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A. REINSCH

AIR DISCHARGE DEVICE WITH INTERNAL COMBUSTION ENGINES

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Fig. 1.

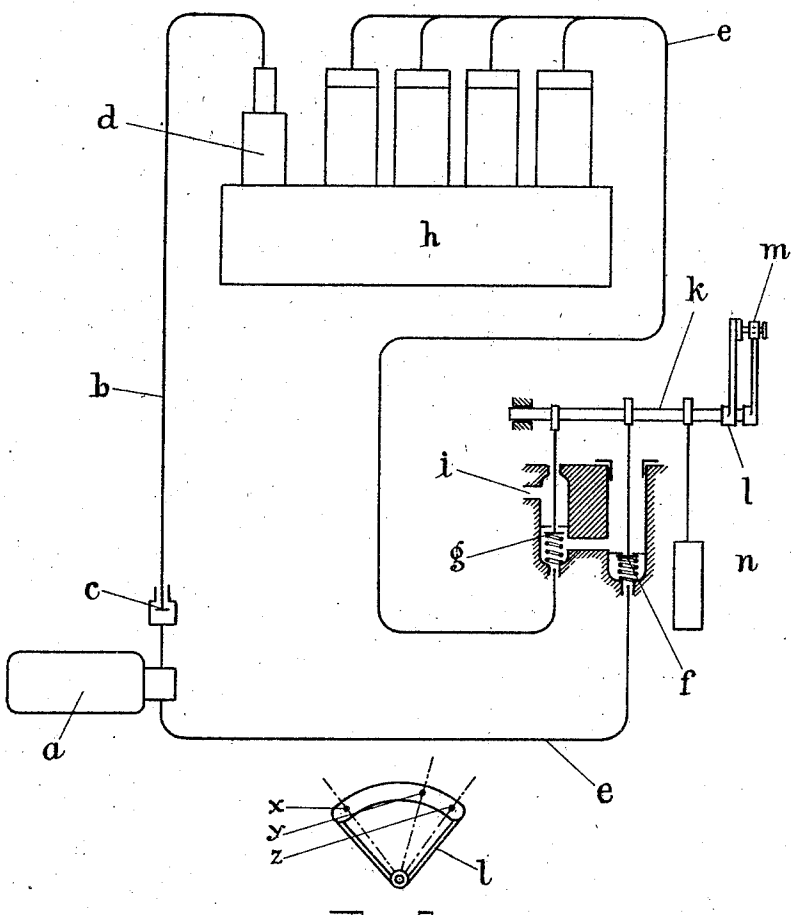

Fig. 2.

WITNESS

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UNITED STATES PATENT OFFICE.

ALFRED REINSCH, OF BERLIN-MARIENFELDE, GERMANY, ASSIGNOR TO DAIMLER-MOTOREN-GESELLSCHAFT, OF STUTTGART-UNTERTURKHEIM, GERMANY, A CORPORATION OF GERMANY.

AIR-DISCHARGE DEVICE WITH INTERNAL-COMBUSTION ENGINES.

Application filed March 1, 1924. Serial No. 696,277.

To all whom it may concern:

Be it known that I, ALFRED REINSCH, a citizen of the State of Bavaria, Germany, residing at Berlin-Marienfelde, 11 Hranitzkystrasse, Prussia, Germany, have invented certain new and useful Improvements in Air-Discharge Devices with Internal-Combustion Engines, of which the following is a specification.

My invention relates in general to internal combustion engines and more especially to internal combustion engines operating according to the Diesel principle. It consists, firstly, in inserting a shutting off means into the air-pipe extending from the air-supply reservoir to the fuel-valves and another device by means of which the air is discharged from the air-pipe leading to the fuel valves so that no disturbances can occur if the necessity arises disassembling the arrangement and combination of parts.

Secondly, the invention consists in the provision of means by which the air-discharging means and the means for closing the air-supply reservoir are operated simultaneously and by only one member, as is fully described hereinafter, whereby the construction of the engine is simplified relatively to the internal combustion engines at present used.

The invention contemplates further the provision of means by which the beforementioned member for the actuation of the air-discharge means and the means for closing the air-supply reservoir is employed also for actuating the switch for starting the electric starter.

In order to be able to bring about the operations mentioned by only one member suitably shaped cams or equivalent or similar members or devices can be provided on the control lever shaft.

My invention is illustrated by way of example in the accompanying drawing in which Figure 1 is a diagrammatical illustration of an internal combustion engine and of the arrangement and combination of parts forming the present invention, and Figure 2 is a side-view of a segment provided for the control lever, or for the adjustment thereof respectively.

In the arrangement and combination of parts shown as an example the air-supply reservoir a is connected with the compressor d in known manner by the pipe b into which is inserted a non-return valve c. e e' is the air-supply pipe, and f is a shut-off valve which shuts off the air-supply reservoir a from the fuel-valves of the engine when the latter is stopped. The valve f is located at the end of the portion e of the pipe e e'. Near thereto, at the adjacent end of the portion e' of the pipe e e', is a valve g which serves for the discharge of the air from this portion when the engine has been stopped, the discharged air flowing through the channel i. The valves f and g are actuated by the control shaft k which can be adjusted, or re-adjusted respectively, by the lever m which can be turned along the segment l and affixed thereto in its adjusted position.

In the example illustrated in Figure 2 the segment l is supposed to have three rest-notches, viz, x, y, and zx being intended for the stoppage of the engine, y for its state of operation, and z for starting it.

If the lever m has been adjusted to stand-still, the valve f has been closed and the valve g opened, but when the lever has been adjusted to the mark "Service" the valve f has been opened and the valve g closed, so that the air from the reservoir a can pass from the portion e of the pipe e e' to the portion e' thereof and to the fuel-valves. If, however, the lever m is turned to the mark "Starter," the starting-switch n of the electric starter is actuated, the valve f remaining open and the valve g closed.

The succession of the rest-notches in the segment as shown is also merely an example and may be changed as desired or preferred.

I claim:

1. The combination, with an internal combustion engine, especially of the type which operates according to the Diesel principle, of an air-supply tank, a pipe connecting it with the fuel-valves of the engine, a shut-off valve arranged in said pipe, an air-discharge device independent of said valve also located in said pipe, and means for actuating said valve and air discharge device simultaneously to reduce the pressure on the fuel valves to atmospheric pressure.

2. The combination, with an internal combustion engine, especially of the type which operates according to the Diesel principle, of an air-supply tank, a pipe connecting it

with the fuel-valves of the engine, a shut-off valve arranged in said pipe, an air-discharge device independent of said valve also located in said pipe, means for actuating said valve and air discharge device simultaneously to reduce the pressure on the fuel valves to atmospheric pressure, and a control lever common to said air discharge device and valve, and forming part of said actuating means, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

DR. ING. ALFRED REINSCH.

Witnesses:

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ROGERS T. AUSPLEX.