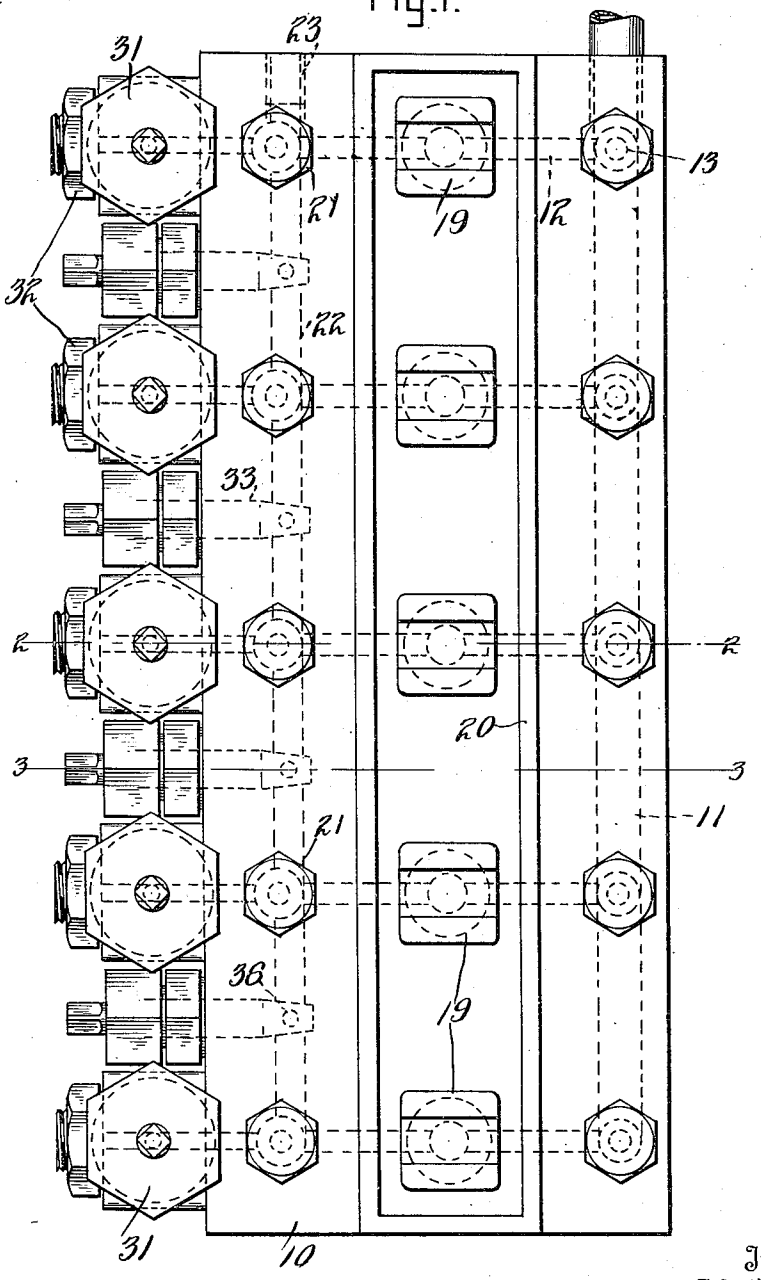
March 18, 1924. 1,487,539

C. W. CLEMENTZ

OIL PUMP

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Fig. 1.



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Fig. 2.

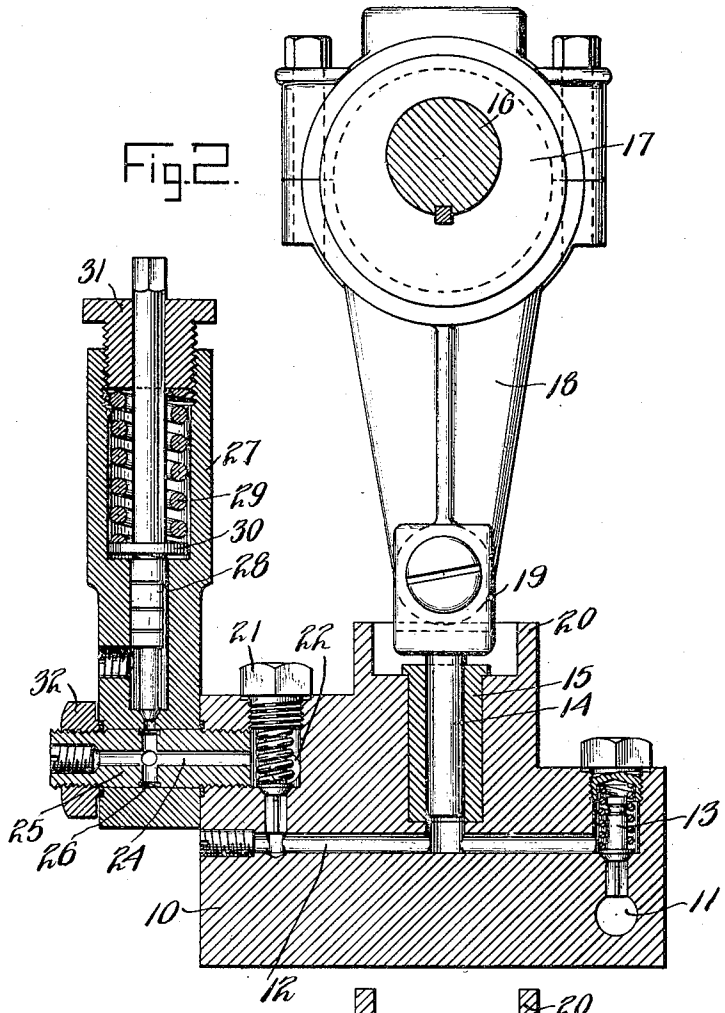
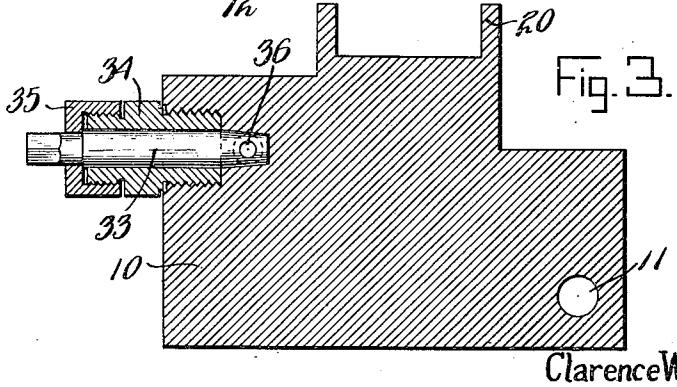


Fig. 3.



Inventor

Clarence W. Clementz

By

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Patented Mar. 18, 1924. 1,487,539

UNITED STATES PATENT OFFICE.

CLARENCE W. CLEMENTZ, OF JACKSONVILLE, FLORIDA, ASSIGNOR TO CRANKLESS ENGINE COMPANY, OF JACKSONVILLE, FLORIDA, A CORPORATION OF FLORIDA.

OIL PUMP.

Application filed August 17, 1922. Serial No. 582,567.

To all whom it may concern:

Be it known that I, CLARENCE W. CLEMENTZ, a citizen of the United States, residing at Jacksonville, in the county of Duval and State of Florida, have invented certain new and useful Improvements in Oil Pumps, of which the following is a specification.

My said invention relates to an oil pump for use in feeding fuel to internal combustion engines under pressure. It is an object of the invention to provide a device of this character in which each cylinder may be fed by its individual pump, or by means of a common passage one or more of the pumps may act conjointly to feed one or more of the cylinders of the engines.

A further object of the invention is to provide a pump of this character which shall not be likely to get out of order, as it consists of but few parts and these parts are simple and strong.

Referring to the drawings,

Figure 1 is a plan of my invention,

Figure 2 a vertical section on line 2—2 of Figure 1, and

Figure 3 is a vertical section on line 3—3 of Figure 1.

In the drawings, reference character 10 indicates a block having a longitudinal inlet passage 11 for liquid fuel. This passage has a number of branches 12 normally shut off from the inlet passage by check valves 13. For each passage there is a corresponding pump piston 14 movable in a bushing 15 set in an opening in the block. The piston is operated by a shaft 16 bearing eccentrics 17, each of which actuates a connecting rod 18 secured at its lower end to a cross-head 19, which cross-head carries the pump piston. A ridge 20 surrounds all the pumps and provides a basin for catching any oil that may escape about the pistons. At the forward end of each passage 12 is a valve 21 normally closing the passage, but adapted to be opened by the pressure of the fuel which thereupon escapes into an outlet passage 22 extending substantially the length of the block and closed at one end by a screw 23. From this common passage individual passages 24 lead outward to spray valves communicating with the cylinders of the engine. A spray valve suitable for this purpose is shown in my co-pending application of even date herewith, but the pump can be used with other spray valves as will be obvious.

Each individual passage 24 is formed in a cylindrical plug 25, this plug having also a transverse passage 26 leading to a pressure relief valve, by which the fuel may escape when the pressure becomes excessive. The pressure relief valve comprises a casing 27 having a bore in which is located a valve 28, the bore being enlarged at its upper end to contain a spring 29 bearing on a head 30 to hold the valve in closed position. The tension of the spring may be adjusted by a cap 31 in the upper end of the bore. The plug 25 extends through the lower end of the valve casing and has threaded connection with the block 10. At its free end the plug has a nut 32 which holds the valve in place. Between each pair of relief valves is a shut-off valve 33 having a casing 34 threaded into the block 10, and the valve is held in place in the casing by an internally threaded nut 35 bearing against a shoulder on the valve. Each valve has a transverse aperture 36 and it will be seen that by turning all the valves into the position shown in Figure 3 the passage 22 will be common to all the outlet passages so that each pump will exert pressure on the spray valves at each of the cylinders, whereas if the shut-off valves are turned to the position shown in Figure 1 each pump will act to feed only its own individual cylinder. All the shut-off valves may be closed, if desired, or any one or combination according to the exigencies of the particular situation.

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

1. A fuel oil pump comprising a block, a plurality of pumps operating therein, a common inlet passage leading to said pumps, a common outlet passage receiving fuel pumped from said pumps, branch passages leading from said common outlet passage and a relief valve connected with each branch passage whereby the common outlet passage is interposed between the pumps and the said branch passage, substantially as set forth.

2. A fuel oil pump comprising a plurality of pumps, a common passage receiving oil therefrom, branch passages leading from said common passage, and means acting at intervals along said common passage for

selectively determining the action of the pumps on the fuel in said passages, substantially as set forth.

3. A fuel oil pump comprising a plurality of pumps, a common passage receiving oil therefrom, branch passages leading from said common passage, and shut-off valves between said branch passages and adapted to cause each branch passage to receive fuel from its individual pump only, substantially as set forth.

4. A fuel oil pump comprising a block, longitudinal inlet and outlet passages therein, transverse passages leading from said inlet passage to said outlet passage, valves at the junction points between transverse passages and the inlet and outlet passages, a pump between each pair of said valves and connected with a transverse passage and means operating at intervals along the outlet passage for selectively determining the action of the pumps on the fuel discharged into said outlet passage, substantially as set forth.

In witness whereof, I have hereunto set my hand and seal at Jacksonville, Florida, this 12th day of August, A. D. nineteen hundred and twenty-two.

CLARENCE W. CLEMENTZ. [L. S.]

Witnesses:

J. L. Doss, Jr.,

Gladys Cox.