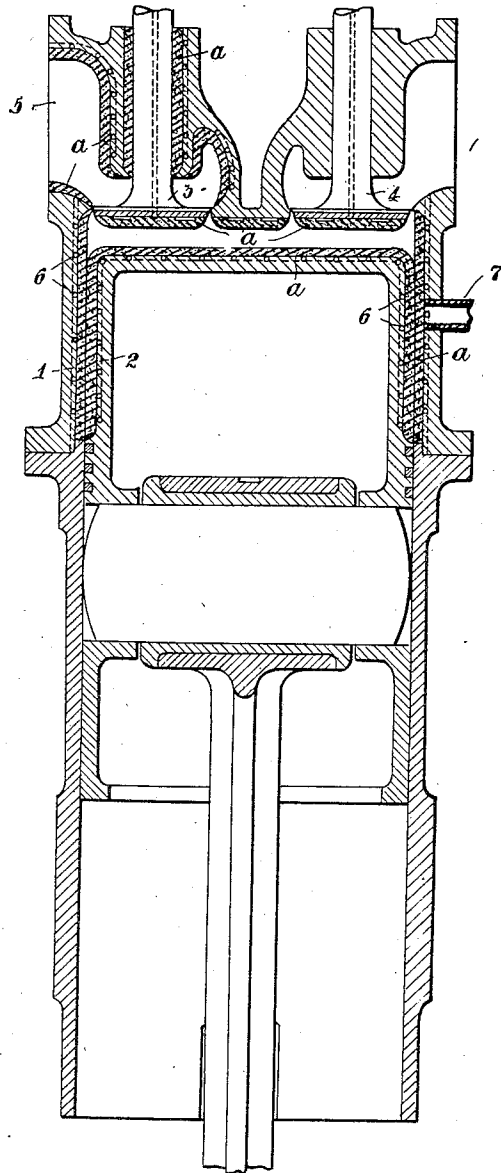


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E. SCHATTANEK
INTERNAL COMBUSTION ENGINE

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E. SchattaneK
INVENTOR

By: Marko & Clark
ATTYS.

UNITED STATES PATENT OFFICE

ERICH SCHATTANEK, OF VIENNA, AUSTRIA

INTERNAL COMBUSTION ENGINE

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This invention relates to an internal combustion engine, and particularly to a porous lining for the parts thereof exposed to heat.

In order to introduce the water, the pipe 7 is tapped into the cylinder, and leads from a source of water under pressure.

What I claim is:

The invention is founded essentially on the perception that a porous body filled with a suitable liquid, for instance, water, is, even under influence of very high temperature, only slightly heated, if the quantity of liquid evaporated is replaced. The phenomenon on which the invention is based can be explained by the fact that through the influence of high heat, a film or coating of steam or gas is instantly formed, which in repose is fairly constant and covers the porous lining, protecting it against further heating. A secondary consequence, is that through the evaporation of the liquid, heat is reduced whereby the walls of the engine are cooled. As shown, the porous metal lining encloses completely the space in which the heat is operative.

The pressure under which the supply of liquid is effected can be regulated from the pressure working at the time on the porous metal lining. The duration of supplying the liquid can also be regulated during the working strokes.

The aforementioned effects are made possible by the qualities of the porous metal lining, as to density, workability and shaping, and also on account of the possibility of a homogeneous connection of the lining with the wall to be protected, consisting of metal, which connection can be made by sintering them together, or by applying the lining in a heated state on the surface to be protected and permitting it to adhere thereto.

The figure represents a vertical sectional view through the device.

The walls, surfaces and parts exposed the most to heat are provided with a porous lining *a*. This metal lining *a* covers the upper part of the cylinder wall, the piston 2, the valves 3 and 4 and their guides, as well as the exhaust chamber 5.

1. In an internal combustion engine a porous metal-lining covering the walls, surfaces and parts exposed to heat, said lining being pervious for a liquid, and means for introducing the liquid under pressure into the lining.

2. Internal combustion engine as claimed in claim 1, characterized in that the porous metal-lining completely encloses the space within which the heat is operative.

3. Internal combustion engine as claimed in claim 1, characterized by the provision of distributing-channels between the lining and the wall, surface and parts to be protected, into which liquid is introduced.

4. The combination of a cylinder having a power element therein, a porous-metal lining associated with the cylinder and movable element, said lining having channels therein, and means for conducting liquid under pressure into the respective channels.

In witness whereof I have hereunto signed my name.

ING. ERICH SCHATTANEK.