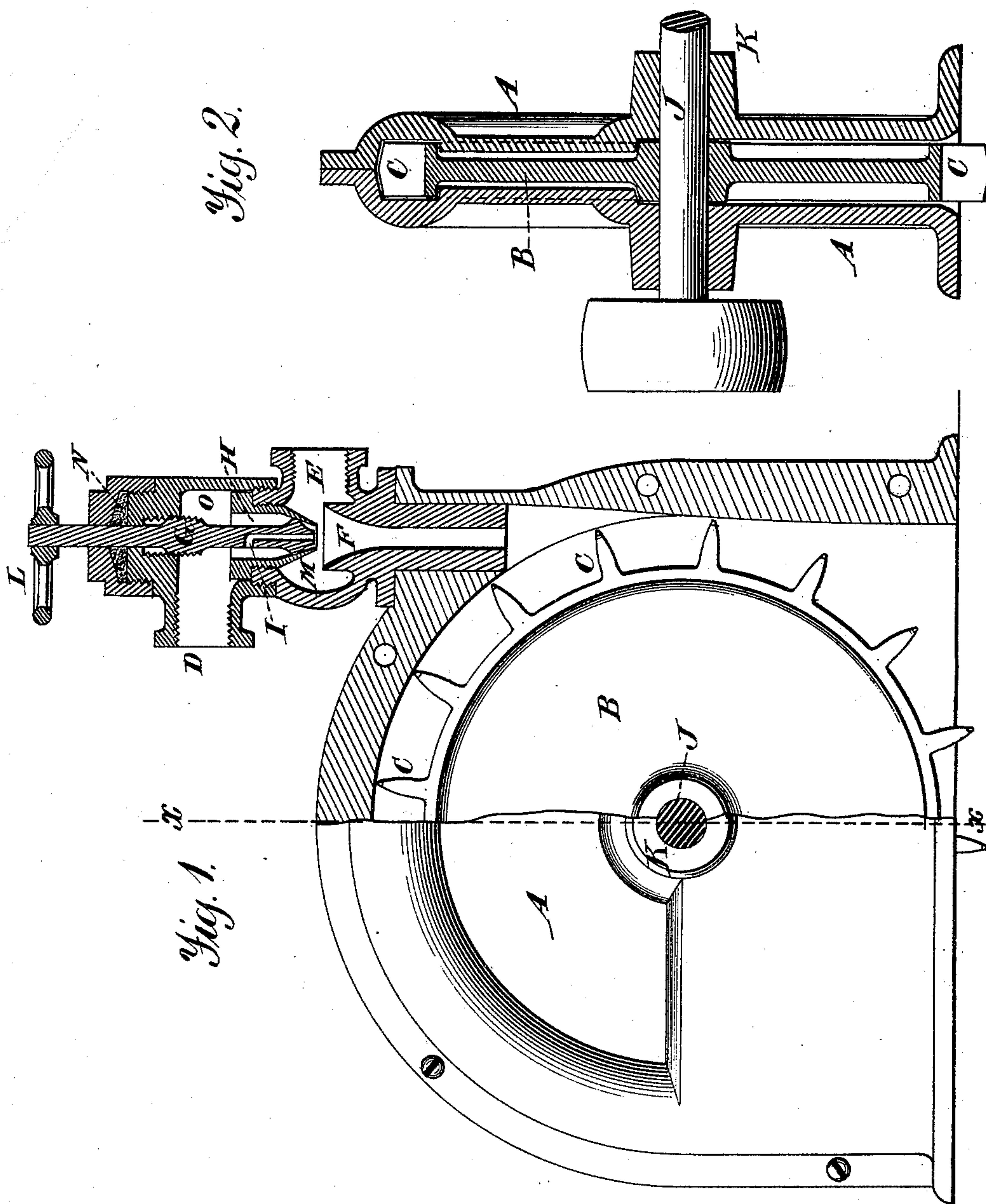


J. M. SIMPSON.
Rotary Steam-Engine.

No. 223,547.

Patented Jan. 13, 1880.



Witnesses.
A. Ruppert,
J. Mason

Inventor:
Josiah M. Simpson
By Theo. Mungen,
att'y.

UNITED STATES PATENT OFFICE.

JOSIAH M. SIMPSON, OF OSHKOSH, WISCONSIN, ASSIGNOR OF ONE-HALF
OF HIS RIGHT TO ALEXANDER AULT, OF SAME PLACE.

ROTARY STEAM-ENGINE.

SPECIFICATION forming part of Letters Patent No. 223,547, dated January 13, 1880.

Application filed June 17, 1879.

To all whom it may concern :

Be it known that I, JOSIAH M. SIMPSON, of Oshkosh, in the county of Winnebago and State of Wisconsin, have invented certain new and useful Improvements in Rotary Steam-Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to an improved rotary steam-engine; and it has for its object to utilize the momentum of a current of water impelled by an injected current of steam against the blades or floats of a wheel mounted upon journals in a suitable casing.

In the drawings, Figure 1 represents a view, partly in side elevation and partly in vertical section, of my improved motor; and Fig. 2 represents a transverse sectional view of the same.

The letter A indicates a segmental casing, formed in two parts, with flanges at their edges, which fit together, and are provided with apertures, through which are passed bolts or screws, by means of which the parts are secured together. Said parts of the segmental casing are provided with outwardly-extending bosses K, which form bearings for a shaft, J, of a wheel, B, which is inclosed by and adapted to rotate within the segmental casing, the said wheel being provided with a series of blades or floats, C, on its periphery.

The letter D represents a steam inlet or induction port, forming part of a connection attached to the segmental casing which incloses the wheel B. Said steam inlet or induction port communicates with a chamber, O, which, in turn, communicates with an annular space, H, in a short conical tube, M, secured within the connection attached to the segmental casing.

The letter G indicates a valve-rod passing

through a packing, N, in a suitable stuffing-box, and provided at its upper end with a hand-wheel, L, by means of which it may be operated. The said rod is externally screw-threaded about midway between its two ends, the screw-threaded portion engaging a female screw-thread in the connection attached to the segmental casing, whereby, upon turning said rod, the valve, at its lower end, will be caused to advance to or recede from its seat in the conical pipe or nozzle. Said valve-rod is provided with an aperture, I, extending from the space H to the end of said valve-stem and into the water-chamber M.

The letter E indicates a water-induction port, and F a funnel-shaped tube leading into the segmental chamber A on a line tangential with the periphery of the wheel B.

The operation of my invention will be readily understood in connection with the above description.

Upon admitting steam into the port D, (the port E being connected with a proper water-supply,) the steam will be forcibly ejected through the space I, creating a vacuum in the chamber M and causing the water to flow into the same through the port E. The force of the current of steam, acting after the manner of a Giffard injector, injects the current of water through the passage F upon the blades of the wheel with great force.

When desired, the volume of steam may be increased at will by raising the valve-stem G so as to lift the valve at the end of the same, by means of which increased power may be imparted to the wheel B. The said wheel has on its shaft a pulley or other gearing, by means of which power may be imparted to machinery of any description.

By placing a similar connection on the opposite side of the segmental casing the wheel or motor may be made reversible.

I am aware that is not new to induce or force a volume of water by a steam-jet.

I am also aware that to employ means to regulate and graduate such jet to accommo-

date different requirements is well known. Such devices are not sought to be covered in this application.

What I do claim is—

5 The combination of the conical pipe F, the valve and stem G L, having steam-passage I leading from the annular steam-space H to the water-chamber M, with the segmental casing A, having annular chamber, and wheel B,

having floats C, all constructed and arranged so substantially as shown and set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of June, 1879.

JOSIAH M. SIMPSON.

Witnesses:

O. H. HARRIS,

C. N. SCHOFIELD.