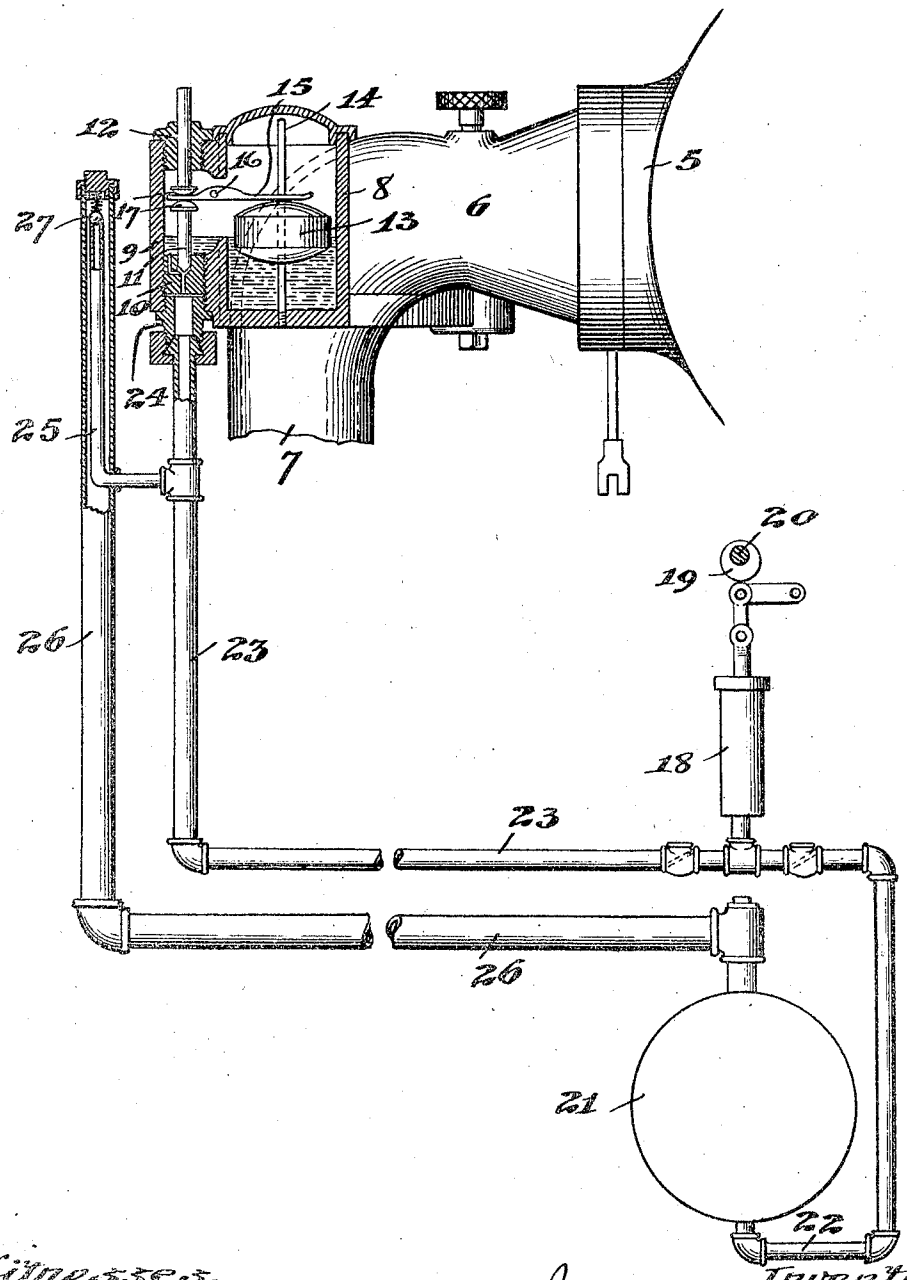
J. A. CHARTER.

FLOAT CONTROLLED OIL SUPPLY DEVICE FOR GAS ENGINES.

APPLICATION FILED JULY 28, 1908.

933,888. Patented Sept. 14, 1909.



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UNITED STATES PATENT OFFICE.

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FLOAT-CONTROLLED OIL-SUPPLY DEVICE FOR GAS-ENGINES.

933,888. Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed July 28, 1908. Serial No. 445,782.

To all whom it may concern:

Be it known that I, JAMES A. CHARTER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Float-Controlled Oil-Supply Devices for Gas-Engines, of which the following is a specification.

This invention relates to the art of internal combustion engines, and has reference more particularly to a new and improved mechanism for insuring at all times a sufficient supply of liquid fuel to the engine cylinder.

To this end the invention consists essentially in the combination with an oil-inlet valve, an oil pump, and a supply connection therebetween, of an oil overflow pipe tapping said supply connection and extending to a point above said oil-inlet valve, a return pipe therefrom to the oil reservoir being preferably also employed in order to prevent waste of oil and insure its return to the reservoir.

My invention will be readily understood when considered in connection with the accompanying drawing, which shows in side elevation an oil-supply mechanism with which my invention is concerned, the valve and float-chamber and a portion of the oil return pipe, being in vertical section.

Referring to the drawing, 5 designates that portion of the cylinder head containing the usual induction passage for the explosive charge.

6 designates a hollow casting containing the mixing chamber and usual oil inlet nipple or nozzle (not shown), with which communicates an air-supply passage 7, and also a float-chamber 8. Integral with and to one side of the float-chamber 8 is a fuel supply valve chamber 9, containing a suitably ported valve-seat 10, with which coöperates a valve 11, the stem of which is slidably mounted in a bearing member 12 in the upper end of the valve-chamber; the lower end of the valve having a tapered or pointed end slidably engaging the valve-seat 10 and controlling the oil-inlet ports thereof. In the float-chamber 8 is a float 13 slidably mounted on a rod 14 secured in the bottom of the chamber; and the top of said float is adapted to engage the longer arm of a lever 15 that is pivoted at 16 in the wall of the float-chamber, and the shorter arm of which extends into the valve chamber and embraces the valve-stem 11, being confined thereon by collars 17 or other suitable devices.

Referring next to the means for supplying the liquid fuel to the fuel-inlet valve, wherein my present invention resides, 18 designates the oil pump, which is in practice, continuously operated by a moving part of the engine, such as an eccentric 19 mounted on a counter-shaft 20. This pump draws its supply from a tank or reservoir 21 through a pipe 22, and delivers its successive charges through a supply pipe 23 and coupling 24 to the small central duct of the valve-seat 10. Communicating with and extending laterally of the supply pipe 23, just below the valve, is an overflow pipe 25, which leads to a height somewhat above that of the valve-seat and overflows into a return pipe 26 leading back into the tank or reservoir 21. On the upper end of the overflow pipe 25 is preferably located a weighted valve 27 sufficient to overcome the friction of the oil in passing through the oil-supply valve when the latter is open.

In the operation of the device, the valve 11 being raised, the oil supplied by the pump 18 flows upwardly through the ported valve-seat 10 into the valve-chamber, overflows the latter into the float-chamber, and from the latter flows by gravity into the usual vaporizing nipple or nozzle of the mixing chamber, the float 13 automatically controlling the level of the oil in such vaporizing nozzle, as well understood in mixing devices of this character. After the oil has risen to a predetermined height, the float 13 acts on the lever 15 to force the valve 11 to its seat, which arrests the free supply of oil, the excess of the latter due to the continuous operation of the pump flowing up through the overflow pipe 25 and back through the return pipe 26 to the tank 21. By thus providing a continuously operating oil-supplying device, with provisions for returning surplus oil to the reservoir, sufficient fuel in the mixing chamber is always insured, yet without any waste of fuel; and the means whereby this important and practically useful result is attained, as herein shown and described and defined in the appended claims, constitutes the subject-matter of my present invention.

I claim:

1. In an oil supply mechanism for gas engines, the combination with a float-chamber,

of an oil-inlet valve therefor, an oil pump, a supply connection between said pump and valve, and an oil overflow pipe tapping said supply connection and extending to a point above said oil-inlet valve, substantially as described.

2. In an oil supply mechanism for gas engines, the combination with an oil reservoir and a float-chamber, of an oil-inlet valve for said float-chamber, a connection between said reservoir and valve, a pump in said connection, an oil-overflow pipe tapping said connection between said pump and valve and extending to a point beneath the latter, and a return pipe for the overflow oil leading from the top of said overflow pipe back to said reservoir, substantially as described.

3. In an oil supply mechanism for gas engines, the combination with an oil reservoir and a float-chamber, of an oil-inlet valve for said float-chamber, a connection between said reservoir and valve, a pump in said connection, an oil-overflow pipe tapping said connection between said pump and valve and extending to a point above the latter, a weighted valve on the upper end of said overflow pipe, and a return pipe for the overflow oil leading from the top of said overflow pipe back to said reservoir, substantially as described.

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