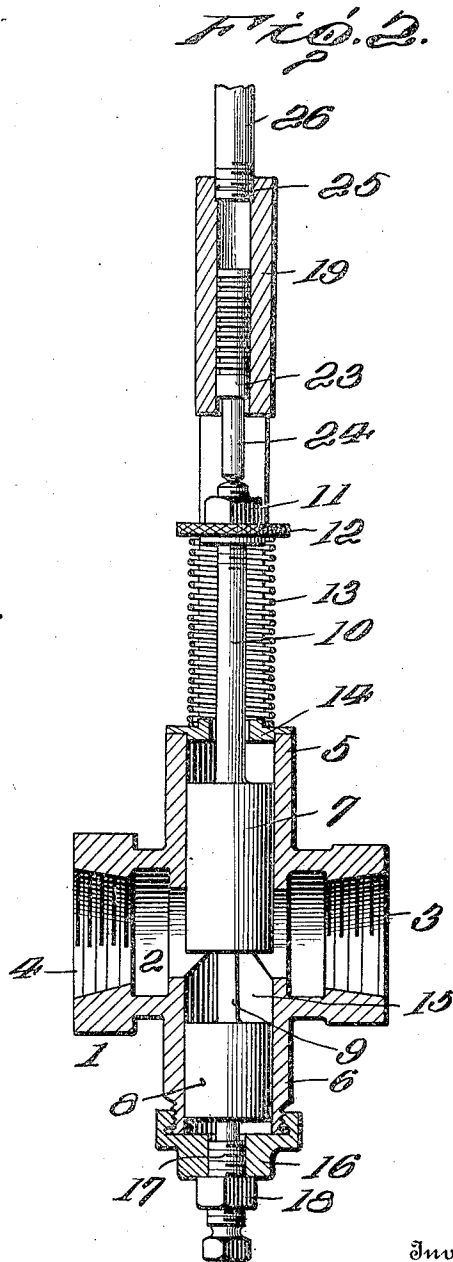
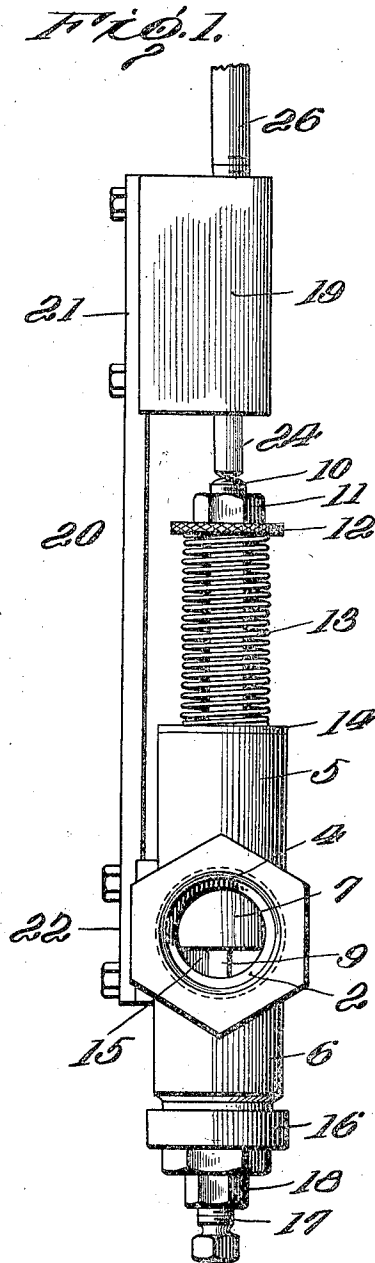


F. M. TITUS.
PRESSURE THROTTLE CONTROL.
APPLICATION FILED JULY 1, 1919.

1,348,604.

Patented Aug. 3, 1920.



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UNITED STATES PATENT OFFICE.

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PRESSURE THROTTLE CONTROL.

1,348,604.

Specification of Letters Patent.

Patented Aug. 3, 1920.

Application filed July 1, 1919. Serial No. 307,965.

To all whom it may concern:

Be it known that I, FRANK M. TITUS, a citizen of the United States, residing at Bradford, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Pressure Throttle Control, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in pressure throttle control, and is especially intended for use in connection with the explosion type of engine using gas as its fuel, and operating as an air compressor.

The object of the invention is to control the throttle and therefore the speed and power of the engine by the amount of stored pressure produced by an air or gas compressor, whereby when the predetermined maximum pressure of stored air or gas is obtained, this pressure will act to throttle the fuel fed to the engine through the medium of the present invention and thereby control the maximum pressure stored in a receiving tank.

In the accompanying drawings—

Figure 1 is an elevation of a device embodying my improved construction.

Fig. 2 is a longitudinal central sectional view taken at right angles to Fig. 1.

My invention comprises a housing 1, which has a passage 2 extending therethrough. One end of this passage 3 is an outlet for the fuel to an engine (not shown) and 4 an inlet passage for the fuel from a suitable source of supply (not shown).

This housing has an upwardly projecting portion 5 and a downwardly projecting portion 6. The upwardly projecting portion 5 forms a housing for a throttle or piston 7, that extends to and intercepts the passage 2, while the lower projection 6 forms a housing for a piston-like member 8, which is connected with the throttle 7 by means of a suitable web 9. A throttle stem 10 projects from the throttle 7 beyond the housing 5, and carries a screw-nut 11 and a washer 12, both of which are adjustable back and forth on the stem 10. Surrounding the projecting stem 10 is a spiral spring 13, and it is located between the washer 12 and a cap 14, resting on and closing the outer end of the housing 5. This spring serves to normally hold the throttle 7 in its upward posi-

tion and in this upward position the open space 15 will be in a line with the passage 2, and the passage 2 is closed to the extent that the throttle 7 moves downward.

A screw-cap 16 closes the lower end of the housing 6 and this cap carries an adjustable throttle screw cap 17, which projects into the housing 6 and will engage the lower member 8 of the throttle, to limit its downward movement to a minimum adjustment of the fuel passage and, therefore, regulate the minimum speed of the engine. This screw 17 is held in its adjusted position by a suitable lock-nut 18.

Supported above the throttle stem 10 is a cylinder 19 by means of a rod 20, which has its upper end 21 bolted to the cylinder, as shown, and its lower end 22 bolted to the housing as shown. This cylinder 19 is in a line with the throttle stem 10 and it contains a suitable piston 23, the stem 24 of which is in engagement with the end of the throttle stem 10. The opposite or upper end 25 of the cylinder 19 is connected by means of a pipe 26 with a pressure storage tank (not shown) so that the pressure in the tank is communicated to the cylinder and acts on the piston 23 to force it down against the throttle stem 10, and when the pressure has reached its maximum, the pressure of the spring 13 is overcome and the throttle is pushed downward to its lowest position, as shown in Fig. 2 to permit a minimum amount of fuel to flow to the engine and reduce its speed, and therefore the amount of pressure supplied by the compressor operated by the engine, is correspondingly reduced.

With the parts in the positions shown, the maximum pressure is acting on the piston 23 and the throttle 7 is moved to its closed position and the amount of fuel passing by it is reduced to a minimum. When the pressure in the cylinder 19 is reduced, the spring 13 moves the throttle upward causing it to open and the speed of the engine increased to increase the rapidity with which air or gas pressure is fed to the storage tank.

By means of the adjustable nut and washer carried by the projecting end of the throttle stem 10, the pulling tension on the throttle can be regulated and thereby regulate the predetermined pressure required to overcome the spring pressure through the

medium of the piston 23 for closing the throttle 7, so that the device is capable to be set for operation at any desired pressure.

From the foregoing it will be observed
5 that the housing 1 is approximately of a Maltese cross-shape in external contour. Two of the arms of the cross are formed by the inlet and outlet fuel projections or passages 3 and 4, and the projections 5 and
10 6 form the other arms of the cross. The projection 6 may be termed a piston cylinder, and the projection 5 a throttle cylinder.

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

A device of the character described, comprising a housing having a fluid passage extending therethrough, a valve passage extending therethrough having an open end

of a diameter equal to the diameter of the
20 passage, a valve in the last mentioned passage and controlling the fluid passage, a cap closing the open end of the valve passage, the valve having a stem passing loosely
25 through the cap and extending beyond it, the extended end of the valve stem having an adjustable screw-nut, an expanding spiral spring between the cap and the nut and holding the cap in position and the
30 valve stem outward, a cylinder supported beyond the valve stem, and a piston in the cylinder extending therefrom and engaging the end of the valve stem, the cylinder having a pressure communication, the parts
35 operating as and for the purpose described.

In testimony whereof I hereunto affix my signature.

FRANK M. TITUS.