

(No Model.)

W. LORENZ.

COMBINED VAPORIZER AND IGNITER FOR OIL MOTORS.

No. 535,837.

Patented Mar. 19, 1895.

Fig. 1.

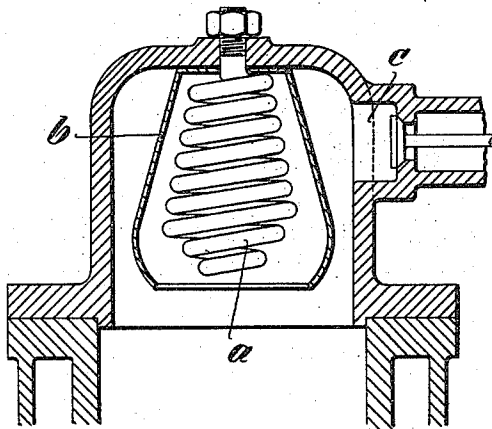


Fig. 2.

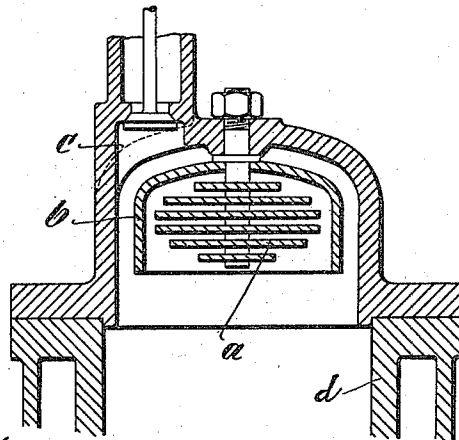
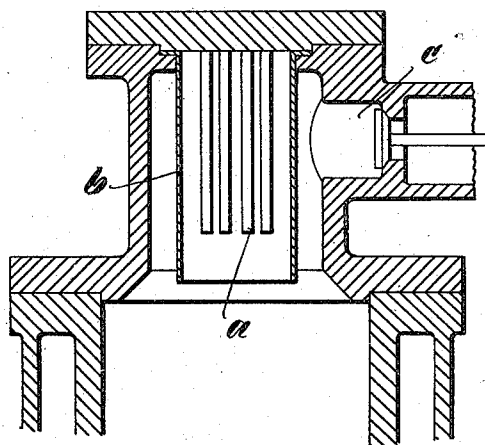


Fig. 3.



Witnesses

Johannes Fumisch.

Emil Kaysor.

Inventor
Wilhelm Lorenz
by
Robert Daigler
Attorney

UNITED STATES PATENT OFFICE.

WILHELM LORENZ, OF CARLSRUHE, GERMANY.

COMBINED VAPORIZER AND IGNITER FOR OIL-MOTORS.

SPECIFICATION forming part of Letters Patent No. 535,837, dated March 19, 1895.

Application filed September 28, 1894. Serial No. 524,387. (No model.)

To all whom it may concern:

Be it known that I, WILHELM LORENZ, a subject of the Grand Duke of Baden, and a resident of Carlsruhe, in the Grand Duchy of Baden, German Empire, have invented an Improved Combined Vaporizer and Igniter for Oil-Motors, of which the following is an exact specification.

This invention refers to oil-motors, in which the intense heat produced by the explosion of the mixture of oil and air is accumulated by suitable parts arranged in the rear of the working-cylinder within a special explosion-chamber, and is used for igniting the said mixture when the latter is compressed.

My improvement in oil-motors of the kind stated relates to the combination of the igniter proper, with a hollow vaporizer covering or inclosing the igniter at the rear and at the sides, but leaving it uncovered in the direction to the piston of the motor. Therefore, instead of leading the dispersed oil upon, and into the igniter for being vaporized by the heat of the same, and thus letting the igniter act as a vaporizer, too, I now employ a special vaporizer, the shape and arrangement of which are such as to hinder the oil from touching the igniter proper before it is vaporized.

The purpose of my improvement is to prevent the igniter from becoming sooted by the residues of the vaporization, and thus to secure the proper action of the same.

In order to make my invention more clear, I refer to the accompanying drawings, in which similar letters refer to similar parts, and in which—

Figure 1 shows an arrangement in which the igniter is formed by a helix, and is inclosed within a vaporizer somewhat resembling an inverted pot. Fig. 2 shows a modification in which the igniter is formed by a number of concentric disks, and is inclosed within a vaporizer somewhat resembling an inverted vat. Fig. 3 shows another modification in which the igniter is formed by a bundle of rods, and is inclosed within a vaporizer formed by a flanged cylinder.

In either case, *a* is the igniter, and *b* the vaporizer.

c is the inlet for the air carrying with it

the dispersed liquid hydrocarbon. This inlet, be it arranged at the side of the explosion chamber, as in Figs. 1 and 3, or at the rear thereof, as in Fig. 2, is arranged in either case so as to lead the mixture of air and oil onto the outer surface of said vaporizer *b*, and to prevent the same from coming prematurely in contact with the igniter.

The intense heat produced by the explosion is accumulated by the vaporizer as well as by the igniter. On sucking the explosive mixture into the cylinder at the first stroke of the (four-stroke) cycle, the oil carried by the air is vaporized by the heat of the vaporizer *b*, and the mixture then enters the working-cylinder *d*. Thereafter the mixture is compressed by the returning piston, and is forced also into the interior of the vaporizing-body *b*, thus coming in intimate contact with every portion of the hot igniter *a*. In the moment of highest compression the explosive mixture is ignited by the combined effect of the heat of the igniter, and that produced by the compression. This method of operation, however, is known, and does not form a part of my present invention.

Having thus fully described the nature of this invention, what I desire to secure by Letters Patent of the United States is—

In an oil-motor having an automatic igniter arranged in a special, non-cooled explosion-chamber, and adapted to accumulate the heat generated by the explosion, the combination with said igniter, of a hollow vaporizer arranged between the walls of said explosion-chamber and the igniter, and inclosing the latter at its rear and sides, but leaving it uncovered in the direction to the piston, said vaporizer being adapted to prevent the igniter from coming in contact with the dispersed, non-vaporized oil, and from being sooted by the residues of the same, substantially as described.

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

WILH. LORENZ.

Witnesses:

GEORG KÜHNER,
LOUIS WOLF.