No. 741,824. PATENTED OCT. 20, 1903.

O. E. PEHRSSON.

GASOLENE ENGINE.

APPLICATION FILED FEB. 1, 1902.

NO MODEL.

Fig. 1.

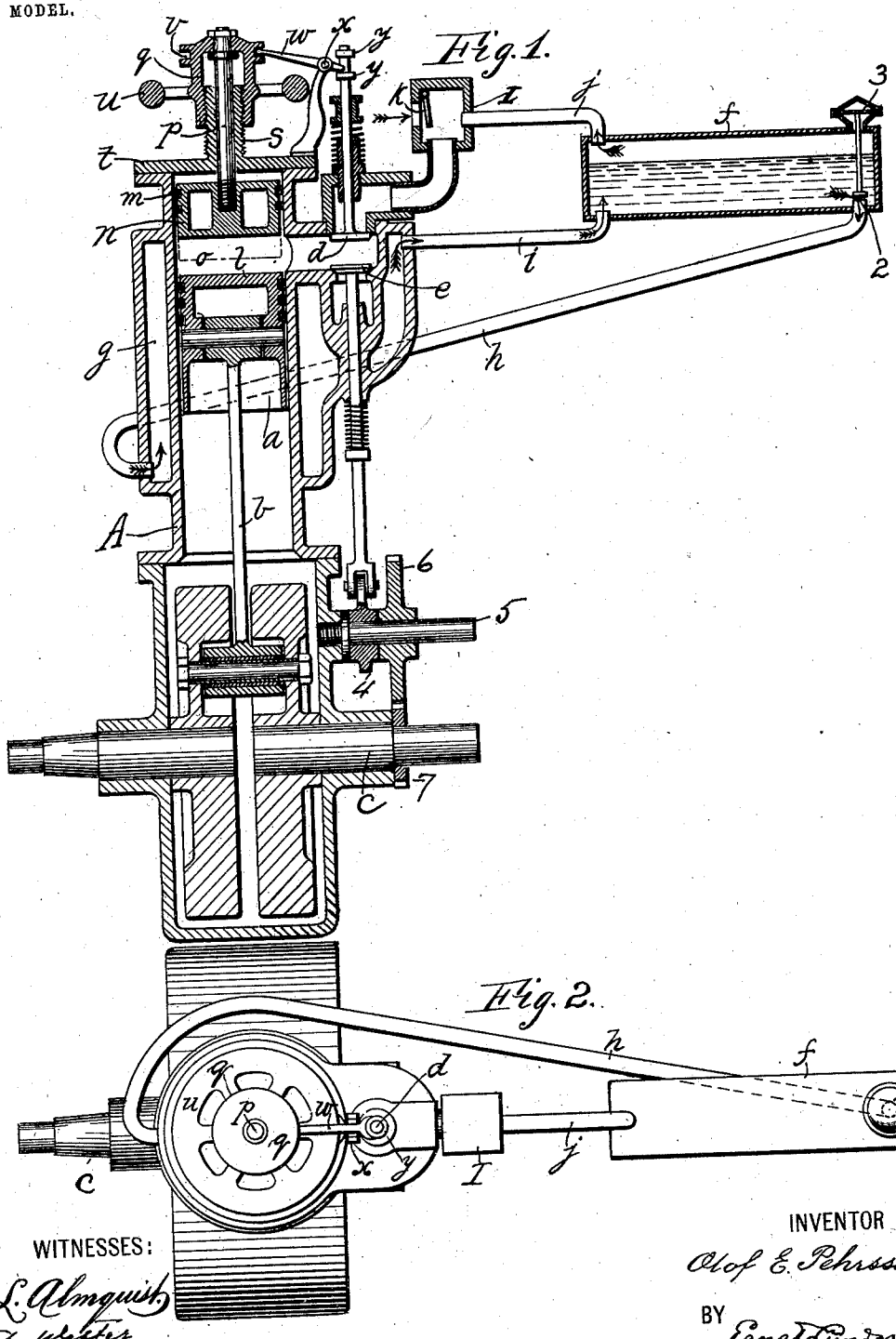

Fig. 2.

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No. 741,824. Patented October 20, 1903.

UNITED STATES PATENT OFFICE.

OLOF E. PEHRSSON, OF BROOKLYN, NEW YORK.

GASOLENE-ENGINE.

SPECIFICATION forming part of Letters Patent No. 741,824, dated October 20, 1903.

Application filed February 1, 1902. Serial No. 92,111. (No model.)

To all whom it may concern:

Be it known that I, OLOF E. PEHRSSON, a citizen of the United States of America, and a resident of the borough of Brooklyn, New York city, and State of New York, have invented certain new and useful Improvements in Gasolene-Engines, of which the following is a specification.

My invention consists of the combination, with an engine having a variable combustion-chamber, of means for automatically varying the charges of the fuel mixture proportionately to the variations of the combustion-chamber in such manner as to maintain uniform or practically uniform compression, the object being to maintain the degree of compression most favorable to economy by reason of the most perfect combustion, as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is a vertical sectional elevation of my improved gasolene-engine. Fig. 2 is a top view of the same.

A represents the cylinder in which the piston *a* works. *b* is the connecting-rod; *c*, the crank-shaft; *d*, the inlet-valve; *e*, the exhaust-valve; *f*, the gasolene-tank; *g*, the cooling-jacket of the cylinder; *h* and *i*, circulating-pipes communicating between the gasolene-tank and the jacket.

I is the mixing-chamber, to which the vapor from the gasolene-tank flows through pipe *j* to mix with the air entering said chamber at *k* for entering the explosion-chamber *l* through the inlet or suction valve *d*. This explosion-chamber is an upward extension *m* of the piston-cylinder A and contains a piston *n* above the inlet from the suction-valve, with means for shifting it up and down to vary the volume of the chamber to a certain extent, as indicated by the dotted line *o*. In this case I represent a piston-rod *p* extending upward through the head of a cap *q*, screwing up and down on the screw-threaded stem *s* of the cylinder-cover *t*, through which said rod extends, said cap having a hand-wheel *u* for turning it. The cap has an annular groove *v*, in which one end of a lever *w*, pivoted at *x*, engages, while the other end of said lever, which is forked, ranges between two collars *y* on the stem of valve *d*, so that as the combustion-space *l* is contracted by piston *m* the opening of valve *d* will be proportionately limited and admission of the fuel mixture will be correspondingly limited, and vice versa. Thus it is feasible to automatically regulate the admission of the fuel mixture relatively to the variations of the combustion-chamber, whereby practically uniform compression may be had with the economy resulting from maintaining that degree of compression which affords the most effective combustion.

The gasolene-tank *f* is provided with a regulating-valve 2 and an automatic actuating-diaphragm 3, whereby if the vaporization of the gasolene is too rapid the increase of pressure resulting in the tank *f* acting on the diaphragm will increase the opening of the valve and more rapid circulation of the gasolene will take place, thus giving up more heat to the walls of the tank and the circulating-pipes, and thereby cooling and regulating the temperature of the gasolene; but I do not herein claim the gasolene-circulating apparatus.

The exhaust-valve *e* is operated by a cam 4 on a shaft 5, which is geared by the spur-wheel 6 and pinion 7 with the crank-shaft.

What I claim as my invention is—

In a gasolene-engine, the combination with the explosion-chamber, an adjustable piston for varying the volume of said chamber, and means for adjusting it consisting of a tubular screw-threaded stem on the cylinder-cover, a screw-threaded cap on said stem, and a rod connecting said piston and cap through said stem, of an inlet-valve, and means consisting of a grooved head on said cap, and a lever connecting the stem of said valve with said cap for adjusting the piston, whereby the lift of said valve is automatically varied by the adjustment of the piston to vary the admission according as the volume of the combustion-chamber is varied.

Signed at New York this 30th day of January, 1002.

OLOF E. PEHRSSON.

Witnesses:
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