

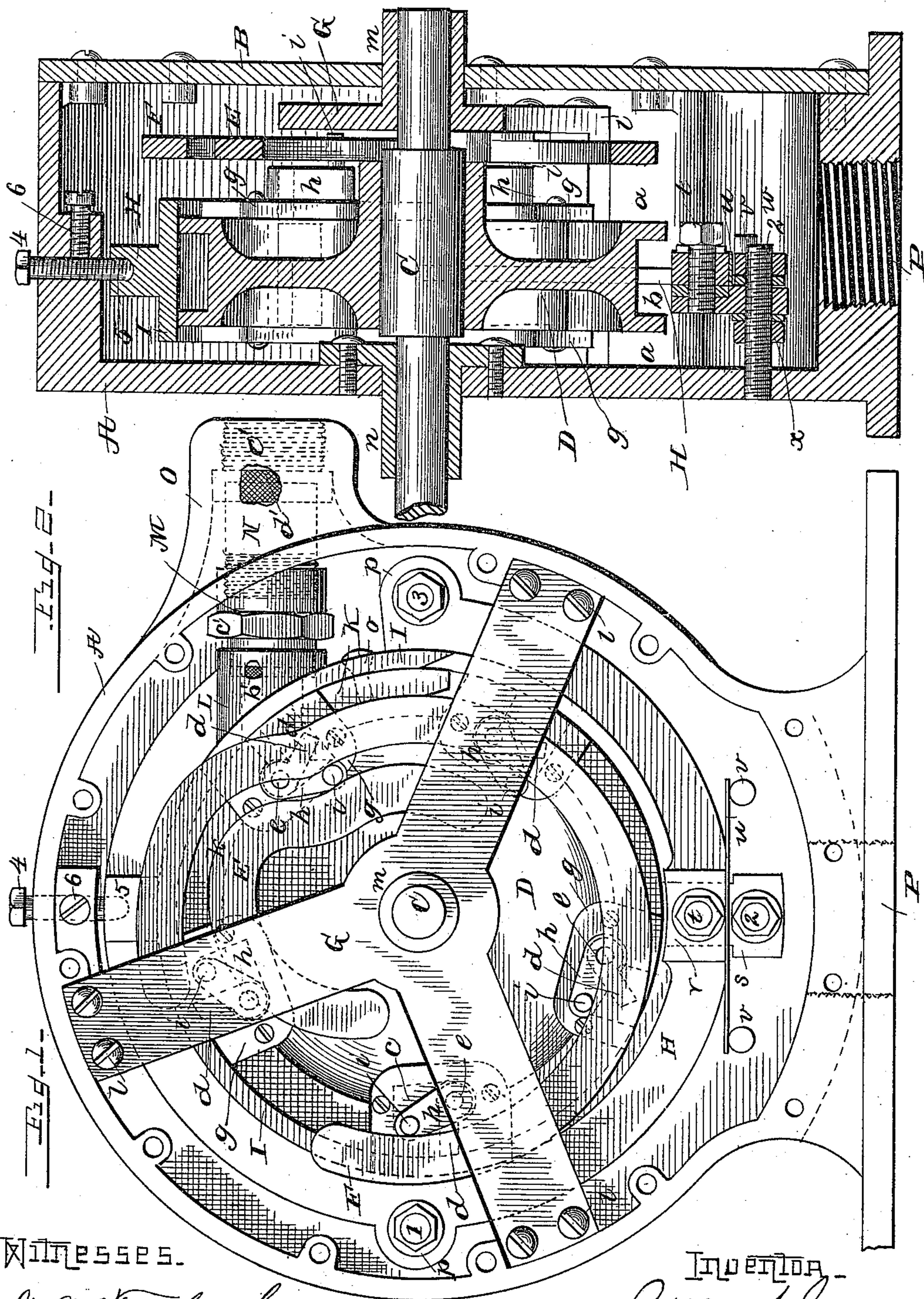
(No Model.)

2 Sheets—Sheet 1.

A. MEYER.
ROTARY ENGINE.

No. 442,634.

Patented Dec. 16, 1890.



Witnesses.

G. A. Fauberschmidt,
Wm. F. Nickel

Inventory

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Attorneys

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

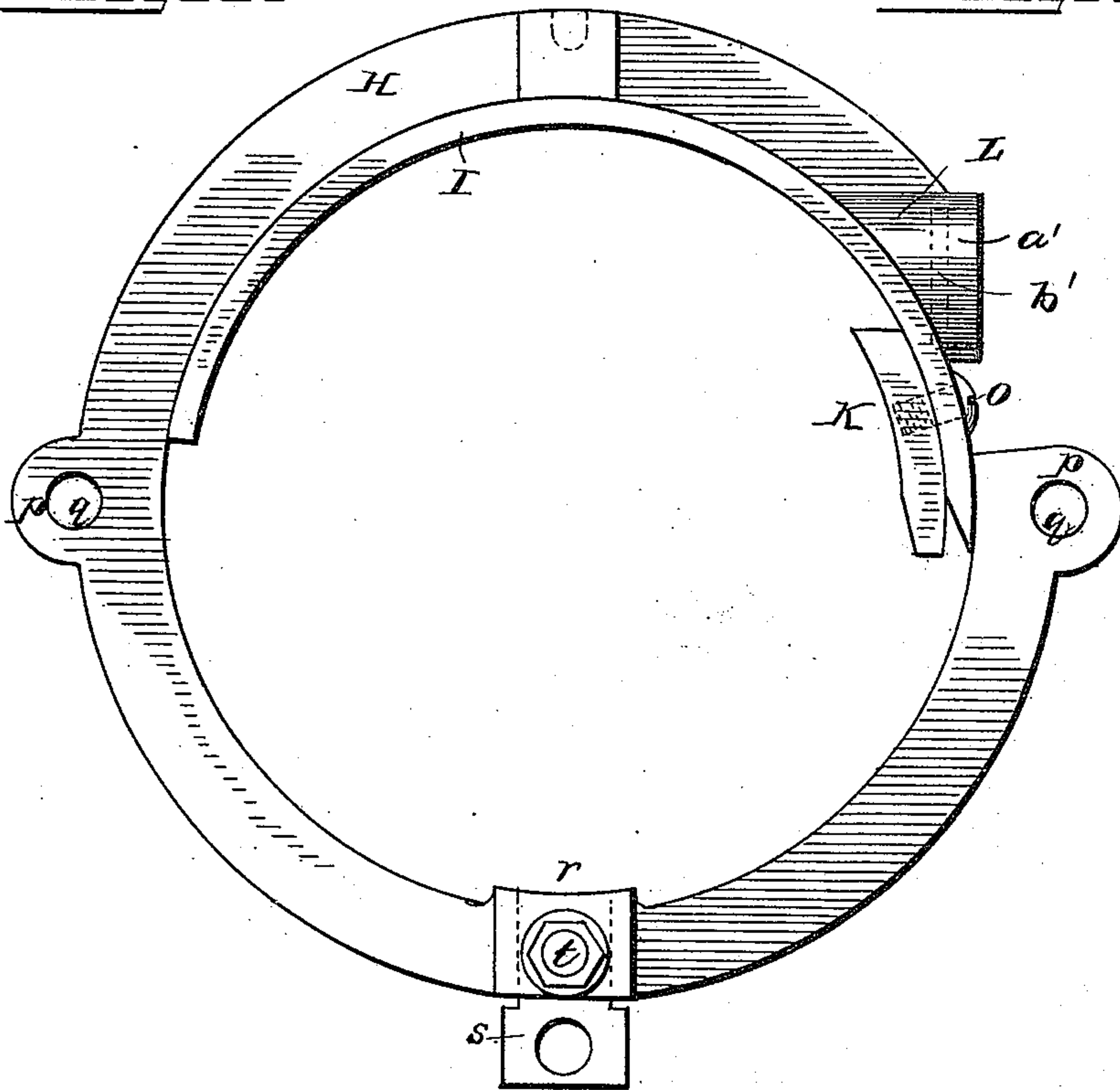


Fig. 4.

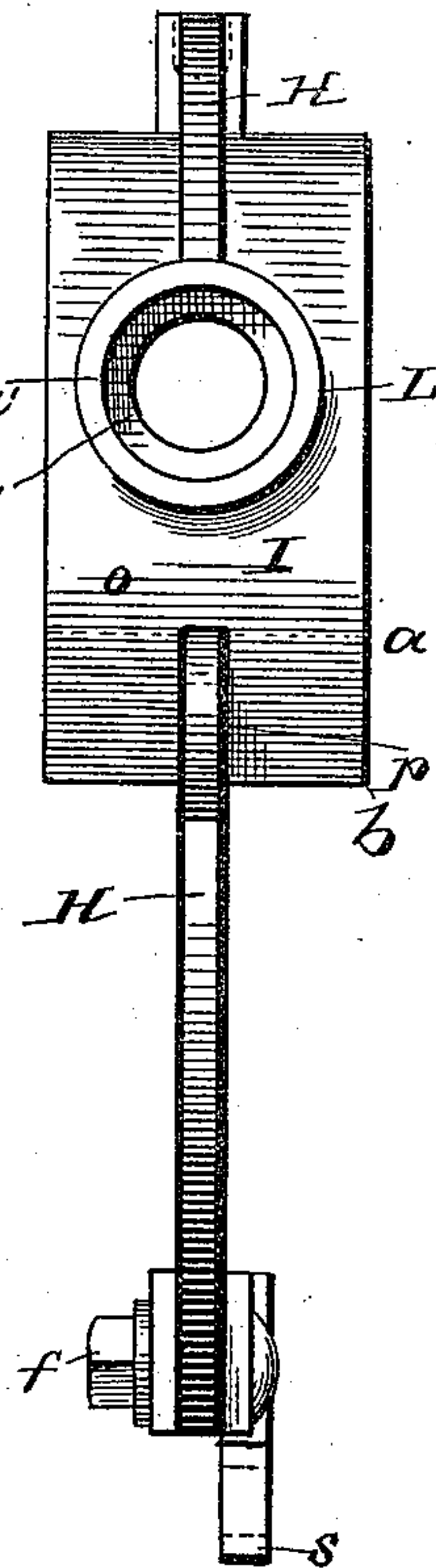
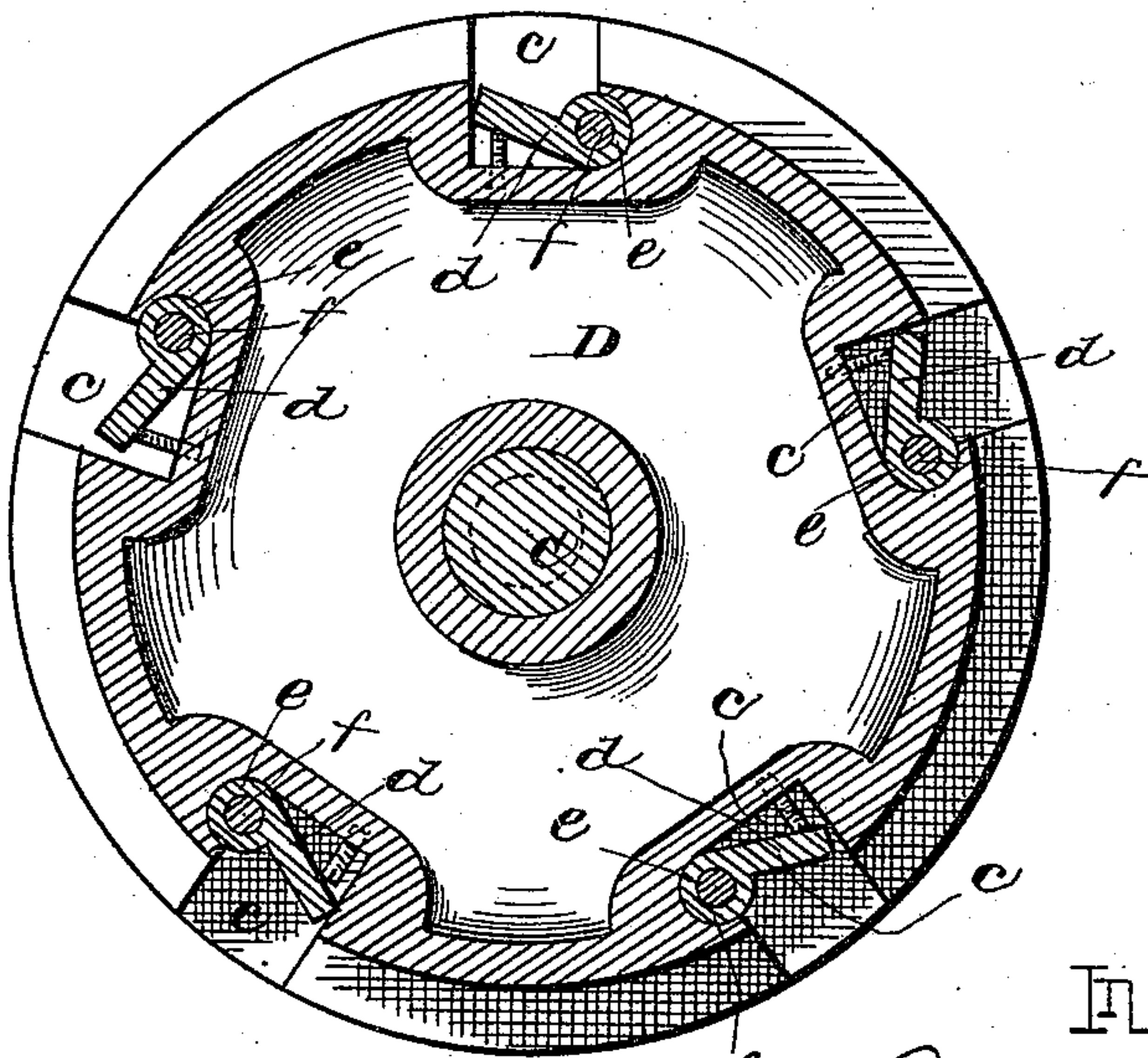


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

AUGUST MEYER, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO
DECATUR H. MILLER, JR., OF SAME PLACE.

ROTARY ENGINE.

SPECIFICATION forming part of Letters Patent No. 442,634, dated December 16, 1890.

Application filed April 14, 1890. Serial No. 347,788. (No model.)

To all whom it may concern:

Be it known that I, AUGUST MEYER, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Rotary Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that class of engines known commercially as "rotary engines," and which are propelled by steam, air, or other motor-fluid; and it consists in certain improvements in construction, which will be hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, which form part of this specification, Figure 1 represents a side elevation with the cover of the casing removed; Fig. 2, a vertical transverse section showing the shaft in side elevation; Fig. 3, a side view of the adjustable ring; Fig. 4, an edge view of the same and Fig. 5, a vertical section of the hub.

Reference being had to the drawings and the letters and figures thereon, A indicates the casing, which is provided with a removable head or end B, which is secured thereto by suitable screw-bolts; C the shaft upon which is secured the hub D to revolve therewith. At the periphery of the hub and on each side thereof is a flange *a a*, between which is a channel or way *b* for the motor-fluid, and below the channel is a series of pockets or recesses *c*, in which are secured wing-pistons *d*, which are provided with hubs *e*, through which the shafts *f* pass, and which shafts are supported at each end in the side walls *g* of the pockets. The sides *g* may both be made removable, or one may be cast integral with the hub, the other being removable to place the wing-piston in position in the pocket.

To one end of the shaft *f* of each wing-piston is secured an arm *h*, having a stud or pin *i* projecting from one side of the arm to engage with cams E F for removing the wing-pistons into operative position to receive the force or power of the motor-fluid, the highest point on cam E being at *k* to put the piston in the channel *b* at the time the piston has

just passed the inlet-port of the engine. In the construction shown the cams are secured to and supported by a spider G, which is secured at the ends of its arms to the casing A by screws *l l*; but it is obvious that the cams could be formed on the inner surface of the removable head B. The spider G is also provided with a bearing *m* for one end of the shaft C, the opposite end of the shaft being supported in a bearing *n*, secured to the casing.

H indicates an adjustable ring which encircles the hub, but does not come in frictional contact therewith. The ring is provided with a hood or flange I, which projects laterally on both sides of the ring, is as wide as the face of the hub D, and confines the motor-fluid in the channel *b* of the hub while it is exerting its power upon the wing-pistons.

K indicates the abutment, which is secured to the inner surface of the hood or flange I by means of a screw *o*, and on the ring H are lugs *p*, having holes *q* slightly larger than the bolts which pass through them and by which the ring is secured to the casing A. Upon the lower side of the ring is a seat *r* to receive a lug *s*, which is secured thereto by a bolt *t*. The enlarged holes *q* admit of an adjustment of the ring H with relation to the hub to set the parts for operation or in the event of wear of the journal-bearings of the shaft. The weight of the flange I is supported upon a leaf-spring *u*, which rests upon studs *v v* in the casing, and the ring is adjusted laterally (in the direction of the shaft) with relation to the hub by means of the screw-bolt 2 and nut *x*, and transversely or at right angles to the shaft by the lugs *p p* and *s*, moving upon their respective bolts 1 2 3. This adjustment of the ring H is effected by forcing the ring down upon the spring *u* by means of the screw 4 until the hood I bears hard upon the periphery of the hub, when the nut on the bolt 2 is tightened. The screw 4 is then slackened sufficiently to allow the resiliency of the spring *u* to release the hood I from frictional contact with the hub. After the ring has been thus properly adjusted it is secured by the nuts on the several bolts, and the screw 6, bearing upon the screw 4, where it remains until wear of the parts—such as

the shaft and its bearings—requires further adjustment, when the foregoing operation is repeated. The ring H is also provided with a supply-nozzle L, in which is formed a recess
 5 a', having a packing-ring or washer b' seated therein, and against which one end of a coupling M bears. The coupling is provided with an angular enlargement c' to receive a wrench, and an internal screw-thread at its outer end
 10 which engages with the threaded end of a nipple N, which at its outer end bears upon a packing-ring d' in the extension O of the casing. The object of this construction is to provide ready an effective means for producing a tight joint in the shop where the engine
 15 is manufactured, and avoiding the possibility of the steam-fitter or plumber inserting a pipe into the opening e' so far as to push the ring H out of proper alignment with the
 20 hub D.

P indicates the exhaust-port. Should the supply-pipe be screwed into the opening e' a little too far, the packing-ring d' will receive it and avoid leaking. It will be observed
 25 that the hub is perfectly free in the casing, there being no frictional contact therewith at any point. The only frictional bearing of the engine being at its supporting and power shaft, where it is in contact with its journals,
 30 it is obvious that the friction of the engine is reduced to the minimum.

Having thus fully described my invention, what I claim is—

1. The combination of a rotating hub, an

adjustable ring encircling the hub, a hood or 35 flange supported by said ring, and suitable devices for adjusting the ring vertically and laterally, substantially as described.

2. The combination of a rotating hub, an adjustable ring encircling the hub, a hood or 40 flange, and an abutment supported by said ring and adjusting devices for moving the ring, substantially as described.

3. The combination of a rotating hub provided with flanges on its periphery, a channel 45 between said flanges, wing-pistons secured to the hub and operating in said channel, a cam, a connection between the wing-pistons and the cam, and an adjustable ring encircling the hub and supporting an abutment, sub- 50 stantially as described.

4. The combination of an inlet and a supply nozzle and an adjustable coupling within the casing of the engine and communicating with the supply-nozzle, substantially as de- 55 scribed.

5. The combination of an adjustable ring encircling a hub and provided with a supply-nozzle, and an adjustable coupling communicating with the supply-inlet of the cas- 60 ing and the nozzle on said ring, substantially as described.

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

AUGUST MEYER.

Witnesses:

ALEX. S. STEUART,
 D. C. REINOHL.