F. G. DAHLGREN.

VALVE STEM HOOD FOR INTERNAL COMBUSTION ENGINES.

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1,230,689. Patented June 19, 1917.

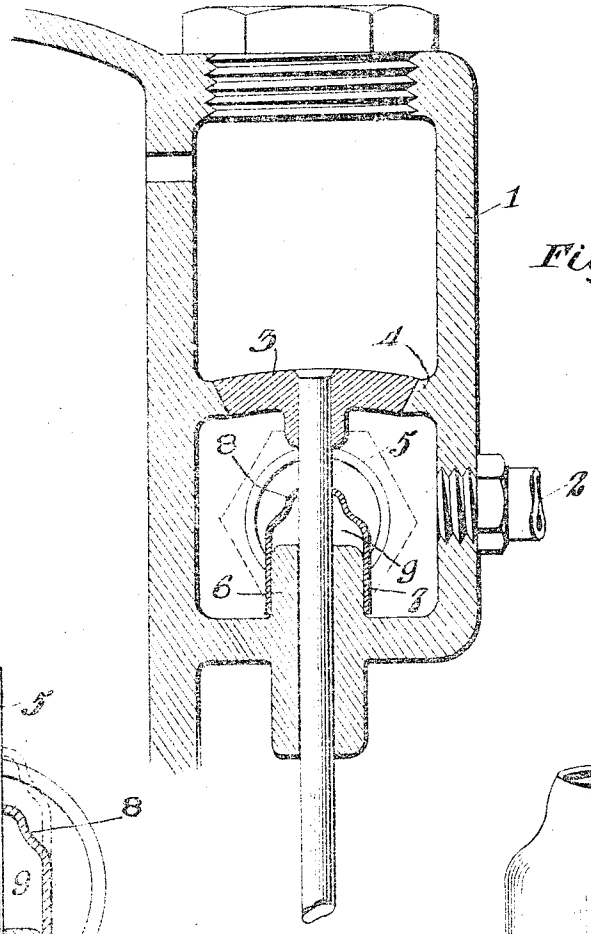


Fig 1.

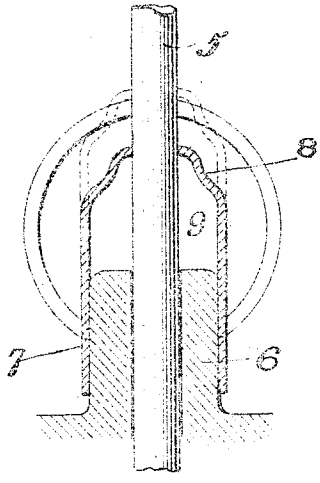


Fig 3.

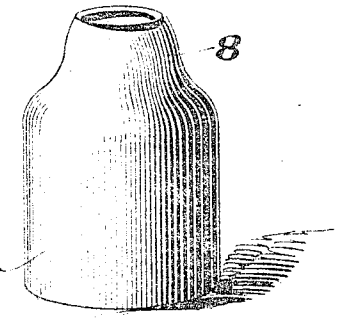


Fig 2.

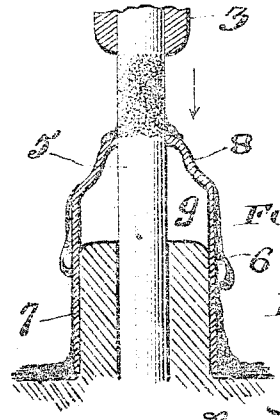


Fig 4.

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UNITED STATES PATENT OFFICE.

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VALVE-STEM HOOD FOR INTERNAL-COMBUSTION ENGINES.

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To all whom it may concern:

Be it known that I, FRANK G. DAHLGREN, a citizen of the United States, residing at Mobile, in the county of Mobile and State of Alabama, have invented certain new and useful Improvements in Valve-Stem Hoods for Internal-Combustion Engines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to a valve stem hood for internal combustion engines.

In the normal operation of internal combustion engines, the combustible mixture or gas is drawn from the carbureter through the intake manifold and by the intake valve into the cylinder. It frequently happens that a portion of the gas or fuel will be condensed and find its way below the valve seat onto the valve stem and valve stem bushing. It is well understood that the valve stem is reciprocated continuously during the operation of the engine, and manifestly requires some sort of lubricant at the point where it is sustained and guided by the valve stem bushing. It will be seen, therefore, that as the condensed gas comes in contact with the lubricant it will act as a solvent of the latter and thereby positively destroy the function of the lubricant, resulting in considerable wear between the bushing and the valve stem and an obvious loss in compression. As stated at the outset this discrepancy ensues during the normal operation of an internal combustion engine. In recent years numerous accessories designed for the purpose of facilitating starting of internal combustion engines in cold weather have been added as a component part of the mechanism, and such devices usually consist of suitable means for injecting a supply of raw gas through a by-pass into the intake manifold immediately adjacent its point of connection with the cylinder head. While it is true that these accessories accomplish their objects in a very satisfactory manner, it is likewise true that whenever they are resorted to as a means of effecting easy starting of the motor a quantity of the raw gas which is drawn in the cylinder trickles down the valve stem in the same manner as it does during the normal operation of the engine, and obviously destroys the lubricant between the valve stem and its bushing.

I overcome the hereinbefore noted disadvantages by the provision of a hood which is designed to loosely surround the valve bushing and snugly fit the valve stem. This hood has an upper portion in the form of a truncated drum which serves to deflect the condensed or raw gas away from the valve stem and bushing, and which further serves to form between it and the valve stem a well defined dead air space coöperating with the press fit engagement of the upper end of the hood to preclude any possibility of the entrance of raw gas therethrough.

To the accomplishment of the recited object, and others coördinate therewith, the preferred embodiment of my invention resides in that construction and arrangement hereinafter described, shown in the accompanying drawings, and embraced within the scope of the appended claim.

In said drawings:

Figure 1 is a vertical sectional elevation of the valve and valve chamber of a conventional internal combustion engine.

Fig. 2 is a detailed perspective view of the hood.

Fig. 3 is a vertical sectional elevation showing different positions assumed by the hood, and

Fig. 4 is a detailed sectional elevation showing the application of the hood and the manner in which the raw gas is deflected thereby.

Referring more particularly to the drawings the numeral 1 designates the valve chamber of the engine, 2 the intake, 3 the valve, 4 the valve seat, 5 the valve stem, and 6 the valve bushing, all of which are of conventional type.

The hood which forms the subject matter of my invention comprises a substantially cylindrical portion 7 with an upper contracted sleeve shaped extremity 8, and is open at both ends. The lower portion 7 has an internal diameter slightly larger than the diameter of the bushing, so as to loosely surround it on the down stroke of the valve stem. The upper end 8 of the hood encircles and frictionally engages the valve stem 5 sufficient to cause the hood to rise and fall with the reciprocations of the valve stem. Another important feature resulting from the application of this device is the fact that a dead air space 9 is formed between the hood, the bushing and the valve stem 5, this dead air space serving still further to inhibit

the access of raw gasolene to the valve bushing 6.

What is claimed is:

In an internal combustion engine the combination with a valve stem and its bushing, of a hood comprising a substantially cylindrical portion having a reduced upper extremity, the said cylindrical portion being designed to loosely surround the bushing while the said upper extremity is adapted to snugly fit the valve stem and prevent the entrance of raw gas therebeyond.

In testimony whereof, I hereunto affix my signature.

FRANK GEORGE DAHLGREN.