

No. 686,004.

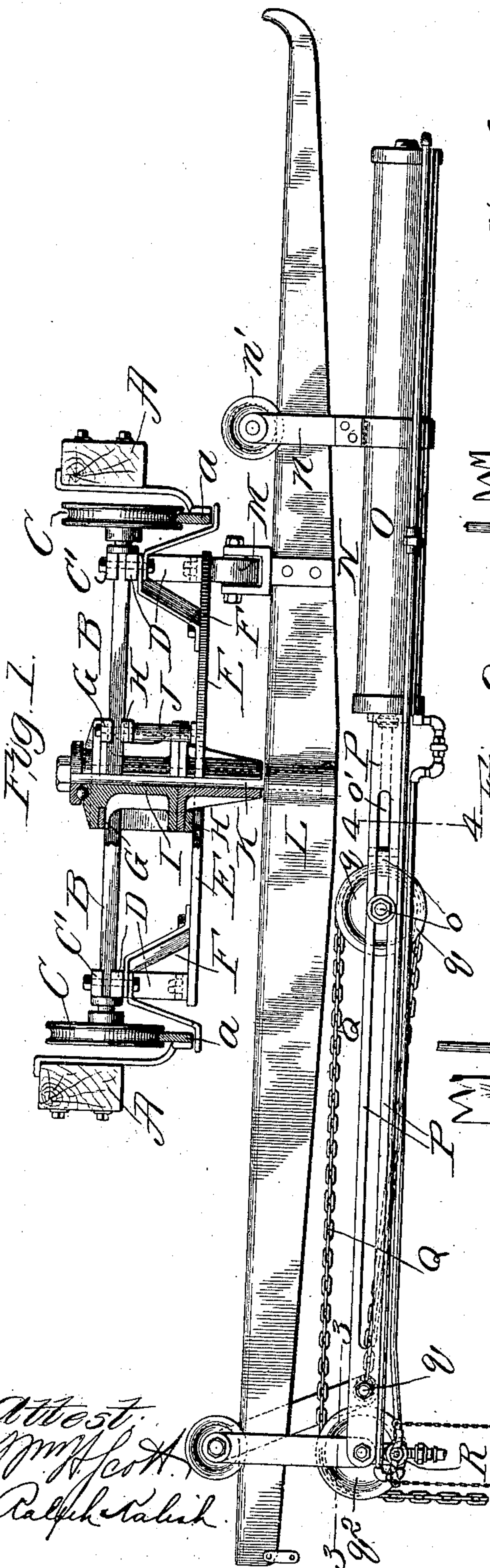
G. W. MUDD.  
RADIAL HOIST.

Patented Nov. 5, 1901.

(No Model.)

(Application filed May 9, 1901.)

2 Sheets—Sheet 1.



Attest:  
J. M. Scott  
Ralph Talbot

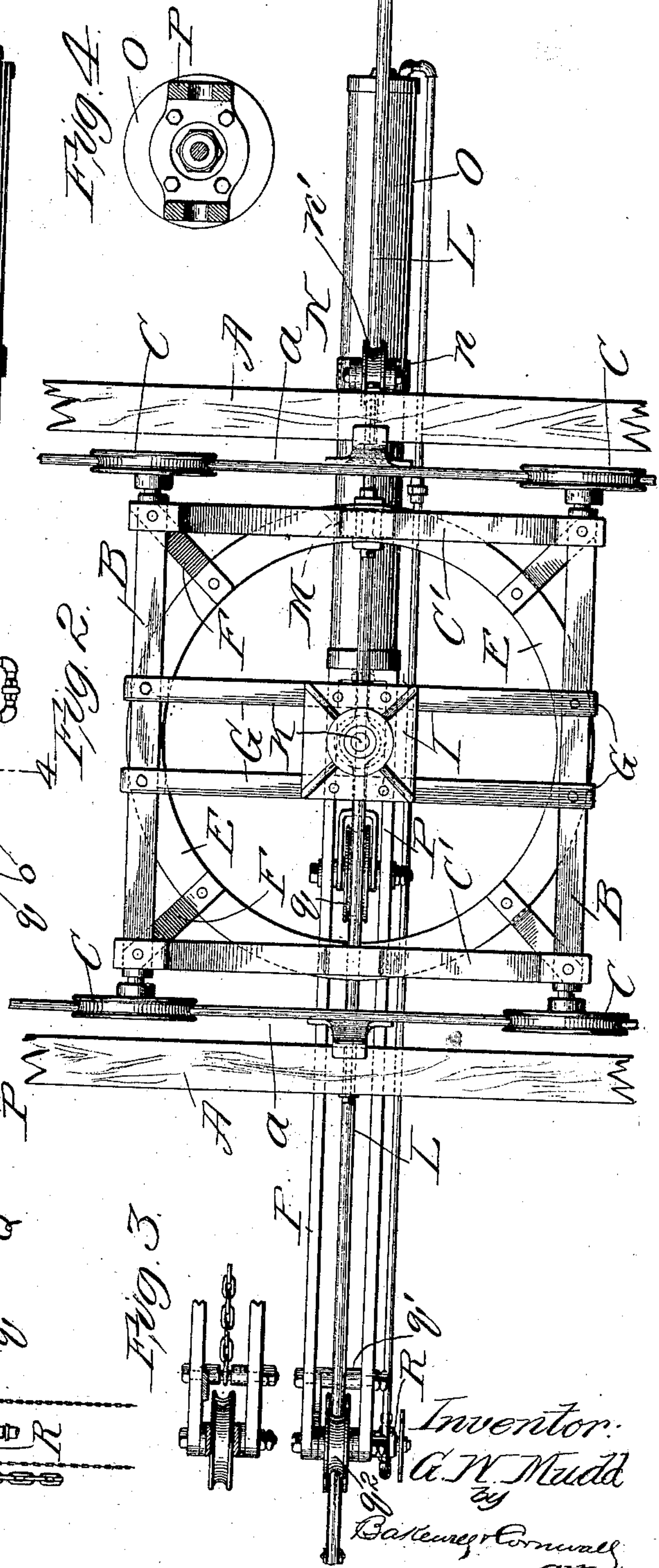
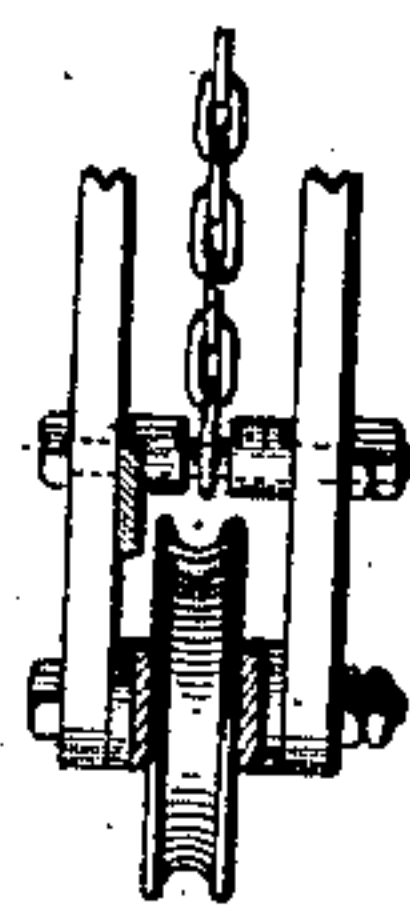


Fig. 3.



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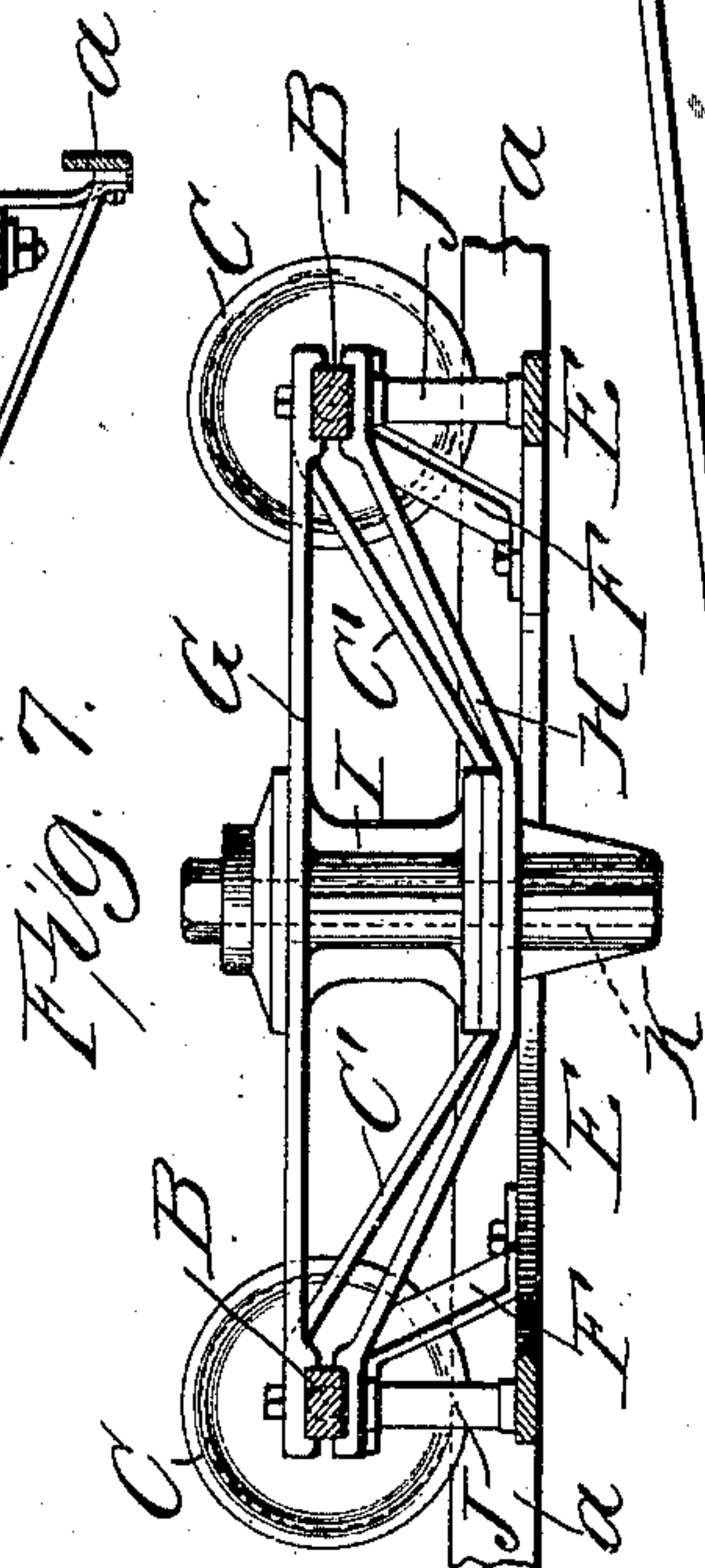
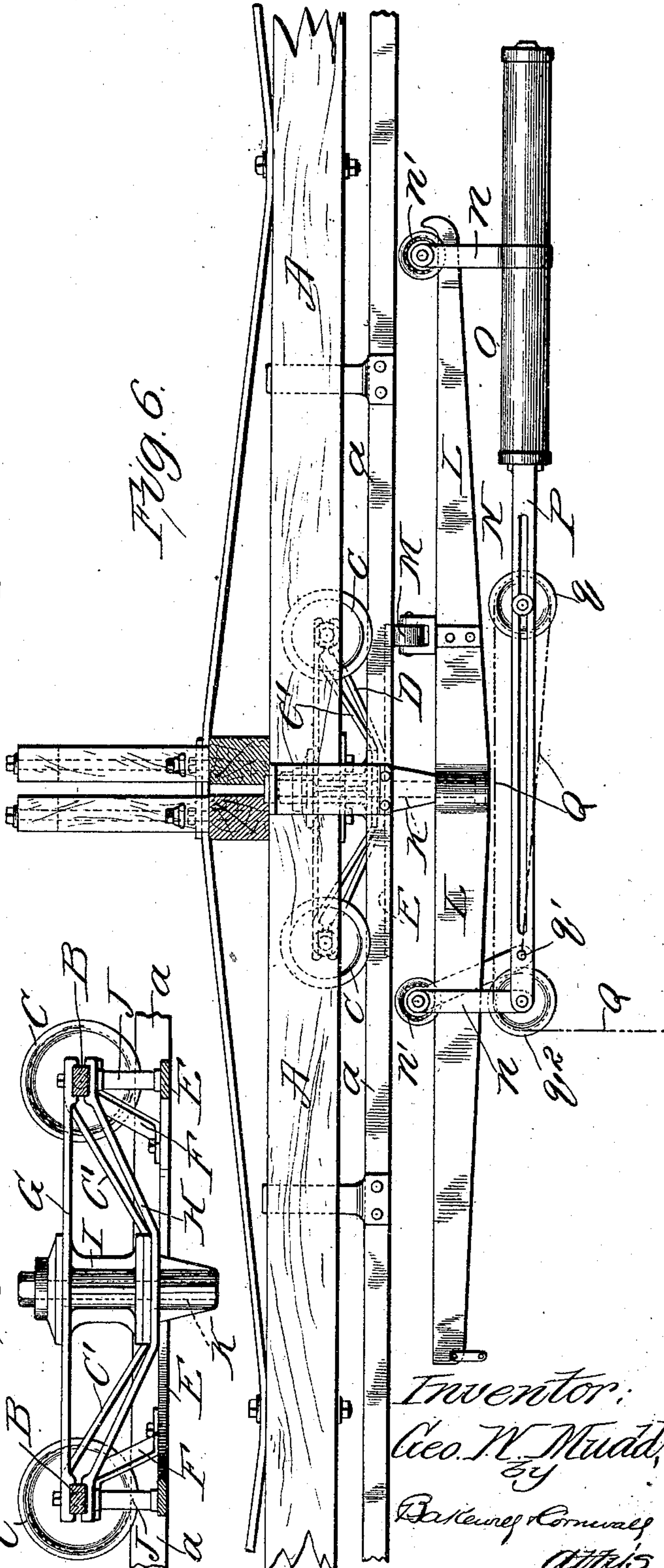
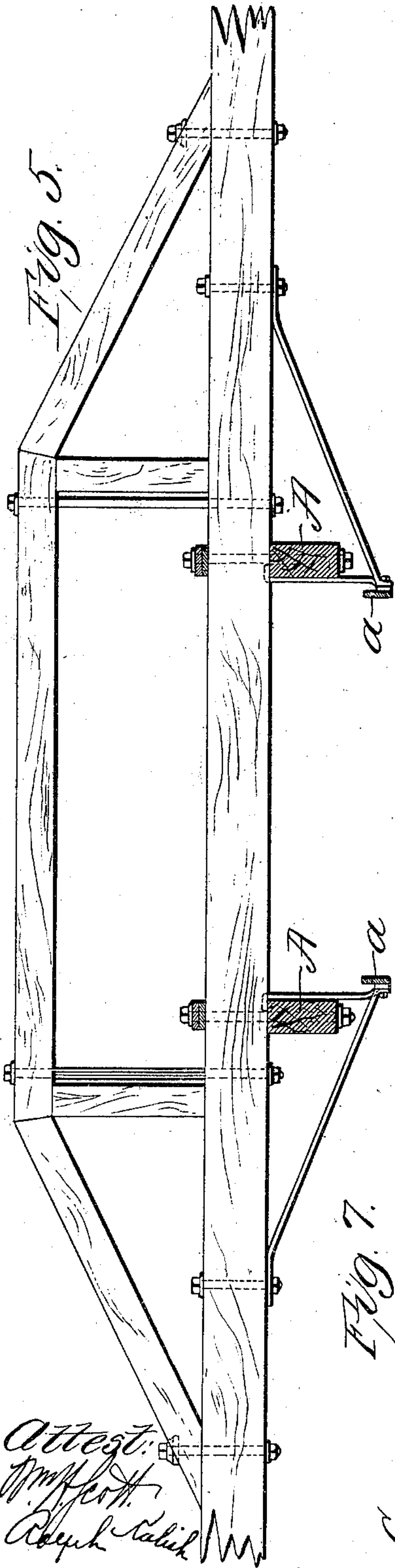
G. W. MUDD.

RADIAL HOIST.

(Application filed May 9, 1901.)

(No Model.)

2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

GEORGE W. MUDD, OF MOBERLY, MISSOURI.

## RADIAL HOIST.

SPECIFICATION forming part of Letters Patent No. 686,004, dated November 5, 1901.

Application filed May 9, 1901. Serial No. 59,418. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. MUDD, a citizen of the United States, residing at the city of Moberly, county of Randolph, State of Missouri, have invented a certain new and useful Improvement in Radial Hoists, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevational view of my improved radial hoist. Fig. 2 is a top plan view. Fig. 3 is a sectional view on line 3 3, Fig. 1. Fig. 4 is a sectional view on line 4 4, Fig. 1. Fig. 5 is a cross-sectional view through the truck, showing the manner of supporting and bracing the same. Fig. 6 is a side elevational view of the track, showing the radial hoist in position thereon; and Fig. 7 is a sectional view of the truck on line 7 7, Fig. 2.

This invention relates to a new and useful improvement in radial hoists, the object being to construct a device of the character described which is susceptible of rotary and radial adjustment, the hoist as an entirety being mounted upon a track, whereby it can be moved from one portion of a shop to another. The hoist shown in the drawings is designed especially for use in railroad-shops and is especially useful in the dismantling of engines or the jacking up of parts thereof for purposes of repair.

With these objects in view the invention consists in the arrangement, construction, and combination of the several parts, all as will hereinafter be described and afterward pointed out in the claims.

In the drawings, A indicates track-timbers, from which are suspended track-rails  $a$ , the same forming an overhead track running in various directions to convenient points. On the track is arranged a truck, which consists of two axle-bars B, having the grooved wheels C mounted upon their ends, which grooved wheels bear upon the track-rails. The ends of these axle-bars are connected by arch-bars C' and D. These arch-bars support a circular track-ring E, (see Fig. 7,) which ring forms a concentric track, cooperating with a roller hereinafter described.

F indicates brackets at the corners of the truck-frame, which are also employed for supporting the track-ring.

G indicates tie-bars, which are arranged parallel to each other and are supported upon the middle portions of the axle-bars.

H indicates the bottom arch-bars in vertical alinement with the tie-bars G, (see Fig. 7,) said arch-bars extending under a casting I, arranged in the center of the truck. This casting is also supported by the tie-bars G. Posts J are arranged under the ends of the arch-bars H for supporting the track-ring E. The tie-bars G and the arch-bars C', D, and H have seats formed at their ends for embracing the axle-bars, said tie and arch bars serving as members of trussed frames for supporting the track-ring and centrally-arranged casting I. This casting I in one sense serves as a strut for the frames composed of the bars G and H, the former being placed in compression and the latter in tension.

The casting I serves as a pivotal support for a king-bolt K, whose upper end is preferably provided with a washer, under which are arranged suitable balls. The lower end of this king-bolt is suitably headed and carries what will be termed, for the sake of convenience, a "beam" L.

M indicates a roller mounted in suitable bearings on the beam and cooperating with the track-ring E.

N indicates a frame provided with brackets  $n$ , between which are mounted rollers  $n'$ , said rollers being grooved and operating upon the upper rounded edge of the beam L. This beam L forms a track for this rolling frame, and any suitable means are provided at the ends of the track for preventing the rollers from becoming displaced.

The frame N, before referred to, consists of a cylinder O and slotted guideways P, in which guideways operates the cross-head  $o$ , mounted upon the end of the piston-rod  $o'$ , which projects out from the cylinder O. The cross-head  $o$  carries a grooved sheave or pulley  $q$ , over which passes a lifting chain or cable Q, one end of said chain or cable being fastened to a cross-bar  $q'$ , arranged at the forward end of the guiding-frame P.  $q^2$  indicates a grooved sheave or pulley mounted at the forward extremity of the frame P and



over which the chain or cable Q passes. The arrangement of the cylinder, sheaves, and hauling-cable is similar in many respects to what is commonly known as the "multiple-sheave" system.

A valve R controls the admission and exhaust of pressure which passes to and from the ends of the cylinder O through suitable pipes. The valve-operating chains preferably hang from a lever, whereby the operator can control said valve.

Referring now to Figs. 5 and 6, I have shown a support for a track involving trussed wooden frames and lateral track-braces, which are preferable, though not absolutely necessary, to the operation of my improved radial hoist.

In operation the truck carrying the hoisting device is moved along its track until the hoisting-chain Q is located over the weight to be lifted. By exhausting pressure from the front end of the cylinder and admitting pressure into the back end thereof the cross-head and its carried sheave q move outwardly, paying out the chain Q and enabling its adjustment to the weight to be lifted.

When the chain is secured in position, pressure is admitted in front of the piston, forcing the same and its connected sheaves q rearwardly until the weight is lifted to the desired height. Frame N may now be moved longitudinally the beam L or the beam swung around, or the entire truck, its lifting device, and the weight may be moved along the track a. The roller M being located on the opposite side of the king-bolt K from that where the weight is carried relieves the king-bolt of most of its transverse or bending strains and enables the beam to be swung freely on its pivot.

I am aware that minor changes in the arrangement, construction, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

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

1. In a radial hoist, the combination with a track, of a truck mounted thereon, a beam pivotally supported at about its center by said truck, and a frame containing hoisting devices mounted on said beam and movable longitudinally thereof, said frame engaging the beam on each side of the pivotal point of said beam; substantially as described.

2. In a radial hoist, the combination with a track, of a truck mounted thereon, a beam pivotally carried by said truck, a track-ring on the truck, a roller on the beam cooperating with said track-ring, and a frame containing hoisting devices and having rollers engaging the beam, whereby said frame and

its hoisting devices are movable longitudinally the beam; substantially as described.

3. In a rotary hoist, the combination with the truck, of a beam pivoted thereon, a track-ring arranged on said truck, and concentric to the axis of rotation of said beam, and a frame comprising a cylinder, and guideways suspended from said beam movable longitudinally thereof, fixed and movable pulleys mounted in the guideway-frame, and a hauling chain or cable cooperating with said pulleys; substantially as described.

4. In a radial hoist, the combination with an overhead track, of a truck mounted thereon, a beam pivotally supported upon said truck, a cylinder O, a guiding-frame P secured to the cylinder, said cylinder and guiding-frame being suspended from rollers arranged on the pivoted beam, fixed and movable pulleys mounted in the guiding-frame, a hauling chain or cable cooperating with said pulleys, and a valve having pipe connections with the opposite end of the cylinder, said valve being arranged upon the guiding-frame; substantially as described.

5. In a radial hoist, the combination with the axle-bars, of a track-ring, arch-bars for supporting the track-ring from the axle-bars, a beam pivotally suspended from the axles and arch-bars, a roller on the beam cooperating with said track-ring, and a frame containing hoisting devices and having rollers engaging the beam, whereby said frame and its hoisting devices are movable longitudinally the beam; substantially as described.

6. In a radial hoist, the combination with the axle-bars, of a trussed frame supported at its ends by said axle-bars, said trussed frame comprising a top or compression member, and a bottom or tension member, and a casting forming a strut for said trussed frame, said casting being cored longitudinally to receive a king-bolt; substantially as described.

7. In a radial hoist, the combination with the rails a, of axle-bars having rollers on their ends cooperating with said rails, a track-ring, bars C and D for supporting said track-ring from the ends of the axle-bars, a casting I, bars G and H for supporting said casting from the middle portion of the axle-bars, a king-bolt supported by said casting, a beam arranged on the lower end of said king-bolt and having a roller for cooperating with the under face of the track-ring, and hoisting devices mounted upon, and movable longitudinally said beam; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 6th day of May, 1901.

GEORGE W. MUDD.

Witnesses:

J. R. TAIT,

J. W. DORSER.