

ROCK BIT

Abstract of the Disclosure

A rock bit for drilling subterranean formations has an improved dynamic O-ring seal for retaining lubricant around the rock bit bearings during operation of the rock bit. Such a bit has a plurality of journal pins, each having a bearing surface, and a cutter cone mounted on each journal pin and including a bearing surface. A grease reservoir is in communication with such bearing surfaces for maintaining grease adjacent to the bearing surfaces. The grease is sealed in with dynamic O-ring seals rotating against a sealing surface with a Vickers hardness of at least 1000 and vibratory burnished to have a surface finish in the range of from 5 to 32 microinches (0.13 to 0.8 micrometers) AA. Preferably, the sealing surface is formed on a seal ring interposed between the cone and journal. Preferably the sealing surface comprises a tungsten carbide composite sprayed onto the outside surface of a steel ring which is then welded to a journal.

This Sheet Has Been Replaced

