

Title (en)

CONTROLLED FRAGMENTATION OF HARD ROCK BY PRESSURIZATION OF THE BOTTOM OF A DRILL HOLE

Title (de)

VERFAHREN ZUM KONTROLLIERTEN BRECHEN VON GESTEIN MITTELS UNTERDRUCKSETZUNG DES BODENS EINES BOHRLOCHS

Title (fr)

FRACTURATION CONTROLEE DE ROCHES DURES PAR LA MISE SOUS PRESSION DU FOND D'UN TROU DE FORAGE

Publication

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Application

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Priority

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Abstract (en)

[origin: CA2187750A1] A controlled-fracturing process is accomplished by pressurizing the bottom of a drill hole (6) in such a way as to initiate and propagate a controlled fracture (11) or propagate any pre-existing fractures. A cartridge (5) containing a non-detonating propellant charge (4) is inserted at the bottom of a short hole drilled in the rock. The cartridge (5) is held in place or stemmed by a massive stemming bar (3). A firing pin (2) in the stemming bar (3) strikes a primer which then ignites the propellant (4) in the cartridge (5). The primary method by which the high gas pressures are contained is by the massive inertial stemming bar (3) which blocks the flow of gas up the drill hole (6). A preferred embodiment incorporates an indexing mechanism (37) to allow both a drill (39) and a stemming bar (3) to be used on the same boom (36) for drilling and subsequent charge initiation and firing operations.

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