

No. 731,910.

PATENTED JUNE 23, 1903.

E. JOHNSON.
BLOWPIPE.

APPLICATION FILED AUG. 27, 1902.

NO MODEL.

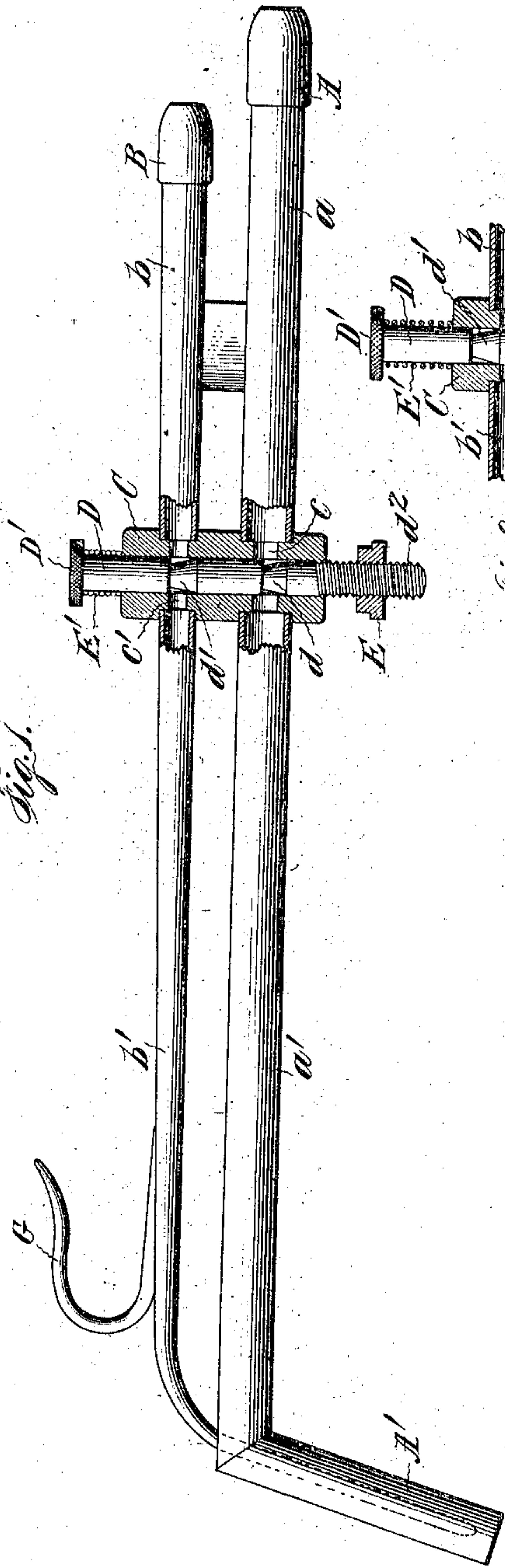


Fig. 1.

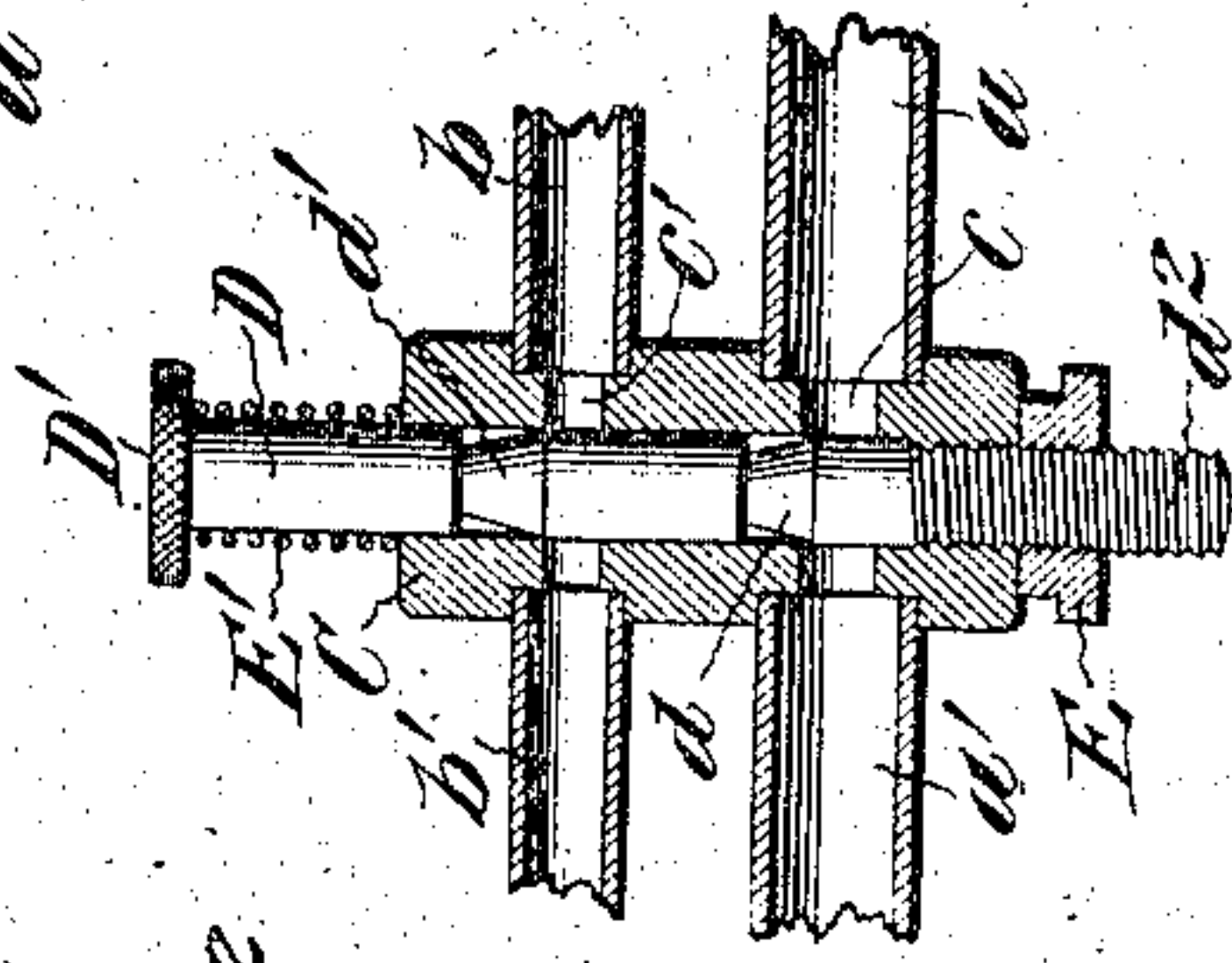
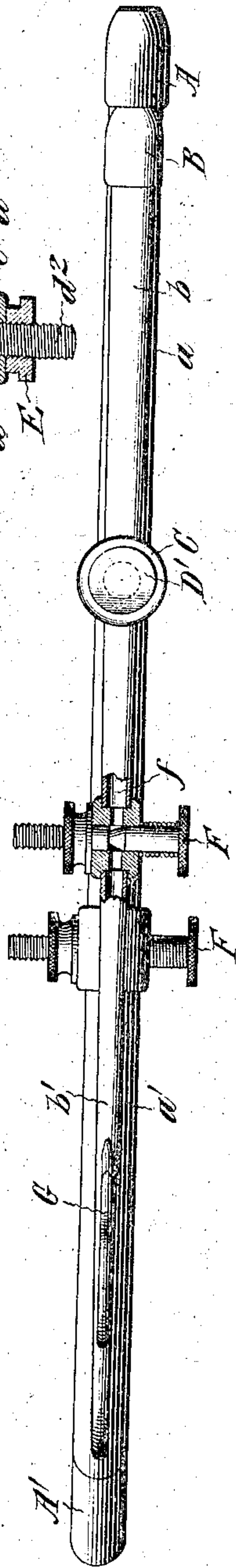


Fig. 3.

Fig. 2.



Witness:
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UNITED STATES PATENT OFFICE.

ELMER JOHNSON, OF NEW HAVEN, CONNECTICUT.

BLOWPIPE.

SPECIFICATION forming part of Letters Patent No. 731,910, dated June 23, 1903.

Application filed August 27, 1902. Serial-No. 121,250. (No model.)

To all whom it may concern:

Be it known that I, ELMER JOHNSON, a citizen of the United States, and a resident of New Haven, county of New Haven, and State of Connecticut, have invented certain new and useful Improvements in Blowpipes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in blowpipes having automatic cut-off for both the air and gas pipes.

The object of my invention is to provide a blowpipe particularly adapted for heating where the use is not constant but frequent, to avoid the annoyance of relighting, to prevent the waste occasioned by constant burning, and also to enable the use of a constant pressure of air to avoid the old and well-known foot-blower.

My invention is especially applicable for use in large factories and stereotype foundries where the use is not constant, but where it is used now instead of the soldering-iron for correcting imperfections in the plates after they come from the molds. When not in use, it is desirable to keep the flame constantly burning ready for instant use, but to automatically reduce the size of the flame to the minimum for the purpose of saving gas and also to prevent undue heating of the atmosphere, which is the case where a large number of such pipes are in use.

My invention is also equally applicable for dentists, jewelers, and others for soldering, brazing, &c.

A further object is to simplify existing devices of the kind; and the invention consists in providing means for permanently regulating the supply of air and gas relatively to each other, means for automatically lowering the flame and cutting off the supply of air, and at the same time enable the operator to instantly obtain the full supply of air and gas independently of each other or both simultaneously.

My invention is clearly illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved blowpipe, the valve-casing being shown in section with the valves open. Fig. 2 is a top plan view, partly in section, showing a modification. Fig. 3 is a detail sectional view showing the position of the valve-stem, the air-port being closed and the gas-port partially closed.

The gas and air tubes A and B, respectively, are adapted to be connected at one end with a suitable source of gas and air supply by the usual flexible hose connections. (Not shown in the drawings.) On one end of the gas-tube is formed a nozzle A' at an angle to the body of the tube, while the air-tube tapers at its discharge end and enters the nozzle concentrically at its top and terminates near its mouth, as shown in dotted lines, Fig. 1; but the gas and air tubes are preferably constructed of two parts, the receiving ends *a* and *b* and the discharge ends *a'* and *b'*. Each of these parts is brazed to a valve-casing C. The receiving and discharge ends *a* and *a'* of the gas-tube communicate through ports *c* and the parts *b b'* of the air-tube communicate through ports *c'*.

A plug-valve D, sliding transversely in the casing C, is provided with annular grooves *d d'*, preferably, though not necessarily, cone-shaped. The lower end of the valve D is provided with screw-threads *d²*, on which an adjusting-nut E is mounted, and on the top of the valve is a head D', between which and the top of the valve-casing C is mounted a coiled spring E'. The annular grooves *d d'* are preferably so situated on the valve in relation to the ports *c c'* that when the port *c'* is closed the port *c* will be only partly closed, as shown in Fig. 3. The object of this is to be able to completely shut off the air-supply when the blowpipe is not in use and only partially close the gas-port, so as not to extinguish the flame, but to only lower it. By means of the spring E' the valve-stem is normally held in a raised position and both the gas and air ports are closed; but when it is desired to only reduce the flow of gas and shut off the flow of air the nut E on the lower end of the stem is so adjusted as to prevent

the stem from rising above a certain height and completely covering the gas-port *c*. To turn on the full force of the gas and air, all that is necessary is to depress the valve D by means of the head D', thereby compressing the spring E'. By removing the pressure from the head the valve is returned to its normal position by means of the spring; but the valve may be held depressed by simply adjusting the nut E on the screw-threads *d*². Means may also be employed, if desired, for independently regulating the supply of gas and air relatively to each other by means of ports *f*, controlled by spring-actuated valves F, (shown in Fig. 2;) but I prefer the construction above described, wherein the supply of gas and air is operated simultaneously.

A hook G is formed on the air-tube for convenience in hanging the blowpipe when not
20 in use.

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

1. A blowpipe comprising a valve-casing
25 having ports through the same, air and gas
pipes mounted in the ports, and a grooved
spindle-valve adapted to move longitudinally
in said casing and project beyond either end
thereof, for the purpose of controlling the op-
30 eration of said valve.

2. A blowpipe comprising a valve-casing having ports through the same, air and gas pipes mounted in the ports, a grooved spindle-valve adapted to move longitudinally in said casing and to close both ends thereof, and provided with circumferential grooves intermediate its ends adapted to register with the ports, both ends of said valve projecting beyond the casing, and means on one end of the valve to regulate its throw.

3. A blowpipe comprising a valve-casing formed of a single piece of metal and having ports through the same, air and gas pipes mounted in said ports, a spindle-valve formed

of a single piece adapted to move longitudinally in said casing to close said ports and both ends of the casing and provided with cone-shaped circumferential grooves adapted to register with the ports, means for depressing said valve, means outside the casing for returning the valve and means on one end of the valve outside the casing to regulate the throw, substantially as described.

4. A blowpipe comprising a gas-tube having a nozzle on one end, an air-tube having one end concentrically mounted in said nozzle and its body portion parallel with the gas-tube, a valve-casing connecting said tubes and provided with separate ports leading into each tube, a plug-valve mounted in the casing and provided with annular grooves adapted to register with the ports, a head on the top of the valve, a spring interposed between the head and valve-casing, and a nut on the end of the valve adapted to regulate the degree of closure, for the purpose specified.

5. A blowpipe comprising a gas-tube, a nozzle mounted thereon, an air-tube having one end concentrically mounted in said nozzle and its body portion parallel with the gas-tube, 70 a valve-casing connecting said tubes and provided with separate ports leading into each tube, a plug-valve mounted in the casing and provided with annular cone-shaped grooves adapted to register with the ports, a head on 75 the top of the valve, a spring interposed between the head and valve-casing, a nut on the end of the valve adapted to regulate the degree of closure and a valve on each tube to regulate independently the quantity of air 80 and gas, for the purpose specified.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ELMER JOHNSON.

Witnesses:

B. W. SUMMERS,
T. H. YEAGER.