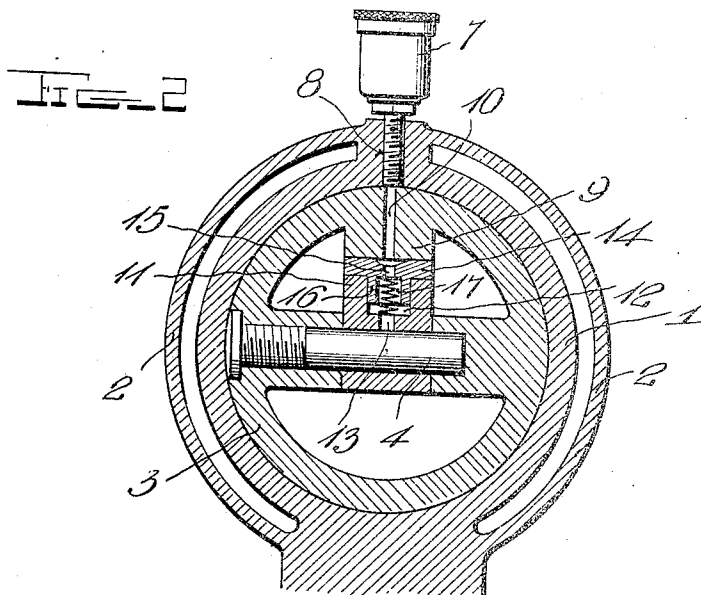
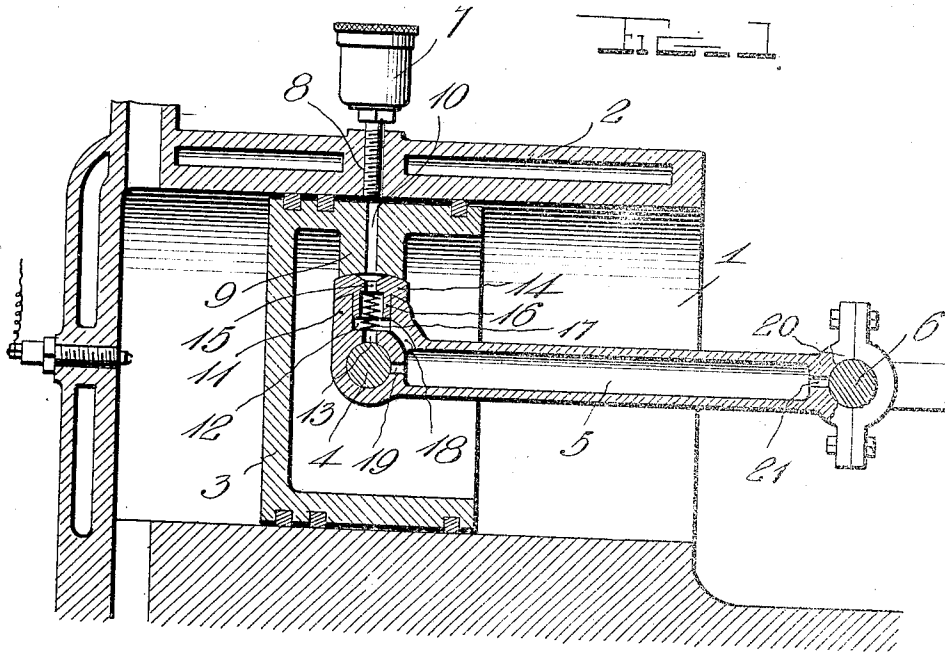


E. GERBER.
LUBRICATING SYSTEM FOR ENGINES.
APPLICATION FILED JAN. 30, 1911.

1,012,071.

Patented Dec. 19, 1911.



Witnesses

E. Gerber
O. B. Hopkins

Inventor

Emanuel Gerber

By *A. B. Wilson & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

EMANUEL GERBER, OF KANSAS CITY, MISSOURI.

LUBRICATING SYSTEM FOR ENGINES.

1,012,071.

Specification of Letters Patent.

Patented Dec. 19, 1911.

Application filed January 30, 1911. Serial No. 605,508.

To all whom it may concern:

Be it known that I, EMANUEL GERBER, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Lubricating Systems for Engines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in lubricating systems for engines whereby the piston and crank pins are automatically lubricated without wasting the oil or permitting the escape of much if any of the same into the cylinder or crank case and the consequent intermixing of this oil with the explosive fluid of the engine, or the fouling of the spark plugs and consequent misfiring of the latter.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a vertical longitudinal sectional view of a portion of the cylinder of a horizontal engine showing the application of my improved lubricating system; Fig. 2 is a cross sectional view of the same.

Referring more particularly to the drawings, 1 denotes the cylinder of an explosive engine, 2 denotes the water jacket, and 3 denotes the piston. These parts may be of the usual or any desired construction. Arranged in the piston is the usual transverse piston pin 4 to which is pivotally connected the inner end of a hollow piston rod 5, said rod being pivotally connected at its outer end to the crank pin 6 in the usual or any suitable manner.

In one side of the water jacket and cylinder is secured the tubular stem of an oil cup 7 which may be of any suitable construction and which communicates with the interior of the cylinder through an inlet port 8. On the inner side of the piston is formed an inwardly projecting boss 9 through which and through the adjacent side of the piston is formed an oil inlet port 10, the outer end of which is adapted to be brought into alignment with the port 8 in the side of the cylinder as the piston is reciprocated, thus per-

mitting the oil to flow into the port 10 from the oil cup.

On one side of the hub at the inner end of the tubular piston rod is formed a segmental projection or boss 11 the outer surface of which is concentric with the center of the piston pin. In the center of the projection 11 is formed a socket or recess 12 in the inner end of which and communicating with the bearing passage of the hub is an oil passage 13. Arranged on the outer surface of the projection 11 between the same and the curved inner side of the boss 9 is a curved contact or wear plate 14 having formed therein a passage 15 which is adapted to engage or register with the port 10 in the boss 9.

On the inner side of the plate 14 is formed a tubular shank 16 which is slidably engaged with the socket 12. In the tubular shank 16 and engaged with the inner end of the socket 12 is a coiled spring 17 the pressure of which is exerted to force the wear plate 14 outwardly and to hold the same in a yielding engagement with the curved inner end of the boss 9 as the plate is rocked by the swinging movement of the piston rod when the latter and the piston are reciprocated. By thus arranging the wear plate a practically oil tight connection is provided between the hub of the piston rod and the inner end of the boss 9 and any wear of these parts is taken up.

In the hub of the piston rod is formed a curved oil inlet port or passage 18 which connects the socket 12 with the tubular body portion of the piston rod, whereby the oil passing into the socket through the passage 15 in the wear plate and through the tubular shank 16 thereof is conducted to the tubular body of the piston rod. In the hub of the piston rod and communicating with the bearing of the piston pin is an oil discharge port 19 through which and through the passage 13 the oil is fed to the bearing of the piston pin. In the crank pin hub at the opposite end of the piston rod is formed an oil discharge port 21 through which the oil from the tubular body of the piston rod is fed to the bearing of the crank pin. By this arrangement of the oil discharge ports in the hubs of the piston rod the bearings or pivotal connections of the latter will be automatically kept lubricated without waste of oil.

From the foregoing description, taken in

connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

5 Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention, as defined in the ap-
10 pended claims.

Having thus described my invention, what I claim is:

1. In a lubricating system for engines, the combination with an engine cylinder having
15 an oil passage extending transversely through one side wall thereof, of an oil cup communicating with said passage, a piston mounted to reciprocate in said cylinder in
20 a plane at right angles to said passage, a laterally extending boss formed on the inner face of one side wall of said piston, said boss and piston having an oil duct adapted
25 to be brought into alinement with the oil passage of the cylinder, a journal on said piston, a piston pin arranged in said jour-
30 nal, a tubular piston rod pivotally connected to said piston, said piston rod having oil ports and passages arranged to com-
municate with the crank pin and piston pin
35 journal, and means whereby said tubular piston rod and the oil passage of said boss are brought into communication.

2. In a lubricating system for engines, the combination with an engine cylinder having
35 an oil passage extending transversely

through one side wall thereof, an oil cup communicating with said passage, a piston mounted to reciprocate in said cylinder and having an aperture in one side wall adapted to be brought into alinement with the oil
40 passage in said cylinder, a laterally extending tubular boss formed on the inner face of said piston and communicating with the aperture therein, a journal arranged in said piston, a piston pin mounted in said journal, a
45 tubular piston rod having a hub on its inner end and oil ports at its other end arranged to communicate with the crank pin, a segmental projection formed on one side of said hub and having a socket therein,
50 said hub having an oil duct connecting said socket with said tubular piston rod, a wear plate arranged between said projection and the inner end of said boss, said plate hav-
55 ing a tubular shank formed thereon and extending into said socket, the outer face of said plate being convex and the outer end of said boss concave to adapt them to fit
closely together and to permit the plate to
60 turn relatively to said boss, and a coiled spring arranged in the tubular shank of said plate and engaging the bottom of said socket.

In testimony whereof I have hereunto set my hand in presence of two subscribing wit-
65 nesses.

EMANUEL GERBER.

Witnesses:

FREDERICK KOEHLER,
CLARENCE A. GALLOWAY.