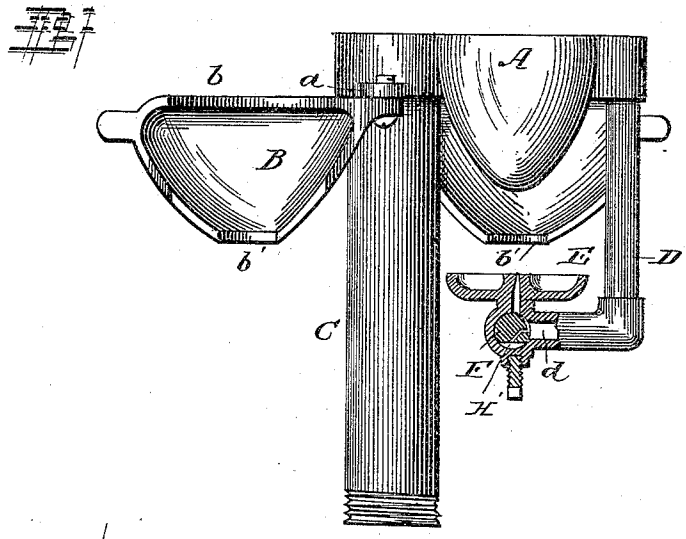
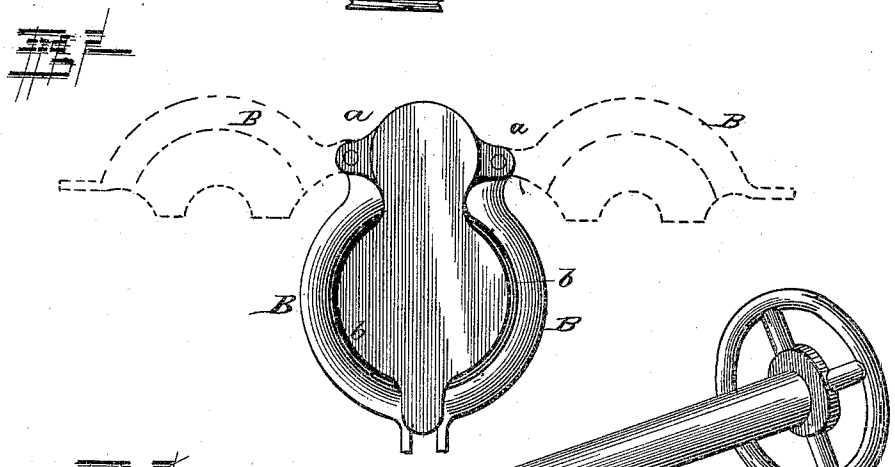
(No Model.)

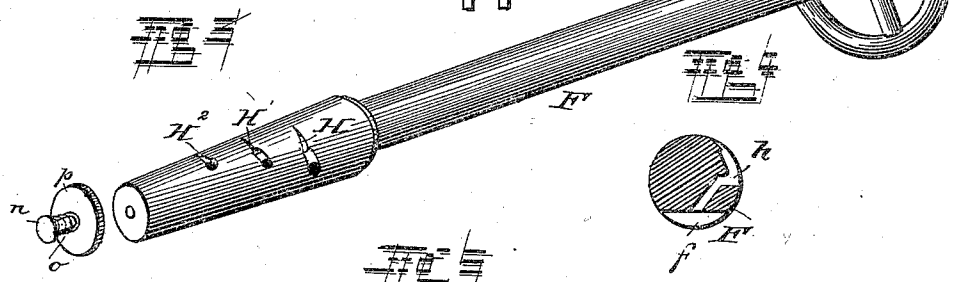
B. REIN.

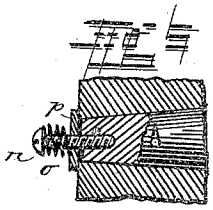
VAPORIZER FOR GASOLINE AND OIL STOVES.

No. 335,719. Patented Feb. 9, 1886.









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VAPORIZER FOR GASOLINE AND OIL STOVES.

SPECIFICATION forming part of Letters Patent No. 335,719, dated February 9, 1886.

Application filed October 27, 1884. Serial No. 146,568. (No model.)

To all whom it may concern:

Be it known that I, BERNARD REIN, a citizen of the United States, residing at Urbana, in the county of Champaign and State of Ohio, have invented certain new and useful Improvements in Vaporizers for Gasoline and Oil Stoves, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in gasoline and coal-oil stoves, more especially to that part pertaining to the burners and the oil-feed.

Heretofore gasoline and oil stoves using needle-valves required frequent repairs, for the reason that said valves become worn and cause too large an orifice, and the orifice would permit oil to flow too rapidly and the vapor or heating-flame be generated and pass out in greater quantity or with more intensity than the requirements demanded. Again, these needle-valves have been constructed with a screw-thread cut on them, which eventually becomes worn out and leaky. Some of these needle-point valves have been constructed with a stuffing-box instead of a thread, and require to be repacked, as they also become leaky. This of course requires constant repairs, and is a constant source of annoyance and trouble to persons using such stoves. These defects are remedied by the construction shown in the accompanying drawings, and described at length in the specification.

In the drawings, Figure 1 is a perspective view of the device, the valve and oil-cup being shown in section; Fig. 2, a top plan view of the vaporizer and jacket; Fig. 3, a detail perspective view of the valve and its openings; Fig. 4, a section through one of the valve-openings, and Fig. 5 a detail vertical section through the end of the valve.

The vaporizer A consists of a copper chamber located between the main delivery-pipe C and the tube supplying the heating-cup. This vaporizer is surrounded by a casing or jacket, B, preferably made in two pieces, hinged or pivoted at one side, as at *a*. The jacket may, however, be rigidly secured to the vaporizer. The jacket extends upward only about one-half the depth of the vaporizer, or may extend upward to or near the top of the vaporizer. Each side is cut away on its under edge, as at *b' b'*, to leave an opening for the passage of the flame to the vaporizer. It does not come in contact with it; but a space is left between them, as at *b*, for the passage of the flame and oxygen, the flame burning at the top of the jacket. This construction tends to form a flue for the flame from the oil-cup and centralizes it around the jacket, thus avoiding spreading of the flame and loss of heat and oil. By this construction I obtain a stronger vaporizer, and can vaporize heavier oil and more quickly than in the ordinary form of construction. Again, I can obtain a maximum and minimum sized flame or intensity of heat quickly and accurately.

The plug is provided with a series of grooves, H H' H^2, usually three in number.

I have here shown a valve-plug which feeds to the oil-cup E and controls the flow of oil to said cup, which supplies vapor to heat the oil in the vaporizer. I use such a plug to control the supply of oil to the vaporizer and cup E.

It will be seen by reference to Fig. 3 that the valve-plug is made in a beveled or conical form, so that the wear is uniform.

Each plug has one or more openings or grooves, H H' H^2, on its exterior surface, which lead by the channels *h* to the opening *f*, which checks or gages with the opening *d* in pipe D. Each slot H H' H^2 commences at the opening *h* leading to the valve-opening, and tapers to a point on the surface of the plug, as shown in Fig. 3. The object of this tapered slot is to control the flow of oil or vapor, as the case may be, and thus regulate the size of the flame. It is often required to permit but little oil to flow into cup E when the vaporization is to be commenced, and thus prevent overflow of said cup. In this instance the smaller opening, H^2, is turned, so as to permit the flow through this opening. As fast as vaporization increases in the cup and in the chamber A, the plug is turned so as to permit a greater flow.

Each slot decreases in size from H to H^2. Thus the size of the flame can be regulated in the burners. It is at once apparent that as the slot decreases in size the flow, and therefore the flame, will decrease. This decrease is continued until the extreme point of slot H^2 is reached, when the minimum is obtained.

The end of the valve is closed by a plate or washer, *p*, and held in position by a set-screw, *n*, surrounded by a spring, *o*, as shown in detail section, Fig. 5. It will be seen from this that a very small supply of oil or vapor can be kept constantly flowing, and hence there can be a regulated heat.

Having thus described my invention, what I claim is—

1. In a hydrocarbon-burner, the combination, with the generator, of the pipe connected therewith and provided with a jet-orifice, and a valve in such pipe, the valve-plug being provided with tapered grooves having the smaller portion or point of one approximately on a line with the larger or deeper portion of the other, substantially as and for the purpose set forth.

2. In a vapor-burner, the combination, with the cup-formed vaporizer, of a shell surrounding said vaporizer, said shell being made in two parts, the parts, when brought together around the vaporizer, forming a shell conforming to the shape of the vaporizer and leaving spaces between the two of substantially the same size throughout, as and for the purpose set forth.

3. In a hydrocarbon-burner, the combination, with the generator, of a pipe connected therewith and provided with a jet-orifice, and a valve in such pipe, the valve-plug of the same being provided with tapered grooves having the smaller portion or point of one approximately on a line with the larger or deeper portion of the other, with openings *h* and exterior tapering grooves, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

BERNARD REIN.

Witnesses:
W. H. BOWMAN,
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