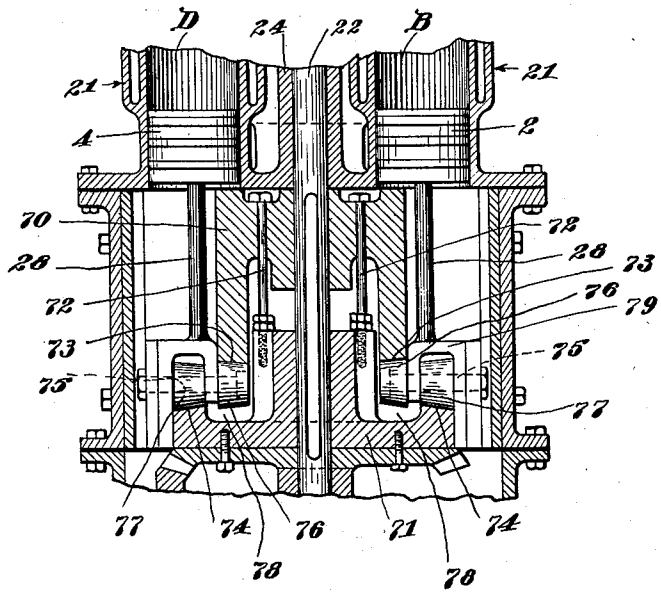
May 6, 1930. C. MEHLUM 1,757,778

INTERNAL COMBUSTION ENGINE

Filed Feb. 24, 1927



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INTERNAL-COMBUSTION ENGINE

Application filed February 24, 1927. Serial No. 170,623.

The invention relates to an improvement in internal combustion engines. It relates especially to an engine in which a plurality of pistons have driving connection with a cam mounted on a rotary shaft whereby the reciprocating movement of the pistons is converted into rotary movement of the shaft. The invention relates especially to the driving connections between the pistons and the cam carried by the shaft. The main feature of the invention consists in forming the cam in two sections in axial relation to each other and spaced apart and providing each piston rod with branches carrying a stud on which two cam rolls are disposed on an axis at right angles to the piston rod, one of said cam rolls being adapted for engagement with one of said cam sections and the other of which is adapted to engage with the other of the cam sections.

The invention will be fully understood from the following description when taken in connection with the accompanying drawing and the novel features thereof will be pointed out and clearly defined in the claim at the close of this specification.

The drawing is a fragmentary sectional view of an engine embodying the invention.

Referring to the drawing, there are shown two pistons 2, 4, working respectively in cylinder B, D mounted 180° apart in a cylinder block 21. Preferably there are four cylinders in all mounted in the block and grouped 90° apart around a vertical rotary cam shaft 22 journalled in bearings 24, 25. Two of the cylinders are not shown by reason of the view being in section. Each piston is mounted on a rod 28 bifurcated at its lower end.

Mounted on the shaft 22 is a cylindrical cam formed in two sections 70 and 71 axially disposed with relation to each other. The two sections are secured together by bolts 72 or other suitable means. The lower edge of the upper section 70 is formed with a cam surface 73 and the upper edge of the lower section 71 is formed with a cam surface 74. A stud 75 projecting from each piston rod 28 carries two rolls 76 and 77, the roll 77 being between the branches of the fork. The roll 76 is always in engagement with the upper cam surface 73 and the roll 77 is always in engagement with the lower cam surface 74. There is a clearance as shown at 78 between the cam roll 76 and the lower cam section 71 and there is a clearance between the cam roll 77 and the upper cam section 70. It will be seeen, therefore, that there will be no cross over of either cam roll from one cam section to the other, and the movement will be smooth and steady and free from undue friction.

The bolts 72 are adjustable to regulate the space between the cam sections and to permit adjustment of said sections with relation to each other to take up wear and to maintain the proper bearing engagement of the rolls with the cam surfaces.

While I have described my invention as embodied in a motor of the four cylinder type, I do not limit myself to this construction as the number of cylinders is immaterial and may be increased or decreased according to the type desired.

What I claim is:

In combination with a cylinder, its piston and piston rod, two cam members mounted in axial alinement with each other and spaced apart from each other, the operative faces of said two cams facing in opposite directions to each other, said piston rod being forked at its outer end, a stud passing through the branches of said fork and extending beyond one of said branches, a cam roll mounted on that portion of the said stud which is between said branches, a second cam roll mounted on said stud extension, one of said rolls having operative engagement at all times with one of said cam members and the other cam roll having at all times operative engagement with the other of said cam members.

In testimony whereof I affix my signature.

CASPER MEHLUM.