No. 873,387. PATENTED DEC. 10, 1907.

C. SCHMIDT.

THROTTLE VALVE FOR HYDROCARBON ENGINES.

APPLICATION FILED OCT. 12, 1905.

Fig. 1.

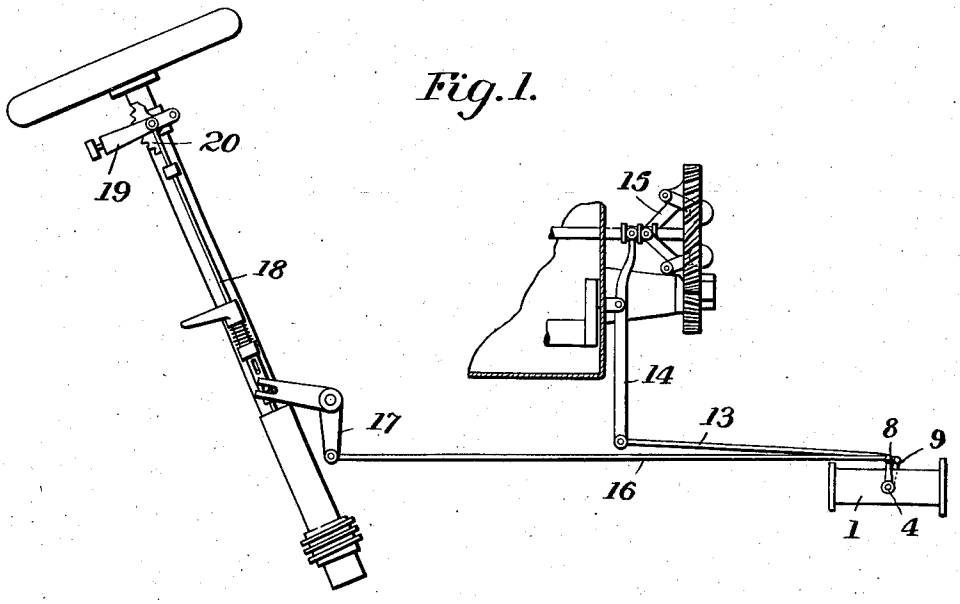


Fig. 2.

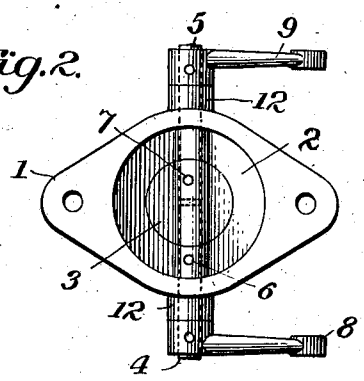


Fig. 3.

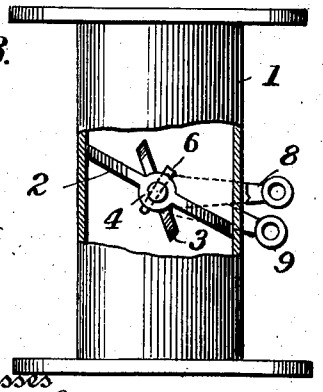


Fig. 4

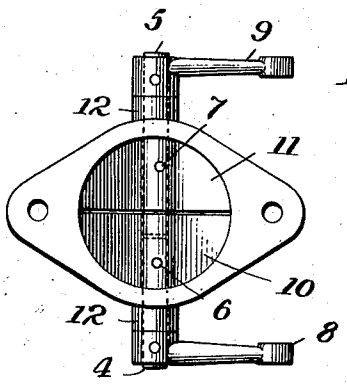
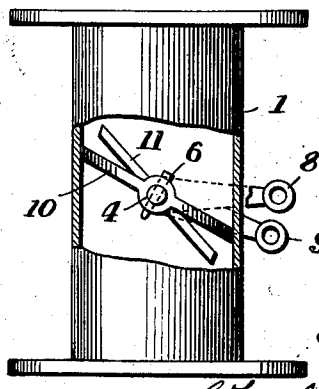


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES SCHMIDT, OF CLEVELAND, OHIO, ASSIGNOR TO PACKARD MOTOR CAR COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF WEST VIRGINIA.

THROTTLE-VALVE FOR HYDROCARBON-ENGINES.

No. 873,387. Specification of Letters Patent. Patented Dec. 10, 1907.

Application filed October 12, 1905. Serial No. 282,511.

To all whom it may concern:

Be it known that I, CHARLES SCHMIDT, a citizen of the Republic of France, and resident of Cleveland, Cuyahoga county, State of Ohio, have invented certain new and useful Improvements in Throttle-Valves for Hydrocarbon-Engines, of which the following is a specification.

This invention comprises improvements in the throttling devices of hydrocarbon engines and it consists in a two-part balanced valve arranged in the mixture pipe leading from the carbureter to the engine and means for independently operating the parts of the valve.

The invention will be described in detail in connection with the accompanying drawing, in which,

Figure 1 is a diagrammatic view illustrating means for operating the throttle valve; Figs. 2 and 3 are side and edge views of valves illustrating one form of the invention; and Figs. 4 and 5 are similar views illustrating another form of the invention.

Referring to Figs. 2 and 3 of the drawing, 1 indicates the pipe through which the explosive mixture is carried from the carbureter to the engine, 2 indicates an annular balanced valve pivotally mounted in the pipe 1, and 3 indicates a circular balanced valve which is fitted to the opening in the valve 2. The valves 2 and 3 are each mounted upon shafts 4 and 5, the valve 2 being connected to the shaft 4 by a pin 6, while the valve 3 is connected to the shaft 5 by a pin 7. The valve 2 is free to turn on the shaft 5 and the valve 3 is free to turn on the shaft 4. On the shaft 4 is a suitable operating arm 8, while a similar arm 9 is carried by the shaft 5. It will be evident that the valves 2 and 3 may be turned independently by their respective arms or levers 8 and 9, with the exception that in its opening movement the valve 2 will carry with it the valve 3 owing to the beveled joint between them, while in its closing movement the valve 3 will carry with it the valve 2 for the same reason. In operation however both valves may be more or less open in which case they may be operated independently.

In Figs. 4 and 5 are shown another form of the invention in which there are two semicircular valves 10, 11, the valve 10 being rigidly connected with shaft 4, while the valve 11 is rigidly connected with shaft 5. It will be observed that these valves 10, 11, are entirely independent and either may be opened or closed, without affecting the other. The shafts 4, 5 are preferably mounted in bosses 12 on the sides of the pipe or valve chamber 1. As shown in Fig. 4, the shaft 5 is extended through valve 11 into a socket in valve 10, thus stiffening the shafts.

In Fig. 1 is illustrated one means of controlling the double throttle valve. The arm 8 of valves 2 or 10 is connected by means of link 13 and lever 14 with the governor 15, controlling the motor. The arm 9 of valves 3 or 11 is connected by a link 16, elbow levers 17, and rod 18 with a setting lever 19 which may be locked in any desired position on a segmental rack 20. By means of the connections 16 to 20, one of the valves can be set at any given opening desired, while the other valve is left free to be controlled by the governor.

Any other arrangement of controlling devices for the valves may be substituted for those shown, the present invention consisting in the special construction of throttle valve which permits of suitable control of the inflow of mixture to the engine.

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

1. In a throttling device for hydrocarbon engines, the combination of a valve casing, two opposite radially arranged coaxial shafts therein, independent valves on said shafts, and means for controlling said valves including a governor connected to one valve and adjusting and locking devices for the other valve.

2. In a throttling device for hydrocarbon engines, the combination of a valve casing through which the mixture passes to the engine, two valve operating shafts arranged radially and coaxially in said casing, semicircular valves arranged on said shafts and adapted jointly to close the passage through

said casing, and means for operating said valves independently.

3. In a throttling device for hydrocarbon engines, the combination with a cylindrical valve casing, of two semicircular valves adapted jointly to close the passage through said valve casing, and means for operating said valves independently.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES SCHMIDT.

Witnesses:
H. R. SULLIVAN,
W. L. MCGARRELL.