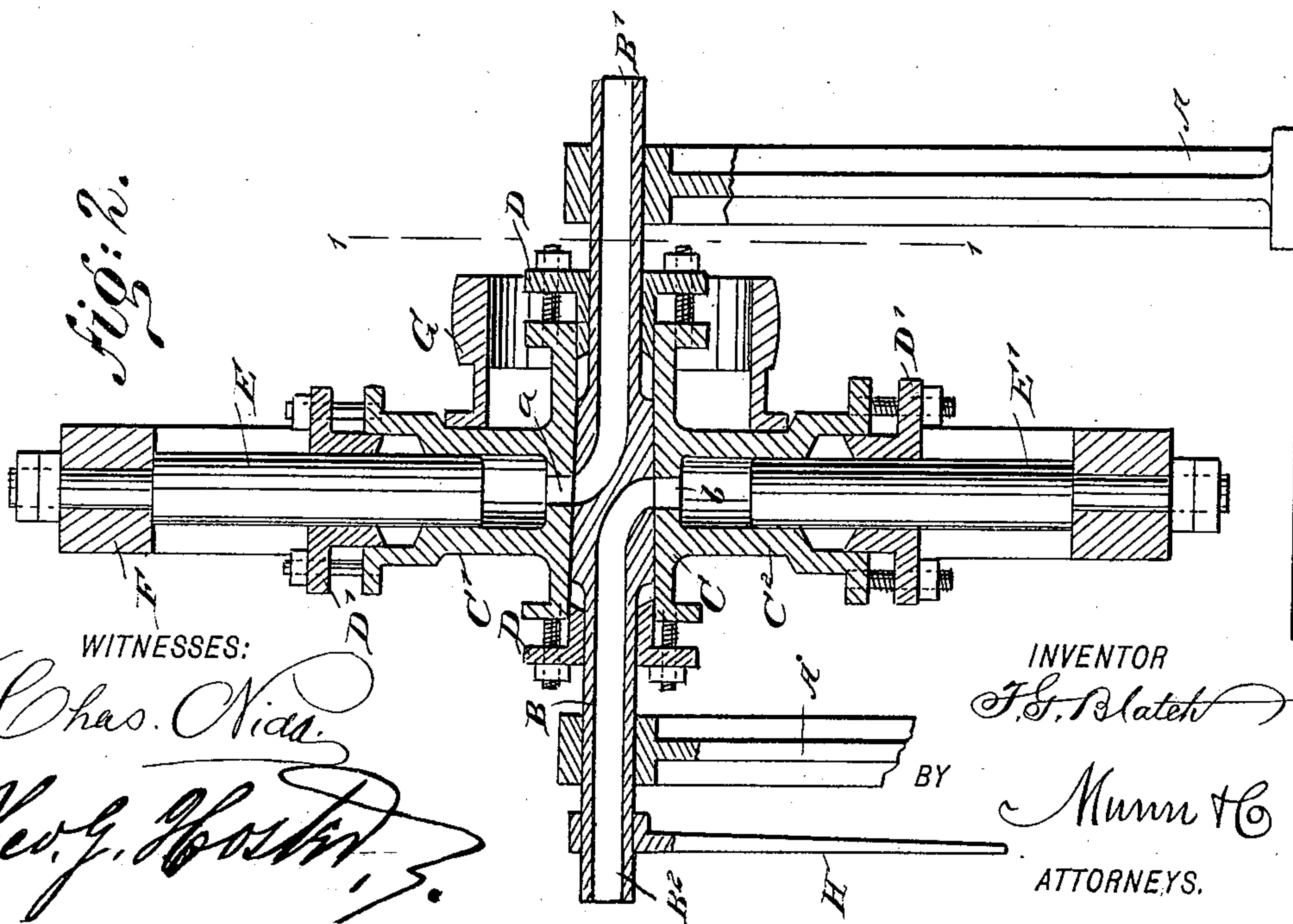
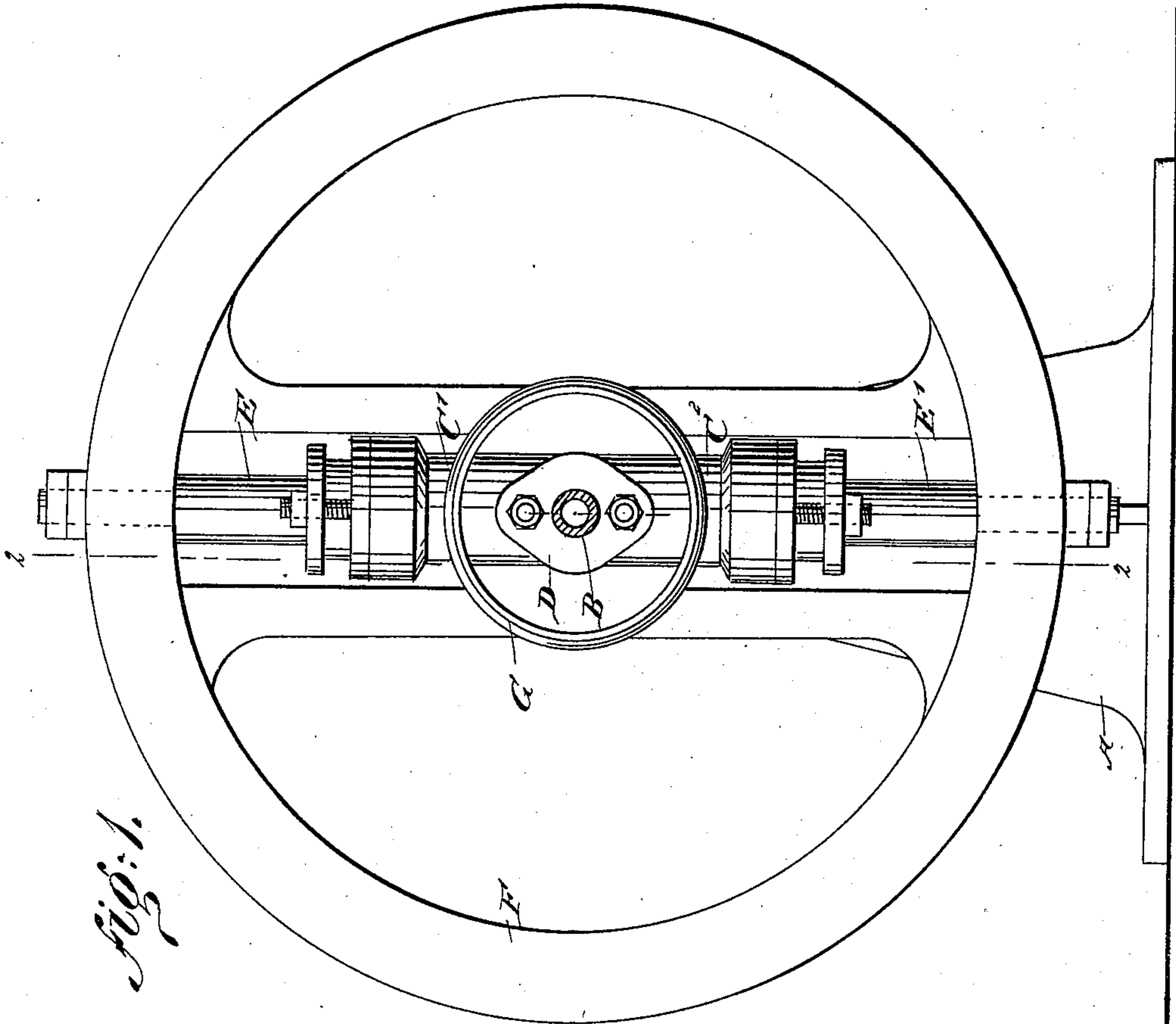


(No Model.)

T. G. BLATCH.
GRAVITY ENGINE.

No. 549,052.

Patented Oct. 29, 1895.



WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS G. BLATCH, OF HAZLETON, PENNSYLVANIA.

GRAVITY-ENGINE.

SPECIFICATION forming part of Letters Patent No. 549,052, dated October 29, 1895.

Application filed May 20, 1895. Serial No. 549,950. (No model.)

To all whom it may concern:

Be it known that I, THOMAS G. BLATCH, of Hazleton, in the county of Luzerne and State of Pennsylvania, have invented a new and Improved Gravity-Engine, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved gravity-engine which is simple and durable in construction, very effective in operation, and arranged to utilize the motive agent (steam, air, or water under pressure) to the fullest advantage.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a sectional front view of the improvement on the line 1 1 of Fig. 2, and Fig. 2 is a transverse section of the same on the line 2 2 of Fig. 1.

In suitable standards A is held a shaft B, on which is mounted to turn a hub or sleeve C, provided with two or more radially-extending cylinders C' and C², placed diametrically opposite each other, as is plainly indicated in the drawings. Stuffing-boxes D are held in the ends of the sleeve C, and like stuffing-boxes D' are arranged in the outer ends of the cylinders C' and C². The inner ends of the cylinders C' and C² are adapted to be connected by ports *a* and *b* with the inlet and exhaust openings B' and B², formed in the shaft B, as is plainly indicated in Fig. 2.

In the cylinders C' and C² are mounted to slide the plungers E and E', respectively, rigidly connected at their outer ends with a heavy wheel F. On the cylinders is bolted or otherwise fastened a pulley G for transmitting the rotary motion of the cylinders to other machinery. On one outer end of the shaft B is held a handle H for turning the said shaft in its bearings whenever it is desired to reverse the engine.

The operation is as follows: When these several parts are in the position illustrated in the drawings, then the motive agent can pass through the opening B' in the shaft B to the

port *a*, to finally pass into the cylinder C', to push the piston E therein in an outward direction, whereby the wheel F is lifted, and at the same time the piston E' moves inward in the other cylinder C², as the latter is now connected at its port *b* with the exhaust-opening B². The wheel F is thus thrown off its concentric position relative to the shaft B, as the preponderance of weight of one side of the said wheel will cause the said wheel to rotate by its own gravity, whereby the ports *a* and *b* are cut off from the openings B' and B², and the port *a* finally connects with the exhaust-opening B², and the other port *b* connects with the inlet-opening B'. As soon as this takes place the piston E' is pushed outward in its cylinder C² at the time the wheel passes the vertical central position, so that the above-described operation is repeated—that is, the wheel F is again lifted and its weight thrown to one side. In the meanwhile the steam previously admitted into the cylinder C' is forced out thereof by the inward movement of the plunger E, the steam passing through the port *a* and exhaust B² to the outside. Thus it will be seen that by the arrangement described the motive agent is utilized to throw the heavy wheel F into an eccentric position relative to the shaft B, so that the wheel is rotated by its own gravity, and consequently the plungers E and E' and cylinders C' and C², in moving with the wheel, cause the sleeve C to turn on the shaft B. The rotary motion thus obtained is transmitted by the pulley G to other machinery.

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

1. An engine, comprising a shaft having an inlet passage at one end and an exhaust passage at the other, the inner ends of the said passages opening through the shaft at opposite points, a sleeve or hub mounted to turn on said shaft and provided with stuffing boxes at its ends, a plurality of radially extending cylinders arranged opposite to each other and carried by the said sleeve or hub, the said cylinders being provided at their inner ends with ports adapted to connect the said cylinders alternately with the inner ends of the inlet and exhaust passages of the said shaft, plungers fitted to slide in the said cylinders,

a cylindrical wheel surrounding the cylinders and hub and to which the outer ends of the said plungers are secured, and a lever for turning the said shaft to reverse the engine, substantially as shown and described.

2. An engine, comprising a shaft having an inlet passage at one end and an exhaust passage at the other, the said shaft being enlarged at the center and provided with a diagonally arranged partition, the inner ends of the said passages opening through the enlarged portion of the shaft at diametrically opposite points, a hub or sleeve mounted to turn on the shaft and having stuffing boxes at its ends, the said hub or sleeve being provided with two or more radially extending cyl-

inders arranged diametrically opposite each other and having stuffing boxes at their outer ends, the said cylinders being provided at their inner ends with diametrically opposite ports adapted to connect the said cylinders alternately with the inlet and exhaust openings in the enlarged portion of the shaft, plungers mounted to slide in the said cylinders and connected with each other at their outer ends, and a pulley held concentric with the shaft, substantially as described.

THOMAS G. BLATCH.

Witnesses:

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JOHN H. WETTSTEIN.