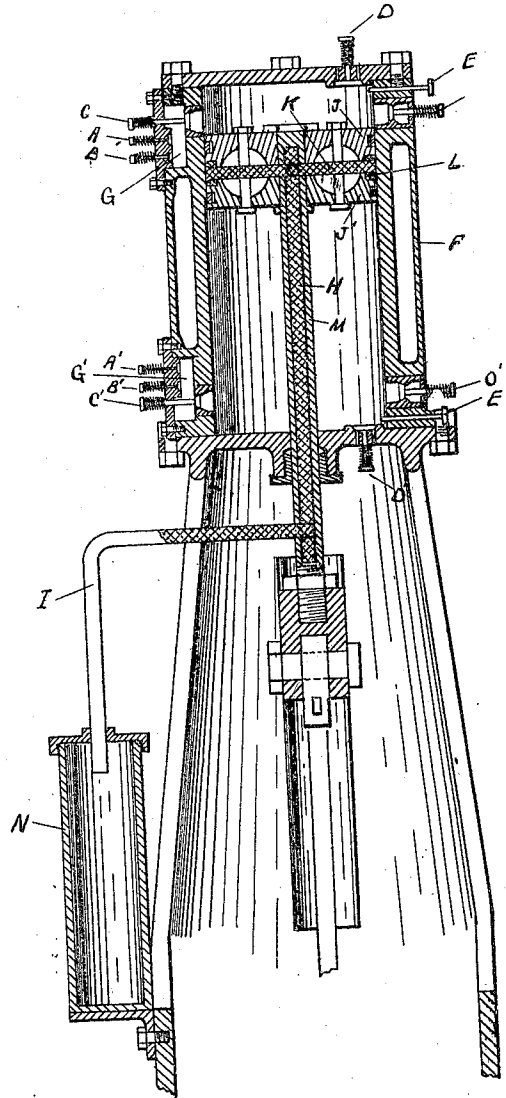


C. L. COOK.
EXPLOSION ENGINE.
APPLICATION FILED AUG. 23, 1909.

Patented May 20, 1913

1,062,323.



WITNESSES:

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CHARLES LEE COOK, OF LOUISVILLE, KENTUCKY.

EXPLOSION-ENGINE.

1,062,323.

Specification of Letters Patent.

Patented May 20, 1913.

Application filed August 23, 1909. Serial No. 514,251.

To all whom it may concern:

Be it known that I, CHARLES LEE COOK, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Explosion-Engine, of which the following is a specification.

My invention relates to double-action explosion engines; and the object of my invention are to provide means for conducting rapidly out of the cylinder the heat caused by the explosions. I attain this object by the mechanism illustrated in the accompanying drawing, in which the figure is a vertical section of one cylinder of the engine.

Similar letters refer to similar parts throughout the view.

The figure represents a vertical section of a cylinder of a double-action explosion engine, in which A and A' are the inlet valves for the gas, and B and B' the inlet valves for the air, into mixing chambers respectively G and G', which the port valves C and C' connect with the cylinder chamber.

O and O' are the exhaust valves, E and E' the sparkers, and F is the water jacket extending around the cylinder.

My invention consists in constructing the piston head with a copper web K, between the upper and lower steel plates J and J', with a rim or bearing surface L, adapted to bear smoothly on the inner surface of the cylinder as the piston head moves up and down. The piston rod M is constructed with a copper core H, connected with the copper web K in the piston head. The copper core H is connected, at a point outside the cylinder, with the copper extension I, which moves up and down in the dash-pot N. Any substance of high conductivity may be used in place of copper to construct the web K and the core H. The web K serves to con-

duct the heat from the plates J and J' of the piston head into the walls of the cylinder and out of the chamber with great rapidity. The core H serves to conduct the heat out of the piston rod M and part of the heat from the lower plate J' out of the cylinder rapidly. By this arrangement one of the chief obstacles in the way of the use of double-action explosion engines is overcome.

I do not limit myself to the exact form in which my invention is herein disclosed.

I claim:

1. In an explosion engine, having a cylinder and a piston, a piston comprising a web more highly conductive of heat than the balance thereof and supports on the opposite sides thereof; said web being in contact with the walls of the cylinder and with said supports.

2. In an explosion engine, having a cylinder and a piston, a piston rod provided with a core of solid material more highly conductive of heat than the balance of the rod.

3. In an explosion engine, having a cylinder and a piston, a piston rod provided with a core of solid material more highly conductive of heat than the balance of the rod, said core being connected outside the cylinder with means for conducting heat rapidly therefrom.

4. In an explosion engine, having a cylinder and a piston, a piston-head comprising a copper web and a piston rod comprising a copper core; said web being in contact with the walls of the cylinder and with said core; said core having an extension outside the cylinder and the rod.

CHARLES LEE COOK.

Witnesses:

H. JOS. GODECKER,
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