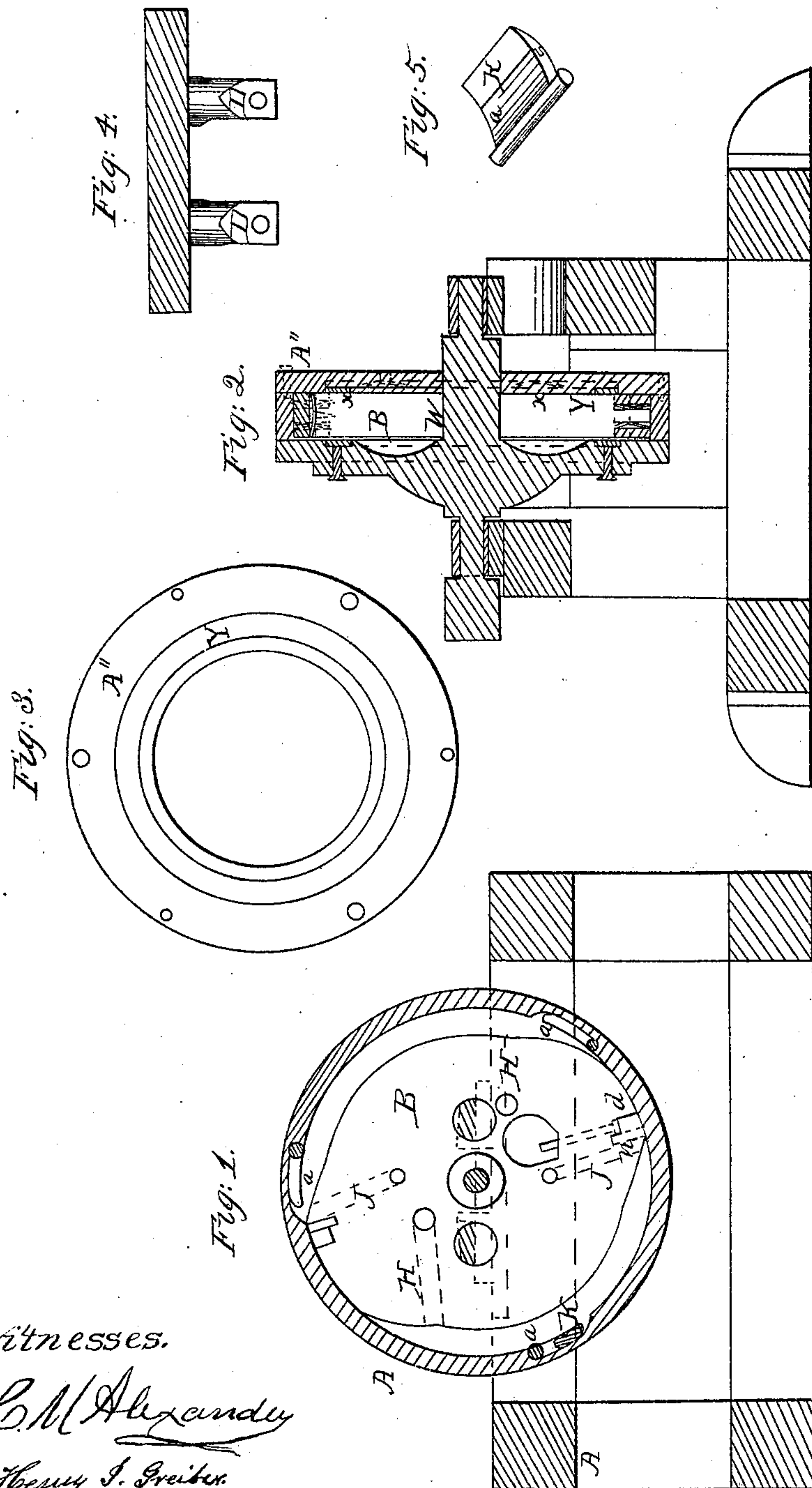


*H. C. Emery,*  
*Rotary Steam Engine.*  
*N<sup>o</sup> 29,475.                      Patented Aug. 7, 1860.*



Witnesses.

*C. M. Alexander*  
*Henry J. Greiber*

Inventor.

*H. C. Emery*

# UNITED STATES PATENT OFFICE.

H. C. EMERY, OF LINCOLN, OHIO.

## ROTARY ENGINE.

Specification of Letters Patent No. 29,475, dated August 7, 1860.

*To all whom it may concern:*

Be it known that I, H. C. EMERY, of Lincoln, in the county of Morrow and State of Ohio, have invented certain new and useful  
5 Improvements in Rotary Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the letters of reference  
10 marked thereon.

The nature of my invention consists in arranging and constructing the several parts of this engine in the particular manner hereinafter described.

15 In the annexed drawings Figure 1 is a vertical longitudinal section. Fig. 2 is a vertical cross section. Fig. 3 is a plan view of one portion of the case. Fig. 4 is a view of the cam wheel and its arms. Fig. 5 is a  
20 perspective of a jointed valve.

In the figures, A, represents a substantial frame upon which the engine is built.

A', A'', represent the steam case, said case being annular and composed of two parts  
25 as represented. Through the case passes a shaft W, to which it is secured,—said shaft having its bearings on the sides of the frame A. Within the case is secured a cam wheel B, which is provided with arms, D, D.  
30 These arms extend through an annular opening in the side of the portion of the case A'', and on each side of the shaft W, and are secured firmly to the frame, so that the said cam wheel will be held firmly and steadily  
35 in its place within the case.

On the inner face of the portion of the case A'' an annular groove is cut in which a ring *y* is placed, with springs acting against its back which press the ring against  
40 the cam wheel, B, for the purpose of making a steam tight joint.

*n*, and, *d*, represent pieces of packing, one placed on the side and the other on the periphery of the cam wheel. These pieces of packing are pressed against the case by set  
45 screws or adjustable springs for the purpose of making tight joints to prevent the escape of steam.

J, J, represent steam passages, and H, H, represent exhaust passages in the cam wheel  
50 B. These passages extend from the periphery to near the center of the wheel and open on the side or face of the wheel B.

The shaft W, it will be seen passes through the cam wheel, revolving in it.  
55

*a*, *a*, represent valves which are secured in the rim of the portion of the case A, being hinged and lying in a recess of the case, so that they may open or close as the case  
60 revolves; being pressed out or open by the steam; and closed by the periphery of the cam wheel. These valves are made in two parts as represented in Fig. 5, one piece being dove tailed into the other. The object  
65 in making these in two parts is that the end of the valve may be renewed when it wears away by rubbing against the wheel B.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—  
70

The case A' A'' the cam wheel B, the shaft W, the metallic ring *y*, secured in annular grooves in the sides of the case, the  
75 springs *x*, *x*, the packing *d*, and *n*, and the jointed valves *a*, *a*, constructed and arranged in the manner and for the purpose herein specified.

H. C. EMERY.

Witnesses:

JOHN ANDREWS,  
WM. F. ARMSTRONG.