

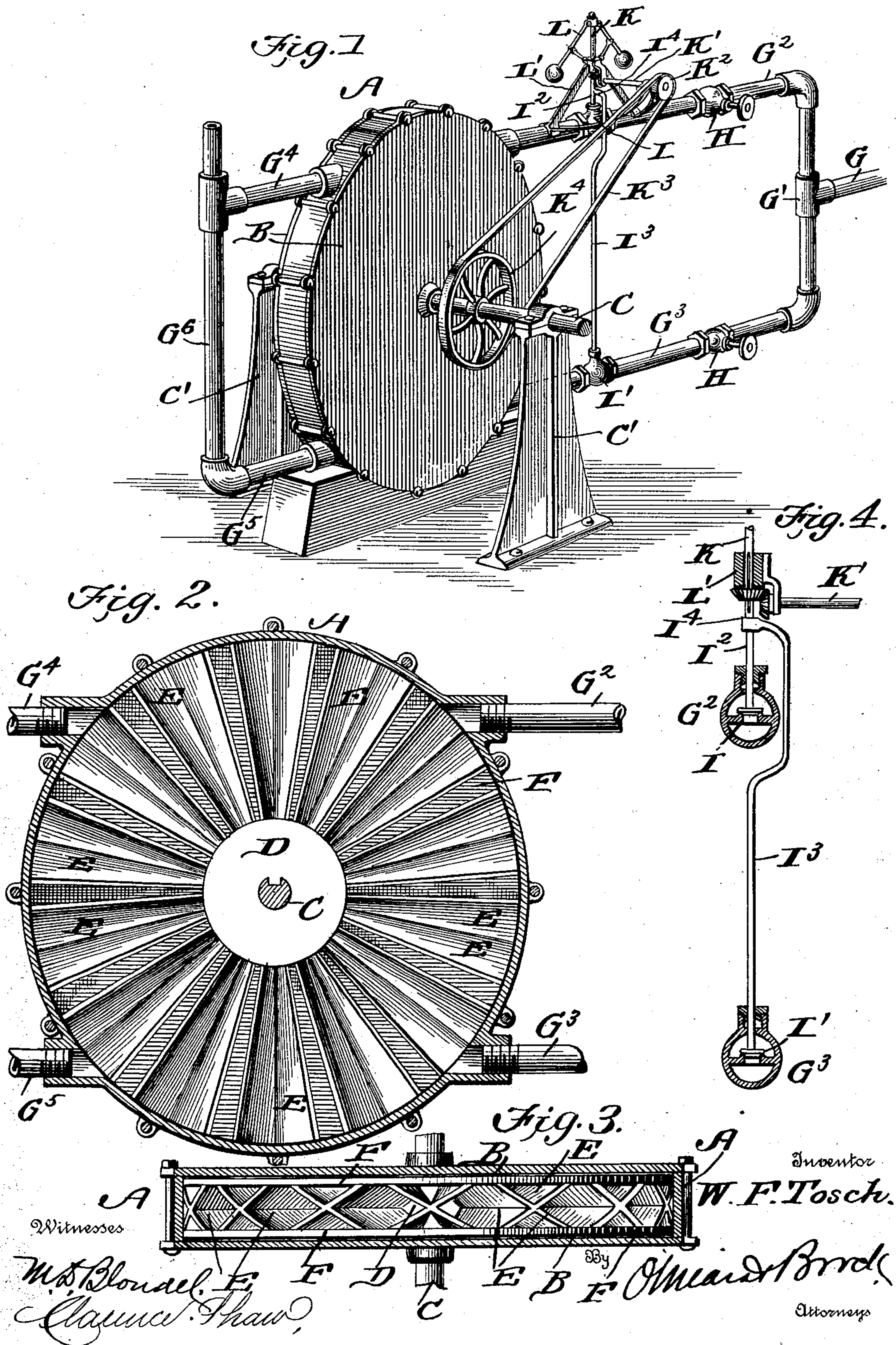
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Patented Dec. 9, 1902.

W. F. TOSCH.
ENGINE.

(Application filed May 29, 1902.)

(No Model.)



UNITED STATES PATENT OFFICE.

WILLIAM F. TOSCH, OF COBDEN, MINNESOTA.

ENGINE.

SPECIFICATION forming part of Letters Patent No. 715,709, dated December 9, 1902.

Application filed May 29, 1902. Serial No. 109,563. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. TOSCH, a citizen of the United States, residing at Cobden, in the county of Brown and State of Minnesota, have invented a new and useful Engine, of which the following is a specification.

This invention relates generally to engines, and more particularly to that class known as "rotary" engines; and the object of the invention is to provide a cheap and simple construction of engine having a governor attachment in connection therewith, whereby speed can be maintained at a uniform degree; and another object of the invention is to provide for the reversal of the said engine.

With these objects in view the invention consists in the novel features of construction, combination, and arrangement, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming a part of this specification, Figure 1 is a perspective view of an engine constructed in accordance with my invention. Fig. 2 is a vertical sectional view. Fig. 3 is a detail sectional view, partly in elevation. Fig. 4 is a sectional view illustrating the manner of operating steam-inlet valves.

In constructing an engine in accordance with my invention I employ a cylinder A, to which is securely bolted the heads B, and mounted in the said heads is a shaft C, having a hub D arranged thereon and from which radiate the V-shaped piston blades or wings E, said blades or wings having their concaved faces arranged alternately in opposite directions, so that the piston can be rotated in either direction, as more fully explained hereinafter. The V-shaped blades or wings E are arranged between the pair of circular plates of disks F, which fit closely against the heads of the cylinder and are of such size as to fit snugly within the body of the cylinder, thereby providing a series of pockets into which the steam is projected for the purpose of rotating the piston.

The main steam-pipe G has a T-coupling G', from which extend the branch steam-pipes G² and G³, the pipe G² entering the cylinder adjacent to the upper end, while the pipe G³ enters the cylinder adjacent to the lower end.

G⁴ and G⁵ indicate exhaust-pipes corresponding with the inlet-pipes G² and G³, respectively, said pipes G⁴ and G⁵ being connected to a common exhaust-pipe G⁶.

Ordinary globe-valves H are arranged in the pipes G² and G³, and by means of which the supply of steam can be completely cut off from the said pipes. Regulator-valves I and I' are arranged, respectively, in the pipes G² and G³, the stems I² and I³ of said valves being connected to each other at I⁴, and these stems are also connected to the adjustable rod K of the governor L, arranged upon the pipe G², said governor being supported upon a suitable bracket L' and operated through the medium of a shaft K', carrying a pulley K², over which travels a belt K³, receiving its motion from the pulley K⁴, mounted upon the shaft C, said shaft being journaled in suitable bearings C', arranged upon opposite sides of the engine-cylinder. By having the valve-stems of the regulating-valves connected to each other and also to the governor-rod it is obvious that only the governor is needed for the regulation of my improved construction of engine.

The branch pipes G² and G³ are employed in order to permit the engine to be run in either direction, it being understood that the steam entering from the pipe G² will drive the piston in one direction, while the steam entering through the pipe G³ will drive the piston in the opposite direction, and by having the piston-blades arranged alternately with reference to their concaved faces it is obvious that every other piston-blade or wing will be operated upon by the jet of steam. When steam is passing to the engine through one pipe, the other pipe is of course kept closed. The governor only operates upon one pipe at a time, inasmuch as steam is only passing through one pipe at a time.

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

1. In a rotary engine, the combination with the branch steam-pipes entering the engine-cylinder at different points, of the regulating-valves in said steam-pipes, the governor mounted upon one of the said pipes, the stems of the regulating-valves being connected with

each other, and also connected to the regulating-rod of the governor, for the purpose specified.

2. The combination with the cylinder, of
5 the heads secured thereto, the shaft journaled therein, the hub mounted upon said shaft and within the cylinder, the circular side disks, the radiating piston blades or wings, said blades or wings being V-shaped and arranged

alternately in opposite directions, the steam- inlet pipes and exhaust-pipes connected to the cylinder, substantially as and for the purpose described.

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Witnesses:

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