

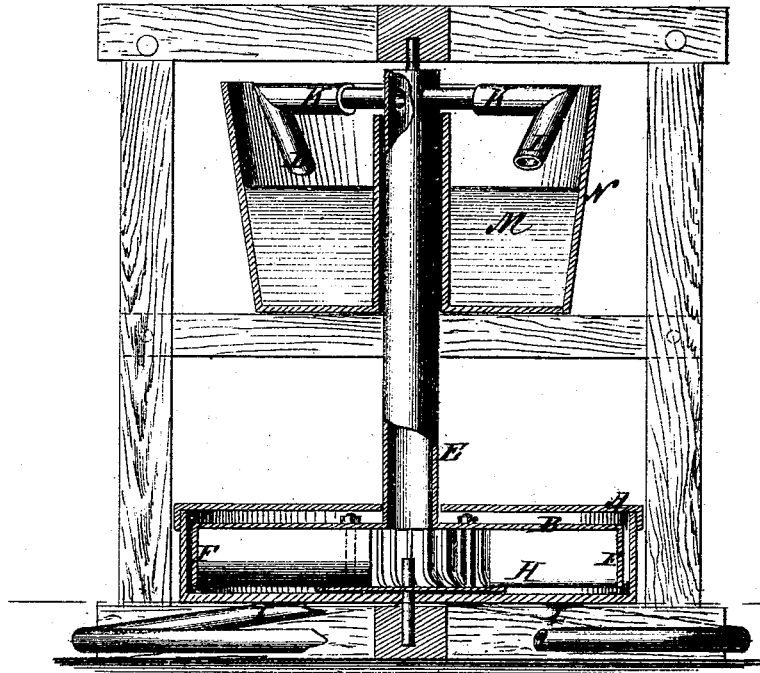
*J. N. Pommert,*

*Rotary Engine.*

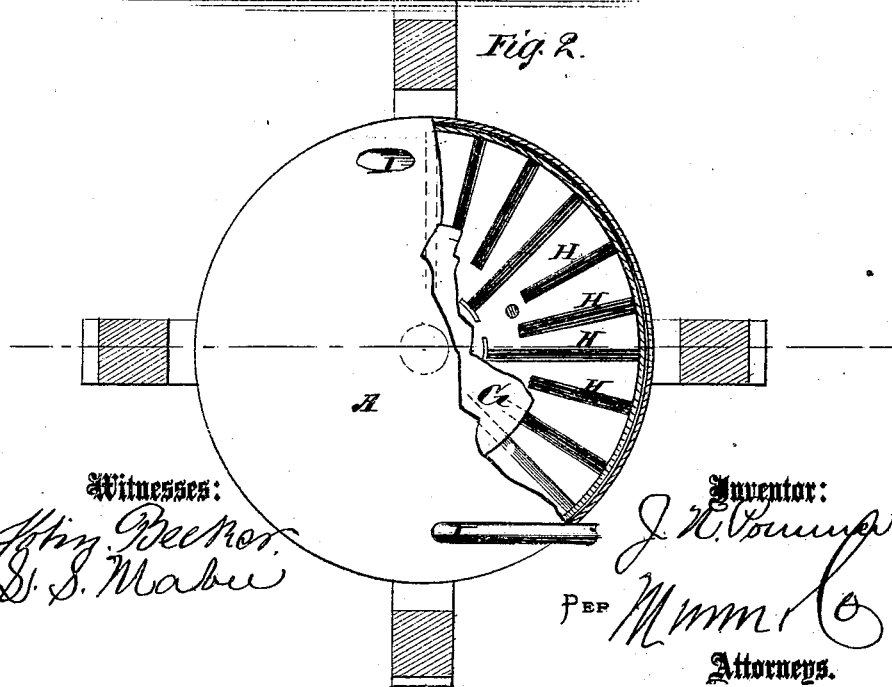
*No. 109659.*

*Patented Nov. 29. 1870.*

*Fig. 1.*



*Fig. 2.*



**Witnesses:**

*John Beecher,  
S. S. Mabe*

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# United States Patent Office.

JOHN NICOLAUS POMMERT, OF GREENFIELD, OHIO.

Letters Patent No. 109,659, dated November 29, 1870.

## IMPROVEMENT IN STEAM-WHEELS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, JOHN NICOLAUS POMMERT, of Greenfield, in the county of Highland and State of Ohio, have invented a new and improved Steam-Wheel; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to improvements in wheels to be propelled by steam, and consists in the application to a hollow shaft of a cased wheel with buckets or vanes of peculiar arrangement, and a pair of radial discharging-arms, the latter arranged for obtaining the reacting force of the steam after its action on the vanes of the wheel in a direct manner, to which it is admitted from below by discharging the steam obliquely upon the surface of water in a tank surrounding the shaft above the wheel, all as hereinafter more fully specified.

Figure 1 is a sectional elevation of my improved wheel, and

Figure 2 is a plan of the bottom with a part broken away.

A is the case or curb of the wheel-disk, attached to the hollow shaft E within the case, and having a rim, F, at the periphery, projecting downward.

The bottom of the wheel is open, except around the center, where the small disk G is attached.

H represents the buckets or vanes attached to the rim F, the disks B and G converging toward the center, some being shorter than the others and not extending as far inward, to avoid choking the space near the center and obstructing the free passage of the steam.

These buckets are arranged, for the most part, in vertical lines between the top and bottom of the wheel,

but near the lower edges they are curved or inclined from the bottom upward in the direction of the movement of the wheel, at such an angle as will be perpendicular, or nearly so, to the oblique steam-pipes I, by which the steam is admitted to the buckets through the bottom of the wheel, so that it will strike the surface upon which it acts in a manner to have the greatest effect.

The steam passes into the shaft E after acting upon the buckets, and rises to the hollow radial arms K, terminating in discharging-nozzles L, inclined rearward and downward, and revolving above the surface of water M in a tank, N, surrounding the upper end of the shaft on which the steam is discharged in a manner to impart a reactionary force to the arms and add thereby to the effective force of the wheel.

In practice, I propose to make the disk B of the wheel, the rim F, and the buckets in one piece by casting the whole together.

The wheel may be set in any suitable frame, and the spindle O on which it rests may have an adjusting-screw applied to it for raising or lowering it for adjusting the wheel relatively to the case. The water-tank may have radial plates to contract the tendency of the steam to force the water around the tank.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

The combination of the wheel, the case A, hollow shaft E, and the hollow reacting arms K I, when arranged to discharge the steam on the surface of the water, substantially in the manner described.

JOHN NICOLAUS POMMERT.

Witnesses:

S. HEIDINGSFELD,  
F. BINDER.