June 19, 1956 F. PERLIN 2,750,774

LIGHTERS

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Fig. 1

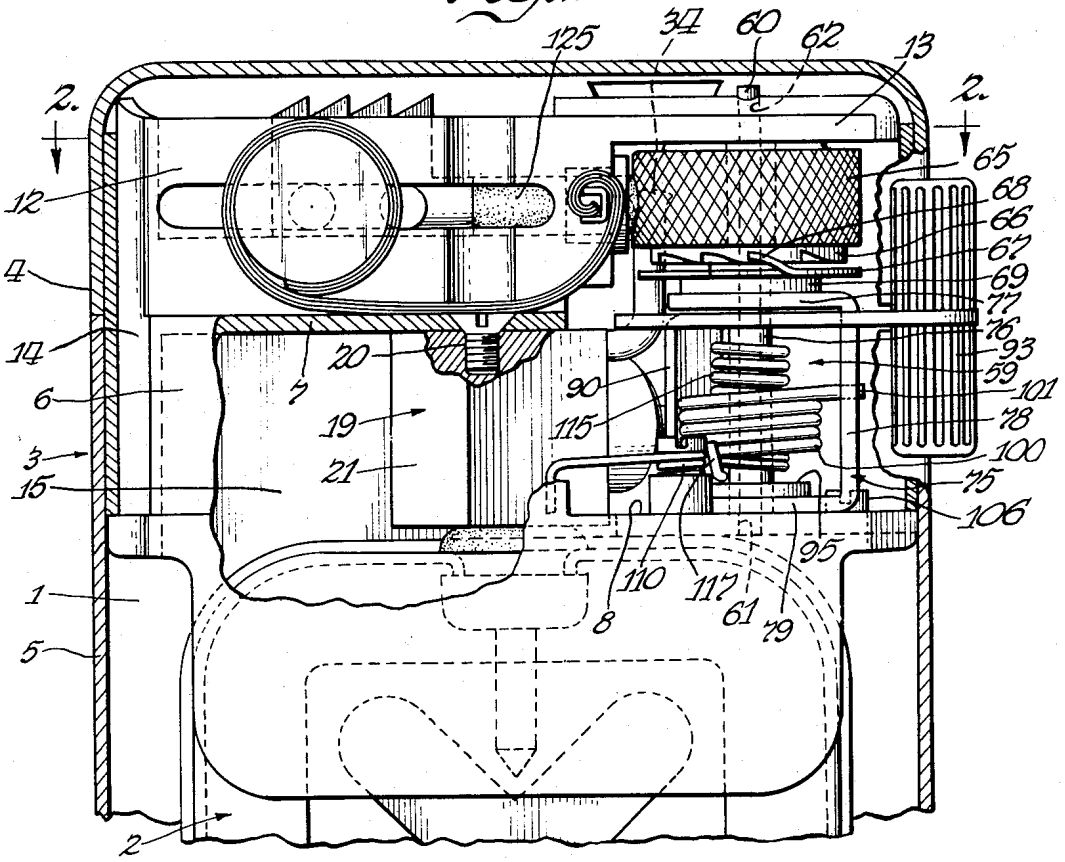

Fig. 2

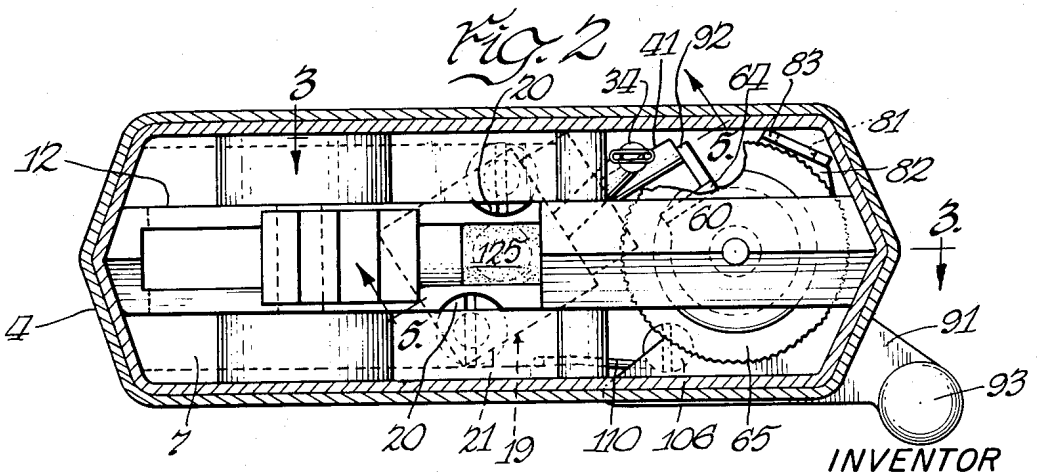

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Fig. 3

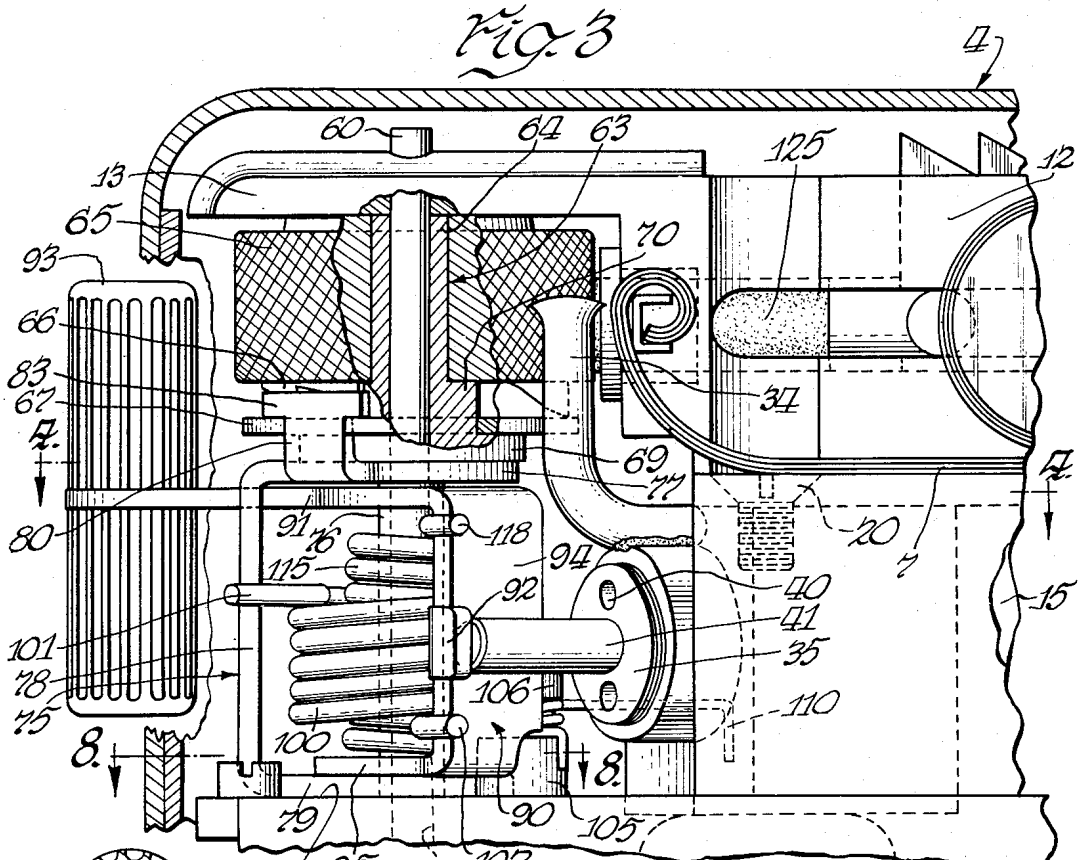

Fig. 4

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LIGHTERS

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Fig. 5

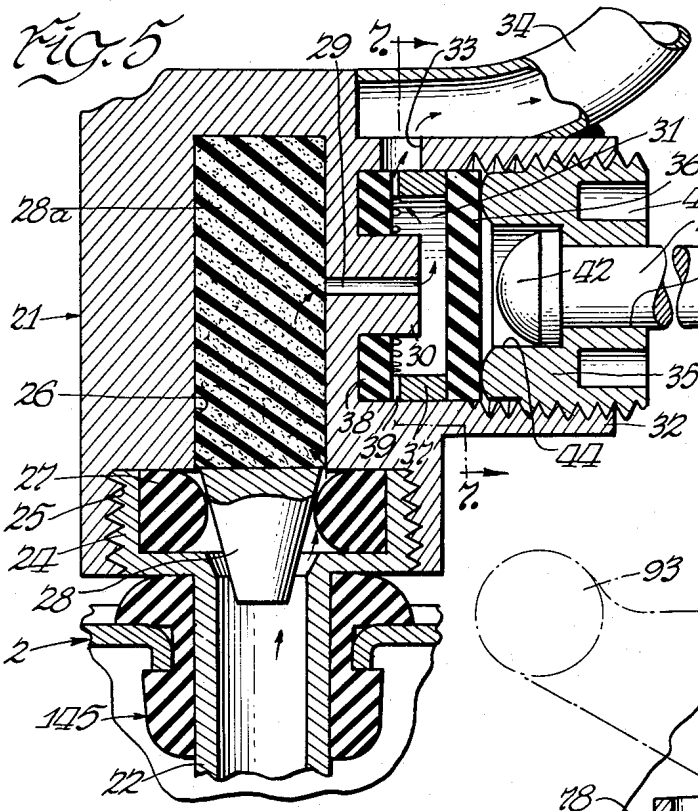

Fig. 7

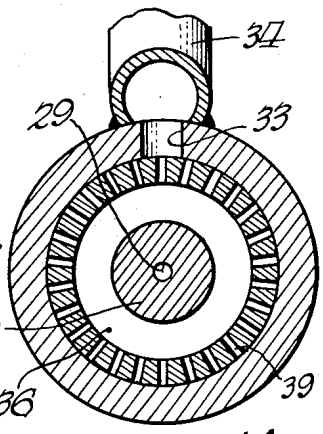

Fig. 8

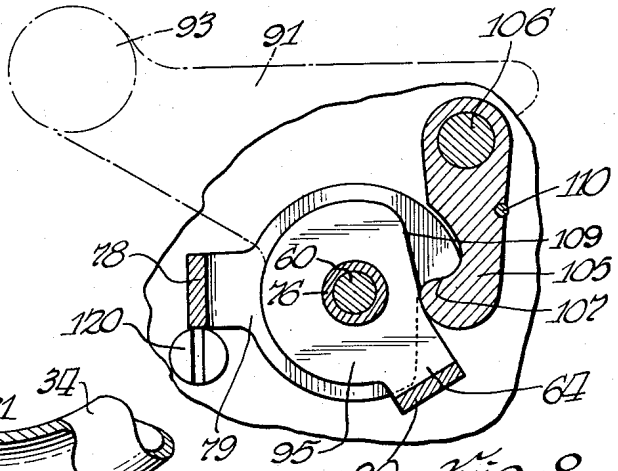

Fig. 6

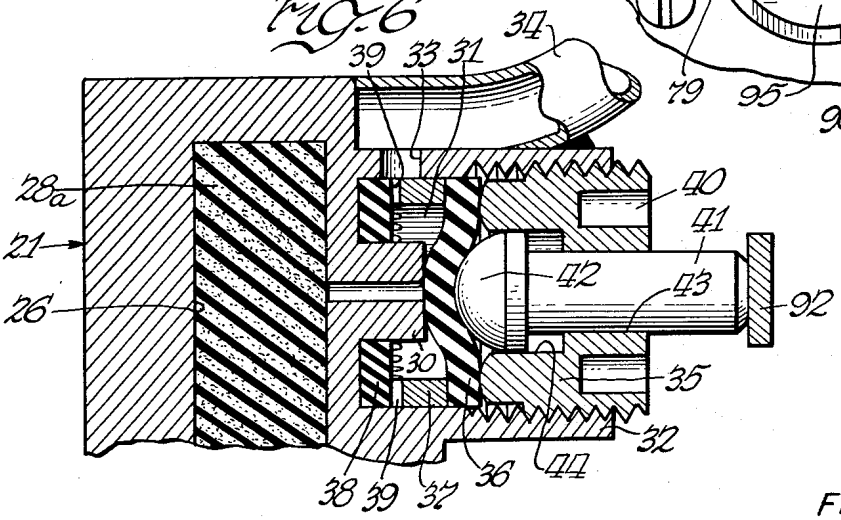

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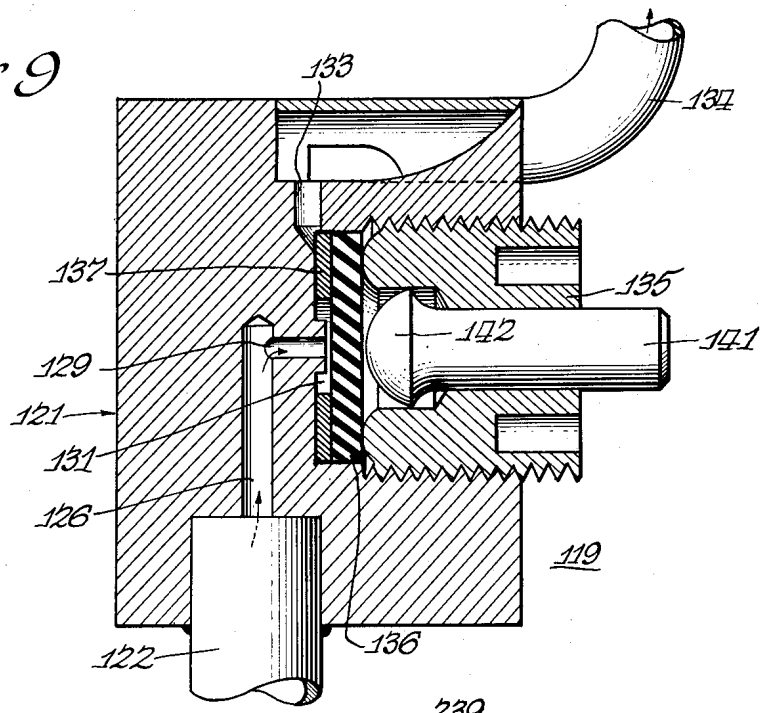
Fig. 9



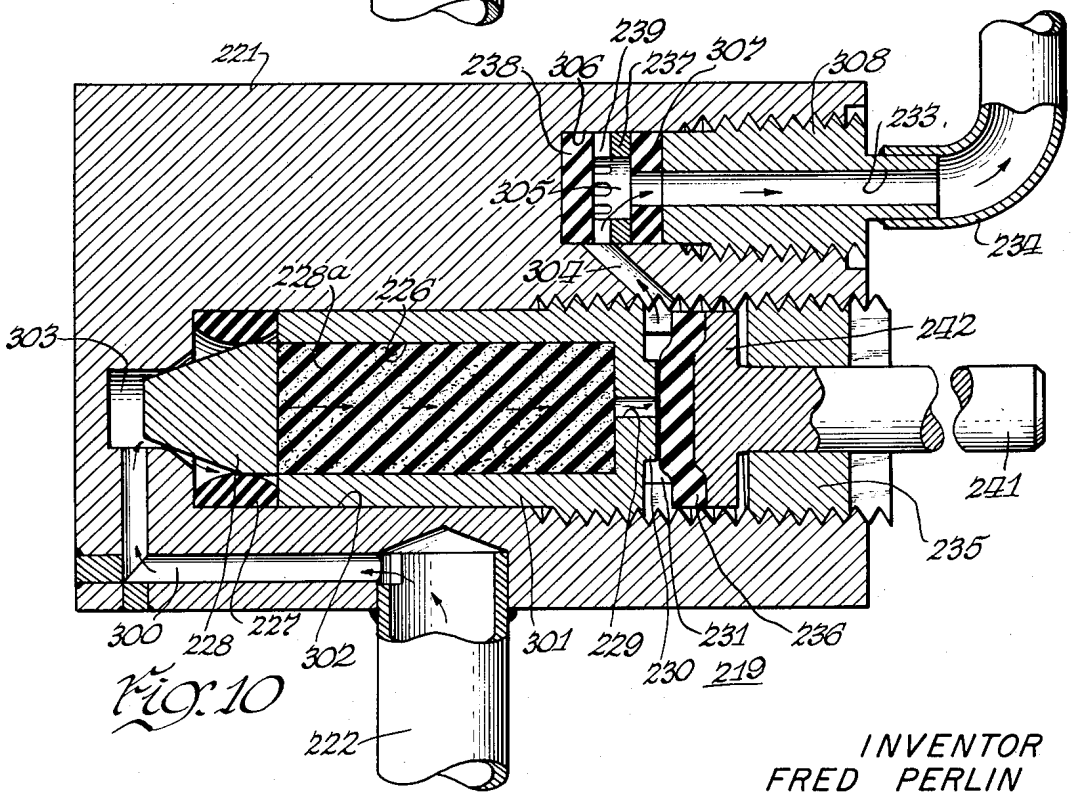


Fig. 10

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United States Patent Office 2,750,774 Patented June 19, 1956

2,750,774

LIGHTERS

Fred Perlin, Oconomowoc, Wis., assignor to The Parker Pen Company, Janesville, Wis., a corporation of Wisconsin

Application February 9, 1954, Serial No. 409,134

6 Claims. (Cl. 67—7.1)

This invention relates to lighters of the type commonly employed for lighting cigars and cigarettes, and has to do particularly with a lighter adapted to employ as a fuel a normally gaseous material which is stored in the lighter either as a compressed or liquefied gas and is discharged in gaseous form. The invention also has to do with a novel valve means for controlling the flow of fuel in the lighter.

An object of the present invention is to provide an improved lighter of the aforementioned character.

Another object is to provide a novel valve having a body with a fluid passage therethrough and novel means for closing the passage and for sealing the body against the escape of fluid except through such passage.

A further object is to provide a novel valve including a valve body having a fluid passage therethrough and a member for closing the passage upon suitable actuation, which member also serves as a seal for the means for effecting the closing of the passage.

Still another object is to provide a lighter having a normally open valve for controlling the passage of fluid from the lighter, which valve is closed by the mechanism for striking a spark when the mechanism is in its normal rest position and is opened when the spark producing mechanism is actuated.

Other objects and advantages of the invention will appear from the following description taken in connection with the appended drawings wherein:

Figure 1 is a fragmentary, vertical view, partially in cross section, of a lighter embodying the present invention;

Fig. 2 is a horizontal, sectional view taken along line 2—2 of Fig. 1;

Fig. 3 is a slightly enlarged, fragmentary, cross-sectional view taken along line 3—3 of Fig. 2;

Fig. 4 is a horizontal, sectional view taken along line 4—4 of Fig. 3;

Fig. 5 is an enlarged, fragmentary, cross-sectional view taken along line 5—5 of Fig. 2 and only showing the valve in open position;

Fig. 6 is a view of a portion of Fig. 5 showing the valve in closed position;

Fig. 7 is a vertical, sectional view taken along line 7—7 of Fig. 5;

Fig. 8 is a horizontal, sectional view taken along line 8—8 of Fig. 3;

Fig. 9 is a view similar to Fig. 5 only showing another form of burner and valve assembly which may be incorporated in the lighter; and

Fig. 10 is a view similar to Fig. 9 only showing a further modification of burner and valve assembly.

Referring now particularly to Figs. 1 and 2 of the drawings, the lighter of the present invention comprises a chassis 1 adapted to carry the mechanism for controlling the discharge of fuel and for striking a spark, a fuel tank or reservoir 2 adapted to be detachably connected to the chassis 1, and an enclosing casing 3 which preferably includes cooperating casing members 4 and 5. While any suitable form of casing may be employed, I

prefer to employ a casing such as the casing 3 disclosed in my copending application Serial No. 333,415, filed January 27, 1953.

The chassis 1 is constructed preferably of metal, as are all the other members of the lighter except where expressly stated to be of other materials. The chassis 1 includes a pair of spaced, generally parallel side walls 6, a top wall 7 extending between the side walls 6, a floor 8 extending between the side walls 6 at a portion offset from and below the level of the top wall 7, a flint guide 12 upstanding from the top wall 7 and an arm or bracket 13 projecting from the flint guide 12 and over the floor 8. An end wall 14 preferably joins the ends of the side wall portions which extend between the floor and the top wall and defines with the adjacent portion of the side walls a chamber 15 open at both its bottom and its end opposite the end wall 14.

A burner and valve assembly 19 for conducting fuel from tank 2, to a point of ignition and for controlling the flow of such fuel, is carried by the chassis 1 and includes a valve body or housing 21 disposed in the chamber 15 and suitably connected to the chassis, as by screws 20 extending through the top wall 7. The valve body (Fig. 5) carries a hollow stem 22 which extends through a plug 145 and into the tank 2 to provide an outlet for the gaseous fuel from the tank. The plug 145 and tank 2 preferably are formed as disclosed in my aforesaid copending application.

The stem 22 has an enlarged head 24 which is threaded into a socket 25 in the lower portion of the valve body 21, which socket communicates with a chamber 26 in the valve body. Contained in the head 24 is a valve seat ring 27 formed of suitable resilient material which is resistant to the fuel used and which preferably is formed from a suitable elastomer. A truncated conical valve 28 formed from metal is arranged to close the opening through the valve seat ring 27 and is actuated by a porous absorbent body 28*a* preferably formed of foam rubber which fills the chamber 26 and which is adapted, as hereinafter explained, upon wetting by a hydrocarbon in liquid form to expand and urge the valve 28 downwardly to close the passage through the valve seat. The valve 28 and porous body 28*a* form a trap for excess liquid which prevents the passage of fuel in liquid form and permits only gaseous fuel to pass from the chamber 26. Hence, it is unnecessary to use a solid absorbent in the tank 2. The trap preferably is similar to the trap disclosed and claimed in the copending application of William G. Hyzer filed February 2, 1954, Serial No. 407,755.

It will be understood that the lighter of the present invention is designed for use with a suitable fuel which is gaseous at normal temperatures and pressures but which can be readily liquefied under cooling and/or pressure. One such fuel is butane although others may be used. Where the lighter embodies the fuel trap, a hydrocarbon fuel should be employed in order that the trap may be effective.

Leading from the chamber 26 is an outlet passage 29 formed in the corresponding wall of the valve body 21 and in a boss 30 projecting into a chamber or space 31 with which the outlet passage 29 communicates. The chamber 31 is formed in a lateral extension 32 of the valve body 21.

An outlet passage 33 leads from the chamber 31 to a burner tube 34 through which the fuel is conducted to the point of ignition. The outer or discharge end of the burner tube is so located that the stream of gas passes out through the casing opening (not shown).

Threaded into the extension 32 is a closure plug or adjustment nut 35 which retains a valve diaphragm 36 formed of a suitable resilient material, such as synthetic

rubber, which is inert to the action of the fuel, the diaphragm being seated against an annular metering washer 37 preferably formed of metal and seated at its inner edge against a metering ring 38 of annular form disposed against the inner wall of the chamber 31 and formed of suitable material such as synthetic rubber. The metering washer 37 is formed on its inner face with a circumferentially arranged series of radially extending slots or grooves 39, one or more of which register with the outlet passage 33 and provide communication between it and chamber 31. In order to adjust the pressure of gas at the discharge end of the burner tube and consequently the height of the flame, the closure plug 35 is adapted to be screwed inwardly or outwardly to adjust the size of the opening defined between the metering washer 37 and the metering ring 38. That is to say, upon inward adjustment of the closure plug 35 the metering ring 38 is compressed and the face adjacent the metering washer 37 is forced into the grooves 39 to restrict the passage of fuel therethrough. For the purpose of permitting adjustment of the closure plug 35 diametrically spaced sockets 40 are provided for receiving a spanner wrench or other suitable tool.

The diaphragm 36 is adapted to be distorted into position closing the outlet passage 29 by a pin 41 having an enlarged head 42, which pin is slidable in a bore 43 in the closure plug 35, the head 42 being received in a counterbore 44. Upon inward movement of the pin 41 the head urges the central portion of the diaphragm into closing position against the end of the passage 29 as shown in Fig. 6. The diaphragm 36 serves not only as a valve to close the outlet passage 29 but also as a seal to prevent escape of fuel through the bore 43 around the pin 41, as well as around the threads. Due to its inherent elasticity the diaphragm 36 also functions by inner gas pressure to normally retain the pin 41 in its projected position (as seen in Fig. 5).

The lighter is provided with an actuating mechanism 59 (Fig. 1) which upon suitable operation by the user serves both to open the outlet valve and to rotate a flint or sparking wheel cooperating with a flint to strike and throw a spark into gas issuing from the burner tip. The actuating mechanism 59 is generally similar to the actuating mechanism disclosed in my aforesaid copending application. The mechanism 59 is disposed substantially within the space between the floor 8 and the bearing arm 13 (Figs. 1 and 3). A shaft 60 is secured in aligned openings 61 and 62 in the floor 8 and arm 13, respectively, and serves to support the actuating mechanism 59. Mounted on the shaft is a bushing 63 (Fig. 3) having a reduced shank 64 on which is rotatably mounted a sparking or flint wheel 65 of cylindrical form and having the usual knurled peripheral surface. On the underside of the sparking wheel is a circumferential series of inclined teeth together forming a ratchet element 66.

Disposed immediately below the ratchet element 66 is a wafer or drive pawl 67 which takes the general form of a split ring having one end bent upwardly out of the plane of the ring and forming a pawl or dog 68 underlying and adapted to engage with the teeth respectively of the ratchet element 66. The drive pawl 67 is supported on an enlarged head 69 of the bushing 63 and is centered relatively to the shaft 60, and therefore in register with the teeth of the ratchet element 66, by a portion 70 of the bushing 63 intermediate in diameter between the shank 64 and the head 69.

The pawl and ratchet arrangement just described provides a one way drive for the sparking wheel 65 whereby upon rotation of the drive pawl 67 in one direction, the sparking wheel 65 is rotated similarly but the drive pawl 67 may be rotated in the opposite direction without causing any movement of the sparking wheel 65. The drag of the flint on the wheel 65 prevents reverse rotation.

The drive pawl 67 is adapted to be pivotally moved about its axis by a drive bracket 75 pivotally supported on the main shaft 60 by a shaft bushing 76 which at its lower end rests on the floor 8 and at its upper end abuts the bushing 63. The drive bracket 75 is generally U-shape in form with an upper arm portion 77 of generally circular form, vertical strap portion 78 and a lower arm portion 79 of generally circular form. The upper arm portion 77 is provided with an upstanding lug 80 received in a notch 81 (Fig. 2) formed in a portion 82 of the drive pawl 67 projecting outwardly beyond the periphery of the sparking wheel 65, the lug 80 being preferably formed with an enlarged upper end portion 83 which serves to prevent disengagement between the lug and the drive pawl.

Pivotally mounted on the shaft 60 by the shaft bushing 76 is a valve operating bracket 90 which serves both as means for controlling the diaphragm 36 (Fig. 5) and also as means for energizing the spring which moves the drive bracket 75. The valve operating bracket 90 includes an upper arm 91, a vertical strap portion 94 and a lower arm 95 mounted on the main shaft bushing 76. A blade or lug 92 projects from the edge of the strap portion 94 in position to engage the pin or stem 41 when the bracket 90 is in its normal rest position to maintain the diaphragm 36 (Fig. 5) closed. At a point on the upper arm 91 approximately 90 degrees from the projection 92, an operating handle 93 is secured for the purpose of conveniently permitting the operator to effect pivotal movement of the valve operating bracket 90.

The valve operating bracket 90 is connected by a driving spring 100 to the drive bracket 75 whereby upon rotation of the former, the spring 100 is tensioned while the drive bracket 75 is restrained against movement until the valve operating bracket 90 reaches a predetermined position, at which time the drive bracket 75 is released, thus allowing the spring 100 to rapidly move the drive bracket 75 through a pivotal movement. The spring 100 is disposed substantially concentrically about the shaft 60 and has one end 101 bearing against the strap 78 of the drive bracket 75 and the other end 102 bearing against the valve operating bracket 90. Thus, as the valve operating bracket is pivotally moved relatively to the drive bracket 75, the spring 100 is "wound" or tensioned.

For the purpose of restraining the drive bracket 75 while the spring 100 is being energized by pivotal movement of the valve operating bracket 90, a holding pawl 105 is pivotally supported on the floor 8 as by a screw 106 and is positioned to engage a notch 107 in the arm 79. The pawl 105 has a portion which projects into the path of a cam surface 109 (Fig. 8) on the lower arm 95 of the valve operating bracket 90. The pawl 105 is urged into position to engage the notch 107 by a spring 110 having one end bearing against a side wall 6 (Fig. 4) of the chassis and the other end bearing against the pawl 105.

Upon pivotal movement of the valve operating bracket 90 out of its rest position by manual manipulation on the part of the user, the drive spring 100 is tensioned and, as the valve operating bracket is moved further, the cam surface 109 moves the holding pawl 105 out of engagement with the notch 107 whereupon the drive spring 100 rapidly moves the drive bracket pivotally out of its rest position and through an angle of approximately 90 degrees. This pivotal movement of the drive bracket effects similar pivotal movement of the drive pawl 67 and thereby pivotal movement of the sparking wheel 65. The limit position of the drive bracket 75 in a forward direction is established by the drive bracket 75 engaging the upper arm 91 of the valve operating bracket 90.

Upon release of the handle 93 by the user, the valve operating bracket 90 and the drive bracket 75 are returned to their initial positions by a return spring 115. The return spring 115 is disposed about the shaft 60 and has one end 117 bearing against a fixed member on the chassis, such as the screw 106 (Fig. 4), and the other end 118 bearing against the strap portion 94 of the valve operating bracket 90. When the user releases the valve operating bracket 90, the return spring 115 pivotally moves the valve

operating bracket 90 back to its initial position and the upper arm 91 bears against the strap portion 78 of the drive bracket 75 and causes corresponding movement of the latter to its initial position. The initial position of the drive bracket 75, and consequently the initial position of the valve operating bracket 90, is established by a stop which may take the form of a screw 120 (Fig. 4), positioned in the path of the lower portion 79 of the drive bracket 75, or by an elongated washer (not shown) secured to the floor 8 by the screw 120.

A flint 125 is provided and is guided and resiliently urged into engagement with the knurled periphery of the sparking wheel 65. The flint 125 is guided and fed into contact with the sparking wheel 65 in a manner similar to that disclosed in my aforesaid copending application to which reference may be had for a disclosure of the details of that portion of the lighter. The arrangement is such that the sparks produced are thrown into the stream of gaseous fuel issuing from the burner tube 34 to ignite the fuel.

When the lighter above described is in normal, inactive condition the fuel in the form of liquefied gas is contained in the tank 2. Fuel passes from the tank 2 through the tube 22 and raises the valve 28 and enters the pores of the body 28*a*. The fuel passing from the tank usually is in the form of vapor or gas; however, it may be in liquid form. Any liquid fuel is retained in the pores and only vapor or gas passes into the outlet passage 29. However, since the bracket 90 is held in its inactive or rest position by the return spring 115 the lug 92 depresses the pin 41 to maintain the diaphragm 36 is "closed" position (as seen in Fig. 6) closing the outlet end of the passage 29. Accordingly the gas cannot pass from the passage 29 into the chamber 31.

When it is desired to operate the lighter the handle 93 is pressed by the user to rotate the bracket 90 and, upon continued movement, to actuate the sparking wheel 65 as above described and strike a spark and throw it into the path of gas issuing from the burner tube 34. Upon initial rotational movement of the bracket 90 the lug 92 moves therewith, thereby relieving the holding pressure upon the pin 41 and allowing it to be moved outwardly by the diaphragm 36, which returns to its "open" position by reason of the gas pressure thereon and also the resiliency of the diaphragm. As the diaphragm 36 moves outwardly to its "open" position (as seen in Fig. 5) the outlet 29 is opened, thereby allowing gas to pass serially through the chamber 31, the grooves 39, the passage 33 and the burner tube 34 from whence it issues and may be ignited.

So long as only fuel in gaseous form passes from the tank 2 and into the chamber 26, the valve 28 will remain open by reason of the pressure of the gas and gas will flow along the path just described to the discharge end of the burner tube 34. However, should any liquid fuel pass by the valve 28 and into the porous body 28*a*, the latter will absorb such liquid and will expand and move the valve 28 toward closed position. If only a small quantity of liquid should pass into the body 28*a* the valve may not be entirely closed. However, the expansion of the porous body 28*a* is such that should a quantity of liquid enter such body approaching the quantity which would saturate the body, then the expansion is sufficient to completely close the valve 28 and retain it closed until the quantity of liquid held in the body 28*a* is reduced. Even though the valve 28 may be closed as just described, the vaporization of the liquid which is held in the body 28*a* is sufficient to produce enough gas under sufficient pressure to maintain a flame at the discharge end of the burner tube 34. Should the liquid held in the body 28*a* substantially evaporate, then the valve 28 will open to permit gas or additional liquid to pass from the tank into the body 28*a*. Thus, so long as the outlet diaphragm 36 is open, sufficient gas will pass from the burner tube 34 to maintain the desired flame height.

Upon release of the handle 93 by the user the bracket 90 is returned to its rest position and the lug 92 engages and moves the pin 44 inwardly to close the diaphragm 36 and shut off further flow of gas from the outlet passage 29.

A modified form of burner and valve assembly 119 is illustrated in Fig. 9 to which reference now is made. This assembly may be substituted in the lighter illustrated in Figs. 1 to 7 for the assembly 19 above described. The modified form of assembly 119 includes a valve hereinafter described and a burner tube but does not include any liquid trap. Accordingly, when this form of assembly is employed in the lighter, a solid absorbent (not shown) such as absorbent cotton is provided in the tank 2 for retaining the fuel in liquid form and permitting the passage only of gaseous fuel from the tank.

The burner and valve assembly 119 includes a valve block 121 carrying a hollow stem 122 adapted to enter the tank 2. The tube or stem 122 connects with a passage 126 in the block 122 which, in turn, leads to an outlet passage 129 opening into a chamber 131. The outlet passage 133 leads from the chamber 131 and communicates with a burner tube 134.

Threaded into the chamber 131 is an adjustment nut 135 which retains a valve diaphragm 136 formed of suitable resilient material such as synthetic rubber which is inert to the action of the fuel, the diaphragm being seated against an annular washer 137 which, in turn, seats against the inner end wall of the chamber 131. A pin 141 is slidably mounted in the adjustment nut 135 and has an enlarged head 142 positioned to urge the diaphragm 136 into closing engagement with the end of the passage 129. When the pin 141 is in its outer position (as seen in Fig. 9) the diaphragm is maintained in "open" position away from the end of the passage 129. Therefore gas may pass from the tank 2 through the stem 122, the passage 126 and the passage 129 into the chamber 131. From the chamber 131 gas may pass between the inner face of the washer 137 and the opposing inner end face of the chamber 131 and thence through the passage 133 to the burner tube 134. The degree of restriction to the passage of gas between the opposing faces of the chamber 131 and the washer 137, which may be designated as the "metering," is adjustable by adjustment of the adjustment nut 136 inwardly or outwardly. Thus the pressure of the gas at the discharge end of the burner tube 134 and consequently the height of the flame resulting when the gas is ignited may be adjusted by suitable manipulation of the adjustment nut 135.

Referring now to Fig. 10 there is illustrated a burner and valve assembly 219 wherein the outlet valve and the metering means are separated from each other instead of being in close association and in the same recess in the block as in the case of the previously described assembly.

The assembly includes a valve block 221 to which is connected a stem 222 adapted to extend into the tank 2. The interior of the stem 222 communicates through a passage 300 with a chamber 226 formed in the valve block 221. Preferably the chamber is defined by an open ended plug 301 threaded into a bore 302 formed in the valve body 221. The plug 301 is open at one end and a valve 228 is slidable therein and cooperates with a valve seat ring 227 to close communication into the chamber 226. Disposed in the chamber 226 is an absorbent body 228*a* which operates in a manner similar to the body 28*a* above described to close the valve 228. The body 221 is provided with a recess 303 in continuation of the bore 302 in order to accommodate the projecting valve 228. Thus it will be seen that a fluid trap is provided which functions like the trap above described.

Leading from the chamber 226 is an outlet passage 229 formed in a boss 230 on the end wall of the plug 301 and leading into a chamber or space 231 formed by the bore beyond the plug 301. An outlet passage 304 leads from the chamber 231 to a chamber 305 defined by a bore

306 formed in the body 221 at a location spaced from the bore 302.

Disposed in the bore 306 is a metering disc 238 which is seated against the end wall of the bore. An annular metering washer 237 having circumferentially arranged series of radially extending slots or grooves is seated against the metering disc 238. An orifice ring 307 is seated against the metering washer 237 and is retained by a plug 308 threaded into the bore 306 and having a passage 233 extending therethrough and leading to a burner tube 234.

The metering means just described functions in a manner generally equivalent to the metering means shown particularly in Fig. 5 and described in connection therewith. Adjustment of the plug 308 causes corresponding adjustment of the inlet to the chamber 305 provided between the metering disc 238 and metering washer 237.

The outlet passage 229 is adapted to be closed by a valve or shutoff element 236 formed of suitable resilient material and secured to an enlarged head 242 of a pin 241 which is slidable in a nut 235 threaded into the outer end of the bore 302. When the pin 241 is moved inwardly the shutoff element 236 abuts the face of the boss 230 to close the passage 229. On the other hand, when no force is applied to the pin 241 to urge it inwardly, the pressure of the gas on the face of the shutoff element 236 opposite the passage 229 is sufficient to move the shutoff element 236 and pin 241 outwardly (to the right as viewed in Fig. 10) to thereby permit gas to pass from the chamber 226 to the passage 229, the chamber 231, the passage 304, the chamber 305 and the passage 233 to the burner tube 234.

I claim:

1. A valve comprising a body having fluid conduit therethrough and having a port in and forming a portion of the conduit, a flexible closure element in said body opposite said port and sealingly secured around its peripheral portions and disposed for flexing movement of its central portion in a direction along the axis of said port into closing and sealing relation to the port, said closure element forming a portion of a bounding wall of said conduit and having an outer surface positioned for engagement by an actuating member for movement of its said central portion as mentioned, adjustable means sealingly securing the closure element, and metering means including at least one resilient element defining an aperture variable in response to adjustment of the adjustable means

2. A valve comprising a body having an inlet passage terminating in a port defined by a boss having a relatively flat end face, said body having a chamber into which said boss projects and which provides an annular space around said boss, said body having an outlet passage leading from said annular space, a flexible closure element secured in said chamber and sealing said chamber to the exterior except through said passages and positioned for flexing movement of its central portion into sealing engagement with said end face for closing said port, adjustable means sealingly securing the closure element, and metering means including at least one resilient element defining an aperture variable in response to adjustment of the adjustable means.

3. A valve comprising a body having a fluid passage therethrough and including a port forming a portion of said passage, a flexible closure element forming a portion of a bounding wall of said passage positioned for flexing movement of a portion thereof into sealing and closing relation to said port, adjustable means sealingly securing said closure element in said body, actuating means having a portion extending to the exterior for such movement of the closure element, and metering means responsive to adjusting movements of said adjustable means for adjustably metering the flow of fluid through said passage, said metering means including a resilient element and a rigid element interengaging and the rigid element having openings defining apertures between the two elements, said apertures remaining constant in any given setting of the adjustable means.

4. A valve comprising a body having an inlet passage terminating in a port, said body having a chamber with which said port communicates, and having an outlet passage, a flexible closure element in said chamber oposite said port, an annular ring inwardly of said closure element and an adjustable annular member outwardly of the closure element operative for clamping the closure element between itself and said annular ring, the closure element thereby sealing the chamber except through said passages and being adapted for flexing movement of its central portion into closing relation to said port, said annular ring having a metering orifice establishing communication between said chamber and outlet passage, and yieldable and resilient means cooperating with said metering orifice for controlling the effective opening of the orifice in response to adjusting movements of said adjustable member.

5. A valve comprising a body having an inlet passage terminating in a port defined by a boss, and having a chamber into which the boss projects and which provides an annular space around the boss, and having an outlet passage, a resilient ring in said chamber surrounding said boss, a rigid ring in said chamber outwardly of and engaging said resilient ring and having grooves forming, with said resilient ring, metering orifices establishing communication between said chamber and outlet passage, a resilient closure element in said chamber outwardly of said rigid ring, an adjustment nut threadedly mounted in said chamber outwardly of said closure element clamping the peripheral portion of said closure element between itself and said rigid ring, said closure element thereby sealing said chamber except through said passages and positioned for flexing movement of its central portion into closing position relative to said port, and a plunger slidably mounted in said adjustment nut engageable with said closure member and having a portion projecting to the exterior.

6. In a lighter, a valve block having a chamber therein, an inlet orifice leading centrally into said chamber and an outlet passage leading from the periphery of the chamber to the exterior of said block, a flexible resilient closure element disposed in said block opposite said orifice and having at least a portion normally spaced from but movable into closing position against said orifice, a plunger slidably disposed in said block on the opposite side of said closure element from said orifice in position to urge said closure element into closing relation with said orifice, and adjustable flow restricting means in said chamber including an annular flexible resilient member and an annular rigid member disposed in said chamber in position adjacent said second flexible resilient member to define therewith a passage connecting the interior of said chamber and said outlet passage.

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