

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**