

Nov. 18, 1924.

1,516,040

W. A. GARLICK

GASOLINE CONTROL FOR AUTOMOBILES

Filed Jan. 21, 1924

Fig. 1.

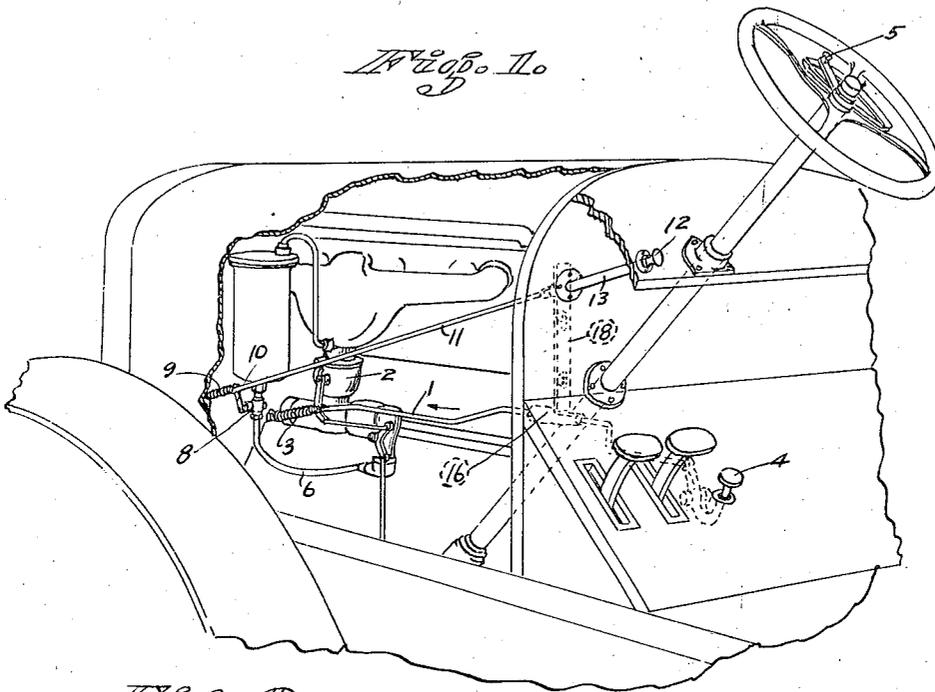


Fig. 2.

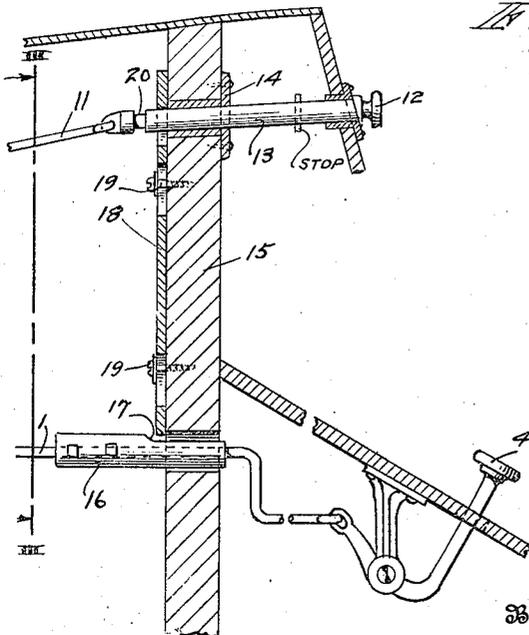
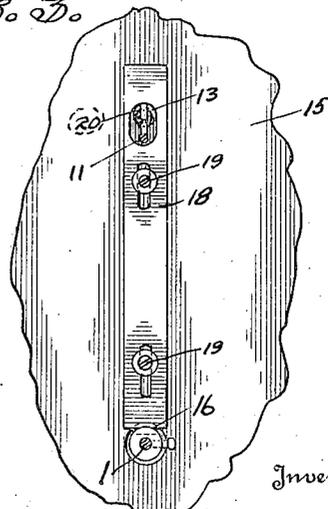


Fig. 3.



Inventor

WILLIAM A. GARLICK

Munn & Co.

Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM A. GARLICK, OF SAN FRANCISCO, CALIFORNIA.

GASOLINE CONTROL FOR AUTOMOBILES.

Application filed January 21, 1924. Serial No. 687,652.

To all whom it may concern:

Be it known that I, WILLIAM A. GARLICK, a citizen of the United States, and a resident of San Francisco, county of San Francisco, and State of California, have invented a new and useful Gasoline Control for Automobiles, of which the following is a specification.

This invention relates to the present system of feeding gasoline or other fuel to automobile engines, especially during idling or coasting periods.

In the present day automobile, as is well known, for the purpose of preventing the engine from stalling, the throttle is so arranged or adjusted that it will never completely close, and this provision, while effective in this respect, is highly detrimental in another respect, as will appear hereafter. When coasting down long inclines with the throttle closed and the engine "idling," if the ignition is on, the engine consumes unnecessary gasoline, and, incidentally, unnecessarily carbonizes the cylinders, valve chambers, valves and spark plugs. If, under the same circumstances, the ignition is turned off, the engine draws in and compresses gasoline vapor, some of which passes between the walls of the cylinder and the rings, reaching the crank case and diluting the lubricating oils therein, and some of it collects in the exhaust manifold and the muffler, where it will result in a muffler explosion as soon as the ignition is turned on. The resulting explosion creates unnecessary noise and sometimes results in the destruction of the muffler.

The injurious effect is increased when using the engine as a compression brake for the reason that this is frequently done on intermediate or low gear, which increases the speed of the engine and consequently increases the quantity of gasoline pumped into it. If under these circumstances the ignition is turned on, the engine develops power which is diametrically opposed to the purpose for which it is being used, namely, as a compression brake, and if the ignition is turned off, the resulting dilution of the crank case oil, carbonization of the cylinders and muffler explosions take place.

The objects of my invention are to overcome the injurious results of the present system with a device which will

(a) Reduce the consumption of gasoline;

(b) Reduce the carbonization of the cylinders, etc.;

(c) Reduce the dilution of crank case oil;

(d) Eliminate muffler explosions;

(e) Eliminate the pull or driving power of the engine when the engine is being used as a compression brake.

These results are obtained preferably without changing the setting of the carburetor by providing means of entirely closing off the gasoline when the throttle is in the idling position, and such means as will be rendered automatically inoperative upon the opening of the throttle. Also means of this character which is simple and which may be easily installed on any existing gasoline automobile or incorporated in the carburetors of new machines as an integral part thereof.

One method of realizing the objects outlined is shown in the drawings accompanying this specification and in which:

Figure 1 is a view in perspective of the forward side of an automobile with certain parts omitted and my invention in place;

Figure 2 is a larger vertical section of the dash showing the locking device cooperating with the throttle rod and gasoline shut off control;

Figure 3 is a view of the parts shown in Figure 2 as seen from the dotted line 3—3 thereof.

In Figure 1 the various well known parts of the automobile will be easily recognized, and at (1) is shown the throttle rod of a carburetor (2). This rod is normally pulled in direction of the arrow by the spring (3) to maintain the throttle at idling speed, and the rod has the usual operating connections for operation either by the accelerator pedal (4) or the hand lever gas control (5).

The gasoline is delivered to the carburetor through the pipe (6), and on the pipe, at any convenient place to facilitate installing my improvement, I place a quick acting or plug valve as indicated at (8). This valve should open or close fully with a small movement of a lever, say a quarter turn or movement through 90° as indicated, and is normally held open by the spring (9) secured at one end to its lever (10) and at the other to any convenient place either on the valve, along the pipe, or elsewhere.

From the lever (10) of the gasoline cut off valve extends a cord or rod (11) to a pull knob (12) on the dash, whereby the gasoline

supply may be entirely cut off by a slight pull of the knob.

Ordinarily, when the engine is running, this knob would immediately fly back upon being let go of on account of the spring (9) which would at once open the valve, but if the knob is pulled when the throttle is shut off and the engine idling, a latch will fall and hold the knob against return movement so that all flow of gasoline to the carburetor is then stopped.

This may be effected in numerous ways as will be apparent to any mechanic, and one such way is indicated in Figures 2 and 3, the larger view of the rods and where the knob (12) is attached to a heavy sliding rod (13) working freely in a socket (14) fitted in the dash or partition (15), and connected at its end with the pull rod (11) from the valve (8).

Below the rod (13) is the throttle rod (1) adapted for movement back and forth to control the throttle, and mounted on the throttle rod is a sleeve (16) with a tapered notch at (17).

On the partition (15) is a loosely sliding gravity latch plate (18) positioned by screws (19) working in slots in the plate. The plate straddles the rod (13) as more clearly shown in Figure 3, and is adapted to fall into a notch (20) cut around the rod and lock the valve open when the knob (12) is pulled.

But during the ordinary driving of the automobile the latch plate is prevented from falling by the sleeve (16) upon which it is supported at its lower end, and is only free to fall at such times as the carburetor throttle is shut off and the rod (1) moves to the left carrying the sleeve with it and bringing the notch (17) under the plate as shown so that it is free to fall and thereby lock the valve (8) in shut off position when the knob is pulled.

The rod (11) locked as described will at once be released by a touch of the foot to the accelerator or through movement of the hand gas lever, as either of these operations will pull the throttle rod (1) and the angular end of the notch (17) will then raise the locking plate, thus instantly opening the gasoline shut off valve (8).

In cars where the throttle rod (1) is pushed instead of pulled to open the throttle, it is merely necessary to reverse the posi-

tion of the sleeve (16) and in cars where the rods (11) and (1) cannot be readily brought into operative relation suitable linkage may be employed to meet the conditions.

Also, the locking plate (18) may be actuated by a spring instead of gravity or otherwise modified or entirely dispensed with and some equivalent form of locking device substituted at any convenient point.

From the embodiment of the invention shown it will be evident to any mechanic without special illustration that instead of carrying out the idea by the use of an auxiliary valve (8) on the gasoline line, the valve may be located within the body of the carburetor or be combined with the throttle.

Having thus described my invention and indicated its possible modifications, I wish it understood that any such variations of the apparatus which come within the spirit of my invention are intended to be covered in my appended claims.

I claim:

1. In an automobile having an internal combustion engine with a throttle control, a shut off valve on the fuel supply pipe to the engine, automatic means for normally holding said valve open, means for holding it closed against the action of said automatic means, and instrumentalities cooperating with the throttle control for rendering the second means inoperative when the throttle is in other than idling position.

2. In an automobile having an internal combustion engine with a throttle control, a shut off valve on the fuel supply pipe to the engine, a spring for holding the valve open, a pull rod extending to the dash for pulling the valve closed against the spring action, a latch for locking the rod with the valve closed and a trip actuated by the throttle control adapted to trip the latch when the throttle is in other than idling position.

3. In an automobile having an internal combustion engine, a throttle control rod, a fuel pipe for the engine, with a shut off valve thereon, a spring for opening said valve, a pull extension from the valve to the dash for closing said valve, a latch for locking said pull with valve closed, a trip on the throttle control rod adapted to trip the latch at a predetermined point in the movement of the rod.

WILLIAM A. GARLICK.