G. E. STANLEY.

INTERNAL COMBUSTION ENGINE.

APPLICATION FILED MAY 13, 1918.

1,306,198.

Patented June 10, 1919.

2 SHEETS—SHEET 1.

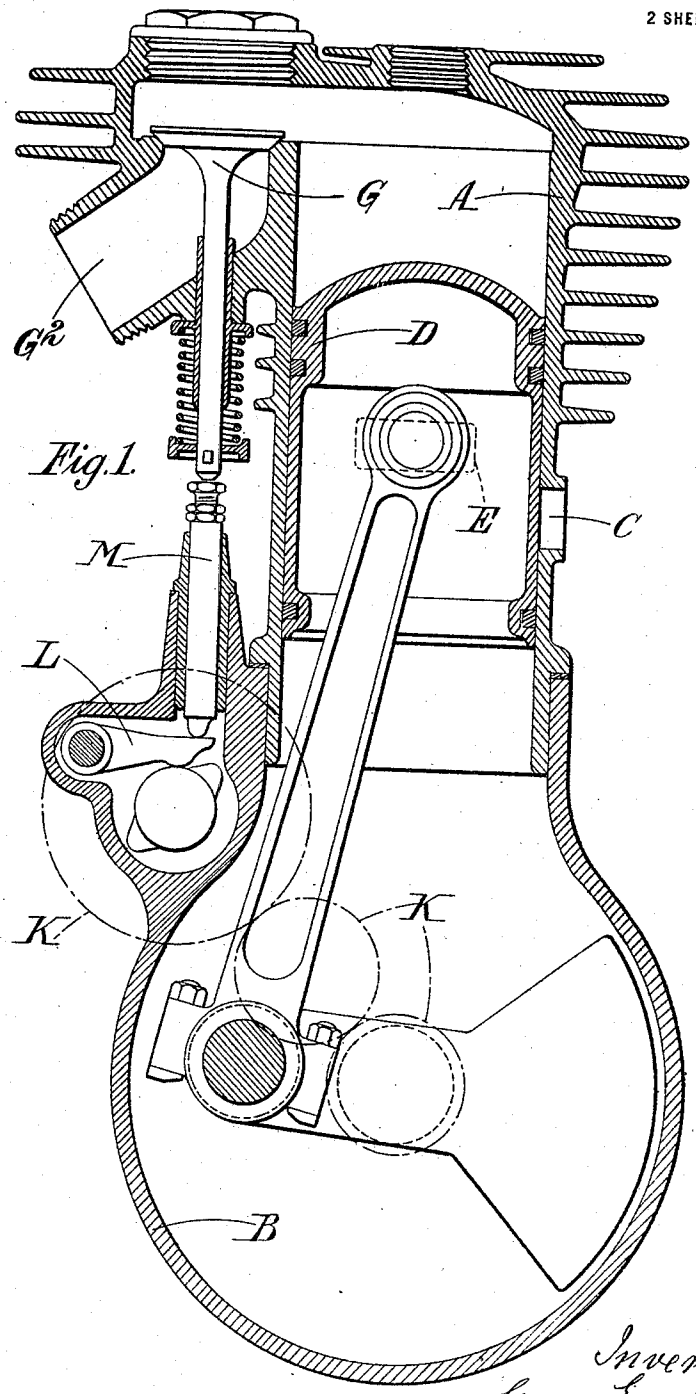


Fig. 1.

Inventor:
George Enoch Stanley
by Alfred Allen,
Atty.

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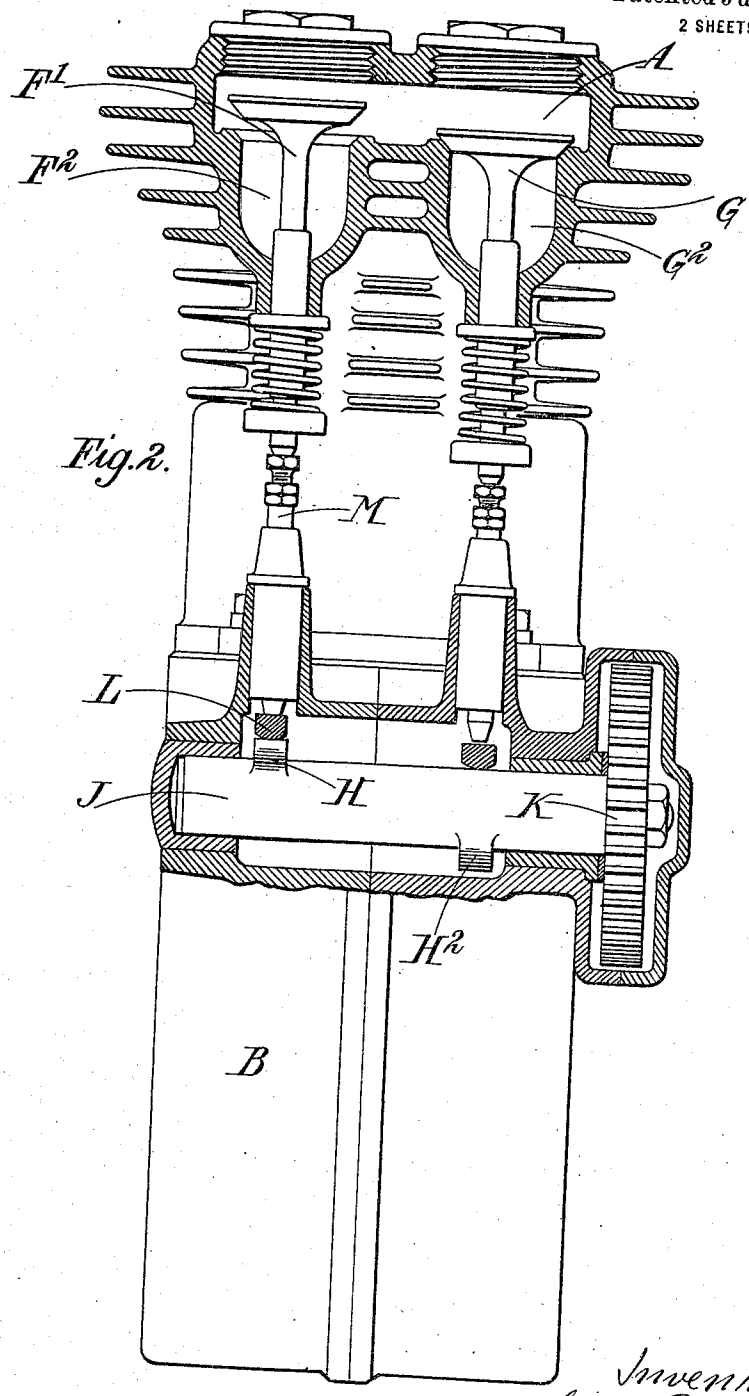


Fig. 2.

Inventor:
George Ewart Stanley
by Albert G. Davis
Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE ENOCH STANLEY, OF COVENTRY, ENGLAND.

INTERNAL-COMBUSTION ENGINE.

1,306,198. Specification of Letters Patent. Patented June 10, 1919.

Application filed May 13, 1918. Serial No. 234,156.

To all whom it may concern:

Be it known that I, GEORGE ENOCH STANLEY, a subject of the King of England, residing at Coventry, Warwickshire, England, have invented certain new and useful Improvements in Internal-Combustion Engines, of which the following is a specification.

This invention relates to two-stroke-cycle internal combustion engines, and has for its object to provide an efficient exhaust system in which valve troubles due to excessive temperatures are reduced to a minimum.

According to this invention two or more exhaust valves are provided and are adapted to be operated in turn during successive exhaust strokes. Thus the excessive heating which accompanies the use of the same exhaust valve for every stroke is avoided, as the valves have an opportunity of cooling between each operative period when more than one exhaust valve is employed.

The invention is illustrated in the accompanying drawing, as applied to a two-stroke-cycle engine of the type in which induction and initial compression of the charge take place in the crank chamber.

Figure 1 is a vertical section through the axis of a cylinder and through one exhaust valve which is closed.

Fig. 2 is a view at a right angle to Fig. 1 showing the exhaust valve mechanism in section.

Like letters indicate like parts throughout the drawings.

A is the cylinder and B the crank chamber, while C is the inlet port which is uncovered when the piston D approaches the top of its stroke. On the down stroke of the piston the gas is compressed in the chamber B, ready to be afterward transferred to the cylinder by a transfer passage the upper end of which is indicated at E in Fig. 1.

There are two exhaust valves F′, G located in a pocket at the side of the cylinder head, and provided with separate exhaust passages F^2 G^2. The valves are lifted alternately by cams H, H^2 on the cam shaft J driven at half engine speed by spur gearing K; rockers L and tappet rods M being interposed between the cams and the valve stems.

Obviously, if desired, the cam shaft may run at quarter engine speed, two swells then being provided on each cam. Further, the valves may be of any other type than puppet valves. For example, sleeve or piston valves may be used. The inlet and compression details of the engine may be of any suitable type.

What I claim as my invention and desire to secure by Letters Patent is:—

In a two-cycle internal combustion engine, the combination with the engine cylinder of two separate exhaust passages, two separate exhaust valves provided therefor, and means for alternately operating said valves.

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

GEORGE ENOCH STANLEY.

Witnesses:

ALBERT BROWN,

SIDNEY JOHNSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."