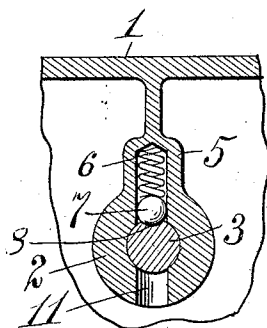
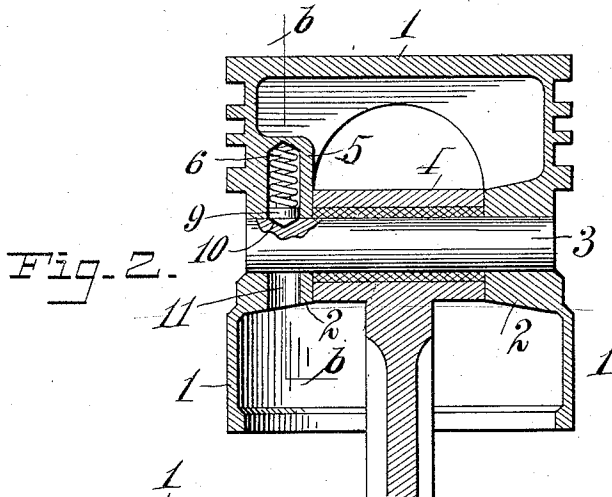
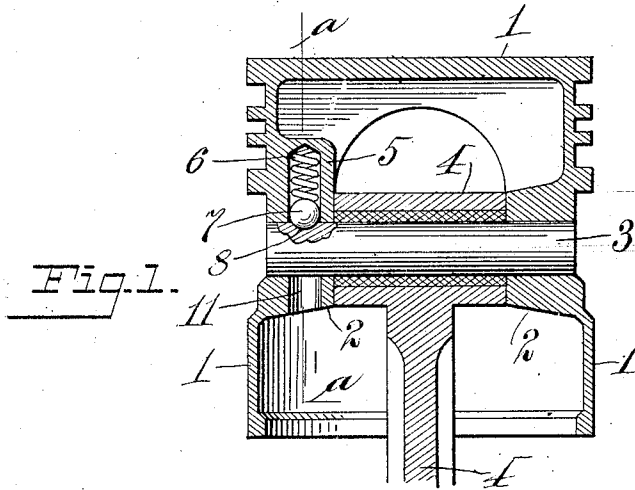


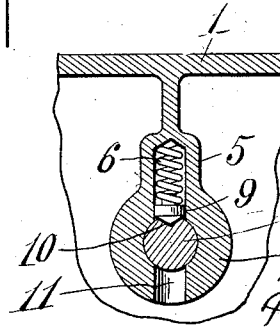
F. C. RHOADS & H. A. LEIS.
 MEANS FOR RETAINING THE WRIST PINS OF PISTONS.
 APPLICATION FILED JUNE 5, 1912

1,054,942.

Patented Mar. 4, 1913.



Witnesses
M. Galloway



Inventors
 F. C. Rhoads
 H. A. Leis.
 By *R. M. Canty* Attorney

UNITED STATES PATENT OFFICE.

FOSTER C. RHOADS AND HUGH A. LEIS, OF DAYTON, OHIO.

MEANS FOR RETAINING THE WRIST-PINS OF PISTONS.

1,054,942.

Specification of Letters Patent.

Patented Mar. 4, 1913.

Application filed June 5, 1912. Serial No. 701,803.

To all whom it may concern:

Be it known that we, FOSTER C. RHOADS and HUGH A. LEIS, citizens of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Means for Retaining the Wrist-Pins of Pistons; and we 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention comprises retaining means for the wrist pins of pistons of the internal combustion engine type.

Otherwise expressed, the invention relates to means for retaining in position the wrist pin which connects the piston and piston rod.

The object of the invention is to provide means of a simplified character which will securely maintain the wrist pin in position and yet may easily be removed when necessary to detach the piston and rod, and without requiring the aid of special tools.

Referring to the drawings, Figure 1 is a longitudinal sectional view through a piston of an internal combustion engine showing the invention applied thereto; Fig. 2 is a similar view showing a modification; Fig. 3 is a section on the line *a-a* of Fig. 1; and Fig. 4 is a section on the line *b-b* of Fig. 2.

In the specification and drawings, similar reference characters indicate corresponding parts.

Referring in detail to the drawings, 1 represents a piston of an internal combustion engine, the same being provided with internal apertured bosses 2 for the reception of a wrist pin 3 which also passes through one end of a piston rod 4 and connects the two. Near one end of said pin 3, it is provided with a peripheral ball cavity 10, or cone cavity 8. In one of the bosses 2 on the interior of the piston, is a pocket 5 which re-

ceives a spring 6 which controls a ball 7, as is shown in Figs. 1 and 3. When the pin 4 is in a normal position, the ball 7 seats in the shallow cavity 8 and is held therein by the pressure offered by the spring 6. The pressure is sufficient to hold the ball 7 in said cavity with sufficient resistance to prevent the pin 3 moving lengthwise. The resistance offered by the ball 7 is not, however, sufficient to prevent the pin 3 being moved laterally under a force applied for the purpose.

In Figs. 2 and 4, a modified form is illustrated, in which a button 9 is substituted for the ball 8. The button 9 is provided with a conical face which is received by similar formed cavity 10 in the pin. The action of the button 9, in holding and releasing the pin 3, is identical with that of the ball.

The pocket 5 for the reception of the spring 6 is a continuation of the aperture 11 which lies on one side of the pin. Through said aperture 11, the spring and ball or button may be easily placed in position before the insertion of the wrist pin.

Having described our invention, we claim.

In a device of the character specified, a piston having apertured bosses, and a pocket extending at a right angle from the aperture in one of said bosses, a piston rod, a wrist pin having a shallow cavity in the surface thereof mounted in said apertured bosses and connecting the piston and piston rod, the cavity in said wrist pin alining with the pocket in one of said bosses, a locking member seated in said cavity, and a spring within said pocket engaging said locking member and maintaining it in engagement with the cavity in the wrist pin whereby said wrist pin may be removed without manipulating said locking member.

In testimony whereof we affix our signatures, in presence of two witnesses.

FOSTER C. RHOADS.
HUGH A. LEIS.

Witnesses:

R. J. McCARTY,
MATTHEW SIEBLER