Nov. 18, 1952 D. BOWSER 2,618,522

RINGLESS PISTON FOR COMPRESSION ENGINES

Filed March 15, 1951 2 SHEETS—SHEET 1

FIG. 1.

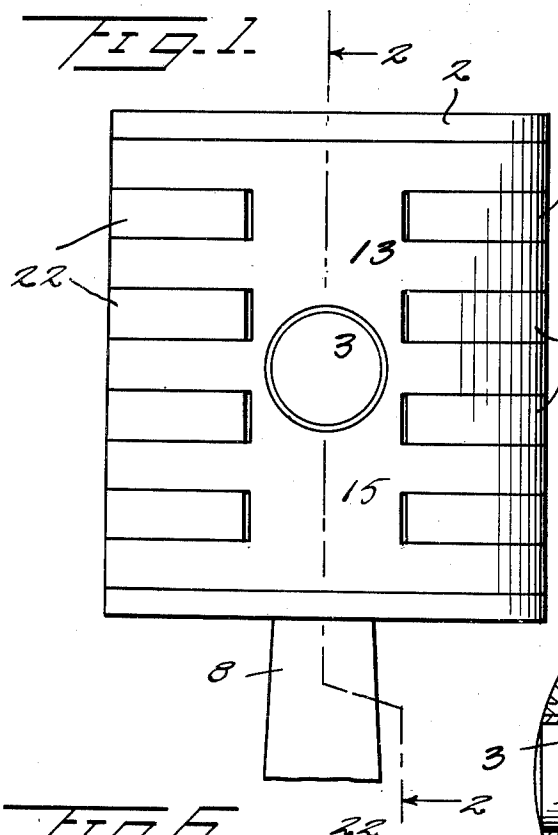


FIG. 7.

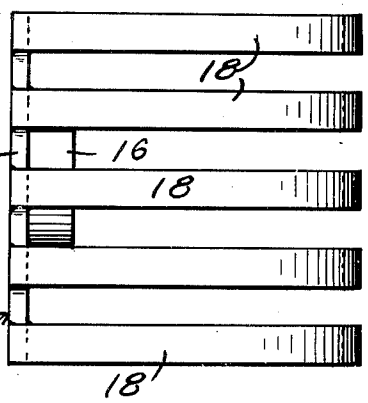


FIG. 5.

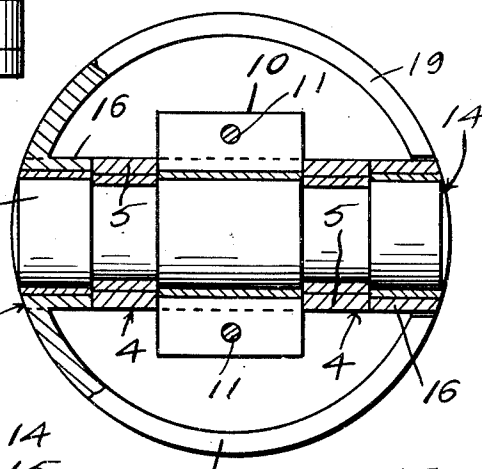
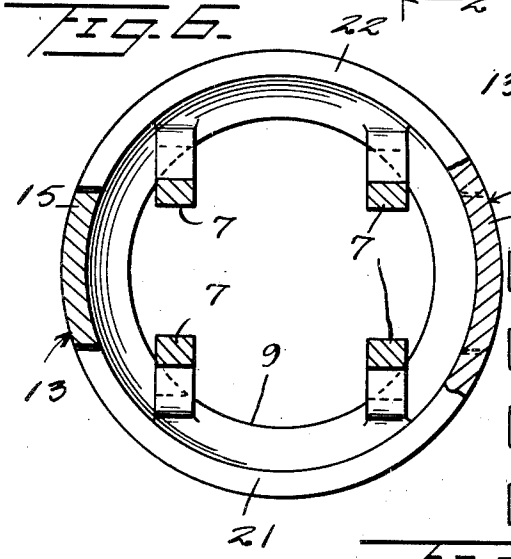


FIG. 6.



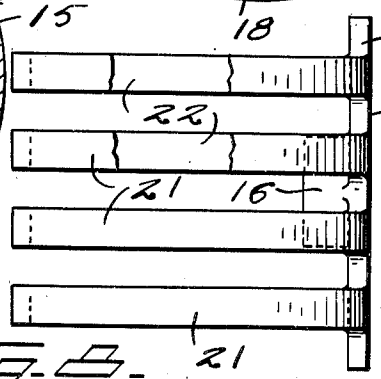


FIG. 8.

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RINGLESS PISTON FOR COMPRESSION ENGINES

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FIG. 2.

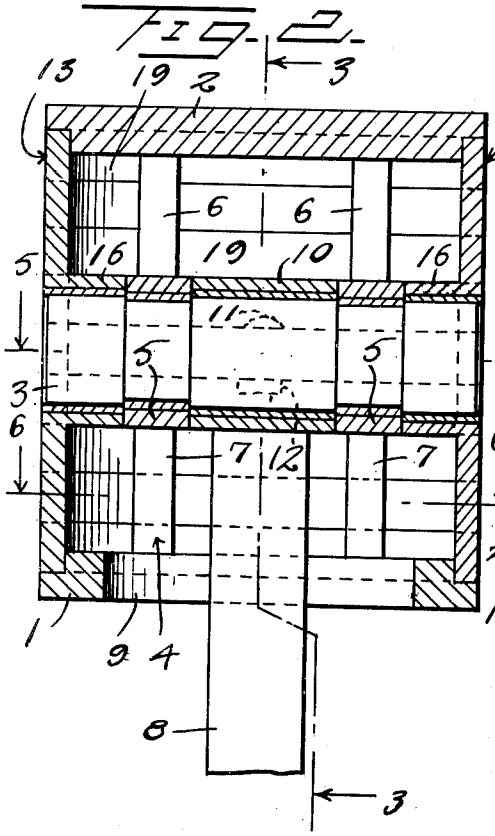


FIG. 3.

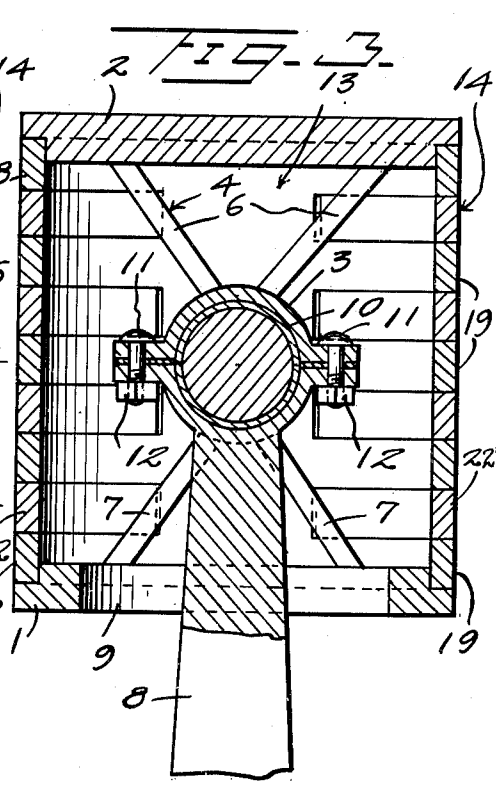


FIG. 4.

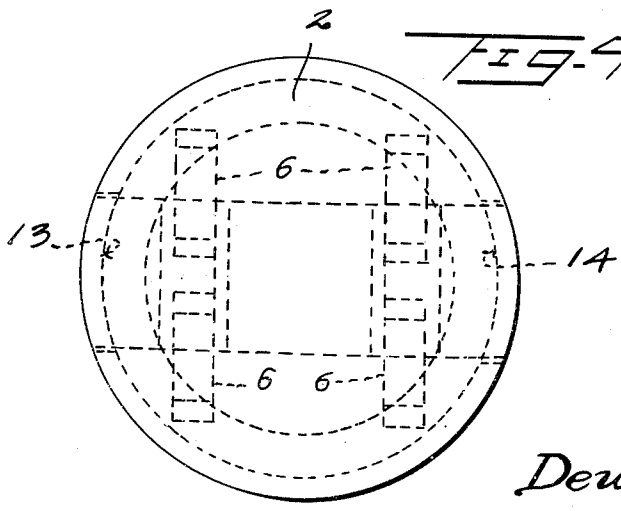
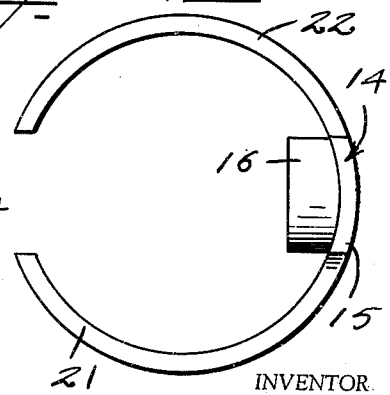


FIG. 9.



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RINGLESS PISTON FOR COMPRESSION ENGINES

Dewey Bowser, Plymouth, Ind.

Application March 15, 1951, Serial No. 215,709

1 Claim. (Cl. 309—14)

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This invention relates to new and useful improvements in ringless pistons for compression engines.

The primary object of my invention is to provide a reciprocating piston for automobile engines, in which two oppositely disposed members with alternating and interlocking fingers or segments will form a smooth ringless piston when compressed in the cylinder of the engine.

A further object of my invention is to provide a ringless piston in which the component parts may be easily and readily assembled to form the piston or as easily removed for replacement or repairs.

A still further object of my invention is to provide a ringless piston of the character specified that is simple and economical in construction and highly efficient and durable in use.

With the foregoing and other objects in view that will appear as the nature of my invention is better understood, the same consists in the novel features of construction, combination and arrangement of parts illustrated in the accompanying drawings and more particularly pointed out in the appended claim.

In the accompanying drawings, which are for illustrative purposes only and are therefore not drawn to scale:

Figure 1 is a side view of a ringless piston constructed in accordance with my invention.

Figure 2 is a central longitudinal section, taken on line 2—2 of Figure 1.

Figure 3 is a transverse section, taken on line 3—3 of Figure 2.

Figure 4 is an end view.

Figure 5 is a horizontal section, taken on line 5—5 of Figure 2.

Figure 6 is a similar view, taken on line 6—6 of Figure 2.

Figure 7 is a general view of one of the piston body forming members.

Figure 8 is a similar view of the other piston body forming member, and Figure 9 is an edge view of Figure 8.

Referring to the drawings for a more particular description of my invention, and in which drawings like parts are designated by like reference characters throughout the several views, my ringless piston essentially comprises the inner and outer disc-shaped end members 1 and 2, respectively, connected to the wrist pin 3 by means of the two corresponding transversely spaced supports 4, each comprising a central tubular hub 5 and the oppositely extending radially disposed arms 6 and 7. The piston rod 8

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extends through an opening 9 in the inner end member 1 of the piston and is connected to the center of the wrist pin between the hubs 5 of the supports 4, by means of the semi-circular clamps 10 and the bolts and nuts 11 and 12, respectively, or other equivalent means.

Two piston body forming members 13 and 14 are arranged at opposite sides of the piston, and each member comprises a longitudinal rectangular oblong body portion 15 of arcuate form in cross section, which extends between the inner and outer end members 1 and 2 of the piston, and is formed with a central sleeve 16 to receive the corresponding end of the wrist pin. In carrying out my invention, the body portion of the member 13 is formed at opposite side edges with a series of arcuate longitudinally spaced fingers or segments 18 and 19, respectively, disposed in alignment with each other. The body portion of the member 14 is formed at opposite edges with a series of arcuate longitudinally spaced fingers or segments 21 and 22, respectively, disposed in alignment with each other, but arranged with the segments 21 of the member 14 alternating and interlocking with the segments 18 of the member 13 and with the segments 22 of member 14 alternating and interlocking with the segments 19 of member 13. By virtue of this novel construction and arrangement of parts, when the piston is compressed in the cylinder of the engine, the interlocking segments 18, 19, 21 and 22 of the members 13 and 14 will form a smooth ringless body for the piston.

From the foregoing description taken in connection with the drawings, it is thought that the construction, operation and advantages of my invention will be readily understood, without requiring a more extended explanation.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:

A ringless piston of the character specified, comprising a pair of disc-shaped end members, a wrist pin, a pair of corresponding transversely spaced supports, each consisting of a central tubular hub to receive the wrist pin and oppositely extending radial arms between the hubs and inner faces of the end members, and piston body forming members arranged at opposite sides of the piston, each of said members comprising a rectangular oblong body portion of arcuate form in cross section formed with a central sleeve to receive the corresponding end of the wrist pin and at opposite side edges with a series of arcuate longitudinally spaced fingers or segments ar-

ranged in alignment with each other, said last mentioned members arranged in position with the segments of one member alternating and interlocking with the segments of the other member to form the body portion of the piston when compressed in the cylinder of the engine.

DEWEY BOWSER.

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