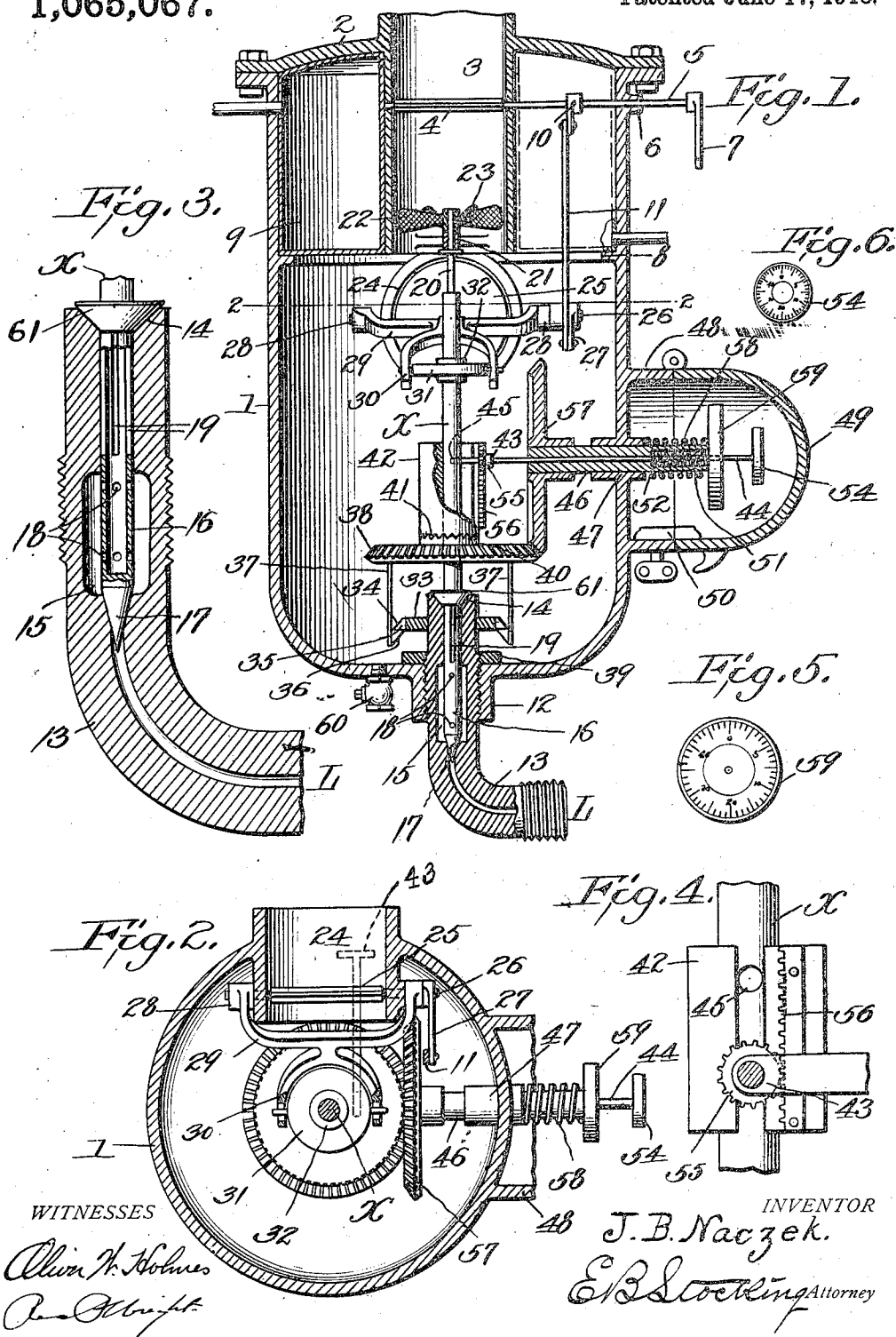


J. B. NACZEK, DEC'D.
J. NACZEK, ADMINISTRATOR.
CARBURETER.
APPLICATION FILED AUG. 7, 1911.

1,065,067.

Patented June 17, 1913.



UNITED STATES PATENT OFFICE.

JOHN B. NACZEK, OF MILWAUKEE, WISCONSIN; JOSEPH NACZEK ADMINISTRATOR OF
SAID JOHN B. NACZEK, DECEASED.

CARBURETER.

1,065,067.

Specification of Letters Patent.

Patented June 17, 1913.

Application filed August 7, 1911. Serial No. 642,625.

To all whom it may concern:

Be it known that I, JOHN B. NACZEK, a citizen of the United States, residing at Milwaukee, county of Milwaukee, State of Wisconsin, have invented certain new and useful Improvements in Carbureters, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to certain new and useful improvements in carbureters, the object being to provide a carbureter which is exceedingly simple and cheap in construction and one which is so constructed that the flow of oil and air is regulated by the throttle valve.

Another object of the invention is to provide a carbureter with a removable water jacket in order to thoroughly heat the mixture passing through the outlet passage to the engine cylinder so as to volatilize the mixture broken up by the fan which is revolved by the suction of the engine.

A further object of the invention is to provide a novel form of inlet nozzle for controlling the liquid fuel to the carbureter which is under the control of the operator and adjusts itself as the throttle is opened and closed in order to increase and decrease the flow of oil.

A still further object of the invention is to provide a locking device which is automatically partially locked when the throttle is closed, thereby preventing anyone from starting the engine to which the carbureter is attached without first working the combination controlling the locking device.

Another object of the invention is to provide a carbureter which is controlled by manually shifting the throttle valve and one in which the parts are so mounted and arranged that an exceedingly strong and durable carbureter is formed.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the drawing—Figure 1 is a transverse vertical section through my improved carbureter; Fig. 2 is a horizontal section taken on line 2—2 of Fig. 1; Fig. 3 is a detail enlarged section of the intake pipe and spray nozzle; Fig. 4 is a detail enlarged view showing the pinion and rack for disconnecting

the clutch faces; Fig. 5 is a plan view of one of the knob dials; and Fig. 6 is a plan view of the other knob.

Like numerals of reference refer to like parts in the several figures of the drawing.

In the drawing, 1 indicates a casing forming the body of my improved carbureter which is provided with an open end over which is arranged a cover 2 having a central tubular portion 3 forming the outlet passage, said tubular portion being adapted to be formed integral with the cover and the manifold which is connected to the engine in the ordinary manner. The outlet passage formed by the tubular portion is provided with a throttle valve 4 having an outwardly projecting stem 5 which is mounted in a boss 6 formed on the side of the casing and is provided with a crank 7 to which the throttle controlling mechanism is connected in the usual manner. The casing is provided with an annular inwardly projecting flange 8 upon which is mounted a substantially cylindrical-shaped water jacket 9 preferably formed of copper and having a space through which the throttle valve stem 5 passes and in which the crank arm 10 works which is fixed upon the stem 5 and carries a link 11 for the purpose later described. By this construction, the cover 2 can be removed and the water jacket detached in order to repair the same when desired and it will be seen that the passage through which the explosive mixture passes will be maintained at an even temperature in order to thoroughly heat the mixture to produce the best results.

An interiorly threaded depending boss 12 is formed in the bottom of the casing 1 in which is threaded an L-inlet pipe 13 which is adapted to be connected to any suitable source of supply and said pipe extends upwardly into the casing 1 and is provided with a conical seat 14 at its upper end for the purpose later described. The passage of the inlet pipe is enlarged to form a chamber as shown at 15 and the upper end of the pipe is provided with a bore of a larger diameter than the bore at the lower end through which extends a nozzle 16 which comprises a tube X having a conical point 17 at its lower end forming a valve which is seated in the passage at the junction of the chamber 15 and is adapted to control the supply of oil to the chamber. The tube

forming the nozzle is provided with perforations 18 through which the oil passes from the chamber 15 and said tube is provided with longitudinal slots 19 which portion
 5 forms the nozzle proper and through which the oil is adapted to be sucked by the engine when said tube is raised so as to bring the slots above the end of the inlet pipe and by forming the conical seat 14 at this point, a
 10 conical spray is obtained in order to scatter the inflowing oil to all parts of the mixing chamber formed by the casing. The upper end of the tube X carries a rod 20 which extends through a bearing 21 and on which
 15 is adjustably mounted a dispersing fan 22 secured in its adjusted position thereon by a screw 23, said fan having reticulated blades of such a shape that the same will be rotated by the suction of the engine so
 20 as to thoroughly mix the air and liquid hydrocarbon.

The wall of the casing is provided with an air inlet passage 24 in which is mounted a butterfly valve 25 carried by a stem 26 on
 25 which is secured a crank 27 to which the lower end of the connecting link 11 is pivotally connected whereby said valve will be opened and closed simultaneously with the throttle valve. Secured on the outer ends
 30 of the stem 26 are collars 28 formed on the ends of the bracket arm 29 which is provided with a yoke 30 in which is pivotally mounted a collar 31 carried by a sleeve 32 fixed on the tube X in order to raise and
 35 lower the tube as the air inlet valve is opened and closed. As the tube is raised, it will be seen that the spray nozzle formed on its lower end will be drawn upwardly in order to allow the liquid fuel contained
 40 therein to be sucked outwardly into the chamber in which it is mixed with air drawn into the outlet passage and as it is sucked upwardly it is thoroughly mixed by the rotation of the fan. It will be seen that
 45 by this construction, the control of oil to the mixing chamber is regulated simultaneously with the opening and closing of the throttle and air inlet valve whereby the proper proportion of air and oil will be admitted to the
 50 carbureter in order to obtain the best result without adjusting the same.

To prevent anyone from opening the valves of the carbureter after the throttle has been closed, I provide a locking device
 55 which comprises a disk 33 having beveled edges 34 and oppositely disposed notches 35 adapted to receive the beveled heads 36 of spring members 37 carried by the beveled gear 38 fixed on the tube X which allows the
 60 same to be drawn upwardly. As the tube is forced downwardly, the beveled heads ride over the beveled edges of the disk and engage the underside of the same in order to prevent the upward movement of the tube,
 65 the disk being fixed to the inlet L which is

locked in its adjusted position within the casing by a nut 39. The beveled gear 38 is provided with a central collar having a ratchet face 40 which co-acts with a ratchet face 41 of a sleeve 42 slidably mounted upon
 70 the tube X, said sleeve being provided with a transverse slot in horizontal alinement with an apertured bracket 43 carried by the casing in which is slidably mounted a shaft
 75 44, the end of which is adapted to enter an opening 45 formed in the tube X to prevent the upward movement of the tube. The shaft 44 is slidably mounted within a tubular shaft 46 which, in turn, is mounted with
 80 a bearing 47 formed in the wall of the casing 1, said casing having a housing 48 provided with a pivoted cover 49 having a suitable lock 50. By providing the housing with a lock, the operating mechanism of the locking device, as will be later described, is
 85 inclosed in order to prevent anyone from tampering with the same. The outer end of the shaft 46 is provided with a cylindrical bore 51 in which is mounted a coiled spring 52, one end of which is fixed to the shaft 44
 90 in order to hold the same in extended position into the opening of the tube X. The outer end of the shaft 44 is provided with a graduated dial knob 54 and keyed on said shaft is a pinion 55 which is adapted to mesh
 95 with a rack 56 formed on the sleeve 42 so that by rotating said shaft, the sleeve 42 can be raised and lowered upon the tube X in order to throw the teeth 41 into and out of engagement with the teeth 40 of the beveled gear 38. By this construction, it will
 100 be seen that the sleeve is raised above the beveled gear in order to allow the same to be rotated and moved upwardly. In this position, the gear is prevented from being moved
 105 upwardly by the spring members 37 and in order to rotate the gear to throw the spring members into vertical alinement with the notches of the disk 33, I provide the shaft
 110 46 with a beveled gear 57 which is adapted to be normally held out of mesh with the beveled gear by a coiled spring 58. The outer end of the shaft 46 is provided with a graduated turn dial 59 and by rotating the
 115 shaft 46, after the beveled pinion has been forced into engagement with the beveled gear, the gear will be rotated until the spring members are brought into vertical alinement with the notches of the disk 33
 120 which allows the spring members to pass through the notches when the tube X is raised by operating the throttle valve. It will be seen that by this construction by giving the knob a slight turn after the valve is
 125 raised so as to throw the notches of the disk out of alinement with the spring arms, it is necessary to know the number of turns to give the dial 59 in order to release the tube X after it has been forced into position as the spring arms ride over the beveled disk and
 130

engage the under surface thereof. After the dial has been operated so as to bring the spring arms into alinement with the notches of the disk, the spring nozzle can be raised.

From the above description, it will be seen that automatic means are provided for partially locking the valve or cutting off the oil supply every time the valve is completely closed.

In order to provide means for cleaning the casing, I provide the same with a drain-cock 60 which is so constructed, that the contents of the mixing chamber can be removed. After the carbureter has been once adjusted, it is never necessary to readjust the same as the proper amount of oil and air is admitted simultaneously to the mixing chamber by shifting the throttle valve.

The tube X is provided with a valve 61 at the junction of the spray nozzle which co-acts with the conical seat of the inlet pipe in order to form a double seal, thereby preventing any surplus of oil which may accumulate within the chamber 15 from being sucked into the mixing chamber after the supply has been cut off and it will also be seen that this valve 61 is conical in form in order to scatter the oil sucked out of the nozzle by the suction of the engine. As the valves carried by the tube X are raised off of their seats, it will be noticed that the fan is moved within the outlet opening so that the air and gas will be contracted to a certain extent before it reaches the fan where it will be thoroughly mixed by the rotation of the fan as the mixture passes the same. As the fan is moved upwardly it is, of course, understood that the throttle valve and air valve are simultaneously opened in order to allow the proper amount of explosive mixture to be drawn into the engine through the manifold, not shown, which is formed integral with the central tubular portion of the cover.

From the foregoing description, it will be seen that I have provided a carbureter which is so constructed that after the same has been installed in an engine, no further attention is necessary, the parts being so mounted and operated that the proper amount of oil and air will be admitted to the mixing chamber and discharged therefrom through an outlet which is surrounded by a water jacket having an inlet and outlet by means of which hot water can freely circulate therethrough in order to heat the combustion mixture, the fan agitating the mixture so that as it enters the engine, it will be in proper condition to obtain the best results. While I have described a carbureter especially adapted for use with gasoline, it can be used for carbureting any liquid desired.

In the operation of the locking device for the carbureter, when the valves are

moved into closed position, the arms 37 with the heads 36 ride over the bevel edge 34 of the disk 33 and effect a partial locking automatically of the valves. The sleeve 42 is then forced downwardly into engagement with the ratchet face 40 upon the bevel gear 38 which prevents the gear, carrying the arm 37, from rotating and forms a positive lock for the valves so that it is necessary to first raise the sleeve 42 through the medium of the shaft 44 in order to allow the gear 57 to operate the gear 38 in order to turn the arms 37 so as to bring the bevel heads into register with the notches 35 of the disk 33 and the spring 58 will then force the gear 57 out of mesh with the gear 38 so that the valves can be moved into open position.

Having described my invention and set forth its merits what I claim and desire to secure by Letters Patent is—

1. A carbureter having a carbureting chamber provided with an oil inlet passage and an outlet passage, valves for closing said passages, means for simultaneously operating said valves, and means for automatically locking said valves when in their closed position.

2. A carbureter having a carbureting chamber provided with an oil inlet at its lower end, and an outlet at its upper end, an air passage disposed between said inlet and outlet, valves for closing said inlet and outlet, and means for locking said valves in closed position.

3. A carbureter having a carbureting chamber provided with an outlet passage at its upper end, a spray nozzle movably mounted within said carbureter, a fan mounted to move simultaneously with said spray nozzle within said outlet passage, a throttle valve mounted within said outlet passage having a connection with said spray nozzle, and means for locking said throttle valve when moved into closed position.

4. A carbureter having a carbureting chamber provided with an air inlet passage, an outlet passage, an oil inlet pipe, a spray nozzle working in said inlet pipe having a valve for controlling the supply of oil thereto, valves for controlling said passages, means for simultaneously operating said valve, and means for locking said valve when moved into closed position.

5. A carbureter having an oil inlet pipe at its lower end provided with a chamber, and an outlet provided with a throttle valve, a tube arranged within said inlet pipe having a valve at its lower end for controlling the supply of oil to said chamber through said pipe, said tube having a spray nozzle, and means for raising said spray nozzle above said inlet pipe, said means being controlled by the throttle valve.

6. In a carbureter, the combination with

a casing provided with a chamber having an outlet passage and an air inlet passage, valves for controlling said passages, an oil inlet pipe extending into said casing, a valve for controlling the flow of oil therethrough, means for simultaneously operating said valves, and means for locking the oil controlling valve when moved into closed position.

7. A carbureter having a carbureting chamber provided with a depending tubular portion at its upper end forming an outlet passage, a fan movably mounted within said passage, an oil supplying pipe extending into said carbureting chamber at its lower end, a valve for closing said oil supply pipe, a throttle valve mounted in the outlet passage connected to the oil controlling valve for simultaneous operation, and locking members carried by said oil controlling valve for locking said valve when moved into closed position.

8. A carbureter comprising a casing having an oil inlet pipe, an outlet passage and an air inlet passage, valves for controlling said passages and pipe, and means for locking said valves when moved into closed position.

9. A carbureter having a carbureting chamber provided with a vertically movable nozzle at its lower end and an outlet passage at its upper end in vertical alinement with the spray nozzle, said carbureter being provided with an intermediate air inlet passage, valves for controlling said passages, means for raising and lowering said spray nozzle, said means being operated by the movement of the throttle valve, and means for locking said spray nozzle when moved into lowered position.

10. In a carbureter, the combination with a casing forming a carbureting chamber, said casing having an inlet and outlet in vertical alinement and an intermediate air inlet, a tube having a spray nozzle working in said inlet, a fan carried by said tube working in said outlet, a throttle valve for controlling the outlet, valves for controlling said inlets, means operated by the throttle valve for raising and lowering the spray nozzle within the inlet and the fan within the outlet, and means for locking said spray nozzle when moved into lowered position.

11. A carbureter having a carbureting chamber provided with valves for controlling the admission of oil and air thereto, a throttle valve for controlling the outlet of the mixture therefrom, means for simultaneously operating said valves, and means for locking said valves when moved into closed position.

12. In a carbureter, the combination with a casing having a carbureting chamber, of a nozzle movably mounted within said carbureting chamber, said carbureting chamber

being provided with an outlet, a fan arranged within said outlet and mounted to move simultaneously with said nozzle, a throttle valve, means operated by the movement of the throttle valve for raising and lowering said fan, and means for locking said spray nozzle when moved into lowered position.

13. In a carbureter, the combination with a carbureting chamber provided with an inlet pipe having a chamber formed therein, of a tube working in said pipe having perforations communicating with the chamber thereof, said tube being provided with slots, a fan mounted on said tube, a throttle valve for controlling the outlet passage of said operating chamber, means operated by the movement of said throttle valve for raising and lowering said tube, and means for locking said tube in lowered position.

14. In a carbureter, the combination with a carbureting chamber provided with an oil inlet pipe, a tube mounted in said pipe having a valve for controlling the supply of oil to said carbureting chamber, and members carried by said tube for locking the oil controlling valve when moved into closed position.

15. A carbureter comprising a casing forming a carbureting chamber having an outlet and an inlet passage, an oil inlet pipe extending into said chamber, a valve for controlling the flow of oil therethrough, valves for closing said nozzle and outlet passages, means for automatically locking said valves when moved into closed position, and means for releasing said valves.

16. A carbureter having a carbureting chamber provided with valves for controlling the supply of oil and air thereto, a throttle valve for controlling the outlet of said chamber, means for operating said valve simultaneously, means for automatically locking said valves when in closed position, and means for releasing said locking means.

17. In a carbureter, the combination with a casing having a carbureting chamber provided with an outlet passage at its upper end, an oil inlet passage at its lower end and an intermediate air inlet passage, a tube working in said chamber having a valve for controlling the oil inlet passage, a butterfly valve for closing the air inlet passage provided with a valve stem, a bracket carried by said valve stem provided with a yoke, a collar carried by said tube pivotally mounted in said yoke, a throttle valve for closing the outlet passage provided with a valve stem, and a connection from said throttle valve stem to the butterfly valve stem for simultaneously operating said valves.

18. In a carbureter, the combination with a carbureting chamber provided with an oil

inlet pipe having a chamber and a conical
valve seat at its upper end, a spray nozzle
working in said inlet pipe having a valve
at its lower end, a second valve co-acting
5 with said conical seat, means for locking
said valves when in closed position, and
means for releasing said locking means.

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

JOHN B. NACZEK.

Witnesses:

JOHN NOLAN,
MATTHIAS O. SUTTER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."