

(No Model.)

2 Sheets—Sheet 1.

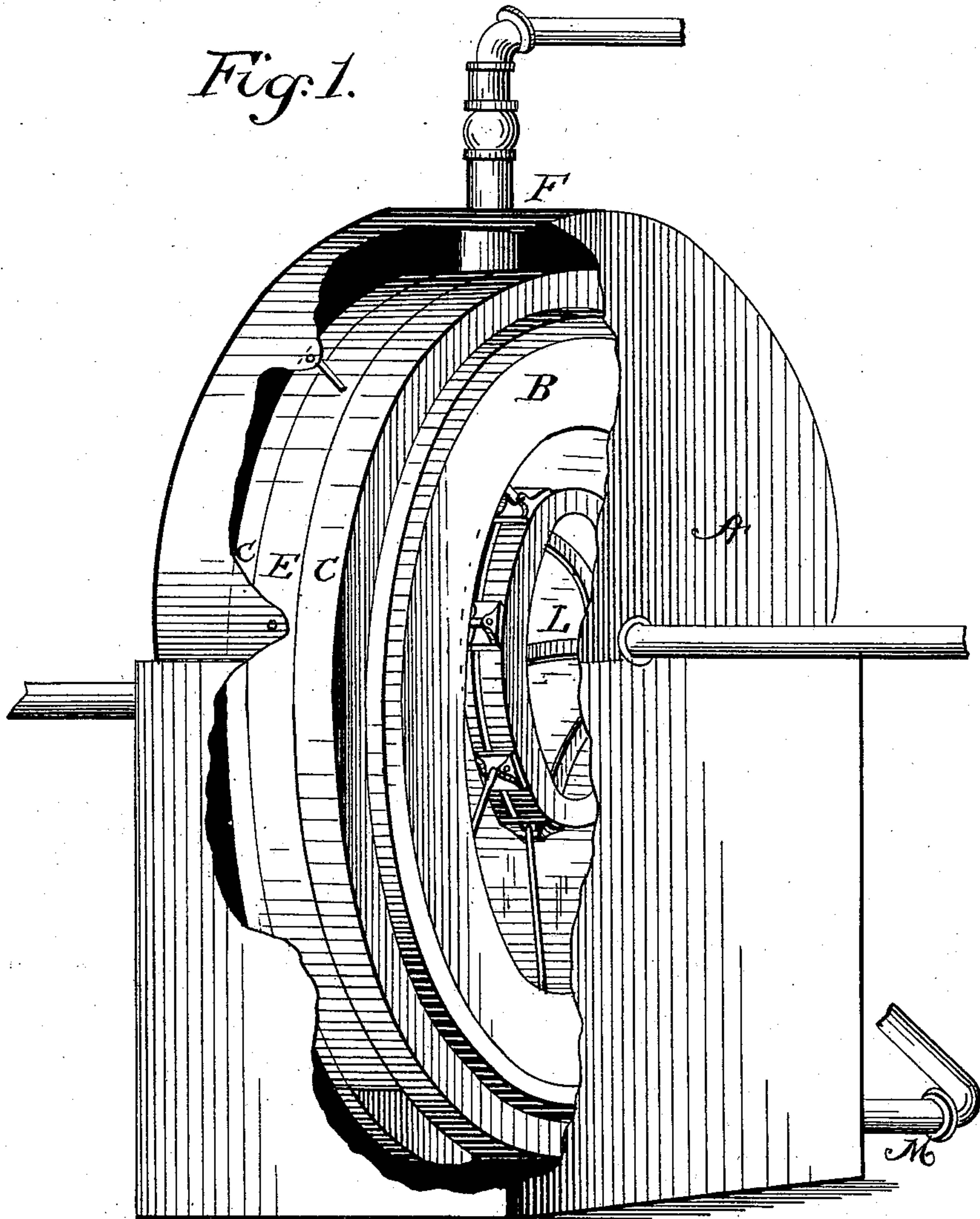
L. FOX.

ROTARY STEAM AND AIR PUMP.

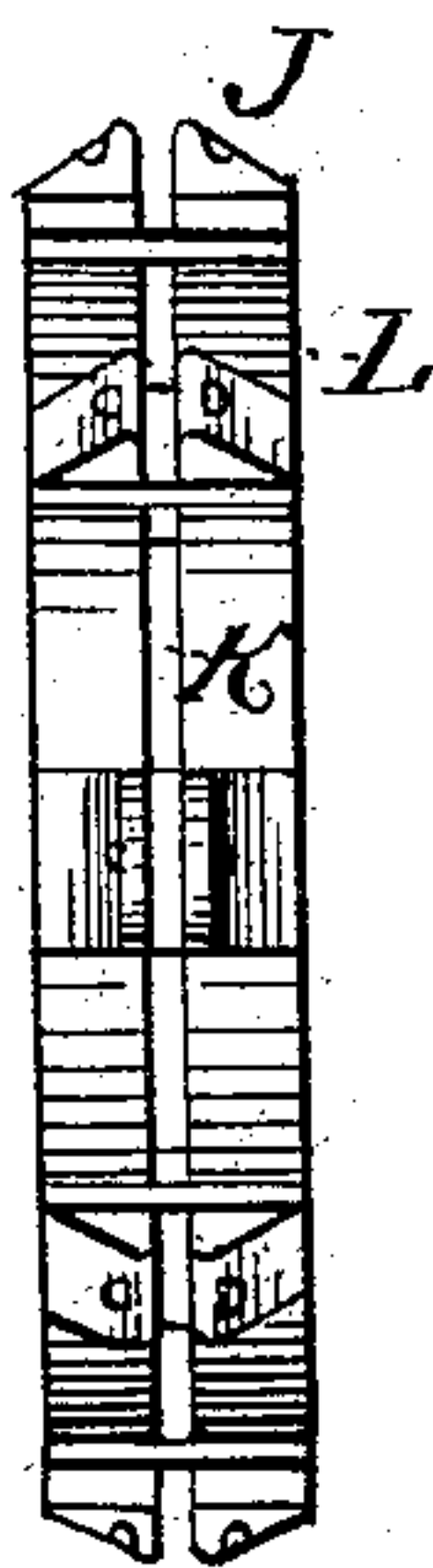
No. 324,370.

Patented Aug. 18, 1885.

*Fig. 1.*



*Fig. 2.*



*Witnesses:*  
*Wm. H. Keller.*  
*J. H. Adriaans*

*Inventor:*  
*Lewis Fox.*  
*By J. B. Sawyer*  
*Att'y.*

(No Model.)

2 Sheets—Sheet 2.

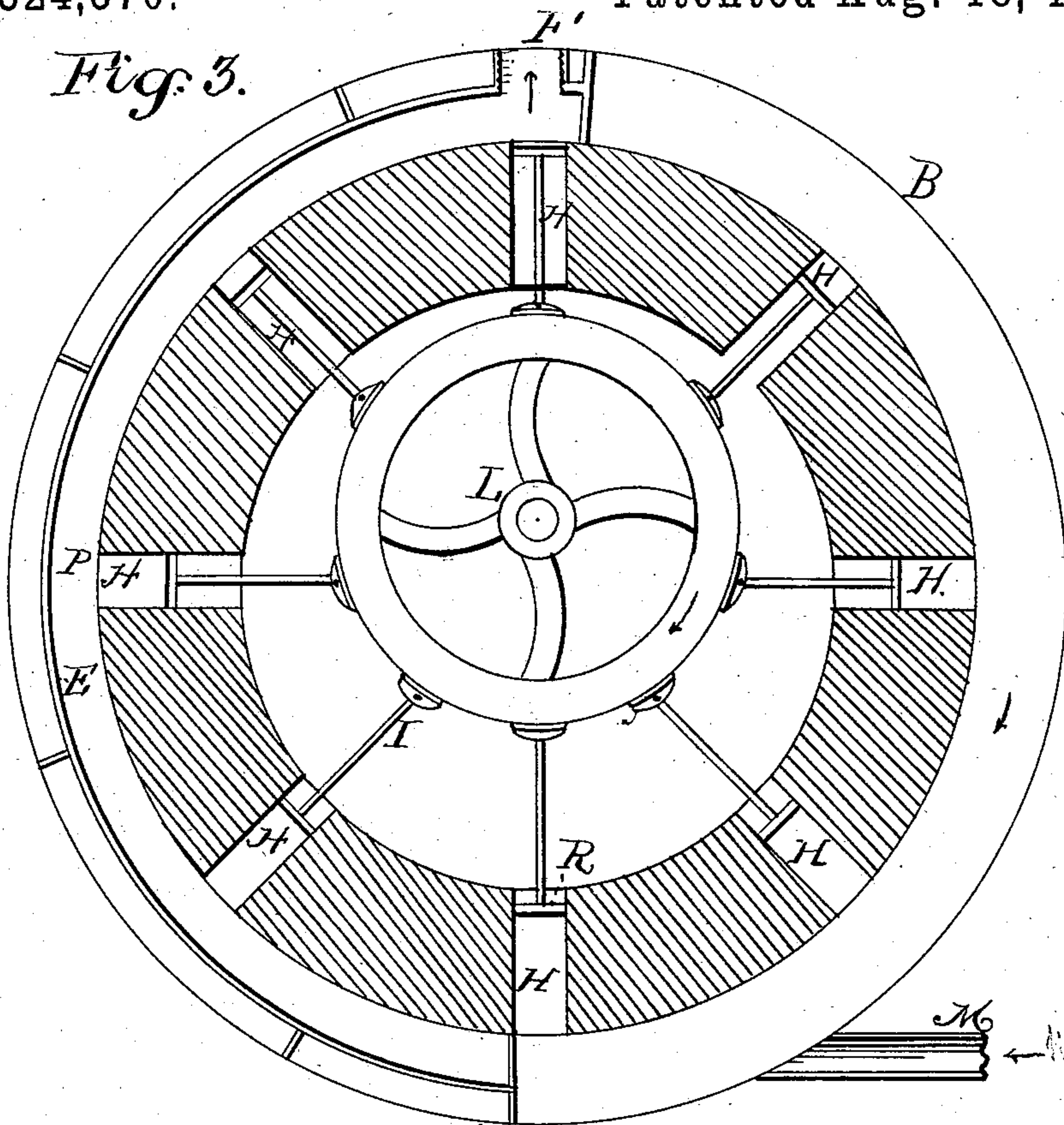
L. FOX.

ROTARY STEAM AND AIR PUMP.

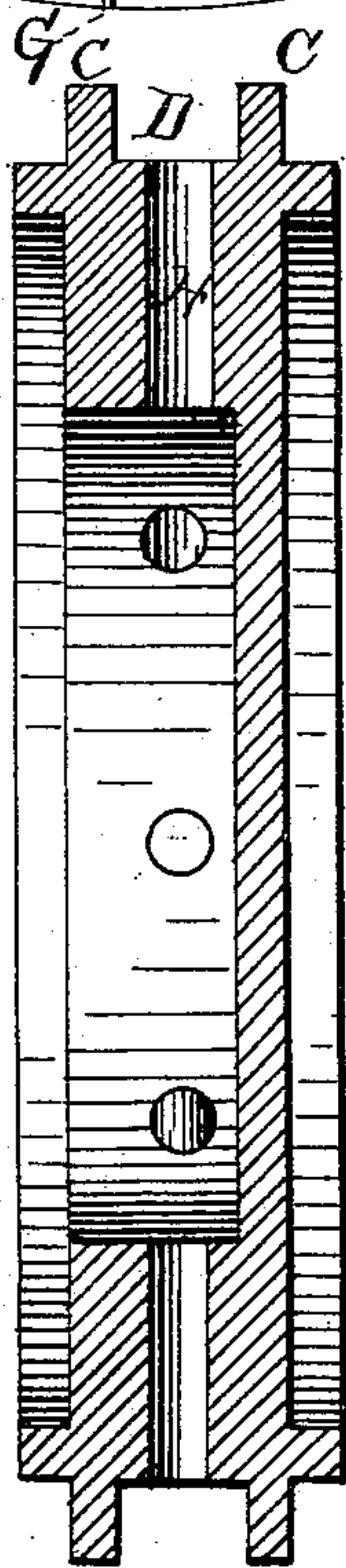
No. 324,370.

Patented Aug. 18, 1885.

*Fig. 3.*



*Fig. 4.*



*Witnesses:*  
*Wm. Fred. Heller*  
*J. B. Adams*

*Inventor:*  
*Lewis Fox.*  
*By J. B. Sawyer*  
*Atty.*



# UNITED STATES PATENT OFFICE.

LEWIS FOX, OF MIDDLEBURG, NEW YORK, ASSIGNOR TO FRANK W. FOX,  
OF SAME PLACE.

## ROTARY STEAM AND AIR PUMP.

SPECIFICATION forming part of Letters Patent No. 324,370, dated August 18, 1885,

Application filed March 17, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, LEWIS FOX, a citizen of the United States, residing at Middleburg, in the county of Schoharie and State of New York, have invented certain new and useful Improvements in Rotary Steam and Air Pumps, of which the following is a specification, reference being had to the accompanying drawings.

10 My invention relates to an improvement in (rotary steam and air pumps) having a series of reciprocating pistons attached to a wheel hung off the center within a wheel of greater diameter; and it consists in the method of packing and simplifying the construction and operation of the pistons.

Reference being had to the accompanying drawings, Figure 1 is a perspective view of my invention with a portion of the casing broken away. Fig. 2 is a front elevation of the small wheel with automatic slides attached. Fig. 3 is a vertical transverse section of pump embodying my improvement. Fig. 4 is a vertical cross-section of large wheel.

25 Similar letters refer to similar parts throughout the several views.

A represents the scroll or casing which incloses the mechanism. B is the large rim or wheel on the end of a shaft. This wheel is provided with flanges C C. These flanges form a channel, D, entirely around the circumference of the wheel. E is a casing-plate, which extends down from the discharge-pipe F to or nearly one-half of the diameter of the wheel to the cross-head or partition G, and is attached to the casing by bolts, pins, or other suitable fastening devices. H are the chambers for receiving the pistons I, which are provided with heads R, and are hinged to the automatic slides J. These slides have T-shaped heads on their under faces for retaining them

in the groove K of the small wheel L, which is attached to the end of a shaft, and when in position is off the center of the large wheel, as shown in Figs. 1 and 3. M is the supply-pipe, which receives the waste steam or air. 45

In the operation of my invention it is only necessary to place the wheels in proper position and within the scroll A and start them revolving in the same direction. The supply-pipe M and the discharge-pipes F being attached, the steam or air will pass through the supply-pipe into the open channel D and be drawn into the chambers H by the action of the pistons I, and as the wheels revolve the discharge will take place directly after the chambers pass the cross-head G and opposite the plate E, and continue to discharge their contents until they arrive up to the discharge-pipe. There being no other escape for the steam which is held in the channel by the packing, it must pass out through the supply-pipe into the boiler. 50 55 60

With this pump steam can be returned to the boiler either above or below the water-line. 65

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

In a rotary steam or air pump, the wheel B, provided with flanges C C, channel D, chambers H, and plate E, in combination with the wheel L, provided with a groove, K, automatic slides J, and a series of hinged piston-rods, I, constructed and arranged to operate substantially as herein shown and described. 70 75

In testimony whereof I affix my signature in presence of two witnesses.

LEWIS FOX.

Witnesses:

W. H. ALBRO,  
W. G. PUTNAM.