June 16, 1931. R. J. HATCH 1,810,423

PISTON

Filed Feb. 13, 1930

Fig. 1.

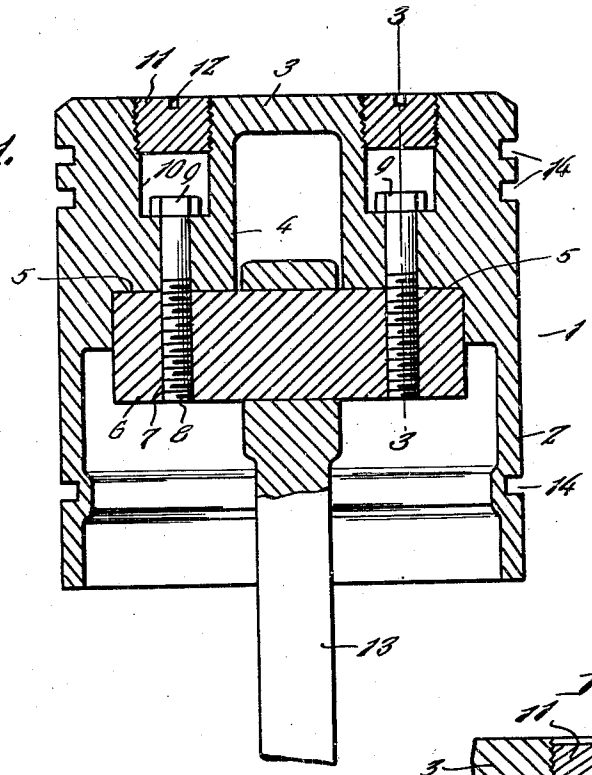


Fig. 3.

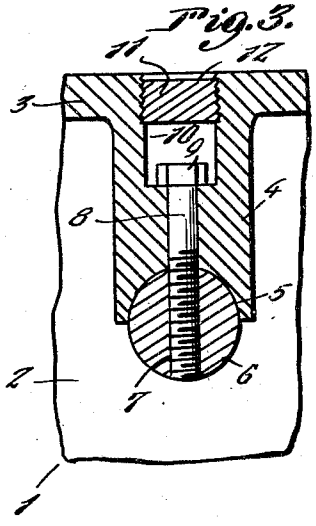
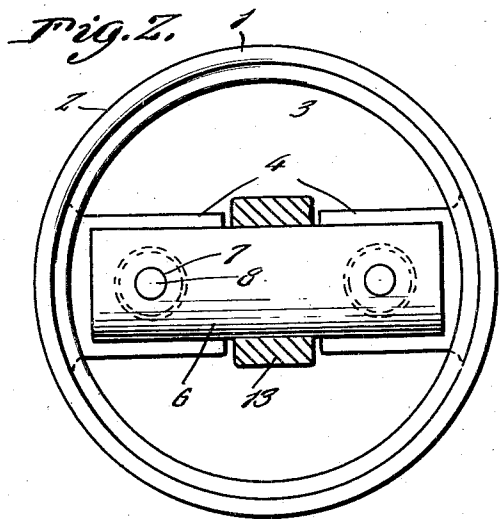


Fig. 2.



Inventor

Roscoe J. Hatch

By Clarence A. O'Brien

Attorney

Patented June 16, 1931 1,810,423

UNITED STATES PATENT OFFICE

ROSCOE J. HATCH, OF MACY, INDIANA

PISTON

Application filed February 13, 1930. Serial No. 428,127.

This invention relates to new and useful improvements in pistons, and more particularly to devices of this character which are especially for use in internal combustion engines for installation in motor vehicles, but it is to be understood that a piston constructed in accordance with this invention may be installed for use in any type of engine, to which same is found adaptable.

An important object of the invention is to provide, in a manner as hereinafter set forth, a piston of the aforementioned character which embodies a construction and arrangement, whereby same may be expeditiously detached from its connecting rod and withdrawn through the upper end of its cylinder, thus eliminating the necessity of removing the crank case of the engine and uncoupling the connecting rod from the crank shaft in order to remove the piston.

Other objects of the invention are to provide a piston of the character set forth, embodying means for coupling same to a connecting rod, which will be extremely light in weight, strong, durable, efficient in its use, and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings, wherein like characters of references designate corresponding parts throughout the several views, and wherein:—

Figure 1 is a vertical sectional view of a piston constructed in accordance with this invention.

Fig. 2 is a bottom plan view thereof.

Fig. 3 is a fragmentary vertical sectional view taken substantially on the line 3—3 of Fig. 1.

Referring to the drawings in detail, the reference character 1 designates generally the body portion of the piston comprising the skirt portion 2 and the upper wall 3.

Formed integrally with the said portion 2 on diametrically opposite sides thereof and the upper wall 3 is a pair of spaced opposed wrist pin supporting blocks 4 having complemental recesses 5 in the lower end portions, for the reception of a stationary wrist pin 6 of circular cross section adapted to seat snugly in the recesses 5.

Adjacent its opposite end, the wrist pin 6 is provided with the transversely extending, vertical threaded bores 7 for threadedly receiving the bolt 8, which extends through openings provided in the block 4 and have heads 9 on their upper ends disposed in the bottoms of the internally threaded sockets 10 which extends downwardly into the piston from the upper end thereof.

The sockets 10 are closed through the medium of the threaded plugs 11 having tool receiving slots 12 therein to facilitate the insertion and removal of said plugs.

A connecting rod 13 is operatively connected to the intermediate portion of the wrist pin 6 between the blocks 4, as clearly shown in Figs. 1 and 2 of the drawings. The connecting rod 13 is of any suitable construction, and may be swingingly connected to the wrist pin in any suitable manner.

The piston 1 is further provided with the usual circumferentially extending ring receiving grooves or channels 14.

When it is desired to remove the piston from the cylinder, it is only necessary to remove the closure plug 11 from the socket 10 and insert a suitable tool, such as a socket wrench into the socket 10, and engage same over the polygonal head 9 of the bolt 8, and thread said bolts outwardly to uncouple the wrist pin 6, after which the piston is free to be removed.

It will further be seen that I have provided a piston construction embodying means for connecting same to a connecting rod with a minimum of moving parts, and which is therefore very simple in construction and light in weight.

It is believed that the many advantages of a piston constructed in accordance with this invention will be readily understood, and although the preferred embodiment of the invention is as illustrated and described, it is to be understood that changes in the details of construction may be had, which will fall within the scope of the invention as claimed.

Having thus described my invention, what I claim as new is:—

A piston of the character described comprising an upper wall, a skirt depending therefrom, a pair of spaced, opposed wrist pin supporting blocks integrally formed on the upper wall and depending therefrom, and integrally connected to the skirt on diametrically opposite sides thereof, the upper wall and blocks being provided with threaded sockets, said blocks being further provided with substantially semi-circular complemental recesses in their lower end portions, said blocks being still further provided with bores communicating with the threaded sockets and the recesses therein, a wrist pin of circular cross section having its opposite end portions seated in the recesses, provided with transversely extending threaded bores for registry, with the bores in the blocks, headed bolts disposed in the threaded sockets and extending through the bores in the blocks for threaded engagement in the bores of the wrist pin in a manner to rigidly and detachably anchor said wrist pin in the recesses, closure plugs threadedly engaged in the threaded bores above the headed bolts, a connecting rod operatively connected to an intermediate portion of the wrist pin between the blocks.

In testimony whereof I affix my signature.

ROSCOE J. HATCH.