

John McGowan.

Comb^d Steam- and Water Motor.

117655

PATENTED AUG 1 1871

Fig. 1

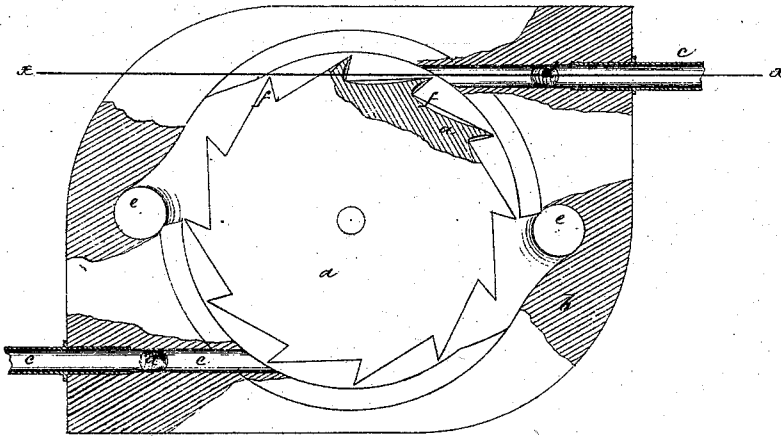
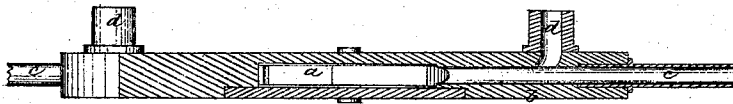


Fig. 2



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN MCGOWAN, OF LEBANON CHURCH, PENNSYLVANIA.

IMPROVEMENT IN STEAM AND WATER-JET ROTARY ENGINES.

Specification forming part of Letters Patent No. 117,655, dated August 1, 1871.

To all whom it may concern:

Be it known that I, JOHN MCGOWAN, of Lebanon Church, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Combined Steam and Water-Motor; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a plan view of the apparatus with one of the side plates removed, and Fig. 2 is a vertical sectional elevation.

This invention has for its objects improvement in that class of inventions in which the revolution of a wheel is produced by means of a jet of water thrown against the buckets of the wheel, the impulsion of the water being caused by the production of a vacuum within the case in which the wheel is inclosed, which vacuum the water rushes in to fill, and the vacuum being produced by the condensation, through contact with the water, of steam which is injected into the case.

Referring to the drawing, *a* is the wheel, and *b* the case within which the wheel is inclosed. *c* are pipes leading through the case, and having their inner mouths opposite the perimeter of the wheel, said pipes being intended for conducting jets of water, drawn from any sufficient external source of supply and discharged against the buckets of the wheel *a*. *d* are pipes running in the case *b* crosswise of and opening into the water-pipes *c*, the pipes *d* being intended for conducting jets of steam drawn from any sufficient external source of supply and discharged into

the water-pipes, where, by contact with the water, the steam is condensed. A vacuum being thereby produced within the case *b*, water rushes in to fill it, and is consequently impelled against the buckets of the wheel and produces the revolution of the latter.

I am aware that the drawing of a jet of water by the condensing of a jet of steam through contact with such water is no new thing, being, in fact, the principle of the Giffard injector; but it is not within my knowledge that a jet of water so drawn has been applied to the propulsion of wheels. One advantage of such application is that the same water may be used over and over again, being drawn from and discharged into a tank located below the case. The water escapes from the case by means of pipes *e*. The buckets *f* are made concave, as shown in Fig. 1, in order the better to retain the water and derive the utmost possible force therefrom.

As shown in the drawing I employ two sets of water and steam-injection pipes; but one set alone will fully answer the purpose.

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

The combination of the wheel *a*, case *b*, steam-pipe *d*, and water-pipe *c*, substantially as herein shown and described, for the purpose specified.

JOHN MCGOWAN.

Witnesses:

THOS. D. D. OURAND,
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