WARREN CASE.

Improvement in Rotary Engines.

No. 120,183. Patented Oct. 24, 1871.

Fig 1

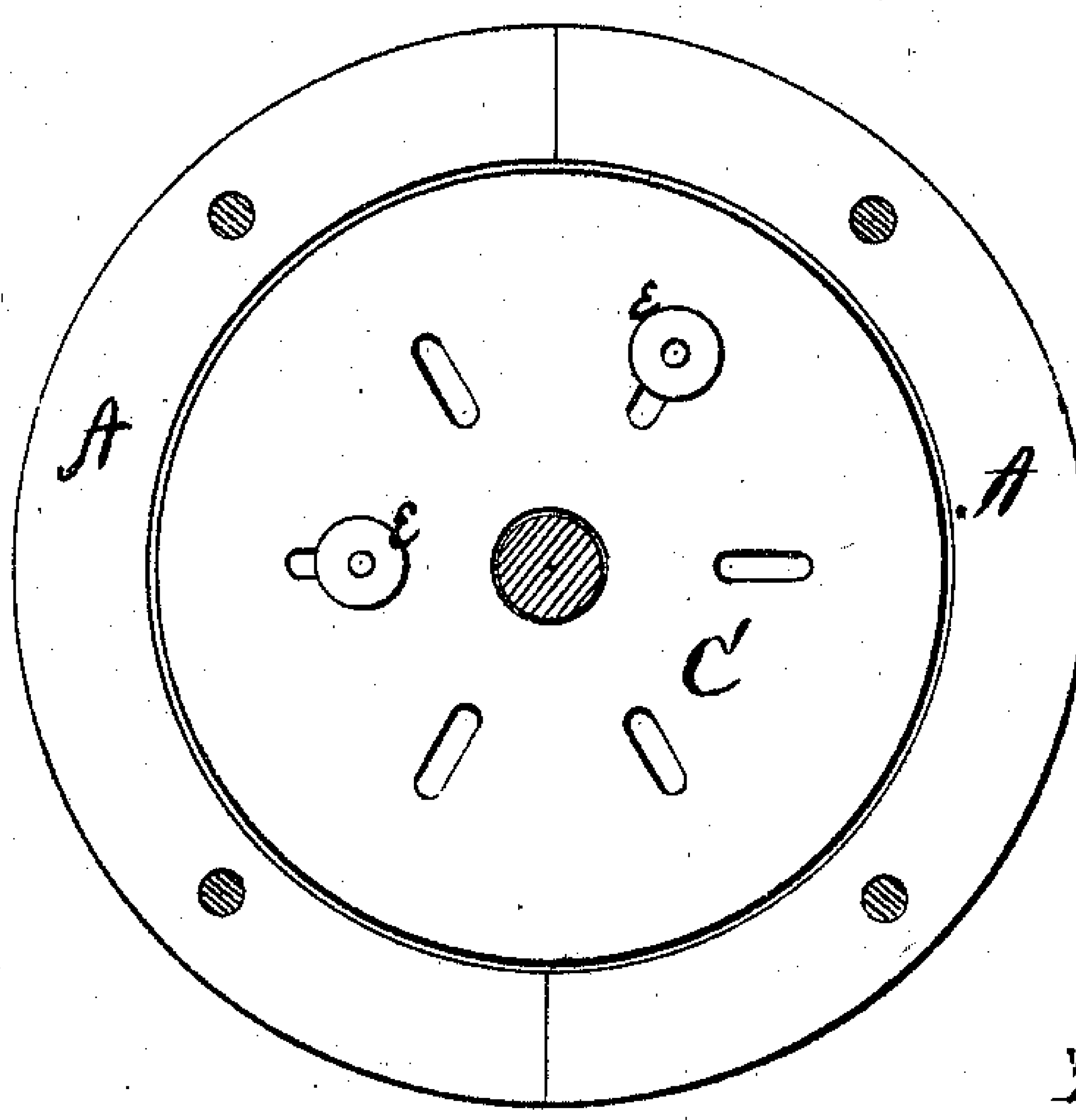


Fig 2

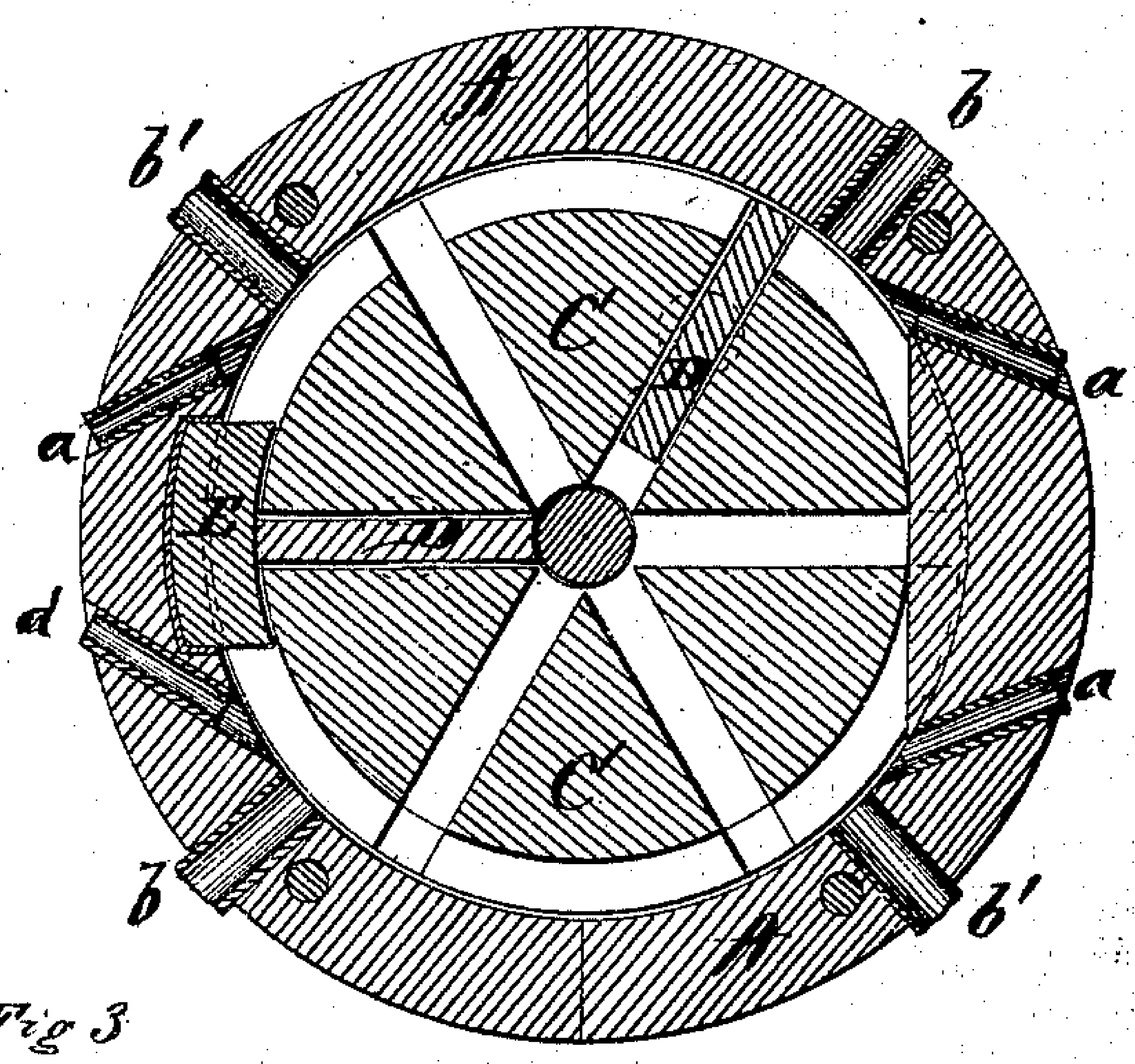


Fig 3

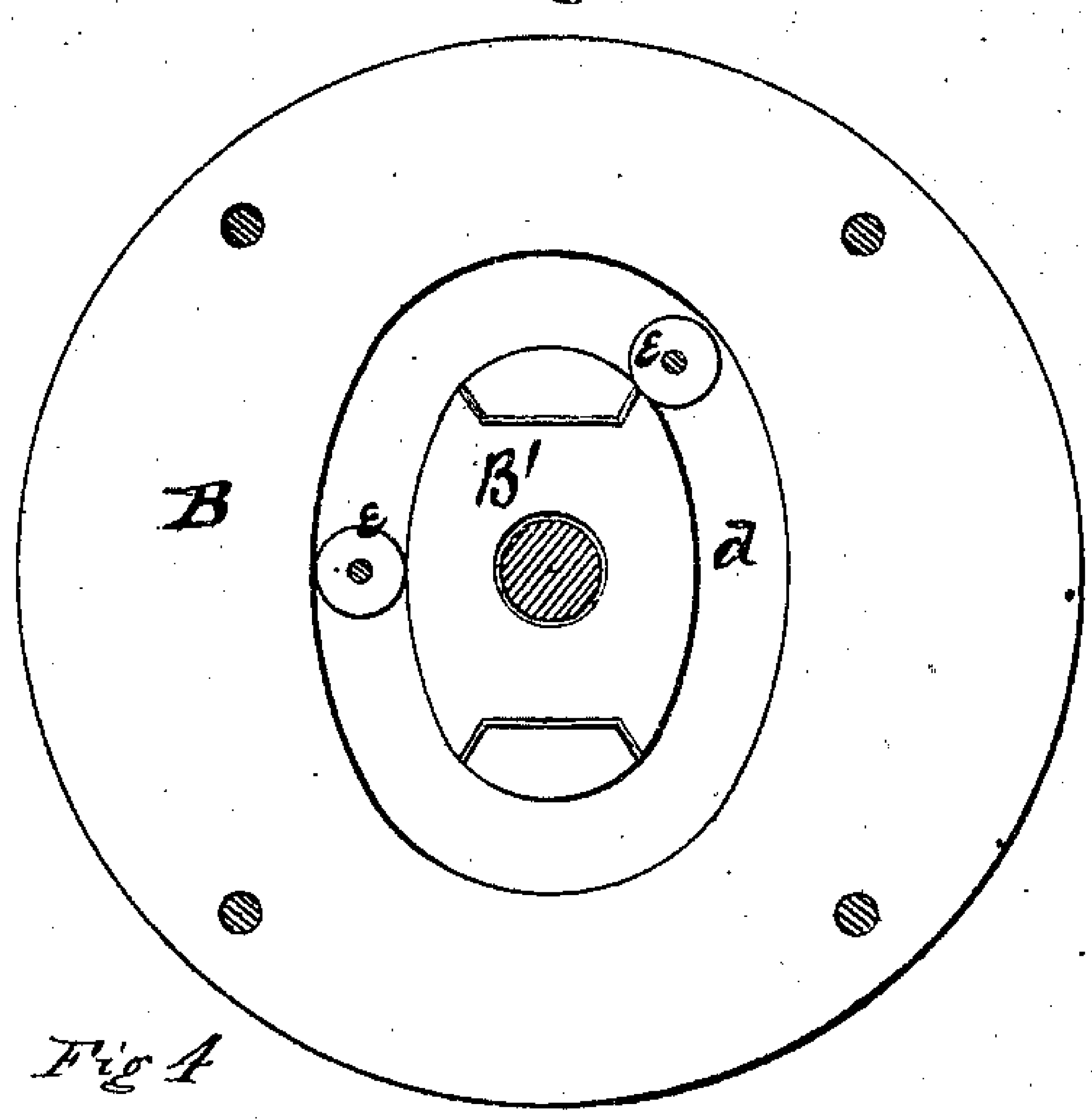
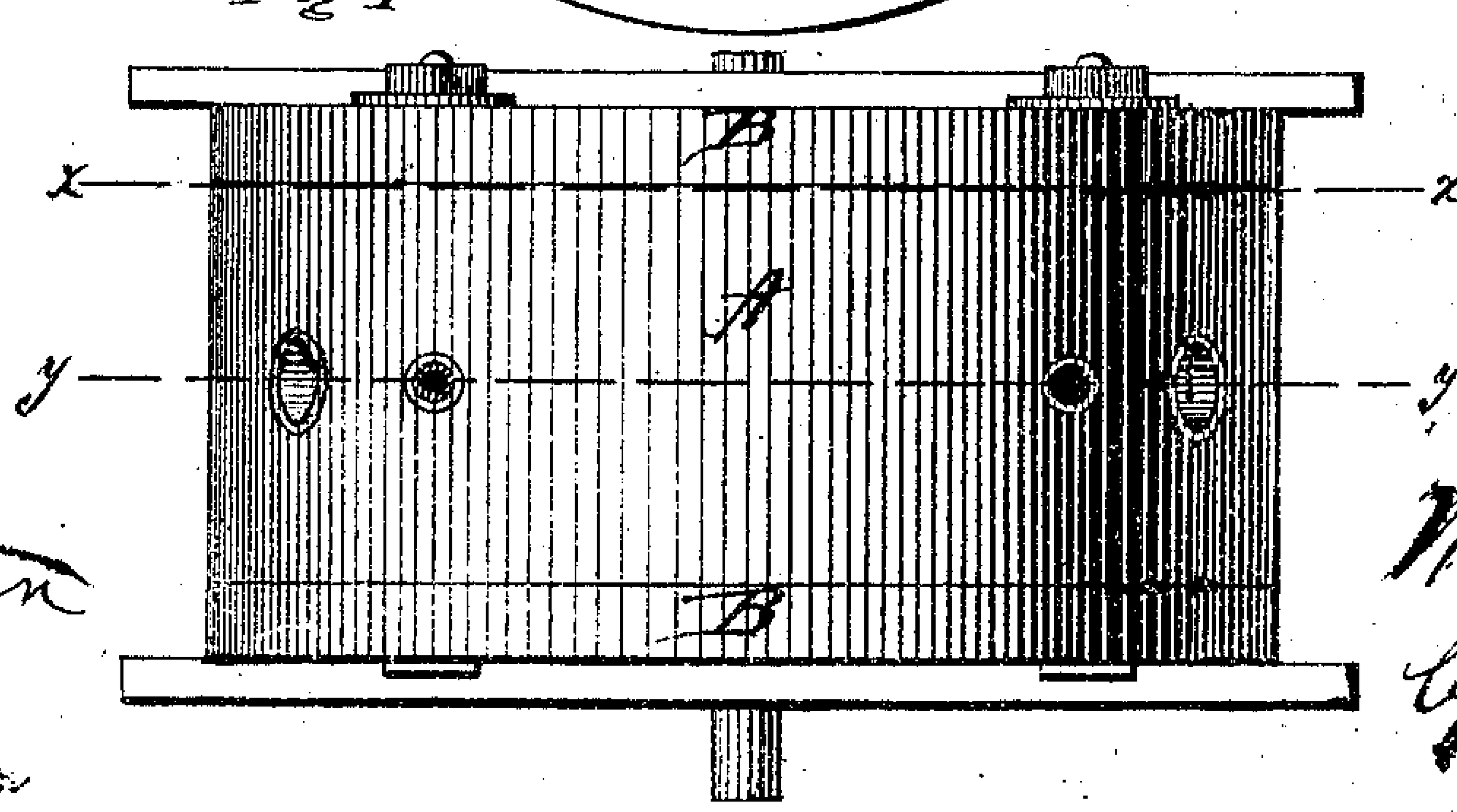


Fig 4



Witnesses:

A. A. Yeatman

John Stroop

Inventor.

Warren Case

by E. H. Wells

atty

UNITED STATES PATENT OFFICE.

WARREN CASE, OF TROY, ILLINOIS.

IMPROVEMENT IN ROTARY ENGINES.

Specification forming part of Letters Patent No. 120,183, dated October 24, 1871.

To all whom it may concern:

Be it known that I, WARREN CASE, of Troy, Madison county, Illinois, have invented certain new and useful Improvements in Rotary Enginery; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in certain improvements, as will be hereinafter set forth, on the rotary engine for which Letters Patent have been granted to me.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is an interior view of the wheel. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is an inside view of one of the heads, and Fig. 4 is a plan view of the engine.

A represents the cylinder with heads B B, and C the rotating wheel with radial passages or grooves, in which the valves D D move out and in. E is the block on the inside of the cylinder that serves to preserve back pressure, and *d* is the groove in the head B for governing the valves, all of said parts being constructed substantially as described in my former patent. The cylinder A is provided with four steam-entrances, *a a* and *a′ a′*, and four steam-outlets, *b b* and *b′ b′*. The steam enters at *a a* simultaneously, and is escaping at the same time at *b b*, the openings *a′ a′* and *b′ b′* being then closed. To reverse the wheel the former openings are closed and the latter opened, so that the steam will enter simultaneously at *a′ a′* and be discharged at *b′ b′*, thus making at all times a double entry and double exit of steam to subdue friction. Upon the pins of the valves D D are placed steel rollers *e e*, which fit in the groove *d* and lessen the friction. B′ represents the portion of the head B which is within the groove *d*. Under the ends of this part B′, as well as beneath the block E, packing is inserted, the former to properly govern the valves and the latter to prevent any possible leakage of steam.

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

1. The arrangement in the cylinder A of the four steam-inlets *a a a′ a′* and the four steam-outlets *b b b′ b′*, substantially as shown and described, so as to change the direction of the wheel at will and always have a double entry and a double exit, as set forth.

2. The combination of the casing A, heads B B, inlets *a a a′ a′*, outlets *b b b′ b′*, wheel C, valves D, rollers *e e*, and blocks E, said blocks and parts B′ of the heads being provided with packing, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of September, 1871.

WARREN CASE.

Witnesses:
G. C. LUSK,
GEORGE MCCUN. (150)