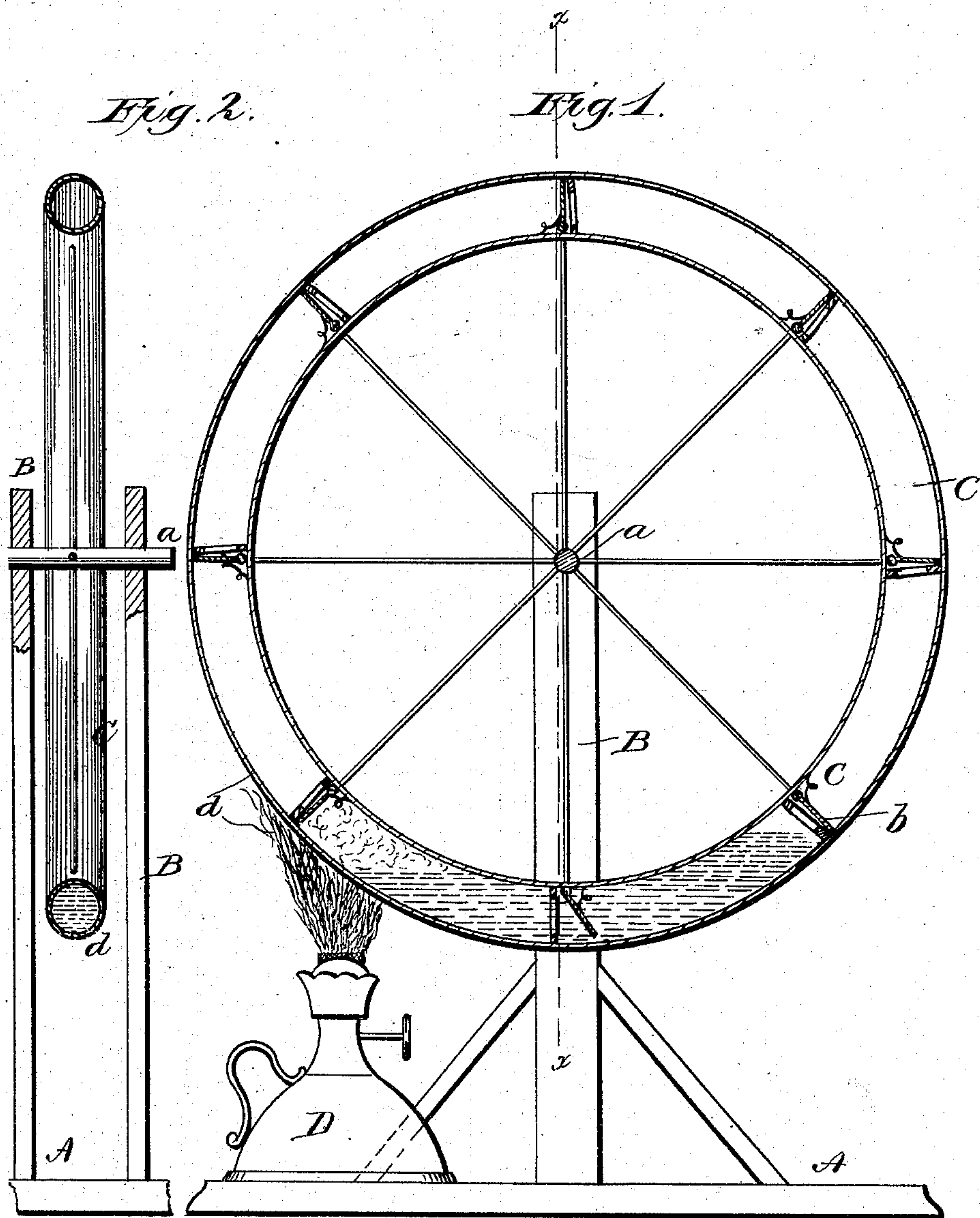


(No Model.)

I. L. LANDIS.  
MOTOR.

No. 249,188.

Patented Nov. 8, 1881.



Witnesses.  
Frank L. Curand  
J. J. McCarthy.

Inventor.  
Israel L. Landis  
By Alexander & Mason  
Attorneys



# UNITED STATES PATENT OFFICE.

ISRAEL L. LANDIS, OF LANCASTER, PENNSYLVANIA.

## MOTOR.

SPECIFICATION forming part of Letters Patent No. 249,188, dated November 8, 1881.

Application filed April 1, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, ISRAEL L. LANDIS, of Lancaster, in the county of Lancaster, and in the State of Pennsylvania, have invented certain new and useful Improvements in Motors; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

Figure 1 is a vertical sectional view of a device embodying my invention, the lamp being shown in elevation, and Fig. 2 is a transverse sectional view.

This invention has relation to motors; and it consists in the improvements in the construction of the same hereinafter fully described, and particularly pointed out in the claim.

Referring by letter to the accompanying drawings, A designates the base; B, the up-rights, braced as shown, to give them stability.

The wheel has a hollow felly or rim, and eight or more spokes radiate from the shaft *a* or hub, as the case may be. This shaft or hub *a* has its bearings in the uprights B. The hollow felly, rim, or tube C is provided at intervals with valves *b*, all opening in the same direction. Springs *c*, for automatically closing the valves, are preferably employed. The valves *b* are hinged, and for convenience are located at the junction of the spokes and the hollow rim, but may be located at any other point, and may be as numerous as the judgment of the operator may desire.

D designates a lamp, either spirit or oil, as may be desired, which is placed beneath the hollow rim at a point preferably about forty-five degrees to the left of the vertical center

of the wheel. Alcohol or other volatile liquid is placed in the hollow rim to an extent that will fill about ninety degrees of the circular rim, its gravity precipitating it to the bottom. The air is then exhausted from the hollow rim by any well-known means, and the rim closed, to produce as nearly as possible a vacuum within the hollow rim. The lamp being lighted will direct the heat of the flame against the rim at the point *d*, which will cause the volatile liquid to vaporize and press against the adjacent valve *b*. The volume of liquid unvaporized will resist this pressure, and cause the wheel to be revolved to the right. The weight of the liquid will press against the succeeding valve *b*, and open it after the wheel has revolved sufficiently far, and the volatile fluid will continue to vaporize and propel the wheel in the foregoing manner, thus making a useful and inexpensive motor that may be used for many purposes.

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

The combination, with a wheel having a continuous hollow rim, with internal valves opening in the same direction, of a supply of volatile liquid placed in a vacuum-chamber in said rim, and a lamp or other heating mechanism, substantially as and for the purposes specified.

In testimony that I claim the foregoing I have hereunto set my hand this 29th day of March, 1881.

ISRAEL L. LANDIS.

Witnesses:

J. J. MCCARTHY,  
JOS. RUSSELL.