H. W. POGUE.

SPRAYING DEVICE FOR INTERNAL COMBUSTION ENGINES.

APPLICATION FILED MAR. 15, 1910.

972,571.

Patented Oct. 11, 1910.

2 SHEETS—SHEET 1.

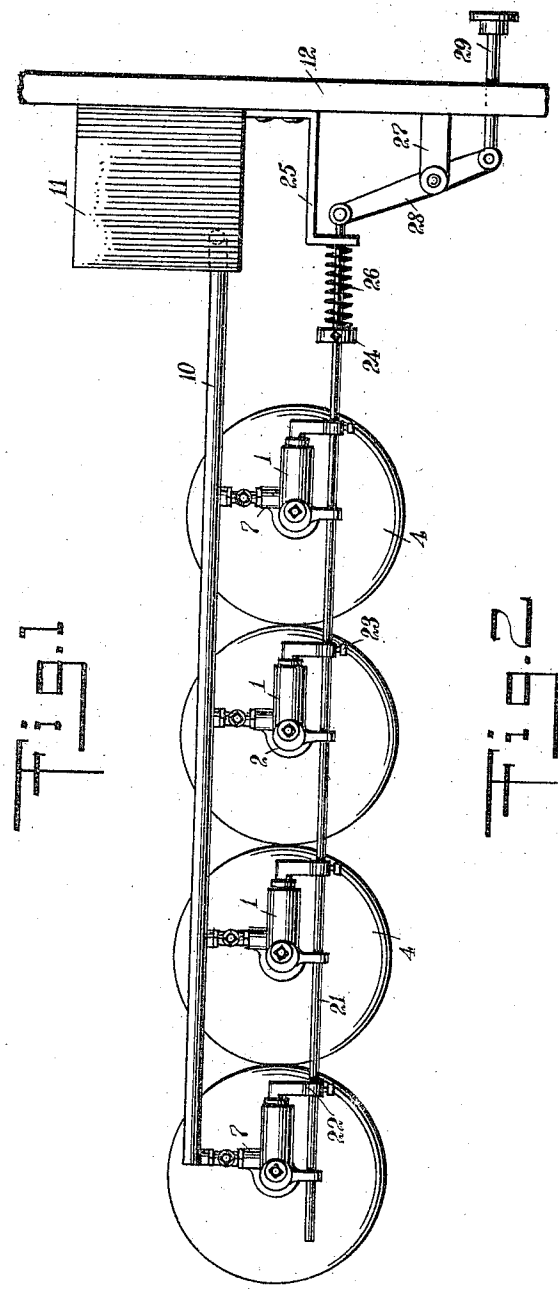

Fig. 1

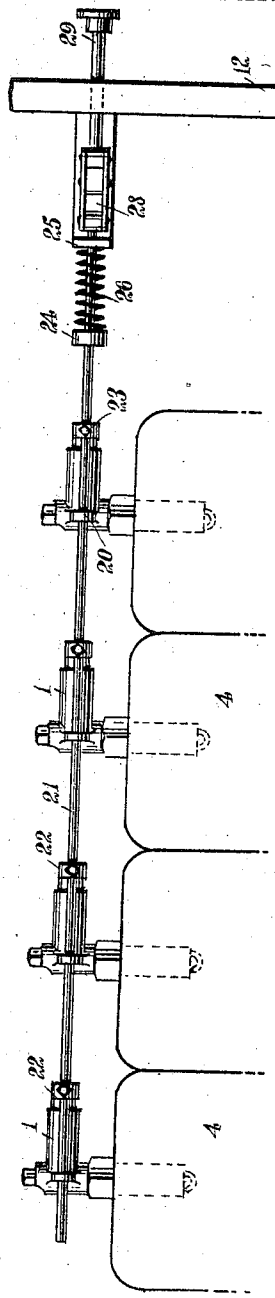

Fig. 2

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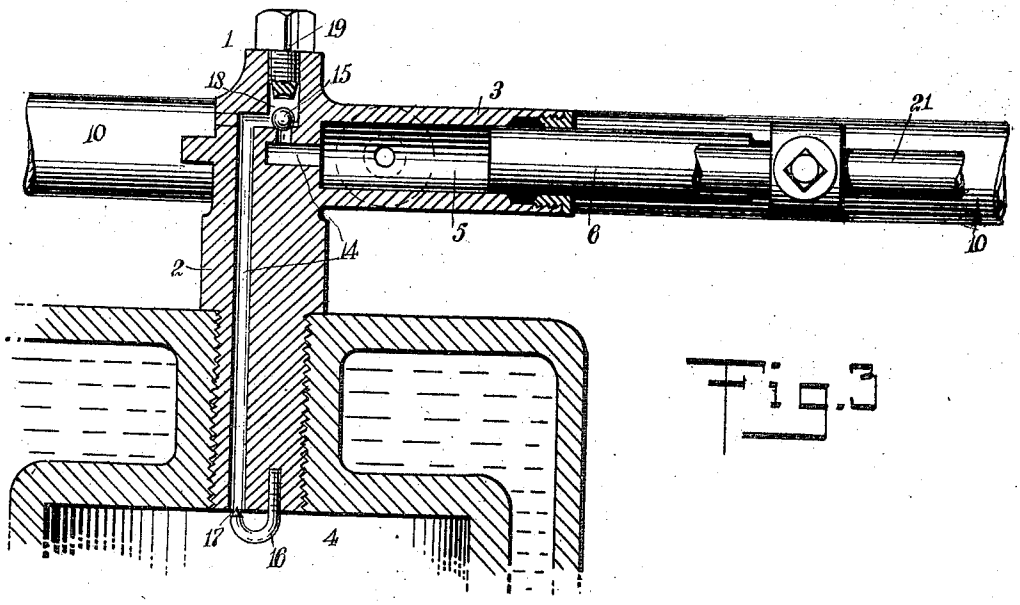

Fig. 3

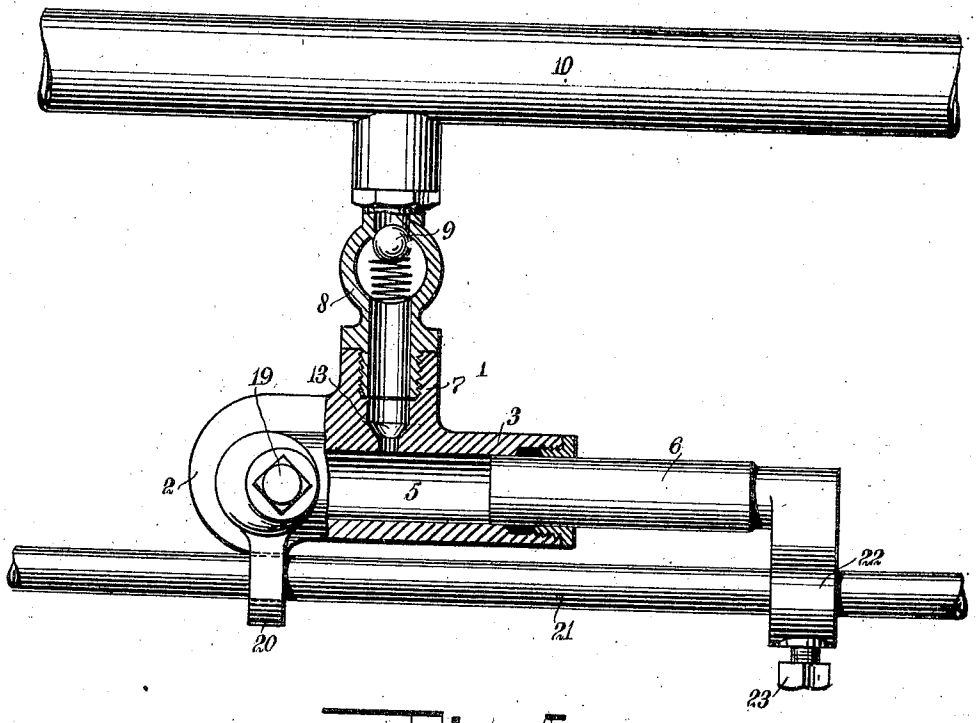

Fig. 4

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HENRY WILSON POGUE, OF DECATUR, ILLINOIS.

SPRAYING DEVICE FOR INTERNAL-COMBUSTION ENGINES.

972,571. Specification of Letters Patent. Patented Oct. 11, 1910.

Application filed March 15, 1910. Serial No. 549,398.

To all whom it may concern:

Be it known that I, HENRY W. POGUE, a citizen of the United States, and a resident of Decatur, in the county of Macon and State of Illinois, have invented a new and Improved Spraying Device for Internal-Combustion Engines, of which the following is a full, clear, and exact description.

The object of the invention is to provide a spraying device for internal combustion engines, for injecting a spray of explosive mixture into the cylinder of the engine, where it is exploded, to start the engine, thereby dispensing with the necessity of turning the crank shaft of the engine to start the same. For the purpose mentioned use is made of a casing provided with a pump, and having a passage from the pump to the interior of the engine cylinder for forcing an explosive mixture through the passage into the cylinder by means of the pump, the said mixture being converted into a spray, when it enters the cylinder, by a nozzle mounted on the casing and formed at one end of the said passage.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a plan view of my device, showing the same applied to a four cylinder engine with suitable connections for operating the device; Fig. 2 is a side elevation of the same; Fig. 3 is a sectional view disclosing various operating parts of my device; and Fig. 4 is a partial sectional plan view showing the spring-controlled valve, the pump and adjacent connections.

Referring more particularly to the various views, I employ a casing 1 having extended arms 2 and 3, the arm 2 being provided with screw threads for connection with a cylinder 4. A chamber 5 is provided in the arm 3 of the casing 1, and a piston 6 is adapted to operate in the chamber 5, as will be seen by referring to Fig. 3. Another arm 7 is provided on the casing 1 and has a screw threaded connection with a valve 8, comprising a spring-controlled ball 9 mounted in the valve 8, the said valve 8 being connected with a supply pipe 10, leading from a supply tank 11 mounted on a support 12.

In the arm 7 is a passage 13 leading into the chamber 5, and from the chamber 5 a passage 14 extends through the casing and the arm 2, a gravity valve 15 being provided at the upper part of the casing in the passage 14. At the lower end of the passage 14, which terminates in the cylinder 4, is a hook 16 adapted to almost close the opening to the passage 14, to form a nozzle 17. For the purpose of gaining access to the gravity valve 15, an opening 18 is provided in the upper part of the casing and removably closed by a screw-threaded closure 19. On the casing 1 a bearing 20 is provided, adapted to receive therethrough a controlling rod 21, and a bearing 22 is mounted on the piston 6, a set screw 23 being provided in the bearing, for rigidly securing the piston 6 to the rod 21.

For the purpose of more easily controlling the rod 21, a lug 24 is mounted on the rod 21, and a bracket 25 is mounted on the support 12, a spring 26 encircling the rod 21, intermediate the lug 24 and the bracket 25. A second bracket 27 is mounted on the support 12, and has hingedly mounted thereon a member 28, hingedly connected with the rod 21 and with a foot lever 29.

In the operation of my device, the tank 11 is filled with an explosive mixture, such as gasolene or the like, and the gasolene feeds through the pipe 10 to the end of the passage 13, where it is obstructed by the piston 6 when the same is in its normal position. By pressing the foot lever 29, the rod 21 is operated to move the piston 6 outwardly from the chamber 5, as is shown in Figs. 3 and 4, thus permitting the chamber 5 to fill with gasolene. When the piston 6 is forced into the chamber 5, the gasolene is pumped through the passage 14, past the valve 18 to the nozzle 17, from which it is injected into the cylinder in the form of a spray. Suitable ignition means being provided in the cylinder, the spray of mixture is exploded as it enters the cylinder 4, and the piston in the cylinder is moved to turn the crank shaft of the engine, thus commencing the operation of the engine.

Referring to Figs. 1 and 2, it will be seen that my device can be connected to an engine having several cylinders, with one controlling rod to operate all of the spraying devices in unison.

Although for the purpose of describing my invention I have shown a particular

form of the same, it will be understood that the scope of my device is fully defined in the appended claim.

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

A spraying device for internal combustion engines, comprising a spring controlled operating shaft, a cylinder, a piston secured to the shaft and adapted to operate in the cylinder, a supply pipe extended from the cylinder, a spring actuated ball valve in the supply pipe, an outlet pipe extended from the cylinder, a gravity valve mounted in the outlet pipe, spraying means at one end of the outlet pipe, a bearing on the outlet pipe and constituting a guide for the operating shaft, and a plug removably engaging the outlet pipe and constituting a cover for a cleaning vent in the outlet pipe.

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

HENRY WILSON POGUE.

Witnesses:
THOS. A. MCGARRY,
I. S. NICHOLSON.