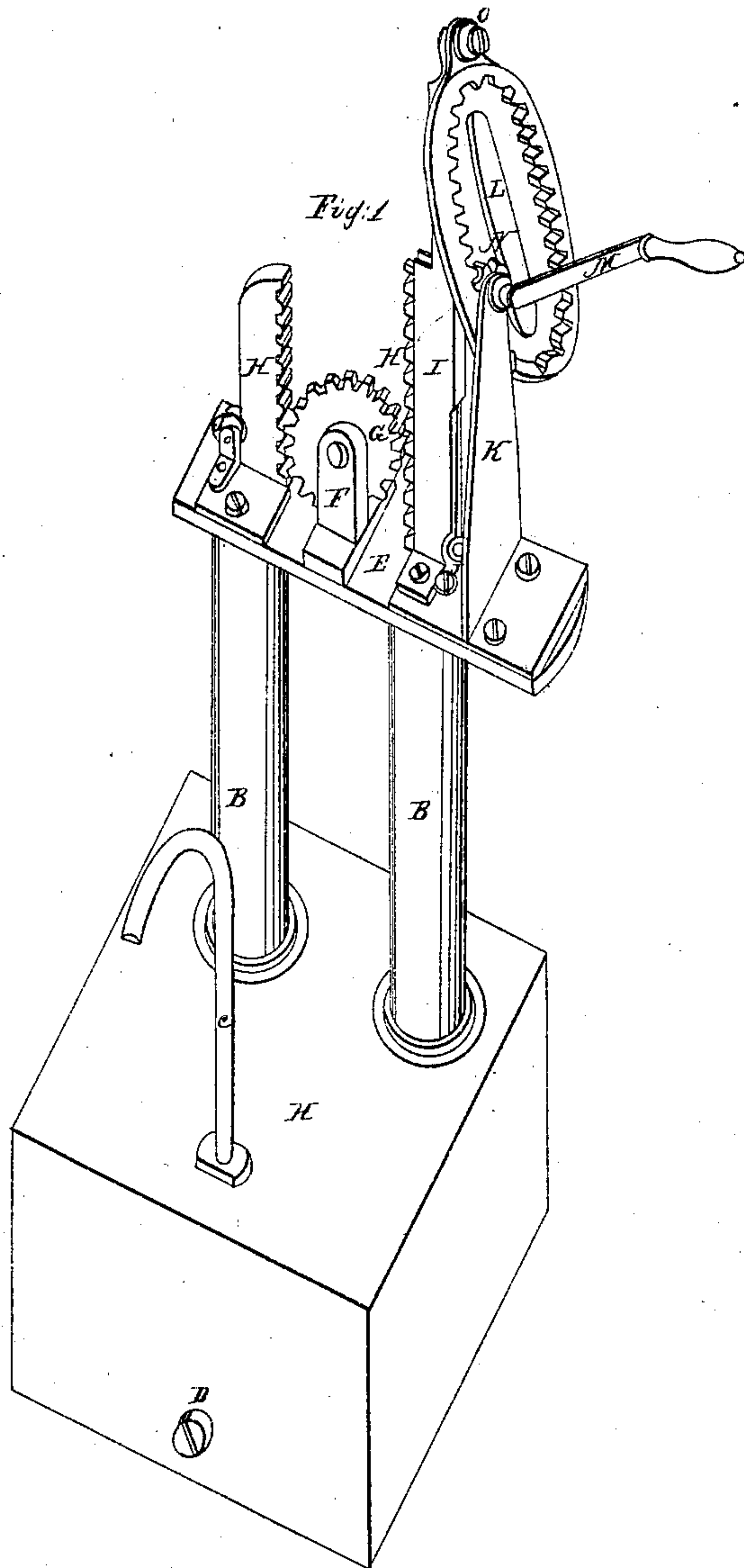


S. S. Durbon,

Double-Acting Pump,

N<sup>o</sup> 56,387.

Patented July 17, 1866.



Witnesses  
Wm. L. Smithinger  
J. Sullivan

Inventor

Sam<sup>l</sup> S. Durbon

*S. S. Durban,*

### *Double-Acting Pump,*

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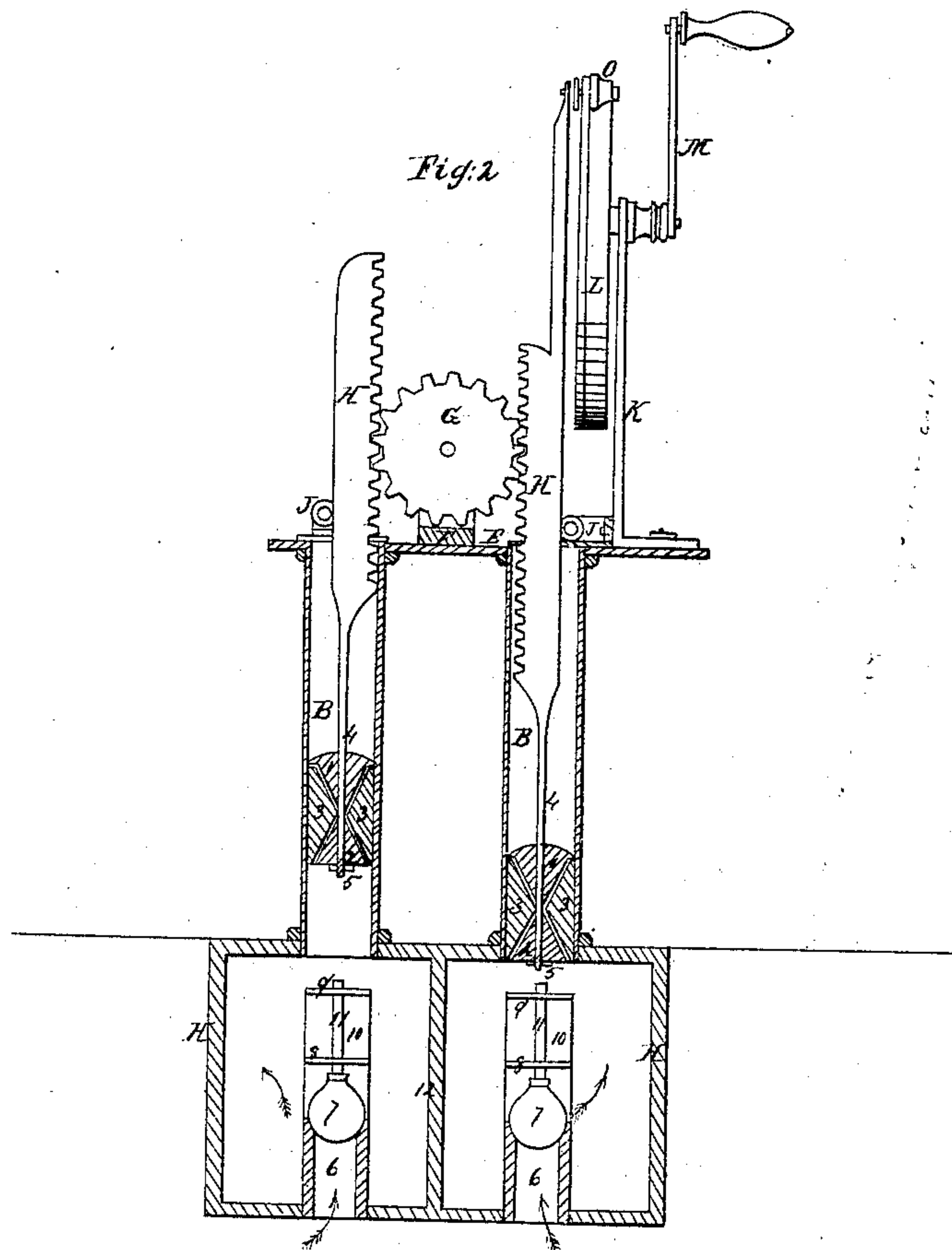
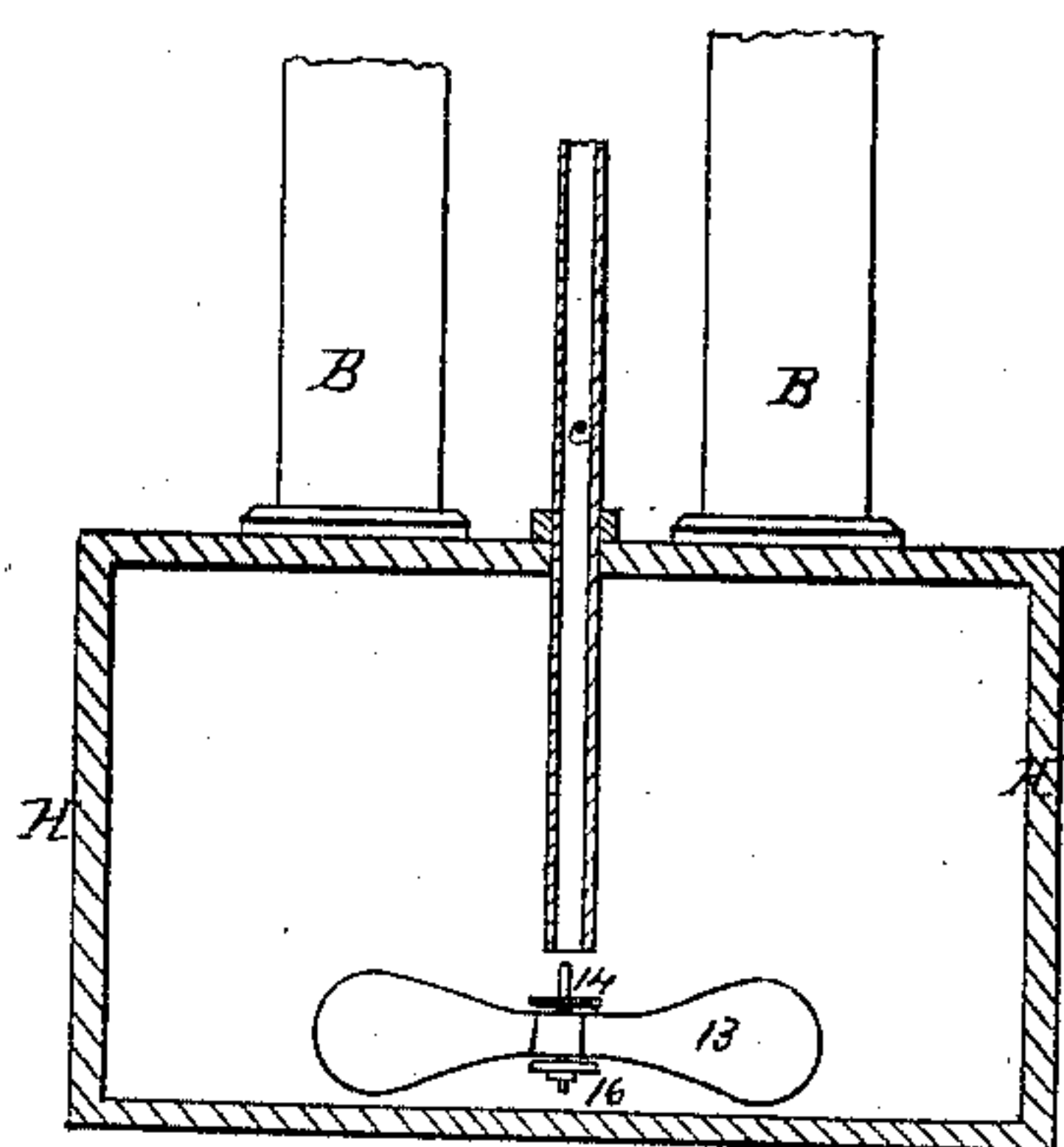
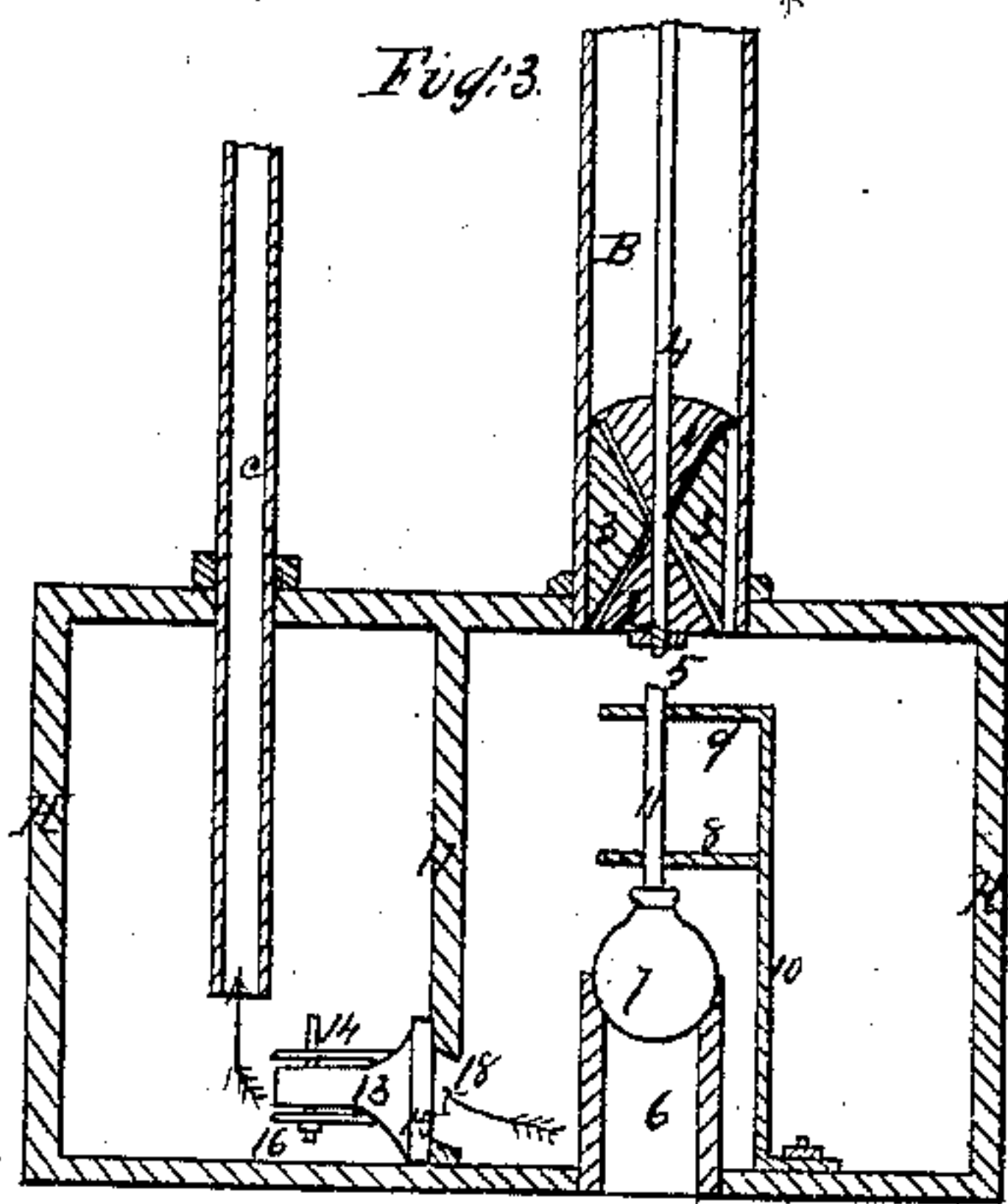


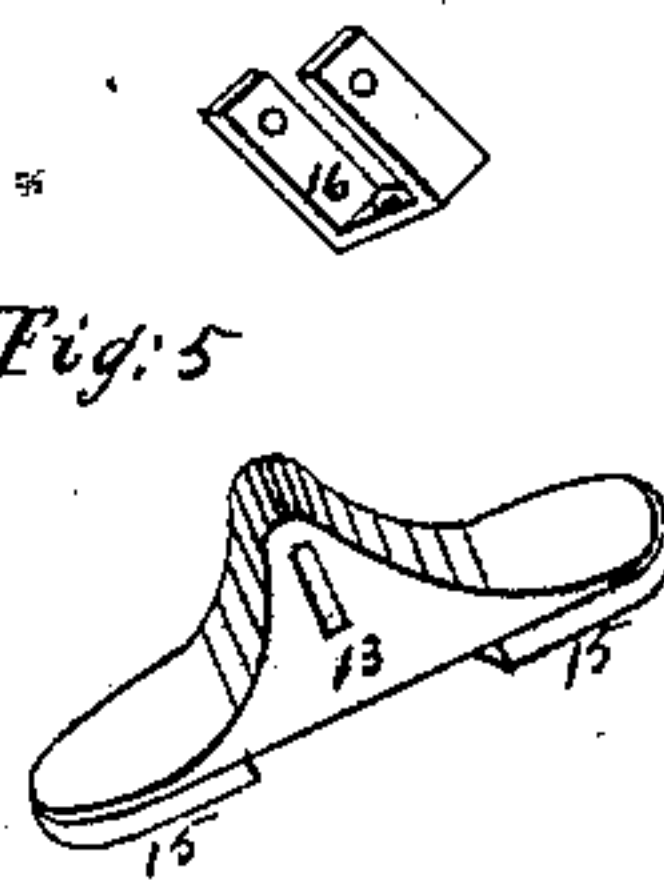
Fig:4



*Fig:3.*



*Fig: 5*



Witnesses  
 Mrs. L. Livingston  
 Mrs. S. Allen

Inventor  
Saml. S. Garban



# UNITED STATES PATENT OFFICE.

SAMUEL S. DURBON, OF LEBANON, INDIANA.

## IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **56,387**, dated July 17, 1866.

*To all whom it may concern:*

Be it known that I, SAML. S. DURBON, of Lebanon, in the county of Boone and State of Indiana, have invented a new and Improved Mode of Pumping Water from Wells; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, of which—

Figure 1 represents a perspective view; Fig. 2, a lateral section; Figs. 3 and 4, transverse sections; and Fig. 5, a detail.

The nature of my invention consists in building an air-tight iron box, A, with three apartments. Two of them are for pumping and one for receiving and exhausting. This exhausting-chamber is an air-chamber.

I insert into each of the two pumping-apartments the tubular valve-seats 6 6, to receive the gum-elastic valves 7 7, which are provided with spindles 11 11, and are confined to a perpendicular motion by means of holes in the brackets 8 and 9 of the frame 10.

18 18 represent two holes through the partition between the air-chamber and the pumping-apartments, by means of which the water passes from the pumping-apartments into the exhausting-chamber, (air-chamber,) where the pressure of the air forces it out through the tube C.

13 represents a self-adjusting leverage, which is provided with gum valves 15 15, and is so arranged as to close one or both holes, as the case may require. This leverage slides in the frame 16 by means of a slot and bolt, 14. To the top of these pumping-apartments I attach two cylinders, B B, and provide each with a piston-rod, 4 4. To the lower ends of these piston-rods I attach a piston composed of three parts, 1, 2, and 3. The conic-shaped washer 1 is fastened to the piston-rod 4, so as to meet the point of the conic-shaped washer 2, which is also fastened to the piston-rod 4, but by means of a screw.

3 3 represent the gum-elastic packings, so shaped as to fit the two conic-shaped washers tightly.

The piston-rods are provided with cogged segments H H, which play into the cogs of the wheel G, creating a rotary motion. This motion is created by the power at the pulley-wheel or crank M, which drives the cog-wheel N and works into the elliptic L. This elliptic is arranged with an eccentric, L', to carry the driving-wheel to the proper gear.

O represents the wrist of the elliptic and attachment of the extension of the piston-rod 4. E represents a platform. J J are friction-wheels.

Operation: When the pump is set in motion the little driving-wheel N moves between the eccentric L' and the cogs of the elliptic L, forcing the elliptic to a motion which raises or lowers the piston-rods 4, the cogs of which work into the cog-wheel G, creating a reverse motion on the other piston-rod, so that when one piston-rod moves upward the other moves downward. The pistons will, when raised, permit the water to force itself into the pumping-apartments, and from there it will be forced into the air or exhausting chamber by the lowering of the pistons. In this way I create a continuous flow of water.

What I claim, and desire to secure by Letters Patent of the United States, is—

The tubular valve-seats 6 6, the spindle gum valves 7 7, the self-adjusting leverage 13, with valves 15 15, the self-adjusting gum piston composed of 1, 2, and 3, and the elliptic L, with the eccentric L', all arranged and operating substantially as and for the purpose set forth.

SAML. S. DURBON.

Witnesses:

JNO. L. SMITHMEYER,  
WM. SULLIVAN.