

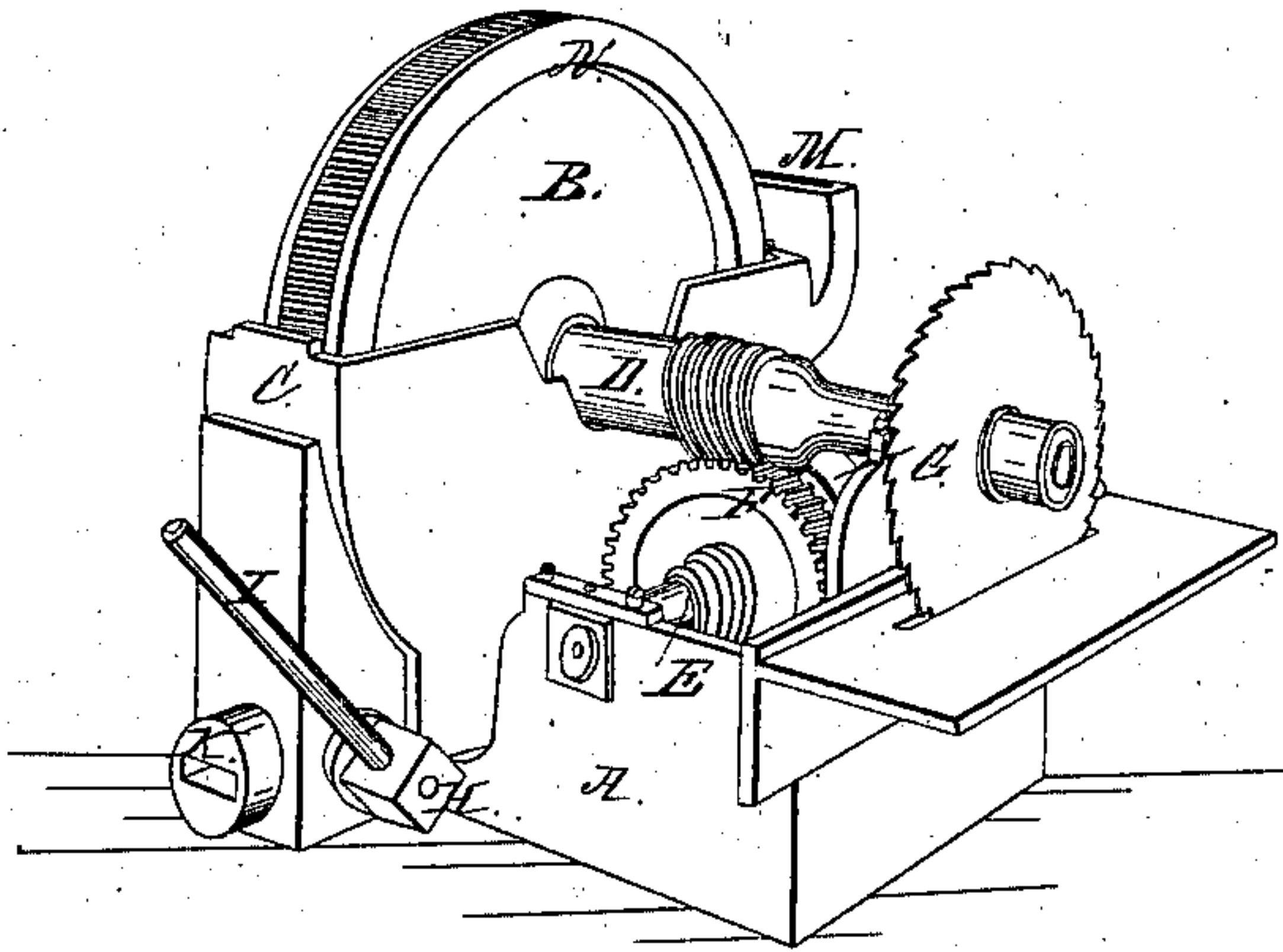
2 Sheets—Sheet 1.

C. HARRISON.  
ROTARY STEAM ENGINE.

No. 79,828.

Patented July 14, 1868.

*Fig. 1.*



*Witnesses:*

*H. B. Smith*  
*J. A. Logan*

*Inventor:*

*Caleb Harrison*

C. HARRISON.  
ROTARY STEAM ENGINE.

No. 79,828.

Patented July 14, 1868.

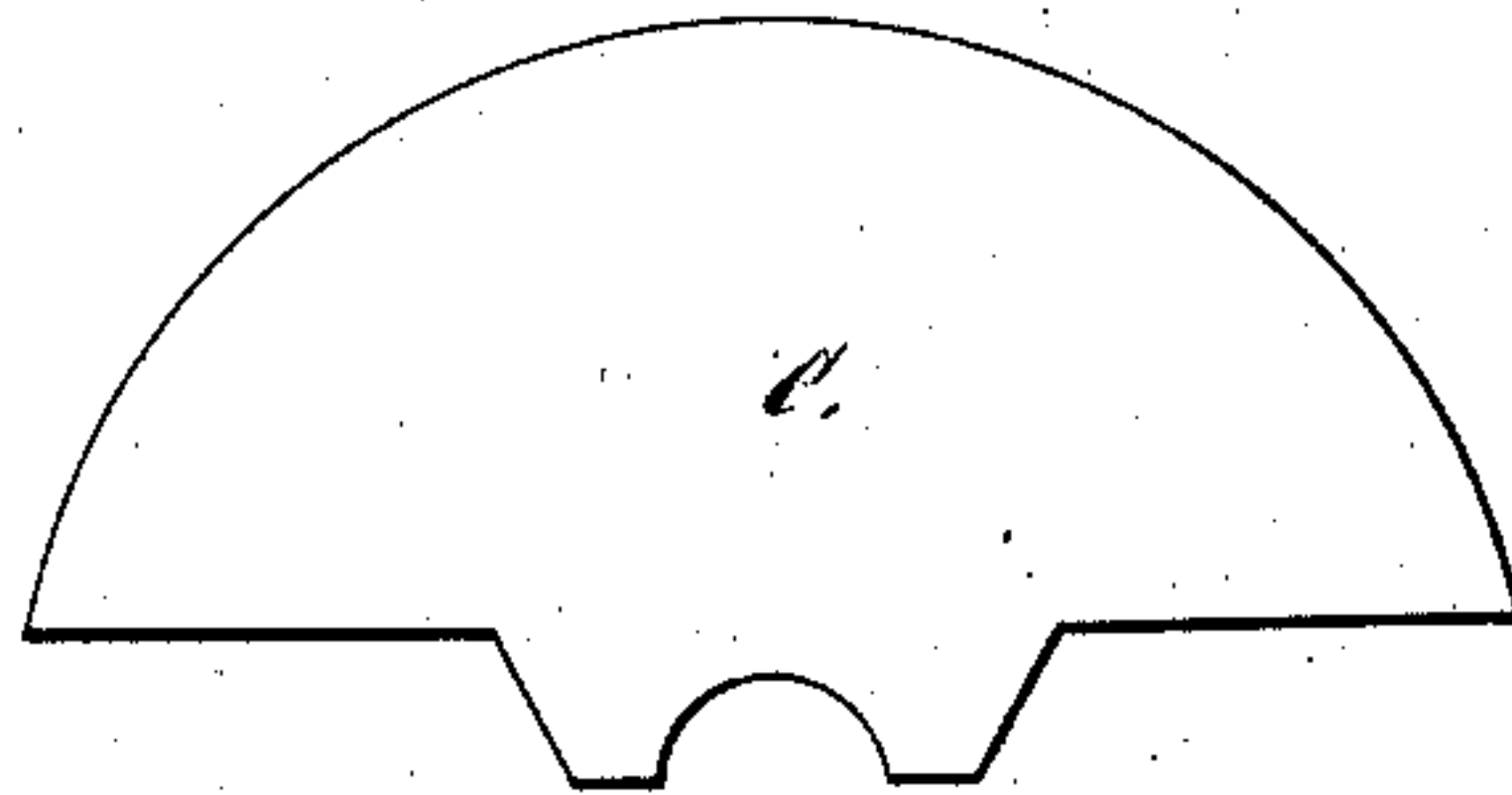
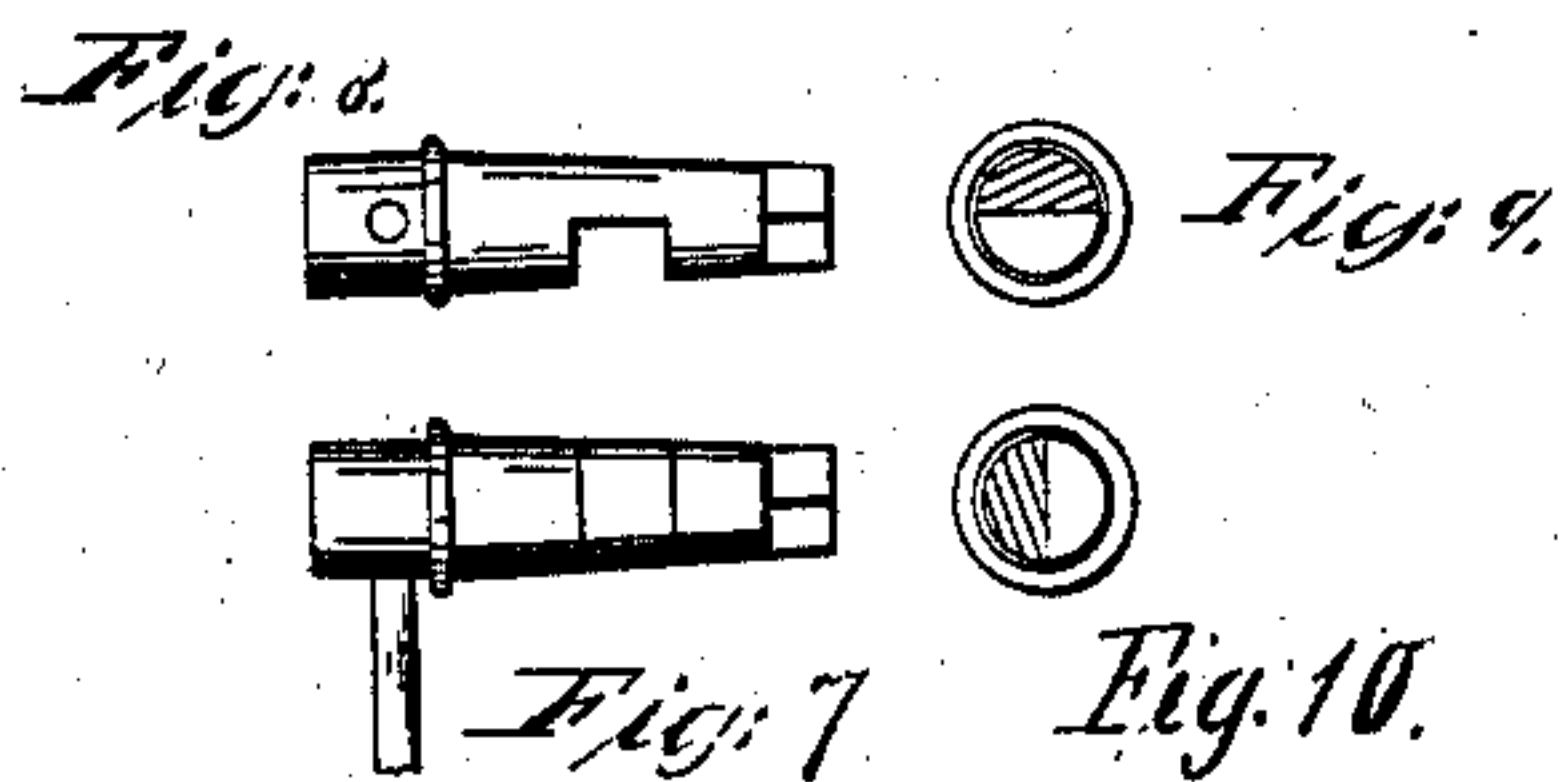


Fig. 6.

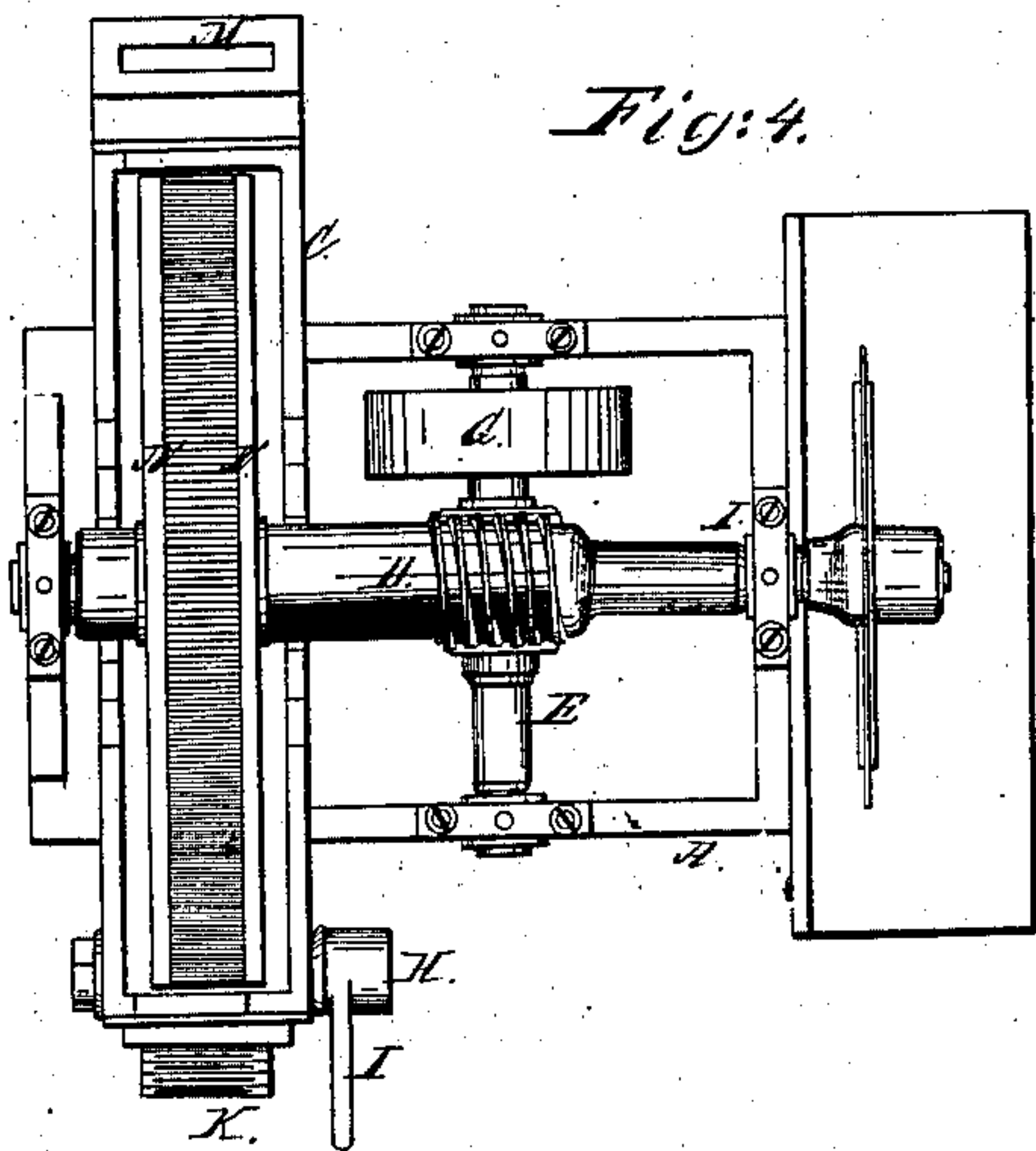


Fig. 4.

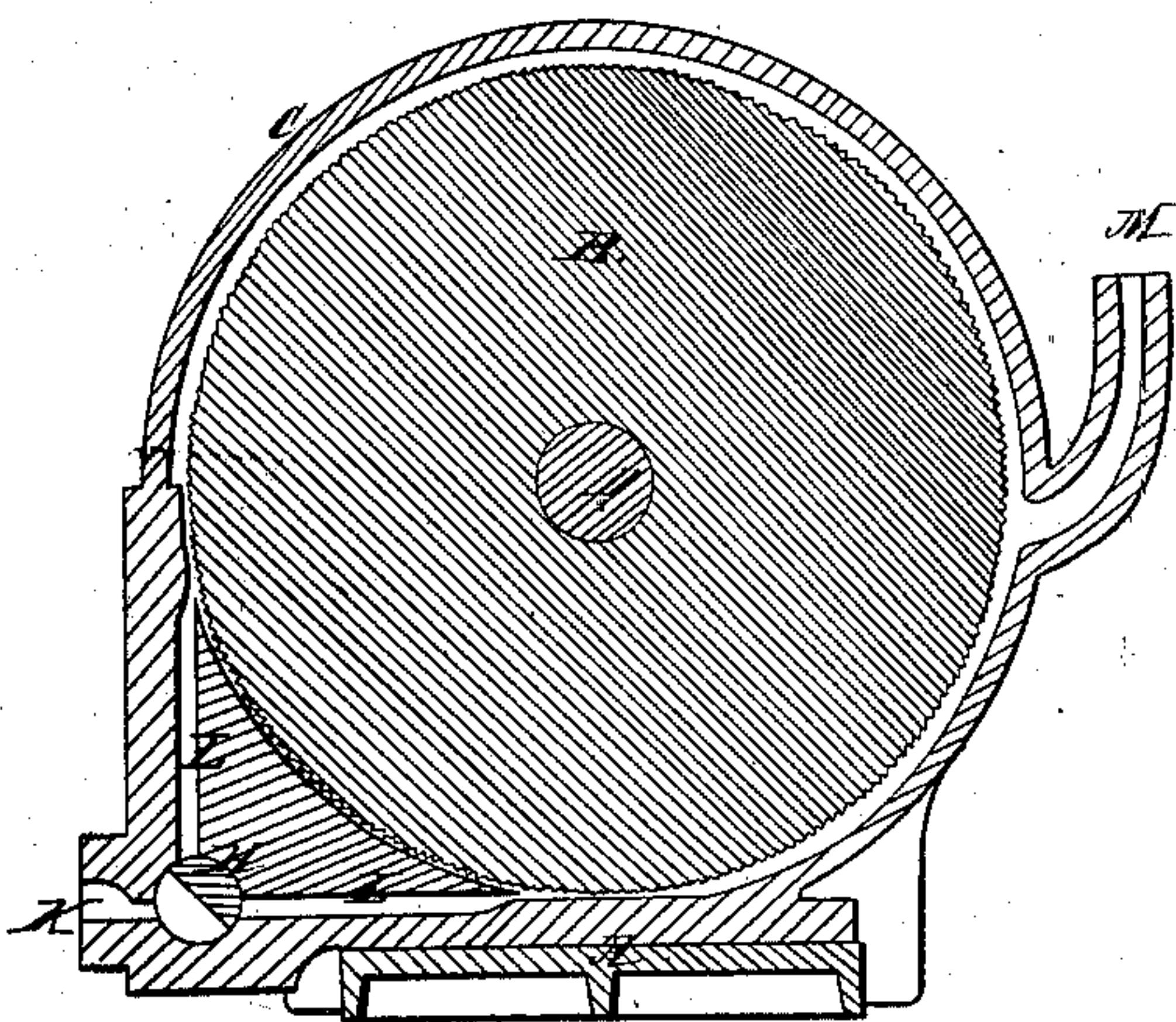


Fig. 5.

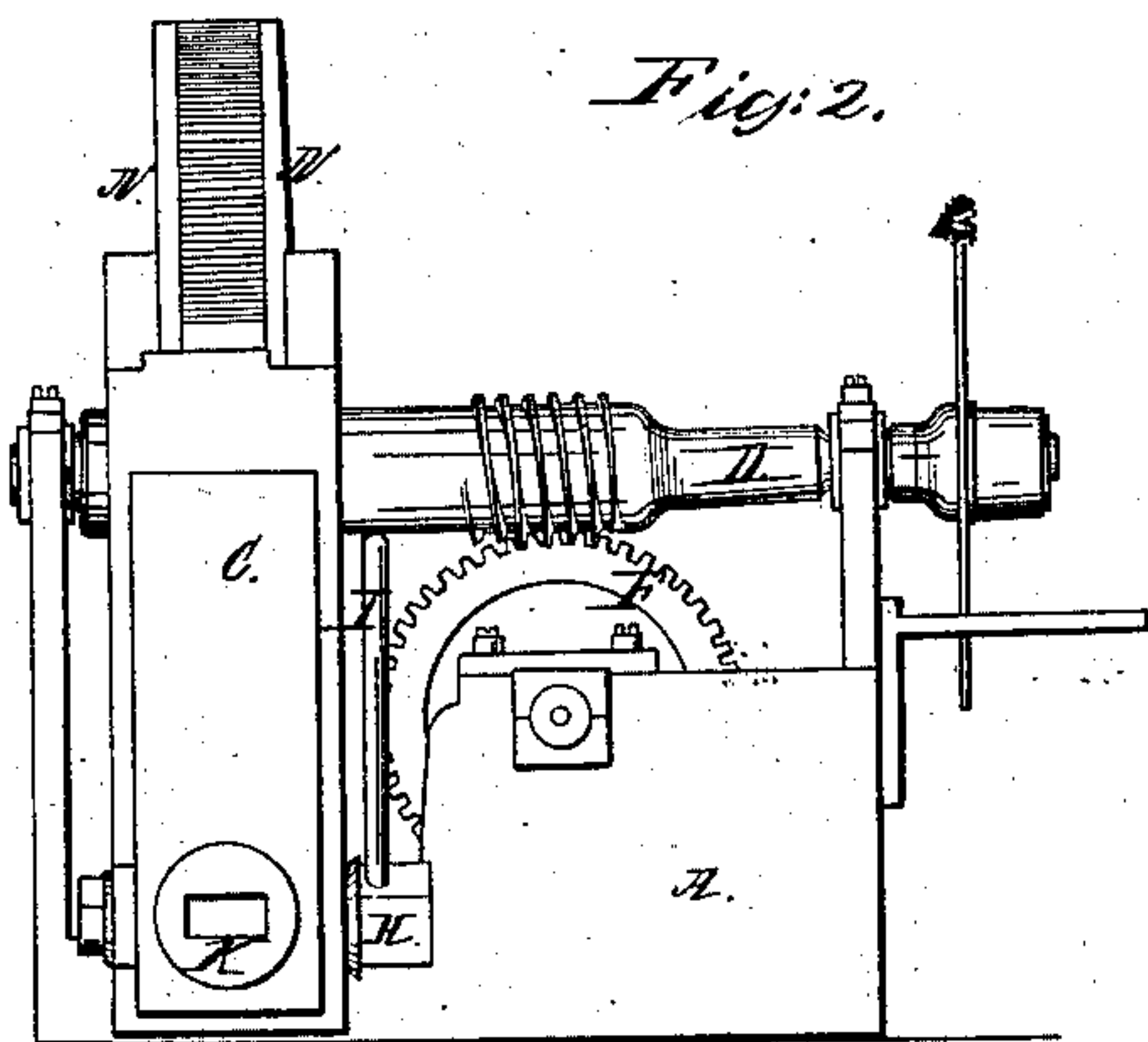


Fig. 2.

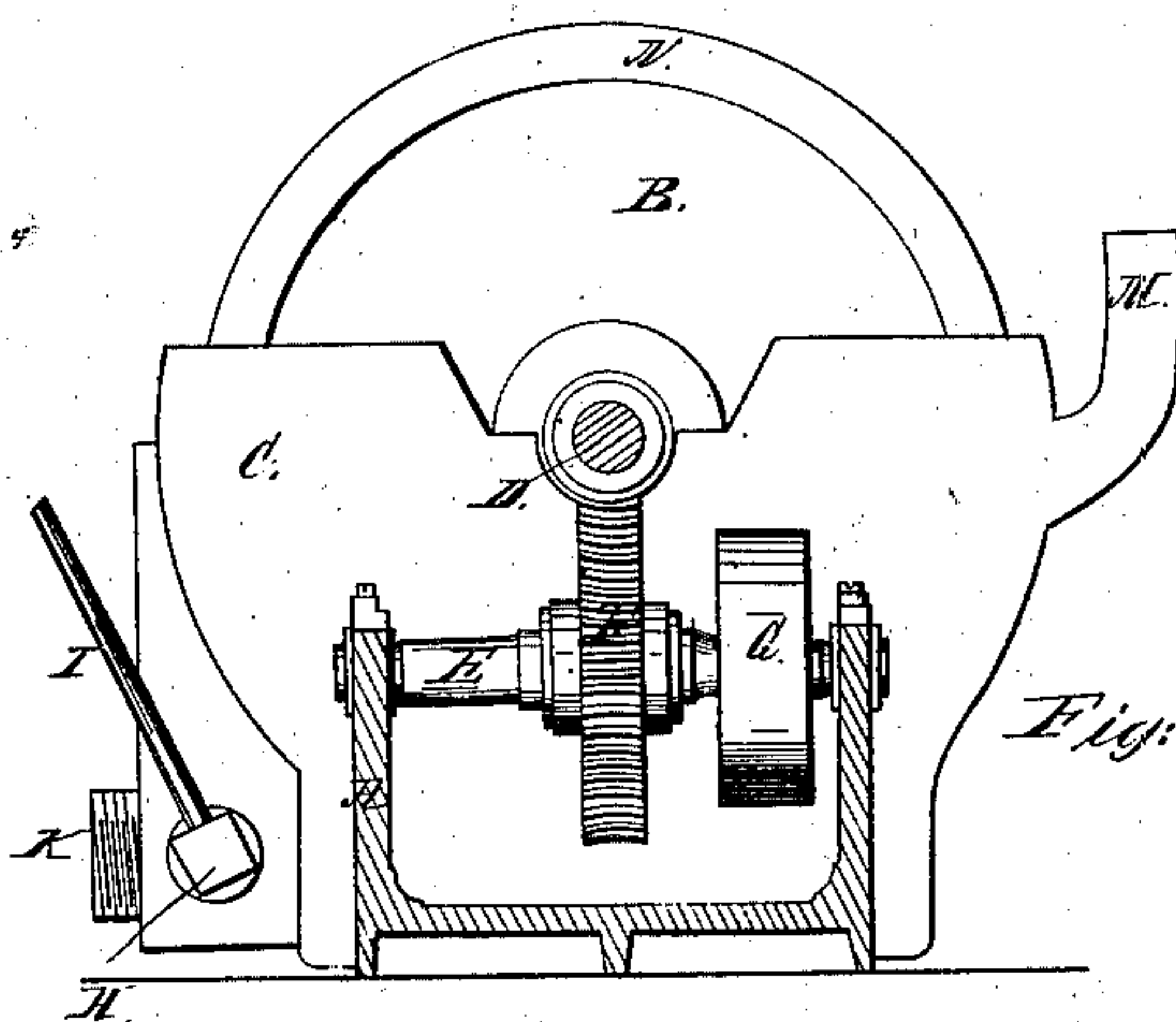


Fig. 3.

Witnesses:

J. B. Smith  
Jno. A. Segur

Inventor:

Caleb Harrison



# United States Patent Office.

CALEB HARRISON, OF MILWAUKEE, WISCONSIN.

*Letters Patent No. 79,828, dated July 14, 1868; antedated June 27, 1868.*

## IMPROVEMENT IN ROTARY STEAM-ENGINES.

*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, CALEB HARRISON, of the city and county of Milwaukee, and State of Wisconsin, have invented a new and useful Improvement in Rotary Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view.

Figure 2, side view with top of wheel-case removed.

Figure 3, end view with top of wheel-case removed.

Figure 4, top view with top of wheel-case removed.

Figure 5, sectional view of toothed wheel, wheel-case, and valve.

Figure 6, top of wheel-case.

Figure 7, valve, flatwise.

Figure 8, valve, edgewise.

Figures 9 and 10, cross-sections of valve.

Similar letters of reference in each of the figures indicate corresponding parts.

The object of my invention is to apply steam from a high pressure upon teeth in close connection with steam-ports, giving action or reaction, as desired; and this I do by applying the steam against teeth on the periphery of a wheel, as shown in the accompanying drawings, or by making teeth on the inside of the wheel-curb, and having the steam issue from the periphery of the wheel against the teeth.

A, frame; B, wheel with teeth on its periphery; C, case in which wheel B revolves; D, main driving-shaft, with perpetual screw; E, line-shaft, from which power is to be taken; F, pitched tooth-wheel, operated by perpetual screw on main shaft, to reduce velocity; G, pulley on line-shaft; H, valve; I, starting-bar; K, steam-pipe; L L, steam-ports; M, exhaust-pipe; N N, turned rings, bolted on to the sides of the wheel B, just large enough to come flush with the points of the teeth.

### *Operation.*

Steam is admitted to the wheel B by turning the valve H, so that it may pass through either port L, according to the direction it is desired to have the wheel revolve. The teeth and the rings N N, on the periphery of the wheel, come close to the openings of the ports in the curb C for about the distance the teeth are apart, but not close enough for them to wear on the curb. The steam issuing from the port comes in contact with the teeth, and by the velocity or force with which it strikes them, moves the wheel B, turning the shaft D with great velocity, much greater than is practicable to use direct. The perpetual screw P on this shaft turns the wheel F and shaft E at a greatly reduced motion, thus converting rapidity of motion into power.

To revolve wheel B in an opposite direction, close that port L and open the other, and a reverse motion is obtained.

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

An engine, consisting of the serrated disk B, mounted in a case provided with the two steam-passages L L, and valve H, and having the shaft D, provided with the endless screw P, engaging in the wheel F, all constructed and arranged to operate as shown and described.

CALEB HARRISON.

Witnesses:

J. B. SMITH,

JNO. A. SEGAR.