L. HAAS.

PROCESS OF DEODORIZING WASTE GASES.

APPLICATION FILED AUG. 23, 1910.

1,144,193. Patented June 22, 1915.

Fig. 3.

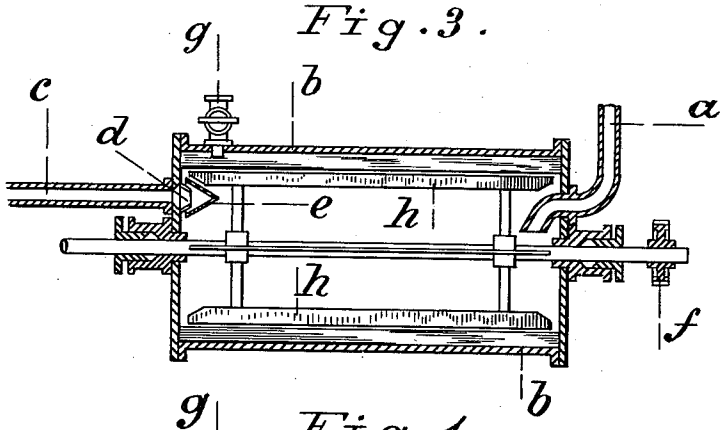


Fig. 1.

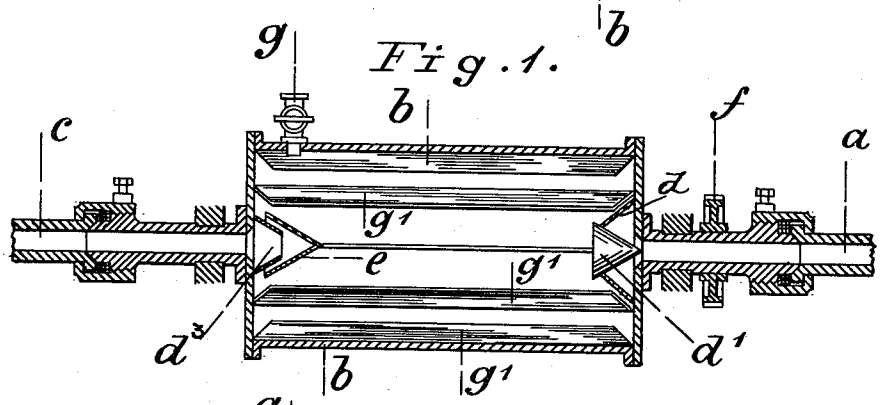
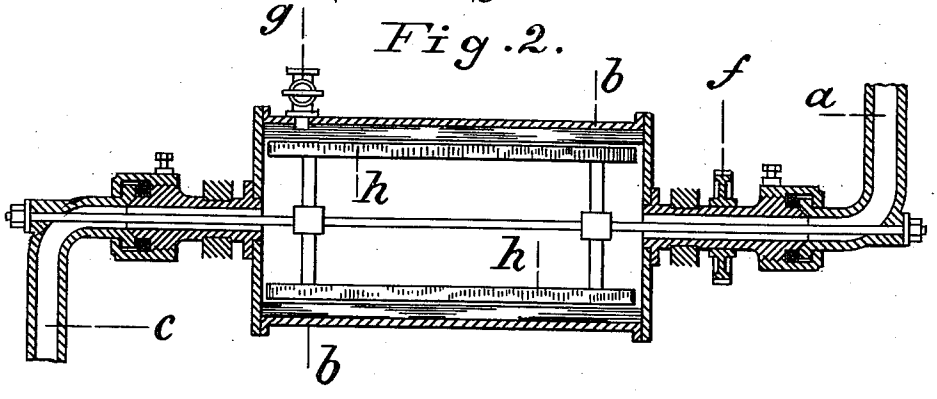


Fig. 2.



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PROCESS OF DEODORIZING WASTE GASES.

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Application filed August 23, 1910. Serial No. 578,604.

To all whom it may concern:

Be it known that I, LAMBERT HAAS, a subject of the Emperor of Austria-Hungary, and resident of Vienna, Austria-Hungary, have invented a new and useful Process of Deodorizing Waste Gases, of which the following is a specification.

For deodorizing gases, they are commonly forced through liquids which are capable of taking up the odorous ingredients. The greater the surface of contact of the gases with the liquids is, the more complete is the absorption of the gases by the liquids, and consequently the more complete is the purifying effect of the latter.

In the art of absorbing it has always been attempted to increase the surfaces of contact of the gases and liquids to the greatest possible extent. According to my invention this object is attained by beating the absorbing liquids into a foam through which the gases are filtered, whereby the surfaces of contact of the gases and liquids are multiplied to a much greater extent than has been attained heretofore either by absorbing, spraying the absorbing liquids or by stirring the same, or by any of the well known and usual methods.

By my new process, the odorous ingredients, of the exhaust gases, for example, of internal combustion engines, and of machines and apparatus heated by fluid combustibles, are removed. By my new process, the exhaust gases of the engines of motor-cars may be deodorized, so that the disagreeable odor of motor-cars is thereby removed.

My process may be put into execution in manifold ways.

In the accompanying drawings I have shown three embodiments of my apparatus.

Figures 1–3 show respectively longitudinal sections of these three embodiments.

With reference to Fig. 1 b is an absorbing drum which is by means of a stuffing-box or the like, connected to the exhaust pipe a of a motor or the like, and is rotated by the motor in any suitable way, such as by a toothed wheel. The drum is partly filled with a liquid capable of absorbing the waste-gases of the motor and which foams, for instance, with soap-water. To the inner wall of the drum there is attached a number of narrow longitudinal ribs g' of sheet-metal, or brushes or brooms by means of which, on the rotating of the drum, the whipping and sprinkling of the liquid is accomplished, and a heavy formation of foam effected.

The gases exhausted by the motor enter the drum b through the exhaust-pipe a and are passed or filtered through the foam and the sprinkled liquid, and leave the rotating drum, in a deodorized state, at the other end through the pipe c. For a better distribution of the gases within the drum b the inlet opening at a is covered by a hollow cone d having its apex cut off, into which cone there projects the smaller cone d', thereby changing the gas-outlet to a narrow annular slit.

For retaining the foam and the washing liquid in the drum b within the latter, and around the outlet for the gases, there is arranged a hollow cone d^3 with the apex cut away, and which is covered by a hollow cone e so that the gases are forced through the space between the walls of the cone e and cone d^3 before they can escape to the pipe c. Thereby the foam and the washing liquid are retained within the drum.

Naturally on the passage of the gases, especially of the hot exhaust gases of the motor, the foam is partly destroyed, and thereby the absorbing surface of the liquid would be reduced, were it not that, in consequence of the lively movement of the washing liquid, there is always new foam formed.

In consequence of the saturation of the washing liquid, especially with hydrocarbons, in course of time the formation of foam is retarded. The washing liquid is then renewed through the valve g.

With reference to Fig. 2, within the drum b is arranged a stirrer h against which the liquid is thrown, which latter is centrifugated by the high rotation of the drum, and so the liquid is still more completely distributed and converted to foam than with the apparatus shown in Fig. 1.

In the embodiment shown by Fig. 3 the stirrer h rotates within the rigid drum b. In this connection, naturally, all known foaming and absorbing liquids may be used. For example, at present a solution of 15% of core-soap has shown itself superior to other absorbing means.

As compared with the well known processes of deodorizing gases, my process has the most effective advantage of using only the most simple arrangements and a very small space for mounting, but the chief ad-

vantage thereof is that no resistance occurs to the gases on their passage from the motor to the atmosphere through the absorbing liquid, so that the motor is not influenced by the treatment of the gases.

I claim as my invention:

1. A process of deodorizing waste gases, said process consisting in forming a mixture of foam and soapy water in a closed space, beating the mixture whereby the mixture is sprayed; and forcing gases through the sprayed liquid and foam.

2. A process of deodorizing waste gases, said process consisting in forming a mixture of foam and soapy water in a closed space, beating the mixture whereby the mixture is sprayed; and forcing gases through the sprayed liquid and foam during the beating.

3. A process of deodorizing waste gases, said process consisting in forming a mixture of foam and a 15% solution of core soap and water in a closed space, beating the mixture whereby the mixture is sprayed; and forcing gases through the sprayed liquid and foam.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

L. HAAS.

Witnesses:
HENRY DE SOTA,
ALCRESANDO SWEEDSE.