**Abstract**

BLAST SYSTEM AND METHOD USING COMBINED PATTERN OF ELECTRONIC AND NON-ELECTRIC DETONATORS

The present invention relates to a blast system and method usinges combined pattern of electronic and non-electric detonators~~, which arranges various pattern of electronic detonators and non-electric detonators in cuts, stopping holes, contour holes and floor holes and blasts the electronic detonators and the non-electric detonators at an optimal delayed time, thereby efficiently controlling over-break and vibration and improving an tunnel advance rate~~.

~~A~~The blast method ~~using a combined pattern of electronic detonators and non-electric detonators~~ may include: a first step of dividing a blast excavation area into a cut region, a stopping region, a contour region, and a floor region; a second step of arranging electronic detonators in the cut region and the contour region, arranging non-electric detonators in the stopping region and the floor region, and connecting the electronic and non-electric detonators through leading wires; a third step of setting a delay time in consideration of a detonator delay time for each hole in the divided regions of the blast excavation area and an error range of the detonators; and a fourth step of performing detonation according to the

following sequence: the cut region, the stopping region, the floor region, and the contour region.

(Fig. 7)