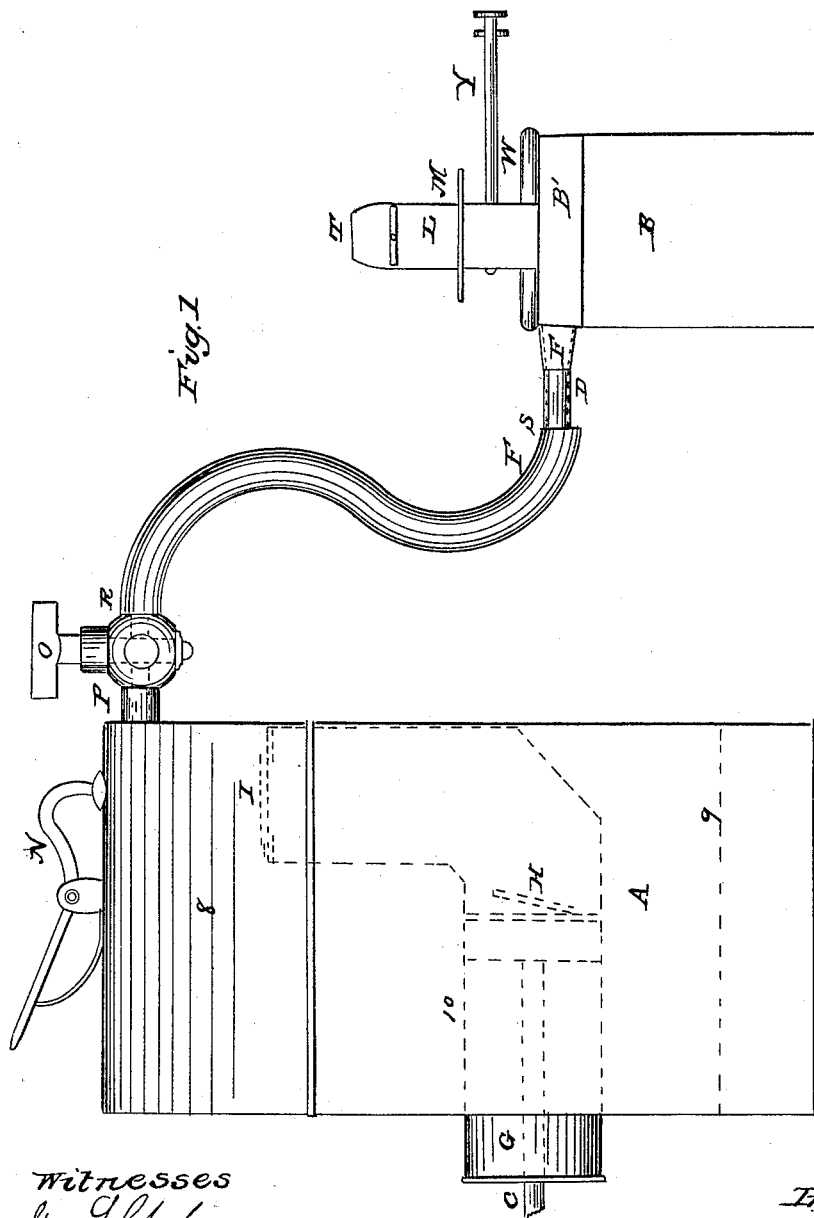


J. H. WILHELM,
Hot Blast Furnace Lamp.

2 Sheets—Sheet 1.

No. 50,865.

Patented Nov. 7, 1865.



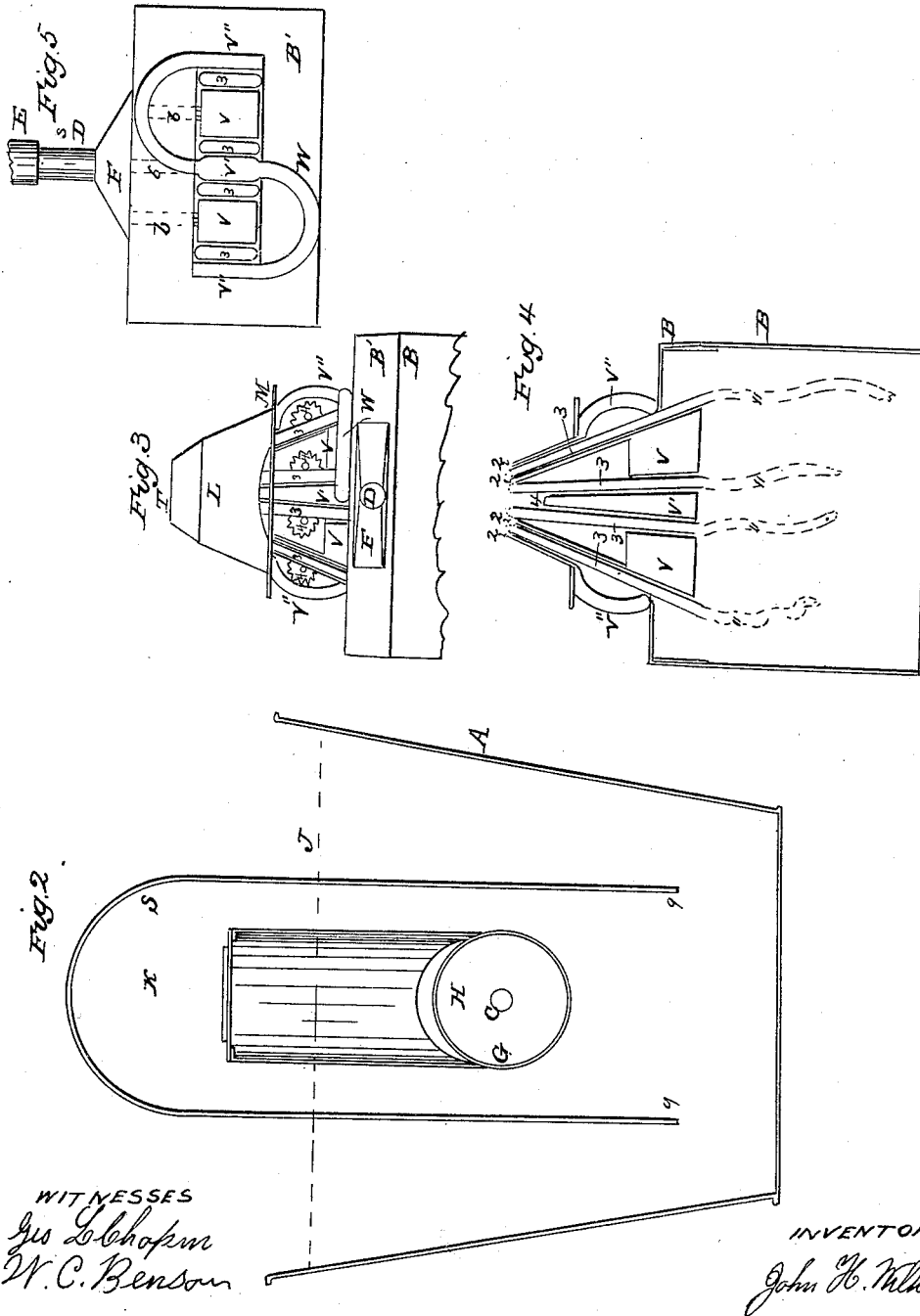
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INVENTOR
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UNITED STATES PATENT OFFICE.

J. H. WILHELM, OF CHICAGO, ILLINOIS.

HOT-BLAST FURNACE-LAMP.

Specification forming part of Letters Patent No. 50,865, dated November 7, 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 a new and Improved Petroleum Hot-Blast Furnace-Lamp; and I do hereby declare that the following is a full, clear, 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 new and improved petroleum hot-blast furnace-lamp. Fig. 2 is a sectional elevation of that portion of my invention containing the water-tank, air-chamber, and air-pump. Fig. 3 is a transverse elevation of the upper part of the lamp. Fig. 4 is a sectional elevation of the lamp. Fig. 5 is a top or plan view of the lamp, containing a horizontal section of the air-tubes, hot-air pipes, and wick-tubes.

The object of my invention is to construct a lamp that will burn petroleum or any oil or fatty substance usually consumed in lamps, and create, by means of air-chambers, air-tubes, and blow-pipes, an intense heat. This I accomplish by attaching the same number of air-chambers and stationary blow-pipes to the lamp as there are wick-tubes, and by operating upon them with an air-pump inclosed in a reservoir and air-chamber, by which means the flame of the wicks is changed from a yellow color to one of light blue of great heat.

I am well acquainted with the various methods of creating a great heat by means of the blow-pipe, but claim in my invention to have introduced the atmosphere to the flame by entirely different means and on a new principle. My invention is intended for the use of chemists, dentists, tanners, artists, also for heating stoves, steam-boilers, and for any other purpose where a strong heat, either concentrated or diffused, is required. In the construction I use any desired metallic substance.

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, I will describe the lamp B separate from that part of my invention which produces the blast.

The part B represents the oil-tank, and is

constructed in any of the common styles; but I prefer the pattern represented in the drawings, the size of the same being regulated by the quantity of oil required.

B' represents the lid of the oil-tank, to which is attached the important part of my invention.

V'', V, V', V, and V'' represent the air-chambers, which are essential to retain a large amount of cool air near the top of the oil in the tank B.

2 2 2 2 represent the blow-pipes connected with the top of the air-chambers, and extending as high as the wick-tubes 3.

It will be seen that the central air-chamber, V', has no blow-pipe attached, but has one or more small orifices, as shown at 9', the object of which is to allow a small portion of the air in the chamber to escape into the flame, carrying up the smoke and giving a central blast. The surplus air in the chamber V', which has become partially heated by close contact with the wick-tubes 3, is conveyed to the outside air-chambers, V'', by means of the coiled air-tube W.

At D is shown the pipe to which the rubber tube E is attached.

F represents the enlargement of the pipe D, adjoining the lid of the tank B', for the purpose of allowing space to admit the air into the air-pipes shown by the dotted lines 5 5 5, which enter the air-chambers V V' V.

At 3 is shown the wick-tubes, which are constructed in the usual manner, but which I generally set in an inclined position, as represented in the drawings at Figs. 3 and 4.

It will be seen at Fig. 5 that the air passing from the pipe D into the air-pipes shown by the dotted lines 5 5 5, will enter the air-chambers V'' V V' V V'' and be discharged at the end of the blow-pipes 2, directly underneath the flame of the wicks 3.

At L is shown what I term a "heat-concentrating blower," and contains the small openings shown at 6 and 7, Figs. 1 and 3, for the purpose of admitting the air to prevent the smoking of the wicks when the flame is not operated on by the blow-pipes. At T it will be seen that the heat-concentrating blower is smaller, where an opening is made to suit the size of the flame required.

At M is represented the platform that rests upon the air-chambers V'' V'' and supports the heat-concentrating blower L.

Second, I will describe the reservoir A, containing the water, air-chamber, and air-pump, by means of which the blast is produced.

At A, Figs. 1 and 2, is shown the reservoir that contains the water, and attached to the inside of this reservoir, and extending above the same, terminating in a circular or curved top, is the air-chamber 8, the sides of which extend down to 9.

To the inside of the air-chamber 8, I attach the air-pump G, a side elevation of which is shown at 10. The top valve of the air-pump is shown at I, the lower valve at H, and the stem which operates the same at C.

At N is represented the safety-valve, from which escapes the surplus air.

At P is shown the air-pipe that connects the air-chamber 8 with the rubber tube E at R. Between the air-chamber 8 and the rubber pipe E is attached the cock O, for the purpose of regulating the force of the blast.

The reason why I am thus particular in describing the reservoir A, containing the water, air-chamber, and air-pump, is because this is the most convenient and effectual means of producing the blast upon the lamp.

Operation: First, in order to use my petroleum hot-blast furnace-lamp, it is necessary to adjust the wicks 11 in the tubes 3, as shown at Fig. 4; then fill the oil-tank B by removing the lid B' in the usual manner. Second,

the reservoir A must be filled with water to any point between the bottom of the pump G to the dotted line J. The wicks of the lamp must then be lighted in the usual manner. I then apply any desired motive power to the stem C that will operate the same with a velocity of from thirty to one hundred strokes per minute, according to the force of the blast required. When this operation is completed the heat emanates from the top of the heat-concentrating blower, and may be used in the usual manner.

I do not claim the application of atmospheric air to the flame of a lamp by means of the blow-pipe, neither do I claim the reservoir A with the devices attached as a part of this invention; but

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

1. The combination of the air-chambers V V' V with the air-pipes 5 5 5, for the purpose set forth.

2. The arrangement and combination of the coiled air-pipe W with the air-chambers V'' V' V'', for the purpose set forth.

3. The combination of the heat-concentrating blower L with the platform M, substantially as described, and for the purpose set forth.

4. The elongation of the air-chambers V'' V V V'', terminating in the blow-pipes 2 2 2, substantially as described and set forth.

JOHN H. WILHELM.

Witnesses:

GEO. L. CHAPIN,
W. C. BENSON.