J. H. Wilhelm,

Blow Pipe,

No. 51,769. Patented Dec. 26, 1865

Fig. 1

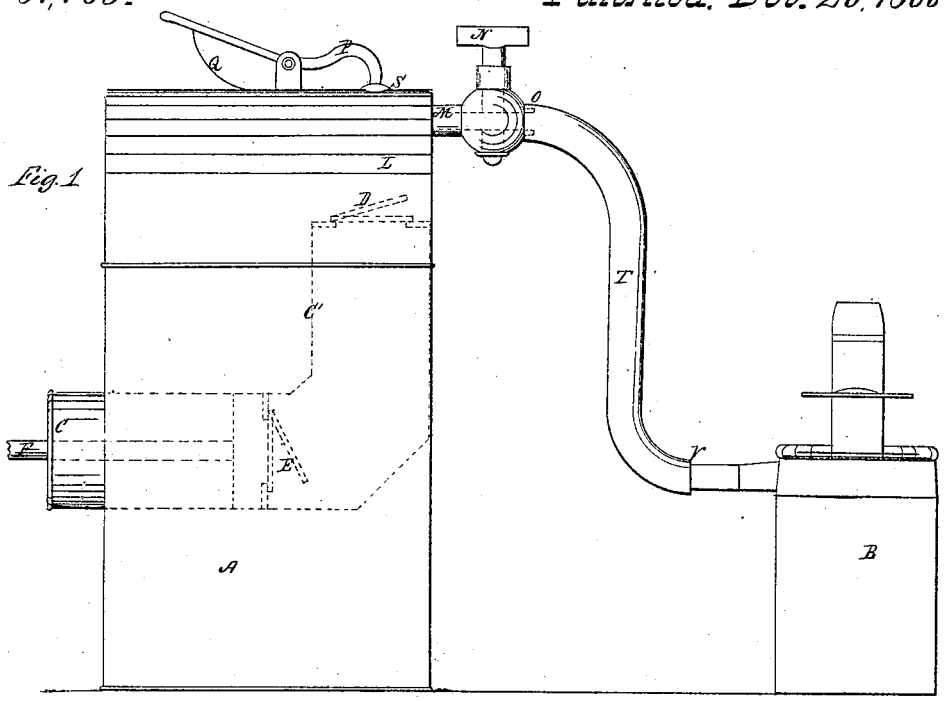
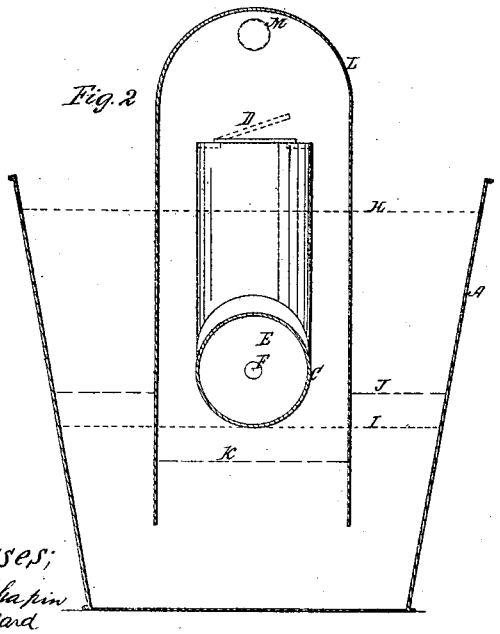


Fig. 2



Witnesses;
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UNITED STATES PATENT OFFICE.

JOHN H. WILHELM, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN AIR-PUMPS.

Specification forming part of Letters Patent No. **51,769**, dated December 26, 1865.

To all whom it may concern:

Be it known that I, JOHN H. WILHELM, of Chicago, in the county of Cook and State of Illinois, have invented an Improved Air-Pump Blow-Pipe; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and letters of reference marked thereon, making a part of this specification, in which—

Figure 1 is a longitudinal elevation of my improved air-pump blow-pipe. Fig. 2 is a transverse sectional elevation of the same.

The object of my invention is to construct an air-pump that will operate conveniently and effectually upon any kind of blow-pipes, but especially upon those connected with the lamp shown at B, which I denominate a "petroleum hot-blast furnace-lamp."

To enable others skilled in the art to make and use my invention, I will describe the method of constructing and using the same.

First, as a foundation and substantial part of my device I use what I term the "water-tank" A, the two sides of which are inclined, as shown at Fig. 2. To the inside of this tank and extending above the same and terminating in a circular or curved top, as shown at L, is the air-chamber which incloses the air-pump C. The object of this elevated air-chamber is to allow the valve D to be placed at such a height above the water in the tank A as to prevent the water from being drawn into the pump C by the action of the pump-stem F, and also to economize space in constructing the air-chamber larger than it otherwise could be without increasing the size of the water-tank A. By this arrangement a large amount of air accumulates in the air-chamber L as it enters the air-pipe M, thus providing a constant supply of air to the air-pipe M. A side elevation of the pump C is shown by the dotted lines C′, Fig. 1.

D represents the upper valve, E the lower valve, and F the stem, to the pump, which are used in operating the same.

At M is shown the pipe through which the air is discharged from the air-chamber L, and at O, at the end of the pipe M, is attached the rubber tube through which the air is conducted to the lamp B.

At N is shown the stop-cock which is used in regulating the force of the blast.

At P is represented the valve for discharging the surplus air from the air-chamber L, which would otherwise be thrown up violently through the water in the tank A. The force or power of the valve P is regulated by the spring *a*. The tank A is designed to be filled with water to any point between the dotted lines I and H. The object of using this water is, first, to prevent the air from escaping from the air-chamber L in any other direction than that described above; second, for the purpose of pressure on the air in the air-chamber L, as the pressure is partially removed by the withdrawal of the stem F when the pump C is in operation, and by this means giving a constant and uniform force to the blast.

Operation: In the drawings, Fig. 1, the air-pump blow-pipe is represented, the rubber tube T being attached thereto and connected with the lamp B at V, and all parts adjusted for operation. The water-tank A is supposed to be filled with water, as above described. Attach any desired motive power to the stem F that will operate the same with a velocity of from thirty to one hundred strokes per minute, according to the size of the pump C and the force of the blast required. The water in the tank A rises as the air is pumped into the air-chamber L by the movement of the stem F, being pressed upward by the confined air, and falls as the stem F is withdrawn, pressing upon the air as it escapes through the air-pipe M, and thus producing a constant blast. Care must be taken properly to regulate the stop-cock O, so as to give the required blast upon the lamp B through the rubber tube T.

I do not claim the use of water for the purpose of pressure, nor the use of an air-chamber opening into water, nor of an air-pump used as such independently; but

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

The air-pump C, contained in the elevated air-chamber L, and water-tank A, substantially as set forth.

JOHN H. WILHELM.

Witnesses:

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