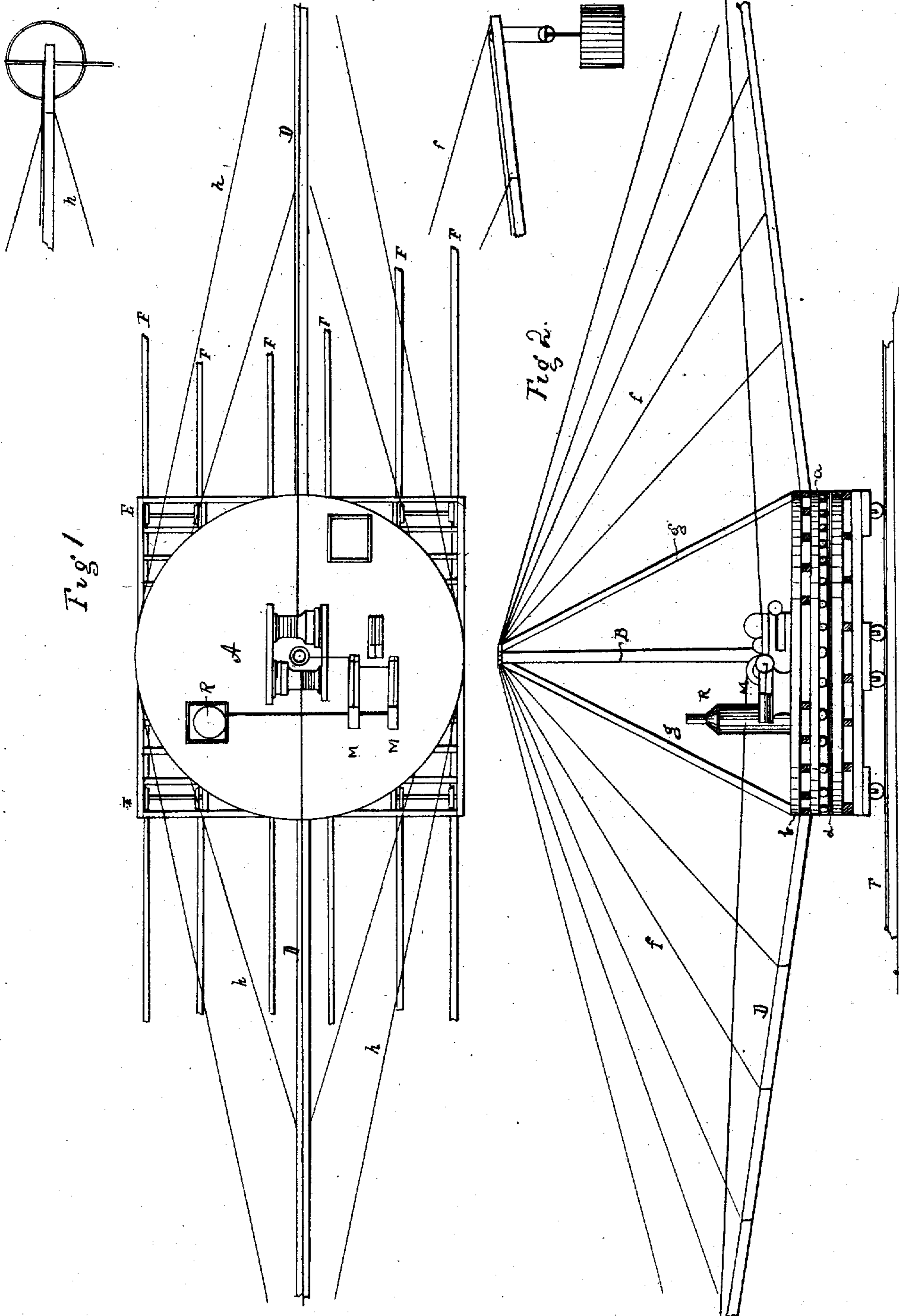


E. MOORE.

Derrick.

No. 221,848.

Patented Nov. 18, 1879.



ATTEST

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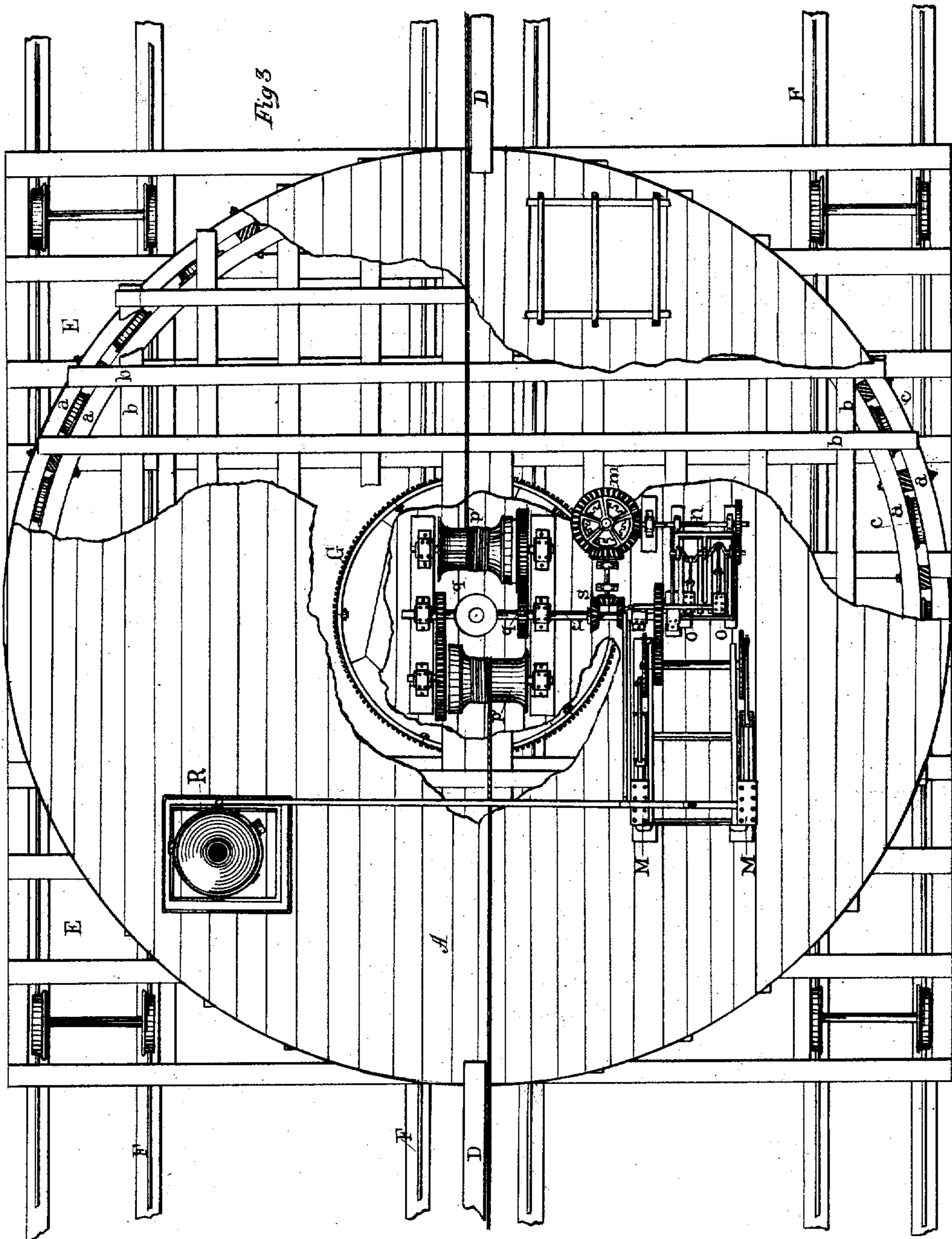
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E. MOORE.
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5 Sheets—Sheet 3.

No. 221,848.

Patented Nov. 18, 1879.

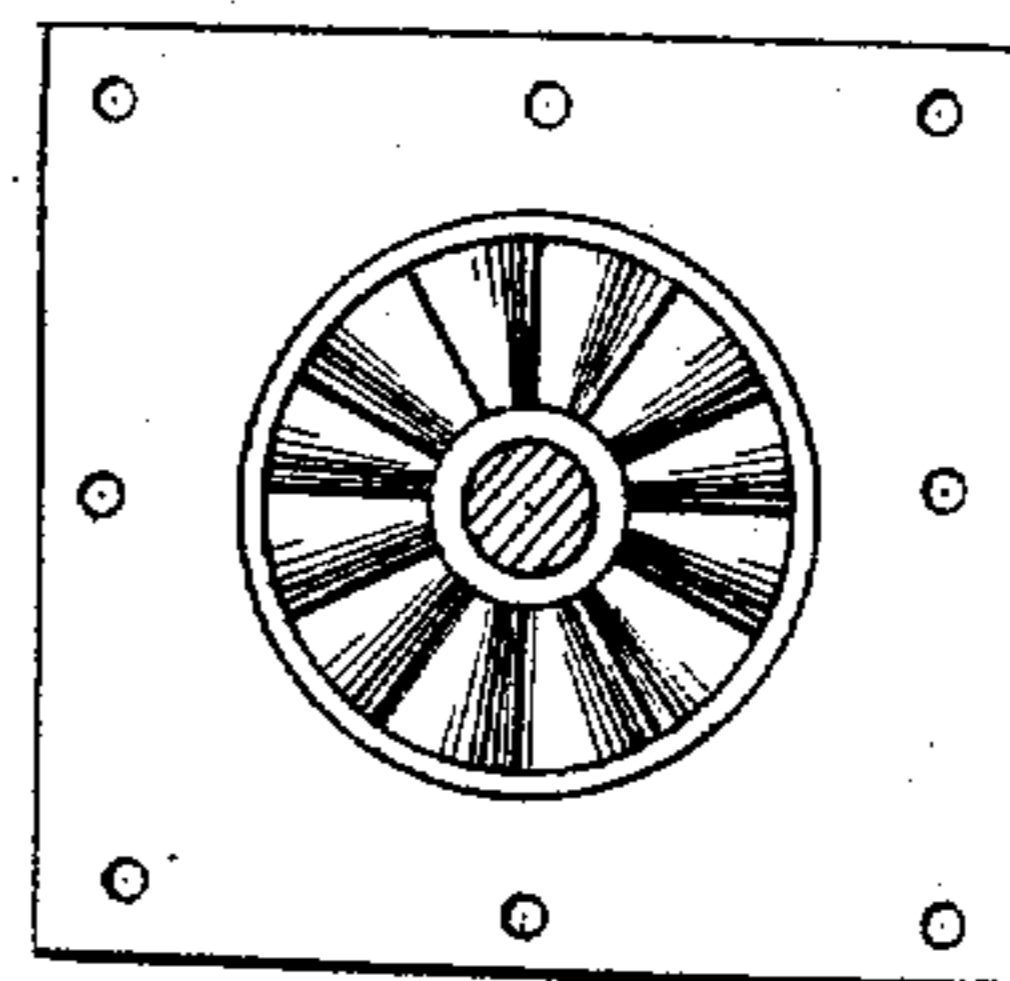
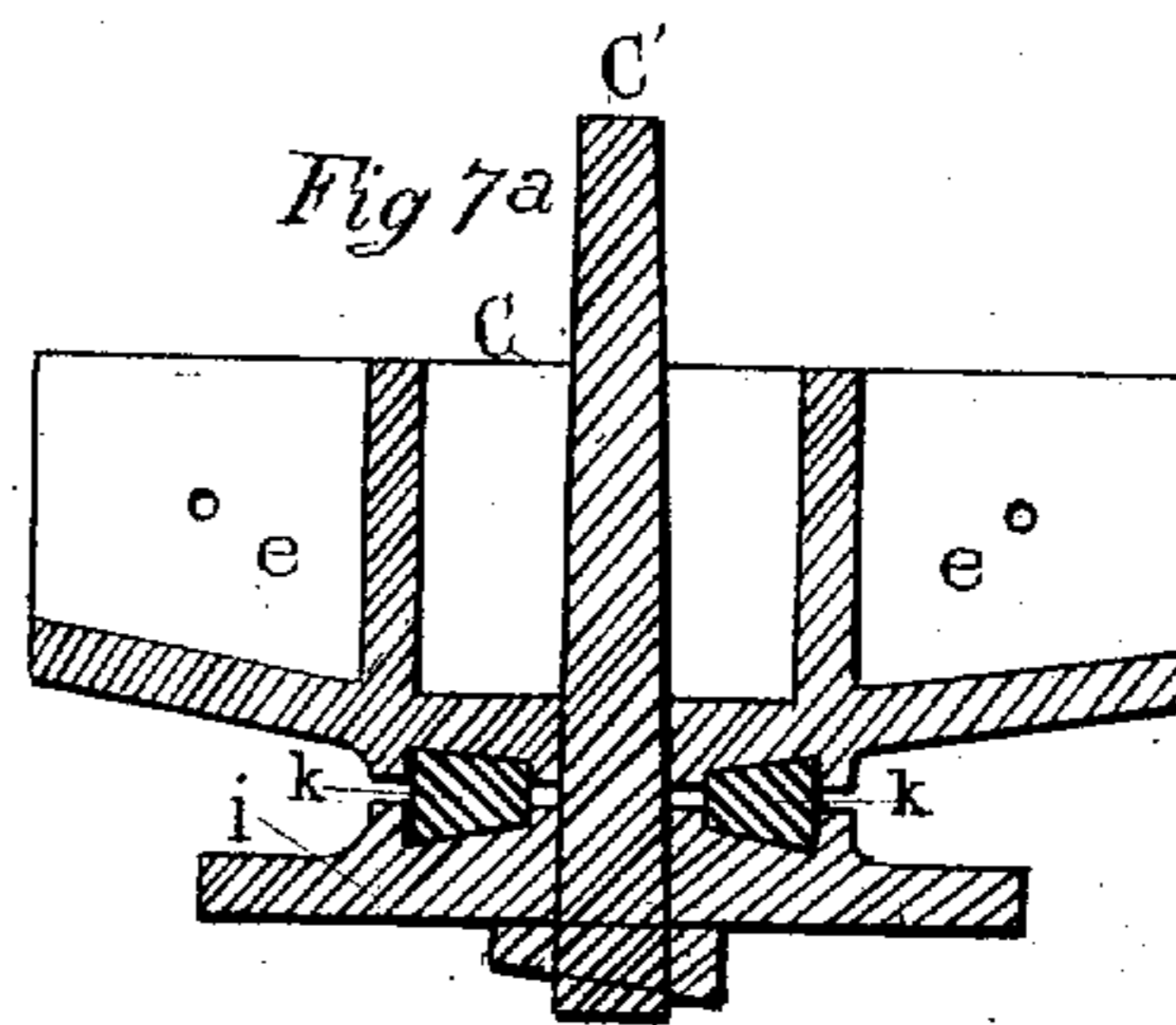
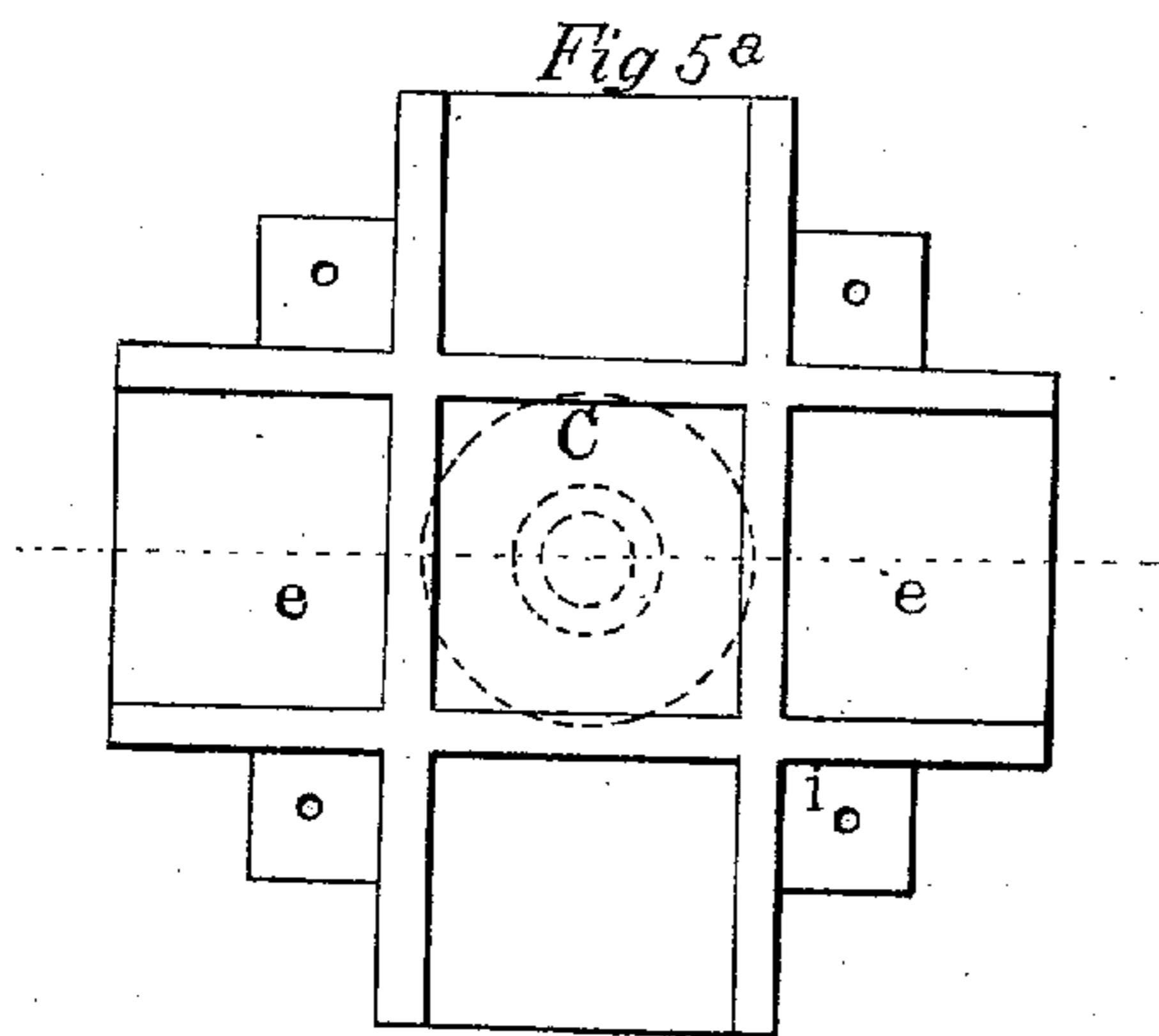
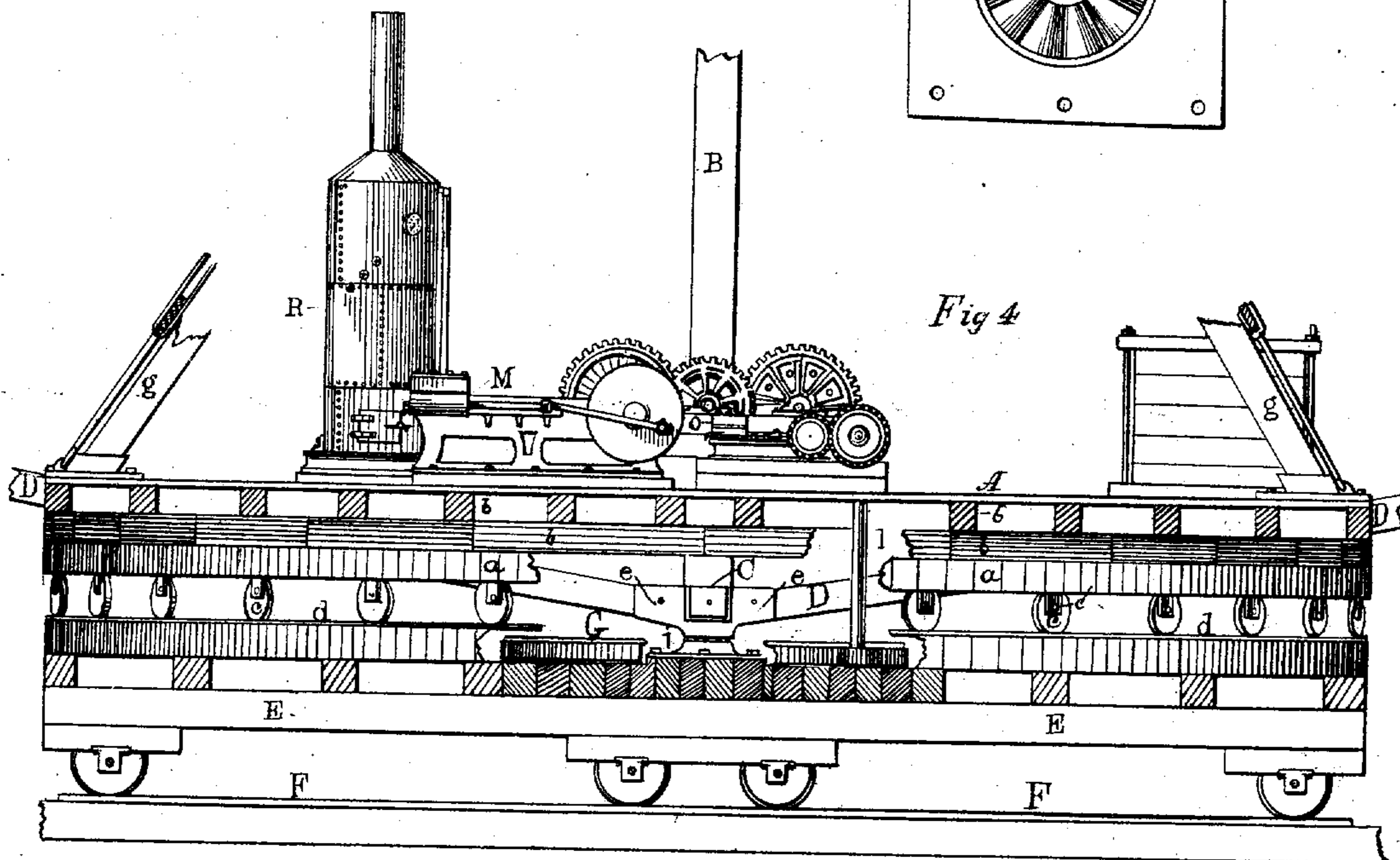


Fig 6a



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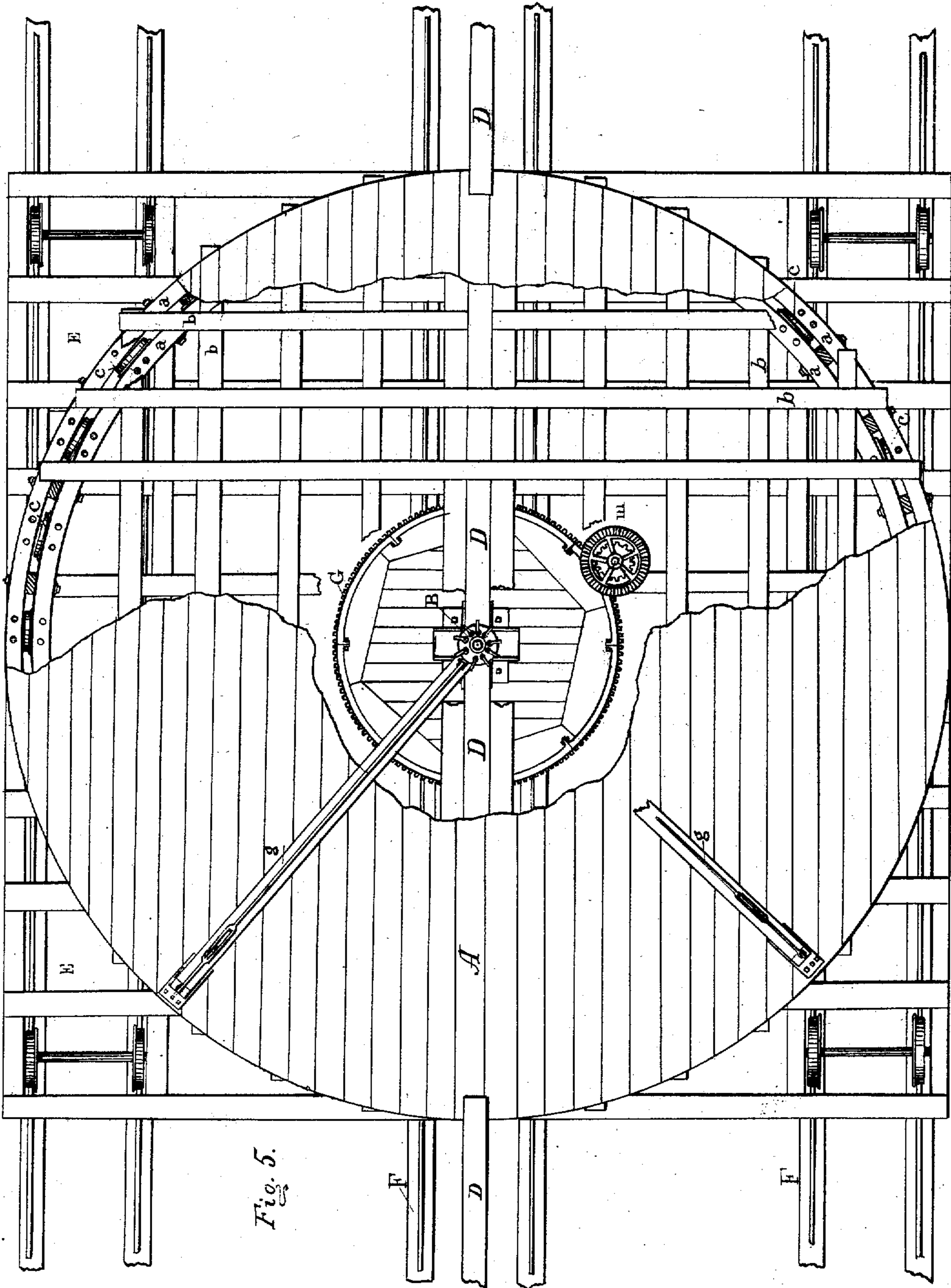


Fig. 5.

ATTEST

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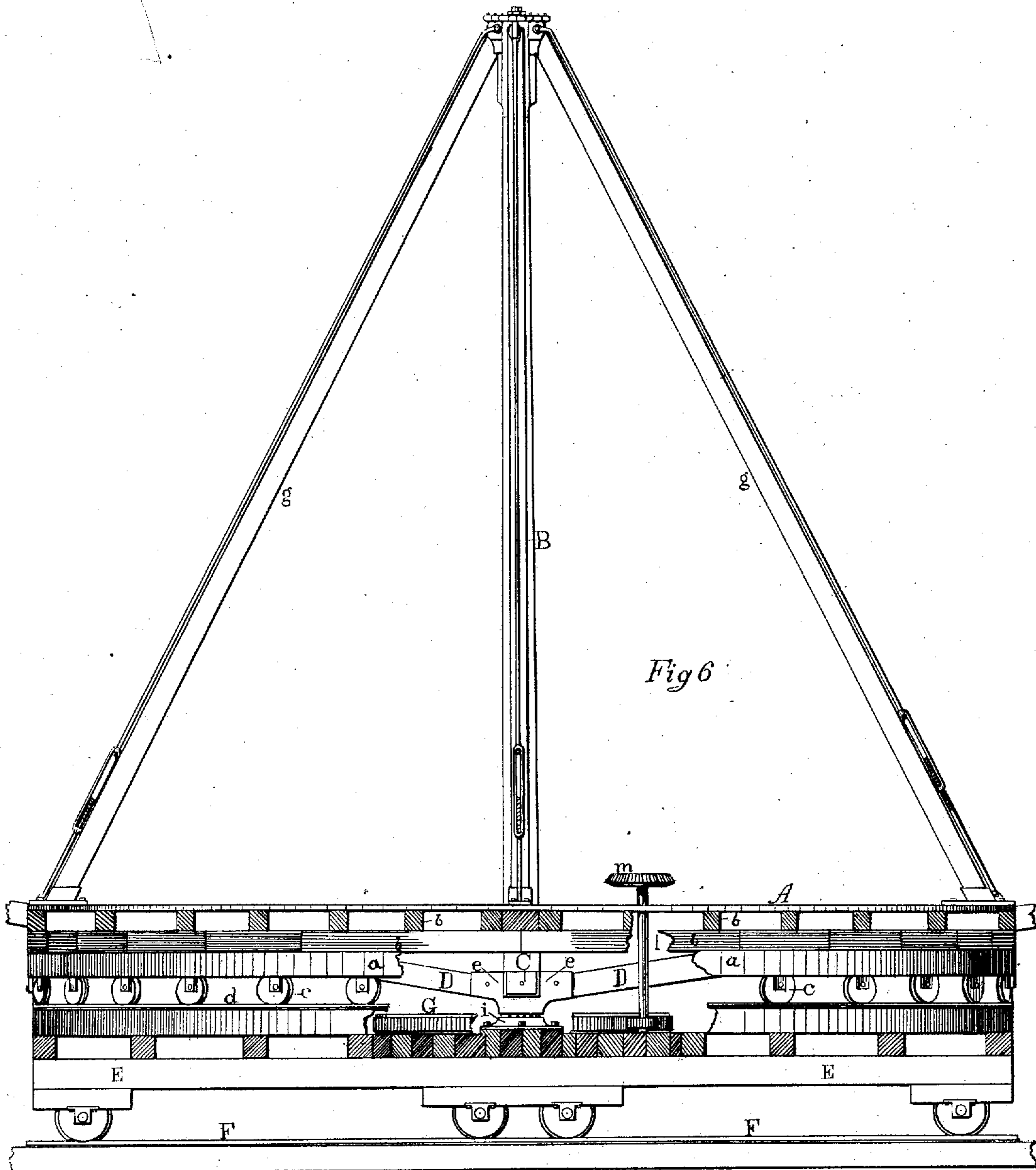
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UNITED STATES PATENT OFFICE.

EDWARD MOORE, OF PORTLAND, MAINE, ASSIGNOR OF ONE-HALF OF HIS
RIGHT TO AUGUSTUS RYKER WRIGHT, OF GENEVA, NEW YORK.

IMPROVEMENT IN DERRICKS.

Specification forming part of Letters Patent No. **221,848**, dated November 18, 1879; application filed
April 21, 1879.

To all whom it may concern:

Be it known that I, EDWARD MOORE, of Portland, Cumberland county, Maine, have invented an Improvement in Derricks, of which the following is a specification.

My invention relates to derricks of that class in which the boom is mounted upon a revolving platform and adapted to raise any required material and transfer it, by the revolution of the platform, from one side of the derrick to the other.

It consists, essentially, of a circular platform mounted upon wheels, which run upon an annular track, said circular platform carrying two or more booms, arranged symmetrically and combined with suitable hoisting apparatus for raising material upon one side and moving it to any point within the sweep of the boom.

It consists, also, of certain details of construction hereinafter fully described, and particularly specified in the claims.

In the drawings hereunto attached, and forming part of this specification, Figure 1 is a plan view; Fig. 2, a side elevation of the entire apparatus. Fig. 3 is a plan view; Fig. 4, an elevation of the platform, trucks, engines, and other working parts on a larger scale, showing more fully the details of construction. Figs. 5, 6, and 5^a, 6^a, and 7^a represent certain details of construction.

The object had in view in my invention is the rapid and convenient removal of heavy materials—such, for instance, as mud dredged from a river or other body of water—and their transfer to a convenient distance.

Heretofore, although derricks have been in common use for hoisting heavy materials and transferring them over short distances—as from a wharf to shipboard or the reverse—the only practical way which has been found for removing heavy masses of earth or the like to any considerable distance has been the laborious and expensive method of carting.

By my apparatus I am able to remove earth or mud or similar material more than two hundred feet in larger mass and much more rapidly than it could be moved in any other way known to me.

Referring to the drawings, A represents a

circular platform, which may be fifty feet (more or less) in diameter. It is represented as formed of two concentric annular beams, *a a*, supporting sills *b b*, over which is laid planking for the floor. The two annular beams *a a* are separated by a small space sufficient in width to admit the wheels *c c*, which support the circular platform and run upon the track *d*, resting upon the platform below. Upon this circular platform is mounted a central mast, B, laterally supported in the framework of the circular platform and stepped in the central socket of a shoe, C. (Shown detached in Figs. 5^a and 7^a.)

Supported upon the platform and diametrically opposite each other are two booms, D D, the inner ends of which rest in sockets *e e* in the shoe C, and upon the annular beams of the circular platform. They are also supported by the guys *f f*, extending from the head of the mast to different points upon the booms.

The mast is braced by struts *g g*, extending from the cap thereof to suitable foot-pieces resting upon the circular platform. The booms are supported against lateral strain by guys *h h*. (Shown in Fig. 1.)

The lower platform in Fig. 1 is shown at E E, rectangular in form and mounted upon trucks which run upon the straight tracks F F. These straight tracks may be laid to any convenient extent, and serve to shift the apparatus from place to place as the work progresses.

In the drawings I have shown three tracks adapted to three sets of trucks; but a greater or less number may be used, as circumstances require.

The circular track is firmly supported upon the lower platform, and must be made strong enough to resist the great weight and strain brought upon it. At the center of this circular track is fixed a bearing-plate, *i*, (shown more clearly in Fig. 7^a), provided with a central orifice, and adapted to conical rollers *k*. Upon these rollers rest the shoe C, securely centered by the bolt C'.

A circular ratchet-bar, G, is firmly fixed upon timbers in the center of the lower platform, said circular bar being concentric with the circular track, the bolt C' being at the center of

both. The teeth of this ratchet-bar are upon the outside, and a pinion fixed upon the shaft *l* gears into this ratchet-bar, and affords means for the rotation of the circular platform. This pinion is held securely in gear by the steadiness of the circular platform upon its track, and is not affected by any slight vertical motion of the platform. Obviously the weight of the structure rests mainly upon the circular track, and when any one of the booms is loaded the wheels and the rollers upon which they rest on the loaded side form the support for the said load, and become the fulcrum over which the loaded boom acts as a lever, the whole circular platform and the opposite boom serving as counterbalancing-weights to hold the platform in place and enable it securely to carry the load.

As the shoe C simply rests upon the rollers *k*, and is not fastened down, it may be slightly lifted, and free action is thereby allowed of all the parts.

The machinery for rotating the circular platform is shown more clearly in Fig. 3. A beveled gear, *m*, is fixed upon the upper end of the shaft *l*, as shown in Fig. 6. A small beveled gear meshes into this, being fixed upon the end of a horizontal shaft, *n*, driven by an engine or engines, *o o*.

In order to hoist the buckets or other weights at the ends of the booms, ordinary drums *p' p'* are located on each side of the mast. These drums are provided with large gear-wheels, which mesh into pinions *q q* on a central shaft, *r*, which is driven by suitable gearing from engines *M M*. On the shaft *r* are also arranged bevel-gears *s* for forming connection, as shown in the drawings, with the beveled gear *m* upon the shaft *l*. These are to be used whenever, for any reason, it is desirable to use the engines *M M* to impart motion to the platform upon its track. The boiler *R* is mounted at any convenient place upon the platform to supply steam to the engines.

I have shown in the drawings only two booms arranged diametrically opposite each other; but it is plain that four, or any other number which may be symmetrically arranged, may be used with the same effect.

The entire apparatus may be worked by a single attendant, and heavy masses of material quickly transferred from one side to the other—a distance equal to the distance from the outer end of the boom upon one side to the outer end of the boom upon the other.

I am aware of the patent of Cooke, granted April 2, 1879, No. 201,997, in which is shown a derrick having two opposite frames, one of which serves as a jib or crane, and the other is secured to the structure on which it works, said frames being mounted and turning on a central support; and I am also aware that in a revolving derrick the segmental rack-bar and pinion for rotating the derrick are not new.

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

1. A derrick consisting of a platform revolving upon a circular track, and carrying symmetrically-arranged booms and hoisting devices connected with each, in combination with an engine mounted on said platform, and with suitable driving mechanism, whereby a bucket may be lifted at either end and transferred from one side to the other, as set forth.

2. The combination of a revolving platform, booms arranged opposite to each other for hoisting and transferring from side to side, a central mast, and guys connecting the booms and mast, as set forth.

3. The combination of the booms *D D*, the mast *B*, the guys, and the circular platform, as set forth.

4. The combination of the booms *D D*, the mast *B*, with the circular platform, and with the central shoe *C*, as set forth.

5. The circular platform composed of the two annular beams, separated to admit of the wheels, in combination with the transverse timbers *b b*, as set forth.

6. The combination of the lower platform supporting a circular track, an upper platform mounted upon wheels adapted to move on said track, an annular ratchet-bar fixed upon the lower platform concentric with the circular track, and a pinion in gear with the said ratchet-bar, with driving mechanism, as described, mounted upon the circular platform, as set forth.

7. The combination of the drums *p' p'*, central shaft *r*, engines *M M*, and the intermediate connections, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD MOORE.

Witnesses:

E. B. CUMMINGS,
ALVIN H. JACOBS.