

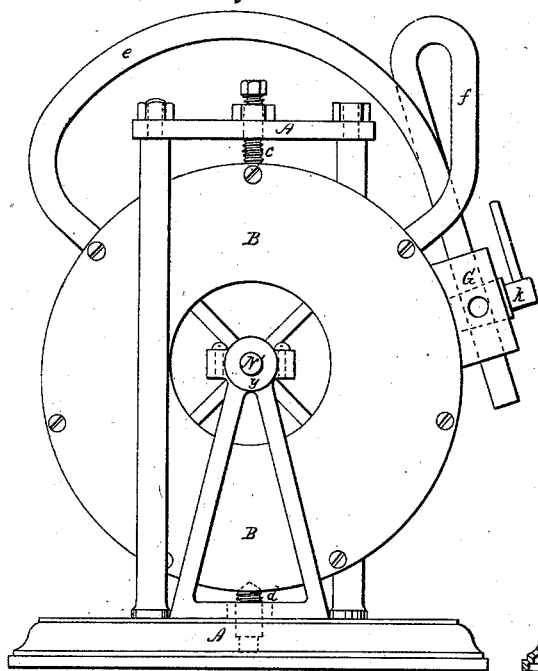
*H. Durre,*

*Rotary Steam Engine.*

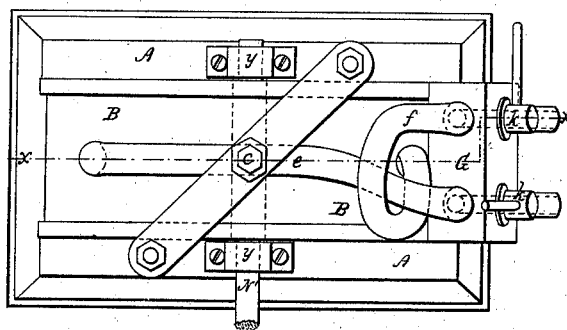
*N<sup>o</sup> 49,391.*

*Patented Aug. 15, 1865.*

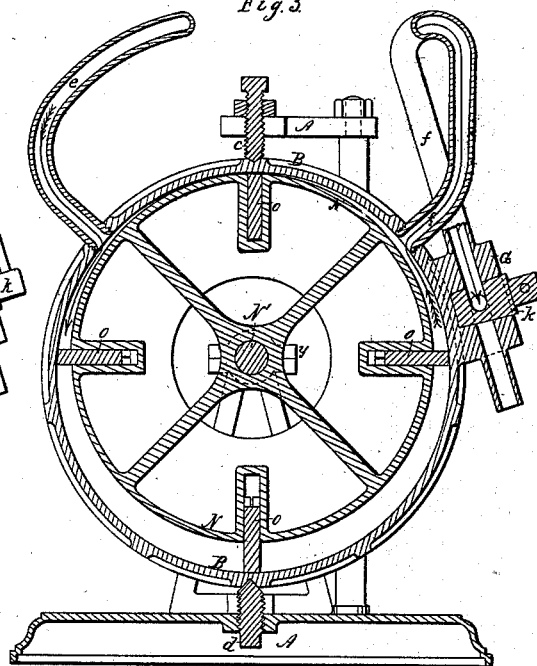
*Fig. 1.*



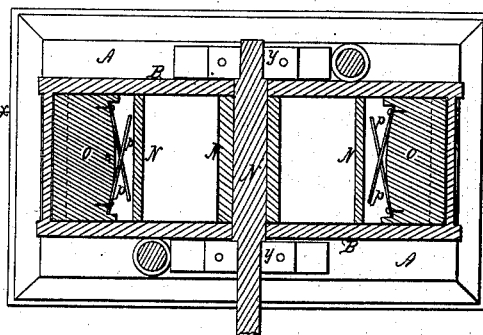
*Fig. 2.*



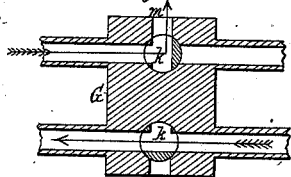
*Fig. 3.*



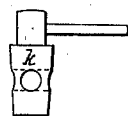
*Fig. 4.*



*Fig. 5.*



*Fig. 6.*



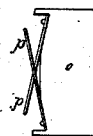
*Fig. 7.*



*Fig. 8.*



*Fig. 9.*



*Witnesses;*  
*E. Sanderson*  
*to choice*

*Inventor;*  
*Henry Durre*

# UNITED STATES PATENT OFFICE.

HENRY DURRE, OF NEW YORK, N. Y.

## IMPROVEMENT IN ROTARY ENGINES.

Specification forming part of Letters Patent No. **49,391**, dated August 15, 1865.

*To all whom it may concern:*

Be it known that I, HENRY DURRE, of the city, county, and State of New York, have invented a new and useful or Improved Rotary Engine; and I do hereby declare the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1 is an elevation; Fig. 2, a top view; Fig. 3, a vertical section on line *xx*; Fig. 4, a horizontal section; Fig. 5, a section through steam-cocks; Fig. 6, an elevation of one of the cocks; Fig. 7, a horizontal section of same; Fig. 8, an end view of one of the valves; Fig. 9, a plan of said valve.

The nature of my invention consists in a rotary piston with centrifugal slide-valves diverging from its center, said piston being firmly attached to the driving-shaft and inclosed by an adjustable cylinder, having steam entrance and exhaust pipes placed at any convenient place on the cylinder, which may be used alternately for steam and exhaust or exhaust and steam, as occasion requires, to reverse the motion of the engine or driving shaft. The cylinder, being adjustable, is not connected with the piston-rod or driving-shaft, and is non-concentric with the piston, as will be hereinafter explained.

In the drawings, A is the frame of the steam-engine, which may vary in form as fancy dictates.

B is the adjustable cylinder, sustained, adjusted, and held in place by the screws *c d*. Connected with this cylinder are the steam entrance and exhaust pipes, *e f*, which, as al-

ready explained, may be used alternately for the purpose of reversing the engine by reversing the three-way steam-cocks *k k*, which are similar in construction, an elevation and section of one of these steam-cocks being shown in Figs. 6 and 7.

G is the valve-seat attached to the cylinder, and has steam entrance and exhaust extensions, *l m* or *m l*, a section of same and steam-cocks being shown in Fig. 5.

N is the rotary piston, with piston-rod or shaft N' passing through the piston-arms and open sides of the cylinder, and sustained in bearings *y y*. The piston has slide-valves O O, &c., which may be of any number desired, while I prefer four. These valves act against the inner surface of the cylinder by their own gravity, and for the purpose of aiding them in starting springs P P, &c., are attached to their inner ends, as shown in the drawings.

It will be seen from the above that the piston, being firmly fixed on the piston-rod, said rod becomes the driving-shaft.

What I claim, and desire to secure by Letters Patent, is—

The adjustable cylinder B, with its manner of adjustment, in combination with the reversible steam-cocks *k k* and steam and exhaust pipes *e f*, together with the rotary piston with centrifugal valves, substantially as and for the purpose described.

HENRY DURRE.

Witnesses:

M. M. LIVINGSTON,  
A. NEILL.