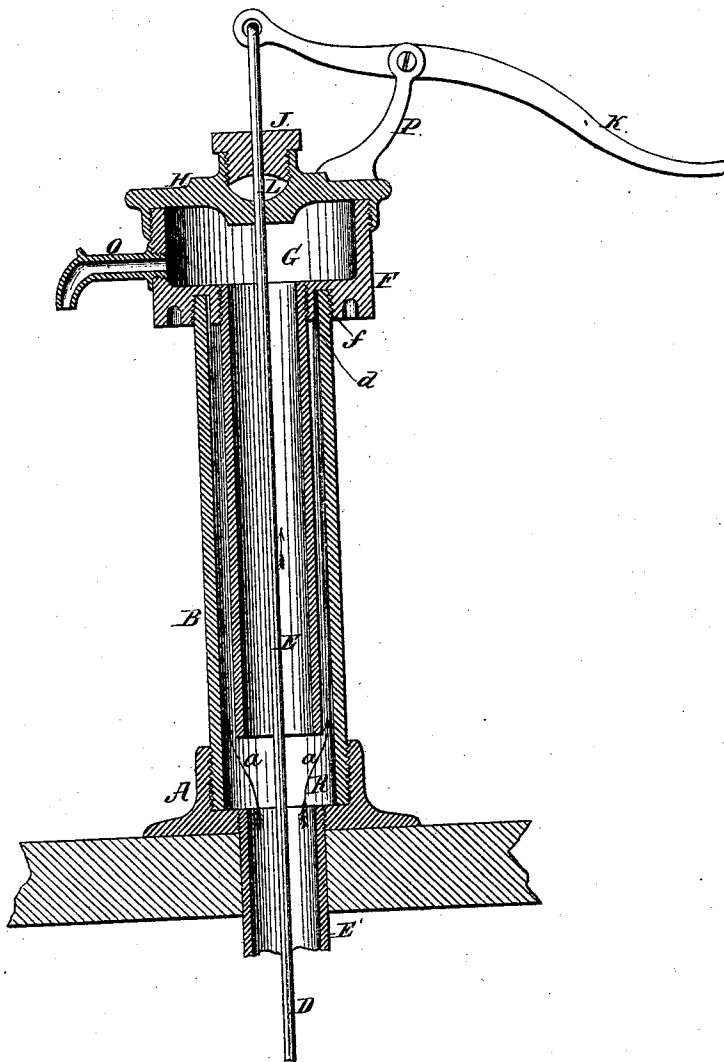


L. D. RAILSBACK.

PUMPS.

No. 188,481.

Patented March 20, 1877.



*Attest.*  
*E. C. Whitney*  
*George Smith*

*Inventor:*  
*Lafayette D. Railsback.*  
*Per E. C. Whitney*  
*his Atty.*

# UNITED STATES PATENT OFFICE.

LAFAYETTE D. RAILSBACK, OF INDIANAPOLIS, INDIANA.

## IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **188,481**, dated March 20, 1877; application filed November 9, 1876.

*To all whom it may concern:*

Be it known that I, LAFAYETTE D. RAILSBACK, of Indianapolis, county of Marion, State of Indiana, have invented a new and useful Improvement in Pumps, of which the following is a description, reference being had to the accompanying drawings.

The object of my invention is to provide an air-chamber in the body of the pump in such a manner as to force water that is elevated from the well, and at the same time to surround the water in the body of the pump with air and prevent freezing; and my invention consists of a pipe located inside of the body of the pump, said inside pipe making connection with an enlarged chamber above, and being surrounded with an annular air-chamber between the inner and outer pipes; also, to have the inner pipe disconnected from the lower pipe that is attached to the bottom of the pump, leaving a space between them for the water to pass from the lower pipe while being elevated into the air-chamber or annular space between the inner and outer pipes, thus causing an air-pressure to force the water up the inner pipe, and also to prevent the water in the inner pipe from freezing, as will be hereafter more fully set forth and claimed.

In the drawing, I have represented my improved pump by a sectional view in Figure 1.

The base A, lower pipe E', and outer pump-cylinder B, are made in the usual manner. The top is formed of the casting F, and is provided with an enlarged chamber, G, with a top, H, above, which has a stuffing-box and gland, L J, through which the pump-rod D operates in the usual manner by the standard P and pump-handle K; and the spout O is located near the bottom of the chamber G, as shown. The bottom of the casting F is provided with a central opening, in which is screwed the inner pipe E and pump-rod D, and outside of this pipe E the outside pipe B is screwed to the casting F at b. The inner pipe E extends downward to near the base A of the pump-body, leaving a space between the bottom of the inner pipe E and the lower pipe E', so that water that is forced upward by the rod D and valves below, through the

lower pipe E, enters the outside pipe B of the pump, and as the water is still forced upward through the inner pipe E a portion of the water rises in the annular space between the inner and outer pipes E B, as indicated by arrows a a, and the air that is compressed forces the water into the chamber G, where it is discharged through the spout O. The air that surrounds the inner pipe E also prevents, to a great extent, the water in the inner pipe from freezing in cold weather. The base A of the main body of the pump may be located well down in the ground, so that there will never be any water in the annular space between the inner and outer pipes E and B above the surface of the ground to freeze in winter.

The operation of my improved pump is more like a double-acting pump than a single-acting one. The stroke upward of rod D causes one action, and the compressed-air chamber another action, giving a flow equal to a double-acting pump.

I do not broadly claim an air-chamber to a pump, as that is old.

What I claim as new, and wish to secure by Letters Patent, is—

1. In a force-pump, the inner pipe E, secured to the enlarged chamber-casting F, the outer pipe B, also secured to the same casting F and to the base A reduced to receive the lower pipe E', leaving a space between the lower end of pipe E and upper end of pipe E', and also an annular space between the pipe E and pipe B, in the manner and for the purposes set forth and described.

2. The casting F, formed with an enlarged chamber, G, stuffing-box and gland L J, spout O, and provided with screw-threads b d below, to receive the inner and outer pipes E B, in the manner and for the purposes set forth and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LAFAYETTE D. RAILSBACK.

Witnesses:

E. O. FRINK,  
GEO. LUPTON.