

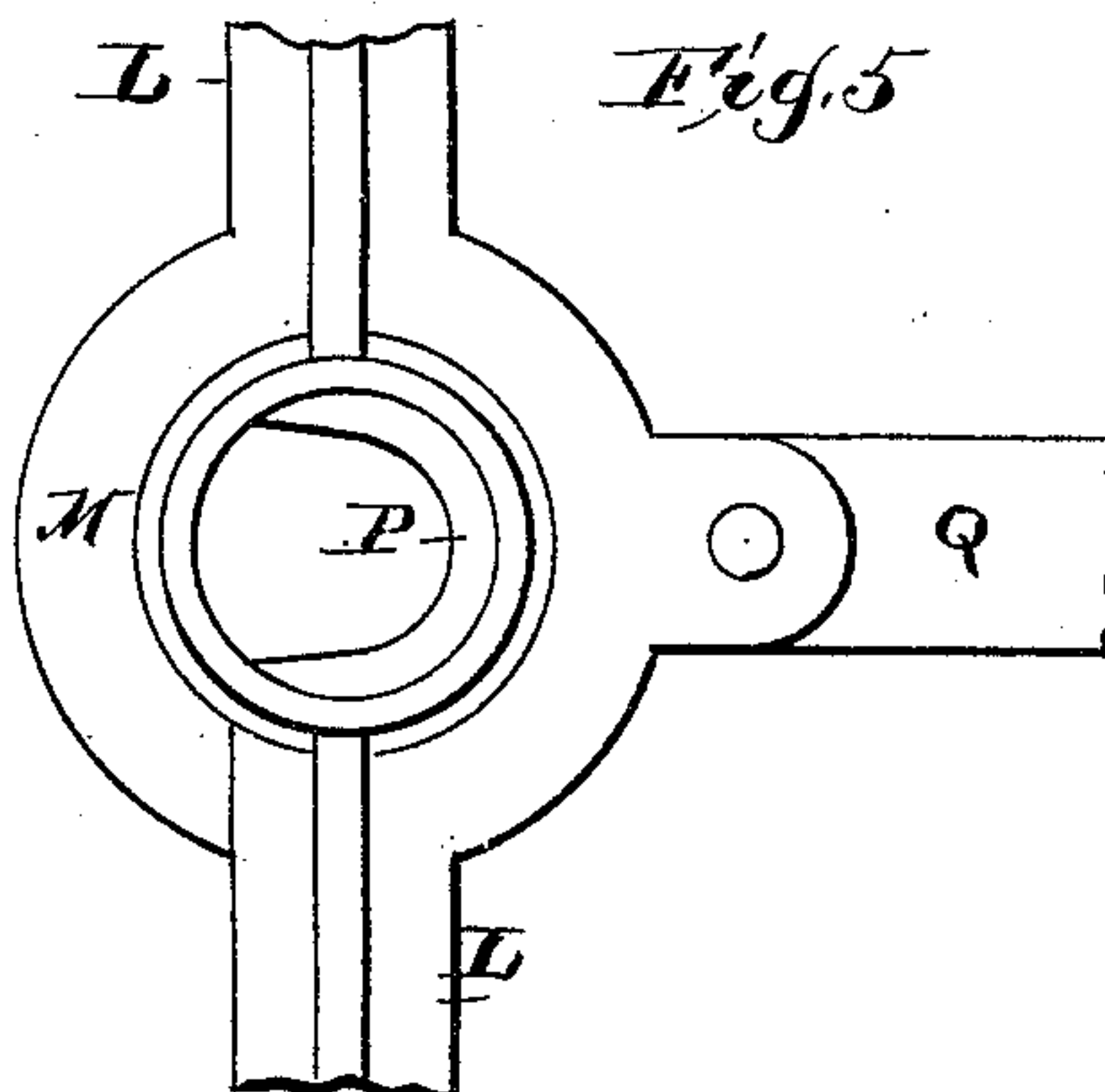
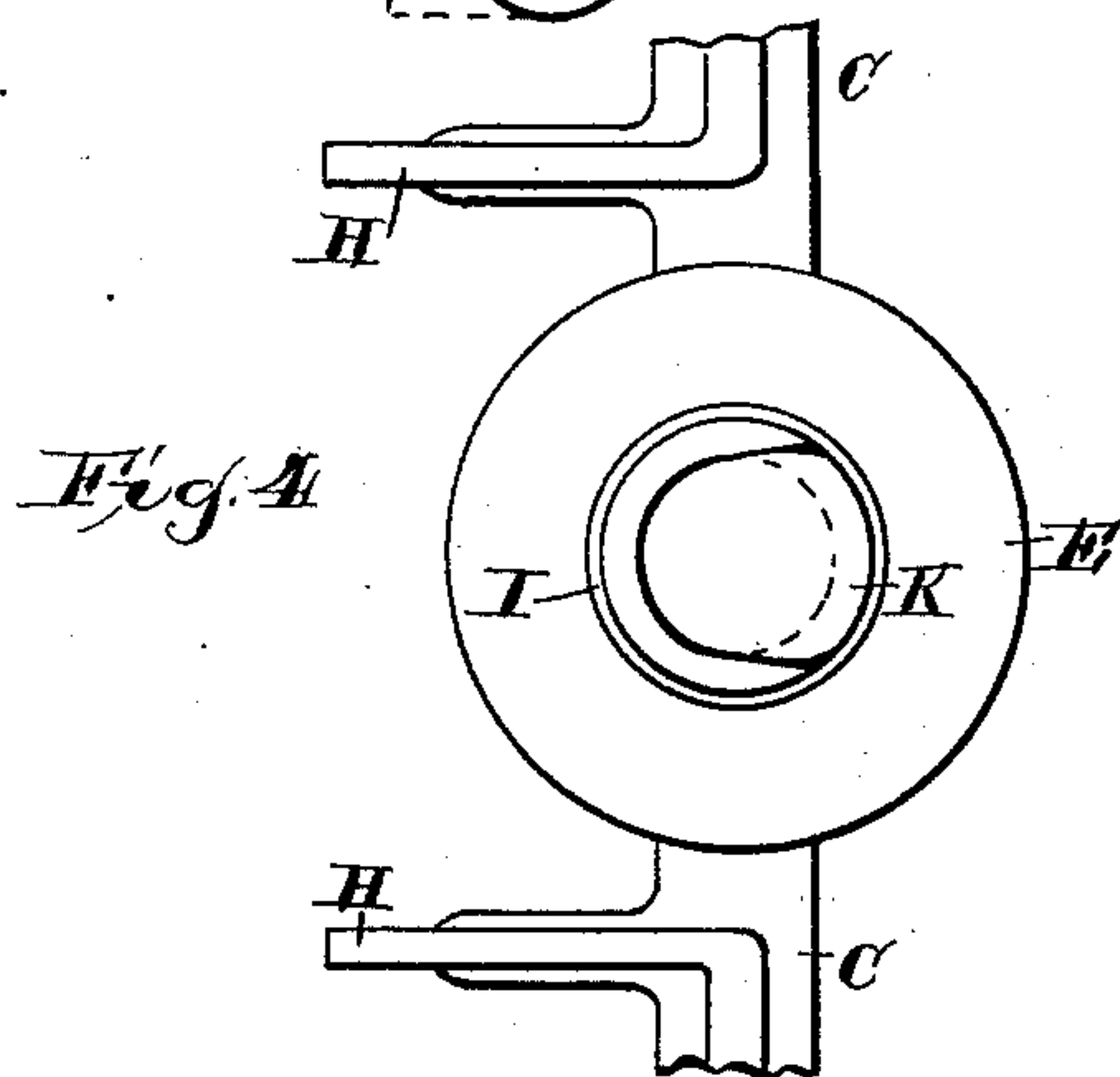
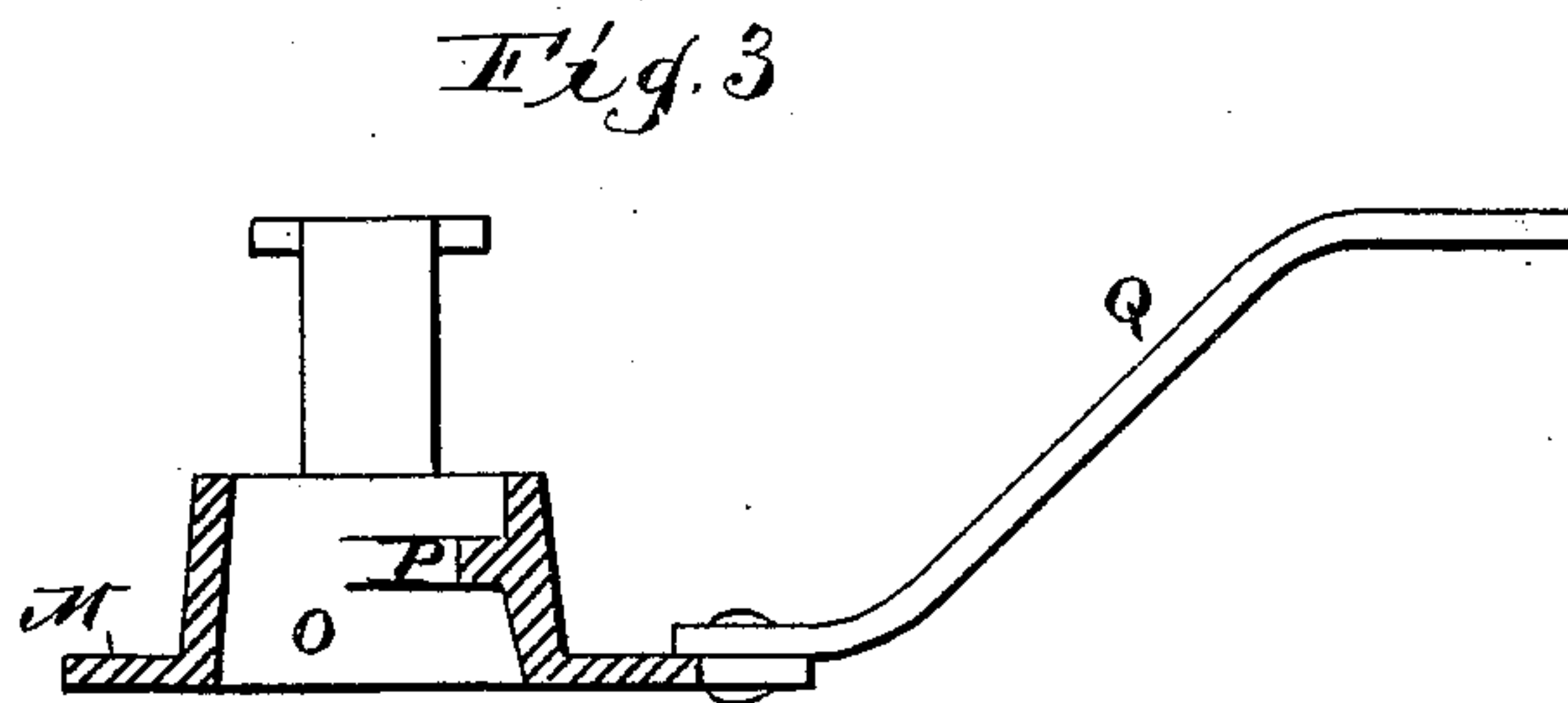
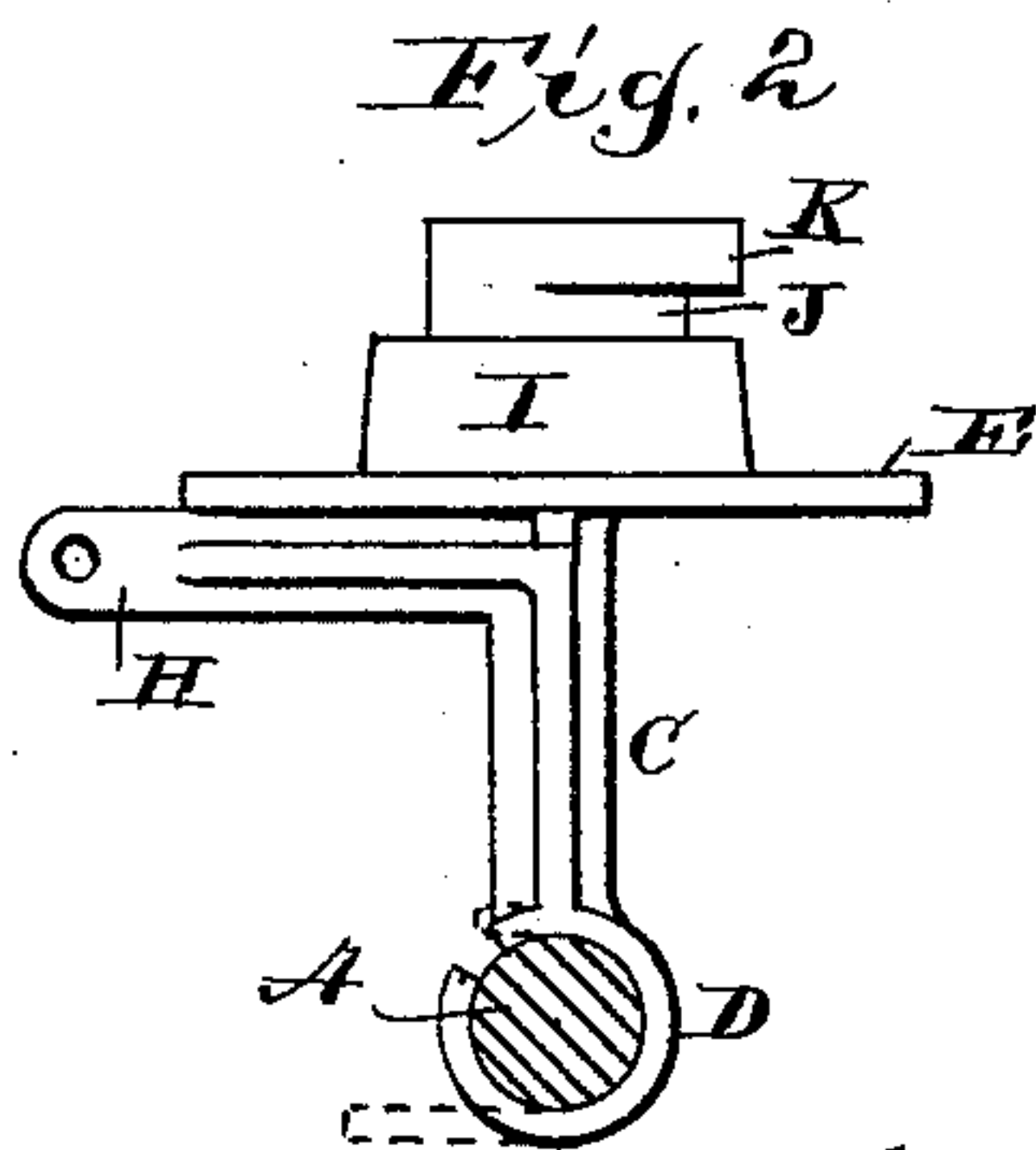
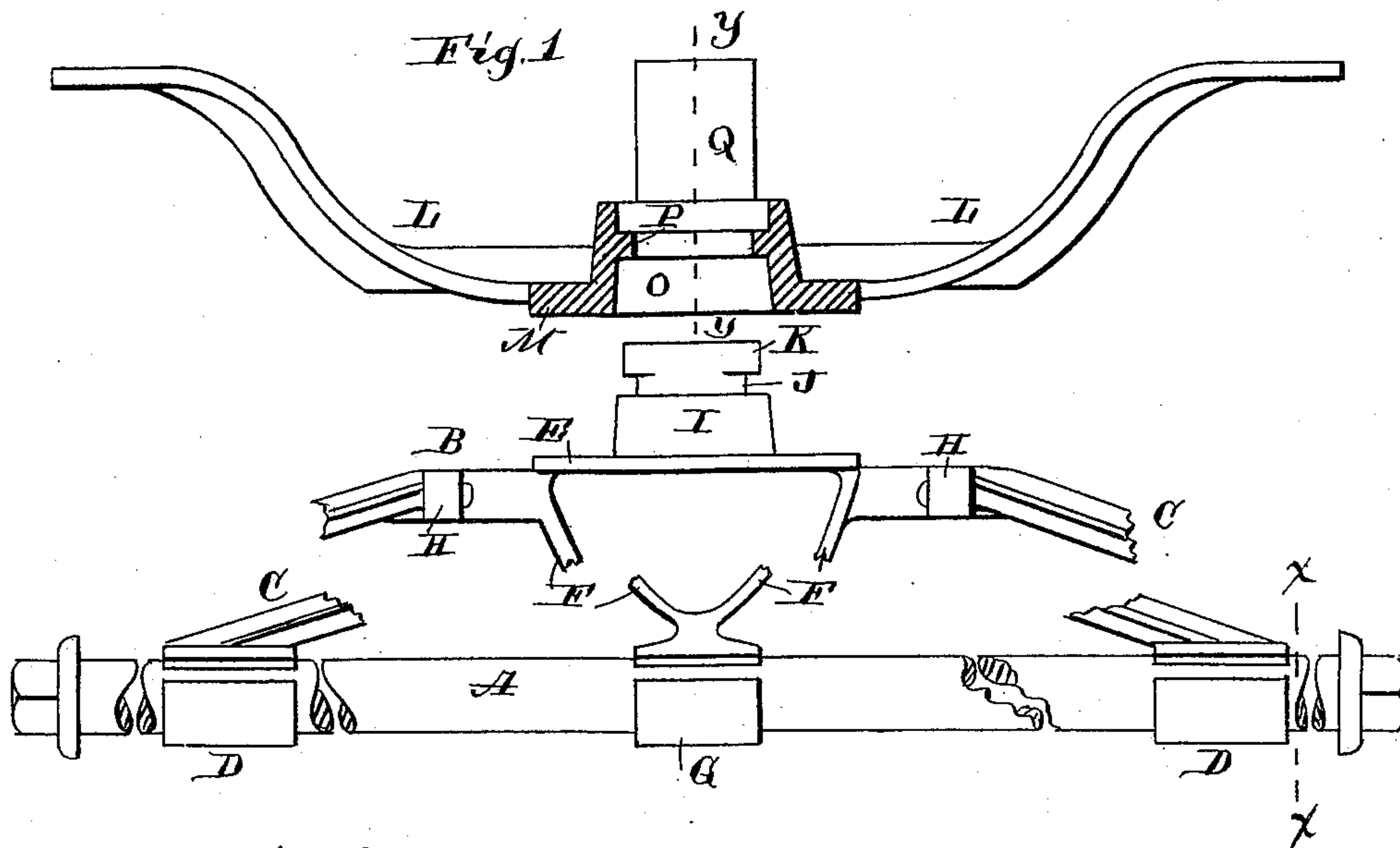
(No Model.)

2 Sheets—Sheet 1.

A. W. GRANT.
VEHICLE RUNNING GEAR.

No. 429,681.

Patented June 10, 1890.



Witnesses
Charles H. Hull
J. M. Ridley

Inventor
Arthur W. Grant,
By S. A. Coulman,
his Attorney.

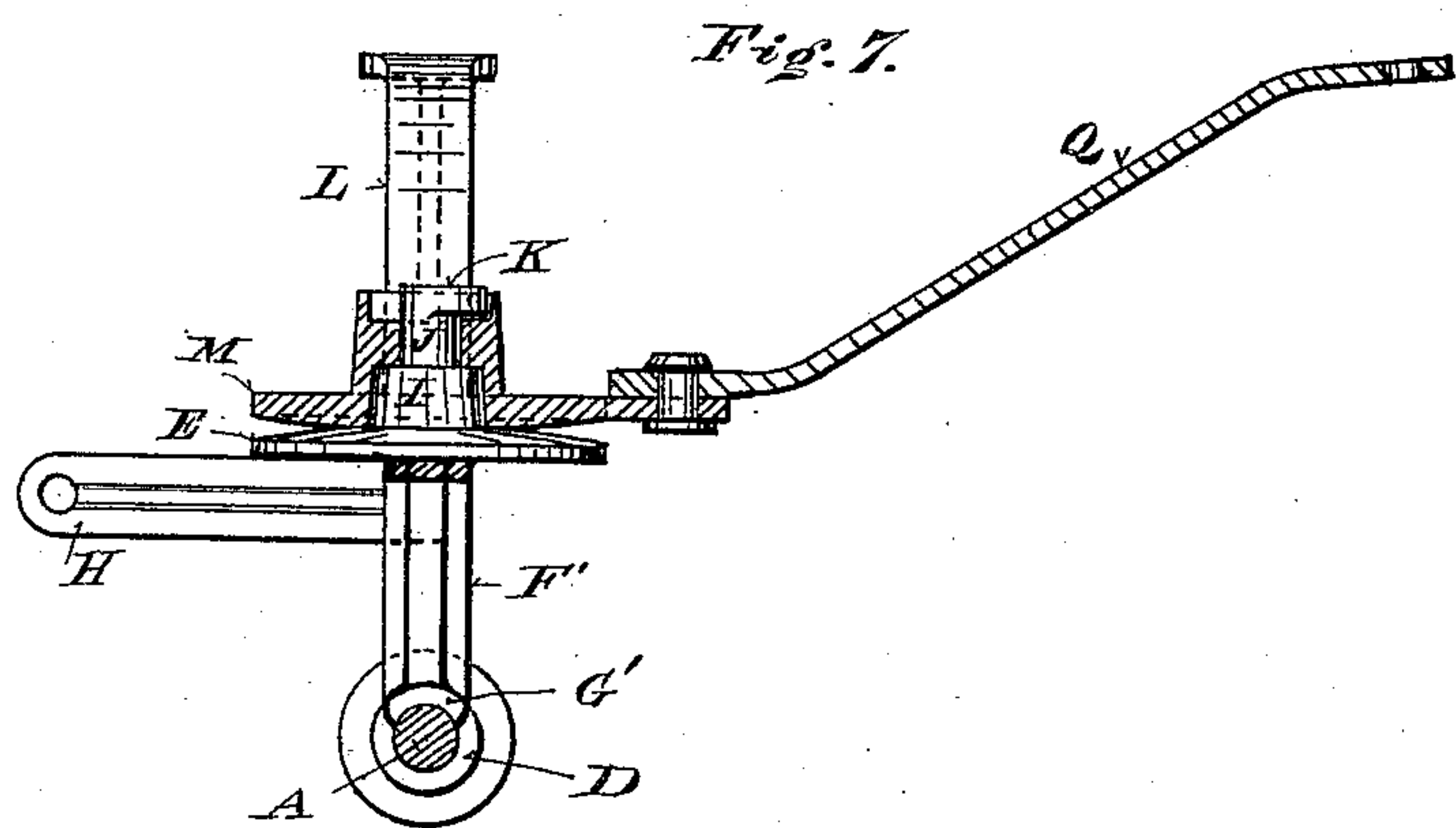
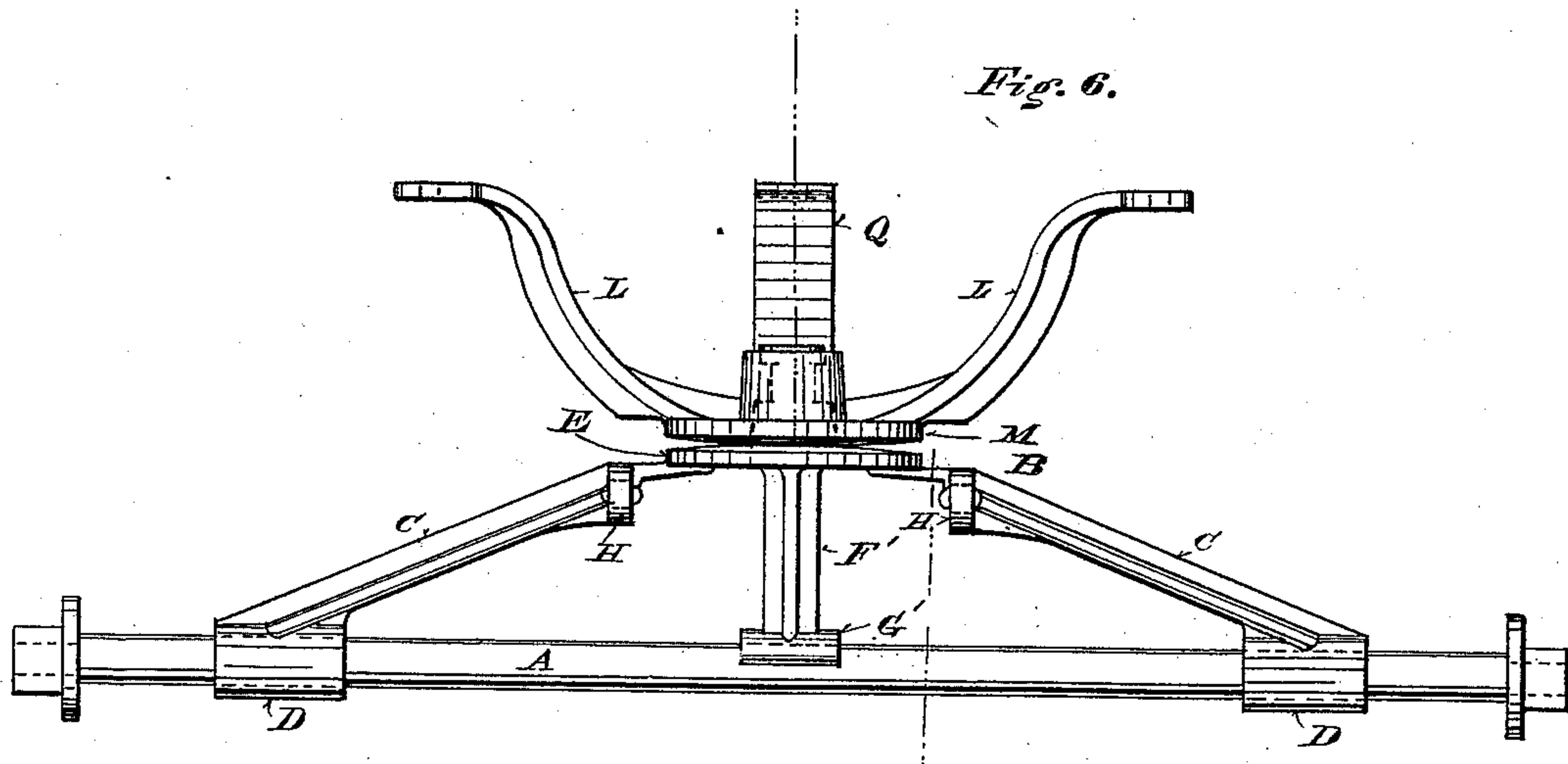
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WITNESSES

H. M. Plaisted.

Warren Hull,

INVENTOR

Arthur W. Grant,

By H. A. Tenting
his Attorney.

UNITED STATES PATENT OFFICE.

ARTHUR W. GRANT, OF SPRINGFIELD, OHIO, ASSIGNOR TO THE TRICYCLE MANUFACTURING COMPANY, OF SAME PLACE.

VEHICLE RUNNING-GEAR.

SPECIFICATION forming part of Letters Patent No. 429,681, dated June 10, 1890.

Application filed July 5, 1889. Serial No. 316,623. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR W. GRANT, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Wagon Running-Gears, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in running-gears for wagons, and is particularly designed for children's wagons.

The improvements have reference to a novel 15 manner of constructing the fifth-wheel and its pivot-connection, with the view to dispensing with the ordinary king-bolt, have reference to the manner of connecting the axle-bolster with the axle, have reference to the 20 form and construction of said axle-bolster, and have reference to the manner of constructing the forward body-bolster.

In the accompanying drawings, forming a part of this specification, and in which like reference-letters indicate corresponding parts, 25 Figure 1 represents a partial front elevation and sectional view of an axle, its bolster, and the body-bolster, with the fifth-wheel and pivot-connection; Fig. 2, a sectional view of the 30 axle on the line *xx* of Fig. 1, showing the bolsters in side elevation; Fig. 3, a sectional view on the line *yy* of the body-bolster; Fig. 4, a plan view of the axle-bolster with portions of the ends broken off; Fig. 5, a similar view of 35 the body-bolster; Fig. 6, a detail front elevation of the lower bolster and axle, and Fig. 7 a sectional view thereof.

The letter A designates the front axle of a child's wagon constructed either of a rod or 40 pipe, and the letter B the forward bolster mounted upon the same. This bolster consists of inclined arms C, constructed at their outer ends with open clips D, adapted to be bent or folded around and upon the axle, so 45 as to strongly and cheaply connect the arms therewith. The inner ends of said arms connect with a plate E, constituting the lower half of the fifth-wheel, and from which plate extend supports F, terminating in an open 50 clip G similar to the clips D, and which is also clamped upon the axle. From the forward

side of the arms C also project thill-bars H, to which the hounds of the pole are to be pivoted. Projecting upward from the plate E is a stout stud I, having a neck J and an eccentric flange or other form of lateral enlargement or projection K, the latter being more 55 clearly seen in Figs. 2 and 4. Thus it will be observed that the said bolster consists of supporting-arms and standards, clipped to the 60 axle, of thill-bars, a fifth-wheel plate, and a pivot-stud, all of which parts are preferably constructed of one piece, say of malleable iron. The construction is simple, is cheap and very strong, and renders the bolster eas- 65 ily applied in organizing the wagon.

I will now refer to the upper or body bolster. The letter L refers to the arms thereof, which are bolted or otherwise secured to the wagon-body, and which terminate at their inner ends in a plate M, constituting the upper 70 half of the fifth-wheel. This plate is constructed with a central opening O, with an eccentric interior rib P, occupying the same side of said opening that the flange K occupies with respect to the center of the stud I. 75 By this construction it will be understood that by placing the lower bolster in an abnormal position with respect to the upper bolster the stud I may be inserted into the 80 opening O with the flange enlargement or projection K away from the rib P. This done, the parts can be interlocked to prevent their vertical separation by turning the lower bolster around within normal positions, or so 85 that the flange enlargement or projection K will pass over and fit upon the rib P, the said rib then occupying the neck J. Thus it will be understood that the connection between the two may be made in a moment without 90 the use of tools and without the employment of loose pieces, as the usual king-bolt. A suitable brace Q is connected with the rear side of the plate M and extends up to the bottom of the body, where it may be connected. I also prefer to construct the upper 95 bolster of a single piece and of malleable iron.

From the foregoing it will be observed that there are but two pieces, each having its 100 several features, in the entire construction of the upper and lower forward bolsters, includ-

ing the connection of one bolster with the axle of the thill-bars, and of both with each other. The brace Q may or may not be formed integrally with the upper bolster.
 5 The clips D and G may or may not be formed in one piece with the lower bolster, though I prefer to so construct them.

Referring now to Figs. 6 and 7, it will be observed that the clips D are modified in
 10 their construction so as to constitute short tubes, as distinguished from being opened in their sides, as shown in Figs. 1 and 2, and also that the under and upper surfaces of the plates M and E, respectively, have convex
 15 surfaces adapted to rock upon each other. By this rocking action the tipping action on the carriage-body is greatly lessened when the lower bolster and the axle are thrown out of horizontal by one of the supporting-wheels
 20 going over a rock or dropping into a rut. When the clips D are closed, the axle is inserted endwise through them, as distinguished from their being lapped around the axle in connecting the lower bolster with the axle.
 25 It will also be noticed in Figs. 6 and 7 that the clip G is omitted and the mere foot G' substituted for the base of the central support, and also that such support, instead of being composed of two members F, is fash-
 30 ioned of a single piece F', occupying about a vertical position. I prefer, however, to constitute this support of two members and to slightly curve them, so that in properly leveling and adjusting the lower bolster with
 35 respect to the axle such members, or either of them, may be increased or decreased in curvature, so as to raise or lower the plate E at one or both sides. The inclined direction of the arms C also admit of their being bent
 40 up or down more or less to lengthen or shorten the distance between the clips or tubes D, as the occasion may require. These manipulations of the supports and inclined arms, while of great convenience in applying the
 45 bolster to the axle, do not affect the appearance after the application is made.

I have shown and described an eccentric rib P as the device with which the flange, lateral enlargement, or projection K engages.
 50 It is obvious, however, that so long as the flange, lateral enlargement, or projection engages with the upper bolster in such manner as to admit of the connection of the upper and lower halves of the fifth-wheel and their
 55 movement one with respect to the other, and in such manner as to prevent their pulling apart, except when in abnormal positions,

the invention will be carried into effect irrespective of the presence or absence of the upper rib P. 60

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

1. The combination, with a lower skeleton bolster consisting of inclined arms and oblique
 65 standards clipped to the axle, a fifth-wheel plate at the juncture of said arms and standards, a stud on the plate having a neck and an eccentric flange, of an upper bolster hav-
 70 ing upwardly-extending arms, and a fifth-wheel plate at the lower juncture thereof, with a central hole and an eccentric bead.

2. The combination, with a lower skeleton bolster having a lower fifth-wheel plate with a convex upper side and opposite downwardly-
 75 inclined arms, with sockets adapted to engage the axle, and a vertical support F' extending from the under side of the said plate down to and riding on the axle by a foot G' on the lower end of the support, the said
 80 plate also having a central vertical extension consisting of a stud I, a neck J, and an eccentric flange K, of an upper skeleton bolster consisting of an upper fifth-wheel plate, with an under convex side having a matching re-
 85 cess for said stud I, and an eccentric socket adapted to admit and normally retain the said neck and flange and allow a rocking motion of the upper and lower plates on each other, and also having upwardly-extending
 90 arms oppositely cast on said upper plate.

3. The combination, with an upper skeleton bolster consisting of an upper fifth-wheel plate having upwardly-extending arms and having a vertical boss or enlargement on the
 95 upper side of the said plate, with an opening entirely through said boss and plate, which opening consists of a circular recess above and below an irregularly-contracted portion in said opening, of a lower skeleton bolster
 100 consisting of a lower fifth-wheel plate having a vertical upward projection adapted to enter said opening and normally engage the contracted portion thereof by an eccentric flange turning in the upper recess in sight
 105 and accessible without disengagement, and also of downwardly-extending arms engaging the axle.

In testimony whereof I affix my signature in presence of two witnesses.

ARTHUR W. GRANT.

Witnesses:

WARREN HULL,
 CHASE STEWART.