

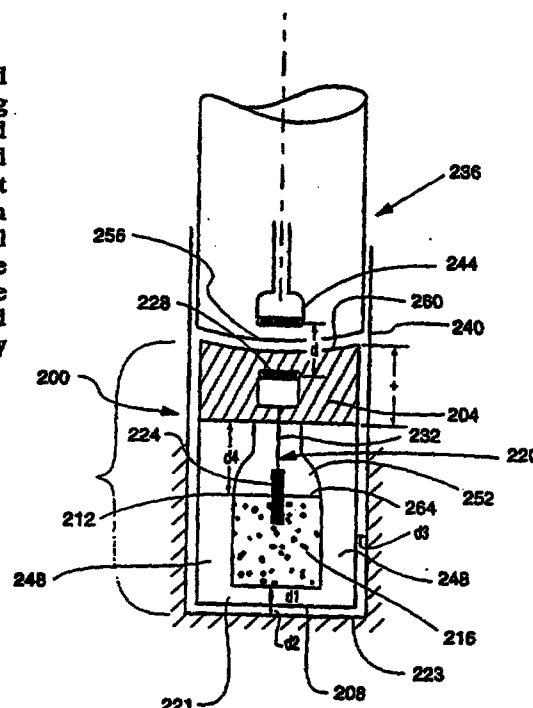
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(54) Title: CONTROLLED SMALL CHARGE BLASTING BY EXPLOSIVE

(57) Abstract

Rock and other hard materials, such as concrete, are fragmented by a controlled small-charge blasting process. A cartridge (200) containing an explosive charge is inserted at the bottom of a short hole (240) drilled in the rock. The explosive charge is configured to provide the desired pressure in the hole bottom, including, if desired, a strong shock spike at the hole bottom to enhance microfracturing. The cartridge (200) is held in place or stemmed by a massive stemming bar of high-strength material such as steel. The cartridge (200) incorporates additional internal volume designed to control the application of pressure in the bottom hole volume by the detonating explosive. The major features of the method and apparatus are the relatively low-energy of the flyrock and the relatively small amount of explosive required to break the rock.



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