

Nov. 4, 1930.

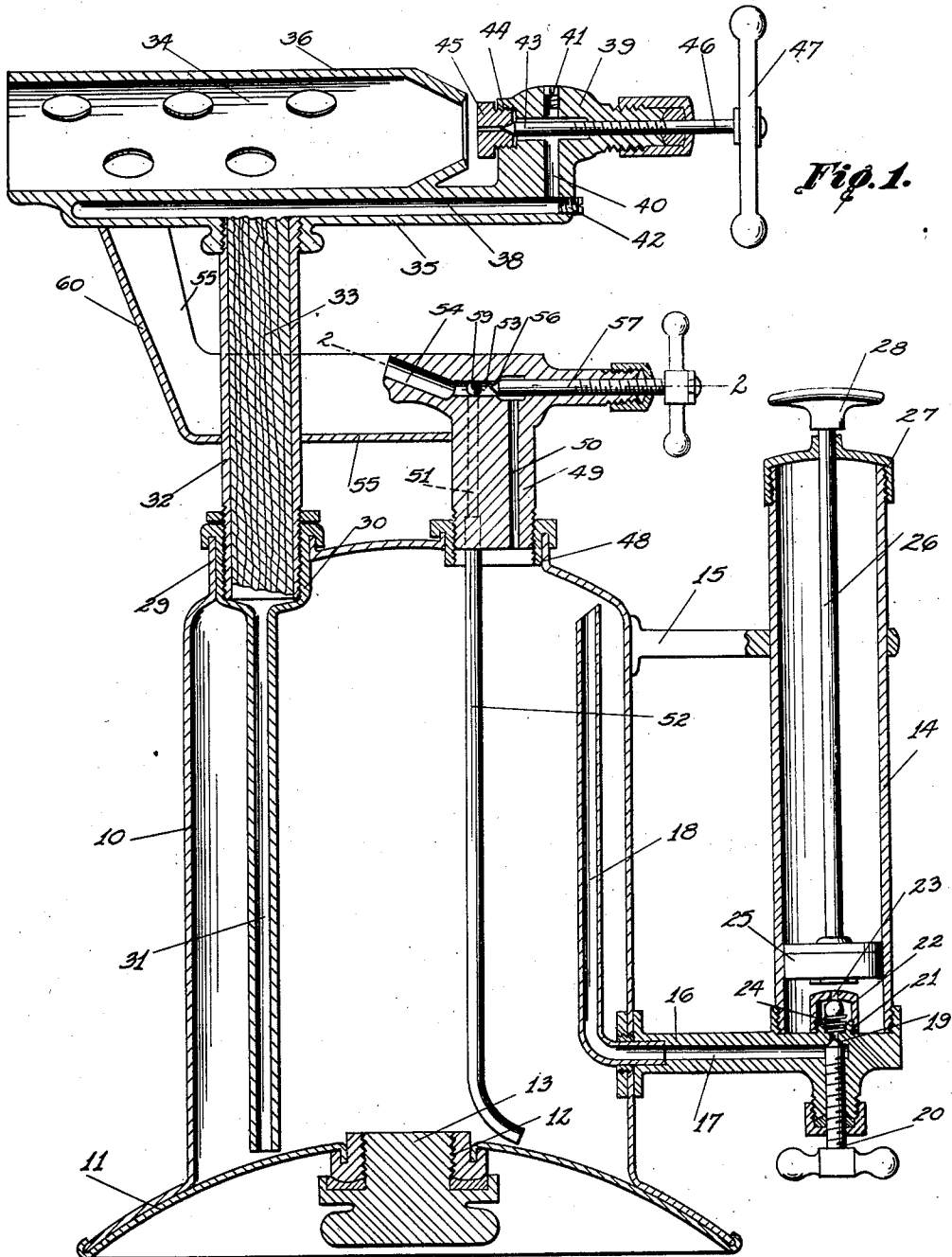
H. BIRNBAUM

1,780,152

BLOWTORCH

Filed Feb. 18, 1929

2 Sheets-Sheet 1



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Witness:
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Fig. 2.

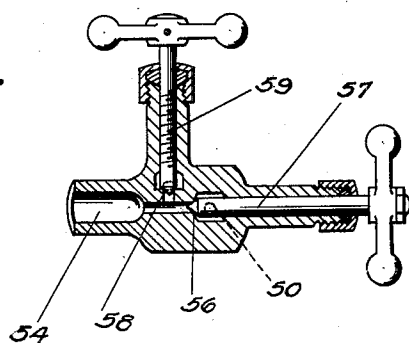
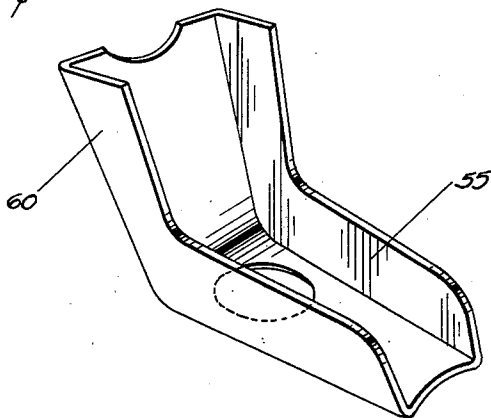


Fig. 3.



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UNITED STATES PATENT OFFICE

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BLOWTORCH

Application filed February 18, 1929. Serial No. 340,893.

This invention relates to blow torches such as those employing gasoline as a fuel and used by tinnermen, painters, plumbers and other mechanics, the object of the invention being to provide a blow torch of novel construction whereby generation of the liquid fuel into a readily combustible vapor or gas may be effected in a much shorter time than is required in the well known types.

Another object of the invention is to provide a device of this character having novel control means for the air and fuel whereby the pressure within the reservoir may be permitted to escape, when use of the device is not desired, thereby avoiding any necessity for screwing in the fuel shut off valve so tightly as to cause possible damage to the seat.

Another object is to provide a torch having a priming tube and wick of peculiar arrangement and formation, the burner proper being carried by the wick tube and detachable therefrom, in case of necessity, without disturbing any of the other parts of the apparatus.

Still another object is to provide a device of this type having a deflector arranged to insure impingement of the priming flame upon and against the burner for generating the vapor or gas very expeditiously.

An additional object is to provide a torch which will be simple and inexpensive in manufacture, easy to operate and adjust, positive in action, efficient and durable in service, and a general improvement in the art.

With the above and other objects and advantages in view, the invention consists in the details of construction and arrangement of parts to be hereinafter more fully described and claimed, and illustrated in the accompanying drawing in which:

Figure 1 is a vertical section through the device,

Figure 2 is a detail section through a control valve, and

Figure 3 is a perspective view of the deflector.

Referring more particularly to the drawing the numeral 10 designates a tank or re-

ceptacle of suitable size, shape and material and having a concaved bottom 11 at the center of which is a filling opening 12 normally closed by a removable plug 13. This tank or receptacle is intended to contain liquid fuel, preferably gasoline. Located at one side of the tank is a pump including a barrel 14 connected with the tank by arms or brackets 15 and 16, the latter of which is formed with a passage 17 with which communicates a tube or pipe 18 located within the tank and terminating near the top thereof. The passage 17 leads to a valve seat 19 with which cooperates a threaded adjusting valve 20. Surrounding the valve seat 19 is an upstanding flange 21 carrying a cage 22 apertured at 23 and containing an upwardly spring pressed ball 24 normally closing the aperture 23. Slidably mounted within the barrel 14 is a plunger or piston 25 carried by a plunger rod 26 slidable through a cap 27 at the top of the barrel and carrying a handle 28. By reciprocating the plunger 25 it is clear that air may be pumped into the tank to any desired pressure.

Near one side the top of the tank is provided with an opening 29 within which is seated a cup member 30 carried by the upper end of a fuel tube 31 which extends down to a point near the bottom of the tank. Screwed into this cup member 30 is a tube 32 containing a wick 33 formed preferably as a wire cable.

The burner, designated generally by the numeral 34, is detachably mounted on the wick tube and includes a hollow body member 35 on which is formed a shell 36 perforated at intervals as shown at 37 as is customary. The wick 33 is in communication with the chamber 38 in the hollow bottom of the burner. Formed upon the bottom portion 35 of the burner is an upstanding projection 39 formed with a passage 40 communicating with the chamber 38, the upper end of this passage being closed by a removable screw plug 41. There is also provided a screw plug 42 normally closing one end of the chamber 38. These plugs 41 and 42 may be removed when cleaning of the interior is necessary. The projection 39 is also formed with a bore

43 intersecting the passage 40 and opening out into a chamber or recess 44 into which is screwed a removable burner tip 45 controlled by means of an adjustable needle valve 46 which is threaded into the projection 39 and which is equipped with a handle 47.

The top of the tank 10 is provided with a flanged opening 48 within which is screwed a body member 49 formed with passages 50 and 51 into the latter of which leads a fuel tube 52 which extends downwardly to a point near the bottom of the tank. The body 49 is formed with a passage 53 discharging into a cup 54 beneath which is located one end of a deflector 55 of angular formation engaged upon the tube 32. The passage 50 communicates with the bore 53 through a valve seat 56 controlled by a needle valve 57. The passage 51 communicates with the bore 53 through a valve seat 58 controlled by a needle valve 59.

The deflector or baffle 55 is an important feature of the invention and it will be observed that one end thereof, indicated at 60, is inclined upwardly and terminates adjacent the burner 34. It should be noted that the above described parts may be individually disassembled without necessitating removal of all the parts and, in particular, the burner may be detached and cleaned without disturbing the control valves or deflector.

In the operation, the tank is initially partly filled and the pump operated to supply air pressure within the tank. To effect starting, the valve 59 is opened slightly whereupon the air pressure within the tank will cause a small amount of the fuel to be forced out through the tube 52 and passage 51 into the cup 54 where the fuel is ignited. By opening the valve 57 slightly a blast is produced and the flame will impinge against the inclined end portion 60 of the deflector and consequently be directed against the underside of the burner and against the tube 32 so that the wick will be heated to such an extent that the fuel saturating the same will be vaporized. The vapor of course enters the chamber 38 and when the valve 46 is opened it will pass out through the tip 45 and be ignited at the burner in a well known manner. After priming in this manner the valves 57 and 59 may be closed or not as preferred. When use of the device is no longer desired the air pressure may be relieved by opening the valve 57, the valve 59 being left closed so that no fuel will be drawn out.

From the foregoing description and a study of the drawings it will be apparent that I have thus provided a simply constructed, inexpensive and highly efficient device for the purpose specified, the advantages being readily apparent to one skilled in the art without further explanation.

While I have shown and described a preferred embodiment of the invention, it should

be understood that I reserve the right to make such changes in the form, construction and arrangement of parts as will not depart from the spirit of the invention or the scope of the subjoined claims.

Having thus described the invention, I claim:

1. A blow torch comprising a closed receptacle constituting a fuel reservoir, pump means carried thereby and communicating therewith for placing the fuel under pressure, a tube mounted within the receptacle and extending from the top to a point near the bottom thereof, the upper end of said tube being enlarged, a wick tube detachably mounted within the enlarged upper end of said first named tube and containing a wick, a burner structure carried by the upper end of said wick tube and including a horizontally elongated generating chamber and a passage therebeneath, the passage communicating with the upper end of the wick tube, a valve nozzle forming part of the burner structure located beyond one end of the generating chamber and communicating with said passage, and a priming nozzle mounted on the receptacle in spaced relation to the wick tube and provided with a valve controlled outlet passage to which is connected a tube leading into and terminating near the bottom of the receptacle.

2. A blow torch comprising a closed receptacle constituting a fuel reservoir, pump means carried thereby and communicating therewith for placing the fuel under pressure, a tube mounted within the receptacle and extending from the top to a point near the bottom thereof, the upper end of said tube being enlarged, a wick tube detachably mounted within the enlarged upper end of said first named tube and containing a wick, a burner structure carried by the upper end of said wick tube and including a horizontally elongated generating chamber and a passage therebeneath, the passage communicating with the upper end of the wick tube, a valve nozzle forming part of the burner structure located beyond one end of the generating chamber and communicating with said passage, a priming nozzle mounted on the receptacle in spaced relation to the wick tube and provided with a valve controlled outlet passage to which is connected a tube leading into and terminating near the bottom of the receptacle, and a substantially L-shaped deflector extending from said priming nozzle to the under side of the burner structure and apertured for the passage of the wick tube.

In testimony whereof I affix my signature.

HENRY BIRNBAUM.

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