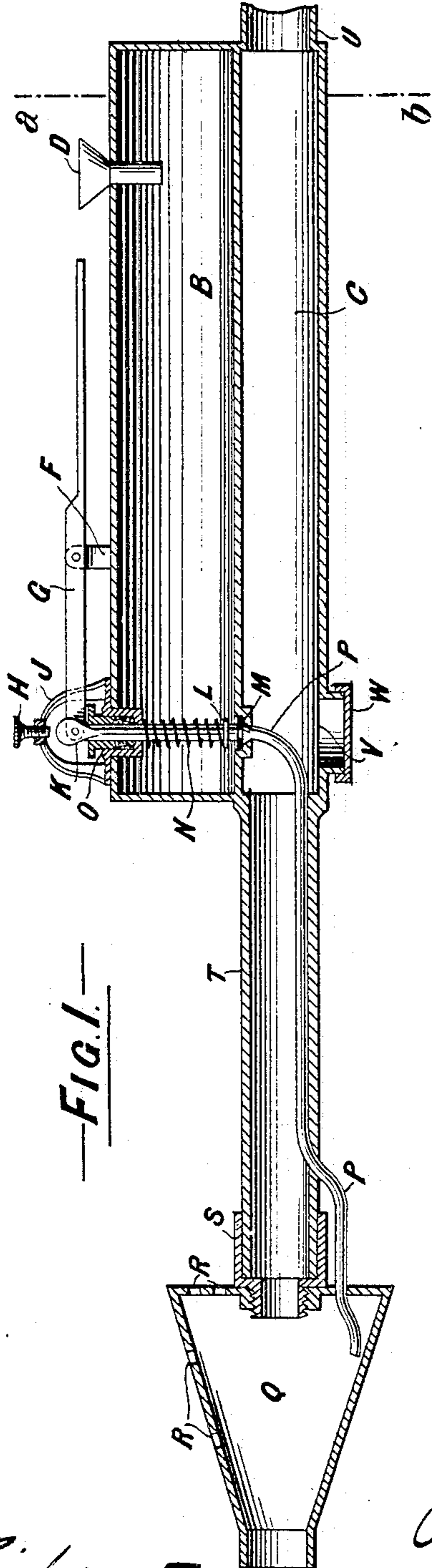


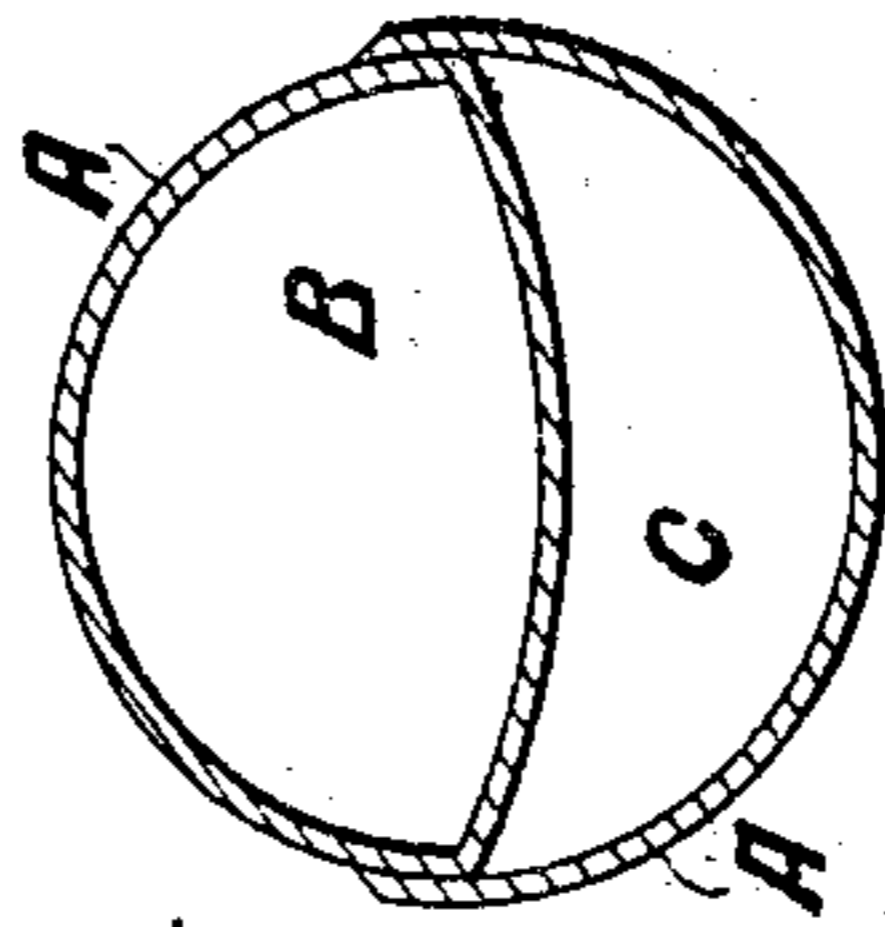
A. H. O. JACKSON.
SPIRIT BLOWPIPE.

APPLICATION FILED MAR. 7, 1904.

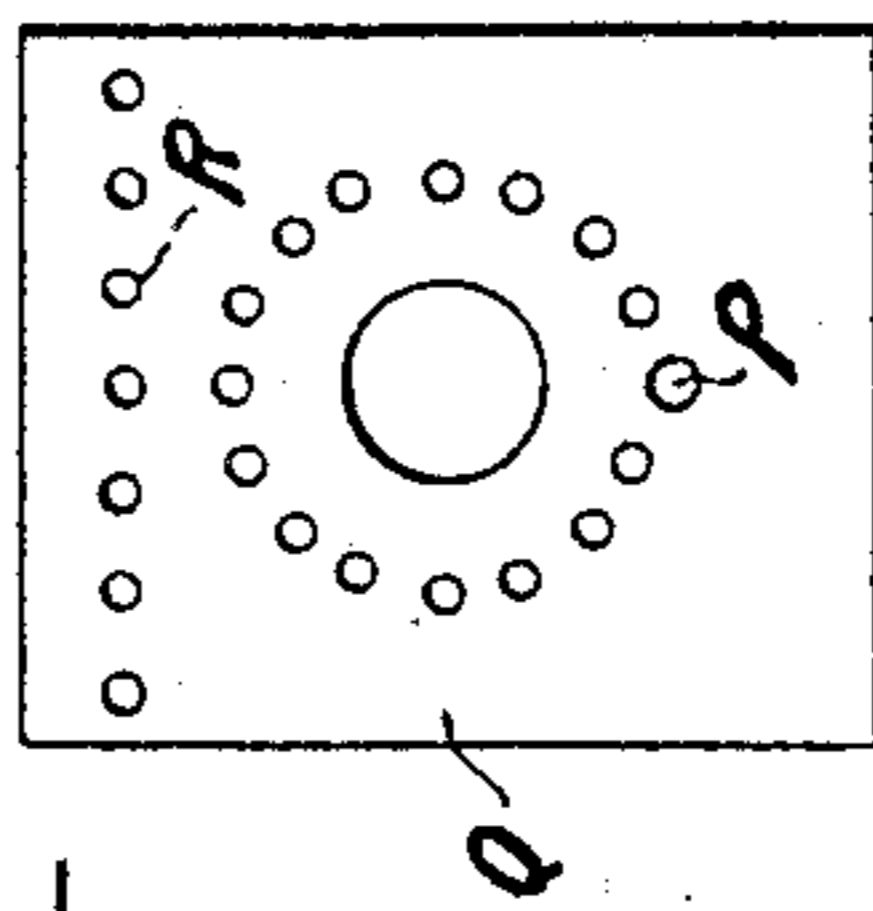
2 SHEETS—SHEET 1.



—FIG. 1.—



—FIG. 3.—



—FIG. 4.—

Witnesses.
Stephen Kinsten
Fred W. Engert.

Inventor.
A. H. O. Jackson
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his Attorneys

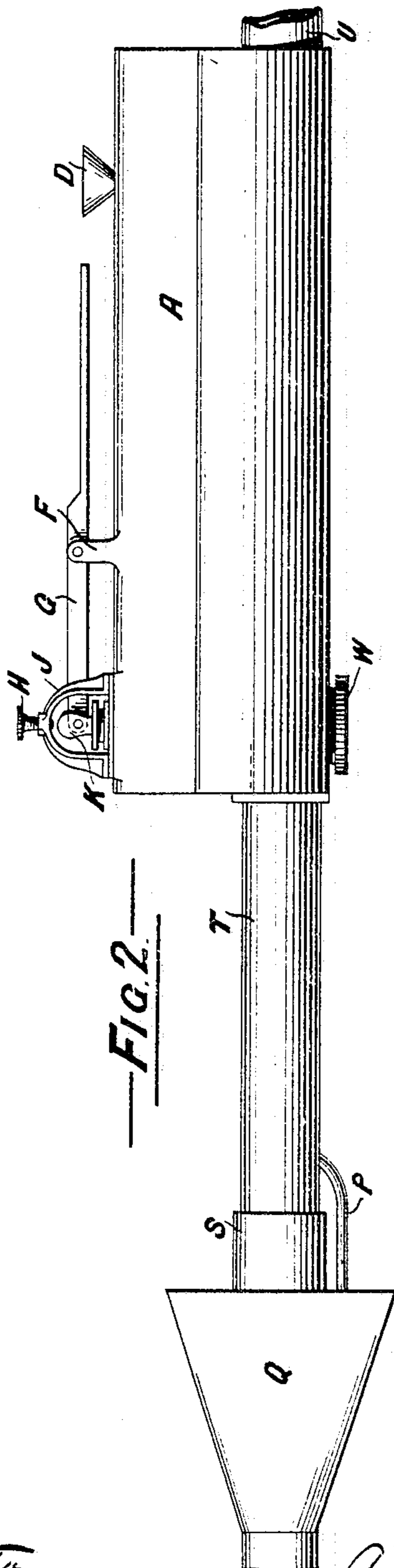
No. 782,136.

PATENTED FEB. 7, 1905.

A. H. O. JACKSON.
SPIRIT BLOWPIPE.

APPLICATION FILED MAR. 7, 1904.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

ALBERT HENRY OAKLEY JACKSON, OF BROOKWOOD, ENGLAND.

SPIRIT-BLOWPIPE.

SPECIFICATION forming part of Letters Patent No. 782,136, dated February 7, 1905.

Application filed March 7, 1904. Serial No. 196,940.

To all whom it may concern:

Be it known that I, ALBERT HENRY OAKLEY JACKSON, a subject of the King of Great Britain, and a resident of Brookwood, in the county of Surrey, England, have invented new and useful Improvements in Spirit-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.

This invention relates to an apparatus for safely producing a flame of great heat from a mixture of inflammable spirit, preferably the spirit known as "petroleum," and cold air. As petroleum vaporizes naturally, it will vaporize to a greater extent in a given space under a forced draft of air, and so form a readily-combustible vapor burning at a very high temperature, which may be used for many purposes where great heat is required to be concentrated upon a given spot, particularly for brazing metals. An advantage of this apparatus is that the mixture of air and petroleum readily ignites by a light being applied without any heating of the nozzle, as is necessary with other apparatus using spirit.

According to this invention I construct a blowpipe for petroleum and air in such a manner that it will utilize the forced draft of cold air to cool every part holding the petroleum, it being necessary for safety purposes when using petroleum that the reservoir of petroleum and the feed-pipe of same to the burning-nozzle be kept perfectly cool. The shape of the blow-pipe may be varied to suit particular purposes of use and be made portable or fixed without in any way departing from the invention.

To enable my invention to be fully understood, I will proceed to describe the same with aid of the accompanying drawings, in which—

Figure 1 illustrates a sectional view of a complete portable apparatus of usual construction; Fig. 2, an elevational view of same; Fig. 3, a cross-sectional view on line *a b* of Fig. 1, and Fig. 4 a view of rear end nozzle.

A represents the body of the apparatus to be held by hand of operator. This body is divided into two portions B and C. A suitable

manner of forming this body is first to make the B portion and then solder onto same the C portion. The B part is the petroleum-reservoir, and the C part for the passing draft of cold air to enable the latter to give a cooling effect to the whole bottom of the petroleum-reservoir B.

D is the filling-nozzle for the petroleum, internally fitted with a screw-stopper, with a small air-hole through same.

Near the front end of the body A is fitted the special valve arrangement preferred to be used for feeding the petroleum to the burning-nozzle; but any other form of valve suitable for the purpose can be used. It is essential for proper brazing that the heat should be varied, and by this apparatus this variation is effected by varying the quantity of petroleum to the burning-nozzle.

Connected to the top of the reservoir B is a short bracket F, to which is pivoted a lever G, to be depressed by the contraction of the fingers of the operator holding the body. This movement of the lever operates the valve to regulate the supply of petroleum, as herein-after explained.

To prevent accidentally an undue quantity of petroleum being passed and to lock the valve arrangement when the apparatus is not in use if the reservoir contains spirit, I provide a lock set-screw H, carried by a bracket J, secured to top of reservoir B. The distance the valve can be opened by depressing the lever G is set by raising more or less the point of the screw H. The front end of the lever G is pivoted to the top of a plunger K, the bottom of which is round and flat-faced and bears upon a packing-piece or washer L, of leather, held in a recess M in the bottom of the reservoir B. The bottom of the recess and the washer have a small hole through same for outlet of petroleum. The plunger K is normally held down on the washer to cut off the outlet of petroleum by the spiral spring N. To prevent leakage of petroleum at top of plunger, the latter is fitted with a stuffing-box O of usual construction. Connected to the under side of the small outlet for the petroleum is the feed-pipe P to carry and feed the petroleum into the burning-nozzle Q. The rear

end of the latter is rectangular, and the body part verging into round at the burning end. This part may be thickened by an extra band of metal. This nozzle is made of sheet-steel.

5 The top and back of nozzle are drilled with small holes R to admit supplementary streams of cold air to form eddies within the nozzle, which assists the vaporizing of the petroleum and its mixture with the air, thereby increasing the heat of the flame produced from the nose of the nozzle. The latter has attached to the back a reduced socket S, by which it is fitted upon the forced-draft pipe T, through which also passes the petroleum-supply pipe 15 P, thereby keeping this pipe and the petroleum in it cool. This pipe T is connected to the front of the air-chamber C. The air enters at the back end through the pipe U, connected to a suitable supply of air under pressure. V 20 is an opening in the bottom of air-chamber C to enable the interior to be inspected. This opening is closed by screwed cap W.

Having now described my invention, what I desire to secure by Letters Patent of the United 25 States is—

1. A compound blowpipe comprising a spirit-reservoir, a compressed-air conduit adjacent thereto, a burning-nozzle having a contracted outlet attached to said air-conduit provided with perforations in one of its walls for admitting the outside air to the interior thereof, and means for supplying spirit to said nozzle, substantially as described. 30

2. A compound blowpipe comprising a 35 spirit-reservoir, a compressed-air conduit adjacent thereto, a burning-nozzle attached to

said air-conduit tapering toward its outlet and provided with a series of perforations in its rear wall surrounding said air-conduit, and means for supplying spirit to said nozzle, substantially as described. 40

3. A compound blowpipe comprising a spirit-reservoir, a compressed-air conduit adjacent thereto, a burning-nozzle attached to said air-conduit tapering toward its outlet provided with perforations in the rear and side walls thereof, and means for supplying spirit to said nozzle, substantially as described. 45

4. A compound blowpipe comprising a suitable tank, a centrally-arranged partition therein dividing said tank into spirit and air chambers, a burning-nozzle having a contracted outlet connected to said air-chamber provided with perforations in one of its walls for admitting the outside air to the interior thereof, 50 means for supplying spirit to said nozzle and a valve for regulating the amount of said supply, substantially as described. 55

5. A compound blowpipe comprising a suitable tank, a centrally-arranged partition dividing said tank into spirit and air chambers, an air-pipe leading from said air-chamber, a perforated burning-nozzle attached thereto, a spirit-supply pipe leading from said partition to said burning-nozzle lying within said air-pipe for substantially the whole of its length, and means for regulating the supply of spirit, substantially as described. 60 65

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Witnesses:

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