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V. E. GRIFFITH

OIL PUMP ATTACHMENT FOR GAS ENGINES

Filed August 13, 1924

Fig. 1

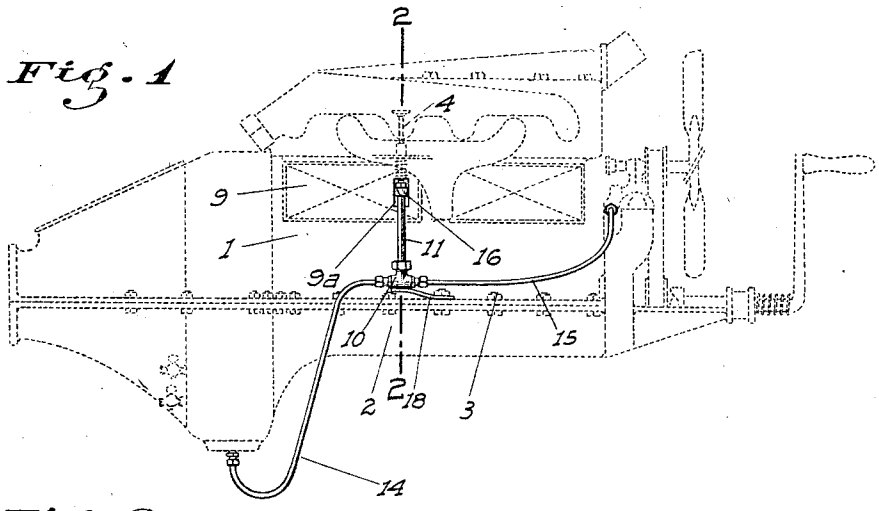


Fig. 2

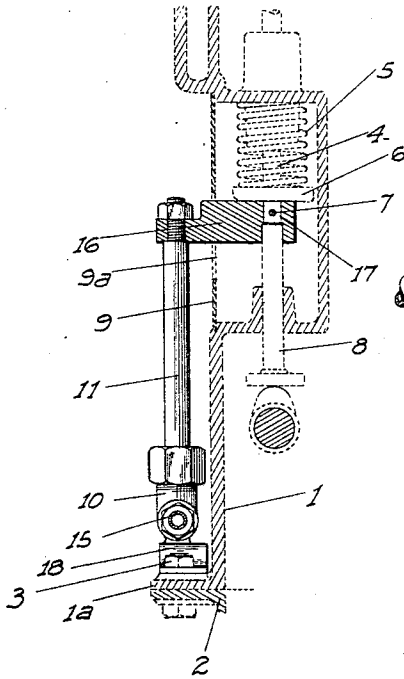
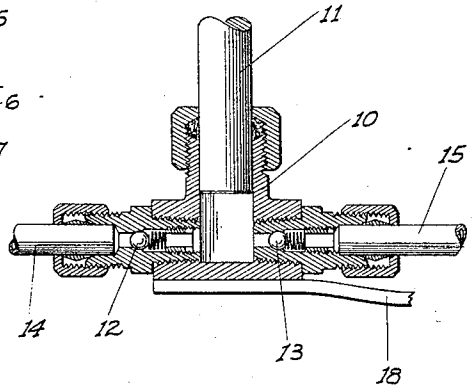


Fig. 3



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UNITED STATES PATENT OFFICE.

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OIL-PUMP ATTACHMENT FOR GAS ENGINES.

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To all whom it may concern:

Be it known that I, VERNIA E. GRIFFITH, a citizen of the United States, residing at Lodi, county of San Joaquin, State of California, have invented certain new and useful Improvements in Oil-Pump Attachments for Gas Engines; and I do declare the following to be a full, clear, and exact description of same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to oil circulating pumps for gas engines, and particularly to one especially intended to be applied to engines of the Ford type, to provide a better circulation of the oil from one end to the other of the crank case.

The principal object of my invention is to provide a pump for the purpose, which will be operated from one of the valve stems of the engine in such a manner that the pump will be positively operated whenever the engine is running, and without the use of belting or other more or less unreliable operating means.

A further object is to provide a structure which may be quickly and easily applied to the engine as an attachment, without making other than a very small alteration to one part of the engine, and without necessitating that such part be discarded and replaced by another.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Fig. 1 is a side outline of a gas engine of the Ford type, showing my oil pump attachment applied thereto.

Fig. 2 is an enlarged cross section on line 2—2 of Fig. 1.

Fig. 3 is a sectional elevation of the pump.

Referring now more particularly to the characters of reference on the drawings, the engine includes the cylinder block 1 secured to the crank case 2 by bolts 3. Mounted in the cylinder block are valves having the usual vertically movable stems, one of which is shown at 4. A spring 5 is about the stem, seating in a cup 6 which is held from downward movement on the stem below a certain point by a transverse pin 7. The usual cam actuated push or tappet rods 8 engage the lower ends of the valve stems to raise the same. A cover plate 9 is mounted on the block 1 to enclose the otherwise exposed portions of the adjacent valve stems and push rods. The above parts are all standard on the engine, as will be evident.

My improved attachment comprises a pump body 10 having a vertical plunger rod 11 reciprocable therein and adapted to be disposed parallel to the valve stem 4 in substantially transverse alinement therewith.

Mounted in the body below the limit of travel of the plunger, are check valves 12 and 13, the former opening inwardly of the body, and the latter outwardly thereof. Leading to the check valve 12 from the lower and rear end of the crank case is a pipe 14, while leading from the check valve 13 to the upper and forward end of the case 1 is a pipe 15.

It will therefore be seen that with the reciprocation of the plunger, oil will be drawn into the pump body from the rear end of the crank case and forced into the front end thereof, the check valves of course acting to prevent misdirection of flow of the oil. The benefits to the operation of the engine obtained with the oil circulation thus set up will be appreciated by all acquainted with engine construction and operation, and need not be recited herein.

I impart the necessary reciprocating motion to the plunger by the following means: Fixed on the upper end of the plunger is a rigid block 16 adapted to extend transversely of the engine toward the stem 4 and passing through a specially provided vertical slot 9^a in the plate 9.

The inner end of the block is orificed as at 17, parallel to the plunger. The upper portion of this orifice is adapted to snugly receive the lower end of the stem 4 therein, which however should not extend to the bottom of the block. The block is then secured to the stem by means of the original transverse cup-holding pin 7 (or one similar thereto) which is passed through the stem and block. In doing this, the cup 6 is of course raised somewhat, and then rests on top of the block instead of on the pin. The spring 5 will also be compressed slightly, but not to

a degree which will be a detriment to the functioning of the valve. The lower end of the block orifice is of a size to receive the upper end of the push rod 8 with a running fit, as shown. In this manner, the strain imposed by the plunger is divided between the valve stem and push rod, and any tendency of the former to be ultimately deflected laterally with continuous operation, is avoided.

The pump body itself may be mounted onto the engine in any suitable manner. I preferably provide a pad or bracket member 18 with said body adapted to rest on the lower flange 1^a of the cylinder block and to be clamped onto said flange by one or more of the standard bolts 3.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

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

1. An oil pump attachment for gas engines comprising a pump member, a plunger therefor, a rigid block fixed at one end onto the plunger and having an orifice at the other end of a size to snugly receive the lower end of a valve stem, and means for enabling the block to be secured to the stem without interfering with the clearance and relative movement between the stem and the corresponding push rod of the engine.

2. An oil pump attachment for gas engines comprising a pump member, a plunger therefor, a rigid block fixed at one end onto the plunger and having an orifice at the other end of a size at its upper end to snugly receive and be secured to the lower end of a valve stem; and at its lower end to receive the push rod of the engine with a running fit, whereby the strain imposed on the block by the plunger is distributed between the valve stem and push rod without interfering with the movement of the latter independent of the stem.

In testimony whereof I affix my signature.

VERNIA E. GRIFFITH.