

C. F. HUDDLE

CARBURETING AND LUBRICATING DEVICE FOR INTERNAL COMBUSTION ENGINES

Filed Jan. 28, 1927

2 Sheets-Sheet 1

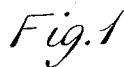
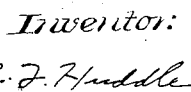


Fig. 2

June 30, 1931.

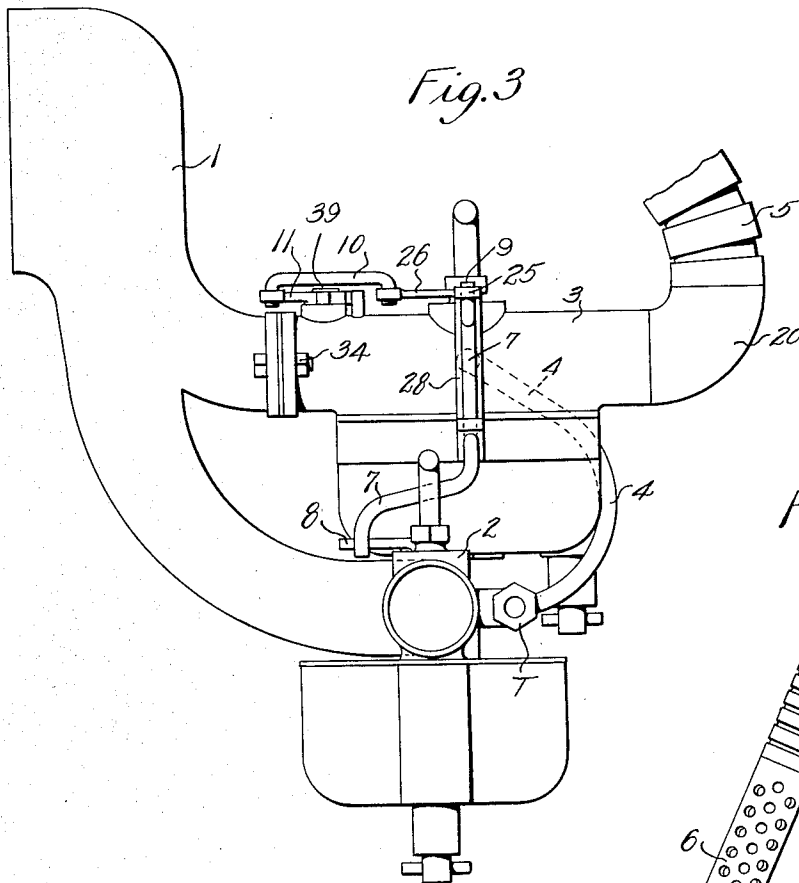
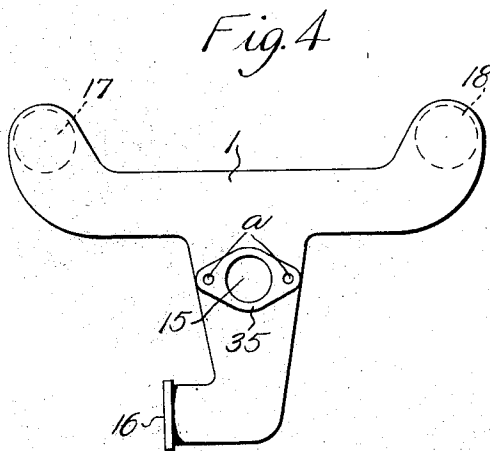
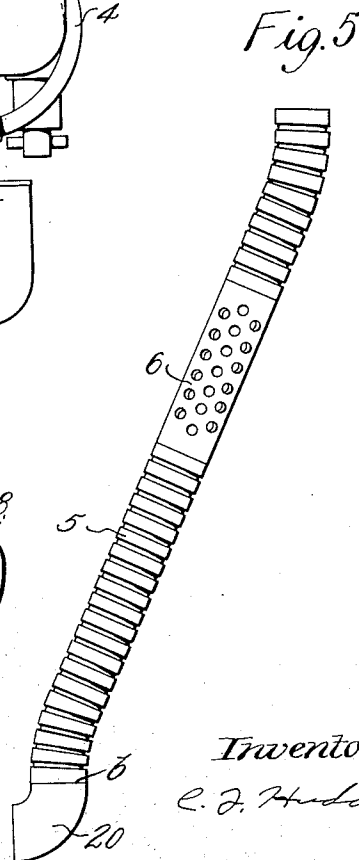
C. F. HUDDLE

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CARBURETING AND LUBRICATING DEVICE FOR INTERNAL COMBUSTION ENGINES

Filed Jan. 28, 1927

2 Sheets-Sheet 2



Inventor:
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UNITED STATES PATENT OFFICE

CARL FRED HUDDLE, OF NAPOLEON, OHIO

CARBURETING AND LUBRICATING DEVICE FOR INTERNAL COMBUSTION ENGINES

Application filed January 28, 1927. Serial No. 164,323.

The present invention relates to carbureting and lubricating devices for internal-combustion engines; and its object is, generally, to provide a device of this character improved in various respects hereinafter appearing; and more particularly, to provide in combination a carburetor of usual type and operation and a second carburetor whereby a lubricant with heated air may be drawn into the manifold common to both carburetors; and further, to provide in such a device means whereby the vacuum in the engine's intake manifold may be decreased; and further, to provide in connection with said second carburetor means for relieving the vacuum occasioned by the drawing of an insufficient amount of lubricant therethrough; and further to provide in such a device means whereby the gases in the engine's crank case may be drawn into the engine and utilized as fuel; and further, to provide means for controlling the said carburetors in their joint, and also in their interrelative, operations; and further, to provide such a double-carburetor device whereby increased economy at high speeds may be attained.

These objects are attained by, and the invention finds preferable embodiment in, the structure hereinafter particularly described in the body of this specification and illustrated by the accompanying drawings, in which:

Figure 1 is a side view of an internal-combustion engine having my carbureting and lubricating device applied thereto;

Figure 2 is a top plan view of said device;

Figure 3 is an end view of the same;

Figure 4 is a side view of the manifold common to both the carburetors of the device; and

Figure 5 is a view of a flexible tube whereby heated air and lubricant is drawn into one of the carburetors.

In the embodiment of the invention illustrated by said drawings, my carbureting and lubricating device is shown applied to the side of an automobile's internal-combustion engine of any usual type. The manifold 1 vents into the engine through the ports 17 and 18, the fuel and air mixture being drawn into

the manifold through its port 16 from the first carburetor 2 and the fuel, air and lubricant mixture being drawn into the manifold through its port 15 from the second carburetor 3. The first carburetor 2 is of usual type and operation, air being drawn thereinto through the pipe 37 connected to said carburetor at *x*. The lubricant—i. e., oil fumes—is drawn into the second carburetor 3 from a suitable source as the engine's crank case, through a flexible pipe 5 supported at *s* in proximity to the engine (as by a collar 21 detachably secured by a bolt 36) in order that the air and lubricant passing there-through may be heated by the engine. This pipe 5 has a portion 6 provided with air intakes through its wall, so that any vacuum created by the operation of the engine may be sufficiently relieved. The fuel is delivered to both carburetors through a pipe 4 venting into the first carburetor 2 through the coupling T, and into the second carburetor 3 through the elbow *d*. The passage of the fuel and air mixture through the first carburetor 2 is controlled by a valve whose shaft 38 has an operating arm 8, the passage through the second carburetor 3 being controlled by a valve whose shaft 39 has the operating arm 11. Suitable connections for operating these valves jointly and also relatively to each other are provided, such connections (as illustrated) being the following:

An annular element, the flexible band 27 may be clamped in angularly adjusted position around the second carburetor 3 as by the screw bolt 29. This band carries a vertical post 28 and has a lateral extension in whose bearing 24 a vertically disposed rock shaft 7 turns. When the arm 8 of the first carburetor's valve is swung, by a suitable operating rod indicated at 30 in dotted lines, far enough toward the left-hand side of Figure 2, it strikes the lower crank arm of shaft 7 turning it in its bearing 24 and causing its upper crank arm to swing the short arm 25 of a bell crank lever fulcrumed at 9 on the upper end of post 28. The long arm 26 of this bell crank lever is connected with the arm 11 of the valve of the second carburetor 3 by a link 10, so that the said oper-

ation of the operating rod 30 moves both valves together toward their open positions, such movement of arm 11 being yieldingly resisted by a spring 13 connected at one end to said arm and at the other end to a bracket 14 at J, said spring pressing this valve to closed position.

It will be seen that the interrelative movement of these valves may be adjusted by turning the band 27 about the second carburetor 3 to desired clamped position. Thus the band 27 may be turned and clamped in such a position that the lower crank arm of shaft 7 will not be contacted and swung by arm 8 until the valve of the first carburetor 2 is half open, and nevertheless the valves of both carburetors may be completely opened at the same time.

It will be seen that the amount of fuel and air mixture passing through the first carburetor 2 and the amount of heated air, fuel and lubricant mixture passing through the second carburetor 3 may be easily adjusted relatively to each other; and that, if the amount of oil fumes in the crank case is not sufficient the vacuum created therein is relieved by the air openings through portion 6 of the pipe 5; also that the faster the engine runs the more lubricant is drawn into it through said pipe.

The device may be detachably mounted on the engine, screw bolts 34 passing through holes *a* in the connecting flanges of the second carburetor 3 and the manifold 1, the pipe 5 being connected at *b* to the elbow 20 of the second carburetor, and the flanges of the two carburetors being connected at *m* by bolts *y*.

Furthermore: It is evident that inasmuch as the vacuum in the engine's intake manifold is by my device decreased or relieved, more power and higher speed of the engine is attained; that, inasmuch as the gases in the engine's crank case are drawn into the engine, additional fuel is thereby supplied; and that increased economy, especially at high speeds and by the operation of the second carburetor, is attained by my device.

The invention being intended to be pointed out in the claim, is not to be limited to or by details of construction of the particular embodiment thereof illustrated by the drawings or hereinbefore described.

I claim:

The combination with an internal combustion engine having a crank case, of an intake manifold having a terminal inlet and an intermediate inlet, a main carbureter connected with the terminal inlet, a high speed carbureter operable with the main carbureter and connected with the intermediate inlet, a fuel supply pipe connected with said carbureters, a main air supply pipe connected with the main carbureter, an air supply pipe connecting the high speed carbureter with the crank case and provided at an inter-

mediate point between the high speed carbureter and the crank case with apertures communicating with the atmosphere and adapted to decrease the vacuum of the engine, controlling means for the main carbureter, and separate controlling means for the high speed carbureter automatically operable by the first mentioned controlling means when the engine has attained a predetermined speed.

In testimony whereof I have hereunto set my hand at Napoleon, Ohio, this 18th day of May, 1927.

CARL FRED HUDDLE.