

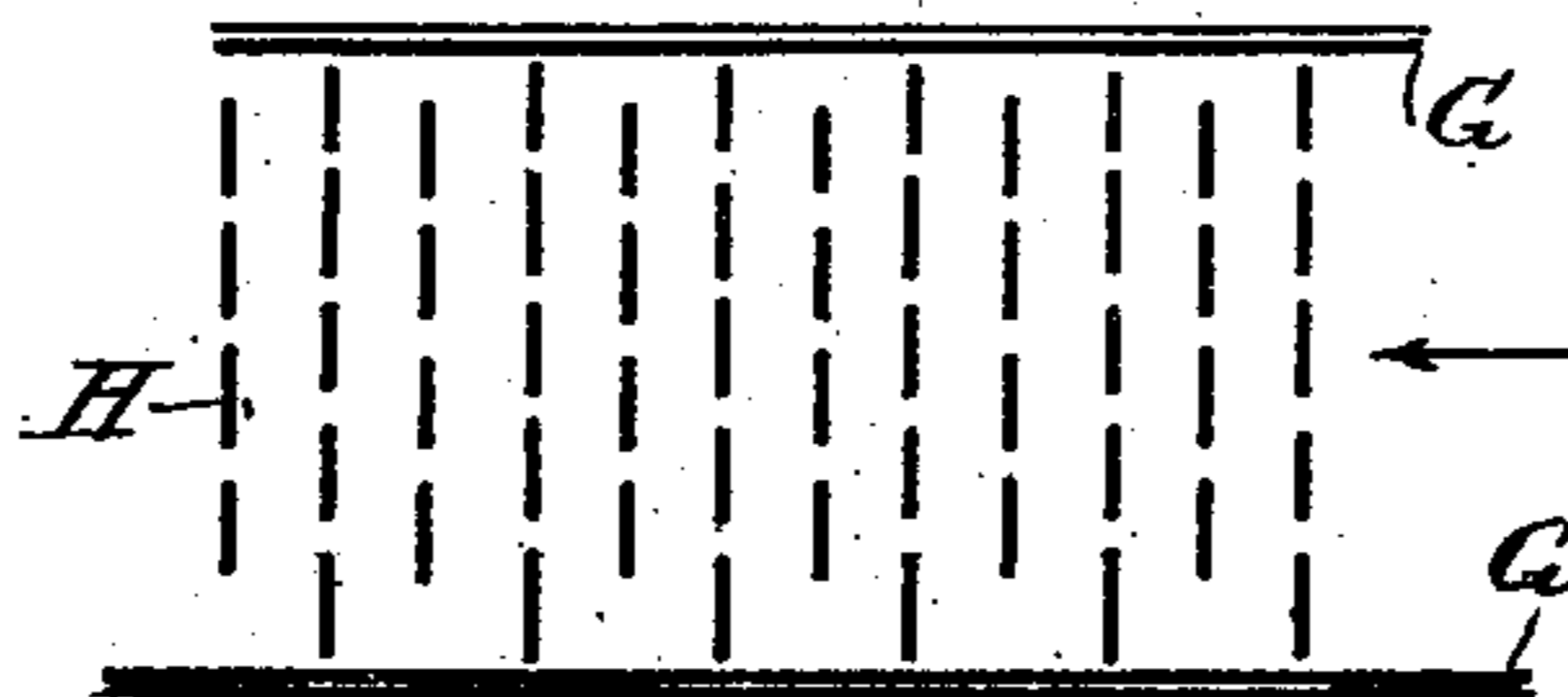
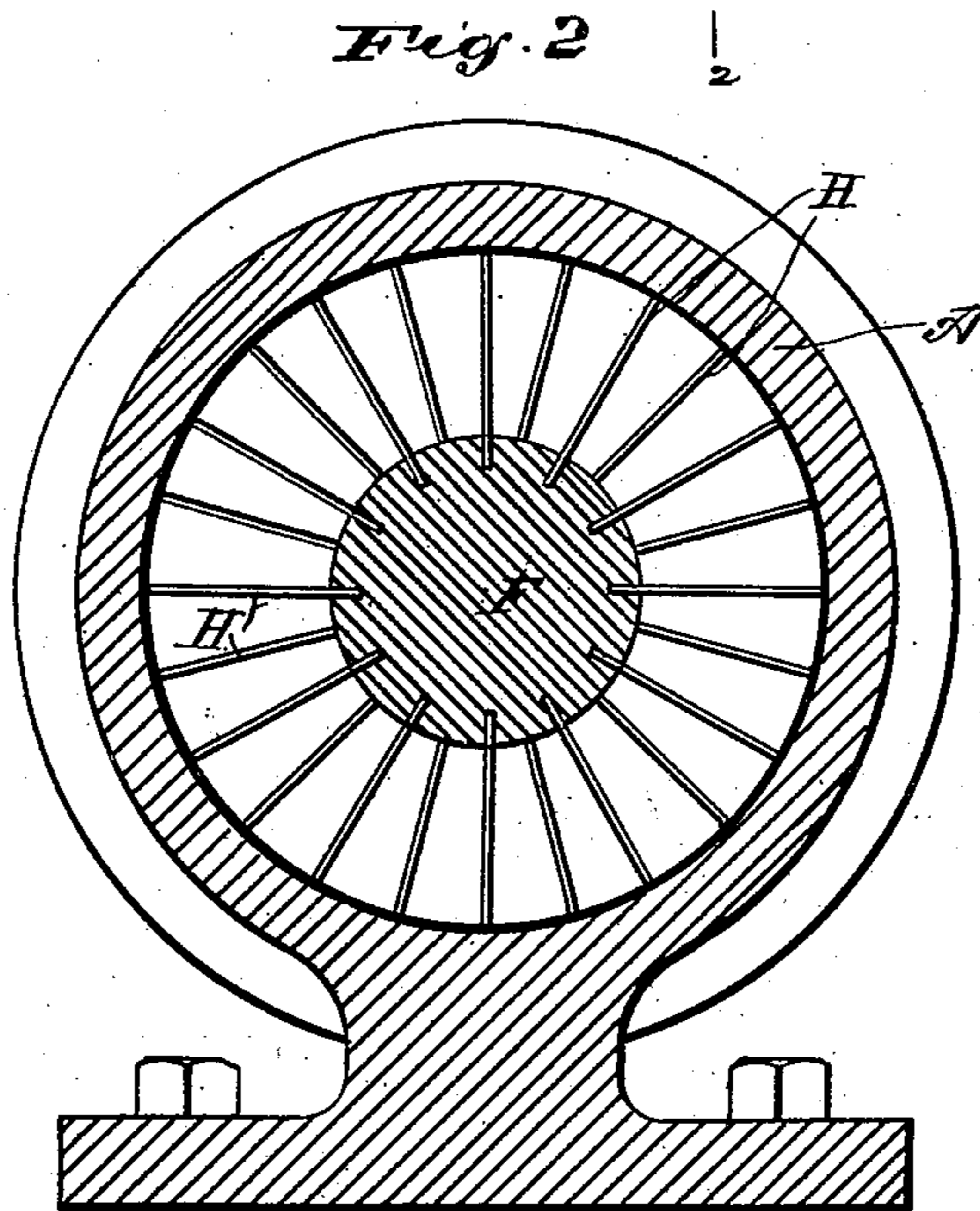
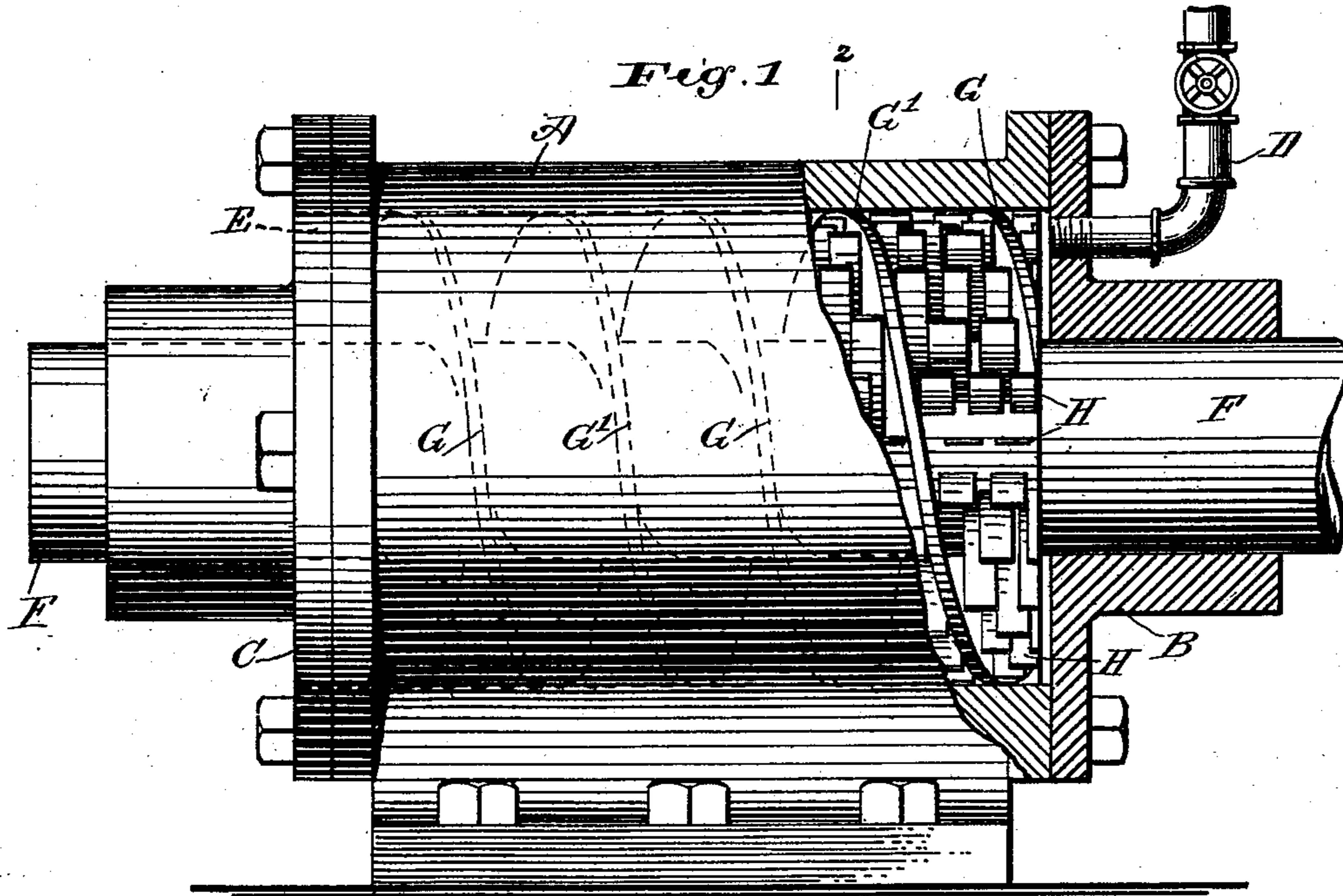
No. 710,261.

Patented Sept. 30, 1902.

W. F. EVANS.
ROTARY ENGINE.

(Application filed July 8, 1902.)

(No Model.)



WITNESSES:

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WILLIAM FENNELL EVANS, OF CHICAGO, ILLINOIS.

ROTARY ENGINE.

SPECIFICATION forming part of Letters Patent No. 710,261, dated September 30, 1902.

Application filed July 8, 1902. Serial No. 114,769. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM FENNELL EVANS, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Rotary Engine, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved rotary engine which is simple and durable in construction, very effective in operation, easily reversible, and arranged to utilize the motive agent to the fullest advantage.

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

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement, part of the cylinder being shown in section. Fig. 2 is a transverse section of the same on the line 2 2 of Fig. 1, and Fig. 3 is a diagrammatic plan view showing the disposition of the blades between the spirals.

The cylinder A of the rotary engine is provided with suitable heads B and C, of which the head B is provided with a pipe D, connected with a boiler or other suitable source of motive-agent supply. The other head C is provided with an outlet E for the exhaust motive agent.

In the heads B and C is journaled the shaft F of a rotary piston provided with spirals G and G', secured on the shaft F and extending with their outer peripheral edges to the inner surface of the cylinder A, the spirals being spaced a suitable distance apart to accommodate rows of blades H, extending radially from the shaft F to the inner surface of the cylinder A. As illustrated in Fig. 1, the blades in one row break joints with those of the adjacent row, the blades in each row being spaced apart and spaced from the sides of the spirals G G', so as to leave sufficient openings between the blades in each row for the motive agent to pass through to the blades in the next row.

As shown in Figs. 1 and 3, the blades are

preferably of flat metal, and the number of blades in a row may be varied according to the size of the engine and the distance the spirals G and G' are spaced apart.

Now the motive agent passing into one end of the cylinder A by the inlet-pipe D passes between the spirals G and G', and thus acts with boiler-pressure on the blades H between the said spirals to rotate the piston, it being understood that the steam acts successively on the rows of blades as the steam travels along between the spirals to finally pass out of the cylinder by the outlet-pipe E.

In order to permit of reversing the engine, it is only necessary to provide the head C with an inlet, such as D, and the head B with an outlet, such as E. The motive agent now passing into the cylinder at the head C causes a rotation of the piston in the reverse direction. It is understood that steam, compressed air, or water under pressure may be used as the motive agent. If water is used, the cylinder is preferably placed in an upright position.

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

1. A rotary engine comprising a cylinder having an inlet at one end and an outlet at the other end, a piston mounted to turn in the said cylinder, comprising a shaft extending centrally in the cylinder, spirals on the shaft extending to the inner surface of the cylinder, and blades on the shaft, between adjacent spirals and extending to the inner surface of the cylinder, as set forth.

2. A rotary engine comprising a cylinder having an inlet at one end and an outlet at the other end, a piston mounted to turn in the said cylinder, comprising a shaft extending centrally in the cylinder, spirals on the shaft extending to the inner surface of the cylinder, and blades on the shaft, between adjacent spirals and extending to the inner surface of the cylinder, the said blades being arranged in longitudinal rows and the blades of adjacent rows breaking joints, as set forth.

3. A rotary engine comprising a cylinder having an inlet at one end and an outlet at the other end, a piston mounted to turn in the said cylinder and having a shaft extending centrally in the cylinder, spaced spirals on the shaft, extending to the inner surface

of the cylinder, and blades extending radially on the shaft between adjacent spirals and reaching to the inner surface of the cylinder, the blades being arranged in longitudinal rows, the blades of adjacent rows breaking joints, as set forth.

In testimony whereof I have signed my

name to this specification in the presence of two subscribing witnesses.

WILLIAM FENNELL EVANS,

Witnesses:

JAMES A. FULLENWIDER,
MOSES A. LEVY.