(No Model.)

W. WALTON.

APPARATUS FOR MANUFACTURING HEATING VAPORS.

No. 353,276. **Patented Nov. 23, 1886.**

Fig 1.

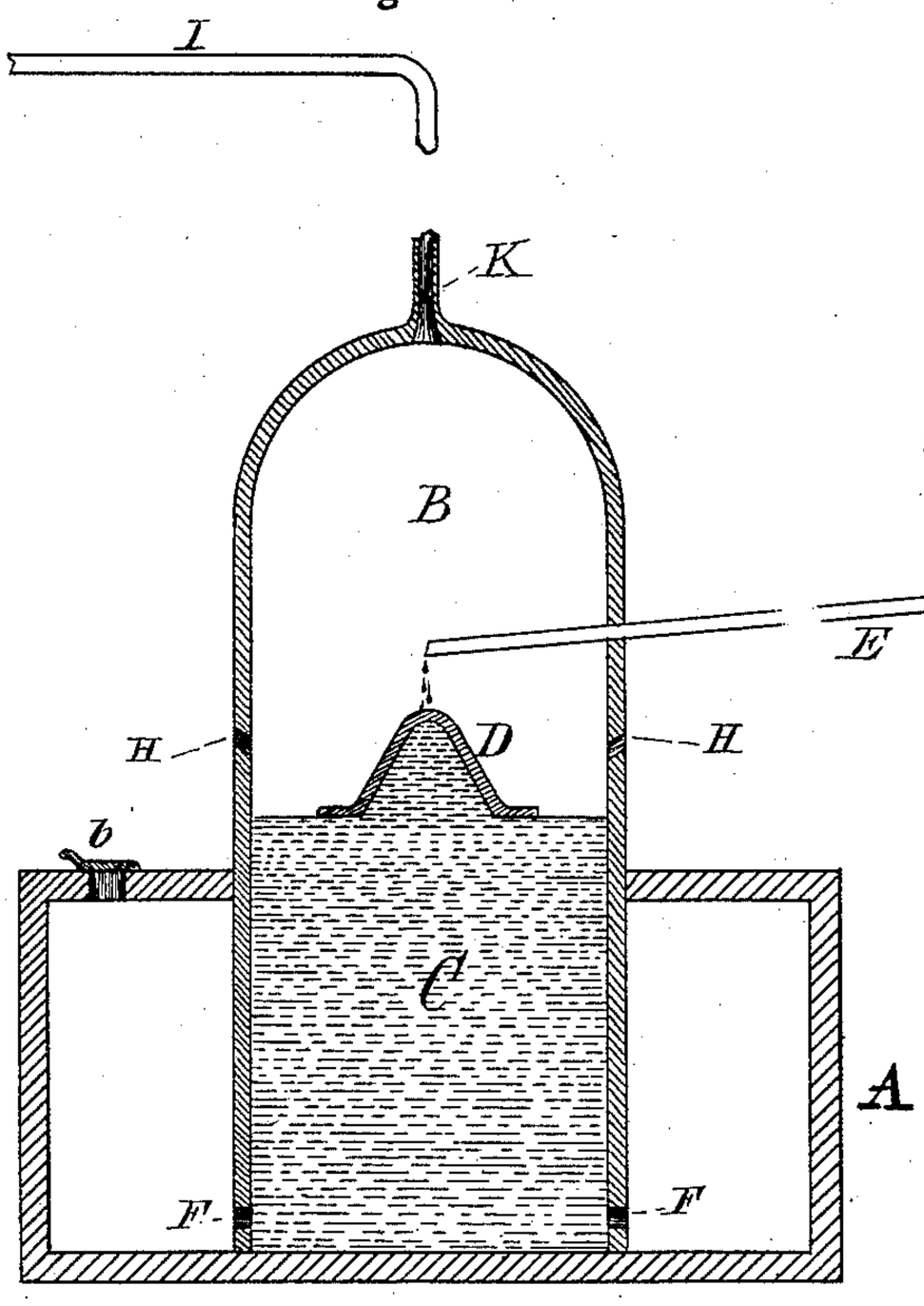
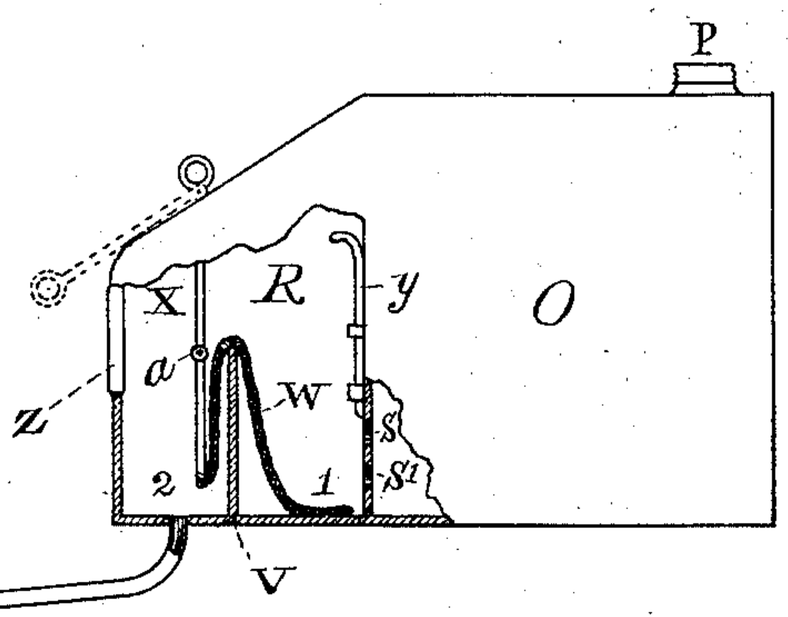


Fig 2.



WITNESSES:

Lucius Bellows
C. F. Langford

INVENTOR

BY William Walton

ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM WALTON, OF BROOKLYN, NEW YORK.

APPARATUS FOR MANUFACTURING HEATING-VAPORS.

SPECIFICATION forming part of Letters Patent No. 353,276, dated November 23, 1886.

Application filed December 4, 1885. Serial No. 184,750. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WALTON, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Apparatus for Manufacturing Heating-Vapors, of which the following is a specification.

My invention relates to an improved apparatus for vaporizing petroleum or other hydrocarbon oils and water, the object being to convert hydrocarbon oil and water into vapor by a simple and economical apparatus, which is adapted to furnaces, stoves, and other heating devices; and the object of this invention is accomplished by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a cross-section in elevation of the generator, showing the base A, with opening *b*, interior of tube B, provided with escape-pipe K and closed by a stop-cock, air-passage H, and core-tube C, and openings F at bottom of said tube C. Fig. 2 is a side view of an oil-reservoir, with part of side removed to more clearly show the means of conducting the oil to the generator.

The generator consists of a hollow base, A, adapted to hold water or hydrocarbon oil. Tube B, resting on base A, is provided with an escape-pipe, K, at the top, and core-tube C, extending downward into base A, resting on the bottom of said base, is provided with openings F, for admitting liquid contained in said base into said tube. Said tube is provided with a core, consisting, preferably, of sea-sand. At the upper line of base A said tube B is provided with air-passages H. Resting on the core is a metal saddle, D, which receives and distributes the oil which flows from reservoir O through the pipe E onto the core.

The saddle D can be dispensed with and the oil allowed to drop directly on the core.

b is an opening for supplying the base A with liquid.

Reservoir O is provided with valve P for filling same. On one side of said reservoir is an extension, R, provided with openings Z. S S are openings into said extension. Y is a slide for closing said openings.

V is a longitudinal partition dividing the extension R into receivers 1 and 2, and of sufficient height to be above the openings S S.

W is a wick, which is connected at one end to a jointed rod, X.

E is a pipe leading from the bottom of reservoir O to the generator.

Oil being placed in reservoir O, the slide Y is raised, when the oil will flow through the openings S S into receiver 1 until it covers said openings, when, the air being cut off, it will cease to flow. The free end of wick W is placed in the oil in receiver 1, and the other end, connected to the rod X, is carried over partition V and into receiver 2. The oil ascends in the wick from receiver 1 by capillary attraction, and descends by gravity into receiver 2, from which it is conducted by pipe E to the generator. When the oil is to be cut off from pipe E, the end of wick W, connected to the rod X, is raised by the said rod to a point above the partition V, when the oil will cease to flow into receiver 1. The rod being jointed, the outer end is turned down, resting on the outside of extension R, and retained in place, as shown by dotted line. When the oil in receiver 1 falls below the opening S in reservoir O, air will pass into said reservoir and cause oil to flow out of the lower opening S into section 1 until it again covers the upper opening S, thereby cutting off the air from entering the reservoir O. When the generator is to be operated, water is placed in the base A, passing through the openings F in the bottom of core-tube C, when by capillary attraction it ascends through the core contained in said tube C. Oil is then admitted through the pipe E from reservoir O, and drops on the saddle D, and flows down its sides onto the core in tube C. Fire is then applied through the opening H in tube B, causing the oil on the core to ignite, thereby converting the hydrocarbon oil and water into vapor, a portion of which mingles with the inward currents of air passing through the openings H into tube B. The vapor which has become mixed with the currents of air ignites, and thereby increases the force of the inward currents, creating a blast and forming tongues of flame, which are similar to so many blow-pipes directed on the top of the said core, thereby greatly intensifying the heat, and aiding in a very considerable degree in converting the hydrocarbon oil and water into vapor. The vapor thus created ascends to the top of the tube and passes out through

the escape-pipe K when the stop-cock is open. Here it mingles with the air and will burn with perfect combustion when ignited.

The openings H in tube B are essential to the attainment of the object, for without them it would be impossible to obtain sufficient heat to convert the liquids into vapor to any considerable degree. In fact, it would become but a smoldering mass were it not for the currents of air, which are not only necessary to aid combustion, but to provide a blast. Their size and position in tube B is important in order to obtain a current of sufficient force. They are not to be considered in the sense of a draft, for that simply aids combustion; but the openings H must be above the fire proper in order to form a tongue of flame, which forms the blast.

I am aware that in a device for burning oils as fuels blast-pipes for supplying oxygen-gas have been used; but in such cases the blast is created by an additional mechanical device, while in my invention the blast is produced automatically, not requiring any machinery. This feature adds to its simplicity and cheapness; besides, it is less likely to get out of order, and will not be interrupted by accident to the machinery which supplies the blast.

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

The herein-described generator, consisting of the hollow base A, tube B, provided with openings H for the admission of air, escape-pipe K, and core-tube C, substantially as and for the purpose set forth.

WILLIAM WALTON.

Witnesses:
C. W. LANGFORD,
FRED S. WELLS.