Oct. 31, 1933. F. C. FISCHER 1,932,927

DEVICE FOR CONVERTING CARBON MONOXIDE

Filed April 20, 1931

Fig. 1

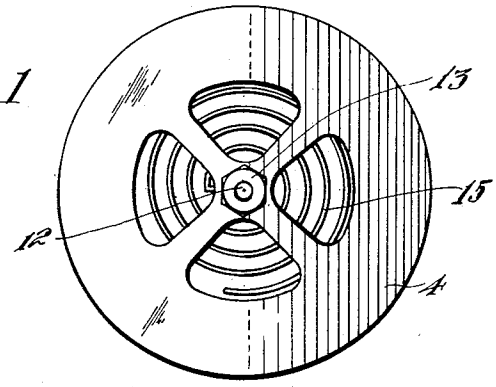


Fig. 2

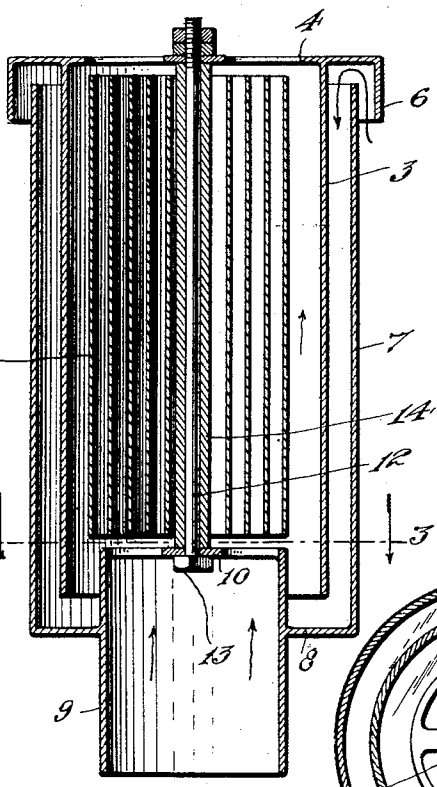


Fig. 4

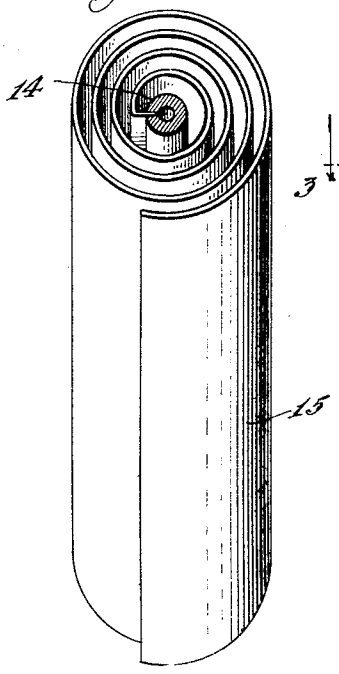
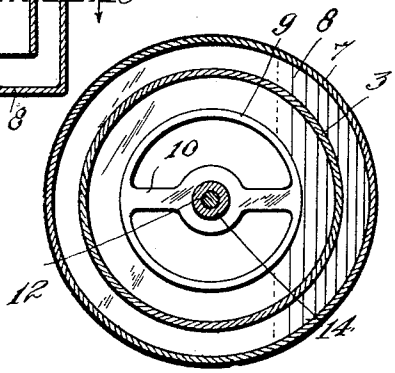


Fig. 3



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DEVICE FOR CONVERTING CARBON MONOXIDE

Frederick C. Fischer, Newark, N. J.

Application April 20, 1931. Serial No. 531,503

5 Claims. (Cl. 23—288)

This invention relates to a device for converting carbon monoxide into harmless substances. This application is a further amplification and development of my Patent Number 1,824,078, issued September 22, 1931.

The poisonous and deadly effects of carbon monoxide upon human beings and animals is well known, and various devices have been produced in the past for converting carbon monoxide into harmless substances. However, such devices have been objectionable in that they were complicated in structure, expensive to make, and necessitated frequent replenishing with certain oxidizing chemicals.

It is therefore, an object of this invention to provide a carbon monoxide converting device which is simple in structure and requires no attention.

A further object is the provision of a carbon monoxide converting device which is permanent in character and employs aluminum or compounds of aluminum as catalytic agents.

A further object is the provision of a carbon monoxide converting device which may readily be attached to internal combustion engines, and the like, without necessitating material alterations.

A further object is the provision of a process for converting carbon monoxide in which aluminum or compounds of aluminum are used as catalytic agents.

These and other advantageous objects, which will later appear, are accomplished by the simple and practical construction and arrangement of parts hereinafter described and exhibited in the accompanying drawing, forming part hereof, and in which:

Figure 1 represents an end view of the device.

Figure 2 represents a longitudinal sectional view of the device.

Figure 3 represents a sectional view taken on line 3—3 of Figure 2.

Figure 4 represents a perspective view of coiled sheet used in the device.

Referring to the drawing, the device is shown to include a two-part casing comprising a pair of telescoping cylinders 3 and 7. The cylinder 3 is partially closed at one end by the plate 4. The plate 4 has an integral flange 6 spaced from and parallel with the walls of the cylinder 3.

The cylinder 7 telescopes over the cylinder 3 and is positioned between the wall of cylinder 3 and the flange 6 as shown in the drawing. The cylinder 7 is partially closed at one end by plate 8 from which projects a cylindrical neck 9, which extends inwardly beyond the free edge of cylinder 3.

The neck 9 is provided with a bridge 10 through which passes a clamping rod 12, which is threaded at each end to accommodate clamping nuts 13, the latter abutting the bridge 10 and plate 4. The cylinders are held in spaced relation by a tube 14 which surrounds the bolt 12 and abuts the plate 4 and bridge 10.

The rod 12 is centrally positioned relative to the cylinder 3 and has coiled thereabout a sheet 15 of aluminum or a compound of aluminum.

The cylinders 3 and 7 preferably are made of aluminum or a compound of aluminum, but effective results may be obtained by making the cylinders from other metals.

In operation, neck 9 is attached to the exhaust pipe of an internal combustion engine or the like, and the exhaust gases pass through cylinder 3 over the coiled sheet of aluminum 15 and out through the apertures in plate 4.

The passage of the gases through the cylinder 3 has an aspirating effect to draw air into cylinder 3 from the space between flange 6 and cylinder wall 7 and through the passage formed by the cylinder 7 and the cylinder 3.

As the gas passes over the aluminum coil it is mixed with the indrawn air and the aluminum has a catalytic action which facilitates the oxidizing of the carbon monoxide by the indrawn air. This action has been found to be complete, and it is not necessary that the gases be heated, the aluminum appearing to be an effective catalytic agent for converting carbon monoxide at all temperatures.

While the device is herein described as applicable to internal combustion engines, it is obvious that it may be effectively used in various situations where it is desired to convert carbon monoxide, it being apparent that the converting of the carbon monoxide is due to the process of passing the carbon monoxide gas over aluminum in the presence of air or other oxidizing agents. Consequently, the device shown on the drawing is by way of example and I do not desire to be confined to the specific structure.

The foregoing disclosure is to be regarded as descriptive and illustrative only, and not as restrictive or limitative of the invention, of which obviously an embodiment may be constructed including many modifications without departing from the general scope herein indicated and denoted in the appended claims.

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

1. A device for converting carbon monoxide adapted to be attached to a monoxide generating vehicle comprising a cylinder, a second cylinder of smaller diameter telescoped in and spaced from the first cylinder to provide a passage for air into the second cylinder, lugs projecting from the second cylinder and engaging the first cylinder to maintain the cylinders in spaced relation, means for clamping the cylinders together, and a sheet of aluminum mounted in the second cylinder.

2. A device for converting carbon monoxide comprising an aluminum cylinder partially closed at one end, a second aluminum cylinder of smaller diameter telescoped in and spaced from the first aluminum cylinder to provide a passage for air into the second aluminum cylinder, said second cylinder being partially closed at one end, means for maintaining the cylinders in spaced relation, a mass of aluminum mounted in the second cylinder, and means to mix the carbon monoxide with inflowing air.

3. A device for converting carbon monoxide comprising an aluminum cylinder partially closed at one end, a second aluminum cylinder of smaller diameter telescoped in and spaced from the first aluminum cylinder to provide a passage for air into the second aluminum cylinder, said second cylinder being partially closed at one end, and means for maintaining the cylinders in spaced longitudinal and concentric relation.

4. A device for converting carbon monoxide comprising a tubular member partially closed at one end, a second tubular member telescoped in and having its walls spaced from the first member, said second member being made of aluminum and partially closed at one end, and a mass of aluminum formed into a plurality of convolutions placed within said second tubular member, means for holding the members in spaced relation.

5. In a device for converting carbon monoxide comprising an inner and outer cylinder concentrically spaced apart, means to hold said cylinders in such spaced relation, a neck member attached to the outer cylinder and serving as means to fasten the device to a gas producing vehicle, a coil of aluminum fixed within the inner cylinder and means for the intake of air formed intermediate the cylinders.

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