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J.S. Boicourt & T.H. Barnes, Imp^t in Rotary Steam Engines

PATENTED
MAR 3 1868

Fig. 1

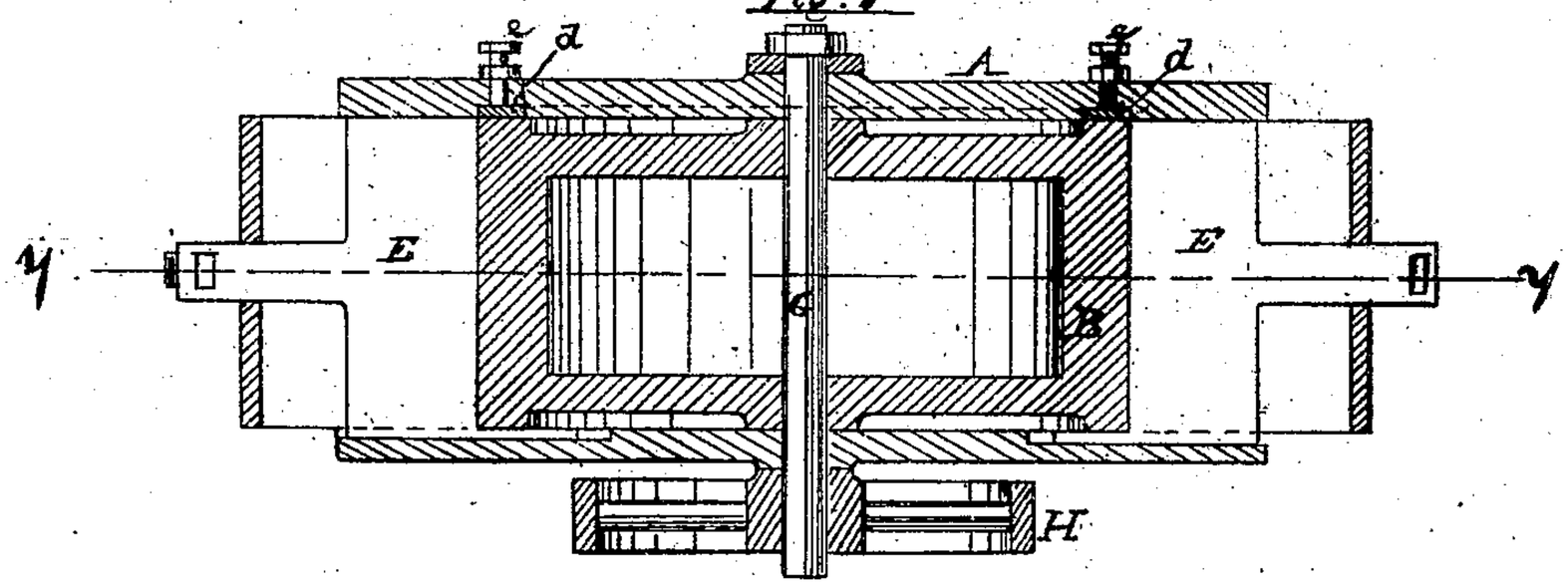
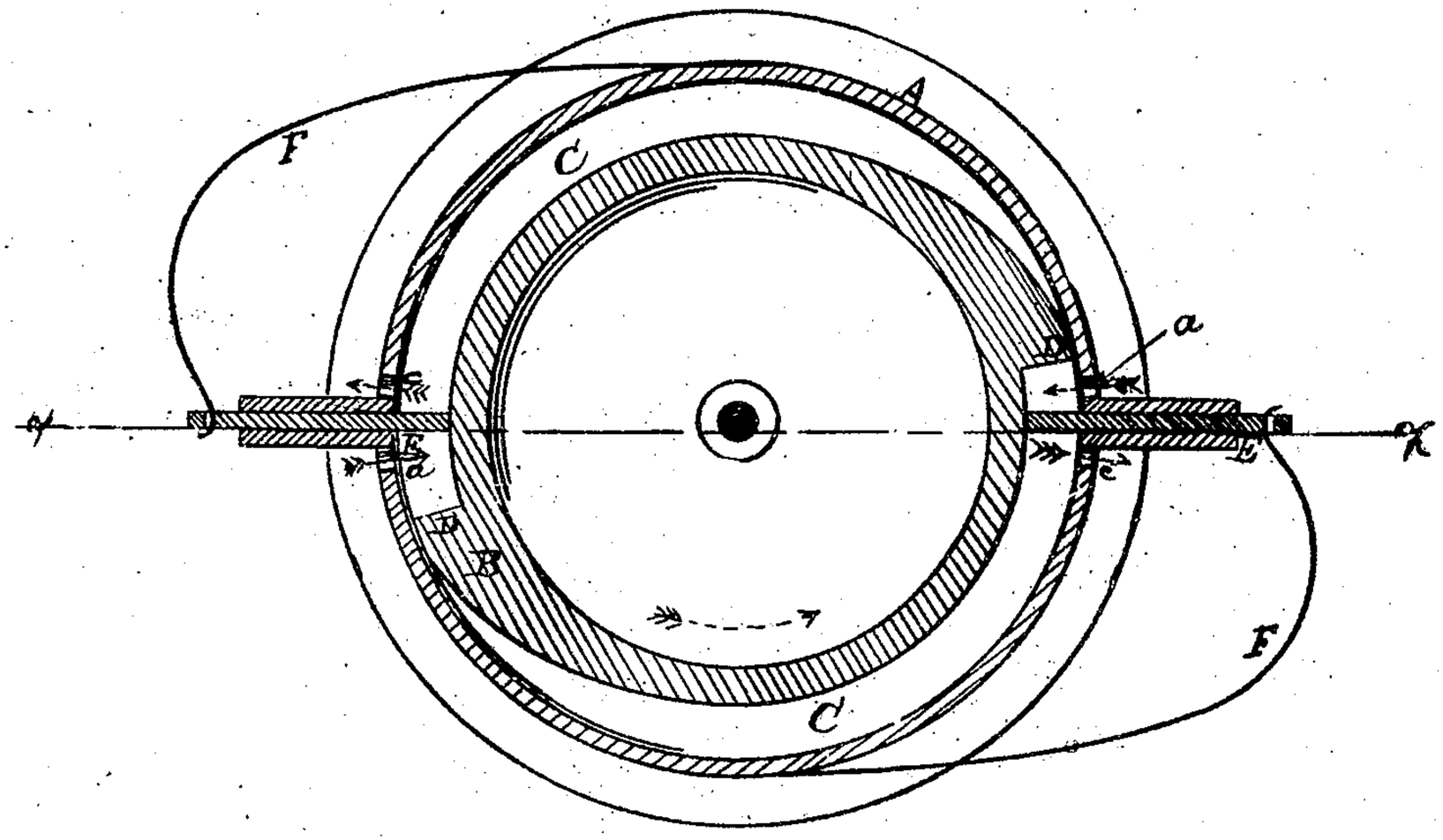


Fig. 2.



Witnesses
Wm. Sewin
H. Blockley

Inventors
J. S. Boicourt
T. H. Barnes
Per Munn & Co
Attorneys

United States Patent Office.

J. S. BOICOURT AND T. H. BARNES, OF BOONESBORO, IOWA.

Letters Patent No. 75,117, *dated March* 3, 1868.

IMPROVEMENT IN ROTARY STEAM-ENGINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, J. S. BOICOURT and T. H. BARNES, of Boonesboro, in the county of Boone, and State of Iowa, have invented a new and useful Improvement in Rotary Steam-Engines; and we do hereby declare that the following is a full, c ear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to new and improved devices for the purpose of producing rotary motion by steam; and it consists in an eccentric-wheel in a suitable casing, which wheel has offsets, and which casing has sliding valves, which are actuated in one direction by springs, and in the other direction by the periphery of the eccentric-wheel, which is rotated in the casing, as will be herein more fully described.

Figure 1 represents a vertical section of the engine through the line *x x* of fig. 2.

Figure 2 is a horizontal section of fig. 1 through the line *y y*.

Similar letters of reference indicate like parts.

A is the casing of the engine. B is the revolving wheel. C C are the steam-chambers. D D are the pistons, which are formed by the termination of the eccentric-periphery of the wheel, or by the offsets in the wheel. E E are the sliding valves, which work steam-tight through the case A, and the inner ends of which, during the revolution of the wheel, are in close contact with its periphery. F F are springs, which are attached to the valves and to the casing, as seen in the drawing, and which act upon the valves, crowding them on to or towards the wheel with a constant pressure. *a a* represent the steam-ports, and *e e* the exhaust-ports of the engine. G is the engine-shaft, upon which the wheel B is hung. H is a pulley on the shaft. The direction of the revolving wheel is indicated by the arrow in fig. 2.

It will be seen that the steam acts continuously on the wheel, that one piston takes steam a little before the other, and that the steam is exhausting from both chambers. The direction of the steam in and out of the chambers is indicated by the arrows.

In the revolution of the wheel, the pistons will be raised by the eccentric-periphery of the wheel until the "offset" passes them, when the action of the springs F forces them on to the periphery again. The pistons, as will be seen, form the abutments against which the steam acts.

The revolving wheel is packed by a ring, seen at *d*, fig. 1, which packing-ring is set up by screws *c*, as seen in the drawing. Instead of the springs F, steam may be used upon the valves to force them inward, if desired.

By this arrangement it will be noticed that the action of the steam upon the pistons is constant, that there are no dead-centres as in the crank-engine, and consequently no necessity for a fly-wheel.

What we claim as new, and desire to secure by Letters Patent, is—

The arrangement of the sliding valves E and the springs F, with reference to the pistons D D, as herein set forth and described.

J. S. BOICOURT,
T. H. BARNES.

Witnesses:
D. C. KETCHUM,
S. H. BELL.