No. 681,690. Patented Sept. 3, 1901.

C. E. ESTERLY.

BLOWPIPE.

(Application filed Jan. 19, 1901.)

(No Model.)

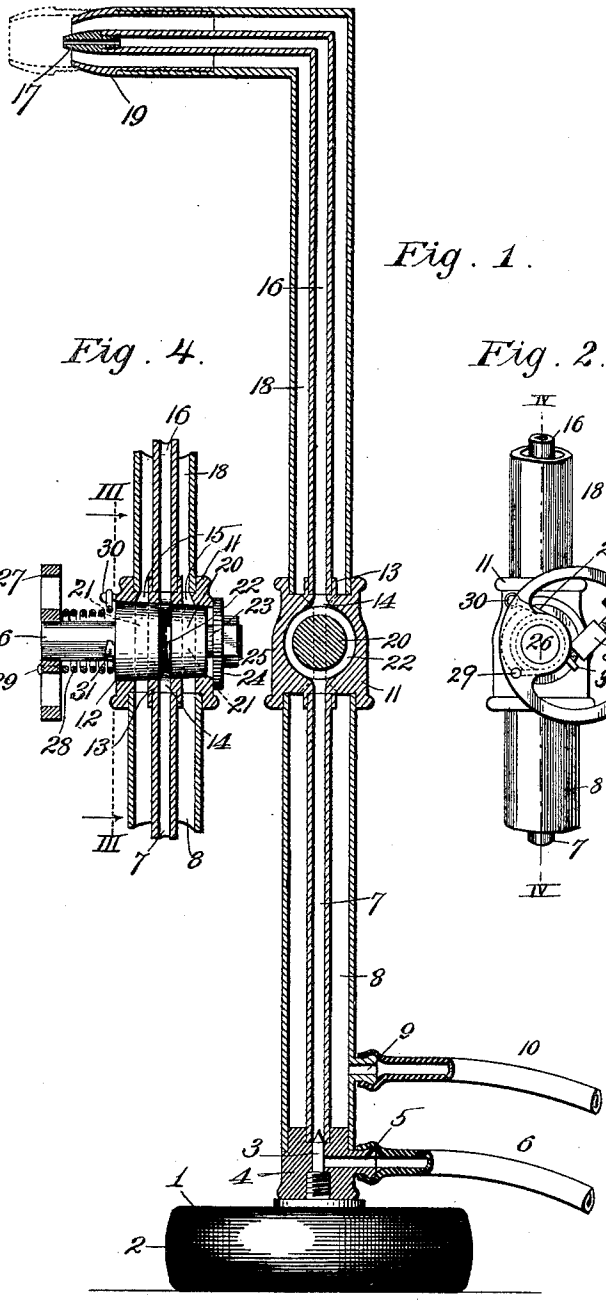


Fig. 1.

Fig. 4.

Fig. 2.

Fig. 3.

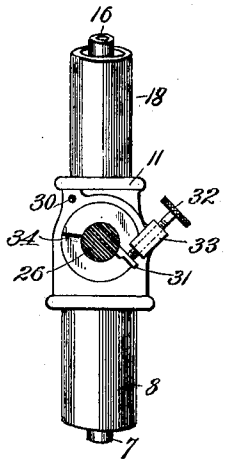
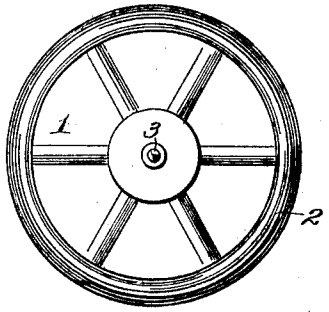


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES E. ESTERLY, OF LAWRENCE, KANSAS.

BLOWPIPE.

SPECIFICATION forming part of Letters Patent No. 681,690, dated September 3, 1901.

Application filed January 19, 1901. Serial No. 43,908. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. ESTERLY, a citizen of the United States, residing at Lawrence, Douglas county, Kansas, have invented a new and useful Blowpipe, of which the following is a specification.

My invention relates to blowpipes for the use of dentists, jewelers, and others whose work requires at times a flame of varying intensity, size, and form—sometimes what is known as a "hair" flame and at others a "brush" flame—and where it is frequently a desideratum that the flame shall be maintained constantly at a certain size and intensity, but subject to instant variation in both when desired, my object in this connection being the provision of a blowpipe of the character outlined, which shall be of compact construction and ornamental appearance, wherein the proportion of air and gas may be varied by increasing or diminishing either or both without requiring the use of both hands or the release of the gas-valve.

With these general objects in view the invention consists in certain novel and peculiar features of construction and combination of parts, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of the blowpipe embodying my invention. Fig. 2 is a side view of the same. Fig. 3 is a sectional view taken on the line III III of Fig. 4. Fig. 4 is a section taken on the line IV IV of Fig. 2. Fig. 5 is a detached plan view of the combined base and air-valve.

In the said drawings, 1 designates the circular base of the blowpipe, said base being of sufficient diameter and weight to support the blowpipe in a vertical position when not in use, so that it shall continue in operation, and thus save the operator the trouble of relighting it at frequent intervals. This base is preferably of wheel or skeleton form and is provided with a heavy rubber tire 2, adapted when the blowpipe is in the hand of the operator, with his thumb upon the gas-valve, to be rolled along the table or other support or against the contiguous wall or other object in order to increase or diminish the volume of air passing through the pipe, and thus effect the desired change at the point of combustion.

The air-valve for the purpose of controlling the amount of air admitted to the blowpipe is in the form of a needle-valve 3 and projects vertically upward from the center of the wheel-base.

4 designates the air-valve plug or casting, the same being centrally bored and threaded to receive said valve and provided with an intersecting passage 5, with which the flexible air-pipe 6 is connected, as shown, or in any other suitable manner, the arrangement being such that when the valve is screwed home it closes the passage 5, and thus prevents the air entering the lower end of air-pipe 7, fitting down in the plug or casting 4 and communicating with the air-valve passage.

8 designates the gas-pipe, concentrically surrounding the air-pipe and seated at its lower end in plug 4, said pipe and pipe 7 being rigidly secured to the plug in any suitable or preferred manner, and adjacent to its lower end pipe 8 is provided with a hollow offset 9, with which is detachably connected the flexible gas-pipe 10.

11 designates a coupling, which also constitutes the gas-valve casing and is provided with a conical passage arranged at right angles to pipes 7 and 8, upon the upper ends of which it is rigidly secured, and said coupling is provided with a pair of internal partitions 13, so as to form the circular chambers 14 and 15, the latter registering with the upper end of gas-pipe 8 at opposite sides of the former, which registers with the upper end of air-pipe 7.

16 designates the air-pipe extension, the same being secured to and registering with chamber 14 of the coupling, said pipe being, as usual, of angular formation, though not necessarily so, and provided with a detachable nozzle 17.

18 designates the continuation of gas-pipe 8, the same being of corresponding form and concentric relation to the air-pipe extension, and seated rigidly, like the latter, in the coupling and communicating with the chambers 15 of the same, and this extension is provided with a contracted nozzle 19, screwed to the

end of pipe 18 and capable of longitudinal adjustment to affect the form, size, and intensity of the flame in the usual manner.

20 designates the conical gas-valve, journaled snugly in the coupling, including the circular or central portions of chambers 15, so as to normally act as a gas-tight partition between gas-pipe 8 and its extension 18, but provided with radial ports or passages 21, adapted to be brought into alinement with the upper and lower portions of said chambers in order that the gas may pass from pipe 8 to its extension 18. The valve is provided centrally with the annular groove 22, registering with central chamber 14, in order to afford a free and unobstructed passage for the air passing from pipe 7 to its extension 16 at all times. The valve is provided with a short stem 23 to receive a washer 24 and a nut 25, the washer bearing against the rear side of the coupling and the nut against the washer, so as to adjust the valve to compensate for wear.

26 designates a stem projecting from the front end of the valve, and 27 a circular handle or wheel mounted eccentrically thereon and so positioned that the thumb of the hand grasping and directing the action of the blowpipe can readily manipulate the valve, the eccentric disposition of the handle giving the operator greater purchase or leverage than if it were mounted concentrically. The valve is normally held closed—viz., with the ports 21 out of alinement with the upper and lower portions of chambers 15—by means of a coil-spring 28, spirally encircling the stem 26 and secured at one end to the handle, as at 29, and at its opposite end to a projection 30 of the coupling, a stop-pin 31 limiting the movement imparted to the valve by the spring by abutting against the end of the set-screw 32, mounted in a sleeve 33, cast with or otherwise secured to the coupling, the set-screw being so positioned as to be easily manipulated by the thumb and index-finger of the hand holding the blowpipe without the necessity of placing the same upon a support or grasping it with the other hand. The stem may be adjusted in the direction indicated by the arrow, Fig. 2, about a half-revolution, when the stop-pin 31 strikes against a shoulder 34, formed on the coupling. In such movement the ports 21 are gradually brought into alinement with the upper and lower portions of chambers 15 and then swung past the same. The valve is closed when stop-pin 31 occupies the position shown in Fig. 3 or is held in opposition to the spring against the shoulder 34, the parts being so relatively disposed that when the valve has been operated approximately a quarter of a revolution the ports are fully open and permit the maximum volume of gas to pass. Any variation of this maximum may be employed by pressing the valve still farther around or permitting it, under the power of the spring, to swing back slightly, the latter being the preferable mode of operation, and when it is desired to hold the valve at any desired point, so as to maintain a constant flow of gas, the operator, keeping the valve positioned with his thumb, uses his index-finger to adjust the set-screw forward until it engages the stop-pin 31, when the thumb-pressure may be removed. If the volume of air should be increased or diminished, the operator simply brings the pipe at a suitable angle to bring the rubber tire to bear on the table or against an upright surface in a manner hereinbefore explained. It will thus be seen that the operator can control the size and form, and consequently the intensity, of the flame to anything between the extremes represented by the brush flame, produced when operating at full capacity, or the hair flame, when operating at minimum capacity, and that any and all adjustments may be effected by the operator with the hand carrying the blowpipe and without laying the latter down.

From the above description it will be apparent that I have produced a blowpipe possessing the features of advantage enumerated as desirable in the statement of invention and which is susceptible of minor changes in the form, proportion, detail construction, and organization of the parts without departing from the spirit and scope of the invention.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A blowpipe, comprising a wheel-base provided with a valve, an air-pipe composed of sections and controlled by said valve, an air-supply pipe connected to said air-pipe and communicating therewith when the valve is withdrawn, a gas-pipe surrounding the air-pipe and composed of sections, a supply-pipe connected to the gas-pipe, a coupling connecting said pipe-sections and provided with chambers communicating at their opposite ends with the contiguous ends of the pipe-sections, and a valve journaled in the coupling, and forming a partition between the ends of the gas-pipe sections but never closing the passage between the air-pipe sections, and provided with ports adapted at times to open up communication between the gas-pipe sections, substantially as described.

2. A blowpipe, comprising a wheel-base, provided with a valve, an air-pipe composed of sections and controlled by said valve, an air-supply pipe connected to said air-pipe, and communicating therewith when the valve is withdrawn, a gas-pipe surrounding the air-pipe and composed of sections, a supply-pipe connected to the gas-pipe, a coupling connecting said pipe-sections and provided with chambers communicating at their opposite ends with the contiguous ends of the pipe-sections, a valve journaled in the coupling, and forming a partition between the ends of the gas-pipe sections but never closing the passage between the air-pipe sections, and provided with ports adapted at times to open

up communication between the gas-pipe sections, a stem projecting from the front end of the valve and provided with a handle, and a spring arranged to normally hold the valve with said ports closed to the passage of gas, substantially as described.

3. A blowpipe, comprising a wheel-base, provided with a valve, an air-pipe composed of sections and controlled by said valve, an air-supply pipe connected to said air-pipe and communicating therewith when the valve is withdrawn, a gas-pipe surrounding the air-pipe and composed of sections, a supply-pipe connected to the gas-pipe, a coupling connecting said pipe-sections and provided with chambers communicating at their opposite ends with the contiguous ends of the pipe-sections, a valve journaled in the coupling, and forming a partition between the ends of the gas-pipe sections but never closing the passage between the air-pipe sections, and provided with ports adapted at times to open up communication between the gas-pipe sections, a stem projecting from the front end of the valve, a handle mounted thereon, a set-screw carried by the coupling, a shoulder projecting from the stem, and a spring coiled around the latter and secured at its opposite ends to the coupling and the handle, and normally holding the stop-pin against said set-screw, substantially as described.

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

CHARLES E. ESTERLY.

Witnesses:
S. A. WOOD,
PAUL LANDIS.