

A. H. STOW.
GASOLINE FLAME PROJECTOR.

APPLICATION FILED JAN. 23, 1903.

2 SHEETS—SHEET 2.

Fig. 3

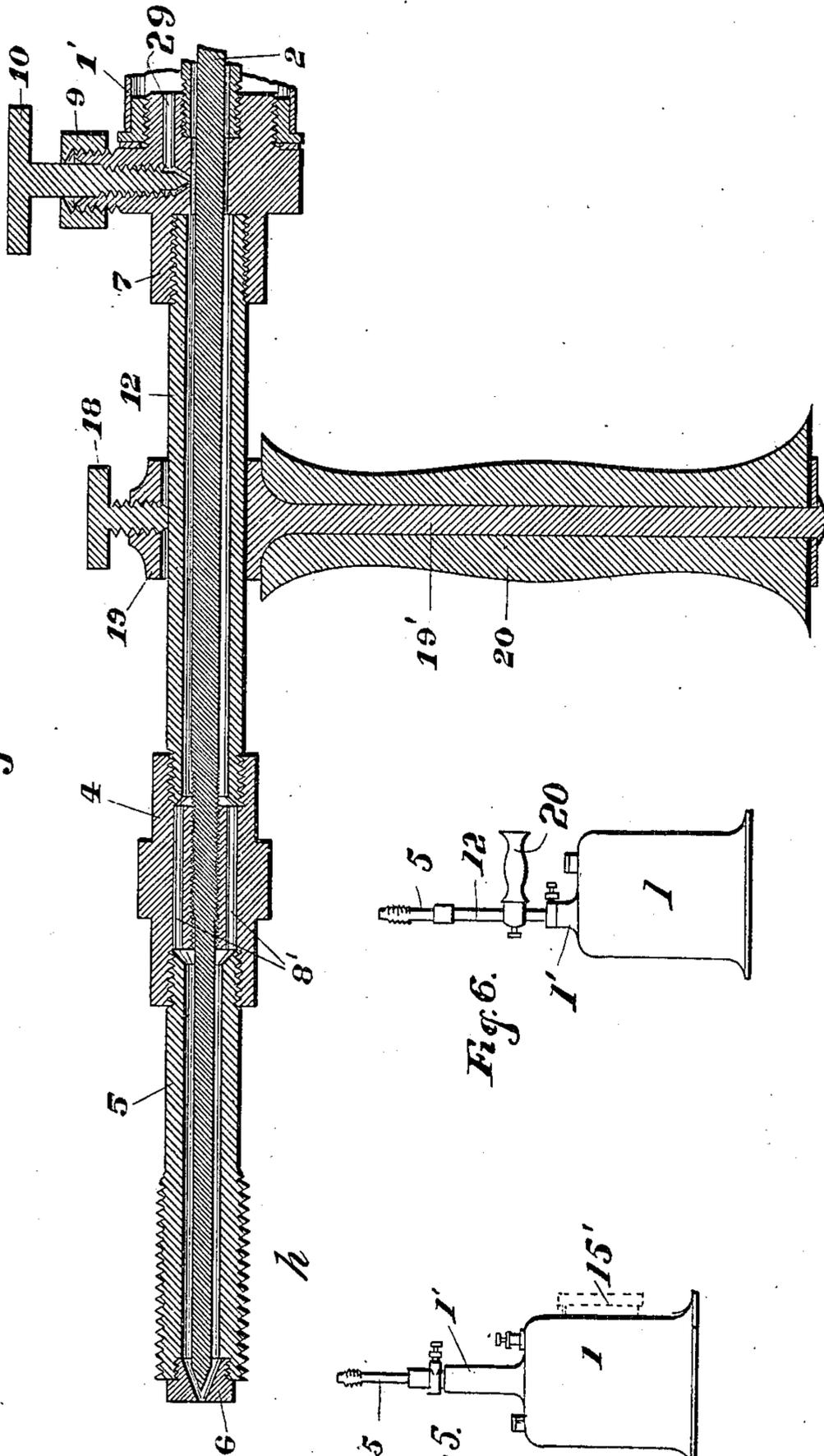


Fig. 6

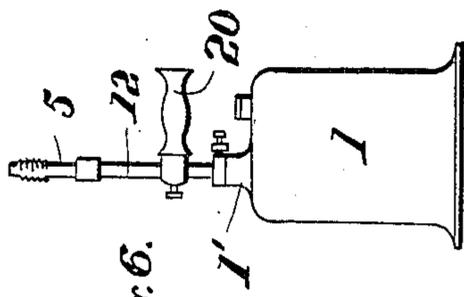


Fig. 5

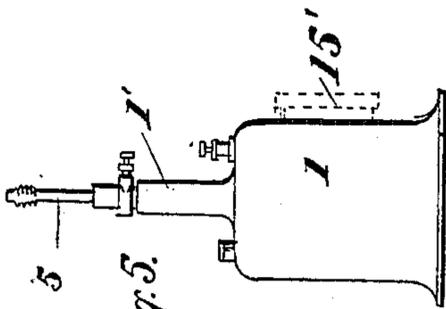
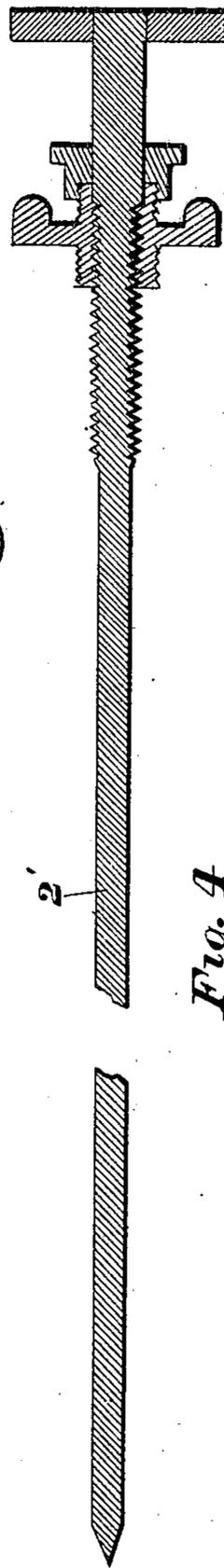


Fig. 4



WITNESSES:

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AUDLEY H. STOW, OF HUNTER, WEST VIRGINIA.

GASOLENE-FLAME PROJECTOR.

No. 825,619.

Specification of Letters Patent.

Patented July 10, 1906.

Application filed January 23, 1903. Serial No. 140,283.

To all whom it may concern:

Be it known that I, AUDLEY H. STOW, a citizen of the United States, residing at Hunter, in the county of Mingo and State of West Virginia, have invented certain new and useful Improvements in Gasolene-Flame Projectors, of which the following is a specification.

This invention relates to that class of heaters which produce a flame from the combustion of gasolene or gasolene-vapor projected through a nozzle.

The object of the invention is to produce an apparatus which may be used in any position to project a gasolene-flame; also, to produce an apparatus which can be easily handled in different positions with a minimum of muscular exertion; also, to improve the construction and operation of mechanism used for projecting a flame, as in soldering, paint-breaming, igniting jets and fuses, and for similar purposes.

Figure 1 is a vertical central section of the front part of a burner according to my invention, and Fig. 2 is a similar section of the rear part. Fig. 3 is a vertical central section of the front or nozzle end of a modification. Fig. 4 is a broken section of needle-valve. Fig. 5 is a side elevation of the device of Figs. 1 and 2. Fig. 6 is an elevation of the entire device on the plan of Fig. 3.

Gasolene-flame projectors, as generally constructed, have a tank for containing gasolene, a plug for filling, means for producing an air-pressure in the tank, and a needle-valve controlling the flow of gasolene. Such apparatus is generally defective in operation, because the device will generally fail to work properly except when the axis of the needle-valve is horizontal.

In my device 1 indicates a tank for gasolene. This has a forward extension or tube 1', which may serve as a hand-grasp or as a means for attaching a handle. The tube 1' contains a smaller internal tube or conduit 3, which is attached to the coupling-piece 14 at the front of the extension-tube 1' and extends nearly to the bottom of the tank proper. This tube 3 may be called the "long-needle" tube.

The coupling-piece 14 is screwed into a cap or bushing *a* at the front of tube 1' and has a threaded socket *b* for generator-tube 5. Screwed into the front of tube 5 there is a valve-piece 6, which has a conical seat for the long-needle valve.

The long-needle-valve spindle 2 passes through the bottom of the tank (through a stuffing-box 22) and thence extends inside the tube 3 to the thread 7 in coupling-piece 14, from which the needle extends in reduced diameter through the generator-tube 5 to valve-seat 6. The needle-valve can be operated by finger-piece *c* from outside the tank to open or close the valve more or less. When pressed forward, the needle-valve fits tightly into valve-seat 6. When drawn back, it permits the passage of gasolene or gasolene-spray alongside the needle-spindle through the front opening of the valve-seat.

For convenience the tank 1 preferably has a recessed bottom *d*, in which the finger-piece *c* is inclosed. The tank can then rest on its base on a flat surface.

The stuffing-box 22 is preferably attached to a removable screw-plug 30, having wings 21, by which said plug may be removed from the bottom of the tank. This plug 30 has a projecting wing-collar 23 to hold the bottom of tube 3 in place. The tube 3 may be perforated near its base, as at *e*.

An air-pump 15 affords means for producing air-pressure in the tank, and a screw-plug 16 is a means for supplying the tank with gasolene.

The long needle 2 has a screw-threaded section *f* engaging with a female thread *g* on the interior of the coupling-piece 14.

By-passages 8 permit the flow of gasolene from tube 3 to the generator-tube 5. Thus if the tank be in upright position or in any position with the valve-seat 6 above the opening *e* into tube 3 air-pressure within the tank will force gasolene through tube 3, by-passages 8, generator-tube 5, and so through the opening 6 whenever the withdrawal of the needle-valve permits such emission.

To provide for the passage of gasolene when the tank is inclined so that the nozzle is below the base, a by-passage 29 is formed in coupling-piece 14 and leading to passage 8. This passage is controlled by shut-off valve 10, which has threaded engagement with a radial opening in piece 14 and can be turned out or in to control the opening 29. A stuffing-box 9 preferably surrounds the stem of this shut-off valve.

When the tank is inclined so that the nozzle is below the entrance to tube 3 at the bottom of the tank, the fluid contents of the tank naturally run to the lower part of the tank, and so into the tube 1'. Then by opening

passage 29 air-pressure in the tank will force the gasolene through passage 29, and so to the nozzle, the escape of air through tube 3 being prevented by the liquid itself.

5 The nozzle end *h* of tube 5 is screw-threaded for the attachment of a soldering-piece, a burner, or any other fixture desirable.

In the modification shown in Fig. 3 an extension-tube 12 is shown as connected to the
10 coupling-piece 14. This tube 12 has a second coupling-piece 4 connected thereto, and by-passages 8' in this coupling convey gasolene through the coupling past the point of screw-threaded engagement of the needle
15 therewith.

A handle-piece 20, connected to a sleeve-collar 19, may be attached to the extension-piece 12 and secured in any position by set-screw 18. Such a handle might, of course, be
20 attached to the extension 1', but as the set-screw might indent a thin tube it is better to put in a heavy extension-piece, as 12, than to make the extension 1' heavy enough to resist such compression.

25 As shown in Fig. 4, the long-needle valve may be so modified as to engage with the plug at the base of the tank instead of near its front end.

It is not material what form of tank is
30 adopted, save for convenience. In Figs. 1 and 5 a cylindrical tank is indicated with the extension 1' concentric therewith. In Fig. 6 the extension is eccentric. This throws the gasolene-supply at the side of the tank
35 which is lowest when the tank is inclined.

In Fig. 5 the air-pump 15' is shown outside the tank, where it may serve as a handle.

From the foregoing it will be understood that my invention contemplates an apparatus
40 for use in projecting a gasolene-flame in which the gasolene-supply may be received from a plurality of openings, which openings may be controlled according to position; also, that the invention contemplates changes
45 in construction within the scope of the claims.

What I claim is—

1. A gasolene-flame projector having a portable tank, a tube extending through the
50 tank axially and provided with a nozzle substantially in line with the axis of the tank, a plurality of passages from the tank to the nozzle-tube and from different parts of the tank, and separate valves, extending out-

side the tank, controlling the entrances to said nozzle-tube, all combined. 55

2. In a gasolene-flame projector, the combination of a portable tank, a tubular extension, a needle-valve seat in said extension, a needle-valve extending from said valve-seat
60 outside the tank, a coupling-piece for said extension having a separate connection to the tank, and a separate valve controlling said connection, all combined.

3. In a gasolene-flame projector, the combination of a tank having a forwardly-pro-
65 jecting tube, a smaller needle-tube attached to said forwardly-projecting tube and extending within said tube and nearly to the bottom of the tank, a needle passing through
70 proper packing in the base of the tank and through said needle-tube, and a generator-tube in front of the needle-tube and having a seat for the needle at its front end.

4. A gasolene-tank having a forwardly-projecting tube and a nozzle connected there-
75 to, a needle-tube within the said forwardly-projecting tube and a needle within said tube and projecting to the nozzle, a stuffing-box in the base of the tank and inclosed in a recess, the needle passing through the stuffing-
80 box and having a handle within the recess in the tank, all combined.

5. A gasolene-tank having a forwardly-projecting tube, a needle-tube inclosed within
85 the first-named tube and extending nearly to the bottom of the tank, a valve controlling a passage between said first-named tube and the needle-tube, in front of the tank, and
90 controllable from outside the tank, and a needle within the needle-tube and extending through the tank, all combined.

6. In a gasolene-flame projector and in combination, a tank having a forwardly-projecting tube and nozzle with a by-pas-
95 sage, an internal tube from the nozzle leading nearly to the bottom of the tank, a needle-valve operating from outside the tank and controlling the nozzle-opening, and a valve operable from outside the tank and
100 controlling the by-passage.

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

AUDLEY H. STOW.

Witnesses:

N. LAFON,
A. P. PERUN.