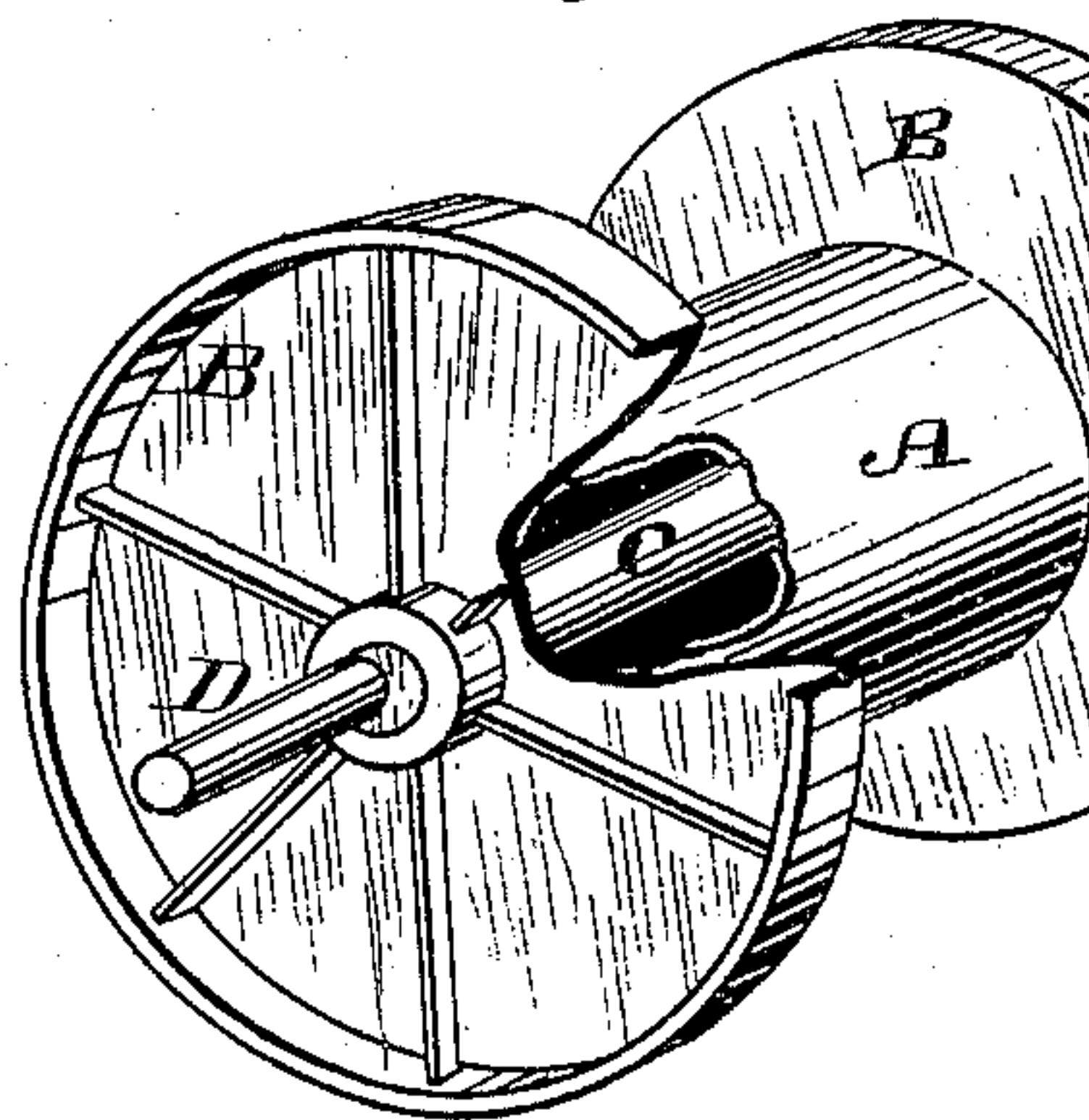


Fig. 5.



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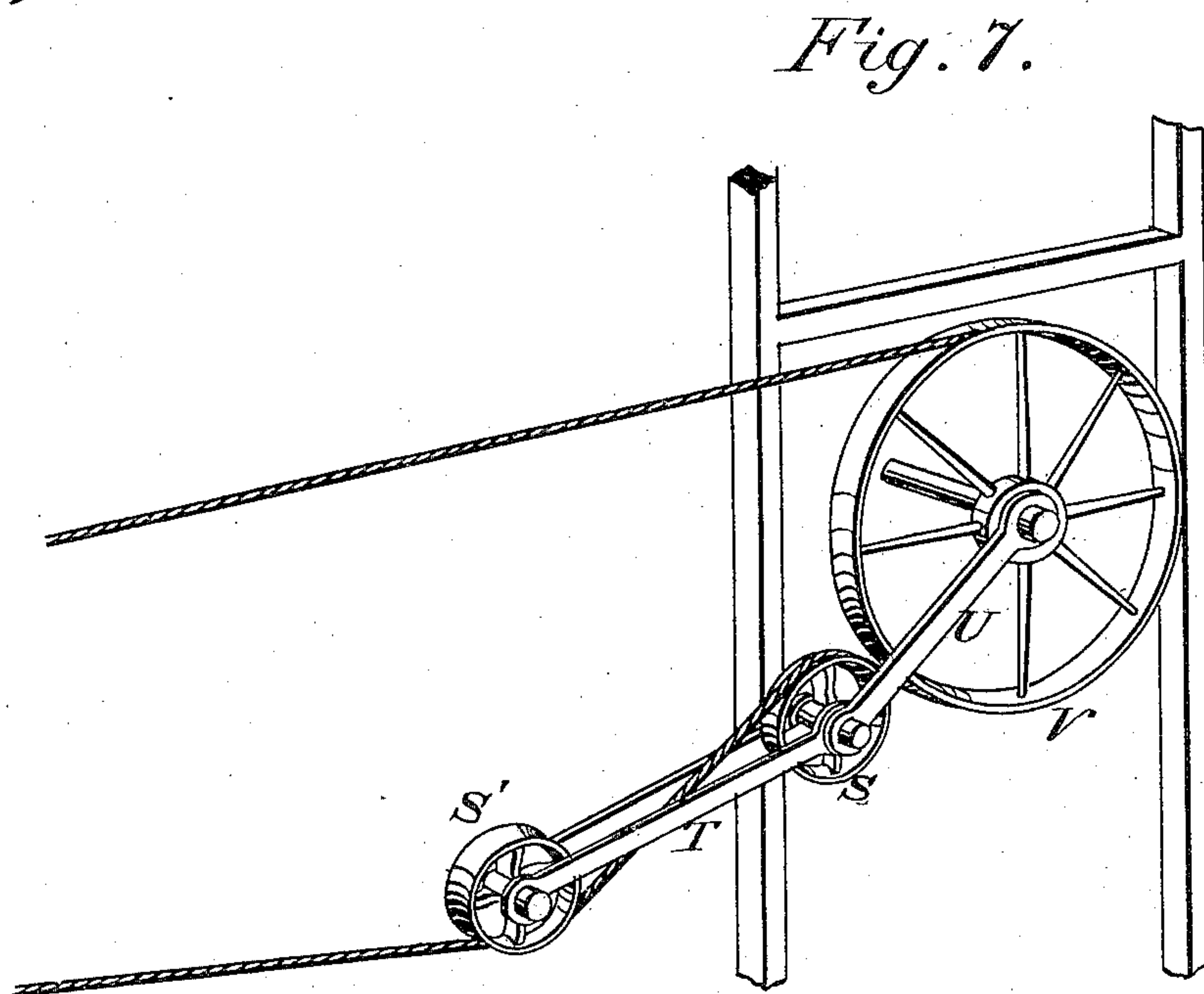
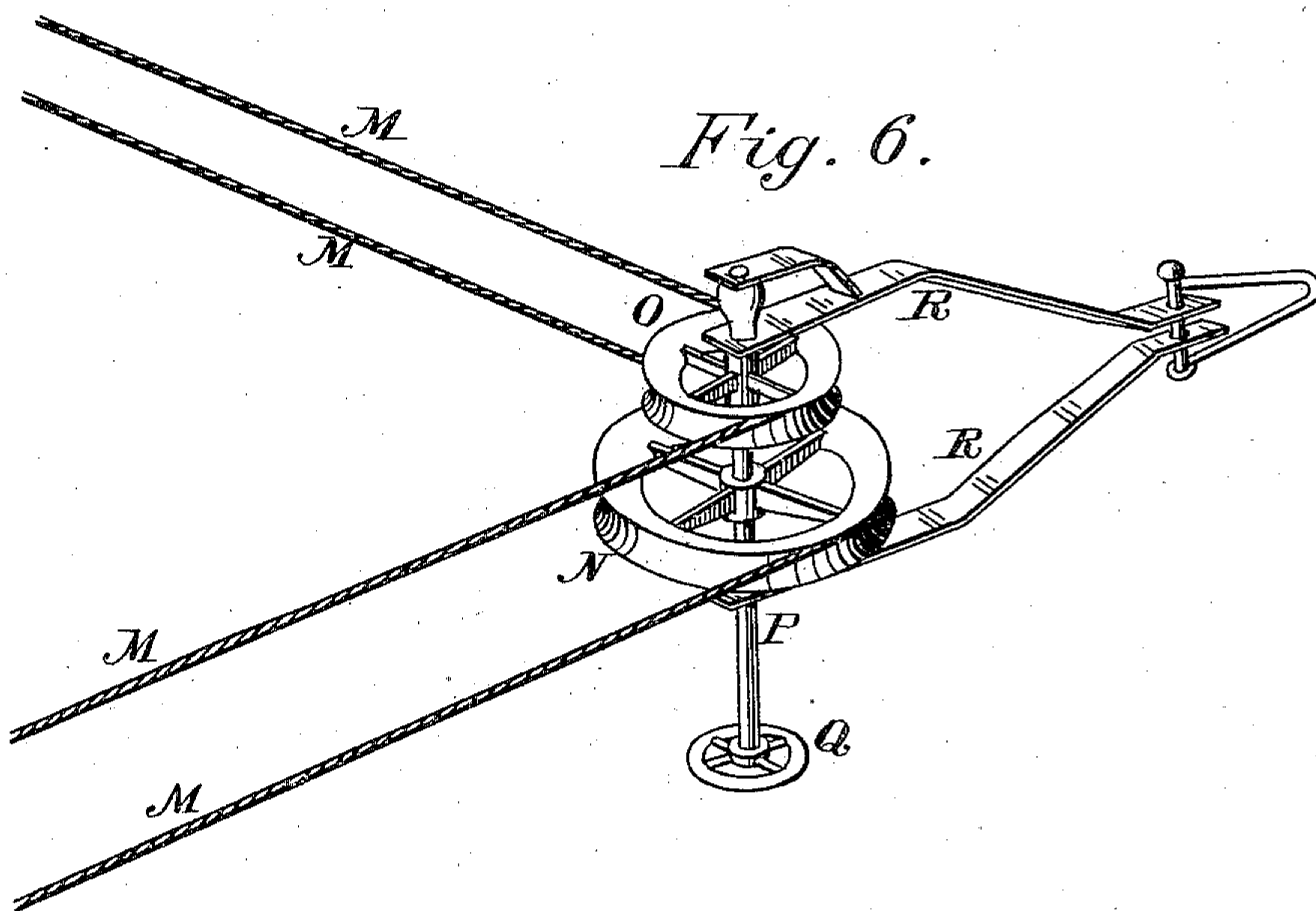
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UNITED STATES PATENT OFFICE.

BYRON JACKSON AND GEORGE W. BONDS, OF SAN FRANCISCO, CALIFORNIA;
SAID BONDS ASSIGNOR TO SAID JACKSON.

HOISTING APPARATUS FOR WAGON-DERRICKS, &c.

SPECIFICATION forming part of Letters Patent No. 285,913, dated October 2, 1883.

Application filed July 28, 1883. (No model.)

To all whom it may concern:

Be it known that we, BYRON JACKSON and GEORGE W. BONDS, of the city and county of San Francisco, and State of California, have
5 invented an Improvement in Portable Hoisting Apparatus for Wagon-Derricks and Derrick-Forks; and we hereby declare the following to be a full, clear, and exact description thereof.

Our invention relates to improvements in
10 portable hoisting apparatus for wagon-derricks and derrick-forks; and it consists, first, in a mechanism for raising and lowering the forks, and a more perfect means for operating the same, in a means for conveying the power to
15 the mechanism from distant points and from various directions, and in a means for keeping the belts in a proper state of tension, all of which will be more fully explained by reference to the accompanying drawings, in which—

20 Figure 1, Sheet 1, is a rim of a thrashing-machine, derrick-wagon, and fork, showing the relative position of the different parts. Fig. 2, Sheet 2, is a plan view of the rope-drums and their friction-wheels. Fig. 3, Sheet 2, is
25 horizontal section taken through the shafts of the friction-wheels. Fig. 4 is a side view, showing the vertical pinion-shaft and driving-pulley. Fig. 5 is an enlarged perspective view of one of the friction-wheels and the eccentric
30 axle upon which they are mounted. Fig. 6, Sheet 3, is a perspective view of the direction-pulleys. Fig. 7 is a view of the tightening devices.

Our present invention is based upon a device patented to W. W. Carlile, December 25,
35 1877, and the first part relates to an improved means for throwing the friction-wheels of the hoisting-drums into or out of contact with the friction-wheels upon the driving-shaft.

40 A A are the hoisting-drums, and B B are two friction-wheels, one fixed at each end of each hoisting-drum, so as to give a greater amount of power than when but one wheel is employed for each drum. A shaft, C, passes
45 loosely through the drum and wheels, so that they may turn upon it, and the ends of this shaft have eccentric journals D turned upon them, as shown. These journals fit into stationary boxes E upon the frame, and levers F
50 are connected with the shafts, so that they may be turned around to any desired position in

their boxes. The driving-shaft G extends across the frame at one side, and has friction-wheels H, corresponding with the wheels B. It will be evident that when the eccentric shaft
55 of either of the drums is turned in one direction it will carry the wheels B forward into contact with the wheels H, so that they and the drums will be caused to rotate as long as contact is maintained, and the forks will thus
60 be lifted, and when by a reverse movement of the lever the eccentric shaft has been turned in an opposite direction the wheels B will be withdrawn from contact with the driving-wheels and the rotation of the drums will be
65 stopped. The forks may be held at any point, when elevated, until it is desired to drop their load, by brakes operated by foot-levers and running upon the pulley L.

In order to adjust the boxes E of the drum-shaft and the boxes E' of the shaft G, so that
70 the pressure of the friction-wheels will be equal at each end, the boxes at each end are united by bolts a, having nuts upon their ends, by which they may be drawn toward each
75 other or relaxed, as is found necessary. By this construction the wheels B and H at each end of the drum may be given the same amount of frictional contact when thrown together.

The shaft G has a gear-wheel, I, upon it, 80 and this is engaged by a bevel-pinion, J, upon the top of the vertical shaft K, which has the horizontal rope-pulley L secured to its lower end at a point so low that the rope passing
85 around it is close to the ground and out of the way of the other mechanism or parts of the wagon. By reason of its horizontal position it will be seen that the driving rope or belt M
90 can be brought to it from any direction, and it will not be necessary to set the wagon exactly with reference to the engine or other power, but only so that the feeder-belts will be in the best position from the wagon to the thrasher, as shown in Fig. 1.

The engine being set with reference to the
95 thrasher, so that the main driving-belt passes properly from one to the other, the two parts of the rope M are carried around the corner-turn idler-pulleys N and O, and are led thence
100 to the driving-pulley upon the engine or driving shaft. These pulleys N and O are mounted loosely upon a vertical shaft, P, having a plate,

Q, upon the lower end, which rests upon the ground. The pulleys are a short distance apart, and the upper one is somewhat smaller than the lower one, so that if the rope sags between these pulleys and the driver or the pulley L the parts will not chafe each other, as they will not be in a vertical line. The shaft P is journaled in a light horizontal frame, R, which extends in the opposite direction from the angle made by the rope M as it passes around the pulleys, and is fixed to a stake or other anchorage, so as to hold the pulleys in place. By drawing these pulleys back with a block and tackle or other suitable device the proper tension will be given to the ropes M, and the exact relative position of the engine and the pulley L will thus be rendered immaterial.

In order to take up the slack of the driving rope or belt, we have shown an automatic tension device consisting of two idler-pulleys, S S', which are journaled at the opposite ends of links T, and these links are loosely connected with the shaft of the pulley V, around which the rope passes by links U. The rope passes around the vertical pulley V, and the lower part passes up over the pulley S, and thence between the links U T, below the pulley S', and to its destination, as shown in Fig. 7. The weight of the pulleys S S' and the links T and U resting upon the rope always keep up the proper tension and take up any slack that may occur from stretching. When not in use, the rope being removed, they simply hang from the pulley-shaft and are out the way, but in a position to be immediately swung up into place as soon as the machine is set and the rope replaced upon the pulley V.

This device is used when the machinery is in line, so that the belt passes directly to the pulley V, and the corner pulleys are not necessary.

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

1. In a hoisting apparatus, and in combination with a driving-shaft having friction-wheels upon it, rope-drums A, having corresponding friction-wheels fixed to them at both of their ends, and loosely mounted upon shafts having eccentric journals, and levers F, for rotating said shafts upon these journals, so as to throw the friction-wheels into or out of contact, substantially as herein described.

2. In a hoisting apparatus, a driving-shaft having friction-wheels secured to it, and corre-

sponding friction-wheels secured to the rope-drums, which turn loosely upon a shaft having eccentric journals, and a means by which said shaft may be turned to throw the wheels into or out of contact, in combination with the boxes E and E' of the drum-shaft and the driving-shaft, and a means for adjusting said boxes with relation to each other, substantially as herein described.

3. In a hoisting apparatus, a rope-drum, A, having friction-wheels secured to its ends and turning loosely upon a shaft with eccentric journals, and a means for turning said shaft, in combination with a shaft, G, having corresponding friction-wheels fixed to it, the vertical shaft K, and gear-wheels I J, and the horizontal rope-pulley L, substantially as and for the purpose herein described.

4. In a hoisting apparatus, and in combination with the rope-drums, friction-pulleys, with means for throwing them into or out of contact, gears I J, vertical shaft K, and horizontal pulley L, as shown, the driving-rope M and the corner-turn pulleys N and O, substantially as herein described.

5. The direction-pulleys N O, of different diameters, supported and turning upon the vertical shaft P, in combination with the horizontally-moving ropes M, passing around said pulleys out of a vertical line, substantially as herein described.

6. The vertical shaft P, with its base or support Q, and the directing-pulleys N and O, turning loosely upon it, in combination with the frame or arms R and an anchor therefor, whereby the pulleys are supported and their horizontal position maintained, substantially as herein described.

7. The means for automatically taking up the slack and maintaining the tension of the belt, consisting of the pulleys S S', having their shafts journaled at the ends of links T, and the links U, loosely connecting said links with the shaft of the pulley V, in combination with a belt the lower part of which passes beneath the pulley S', over the pulley S, and thence beneath the pulley V, substantially as herein described.

In witness whereof we have hereunto set our hands.

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GEO. W. BONDS.

Witnesses:

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J. H. BLOOD.