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METHOD OF DEODORIZING EXHAUST GASES FROM INTERNAL COMBUSTION ENGINES.

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996,205.

Patented June 27, 1911.

Fig. 1.

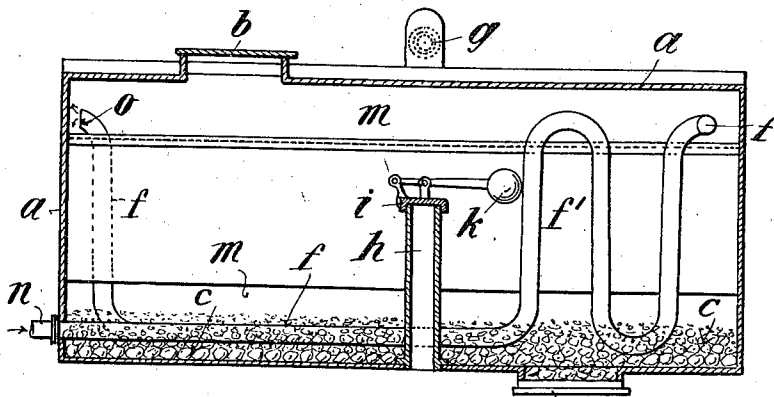
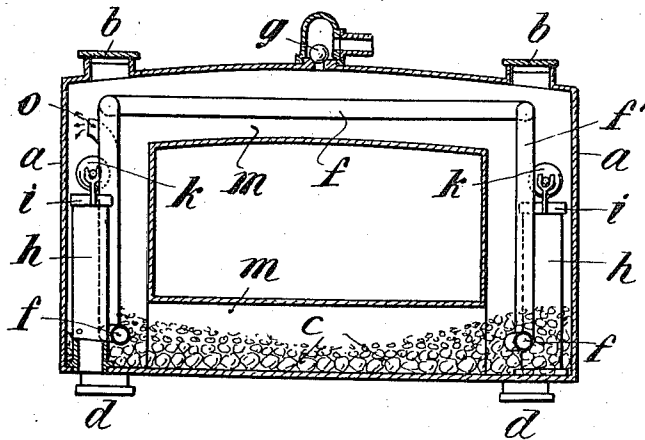


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

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METHOD OF DEODORIZING EXHAUST-GASES FROM INTERNAL-COMBUSTION ENGINES.

996,205.

Specification of Letters Patent. Patented June 27, 1911.

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To all whom it may concern:

Be it known that I, LEOPOLD BREGHA, a citizen of Austria, and residing at Vienna, in the Province of Lower Austria, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in the Method of Deodorizing Exhaust-Gases from Internal-Combustion Engines, of which the following is a full, clear, and exact specification.

This invention relates to a method for deodorizing the exhaust gases from the combustion of liquid fuel, such as petroleum, in internal combustion engines and consists in bringing the exhaust gases, which are formed from the products of combustion and unburned vaporous or gaseous fuel in internal combustion engines, into contact before their exit into the open air with a mixture of calcium chlorid and calcium oxid in a closed casing.

The deodorizing action of the process is as follows: By the contact of the vapors obtained from the combustion gases with the calcium oxid (quick lime) vigorous evolution of heat takes place and a deodorizing effect is exerted on the acrolein (acrylic aldehyde) and the resulting product and the unburned petroleum are absorbed by the lime water or calcium hydroxid formed.

Damage to the metal forming the walls of this reaction chamber does not take place and the formation of chlorin peroxid does not occur.

The carrying out of the process is best and easiest effected in an iron casing which in consequence of its necessarily small dimensions can be carried on those power vehicles driven by liquid fuel (petroleum or the like) for which the process is mainly intended.

One form of the apparatus shown by way of example provided with means for automatically removing the condensed water formed is shown in the accompanying drawing in which—

Figure 1 is a longitudinal section and Fig. 2 a vertical cross section of the apparatus used for carrying out the invention.

As shown, the apparatus consists of a closed casing *a* having one or more inlet openings *b* which are adapted to be opened and closed and which are intended for the introduction of the reagents *c* and having one or more outlet openings *d* for the re-

moval of the said reagents when the same are spent and for the removal of the deposit formed in the casing. In the casing *a* is arranged a pipe *f* leading from the motor for the gases to be deodorized, which pipe is secured in one wall of the casing, passes through the casing in suitable manner, said pipe preferably being formed of one or more vertical coils *f*¹, and then opens into the interior of the casing *a*.

The long path given to the gases by the coils *f*¹ has for its object not only the removal of as much heat as possible but also has the advantage that by the partial formation of a vacuum and the condensation of the vapors back pressure is not exerted on the explosion chamber.

The casing *a* is provided with one or more safety valves *g* which come into action when in consequence of a very fast running of the engine overloading of the apparatus might take place and these allow the periodical release of the deodorized gas into the open air.

For the removal of the water of condensation one or more overflows *h* having covers *i* are provided which covers are provided with floats *k* which automatically raise the covers for allowing the liquid to flow off as soon as the water rises high enough in the casing *a*.

The apparatus shown which as already mentioned is intended for power vehicles, in consequence of the small amount of space available in such vehicles and in order not to change the positions of the parts of the vehicle necessary for driving, etc., is constructed of flat chambers connected with one another by a transverse passage *m*; in stationary installations however, these chambers can be united to form one large casing.

The exhaust gases entering the pipe *f* at *n* flow in the first place through the coils of the same and pass from *o* into the chamber space *a* having at the same time lost a part of their heat. In the chamber they come directly into contact with the mixture of calcium chlorid and calcium oxid whereby the effects described take place. If water of condensation in large quantity collects in the casing *a*, which can only take place after fairly long use of the apparatus, the float or floats *k* then opens the valve *i* of the overflow *h* and allows the water to flow off. The periodically necessary emptying of the

casing is effected by openings *d* on the bottom while the opening *b* allows a new charge of material as also the introduction of cleaning water.

5 What I claim is:

The hereindescribed method of deodorizing the exhaust gases of burned liquid fuel, consisting in introducing the exhaust gases before their exit into the open air into an
10 inclosed space and bringing them into con-

tact with a mixture of calcium oxid and calcium chlorid.

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

LEOPOLD BREGHA.

Witnesses:

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