

B. L. KISSEL.
 BLOWPIPE.
 APPLICATION FILED FEB. 13, 1911.

1,028,363.

Patented June 4, 1912.
 2 SHEETS—SHEET 1.

Fig. 1

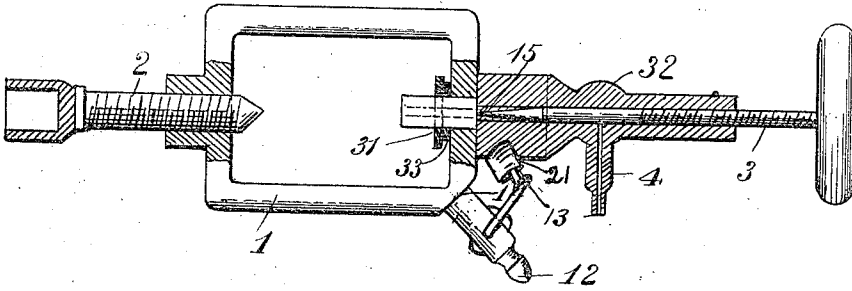
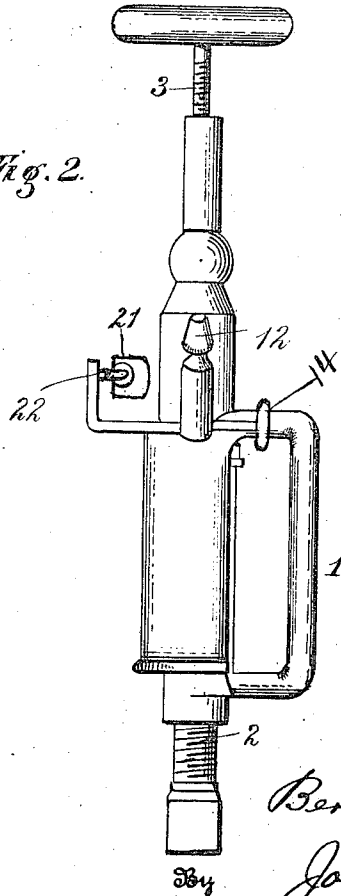


Fig. 2



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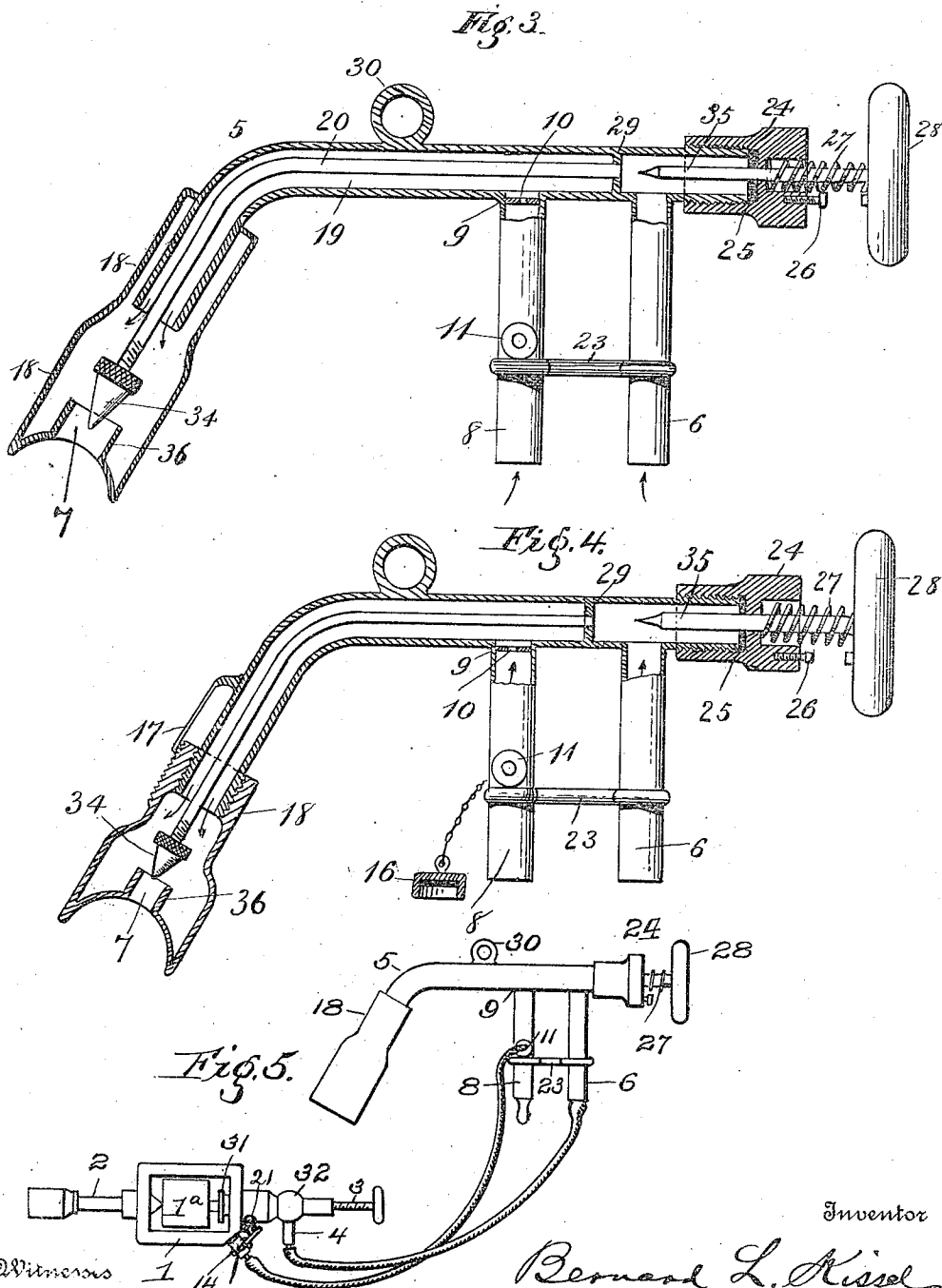
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UNITED STATES PATENT OFFICE.

BERNARD L. KISSEL, OF JOPLIN, MISSOURI.

BLOWPIPE.

1,028,363.

Specification of Letters Patent.

Patented June 4, 1912.

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To all whom it may concern:

Be it known that I, BERNARD L. KISSEL, a citizen of the United States, residing at Joplin, in the county of Jasper and State of Missouri, have invented certain new and useful Improvements in Blowpipes, of which the following is a specification.

My invention relates to blowpipes, and more particularly to that class of blowpipes to be used on metals that fuse only under the most intense heat; and is especially adapted for use in dentistry, or the like.

The object thereof is to so construct the same that it will mix natural gas or artificial gas with nitrous oxid; or gas and air, or a mixture of oxygen and hydrogen, or the like, as may be desired.

A further object is to regulate the volume of the flame and produce perfect combustion of the gases used.

With these and other objects in view, my invention consists in the construction, combination, and arrangement of parts hereinafter shown, described and claimed.

In the drawings forming a part of this specification, and in which like symbols of reference represent corresponding parts in the several views:—Figure 1 is a plan view, partly in section, of a yoke to fit over the gas cylinder; Fig. 2 is a side view of the yoke; Fig. 3 is a longitudinal view of the blowpipe, partly in section; Fig. 4 is a modification of the same, and Fig. 5 a diagrammatic view of the device connected to an oxid tank.

1 indicates the yoke, which is adapted to fit over an ordinary nitrous oxid gas cylinder 1^a, or the like; 2 a set-screw to fasten the yoke to the cylinder; and 3 a valve to control the flow of gas from the cylinder.

4 is the nitrous oxid gas outlet for the purpose of feeding the blowpipe 5, at 6, and mixes with natural gas at 7, producing the flame.

8 is the natural gas supply tube, having a disk 9, with a pin point opening 10, in order to supply the right quantity of natural gas to the natural gas chamber. Midway between the natural gas supply tube 8 and the opening 10 is a gas outlet 11, that is adapted to be connected by a rubber tube with 12 on yoke, producing a small flame at 13, which is controlled by a valve 14, keeping valve 15 warm to prevent frosting nitrous oxid gas and obstructing its ready flow.

16 is a screw-cap for closing tube 11, when the same is not needed.

17 is a gage on the tube 5, which corresponds with the marks on the chambered hood 18, to set the mixing point of air and natural gas, or air and artificial gas.

19 is the outer, or natural gas supply chamber or tube, and 20 the inner chamber or nitrous oxid tube, for controlling, directing and mixing the fluids.

21 is a wind-shield; 22 an air inlet; 23 a brace to strengthen the tubes 6 and 8; 24 a screw-cap for the blowpipe, the same having a washer 25; and 26 a regulating set-screw to regulate the valve 35, as may be desired.

27 is a spring to hold the handle 28 normally retracted; and 29 the valve-seat for valve 35. 30 is a ring to suspend the device.

31 is a nut for securing the stem 32 to the yoke; and 33 is a washer for the same.

34 is an adjustable tip on tube 20; and 36 an internal flange on the chamber 18, the same acting in conjunction with tip 34 to break the velocity of the gas and eliminate the surplus oxygen.

The gas in the first instance is directed along the sides of the hood and then returning inwardly along the flange escapes at the outlet, the adjustable tip also contributing to said operation, as well as to cause the rearward movement of the nitrous oxid in the first instance. Thus, as explained, the flange 36 impedes the gas, so that it comes back out of the small opening and its velocity is diminished to the proper rate. In an ordinary tip the pressure of natural gas is so great that the force is sufficient to blow the gas away from the point of ignition, and there is a sheath of gas just at the end of the tube, that is not combustible because it does not have a chance to avail itself of the oxygen in the air, the supporter of combustion, and blows out.

The operation of the blowpipe will be apparent from the foregoing. The yoke is connected to the nitrous oxid cylinder and secured by the set-screw, the flow of gas being regulated by the valve 3. The gas outlet 11 is then connected by a rubber tube, or the like, with a nipple 12 on the yoke, producing a small flame at the burner 13, which is controlled by the valve 14 of the burner which keeps the valve 3 and seat 15 warm. The outlet 4 for the nitrous oxid at the same time is connected to the nitrous

oxid gas tube 6 by a rubber tube. The natural gas being supplied to the tube 8. In case the blowpipe is used for natural gas only, the tube 6 is used for an air supply and tube 8 is connected up with natural gas. The tube 11 is closed by means of the screw-cap 16.

Having now fully described my invention, what I claim as new, and desire to secure by Letters-Patent, is:—

1. A blowpipe, consisting of a main tube, a chambered burner connected to the same, said burner having its outlet formed with an internal flange, a second tube traversing the interior of the first-mentioned tube, and an adjustable tip connected to the internal tube and adapted in conjunction with the internal flange to control the fluids.

2. A blowpipe, consisting of a main tube, a chambered burner connected to the same, said burner having its outlet formed with an internal flange, means for adjusting said burner, a second tube traversing the interior of the first-mentioned tube, and an adjustable tip connected to the interior tube and adapted to operate in conjunction with the internal flange to regulate the fluids.

3. A blowpipe, consisting of a main tube, a chambered hood connected to the same, an internal flange on said hood, a second tube traversing the interior of the first-mentioned tube, an adjustable tip on the interior tube to work in conjunction with the flange of the main tube, and a gage on the main tube

to regulate the hood and thus set the mixing point.

4. A blowpipe, consisting of a main tube, a chambered burner connected to the same, a second tube in the interior of the main tube, a valve for the same, a regulating screw, and tubes having connection with the first-mentioned tubes.

5. A blowpipe, consisting of a main tube, a nitrous oxid tube in the interior of the main tube, a valve to control the nitrous oxid, a yoke having a burner thereon and adapted to be connected to a nitrous oxid tank or the like, an outlet from the tank extending through said yoke, and a connection between the burner on the yoke and the gas supply tube, and between the nitrous oxid outlet of the yoke and the nitrous oxid tube.

6. In a blowpipe, a main tube, a second tube in the interior of the main tube, connections communicating with the tubes, a yoke adapted to be connected to a supply tank, a gas outlet in the side of one of the connections, a burner on the yoke with which said gas outlet is connected, and an outlet from the tank extending through the yoke for the fluid, said outlet having connection with the other of the connections.

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

BERNARD L. KISSEL.

Witnesses:

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BLANCHE FORSYTHE.