Dec. 27, 1932. M. LAPANJA 1,892,467

CARBURETOR, BLOW TORCH, AND SOLDER MELTER

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Fig. 2.

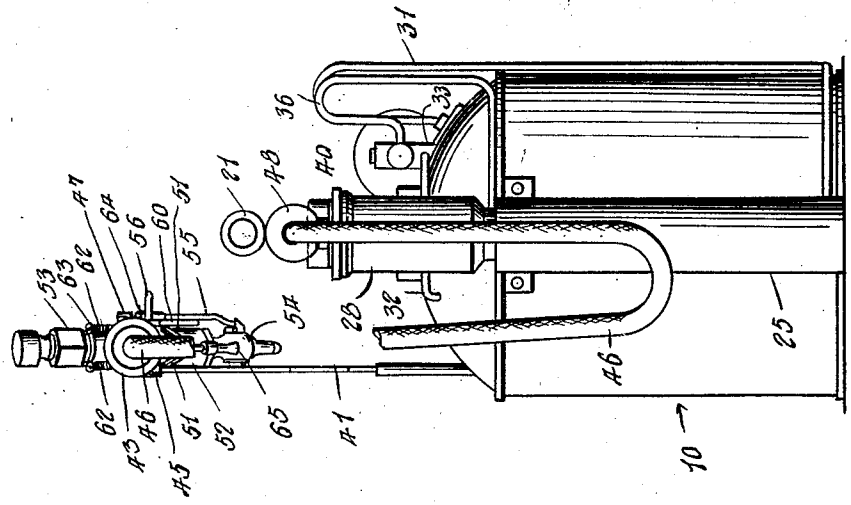
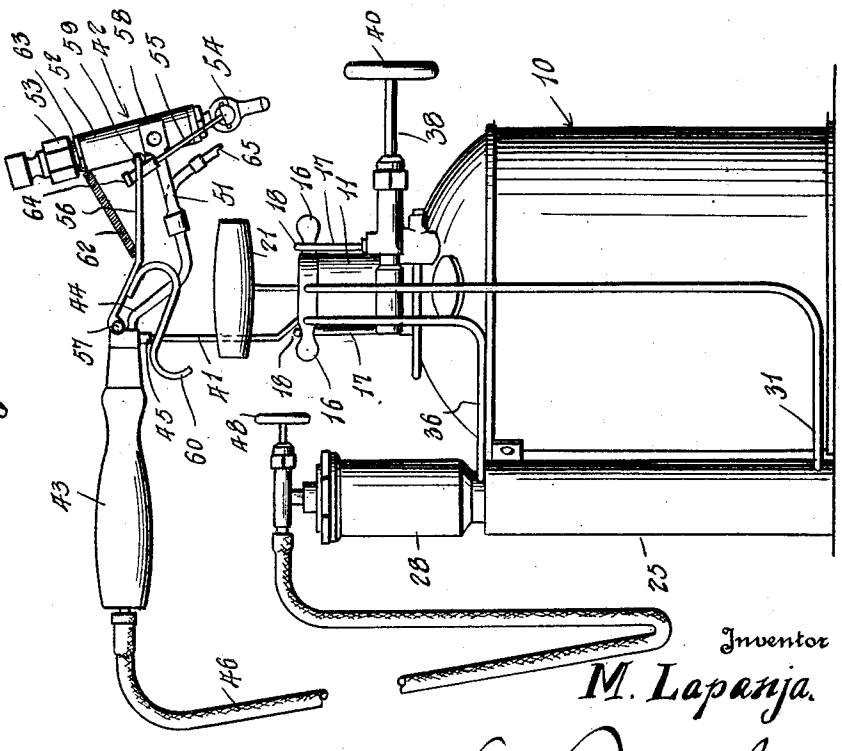


Fig. 1.



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CARBURETOR, BLOW TORCH, AND SOLDER MELTER

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Fig. 4.

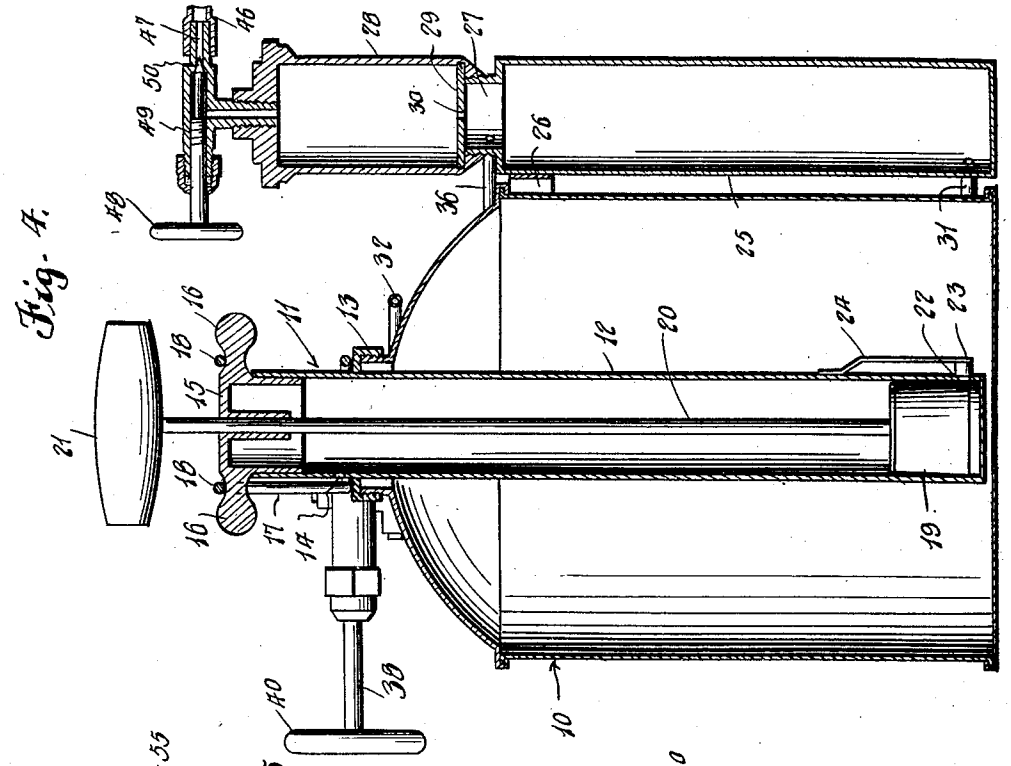


Fig. 3.

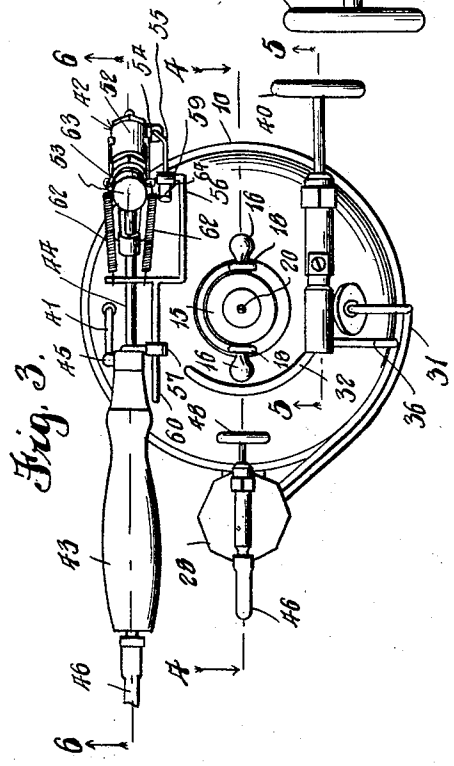
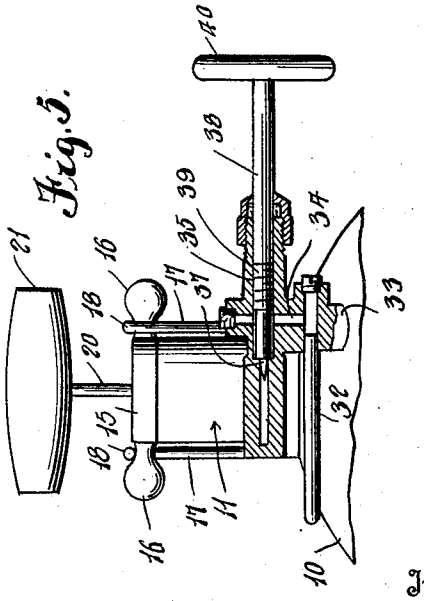


Fig. 5.



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CARBURETOR, BLOW TORCH, AND SOLDER MELTER

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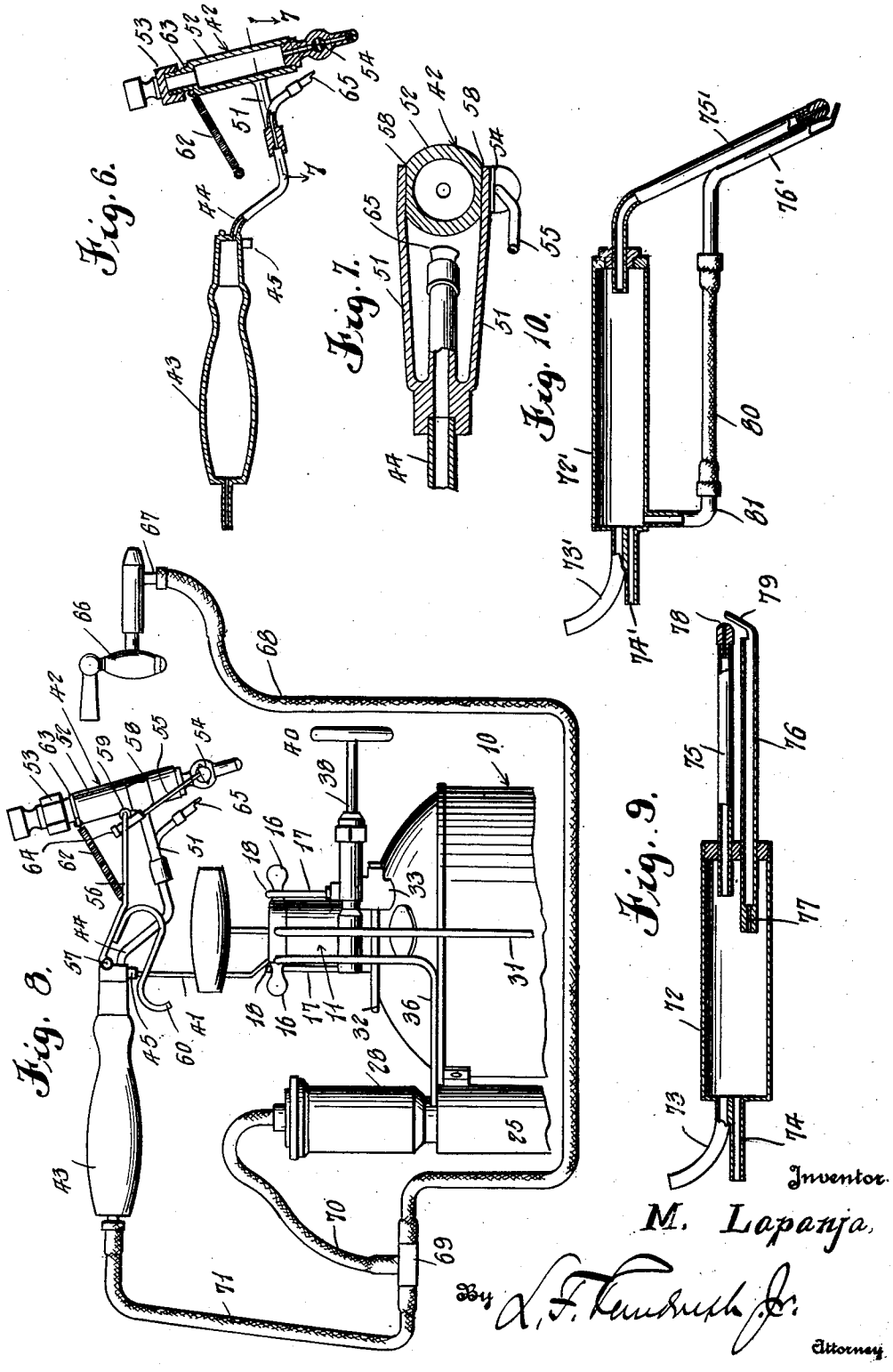

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UNITED STATES PATENT OFFICE

MATHOD LAPANJA, OF CANTON, OHIO

CARBURETOR, BLOW TORCH, AND SOLDER MELTER

Application filed January 31, 1930. Serial No. 424,959.

This invention relates to a device or unit constituting a carburetor and means whereby the same may operate as a blow torch or as a solder melter and which may use liquid fuel or gas.

One important object is to provide a construction wherein a manually operable pump furnishes the air for carbureting purposes and also the air which supplies the requisite pressure.

The more specific objects and advantages will in part be pointed out and otherwise be obvious in the consideration of the description following taken in connection with accompanying drawings illustrating operative embodiments.

In said drawings:—

Figure 1 is a view in elevation showing the device in form adapted to be used as a solder melting device,

Figure 2 is an elevation taken at a right angle to Figure 1,

Figure 3 is a plan view of the device of Figure 1,

Figure 4 is a vertical sectional view taken on the line 4—4 of Figure 3,

Figure 5 is a vertical sectional view taken on the line 5—5 of Figure 3,

Figure 6 is a vertical sectional view taken on the line 6—6 of Figure 3,

Figure 7 is a cross sectional view taken on the line 7—7 of Figure 6,

Figure 8 is a fragmentary elevation showing the device as adapted to use illuminating gas as fuel,

Figure 9 is a fragmentary longitudinal sectional view through a blow torch, and

Figure 10 is a fragmentary sectional view taken through a modified form of blow torch.

Referring specifically to the drawings, 10 designates a tank or receptacle of suitable size and shape which is used as a reservoir for air under pressure. Disposed axially of the tank 10 is a pump generally designated 11 the same being of a suitable manually operable type. This pump includes a barrel 12 which is fastened axially within the tank 10 and extends for a distance above the same, passing through a thickened collar 13 on the tank and above the latter having one or more ports 14 communicating with the atmosphere. A removable closure 15 is provided for the pump, the same having diametrically opposite knobs 16. Rigidly secured to and rising from the collar 13 are a pair of hooks 17 under the hook portions 18 of which knobs 16 may be moved to prevent accidental displacement of the closure 15.

Slidable within the barrel 12 is a suitable piston 19 from which a rod 20 extends, slidably mounted in the cap 15 and equipped with a handle 21 above the same. A port 22 is provided in cylinder 12 adjacent the lower end thereof and the same is normally closed by a valve plug 23 carried by a spring arm 24 secured at its upper end to the barrel 12. Air pumped through the reciprocation of handle 21 and piston 19 is discharged through port 22, displacing the valve 23 and entering the reservoir or tank 10, the spring 24 maintaining the port 22 closed on the up stroke of piston 19 and when the piston is not operating.

Rigidly carried by the tank 10 is a fuel cylinder or reservoir 25, the fastening being effected by a bracket 26 or otherwise. At the top of cylinder 25 is a screw threaded nipple 27 to which is detachably screw threaded an upper gas reservoir 28, the same having a disk 29 in its bottom provided with a restricted aperture or port 30 in communication with the cylinder 25. When the cylinder 25 is filled with fuel, for instance gasoline, the reservoir 28 is removed so that the fuel may be poured through the nipple or neck 27.

The compressed air from the tank or reservoir 10 may pass through a pipe or conduit 31, leading from the top of tank 10 to the bottom of the cylinder 25 for saturation by the fuel in said cylinder, and compressed air also leaves from the top of tank 10 to a pipe 32 to a valve body 33 welded or otherwise suitably supported on or adjacent the tank 10. The body 33 is preferably a metallic casting and it has an L-shaped passageway 34 therethrough under control of an adjustable needle valve 35 so that the air from the tank 10 entering through pipe 32 and passing therethrough to pipe 36 may be regulated and the supply of fuel correspondingly regulated.

Pipe 36 leads to the neck 27, the supply of air at this point being designed to regulate the mixture of the fuel entering the reservoir 28 to be supplied to the utilities hereinafter described for the most successful operation thereof. Valve 35 may be of any conventional design, preferably having a needle at 37 on a stem 38, screw threaded as at 39 to the casting 33 and provided with an operating handle 40. An air discharge pipe 41 of suitable length and preferably flexible material, leads from the top of tank 10, being in communication with the interior thereof.

As shown in Figures 1 to 5, the device is adapted to operate a soldering iron or melter as at 42. This device comprises a handle 43 having a pipe 44 extending longitudinally therethrough and projecting beyond opposite ends thereof, a nipple 45 extending from such pipe and being connected with the pipe 41. The rear end of the pipe 44 is connected with the reservoir 28 by means of a flexible hose 46 attached thereto and also attached to a valve outlet nipple 47 mounted on the reservoir 28. Such nipple may be of any suitable construction and for instance T-shape as shown, having a manually operable valve 48 of the screw adjustable type, its threads being shown at 49, and the valve having a needle at 50.

Fastened rigidly to the pipe 44 is a bracket 51 which mounts a soldering iron 52 of any appropriate construction. Such iron has a closure 53 which is removable so that solder may be placed in the iron. The outlet of the iron is controlled by a normally closed plug valve 54 which may rotate on a horizontal axis and which has a crank 55 extending rigidly therefrom. An arm 56 is pivoted at 57 to the handle 43 and has a sleeve 58 pivoted thereon on a horizontal axis at 59 and which sleeve is slidably mounted on the crank 55. The arm 56 has a finger engaging hook 60 and such arm is normally maintained in and urged to the position shown in Figure 1, maintaining the valve 54 closed, by means of one or more contractile springs 62, a pair being shown connected to arm 56 and joined by a loop 63 partly surrounding the iron 52. The parts are limited to the position shown in Figure 1 by engagement of the sleeve 58 with a stop or abutment 64 at the upper end of rod 55. A burner tip 65 is carried by the forward end of pipe 44 adjacent the discharge end of the iron 42.

As a result of the construction described, after pump 11 has been operated to produce compressed air within the tank 10, and with gasoline or other liquid fuel in the cylinder 25, the latter is subjected to the action of the compressed air engaging the gasoline through the pipes 31 and 36, the gas generated rising through port 30 into the reservoir 28 and from the latter passing through pipe 46 to the pipe 44, the fuel mixture or gas taking in additional air through the pipe 41 and the carbureted mixture being ignited at the tip 65 so as to heat the burner and melt the solder therein after which the iron may be manipulated through movement of the handle 43 and the valve 54 opened as desired through finger manipulation of the hook 60.

In Figure 8, the device is shown as connected for operation from a source of natural gas, producer gas or otherwise such as may operate an ordinary gas stove, one of the burners of which is shown at 66. From a nipple 67 of such burner, a flexible hose 68 may extend into a T-coupling 69. One branch of such coupling communicates with a flexible hose 70 which is connected in any suitable manner with the top of the reservoir 28 in lieu of the nipple or coupling 50 and from the other end of the fitting 69, a flexible hose 71 extends to the pipe 44 in place of the pipe 46.

It is obvious that instead of operating a soldering iron or the like as disclosed in the preceding figures, the device may operate a blow torch such as is shown in Figure 9. This blow torch has a mixing chamber and handle combined in the form of an elongated cylinder 72 having nipples 73 and 74 leading thereto, the bore of the latter being smaller than that of the former, the nipple 73 being connected to either pipe or hose 46 or 71 and the nipple 74 being connected to the pipe 41. A pair of discharge pipes 75 and 76 lead from the cylinder 72, the pipe 76 having a restricted inlet orifice at 77. Pipe 75 primarily is a conduit for fuel to a burner tip 78 carried thereby and pipe 77 has a hood 79 adjacent the tip 78 to apply pressure to direct the flame.

In lieu of the blow torch as shown in Figure 9, the modified form of Figure 10 may be used wherein reservoir or cylinder 72′ is similar to that at 72 and the nipples 73′ and 74′ are similar to those at 73 and 74, respectively. The pipes 75′ and 76′ are connected together and are essentially similar to those at 75 and 76. Pipe 76′, however, has a flexible hose 80 attached thereto which is also atttached to a nipple 81 leading from the chamber or reservoir 72′.

Various changes may be resorted to provided they fall within the spirit and scope of the invention.

I claim as my invention:—

1. A unitary structure of the class described comprising a tank, a pump disposed in said tank axially thereof and operable to supply the same with compressed air, a discharge valve for said pump opening into said tank, said pump extending exteriorly of the tank and communicating with the atmosphere, a closure for the pump, a piston operable in the pump, a control valve device having a casing carried by the tank, a fuel cylinder carried by the tank on the exterior

thereof, means on the exterior of the tank whereby the tank communicates with the cylinder through said valve casing and means on the exterior of the tank whereby the tank communicates with the cylinder adjacent the base of the latter.

2. A unitary structure of the class described comprising a tank, a pump disposed in said tank axially thereof and operable to supply the same with compressed air, a discharge valve for said pump opening into said tank, said pump extending exteriorly of the tank and communicating with the atmosphere, a closure for the pump, a piston operable in the pump, a control valve device having a casing carried by the tank, a fuel cylinder carried by the tank on the exterior thereof, means whereby the tank communicates with the cylinder through said valve casing, means whereby the tank communicates with the cylinder adjacent the base of the latter, and a vapor reservoir detachably carried by the cylinder, having a port in its bottom wall communicating with the cylinder.

3. A unitary structure of the class described comprising a tank, a pump disposed in said tank axially thereof and operable to supply the same with compressed air, a discharge valve for said pump opening into said tank, said pump extending exteriorly of the tank and communicating with the atmosphere, a closure for the pump, a piston operable in the pump, a control valve device having a casing carried by the tank, a fuel cylinder carried by the tank on the exterior thereof, means whereby the tank communicates with the cylinder through said valve casing, means whereby the tank communicates with the cylinder adjacent the base of the latter, said cylinder having a nipple, a vapor reservoir detachably connected to the nipple and having a restricted inlet in its bottom wall communicating with the cylinder, and a valved outlet for the reservoir.

In testimony whereof I affix my signature.

MATHOD LAPANJA.