

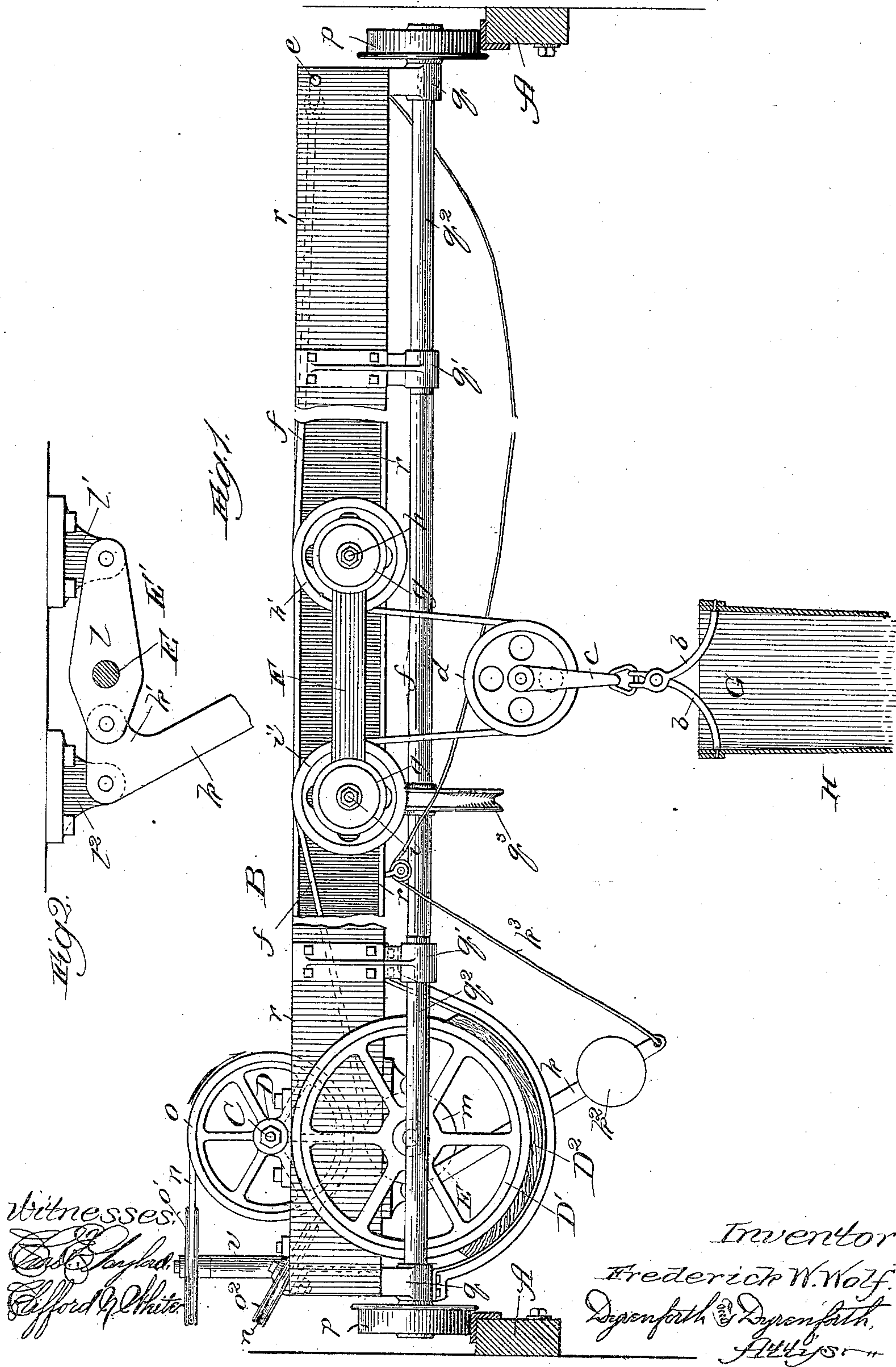
(No Model.)

3 Sheets—Sheet 1.

F. W. WOLF.
TRAVELING CRANE.

No. 444,968.

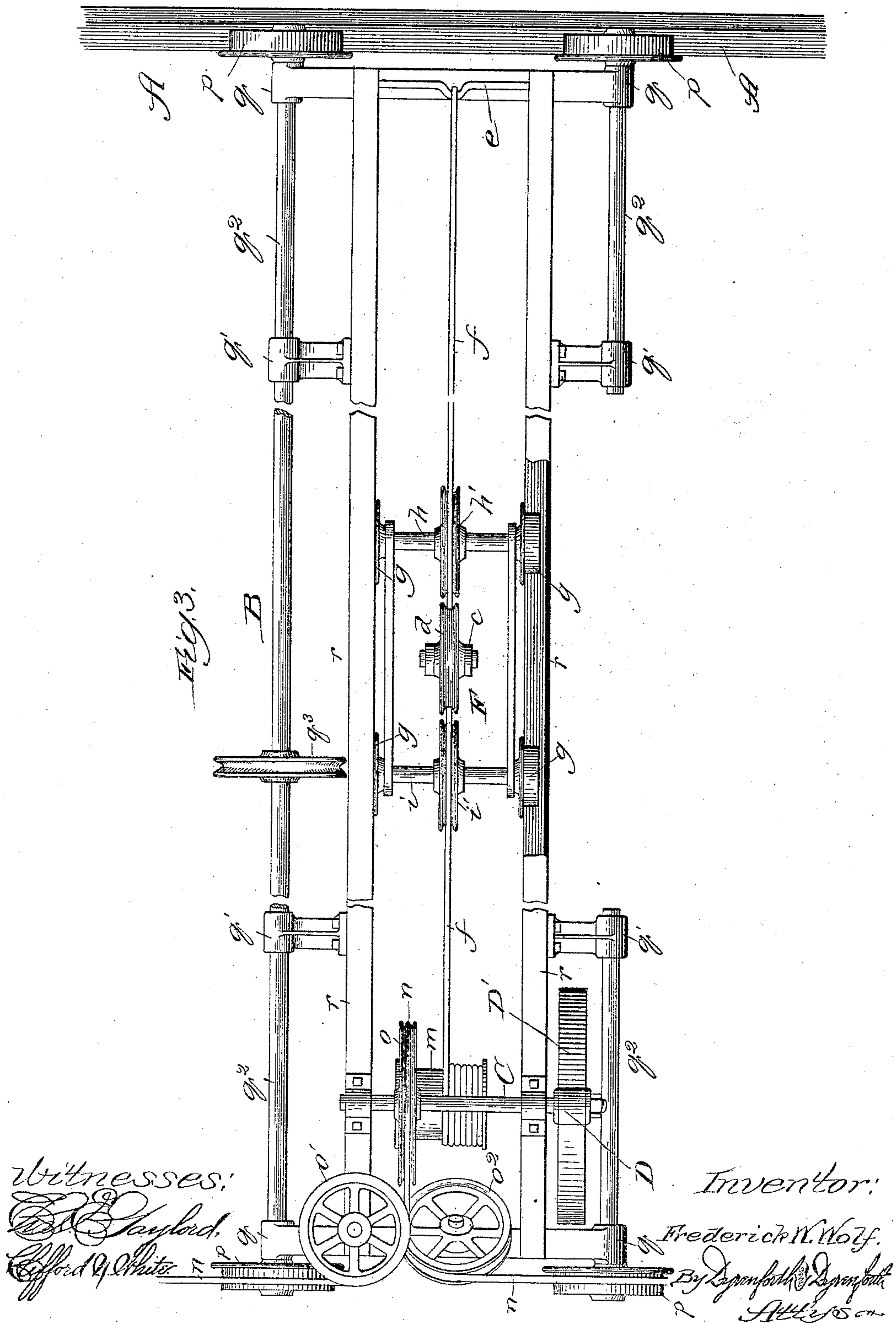
Patented Jan. 20, 1891.



3. Sheets—Sheet 2.

No. 444,968.

Patented Jan. 20, 1891.



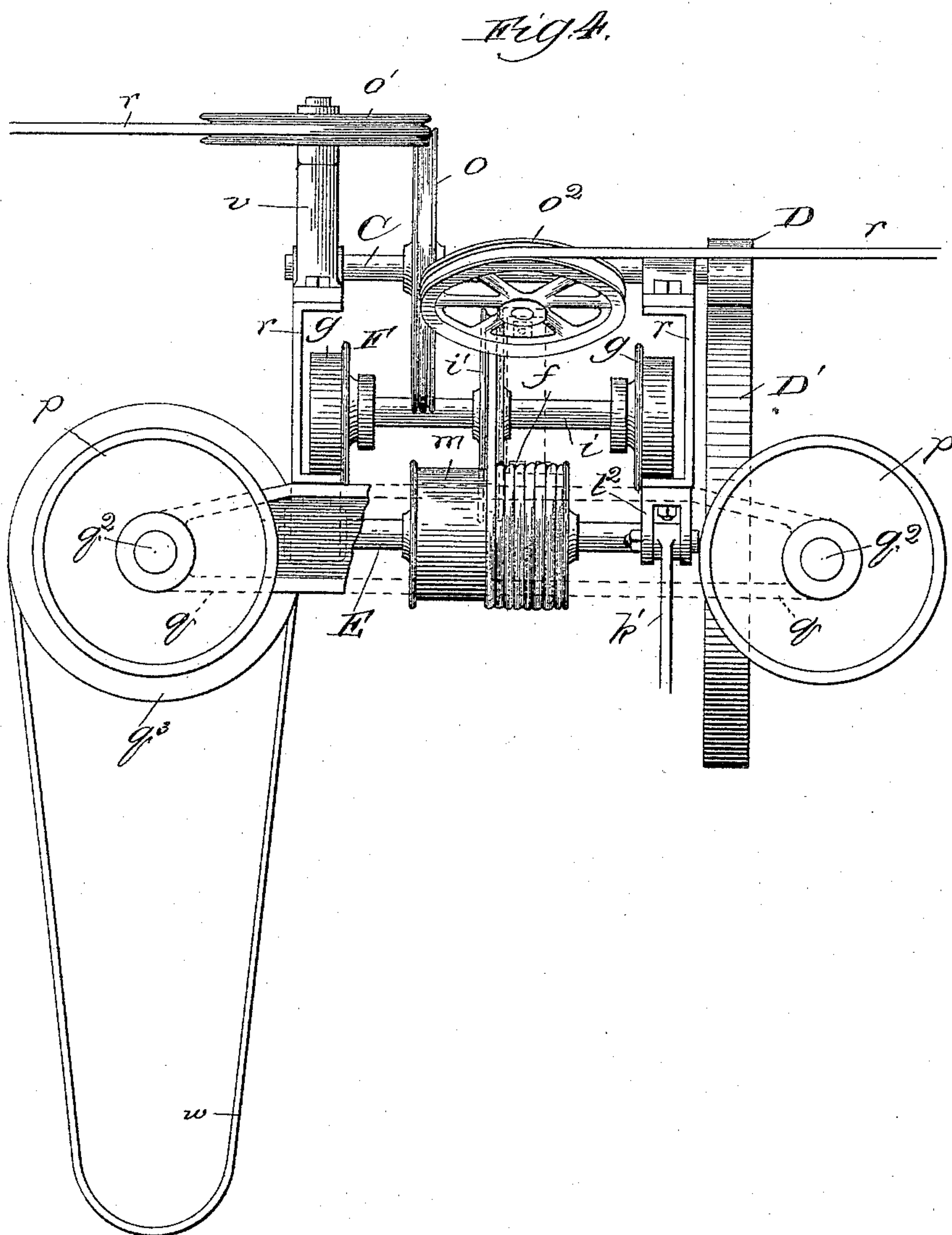
(No Model.)

3 Sheets—Sheet 3.

F. W. WOLF.
TRAVELING CRANE.

No. 444,968.

Patented Jan. 20, 1891.



Witnesses:
 E. J. Gaylord,
 Clifford W. White.

Inventor:
Frederick W. Wolf,
By Dymenboth & Dymenboth,
Attys.

UNITED STATES PATENT OFFICE.

FREDERICK W. WOLF, OF CHICAGO, ILLINOIS.

TRAVELING CRANE.

SPECIFICATION forming part of Letters Patent No. 444,968, dated January 20, 1891.

Application filed October 7, 1890. Serial No. 367,311. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. WOLF, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Traveling Cranes, of which the following is a specification.

Ice manufactured artificially by means of an ice-machine is produced in cakes of considerable weight, so that to handle them conveniently, as for removal from the machine, storing and loading them, and the like, machinery is required. I have devised a traveling crane designed especially for this purpose, though it may of course be used for other purposes. The construction involves, generally stated, a carriage adapted to travel on a raised track and carrying a driving-shaft for the ice-hoisting mechanism supported on the carriage and provided with a friction-wheel on a shaft having a yielding bearing and actuated to work the hoisting mechanism by a friction-pulley on the said driving-shaft.

In the accompanying drawings, Figure 1 is a view showing my improved apparatus in broken end elevation on an elevated track, shown in cross-section; Fig. 2, a broken sectional view showing in detail the construction of the yielding bearing for the hoist-operating shaft; Fig. 3, a broken plan view of the apparatus; and Fig. 4 a side view, partly broken and regarded from the left-hand side of either Fig. 1 or Fig. 3.

A A denote the overhead or elevated rails for supporting the carriage B and parts it carries, the rails being located to form a route, say, in a building between the ice-machine and place of ice-storage. I form the carriage B of channel-bars r , with the channeled sides facing each other, the bars extending lengthwise between the tracks A and being connected at their opposite ends by and there supported on trusses q , having journal-bearings for the outer end portions of the axles q^2 , carrying the carriage-wheels p . The axles q^2 are supported at their inner ends, if they be divided, as shown at one side of the carriage, or intermediately if, as shown on the opposite side, a continuous axle be used for two wheels p , by bearings q' , extending from the outer sides of the channel-bars r .

C is the main driving-shaft journaled upon the channel-bars r near one end of the carriage-frame, the shaft carrying a grooved pulley o inside the carriage-frame, and at one end a friction-pulley D, formed, preferably, of paper. Adjacent to the pulley o a guide-pulley o' is supported on a post v , extending from one of the bars r , and the pulley o' occupies a horizontal position at or near the upper plane of the periphery of the vertically-disposed pulley o . A guide-pulley o^2 is supported in inclined position near the lower plane of the periphery of the pulley o . These pulleys o' and o^2 are relatively placed with relation to the driving-pulley o to guide an endless rope n or cable passing around the driving-pulley in contrary directions to mechanism (not shown) for controlling it to produce rotation of the pulley o .

Below the axle C is journaled, in bearings on the under sides of the channel-bars r , a rotary shaft E, carrying in the plane between the channel-bars a drum m , and near the end corresponding with that of the shaft C, provided with the friction-pulley D a friction-wheel D', preferably of metal, and adapted to have frictional contact with the pulley D and to have such contact broken by a yielding bearing E' for the adjacent end of the shaft E. This bearing I form with a link l , in which the shaft is journaled, and which is pivotally connected at one end with an ear l' , extending from the under side of a channel-bar r . The opposite end of the link is pivotally connected with an eccentric projection k' on the end of a lever k , pivoted at one end to an ear l^2 like the ear l' , and carrying at its opposite free end a weight k^2 . Directly below the wheel D' is a stationary brake-shoe D², curved to conform to the peripheral surface of the wheel.

The construction of the yielding bearing E' causes the weight k^2 to operate normally to tend to lower the end of the link l connected with the lever k , and thereby to lower the adjacent end of the shaft E and, consequently, the wheel D', out of contact with the pulley D, and into contact with the brake-shoe D², or, depending on the extent of release of the lever-controlling line k^3 , midway between the brake-shoe and friction-pulley and thus out of frictional contact with both.

F is a truck comprising axles i and h , tied

together, as shown, and carrying wheels g , resting at their treads on the lower flanges of the channel-bars r . The axles i and h loosely carry, respectively, the peripherally grooved pulleys i' and h' in line with each other, and forming guides for a rope f or cable, secured at one end to the drum m , extending thence over both pulleys i' and h' , and secured at its opposite end to a stationary bar e , the rope supporting between the two said pulleys a third pulley d , from which is suspended, through the medium of links c , a species of tongs G , the outwardly-curved members b of which tend to spread apart and engage the ice-block-containing tank H , as indicated in Fig. 1. If desired, of course the tongs G may be, and operate substantially, like the common or any other suitable form of ice-carrying tongs.

The operation is as follows: Supposing the crane to be in a position on its track wherein it is to serve to hoist a can or tank H containing a cake of manufactured ice out of the ice-making tank of the ice-machine and requiring the tongs G to be lowered for their adjustment to cause them to engage the can, the operator then pulls the rope k^3 to cause the lever k to raise the bearing E' , and thus bring the wheel D' out of frictional contact both with the brake D^2 and pulley D to permit the rope f to unwind from the drum and the weight of the pulley d and parts connected with it to lower the tongs G (with the assistance of an operator, if required.) When this lowering has proceeded sufficiently, the rotation of the drum m and further paying off of the rope f may be instantaneously arrested by the operator on releasing the rope k^3 to permit the weight k^2 to act by its gravity on the lever k to lower the wheel D' against its brake D^2 . On adjusting the tongs G to engage the can H the operator pulls the rope k^3 to effect raising of the shaft E , the wheel D' being then rotated by contact with the pulley D on the shaft C (which is continuously turned in the direction indicated by the arrow in Fig. 1) to wind up the rope f , and thus produce raising to the desired height of the ice-laden can H , when the rope k^3 should be released to arrest, by the engagement of the wheel D' with its brake D^2 , further rotation of the drum. Thus the cake of ice is suspended at a suitable elevation to be transported to the place of storage, the transportation being produced by moving the carriage B on the rails A , which may be done by hand or by machinery, and, if the former, through the medium of a rope w or chain passed around a pulley q^3 on the long shaft q^2 . On reaching its destination the carriage is stopped and the rope k^3 pulled to effect lifting of the wheel D' from contact with its brake D^2 (but not sufficiently to bring it against the pulley D) to permit the weight of the cam H to lower it by producing paying off of the rope f from the drum m . The subsidiary truck F enables the operator, in storing the ice, to move the can H readily to or the nearer to

any of different points in the storage-chamber by merely propelling (by hand) the truck on its track (the channel-bars r) toward such point. On disengaging the can H from the tongs G the latter are ready to be hoisted preparatory to returning the crane for another load, which hoisting is accomplished by pulling the rope k^3 to produce contact of the wheel D' with the pulley D , thereby causing the drum m to wind up the rope f , and when the tongs have been sufficiently raised the rope k^3 is controlled to permit the brake D^2 to act; and the crane is returned to the place of supply. Thus, as will be seen, a traveling crane is provided, which, by its construction, is readily movable to and fro on its route, and as readily operated to handle heavy objects, such as the blocks of ice, in hoisting them, holding them while suspended, and depositing them at desired points.

I do not limit my improvement to exact details involved in the construction herein shown and described, as they may be variously modified without thereby departing from my invention.

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

1. In a traveling crane, the combination of a carriage B , adapted to run on an elevated track and supporting a driving-shaft C , a shaft E , journaled at one end in a yielding bearing E' , controlled by a weighted lever k and adapted to be geared with the shaft C , a truck F on the carriage, having guide-pulleys i' and h' , a rope f or cable secured at one end to the shaft C , passing thence over the guides i' and h' , and fastened at its opposite end, and means for engaging a weight H to be carried suspended on the rope f from between the said guides on the truck, substantially as described.

2. In a traveling crane, the combination of a carriage B , adapted to run on an elevated track and supporting a driving-shaft C , having a friction-pulley D , a shaft E , journaled at one end in a yielding bearing E' and carrying a friction-wheel D' and controlled through the medium of a weighted lever k to produce and release frictional contact between the pulley D and wheel D' , a brake D^2 for the said friction-wheel, a truck F on the carriage having guide-pulleys i' and h' , a rope f or cable secured at one end to the shaft C , passing thence over the guides i' and h' , and fastened at its opposite end, and means for engaging a weight H to be carried suspended on the rope f from between the said guides on the truck, substantially as described.

3. In a traveling crane, the combination of a carriage B , adapted to run on an elevated track and supporting a driving-shaft C , carrying a friction-pulley D , a shaft E , carrying a friction-wheel D' and a drum m , said shaft being journaled at one end in a yielding bearing E' , comprising a pivotal link l and a weighted lever k , eccentrically with which the link is connected, a friction-wheel D' on the shaft E , a brake D^2 for the friction-wheel, a

truck F on the carriage, having guides i' and h' , a rope f or cable secured at one end to the drum m , passing thence over the guide-pulleys i' and h' , and fastened at its opposite end, and means for engaging a weight H to be carried suspended on the rope f from between the said guides on the truck, substantially as described.

4. A traveling crane comprising, in combination, a carriage B, adapted to run on an elevated track and having a frame formed with channel-bars r , connected at their ends by trusses q , having journal-bearings for the axles of the carriage-wheels, bearings q' for the said axles on the bars r , a driving-shaft C, journaled on the carriage-frame and provided with a pulley o and a friction-pulley D, a guide-pulley o' , journaled in a horizontal position, and a guide-pulley o^2 , journaled in an inclined position adjacent to the pulley o , to guide the operating-rope n thereon, a shaft E,

carrying a friction-wheel D' and a drum m , said shaft being journaled at one end in a yielding bearing E', comprising a pivotal link l and a weighted lever k , eccentrically with which the link is connected, a friction-wheel D' on the shaft E, a brake D² for the friction-wheel, a truck F, supported on the flanges of the channel-bars r and having guide-pulleys i' and h' on its axles, a rope f or cable secured at one end to the drum m , passing thence over the guides i' and h' , and fastened at its opposite end, a pulley d , suspended on the rope f between the pulleys i' and h' , and tongs G, suspended from the pulley d , the whole being constructed and arranged to operate substantially as described.

FREDERICK W. WOLF.

In presence of—

J. W. DYRENFORTH,
M. J. FROST.