March 11, 1941. J. L. HARRAH 2,234,762

PISTON CONSTRUCTION

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Fig. 1.

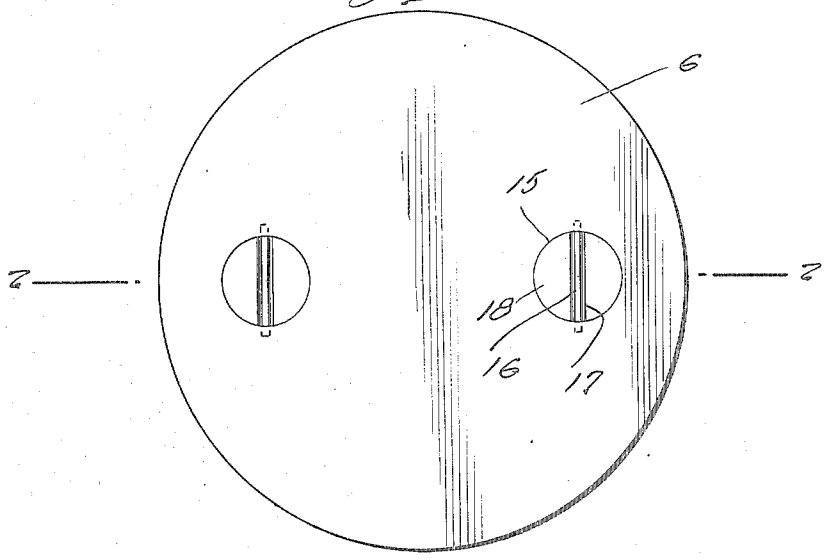
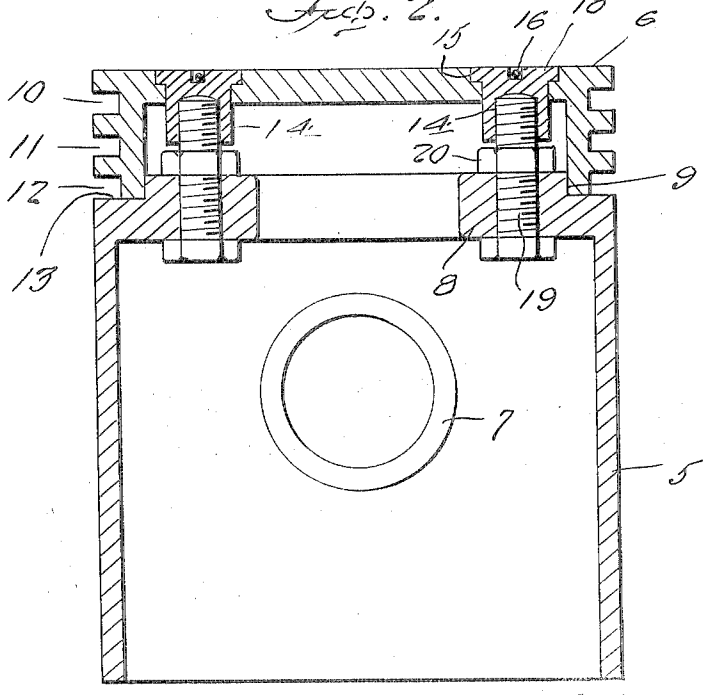


Fig. 2.



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Fig. 3.

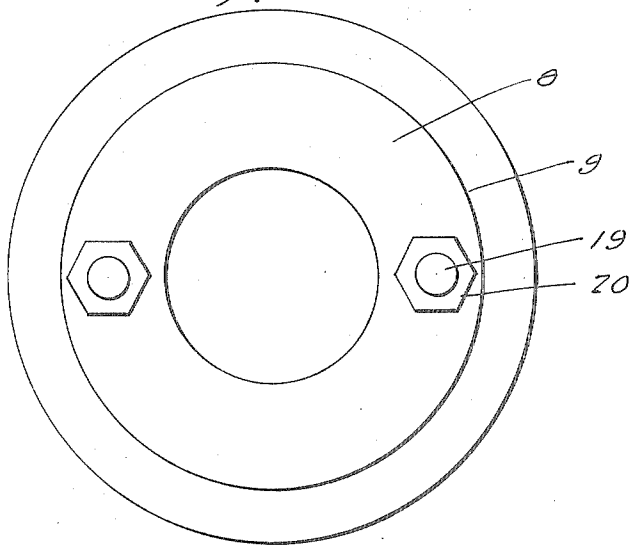


Fig. 4.

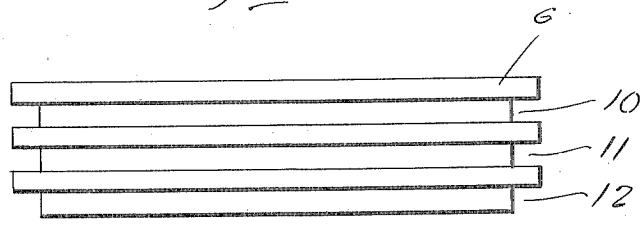


Fig. 5.

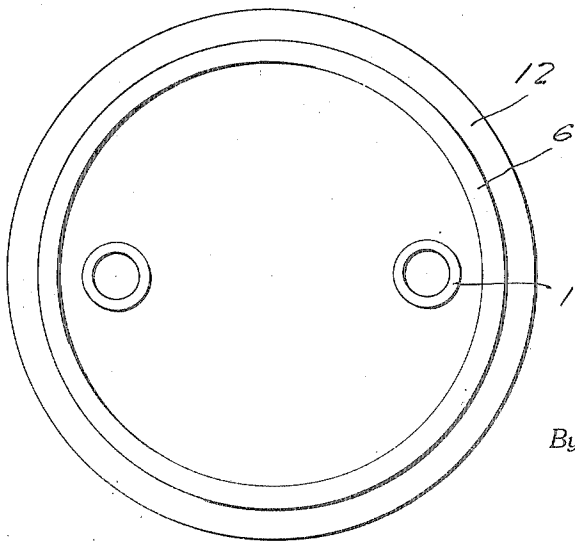
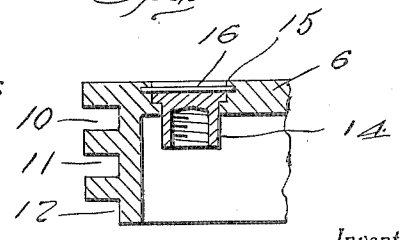


Fig. 6.



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Patented Mar. 11, 1941 2,234,762

UNITED STATES PATENT OFFICE

2,234,762

PISTON CONSTRUCTION

John L. Harrah, Akron, Ohio

Application April 1, 1939, Serial No. 265,518

1 Claim. (Cl. 309—15)

This invention appertains to new and useful improvements in a piston construction of the type especially adapted for use in and as a part of an internal combustion engine.

The principal object of the present invention is to provide a sectional piston construction wherein the head is separable from the skirt portion so that said head can be easily removed for the purpose of replacement of piston rings and associated details without removing the complete piston entirely from the cylinder.

Another important object of the invention is to provide a piston construction wherein the head is separable from the skirt so that these parts alone can be replaced without the necessity of replacing the entire piston.

Other objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings—

Figure 1 represents a top plan view.

Figure 2 is a section on the line 2—2 of Figure 1.

Figure 3 is a top plan view of the skirt section.

Figure 4 is a side elevational view of the head.

Figure 5 is a bottom plan view of the head.

Figure 6 is a fragmentary detailed sectional view through the head.

Referring to the drawings wherein like numerals designate like parts, it can be seen that numeral 5 represents the skirt section while numeral 6 represents the head section of the piston.

The skirt section 5 has the wrist pin bearings 7 therein and this skirt is, of course, of cylindrical construction. The upper portion of the skirt 5 has the inwardly disposed substantially thick annular formation 8 which is reduced at its outer portion to define the shoulder 9 over which the lower portion of the hollow head 6 slips as shown in Figure 2.

The head 6 has the ring grooves 10 and 11 and the open channel 12 at the bottom of the head 6 in complement with the portion 13 at the top of the skirt 5 forms the third ring groove.

The top of the head 6 is bored to receive the socket screws 14—14 each of which has a head seated in a counter-bore or countersink 15. Each of these countersinks has opposed portions of its side wall formed with recesses to receive the end portions of a spring steel pin 16 which can be flexed with its ends inserted in the kerf 17 of the corresponding socket screw head 18 and released, of course, with the kerf aligned with the said recesses, to the end that the pin 16 will straighten out and its ends engage into the recess, thus preventing rotation of the socket screw 14. These socket screws prior to the placement of the pins 16 are screwed downwardly over the upper ends of the bolts 19, said bolts extending upwardly through the formation 8 and being held in place by the jam nuts 20.

Of course, placement of the head 6 over the shoulder 9 aligns the bolts 19 properly with the opening in the head 6 for the screws, 14, after which the screws 14 can be inserted through the openings and rotated until the head is firmly secured to the skirt 5, after which the pins 16 are placed in the manner stated and the piston is completely constructed.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention, what is claimed as new is:

In a piston construction, the combination of a cylindrical skirt portion entirely open at one end and formed with a thickened wall at its opposite end, said wall being cut out at its upper peripheral edge to form an annular seat extending flush with the edge of the skirt portion and extending inwardly and radially therefrom, a hollow cylindrical head having a depending skirt formed with a plurality of circumferentially extending spaced ribs forming intermediate thereof piston ring receiving grooves, said depending skirt being adapted to rest on said annular seat in the thickened wall, the space below the lowermost rib and the upper surface of said seat forming a groove to receive an oil ring, and means carried by said skirt portion and detachable head for holding the head on said skirt portion.

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