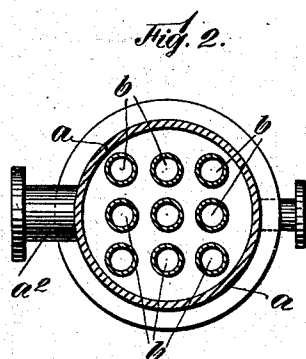
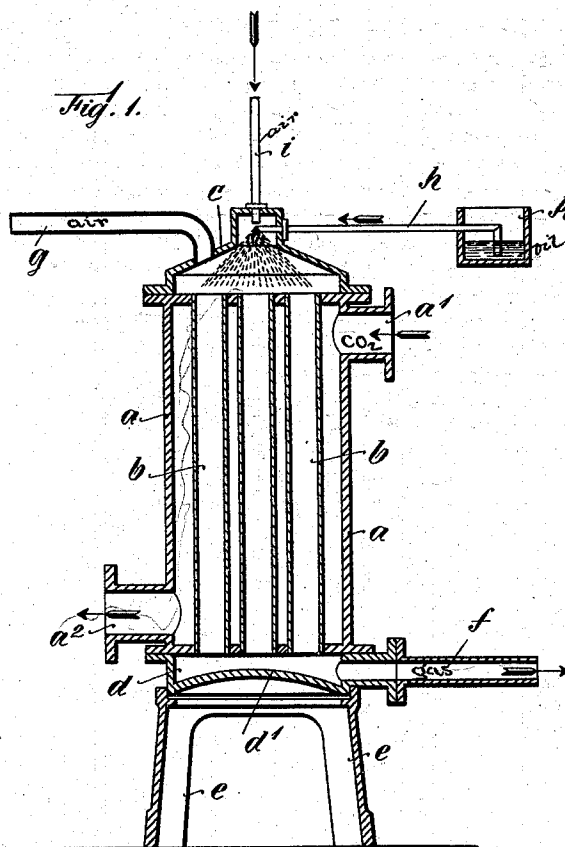


(No Model.)

E. KASELOWSKY.
VAPORIZER FOR PETROLEUM ENGINES.

No. 559,290.

Patented Apr. 28, 1896.



Witnesses
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UNITED STATES PATENT OFFICE.

EMIL KASELOWSKY, OF BERLIN, GERMANY.

VAPORIZER FOR PETROLEUM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 559,290, dated April 28, 1896.

Application filed January 2, 1895. Serial No. 533,581. (No model.) Patented in Germany September 25, 1890, No. 57,659; in Austria-Hungary June 17, 1891, No. 2,893 and No. 627; in Belgium June 23, 1891, No. 95,382; in England July 9, 1891, No. 11,680, and in Italy July 17, 1891, No. 30,113.

To all whom it may concern:

Be it known that I, EMIL KASELOWSKY, counsellor of commerce, a subject of the King of Prussia, German Emperor, and a resident of Berlin, in the Kingdom of Prussia, German Empire, have invented an Improved Vaporizer to be Used in Connection with Petroleum-Engines, (for which Letters Patent have been obtained in Germany, No. 57,659, dated September 25, 1890; in Austria-Hungary, No. 2,893 and No. 627, dated June 17, 1891; in Belgium, No. 95,382, dated June 23, 1891; in Italy, No. 30,113, dated July 17, 1891, and in Great Britain, No. 11,680, dated July 9, 1891,) of which the following is an exact specification.

This invention relates to a vaporizer to be used in connection with petroleum-engines; and it consists in the arrangement and combination of parts described hereinafter.

The purpose of my invention is to make use of the heat of the products of explosion for heating part of the air required for the explosive mixture, and to cause the petroleum, which is introduced in the state of finest dispersion, to be evaporated by said hot air.

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

Figure 1 is a vertical section through the apparatus, and Fig. 2 is a horizontal section through the same.

The apparatus consists of a casing *a*, provided with an inlet *a'* and an outlet *a''*. Parallel tubes *b* arranged in vertical position within casing *a* are held by the top plate and the bottom plate of said casing. The latter is united with a top casing *c* and with a bottom casing *d*, the tubes *b* forming the communication between said two casings *c* and *d*. The whole structure is supported by a foot *e*.

The bottom casing *d* is connected with the air-suction pipe *f* of the petroleum-engine, (not shown,) and the air sucked into the cylinder of the engine by the piston of the same is thus compelled to flow through the tubes *b*. *g* is a pipe through which the air enters the top casing *c*. The exhaust-port of the engine is connected with the inlet *a'* of the middle or main casing *a*, and the hot products of

combustion are thus compelled to wash the tubes *b* and to heat the same, whereafter said gases escape through the outlet *a''* to the waste-pipe of the plant.

Within the head of the top casing *c* terminate two small pipes *h* and *i*, forming a right angle. Pipe *h* is connected with a vessel *k*, containing the petroleum to be dispersed and evaporated. Pipe *i* is connected with an air-pump (not shown) operated by the petroleum-engine in such a manner that an intermittent current of air is forced through pipe *i* at a suitable time of the sucking period. The spray of petroleum produced by said current of air mixes with the air sucked through pipe *g* into the top casing *c*, and the mixture of the finely dispersed or distributed petroleum and the air flows through and along the hot walls of the tubes *b*. Both the said components of the mixture are thus heated and the petroleum is evaporated partly directly by the hot walls and partly by the heat of the air. The mixture then flows off through pipe *f* to the cylinder of the engine, wherein it is mixed with another quantity of air, so that only now the suitable proportion for making the mixture explosive is reached. It will be seen, therefore, that the mixture produced within and flowing through the evaporating apparatus is not yet explosive, but becomes so only within the cylinder of the engine.

If the engine is to be started, there are, as a matter of course, no hot gases yet for heating the tubes *b*. In order to cause the evaporation of the dispersed petroleum until the said tubes are sufficiently heated, the curved bottom plate *d'* of casing *d* is heated by any auxiliary means—for instance, by a Bunsen burner placed between the legs of the support *e*.

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

1. In a petroleum-vaporizer for use in connection with a petroleum-engine, the combination with a top casing *c* and a base casing *d* connected by tubes *b*, of a middle casing *a* inclosing said tubes, and connections *a'* *a''* for leading the waste gases of a petroleum-engine through said middle casing; said top casing having a pipe *h* adapted to lead petroleum,

and another pipe *i* adapted to lead air into the said casing; the inner portion of said pipe *i* being arranged rectangularly to the inner portion of said pipe *h* and terminating shortly in front of the latter, so as to cause the petroleum to be sucked and dispersed by the air, said base casing having a port adapted to lead the mixture of evaporated petroleum and air off, for the purpose as described.

2. In a petroleum-vaporizer for use in connection with a petroleum-engine, the combination with a top casing *c* and a base casing *d* connected by tubes *b*, of a middle casing *a* inclosing said tubes, and connections *a'* *a''* for leading the waste gases of a petroleum-engine through said middle casing; said top casing having a pipe *h* adapted to lead petroleum, and another pipe *i* adapted to lead air into

the said casing; the inner portion of said pipe *i* being arranged rectangularly to the inner portion of said pipe *h* and terminating shortly in front of the latter, so as to cause the petroleum to be sucked and dispersed by the air, said base casing having a port adapted to lead the mixture of evaporated petroleum and air off, and being supported by a structure *e* making the bottom *d'* of the said base casing adapted to be heated from below, for the purpose as described.

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

EMIL KASELOWSKY.

Witnesses:

WM. HAUPT,
CHAS. KINGER.