A. WINTON.

CARBURETER.

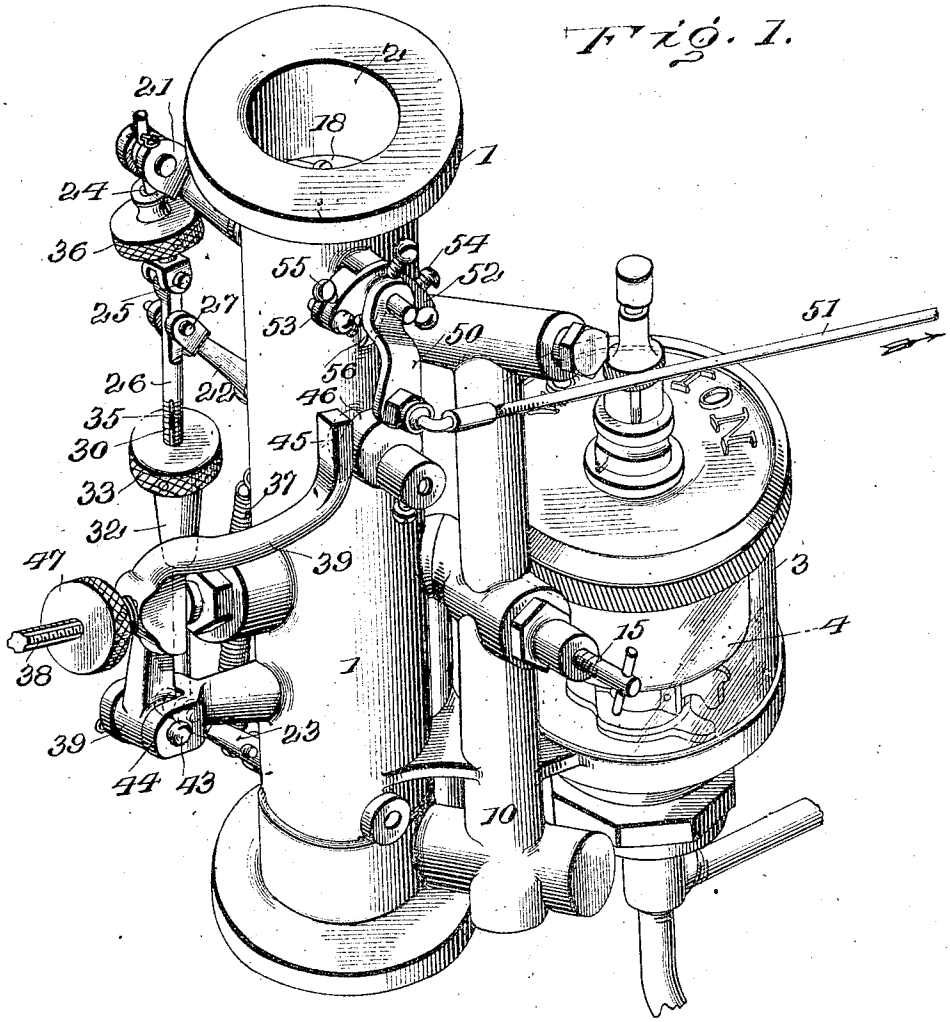
APPLICATION FILED MAY 12, 1911.

1,011,696.

Patented Dec. 12, 191

2 SHEETS SHEET 1.

FIG. 1.



Inventor

Alexander Winton

Witnesses

W. A. Williams.

C. P. Wright Jr.

By A. S. Allison,

Attorney

A. WINTON.

CARBURETER.

APPLICATION FILED MAY 12, 1911.

1,011,696.

Patented Dec. 12, 1911.

2 SHEETS—SHEET 2.

Fig. 2.

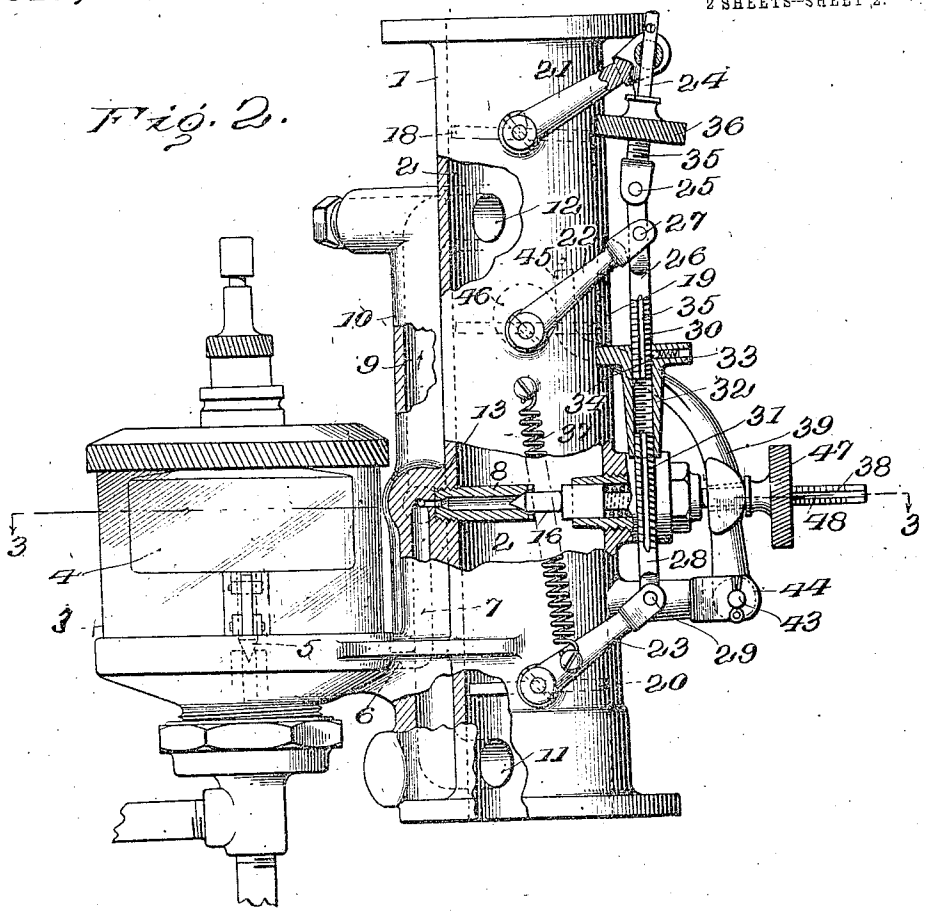
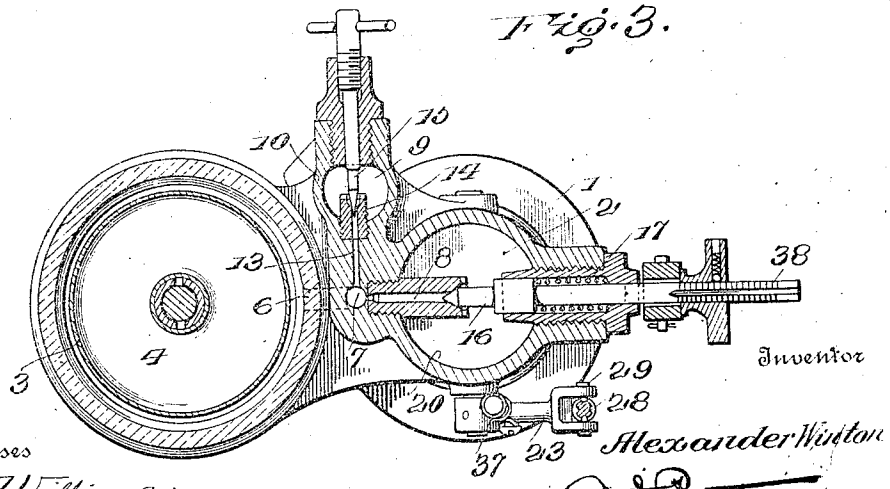


Fig. 3.



Witnesses

W. A. Williams

C. R. Wright, Jr.

Inventor

Alexander Winton

By

A. D. Pattison

Attorney

UNITED STATES PATENT OFFICE.

ALEXANDER WINTON, OF CLEVELAND, OHIO.

CARBURETER.

1,011,696. Specification of Letters Patent. Patented Dec. 12, 1911.

Application filed May 12, 1911. Serial No. 626,795.

To all whom it may concern:

Be it known that I, ALEXANDER WINTON, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, 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 improvements in carbureters, and is especially designed and intended for use with marine internal combustion engines.

The object of the present invention is to provide a carbureter with a main carbureting passage for supplying the explosive mixture to the motor when running under load and power, and an auxiliary carbureting passage for starting the motor and running it slow, and to provide an improved construction and arrangement of parts for controlling the passage of the air through these carbureting chambers and to maintain the desired vacuum in the main carbureting passage at the main gasolene inlet therefor.

In the accompanying drawing—Figure 1 is a perspective view of my improved carbureter. Fig. 2 is a side elevation thereof, partly in section. Fig. 3 is a horizontal sectional view on the line 3—3 of Fig. 2.

In carrying out my present invention, a main carbureting passage and an auxiliary carbureting passage are provided, the main carbureting passage containing three dependent or operatively connected throttles relatively adjustable; a main gasolene supply valve in the main passage and operatively connected with the throttles, and a gasolene supply valve or opening the auxiliary carbureting passage independent of the said throttles.

Referring now to the drawings, 1 is the carbureter casting, which stands in a vertical position and through which passes a main carbureting chamber 2. Located at one side of the casting 1, is a gasolene supply chamber 3, containing a float 4, operatively connected in any well-known manner with the valve 5, which maintains the gasolene within the chamber 3 at a predetermined level, all of which is so well understood by those skilled in this art that further illustration or explanation is unnecessary. A conduit or passage 6 connects the lower end of the chamber 3 with a vertical passage 7, and this vertical passage 7 communicates with a main gasolene supply nipple 8, which projects into the main carbureting chamber 2.

Located parallel with the casting 1 and carbureting chamber 2 is an auxiliary carbureting passage 9 formed in a suitable tube or casting 10. The lower end 11 of this auxiliary passage 9 communicates with the lower end of the chamber 2, and the upper end 12 of this auxiliary carbureting passage communicates with the upper portion of the main carbureting chamber 2. A lateral passage 13 communicates through a suitable valve nipple 14, with the auxiliary carbureting passage 9 and through which gasolene passes and is controlled by a suitable adjustable needle valve 15.

A needle valve 16 controls the flow of gasolene through the nipple 8 into the main carbureting chamber 2, and this valve 16 is normally held to its seat by a suitable spring 17.

Located within the main carbureting chamber 2, is an upper throttle 18, located just above the upper end 12 of the auxiliary passage 9, and also located in this main carbureting chamber 2 is an intermediately positioned throttle 19, located between the opening 12 and the gasolene supply nipple 8. A lower throttle 20 is also placed in the main carbureting chamber 2 and is located between the lower end 11 of the auxiliary carbureting passage 9 and the gasolene supply nipple 8, all of which is illustrated in Fig. 2. A throttle lever 21 is connected with the upper throttle 18; a throttle lever 22 is connected with the intermediate throttle 19, and a throttle lever 23 is operatively connected with the lower throttle 20. A link or rod 24 has its upper end loosely passing through the free end of the throttle lever 21 so that the free end of the throttle lever may have a vertical movement on the upper end of said link independently of the link. The lower end of this link 24 is pivotally connected at the point 25 with the upper end of a link 26 and the free end of the throttle lever 22 is pivotally connected with the link 26 just below the lower end of the link 24. A link 28 has its lower end pivotally connected with the free end of the throttle lever 23 at the point 29. The inner ends of these links 26 and 28 are provided respectively with right and left hand screw-threads which enter and engage corresponding screw-threads formed in opposite ends

of a rotatable tubular portion 32. One end of this tubular portion 32 is provided with a knurled head 33 by means of which it is rotated in either direction for the purpose of either drawing the adjacent ends of the links 26 and 28 nearer together, or forcing them apart for a purpose to be explained hereinafter. The knurled head 33 is provided with a suitable ball or other detent 34 to engage longitudinal grooves 35 in the link 26 to hold the tubular portion 32 at its adjusted position.

The lower portion of the link 24 is screw-threaded at 35 and receives an adjustable knurled thumb screw 36 by means of which the amount of independent downward movement of the free end of the throttle lever 21 in respect to the link is adjusted for a purpose to be explained hereinafter. A suitable contracting spring 37 has its lower end connected with the throttle lever 23 and its upper end connected with the casting 1, by means of which the throttle levers 22 and 23 are normally held in their uppermost positions.

The needle valve 16 has its stem 38 projecting outside of the casting 1 and passes through the cam lever 39 and engages an adjustable thumb-screw 47 on the valve stem. The lower end of this cam lever 39 is pivoted at the point 43 to an arm 44 projecting outward from the casting 1, while its upper end 45 is engaged by a cam 46 operatively connected with the intermediate throttle 19. The adjustable thumb-screw 47 engages a screw-threaded portion 48 on the valve stem 38, by means of which the amount of movement of the valve stem by the cam 46 is adjustable.

The operating lever 50 is connected with the upper throttle 18 and an operating connection 51 is connected with the free end of this lever 50 for operating the throttles in a manner to be explained presently. This lever 50 carries at opposite sides arms 52 and 53, and passing through these arms are screws 54 and 55. These screws 54 and 55 are adapted to engage a lug 56 on the casting 1. The screw 54 by adjustment will limit the closing movement of the lever 50, and the screw 55 limits the opening movement of the lever 50 and by these screws these two movements are adjustable.

The operation of this carbureter is as follows: The screw 36 is set to hold the upper throttle 18 in its desired position, which would be slightly open. The screw 36 being adjusted to permit the desired independent movement of the throttle lever 21 on the link 24, the throttles 19 and 20 remain closed, while the throttle 18 is open the distance permitted by the independent movement of the lever 21 on the link 24. During this period of time, the explosive mixture is supplied to the motor wholly through the auxiliary carbureting chamber 9, the passage of air through the main carbureting chamber 2, being cut off by the throttles 19 and 20, which are normally held closed by the spring 37. This independent movement of the throttle 18 controls the slow operation of the motor, after which the continued opening of the throttle 18 carries the throttle lever 21 in engagement with the screw 36 and forces the links 25, 26 and 28 downward carrying with them the throttle levers 22 and 23, and opening the throttles 19 and 20 in the main carbureting chamber the desired distance according to the desired speed or power of the motor. The opening movement of the throttle 19 carries with it the cam 46, which operating on the cam lever 45 forces it outward and it in turn unseats the needle valve 16 in the main carbureting chamber 2 and the motor is then supplied with the mixture principally from the main carbureting chamber 2, and the amount of gasolene supplied is increased or decreased automatically by the cam and cam lever according to the distance the throttles 19 and 20 are opened.

By means of the screw threaded tubular portion 32, the relative positions of the throttles 19 and 20 may be regulated for the purpose of maintaining the desired vacuum at the nozzle of the nipple 8, which opens as before stated with the movement of the lower throttles and with the movement of the upper throttle after it has traveled its independent movement on the link 24.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. In a carbureter, the combination of a main carbureting chamber, an auxiliary carbureting passage having its two ends communicating with the ends of the main carbureting chamber, a gasolene supply for the auxiliary passage, a gasolene supply located in the main carbureting chamber at a point between the ends of said auxiliary carbureting passage, and throttles in the main carbureting chamber controlling the passage of the mixture through the main carbureting chamber and the auxiliary carbureting passage.

2. In a carbureter, the combination of a main carbureting chamber, an auxiliary carbureting passage having its two ends communicating with the ends of the main carbureting chamber, a gasolene supply for the auxiliary passage, a gasolene supply located in the main carbureting chamber at a point between the two ends of said auxiliary carbureting passage, a throttle located in the main carbureting chamber between the ends of the auxiliary carbureting passage to control the passage of air through the main carbureting chamber, and a throttle located in the main carbureting chamber beyond the

upper end of the auxiliary carbureting passage to control the passage of the mixture through the latter.

3. In a carbureter, the combination of a main carbureting chamber, an auxiliary carbureting passage having its ends communicating with the ends of the main carbureting chamber, a gasolene supply for the auxiliary passage, a gasolene supply located in the main carbureting chamber at a point between the ends of the said auxiliary carbureting chamber, a throttle in the main carbureting chamber at a point in rear of the outlet end of the auxiliary carbureting passage, a throttle in the main carbureting chamber beyond the said outlet end of the auxiliary carbureting passage, the last mentioned throttle operatively connected with the first mentioned throttle, but having a predetermined movement independent thereof, for the purpose described.

4. In a carbureter, the combination of a main carbureting chamber, an auxiliary carbureting passage having its ends communicating with the ends of the main carbureting chamber, a gasolene supply for the auxiliary passage, a gasolene supply in the main carbureting chamber located between the ends of the auxiliary carbureting passage, throttles located within the main carbureting chamber at opposite sides of the gasolene supply, and a third throttle in the main carbureting chamber beyond the outlet of the auxiliary carbureting passage, said throttles operatively connected for the purpose described.

5. In a carbureter, the combination of a carbureting chamber, a carbureting passage, two gasolene supplies, a throttle located in the carbureting chamber, separate valves controlling said gasolene supplies and operative connections between the throttles and one of the valves, whereby the opening of the throttle opens the said movable valve.

6. In a carbureter, the combination of a plurality of throttles therein operatively connected and relatively adjustable, a carbureting passage, two gasolene supplies, a carbureting passage for each gasolene supply, valves for said supplies, and an operative connection between the throttles and one of said valves, whereby the opening and closing of the throttles open and close the said valve.

7. In a carbureter, the combination of a carbureting chamber, a carbureting passage, a purality of throttles in said chamber relatively adjustable and two independent gasolene openings, one fixed and the other operatively connected and variable by the movement of said throttles.

8. In a carbureter, the combination of a carbureting chamber, a carbureting passage, independent gasolene openings, a plurality of throttles in the said chamber, a cam operatively connected with one of the throttles, and a cam lever actuated by the cam and controlling one of said gasolene openings.

9. In a carbureter, the combination of a carbureting chamber, a gasolene opening therein, a plurality of throttles in the carbureting chamber and located at opposite sides of the said gasolene opening, a valve controlling the gasolene opening, adjustable connections between the throttles, and an operative connection between one of the throttles and a valve for controlling the gasolene opening.

10. In a carbureter, the combination of a carbureting chamber, a gasolene opening therein, a throttle in said chamber above the gasolene opening, a second throttle in said chamber located beyond the first-mentioned throttle, said throttles operatively connected, one throttle having a limited movement independent of the connection, means for regulating said independent movement, a valve controlling the gasolene opening, and an operative connection between the valve and one of said throttles for the purpose of opening the valve when the throttle is opened.

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

ALEXANDER WINTON.

Witnesses:
A. S. NEWTON,
B. B. BROCKWAY.