

A. & S. J. COVEY.
Steam-Engines.

No. 227,739.

Patented May 18, 1880.

Fig. 1.

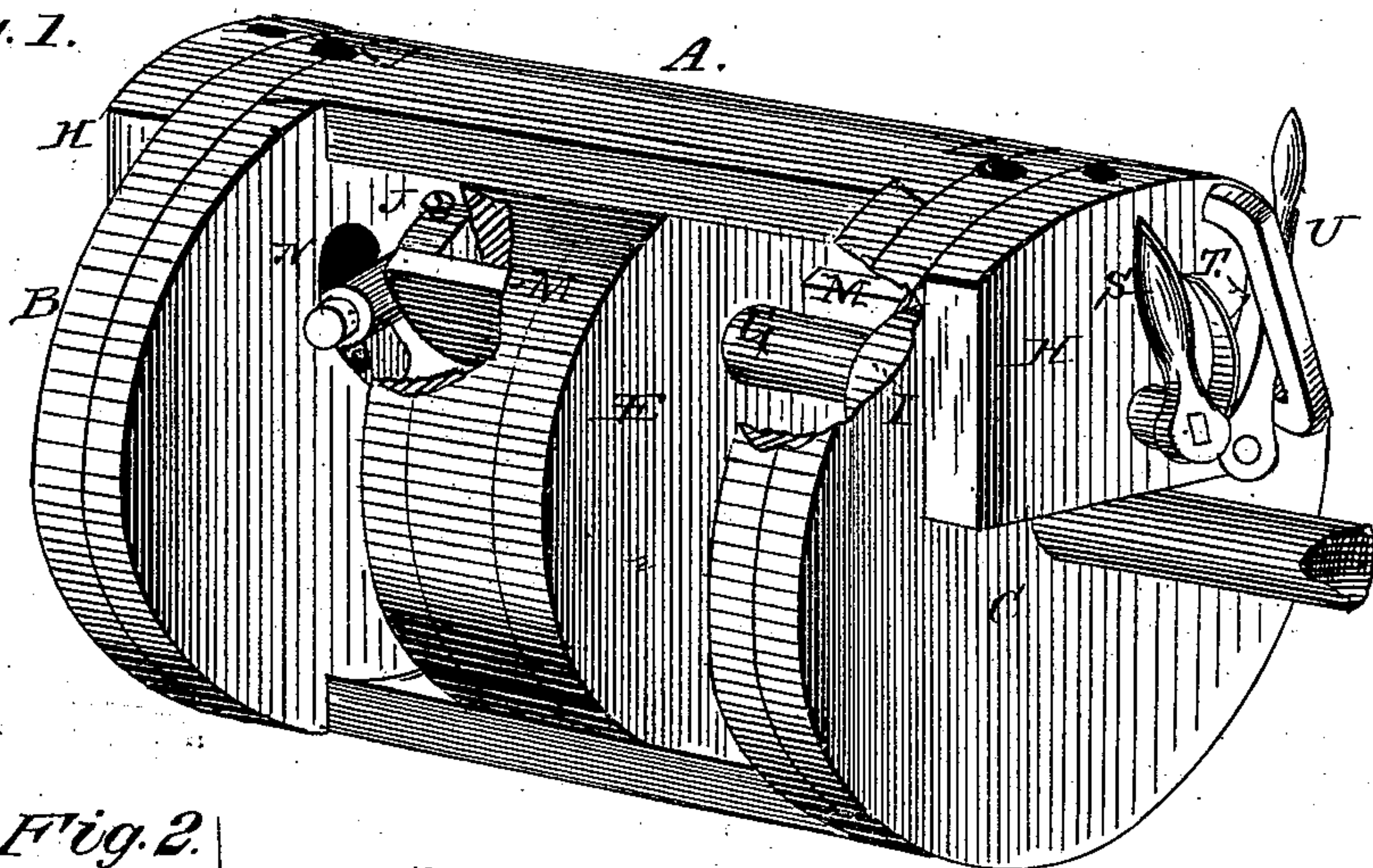


Fig. 2.

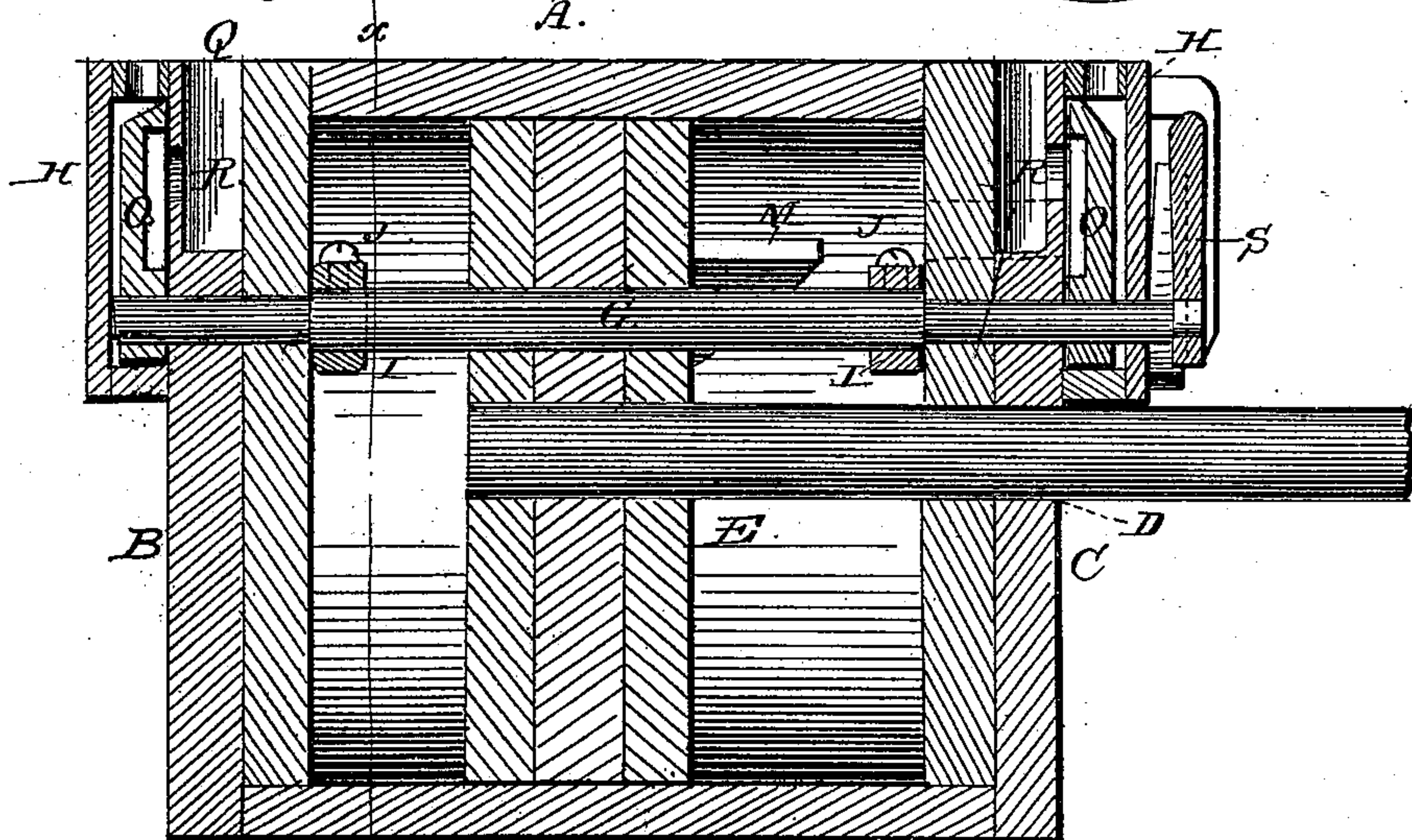
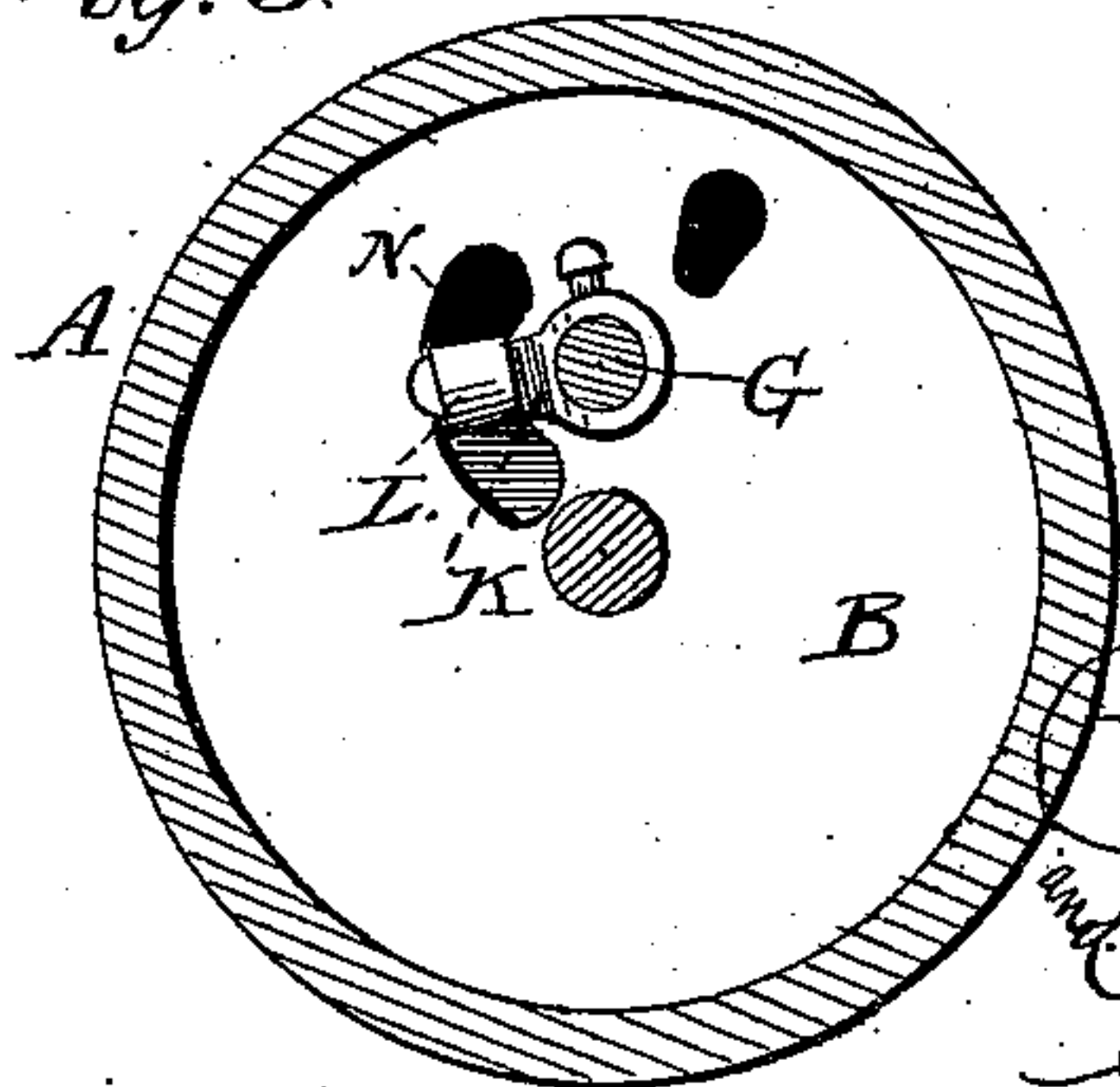


Fig. 3.



Witnesses:
Fred G. Dietrich

J. R. Littell,

Inventors:

Amaziah Covey,
and Samuel J. Covey,
by C. A. Snow & Co. Attys.

UNITED STATES PATENT OFFICE.

AMAZIAH COVEY AND SAMUEL J. COVEY, OF SIGOURNEY, IOWA.

STEAM-ENGINE.

SPECIFICATION forming part of Letters Patent No. 227,739, dated May 18, 1880.

Application filed November 15, 1879.

To all whom it may concern:

Be it known that we, AMAZIAH COVEY and SAMUEL J. COVEY, of Sigourney, in the county of Keokuk and State of Iowa, have invented certain new and useful Improvements in Steam-Engines; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 is a perspective view, parts of the cylinder being broken away for the purpose of better showing the construction. Fig. 2 is a longitudinal sectional view, and Fig. 3 is a cross-section on the line *x x*, Fig. 2.

Corresponding parts in the several figures are denoted by like letters of reference.

This invention relates to steam-engines; and it consists in certain improvements in the construction of the same, which will be hereinafter fully described, and particularly pointed out in the claim.

In the drawings, A represents the cylinder, which is provided with heads B C, the latter of which has a central opening or bearing for the piston-rod D, carrying at its inner end the piston E, which is provided with suitably constructed packing-rings.

Set off from the center of the cylinder-heads are the bearings for a rock-shaft, G, which extends through said cylinder-heads into the valve-boxes or steam-chests H H. I I are bands or collars secured by set-screws J upon the rock-shaft G immediately adjoining the cylinder-heads, and said collars are provided with arms K, upon which are journaled hardened cast-steel rollers L, adapted to engage triangular projections M M, secured in suitable positions on opposite sides of the piston. The cylinder-heads are provided with suitable recesses for the projections M, so as to prevent the latter from interfering with the operation of the piston.

N N are the ports or openings in the cylinder-heads which connect the cylinder with the steam-chests. The valves O O, arranged in the latter, are secured upon the rock-shaft

G, and are approximately triangular in shape, so as to cover or close the steam-ports alternately when the rock-shaft is oscillated by the mechanism above described. The steam-chests are connected by pipes direct with the boiler.

Q Q are the exhaust-ports, which are located in the cylinder-heads and connected by passages with openings R R, located under the valves and permanently covered thereby. The under sides of the valves are provided with recesses or concavities, which, while the exhaust takes place, connect the exhaust with the steam ports.

One end of rock-shaft G, it will be seen, projects through the wall or casing of the steam-chest at one end of the cylinder, and is there provided with a lever, S, operated upon by a spring, T, secured upon a hand-lever, U, near the fulcrum of the latter. By means of lever U and spring T pressure may be brought to bear upon the spring S, thereby causing the latter to oscillate the rock-shaft G, thus reversing the engine. This can be easily and instantaneously done at any time when the engine is in motion.

The operation of our improved steam-engine may be readily understood from the foregoing description and by reference to the drawings hereto annexed.

One of the steam-ports is at all times open for the admission of steam into the cylinder, while the other is closed, thus affording a means of escape for the steam confined in the cylinder through the exhaust-port. As the piston reciprocates it automatically reverses the position of the valves.

Our improved engine is simple, durable, and very economical, little or no steam being lost by leakage.

Having thus described our invention, we claim and desire to secure by Letters Patent of the United States—

The combination of a steam-cylinder, a piston provided on opposite sides with triangular projections, a rock-shaft journaled in the cylinder-heads, and provided with adjustable collars having arms and friction-rollers engaging the projections on the piston, the

steam-chests arranged upon the outsides of
the cylinder-heads and connected with the
cylinder by the steam-ports, the valves ar-
ranged in the steam-chests upon the ends of
5 the rock-shaft, and the exhaust-ports terminat-
ing under and permanently covered by the
concave under sides of the valves, as set forth.

In testimony that we claim the foregoing as

our own we have hereto affixed our signatures
in presence of two witnesses.

AMAZIAH COVEY.
SAMUEL J. COVEY.

Witnesses:

ALICE I. GRAY,
D. C. ROGERS.