Apr. 3, 1923. 1,450,177

H. J. HOUPERT

INTERNAL COMBUSTION ENGINE PISTON

Filed Jan. 11, 1922

Fig. 1.

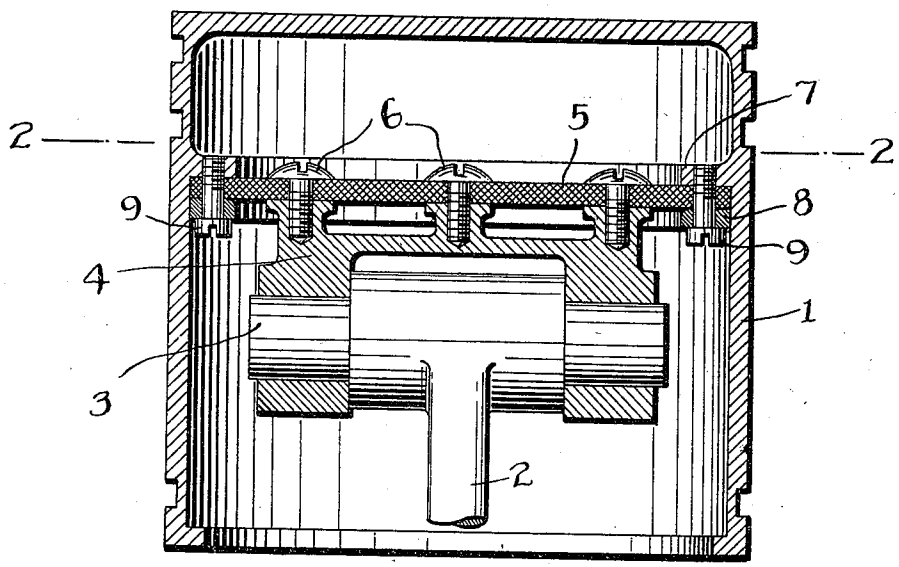
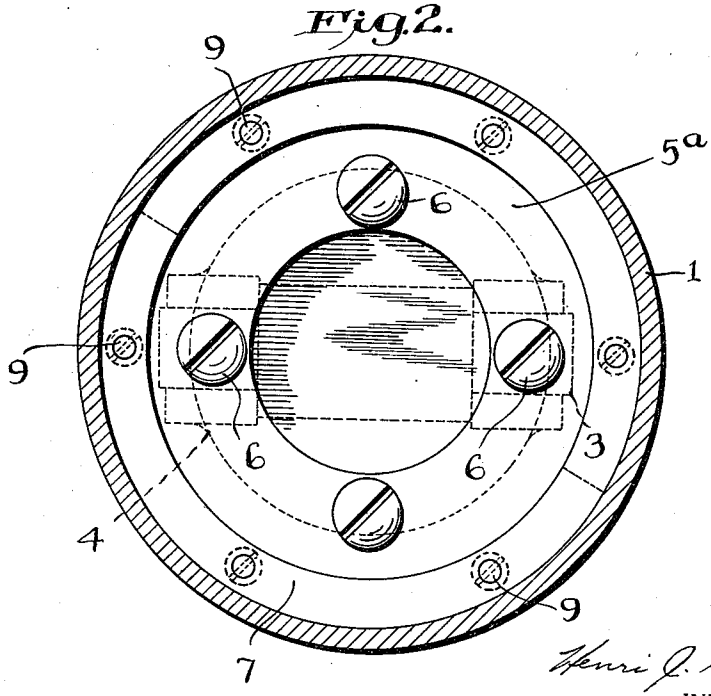


Fig. 2.



Henri J. Houpert,
INVENTOR

BY
ATTORNEY

Patented Apr. 3, 1923. 1,450,177

UNITED STATES PATENT OFFICE.

HENRI J. HOUPERT, OF MAMARONECK, NEW YORK.

INTERNAL-COMBUSTION-ENGINE PISTON.

Application filed January 11, 1922. Serial No. 528,434.

To all whom it may concern:

Be it known that I, HENRI J. HOUPERT, a citizen of the United States, residing at Mamaroneck, in the county of Westchester and the State of New York, have invented a new and useful Internal-Combustion-Engine Piston, of which the following is a specification.

This invention relates to the pistons of internal combustion engines; and the object is to provide a simple and light construction which affords a universal connection with the connecting rod, thereby reducing wear between the piston and the cylinder and rendering unnecessary extreme accuracy of boring and alinement, as well as securing other advantages.

In the accompanying drawings forming a part hereof:

Figure 1 is an axial section through an illustrative preferred embodiment; and

Figure 2 is a cross-section on the line 2—2 of Figure 1, showing a slight modification.

The body of the piston is marked 1. Because of the lessened wear and the possibility of machining the entire interior, this body can be made of cast-iron, a more desirable metal than aluminum, and still be light because of the thinness of wall. Provision is shown for customary piston rings, but owing to the lessened clearance made possible by the construction to be described, such rings may be reduced in number or even omitted entirely.

The connecting rod 2 is pivoted by a short wrist pin 3 to a bridge 4, which is separate from the body of the piston. This bridge is connected to the body by a flexible disk or member 5 sufficiently resisting for purposes of power and compression, and permitting slight angular movement of the body, particularly in a sense at right angles to the free pivotal movement afforded by the wrist pin. This member may be of a variety of forms and materials and may vary in internal structure. Materials and structures similar to those used in non-metallic flexible disk or ring universal joints are particularly contemplated; or a metallic multiple-leaf-spring member may be employed.

In Figure 1 the member is illustrated as a disk secured by screws 6, at the center and at a suitable number of points about and outwardly from the center, to the bridge 4, and clamped at its margin between an annular ledge 7 in the body and a ring 8, by means of screws 9. The specific details, however, may be varied. Figure 2 shows the member, marked 5^a, in the form of a ring.

What I claim as new is:

An internal combustion engine piston having a body, a bridge to which the connecting-rod is pivoted by a wrist-pin, and a flexible member forming the connection between said bridge and body.

H. J. HOUPERT.