

(No Model.)

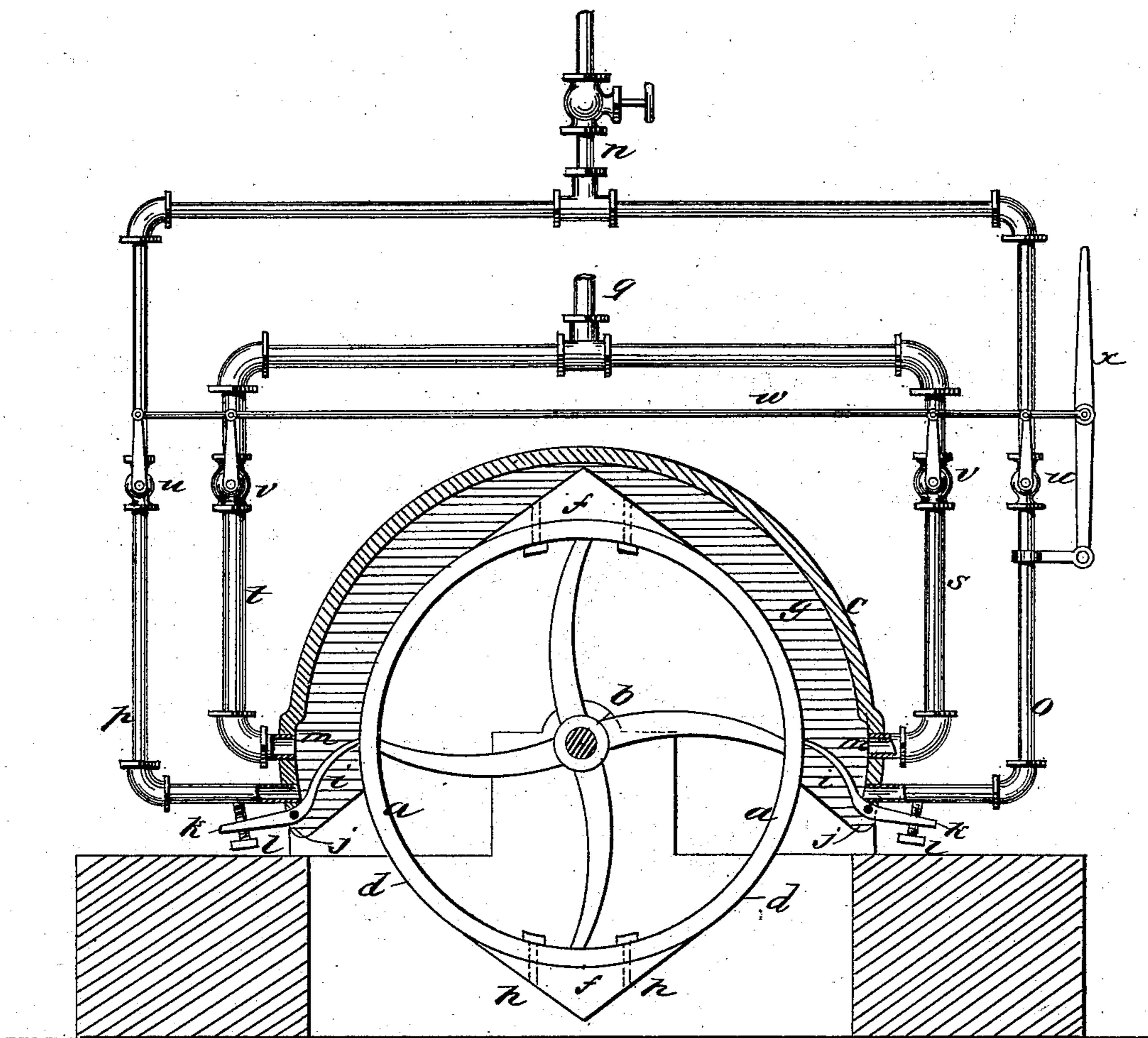
S. J. WEBB.

STEAM WHEEL.

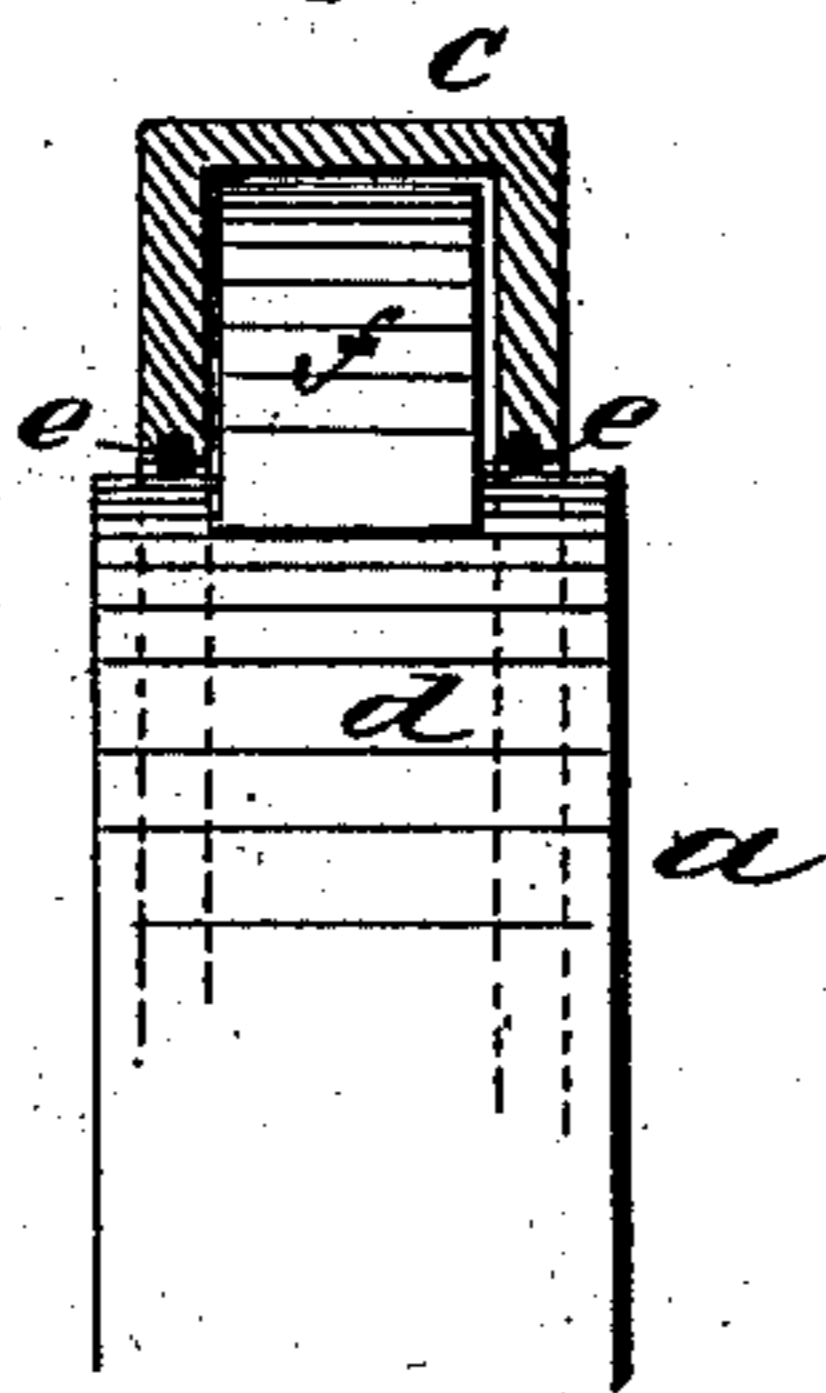
No. 268,327.

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*Fig. 1.*



*Fig. 2.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

SAMUEL J. WEBB, OF FLAT LICK, LOUISIANA.

## STEAM-WHEEL.

SPECIFICATION forming part of Letters Patent No. 268,327, dated November 28, 1882.

Application filed September 9, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL J. WEBB, of Flat Lick, in the parish of Claiborne and State of Louisiana, have invented a new and Improved Steam-Wheel, of which the following is a full, clear, and exact description.

My invention consists of a wheel or drum having two buckets or pistons located on the face at opposite points, and arranged to run in a case partly encircling the face of the drum, and packing steam-tight at its edges on the face of the drum, with abutment-valves at the end of the case to open automatically by the pistons for allowing them to pass, and with reversing devices for causing the wheel to run in either direction, all being constructed and arranged in a simple, cheap, and durable contrivance, as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a sectional elevation of the case of my improved steam-wheel, the section being taken transversely to the shaft; and Fig. 2 is a section of the case parallel with the shaft.

The drum *a* is mounted on a shaft, *b*, fixed in suitable bearings, and runs within the case *c*, to which it is fitted steam-tight on its face *d* by suitable packing-rings, *e*. It has buckets or pistons *f*, attached at opposite points of the face to run in the steamway *g* of the case, said buckets being formed with faces *h* tangential to the rim to automatically open the valves *i*, located at each end of the case for abutments to confine the steam in the case, two being used to enable the wheel to run either way. The valves *i* are pivoted to the case at *j* by any suitable arrangement to prevent leakage of steam at the joints, and they have a projecting arm, *k*, in which there is a set-screw, *l*, to limit the pressure of the inner ends of the valves on the face of the drum and lessen the friction. These valves *i* are to be fitted steam-tight at their edges with the sides of the case *c*, and the case is recessed at *m* to enable the valves to open wide enough for the pistons *f* to pass. It will be seen that the form of the pistons enables them to open the valves whichever way the wheel turns; also, that the said form allows the valves to close gradually with-

out shock. The buckets or pistons will also be packed steam-tight at the sides with the sides of the case, and also at the interior of the face of the same. The steam-pipe *n* connects with the opposite sides of the engine by the branches *o* and *p*, and the exhaust *q* is similarly connected by branches *t*, and the several branches are provided with valves *u v*, which are connected by rod *w* with lever *x*, the said valves being so arranged that the steam may be admitted to and exhausted from the engine to run in either direction at will.

A governor may be used to control the throttle-valve, the same as in other engines, for regulating the speed.

It is believed that an engine constructed in the simple arrangement here shown will run with but little loss by friction and wear.

It will be seen that the case *c* extends a little more than half the circle between the valves *i*, so that the piston of one side will take the steam at or a little before the one at the other side exhausts.

In practice the case will be bolted to the frame and the shaft-bearings will be adjustable for setting the wheel properly within the case.

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

1. A rotary engine having on its wheel only two pistons arranged diametrically opposite, and in its steam-way opposite inlets as well as outlets for the steam, whereby one piston will take steam a little before it is exhausted from the other, as described.

2. The combination, with the inlet and outlet steam pipes and valves *i*, of pistons *f*, having equal tangential faces *h h*, coming to a point at their outer ends and forming a right angle, whereby both the steam supply and exhaust are operated by the pistons, so that the engine may be run in either direction, as described.

3. The combination of the drum *a*, pistons or buckets *f*, case *c*, valves *i*, and adjusting-screws *k*, substantially as described.

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Witnesses:

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