

HAMMER ROCK BIT GAGE PROTECTION

ABSTRACT OF THE DISCLOSURE

A hammer rock drill bit is disclosed having a first cutter end, a cutter face formed by the cutter end and a splined shank adapted to be connected to an air hammer sub. The cutter face contains a plurality of equidistantly spaced gage row inserts that extend beyond the edge of the cutter end to a predetermined gage diameter of the hammer bit. The first cutter end additionally has gage row cutter back up means formed thereon to maintain the bit gage diameter as the bit works in an earthen formation. After the gage row inserts wear, the gage row diameter through a plane taken through the gage row inserts will be undergage. The backup means to maintain the gage diameter after the gage row inserts wear consists of at least a pair of ultra-hard cutters mounted to a side wall formed by the first cutter end below and longitudinally spaced from the gage row inserts. The ultra-hard cutters project axially from the side wall out to a gage diameter of the hammer bit. The ultra-hard cutters serve to maintain the gage of the hammer bit after the gage row inserts wear undergage thereby maintaining the full gage of the hammer bit through a plane of the ultra-hard cutters positioned below the worn gage row inserts.

This Sheet Has Been Replaced

