

CPC**COOPERATIVE PATENT CLASSIFICATION****F42D**

BLASTING (fuses, e.g. fuse cords, [C06C 5/00](#); {for obtaining fluid from wells [E21B 43/00](#); for mining or quarrying [E21C 37/00](#); for making tunnels or galleries [E21D 9/006](#)} ; cartridges [F42B 3/00](#))

F42D 1/00**Blasting methods or apparatus, e.g. loading or tamping**

- [F42D 1/02](#)
 - Arranging blasting cartridges to form an assembly ([adaptation of blasting cartridges therefor F42B 3/02](#))
- [F42D 1/04](#)
 - Arrangements for ignition ({[ignition systems for shaped charge perforators E21B 43/1185](#); [ignition devices for seismic energy generators G01V 1/06](#)})
- [F42D 1/041](#)
 - • {[Tools for adapting cartridges for the mounting of detonators \(Cartridges specially adapted for the mounting of detonators F42B 3/26\)](#)}
- [F42D 1/042](#)
 - • {[Logic explosive circuits, e.g. with explosive diodes](#)}
- [F42D 1/043](#)
 - • {[Connectors for detonating cords and ignition tubes, e.g. Nonel tubes \(mounting of detonators in blasting cartridges F42B 3/26\)](#)}
- [F42D 1/045](#)
 - • Arrangements for electric ignition ([dynamo-electric generators H02K](#))
- [F42D 1/05](#)
 - • • Electric circuits for blasting
- [F42D 1/055](#)
 - • • specially adapted for firing multiple charges with a time delay
- [F42D 1/06](#)
 - • Relative timing of multiple charges ({[F42D 1/043](#) and } [F42D 1/055](#) take precedence)
- [F42D 1/08](#)
 - Tamping methods; Methods for loading boreholes with explosives; Apparatus therefor
- [F42D 1/10](#)
 - • Feeding explosives in granular or slurry form; Feeding explosives by pneumatic or hydraulic pressure
- [F42D 1/12](#)
 - • Feeding tamping material by pneumatic or hydraulic pressure
- [F42D 1/14](#)
 - • Hand-operated tamping or loading
- [F42D 1/16](#)
 - • • Tamping tools
- [F42D 1/18](#)
 - • Plugs for boreholes
- [F42D 1/20](#)
 - • Tamping cartridges, i.e. cartridges containing tamping material ([flexible or deformable blasting cartridges F42B 3/087](#))
- [F42D 1/22](#)
 - • Methods for holding or positioning for blasting cartridges or tamping cartridges
- [F42D 1/24](#)
 - • characterised by the tamping material
- [F42D 1/26](#)
 - • • Tamping with foaming agents
- [F42D 1/28](#)
 - • • Tamping with gelling agents

F42D 3/00

Particular applications of blasting techniques ({[explosive welding B23K 20/08](#); [explosive bolts or actuators F42B 3/006](#); [explosive valves F16K 13/06](#); [cutting devices actuated by explosion B23D 15/145](#); [pyrotechnical actuators F15B 15/19](#); [switching devices actuated by explosion H01H 39/00](#)})

- [F42D 3/02](#)
 - for demolition of tall structures, e.g. chimney stacks
- [F42D 3/04](#)
 - for rock blasting
- [F42D 3/06](#)
 - for seismic purposes

F42D 5/00

Safety arrangements

F42D 5/02

- Locating undetonated charges

F42D 5/04

- Rendering explosive charges harmless, e.g. destroying ammunition ([F42B 39/14](#) and [F42B 39/20](#) take precedence } ; extracting primers, dismantling ammunition [F42B 33/04](#), [F42B 33/06](#); {chemical deactivating of explosives [C06B 21/0091](#)}); Rendering detonation of explosive charges harmless

F42D 5/045

- . Detonation-wave absorbing or damping means

F42D 5/05

- . . Blasting mats

F42D 5/055

- . Silencing means for blasting operations

F42D 5/06

- Unloading boreholes

F42D 99/00

Subject matter not provided for in other groups in this subclass