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FUMIGATING APPARATUS AND PROCESS

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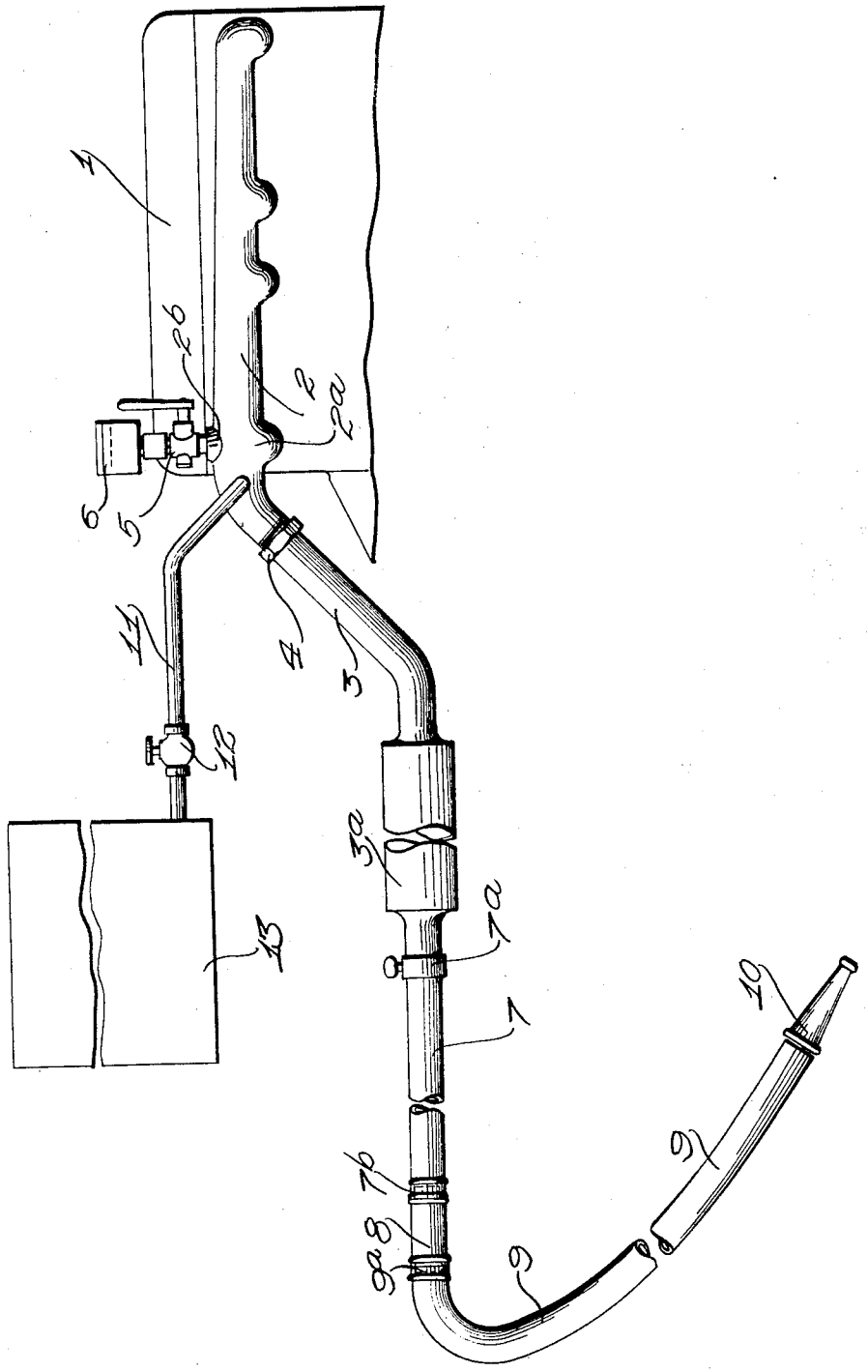

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FUMIGATING APPARATUS AND PROCESS

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10 Claims. (Cl. 167—3)

My invention relates to an apparatus for and method of fumigating rodents, chicken coops, trees, and the like.

The objects of my invention are:

First, to provide a simple and economical apparatus for fumigating, and one which will not readily deteriorate or get out of order;

Second, to provide a fumigating apparatus whereby the exhaust of an internal combustion engine is utilized, and particularly where the exhaust of an automobile vehicle is utilized;

Third, to provide an apparatus of this class whereby a fumigating substance is allowed to dip into a source of hot gases of combustion and then force into the place to be fumigated, the fumigating gases being scattered or forced into the holes or spaces desired to be fumigated by air under pressure forced at intervals into the place to be fumigated; and

Fourth, to provide a simple and novel and economical method of fumigating rodents, chicken coops, trees, and the like.

With these and other objects in view as will appear hereinafter, I devised a structure having certain novel features of construction, combination and arrangement of parts and portions and a certain process of application of the elements of my apparatus, as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawing and to the characters of reference thereon which form a part of this application, in which:

The drawing is a fragmentary diagrammatic view of an apparatus designed to perform the functions hereinbefore and hereinafter set forth.

In the drawing, 1 illustrates the internal combustion engine, and 2 the exhaust manifold thereof, while 3 illustrates the exhaust pipe connected by the coupling 4 to the intake manifold 2, and usually connected to the muffler of the engine, (not shown).

The exhaust manifold 2 is provided with a portion 2*a* for receiving the exhaust gases of the last cylinder, that is, the last cylinder, before the gases of combustion are exhausted. Above the portion 2*a* is provided an enlarged portion 2*b* which is principally made by welding. To the enlarged portion 2*b* is secured a cock 5 for regulating the dipping of the fumigating substance into the exhaust manifold 2. To the regulating cock 5 is secured an oil cup 6 which extends above the cock 5 and in which the fumigating substance is placed as will be described hereinafter.

To the portion of the exhaust pipe 3 which is connected with the manifold 3*a*, is secured, by means of a coupling 7*a*, a hose section 7 which is preferably made of galvanized iron. The galvanized iron hose section 7 is secured by a coupling 7*b* to a nipple 8 which is connected by means of a coupling 9*a* to a flexible hose 9 which may be provided with a nozzle 10.

In the exhaust manifold 2 is secured a pipe 11 for feeding periodically charges of air under pressure to the exhaust pipe. The air under pressure is regulated by the valve 12 while the air under pressure is contained in a container 13 which is preferably charged with air by the internal combustion engine 1.

The nozzle 10, which holds the hose 9, is placed in the place or hole which is desired to be fumigated. The engine is operated and the exhaust gases together with evaporated fumigating substance from the oil cup 6 which is evaporated in the exhaust manifold 2, is directed into the place or hole periodically, say at about two minutes, or so, charges of air under pressure are directed into the space or hole to be fumigated, the air directed into the intake manifold, or directed into the hose 9 is under pressure of a few pounds, say 20 pounds. In order to facilitate the evaporation of the fumigating substance, the oil cup 6 is preferably placed at least above the portion 2*a*, so that all of the cylinders of the internal combustion engine facilitate the evaporation. The connection of the air pipe 11 with the exhaust manifold 2 is preferably an inch backwardly from the last cylinder or portion 2*a*.

For rodents I have found the following mixture appropriate, namely; 2 parts by weight of light cylinder oil, 3 parts by weight of concentrated ammonia (the last element is preferably XXX—ammonia dissolved in water).

For hog houses, chicken coops, basements, and the like, I have found the following mixture appropriate: 3 parts of creoline, 3 parts of concentrated ammonia.

For fumigating trees, shrubs, etc., I have found the following formula appropriate: 2 parts of light cylinder oil, 4 parts of (warm) sulphur water.

Though I have shown and described a particular construction, combination and arrangement of parts and portions of my invention and certain steps in the process of using the same, I do not wish to be limited to this particular construction, combination and arrangement, but desire to include in the scope of my invention the construction, combination and arrangement,

and the process substantially as set forth in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In an apparatus of the class described, a source of hot gases, a source of liquid including a hydrocarbon adapted to mix with said hot gases so as to produce carbon monoxide, and flexible means for directing said gases and liquid vapors into the space to be fumigated.

2. In an apparatus of the class described, a source of hot gases, a source of liquid including a hydrocarbon adapted to mix with said hot gases so as to produce carbon monoxide, means for forcing air under pressure into the first source, and flexible means for directing said gases and liquid vapors into the space to be fumigated.

3. In an apparatus of the class described, a source of hot gases, a source of fumigating liquid so arranged with the source of hot gases as to drop fumigating liquid into the latter adjacent said source of hot gases, flexible means for directing said gases and liquid vapors into the space to be fumigated, and means for forcing air under pressure into said first source.

4. In an apparatus of the class described, the combination with an automobile, of the exhaust manifold of the engine of the automobile, a supply of fumigating liquid connected with the manifold adjacent the connection thereof with a cylinder of the engine whereby the liquid entering the exhaust manifold is immediately vaporized, a flexible fumigating conductor connected with said manifold, and means for forcing the air into said conductor.

5. In an apparatus of the class described, the combination with an automobile propelled by an internal combustion engine, of an exhaust manifold connected to said engine, a flexible conductor connected to said manifold adapted to direct the gases issuing therefrom into the designated place to be fumigated, a supply of fumigating liquid connected with this manifold opposite one of its connections with a cylinder of said engine so as to be heated thereby, means for controlling said liquid, means for supplying said manifold with compressed air, and means for controlling the supply of compressed air to said manifold.

6. The herein described method of preparing a fumigating substance consisting in producing hot gases of combustion, then mixing and vaporizing a fumigating substance with said hot gases of combustion and directing the gases into the place to be fumigated, and periodically injecting air under pressure in said place to be fumigated.

7. The herein described method of fumigating consisting in evaporating a fumigating substance in a current of burned gases of combustion, then directing the gases into the place to be fumigated, and periodically forcing air under presure into said place to be fumigated.

8. The herein described method of fumigating consisting in, vaporizing a fumigating substance including a hydrocarbon in a current of hot burned and burning gases of combustion so as to increase the carbon monoxide content.

9. The herein described method of fumigating consisting in, vaporizing a hydrocarbon in a current of hot burned and burning gases of combustion so as to increase the carbon monoxide content of the resulting mixture, then directing the mixture into the place to be fumigated.

10. In an apparatus of the class described, an internal combustion engine having an exhaust manifold, means for introducing a hydrocarbon into the exhaust manifold so as to contact with the hot burning and burned gases of combustion and be vaporized thereby, whereby the carbon monoxide content is increased, and an exhaust pipe and a flexible hose extending from said exhaust manifold.

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