No. 736,136. PATENTED AUG. 11, 1903.

J. D. McFARLAND, Jr.

PISTON ROD JOINT.

APPLICATION FILED SEPT. 17, 1902.

NO MODEL.

Fig. 1.

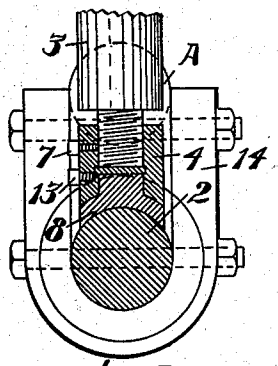


Fig. 2.

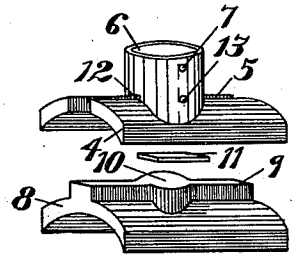


Fig. 3.

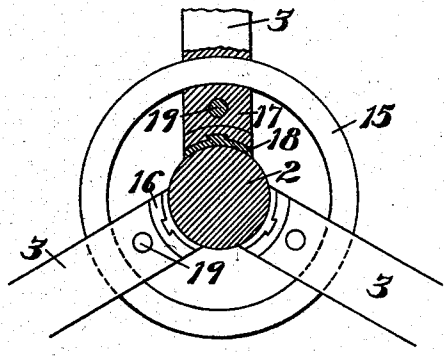
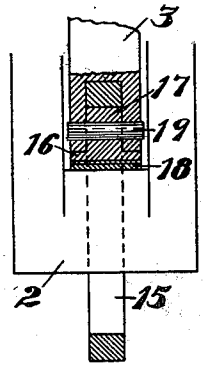


Fig. 4.



Witnesses,
Dudley Moss.
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Inventor,
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Attys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 736,136. Patented August 11, 1903.

UNITED STATES PATENT OFFICE.

JAMES D. McFARLAND, JR., OF FRUITVALE, CALIFORNIA, ASSIGNOR OF ONE-HALF TO JOHN BRUCKMAN, OF SAN FRANCISCO, CALIFORNIA.

PISTON-ROD JOINT.

SPECIFICATION forming part of Letters Patent No. 736,136, dated August 11, 1903.

Application filed September 17, 1902. Serial No. 123,692. (No model.)

To all whom it may concern:

Be it known that I, JAMES D. McFARLAND, Jr., a citizen of the United States, residing at Fruitvale, county of Alameda, State of California, have invented an Improvement in Piston-Rod Joints; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to improvements in means for connecting the piston-rods with a crank-shaft, and is particularly applicable in engines having a plurality of radially-disposed cylinders in the same plane. Its object is to confine the connections between the piston-rods and crank-shaft within the narrowest practicable limits and to provide for take up when these bearing parts have become worn.

It consists of the parts and the construction and combination of parts hereinafter described and illustrated by the accompanying drawings, in which—

Figure 1 is a vertical cross-section of one form of my invention. Fig. 2 is a perspective view of segmental plate 4 and brass 8, Fig. 1. Fig. 3 is a vertical cross-section of another form of my invention. Fig. 4 is a vertical longitudinal section of the form shown in Fig. 3.

A represents an engine-shaft having a crank 2, from which radiate the several piston-rods 3. As the invention pertains to the connections of these rods with the crank, it has not been deemed necessary to show the cylinders or other parts of the engine.

In Figs. 1 and 2 is shown a form of piston-rod joint comprising a segmental plate 4, longitudinally slotted, as at 5, and having a centrally-disposed threaded sleeve portion 6, adapted to be screwed onto the end of a piston-rod and locked thereto by set-screws 7. A second segmental plate 8, concentric with and bearing on the crank, is provided with a flange or projection 9 upon its upper side, fitting the slot 5 of plate 4. The flange is centrally enlarged, as at 10, and the slot is correspondingly widened to accommodate this enlargement, whereby any movement of the parts upon each other is prevented. Any wear may be compensated for by interposing a liner 11 (inserted through opening 12 in sleeve 6) between plate 4 and brass 8. The liner may be securely held in place by means of a set-screw 13. These plates are held together and to the crank by means of the straps 14, embracing the sides of the plates and having their ends secured to the arms of the crank, as shown in Fig. 1.

In Figs. 3 and 4 is shown another form of joint, which permits a piston-rod to be confined within very narrow limits—in fact, the arms of the crank need only be separated sufficiently to give necessary clearance for the piston-rod. This feature of narrow tread is desirable in many instances. As here shown, the piston-rods are slotted centrally at their ends to receive a ring 15, which is slipped on over the crank-elbow. The end of each rod seats upon a segmental plate 16, which has a portion 17 fitting the slot in the end of the piston-rod and bearing against the ring. Between each plate 16 and the crank is interposed a wearing-surface of brass, as 18, which may be replaced from time to time as necessity requires. The parts are held in position about the crank-pin by the bolts 19.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with a crank-shaft, of a piston-rod, a segmental plate bearing upon the crank, a similar plate secured to the piston-rod said plates having interlocking means between adjacent surfaces, and means for holding the rod to the crank.

2. The combination of a piston-rod; a crank-shaft; a segmental plate, longitudinally recessed; means for securing the plate to the piston-rod; a second segmental plate, bearing upon the crank-shaft, and having a longitudinally-extending projection to interlock with the recess in the first-named plate; and means encircling the crank-shaft for holding the parts to the crank.

3. The combination of a piston-rod; a crank-shaft; a segmental plate; means for securing said plate to the rod, said plate having a longitudinal slot; a second segmental plate, bearing upon the shaft and having a projection enlarged between its ends and fitting the slot of the first-named plate; and means for holding the plates to the crank.

4. A piston-rod joint comprising a plate

having a centrally-threaded sleeve fitting the piston-rod, a segmental wearing-plate having interlocking means with the first-named plate, a liner introduced through said sleeve between the plates, and a strap engaging the sides of the plates to hold the parts to the crank.

In witness whereof I have hereunto set my hand.

JAMES D. McFARLAND, JR.

Witnesses:
S. H. NOURSE,
JESSIE C. BRODIE.