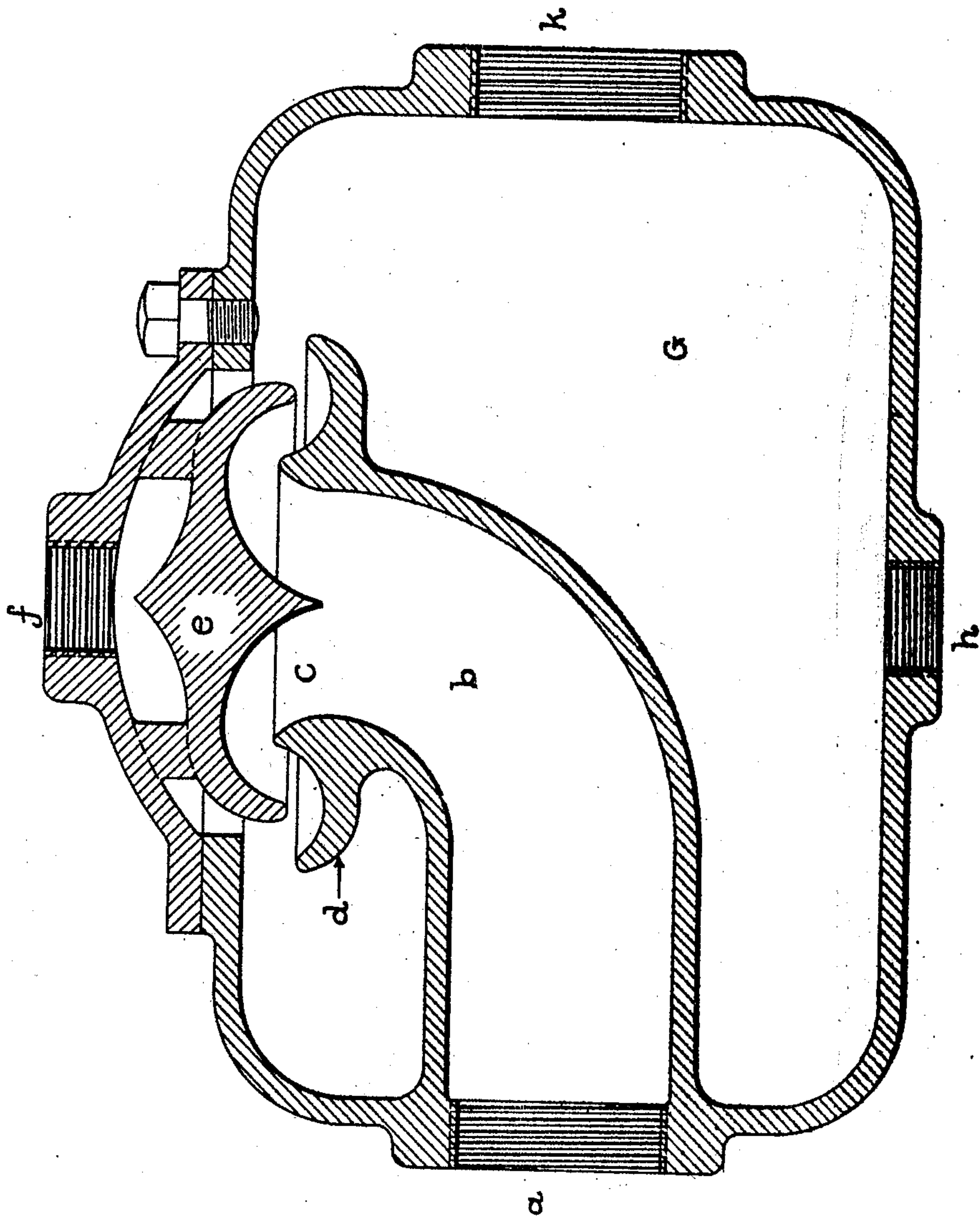


W. L. TOBEY.
SILENCER FOR INTERNAL COMBUSTION ENGINES.
APPLICATION FILED MAY 14, 1909.

940,290.

Patented Nov. 16, 1909



WITNESSES:

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SILENCER FOR INTERNAL-COMBUSTION ENGINES.

940,290.

Specification of Letters Patent.

Patented Nov. 16, 1909.

Application filed May 14, 1909. Serial No. 496,093.

To all whom it may concern:

Be it known that I, WILLIAM LAUGHTON TOBEY, a citizen of the United States, of Winthrop, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Silencers for Internal-Combustion Engines, of which the following is a specification.

My invention relates to mufflers or silencers used in connection with exhaust piping of internal combustion or gas engines and has for its object to so completely extract the heat from the exhaust gases and reduce the volume and consequent pressure of the exhaust gases as to make their exhaust into the atmosphere practically noiseless. I accomplish this in the following manner.

The drawing shows in section an expansion chamber G proportioned to the size of the engine cylinder used.

The exhaust gases enter at *a*, passing through the internal elbow pipe *b* having a vertical outlet at C. This outlet is formed with an increasing sectional area to reduce friction and around and below this outlet is a suitable saucer shaped flange *d*, to direct the flow of the exhaust gases in the desired path. Above the vertical outlet C. is a horizontal deflecting plate *e*, of a shape to cause the least friction of the gases and with the lower outside edge below the top of the vertical exhaust outlet C. The pipe *f* is connected with the circulating water from the cylinder water jackets, or other source and discharges on to the center of the horizontal deflecting plate *e*. The water flows from the circumference of the deflecting plate *e*, in the form of spray or a thin sheet, providing the most complete and efficient medium for cooling the exhaust gases as they enter the expansion chamber G. The lower edge of the deflecting plate *e*, being below the top of the vertical discharge nozzle C, makes it practically impossible for the water flowing over the deflecting plate *e*, to enter the exhaust nozzle *b* and thence into the cylinder.

The vertical exhaust outlet C, being located near the top of the expansion chamber G makes it practically impossible for water to flow back through the exhaust outlet *b*, and flood the cylinder as the drain *h*, in the bottom of the exhaust chamber G allows free escape of all returning water before the level of the vertical outlet C, is reached.

The gases escape from the expansion chamber G at the outlet *h*.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a silencer for internal combustion engines, the combination of an expansion chamber containing a centrally located vertical inlet nozzle having a connecting passage to outside of expansion chamber, a horizontal gas deflecting and water scattering plate having a water inlet centrally located over said plate and a gas outlet substantially as described.

2. In a silencer for internal combustion engines, the combination of an expansion chamber, a centrally located vertical inlet nozzle having a connecting passage to outside of expansion chamber, said nozzle having a surrounding flange below and near the top of said nozzle to deflect the escaping gases into immediate contact with the water delivered over the edge of a superimposed horizontal gas deflecting and water scattering plate having a water inlet centrally located over said plate and a gas outlet substantially as described.

3. In a silencer for internal combustion engines, the combination of an expansion chamber containing a centrally located vertical inlet nozzle having a connecting passage through expansion chamber to outside of chamber, said nozzle having a surrounding saucer shaped flange to deflect the escaping gases into immediate contact with the water delivered over the edge of a superimposed horizontal gas deflecting and water scattering plate before said gases enter said expansion chamber, a water inlet located centrally over said water scattering plate and a gas outlet substantially as described.

4. In a silencer for internal combustion engines, the combination of an expansion chamber, a centrally located vertical inlet nozzle having a connecting passage to outside of expansion chamber, and a surrounding flange below and near the top of said nozzle to deflect the gases at nozzle outlet into direct contact with the water from the outside edge of a superimposed horizontal gas deflecting and water scattering plate having a water inlet centrally located over said plate, a gas outlet and a water drain substantially as described.

5. In a silencer for internal combustion

engines, the combination of an expansion chamber, a vertical inlet nozzle having a connecting passage through the expansion chamber, and a saucer shaped flange, surrounding and located immediately below said nozzle outlet, to deflect the gases into immediate contact with the water flowing from the edge of a superimposed horizontal gas deflecting and water scattering plate having a water inlet centrally located over said plate, a gas outlet and a water drain substantially as described.

6. In a silencer for internal combustion engines, an expansion chamber having a centrally located vertical inlet nozzle with its connecting passage to outside of expansion chamber, a superimposed horizontal gas deflecting and water scattering plate having a water inlet centrally located over said

water scattering plate, a gas outlet and a water drain substantially as described.

7. In a silencer for internal combustion engines, an expansion chamber a vertical gas inlet nozzle having its connecting passage within and to the outside of said expansion chamber, a superimposed horizontal gas deflecting and water scattering plate having its lower outside edge below the level of outlet of vertical gas inlet nozzle, a water inlet centrally located over said water scattering plate, a gas outlet and a water drain substantially as described.

In testimony whereof I have affixed my signature, in presence of two witnesses.

WILLIAM LAIGHTON TOBEY.

Witnesses:

ERNEST C. WHIDDEN,
NATHAN CLARK.