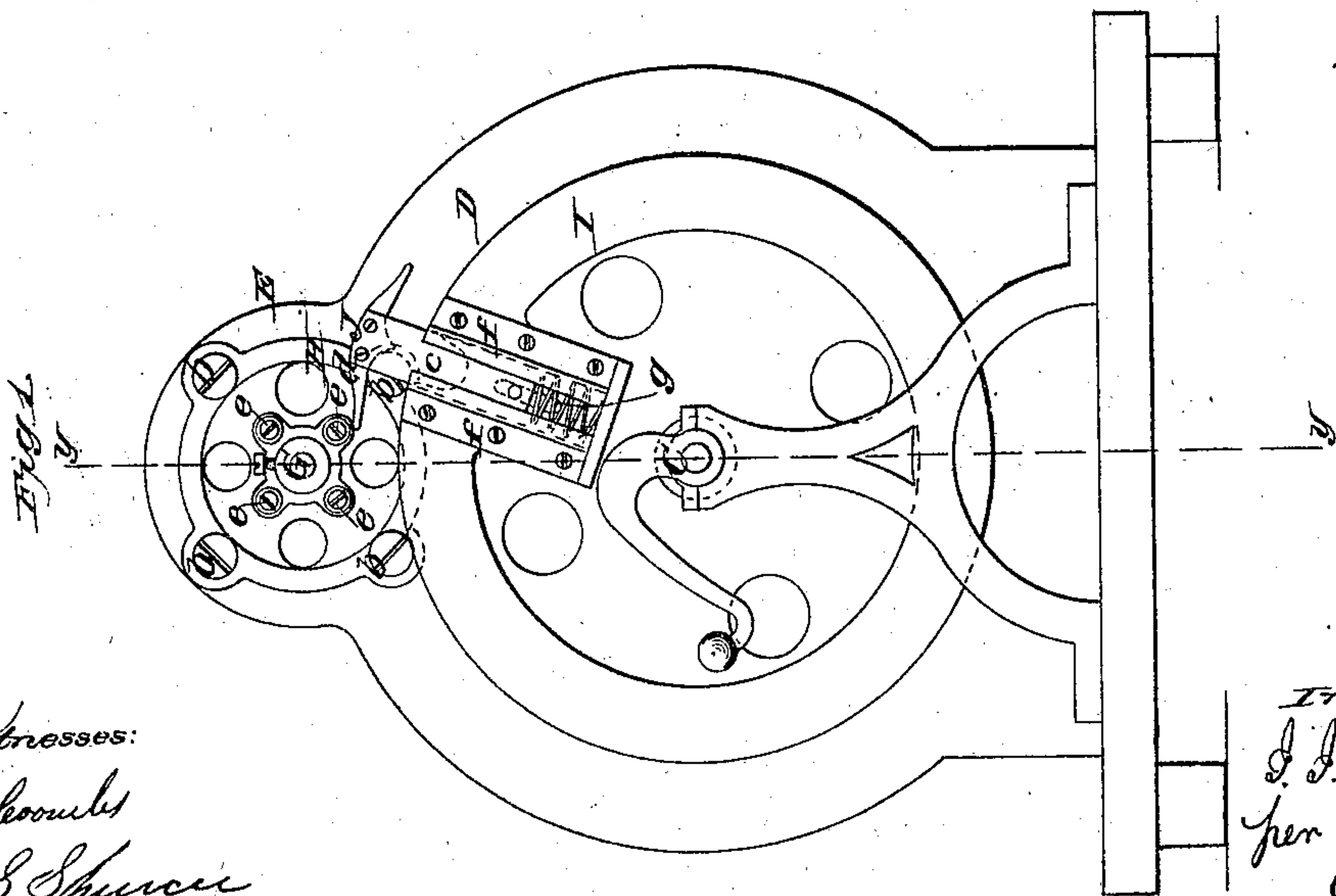
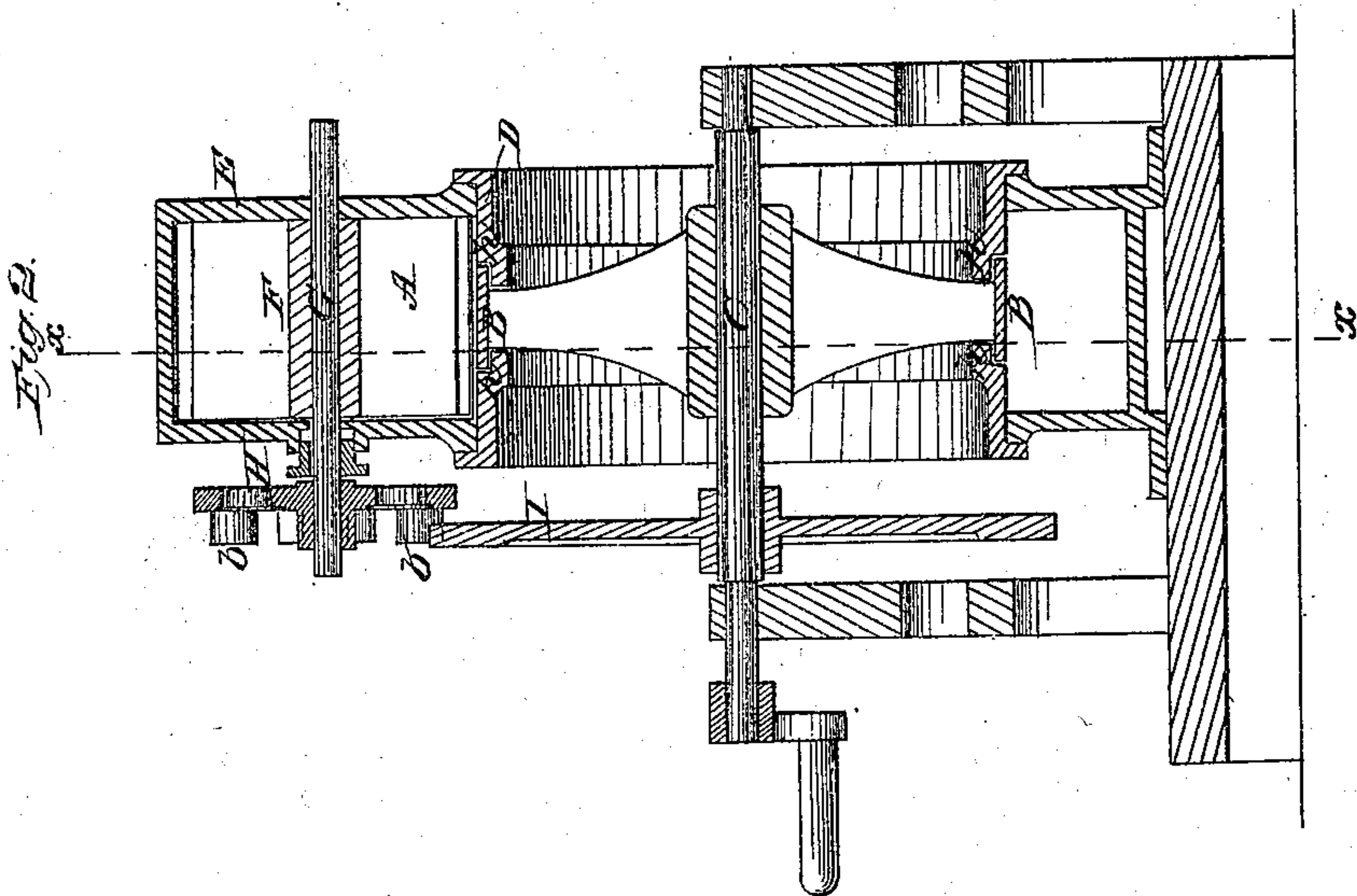
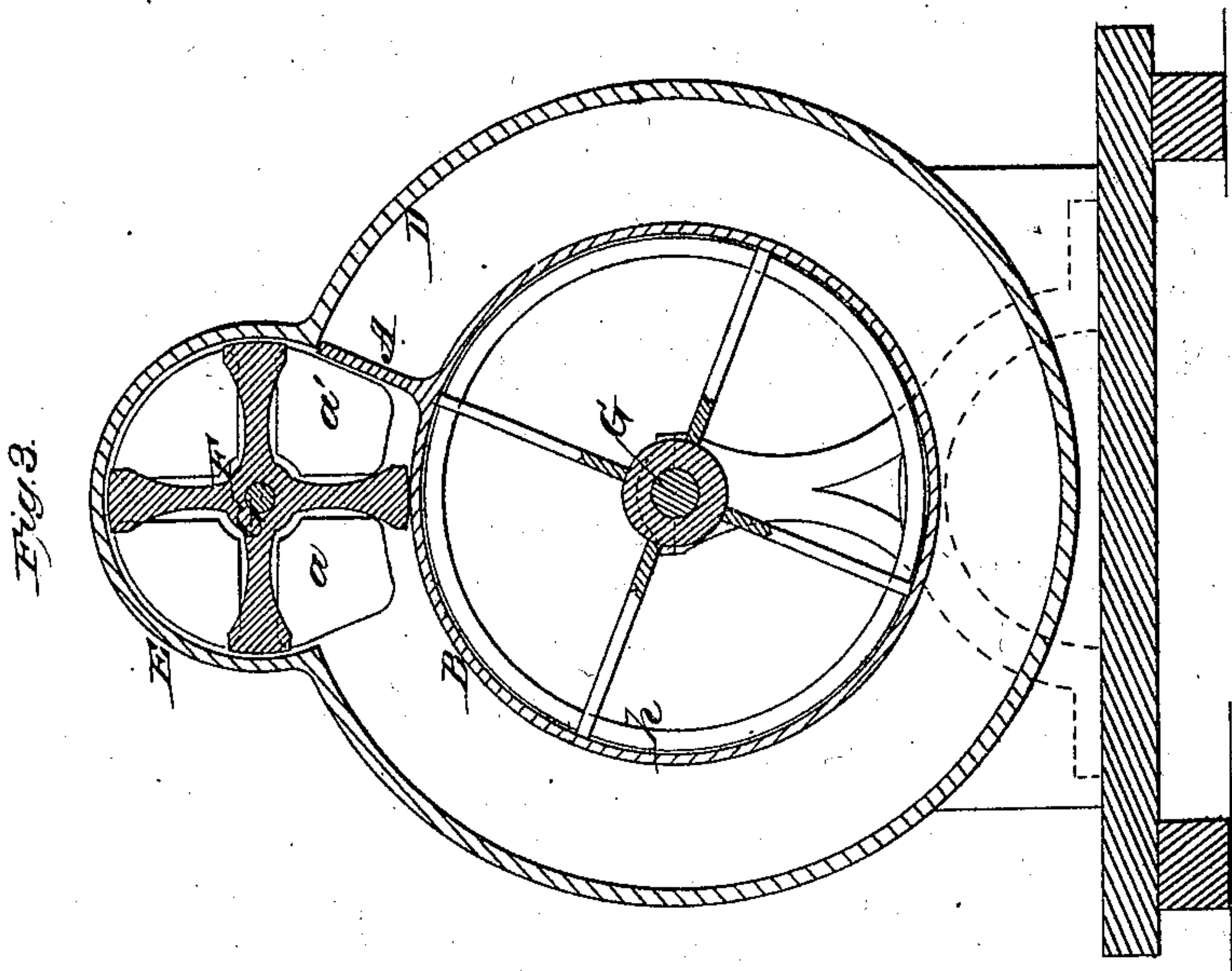


J. J. SLOCUM.
ROTARY ENGINE.

No. 30,936.

Patented Dec. 18, 1860.



Witnesses:
J. J. Slocum
R. S. Spencer

Inventor:
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Attorneys

UNITED STATES PATENT OFFICE.

J. J. SLOCUM, OF NEW YORK, N. Y.

ROTARY ENGINE.

Specification of Letters Patent No. 30,936, dated December 18, 1860.

To all whom it may concern:

Be it known that I, J. J. SLOCUM, of the city, county, and State of New York, have invented a new and Improved Rotary Engine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification, in which—

Figure 1 represents a rear elevation of this invention. Fig. 2 is a longitudinal vertical section of the same, the line *y, y*, Fig. 1, indicating the plane of section. Fig. 3 is a transverse vertical section of the same taken in the plane indicated by the line *x, x*, Fig. 2.

Similar letters of reference in the three figures indicate corresponding parts.

This invention consists in the employment of a rotary winged abutment in combination with a rotary piston, in such a manner that by imparting to said abutment a rotary motion at certain intervals, the piston is allowed to pass by unobstructed; it consists also in arranging on the shaft of the piston a notched disk with a spring catch in combination with two sets of rollers, attached at different distances from its center to a plate that is secured to the axle of the rotary abutment in such a manner that by the action of the notched disk on the outer set of rollers the abutment is kept perfectly stationary until by the combined action of the spring catch and the two sets of rollers the abutment is partially rotated.

To enable those skilled in the art to make and use my invention I will proceed to describe its construction and operation, with reference to the drawing.

The piston A, is secured to a rim B, which is firmly attached to the shaft C, and it rotates in an annular case or cylinder D. Fastened to the top of this cylinder or cast with the same is the chamber E, which contains the rotary winged abutment F. This abutment is firmly secured to shaft G, and it works steam tight in the chamber E. The edge of each of its wings when turned down to a vertical position, is brought in contact with the surface of the rotary rim B, and if steam is admitted to one side of this wing, it (the steam) has to travel all around the rim B, and cylinder E, in order to reach its other side.

Two apertures *a, a'*, in the side of the chamber E, serve as induction and eduction ports, and these ports are so situated that

the wings of the abutment on being successively brought down in a vertical position, have one of the ports on one and the other on the other side as clearly shown in Fig. 3, in the drawing.

The abutment F, is prevented turning spontaneously by four (more or less) rollers *b*, which are arranged at equal distances from the center on a plate H, that is firmly secured to the shaft G, of the abutment. By bringing two of these rollers in contact with the edge of a disk I, which is secured to and rotates with the main shaft C, the abutment is retained perfectly stationary, until by the action of a spring catch J, which is secured to the outside of the disk I, one of the rollers after the other is drawn down into a notch *c*, in the edge of the disk, and as the motion of the piston continues, the plate H, together with the abutment is rotated.

The spring catch J, is provided with a head *d*, the two surfaces of which form cams, the lower surface, to catch over the rollers *b*, and to cause them to enter the notch *c*, in the disk, and the upper surface to catch under another set of rollers *e*, which are arranged on the plate H, and upon the same radial lines with the rollers *b*, but nearer to the center of said plate *b* down into the notch *c*, and insure a correct action of the abutment. The spring catch J, moves in and out between the guide plates *f*, and it is subjected to the action of a spring *g*, which serves to keep its head up above the edge of the disk to cause it to catch without fail above the rollers *b*.

The spring catch J, and the notch *c*, are so situated in relation to the piston A, that the abutment is caused to rotate just before the piston comes in contact with the vertical wing and that, during the time the abutment changes its position, the piston is allowed to move unobstructed from one side of the same to the other. During the time occupied by changing the position of the abutment, the steam is shut off, but as soon as the piston has passed under the abutment and after the next succeeding wing is turned down in a vertical position, the steam is let on again and it acts with its full force on the piston.

The rim B, to which the piston A, is attached, is considerably narrower than the cylinder D, said cylinder being provided with two flanges *h*, which form a tight

joint on the edges and on the inner surface
of the rim, their upper surface being flush
with the outer surface of the rim so that
those portions of the piston, which project
5 beyond the rim on either side, fit steam tight
down upon said flanges. By thus reducing
the width of the rim as compared with the
width of the piston the friction of the
journals of the mainshaft caused by the
10 pressure of the steam on one side or on the
other of the rim B, is reduced without
diminishing the power of the engine, which,
of course, depends in a great measure on
the area of the piston A. The edges of the
15 flanges *h*, and those of the piston A, are
provided with suitable packing, and the en-
gine is started by introducing steam through
the port *a*, and exhausting through the port
a', or vice versa.
20 This engine can be built cheap; it is very
simple and it is sure in its action. The

joints are easily kept tight and all its parts
are so constructed, that they do not easily
get out of order.

Having thus fully described my invention 25
what I claim as new and desire to secure by
Letters Patent, is—

1. The arrangement of the rotary winged
abutment F, in combination with the rotary
piston A, constructed and operating as and 30
for the purpose specified.

2. The combination and arrangement of
the notched disk I, with the spring catch J,
plate H, with the rollers *b*, and *c*, and ro-
tary abutment F, constructed and operating 35
substantially as and for the purpose set
forth.

J. J. SLOCUM.

Witnesses:

PECOS J. AVERY,
J. M. ADAMS.