

CPC COOPERATIVE PATENT CLASSIFICATION

F42B EXPLOSIVE CHARGES, e.g. FOR BLASTING, FIREWORKS, AMMUNITION (explosive compositions [C06B](#); fuzes [F42C](#); blasting [F42D](#))

WARNING

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

F42B 5/14	covered by	F42B 12/40 , A01K 11/00
F42B 19/10	covered by	F41G 7/24

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|-------------|--|-------|---|
| 1/00 | Explosive charges characterised by form or shape but not dependent on shape of container | 3/11 | . . characterised by the material used, e.g. for initiator case or electric leads (F42B 3/107 takes precedence) |
| 1/02 | . Shaped or hollow charges (blasting cartridges with cavities in the charge F42B 3/08 ; oil winning using shaped-charge perforators E21B 43/116) | 3/113 | . . activated by optical means, e.g. laser, flash-light |
| 1/024 | . . provided with embedded bodies of inert material | 3/117 | . . activated by friction |
| 1/028 | . . characterised by the form of the liner | 3/12 | . . Bridge initiators {(F42B 3/103 , F42B 3/11 , F42B 3/195 take precedence; electric ignitors in propellant charges F42C 19/12)} |
| 1/032 | . . characterised by the material of the liner | 3/121 | . . . {Initiators with incorporated integrated circuit} |
| 1/036 | . . Manufacturing processes therefor
{(F42B 33/0214 - F42B 33/0292 take precedence)} | 3/122 | {Programmable electronic delay initiators} |
| 1/04 | . Detonator charges not forming part of the fuze | 3/124 | . . . {characterised by the configuration or material of the bridge (F42B 3/13 takes precedence)} |
| 3/00 | Blasting cartridges, i.e. case and explosive (fuse cords, e.g. detonating fuse cords C06C 5/00; chemical aspects of detonators, blasting caps or primers C06C 7/00) | 3/125 | . . . {characterised by the configuration of the bridge initiator case (F42B 3/11 takes precedence)} |
| 3/003 | . {Liquid-oxygen cartridges} | 3/127 | {the case having burst direction defining elements} |
| 3/006 | . {Explosive bolts; Explosive actuators (explosive valves F16K 13/06 ; explosive cutting B23D 15/145 ; explosive switches H01H 39/00 ; pyrotechnical actuators F15B 15/19)} | 3/128 | . . . {characterised by the composition of the pyrotechnic material} |
| 3/02 | . adapted to be united into assemblies | 3/13 | . . . with semiconductive bridge |
| 3/04 | . for producing gas under pressure {(generators of inflation fluid especially adapted for vehicle air bags B60R 21/26)} | 3/14 | . . Spark initiators {(F42B 3/195 takes precedence)} |
| 3/045 | . . {Hybrid systems with previously pressurised gas using blasting to increase the pressure, e.g. causing the gas to be released from its sealed container} | 3/16 | . . {Pyrotechnic} delay initiators (F42B 3/195 takes precedence; {programmable electronic delay initiators F42C 11/065)} |
| 3/06 | . . with re-utilisable case | 3/18 | . . Safety initiators resistant to premature firing by static electricity or stray currents |
| 3/08 | . with cavities in the charge, e.g. hollow-charge blasting cartridges | 3/182 | . . . having shunting means {(F42B 3/185 takes precedence; details of shunting devices H01R 13/7032)} |
| 3/087 | . Flexible or deformable blasting cartridges, e.g. bags or hoses {for slurries} (loaded cartridge bags F42B 5/38) | 3/185 | . . . having semi-conductive {means, e.g.} sealing plugs |
| 3/093 | . . in mat or tape form | 3/188 | . . . having radio-frequency filters, {e.g. containing ferrite cores or inductances (F42B 3/185 takes precedence)} |
| 3/10 | . Initiators therefor (percussion fuzes F42C 7/00 ; percussion caps F42C 19/10 ; electric primers F42C 19/12) | 3/192 | . . designed for neutralisation on contact with water |
| | NOTE | 3/195 | . . Manufacture |
| | Group F42B 3/18 takes precedence over groups F42B 3/103 - F42B 3/16 . | 3/198 | . . . of electric initiator heads {e.g., testing, machines} |
| 3/103 | . . Mounting initiator heads in initiators; Sealing-plugs | 3/22 | . Elements for controlling or guiding the detonation wave, e.g. tubes (using inert bodies embedded in shaped or hollow charges F42B 1/024) |
| 3/107 | . . . Sealing-plugs characterised by the material used | 3/24 | . Cartridge closures or seals (top closures for shotgun ammunition cartridges F42B 7/12) |
| | | 3/26 | . Arrangements for mounting initiators; Accessories therefor, e.g. tools |
| | | 3/28 | . Cartridge cases characterised by the material used, e.g. coatings (for initiator cases F42B 3/11) |

- 4/00 Fireworks, i.e. pyrotechnic devices for amusement, display, illumination or signal purposes (signalling by explosives G08B; advertising by fireworks G09F 13/46; {signalling by pyrotechnics in railway systems B61L 5/20})**
- 4/02 . in cartridge form, i.e. shell, propellant and primer
 - 4/04 . Firecrackers
 - 4/06 . Aerial display rockets (rockets in general F42B 15/00)
 - 4/08 . . characterised by having vanes, wings, parachutes or balloons
 - 4/10 . . characterised by having means to separate article or charge from casing without destroying the casing
 - 4/12 . . . Parachute or flare separation
 - 4/14 . . characterised by having plural successively-ignited charges
 - 4/16 . Hand-thrown impact-exploded noise makers; {Other noise-makers generating noise via a pyrotechnic charge} (cap pistols F41C 3/06)
 - 4/18 . Simulations, e.g. pine cone, house that is destroyed, warship, volcano
 - 4/20 . characterised by having holder or support other than casing, e.g. whirler or spike support {(supports for flares or torches F42B 4/26)}
 - 4/22 . characterised by having means to separate article or charge from casing without destroying the casing (in aerial display rockets F42B 4/10)
 - 4/24 . characterised by having plural successively-ignited charges (in aerial display rockets F42B 4/14)
 - 4/26 . Flares; Torches {(mines for practice or training containing flares or illuminating charges F42B 8/28; projectiles of illuminating type F42B 12/42)}
 - 4/28 . . Parachute flares (F42B 4/12 takes precedence)
 - 4/30 . Manufacture
- 5/00 Cartridge ammunition, e.g. separately-loaded propellant charges (shotgun ammunition F42B 7/00; practice or training ammunition F42B 8/00; missiles therefor F42B 12/00, F42B 14/00, F42B 15/00)**
- 5/02 . Cartridges, i.e. cases with charge and missile
 - 5/025 . . {characterised by the dimension of the case or the missile}
 - 5/03 . . containing more than one missile
 - 5/035 . . . {the cartridge or barrel assembly having a plurality of axially stacked projectiles each having a separate propellant charge}
 - 5/045 . . of telescopic type (F42B 5/184 takes precedence)
 - 5/05 . . for recoilless guns (recoilless guns using a counter-projectile to balance recoil F41A 1/10)
 - 5/067 . . Mounting or locking missiles in cartridge cases (F42B 5/18 takes precedence)
 - 5/073 . . . using an auxiliary locking element
 - 5/08 . . modified for electric ignition
 - 5/10 . . with self-propelled bullet
 - 5/105 . . . {propelled by two propulsive charges, the rearwardly situated one being separated from the rest of the projectile during flight or in the barrel; Projectiles with self-ejecting cartridge cases}
 - 5/145 . . for dispensing gases, vapours, powders, particles or chemically-reactive substances (from projectiles F42B 12/46)
 - 5/15 . . . for creating a screening or decoy effect, e.g. using radar chaff or infra-red flares F42B 4/26
- 5/155 Smoke-pot projectors, e.g. arranged on vehicles
 - 5/16 . . characterised by composition or physical dimensions or form of propellant charge, {with or without projectile,} or powder (chemical composition C06B; {F42B 5/24 takes precedence})
 - 5/18 . . Caseless ammunition; Cartridges having combustible cases
 - 5/181 . . . {consisting of a combustible casing wall and a metal base; Connectors therefor}
 - 5/182 . . . {Caseless cartridges characterised by their shape}
 - 5/184 . . . telescopic
 - 5/188 . . . Manufacturing processes therefor
 - 5/192 . . . Cartridge cases characterised by the material {of the casing wall (cartridge bags F42B 5/38)}
 - 5/196 Coatings
 - 5/24 . . for cleaning; for cooling; for lubricating; {for wear reducing}
 - 5/26 . Cartridge cases (F42B 5/18 takes precedence; {manufacturing of cartridge cases B21K 21/04})
 - 5/28 . . of metal {, i.e. the cartridge-case tube is of metal}
 - 5/285 . . . formed by assembling several elements
 - 5/29 wound from sheets or strips
 - 5/295 coated
 - 5/297 with plastics
 - 5/30 . . of plastics {, i.e. the cartridge-case tube is of plastics}
 - 5/307 . . . formed by assembling several elements
 - 5/313 all elements made of plastics
 - 5/32 . . for rim fire
 - 5/34 . . with provision for varying the length
 - 5/36 . . modified for housing an integral firing-cap
 - 5/38 . Separately-loaded propellant charges, e.g. cartridge bags {(F42B 5/16, F42B 5/192 take precedence)}
- 6/00 Projectiles or missiles specially adapted for projection without use of explosive or combustible propellant charge, e.g. for blow guns, bows or crossbows, hand-held spring or air guns (for delivering hypodermic charges F42B 12/54; projectiles or missiles incorporating springs as the projecting means F41B 7/02; {Arrows or darts for dispensing materials, for producing chemical or physical reaction, or for signalling F42B 12/362})**
- 6/003 . {Darts}
 - 6/006 . {Projectiles for electromagnetic or plasma guns}
 - 6/02 . Arrows; Crossbow bolts; Harpoons for hand-held spring or air guns
 - 6/04 . . Archery arrows (F42B 6/08, F41B 5/06, {F42B 12/362} take precedence)
 - 6/06 . . . Tail ends, e.g. nocks, fletching
 - 6/08 . . Arrow heads; Harpoon heads
 - 6/10 . Air gun pellets; {Ammunition for air guns, e.g. propellant-gas containers}
- 7/00 Shotgun ammunition**
- 7/02 . Cartridges, i.e. cases with propellant charge and missile
 - 7/04 . . of pellet type
 - 7/043 . . . {with shot-scattering means}
 - 7/046 . . . {Pellets or shot therefor}

- 7/06 . . with cartridge case of plastics { (F42B 5/30 takes precedence) }
- 7/08 . . Wads, {i.e. projectile or shot carrying devices,} therefor
- 7/10 . . Ball or slug shotgun cartridges
- 7/12 . . Cartridge top closures, i.e. for the missile side (closures for blasting cartridges F42B 3/24)
- 8/00 Practice or training ammunition**
- 8/02 . Cartridges { (F41A 33/02, F42B 7/12 take precedence) }
- 8/04 . . Blank cartridges, i.e. primed cartridges without projectile but containing an explosive or combustible powder charge
- 8/06 . . . for cap-firing pistols
- 8/08 . . Dummy cartridges, i.e. inert cartridges containing neither primer nor explosive or combustible powder charge
- 8/10 . . with sub-calibre adaptor
- 8/12 . Projectiles or missiles (F42B 10/48, F42B 12/36, F42B 19/36 take precedence)
- 8/14 . . disintegrating in flight or upon impact
- NOTE**
- Group F42B 8/14 takes precedence over groups F42B 8/18 - F42B 8/26
- 8/16 . . . containing an inert filler in powder or granular form
- 8/18 . . Rifle grenades
- 8/20 . . Mortar grenades
- 8/22 . . Fall bombs
- 8/24 . . Rockets
- 8/26 . . Hand grenades
- 8/28 . Land or marine mines; Depth charges
- 10/00 Means for influencing, e.g. improving, the aerodynamic properties of projectiles or missiles; Arrangements on projectiles or missiles for stabilising, steering, range-reducing, range-increasing or fall-retarding (F42B 6/00 takes precedence)**
- 10/02 . Stabilising arrangements
- 10/025 . . {using giratory or oscillating masses for stabilising projectile trajectory}
- 10/04 . . using fixed fins (F42B 10/22 takes precedence)
- 10/06 . . . Tail fins
- 10/08 Flechette-type projectiles
- 10/10 the fins being formed in the barrel by deformation or the projectile body
- 10/12 . . using fins longitudinally-slidable with respect to the projectile or missile
- 10/14 . . using fins spread or deployed after launch, e.g. after leaving the barrel
- 10/143 . . . {Lattice or grid fins}
- 10/146 . . . {Fabric fins, i.e. fins comprising at least one spar and a fin cover made of flexible sheet material}
- 10/16 . . . Wrap-around fins
- 10/18 . . . using a longitudinally slidable support member
- 10/20 . . . deployed by combustion gas pressure, or by pneumatic or hydraulic forces
- 10/22 . . Projectiles of cannellured type
- 10/24 . . . with inclined grooves
- 10/26 . . using spin (F42B 10/04, F42B 10/12, F42B 10/14, F42B 10/24, F42B 14/02 take precedence)
- 10/28 . . . induced by gas action
- 10/30 using rocket motor nozzles
- 10/32 . Range-reducing or range-increasing arrangements; Fall-retarding means
- 10/34 . . Tubular projectiles
- 10/36 . . . Ring-foil projectiles
- 10/38 . . Range-increasing arrangements (F42B 10/34, F42B 14/06 {and F42B 15/105} take precedence)
- 10/40 . . . with combustion of a slow-burning charge, e.g. fumers, base-bleed projectiles
- 10/42 . . . Streamlined projectiles
- 10/44 Boat-tails specially adapted for drag reduction
- 10/46 Streamlined nose cones; Windshields; Radomes { (F42B 12/105 takes precedence) }
- 10/48 . . Range-reducing, destabilising or braking arrangements, {e.g. impact-braking arrangements}; Fall-retarding means, {e.g. balloons, rockets for braking or fall-retarding} (F42B 10/34 takes precedence)
- 10/50 . . . Brake flaps, {e.g. inflatable}
- 10/52 . . . Nose cones
- 10/54 . . . Spin braking means
- 10/56 . . . of parachute {or paraglider} type
- 10/58 . . . of rotochute type
- 10/60 . Steering arrangements (F42B 19/01 takes precedence)
- 10/62 . . Steering by movement of flight surfaces
- 10/64 . . . of fins
- 10/66 . . Steering by varying intensity or direction of thrust (thrust vector control of rocket engine plants F02K 9/80; {guiding or controlling apparatus using jets adapted for cosmonautic vehicles B64G 1/26})
- 10/661 . . . {using several transversally acting rocket motors, each motor containing an individual propellant charge, e.g. solid charge}
- 10/663 . . . {using a plurality of transversally acting auxiliary nozzles, which are opened or closed by valves}
- 10/665 . . . {characterised by using a nozzle provided with at least a deflector mounted within the nozzle}
- 10/666 . . . {characterised by using a nozzle rotatable about an axis transverse to the axis of the projectile}
- 10/668 . . . {Injection of a fluid, e.g. a propellant, into the gas shear in a nozzle or in the boundary layer at the outer surface of a missile, e.g. to create a shock wave in a supersonic flow}
- 12/00 Projectiles, missiles or mines characterised by the warhead, the intended effect, or the material (F42B 6/00, F42B 10/00, F42B 14/00 take precedence; for practice or training F42B 8/12, F42B 8/28; self-propulsion or guidance aspects F42B 15/00)**
- 12/02 . characterised by the warhead or the intended effect
- 12/04 . . of armour-piercing type
- 12/06 . . . with hard or heavy core; Kinetic energy penetrators (F42B 12/16, F42B 12/74 take precedence)

12/08	. . . with armour-piercing caps; with armoured cupola	12/382	. . . . {emitting an electromagnetic radiation, e.g. laser beam or infra-red emission}
12/10	. . . with shaped or hollow charge (shaped or hollow charges per se F42B 1/02 ; {mines having hollow charges F42B 23/04 })	12/385	. . . . {Arrow or dart carrying a radio transmitter for signalling}
12/105	. . . . {Protruding target distance or stand-off members therefor, e.g. slidably mounted (fuze aspects F42C 1/14)}	12/387	. . . . {Passive tracers, e.g. using a reflector mounted on the projectile}
12/12	. . . . rotatably mounted with respect to missile housing	12/40	. . . of target-marking, i.e. impact-indicating type (F42B 12/48 , F42B 12/50) take precedence)
12/14	. . . . the symmetry axis of the hollow charge forming an angle with the longitudinal axis of the projectile	12/42	. . . of illuminating type, e.g. carrying flares
12/16	. . . . in combination with an additional projectile or charge, acting successively on the target {(see also F42B 12/625)}	12/44	. . . of incendiary type (F42B 12/46 takes precedence)
12/18	. . . . Hollow charges in tandem arrangement	12/46	. . . for dispensing gases, vapours, powders or chemically-reactive substances (F42B 12/70 takes precedence)
12/20	. . of high-explosive type (F42B 12/44 takes precedence)	12/48	. . . . smoke-producing, {e.g. infrared clouds}
12/201	. . . {characterised by target class}	12/50	. . . . by dispersion
12/202	. . . . {for attacking land area or area targets, e.g. airburst}	12/52	. . . . Fuel-air explosive devices
12/204	. . . . {for attacking structures, e.g. specific buildings or fortifications, ships or vehicles}	12/54	. . . . by implantation, e.g. hypodermic projectiles
12/205	. . . . {for attacking aerial targets}	12/56	. . . for dispensing discrete solid bodies (F42B 12/70 takes precedence)
12/207	. . . {characterised by the explosive material or the construction of the high explosive warhead, e.g. insensitive ammunition}	12/58	. . . . Cluster or cargo ammunition, i.e. projectiles containing one or more submissiles (F42B 12/32 takes precedence)
12/208	. . . {characterised by a plurality of charges within a single high explosive warhead}	12/60	. . . . the submissiles being ejected radially
12/22	. . . with fragmentation-hull construction	12/62	. . . . the submissiles being ejected parallel to the longitudinal axis of the projectile
12/24	. . . . with grooves, recesses or other wall weakenings {(F42B 12/26 , F42B 12/28 take precedence)}	12/625	. . . . . {a single submissile arranged in a carrier missile for being launched or accelerated coaxially; Coaxial tandem arrangement of missiles which are active in the target one after the other (with shaped or hollow charges F42B 12/16)}
12/26	. . . . the projectile wall being formed by a spirally-wound element	12/64	. . . . . the submissiles being of shot- or flechette-type
12/28	. . . . the projectile wall being built from annular elements	12/66	. . . . Chain-shot, i.e. the submissiles being interconnected by chains or the like; {(Ballistically deployed systems for restraining persons or animals F41H 13/0006)}
12/30	. . . . Continuous-rod warheads	12/68	. . . . Line-carrying missiles, e.g. for life-saving (harpoons F42B 30/14 , {mine-clearing snakes F41H 11/14 })
12/32	. . . . the hull or case comprising a plurality of discrete bodies, e.g. steel balls, embedded therein {or disposed around the explosive charge}	12/70	. . . . for dispensing radar chaff or infra-red material (radar-reflector targets, active targets transmitting infra-red radiation F41J 2/00 ; radar-reflecting surfaces H01Q 15/14)
12/34	. . expanding before or on impact, i.e. of dum-dum or mushroom type	12/72	. characterised by the material (heat treatment for explosive shells C21D 9/16)
12/36	. . for dispensing materials; for producing chemical or physical reaction; for signalling; {for transmitting information}	12/74	. . of the core or solid body
12/362	. . . {Arrows or darts (F42B 12/38 takes precedence, having means for implantation, e.g. hypodermic projectiles F42B 12/54 ; arrows or darts in general F42B 6/00)}	12/745	. . . {the core being made of plastics; Compounds or blends of plastics and other materials, e.g. fillers}
12/365	. . . {Projectiles transmitting information to a remote location using optical or electronic means (F42B 12/385 takes precedence)}	12/76	. . of the casing
12/367	. . . {Projectiles fragmenting upon impact without the use of explosives, the fragments creating a wounding or lethal effect (practice or training projectiles disintegrating upon impact F42B 8/14 ; projectiles of high-explosive type with fragmentation-hull construction F42B 12/22)}	12/78	. . . of jackets for smallarm bullets; {Jacketed bullets or projectiles}
12/38	. . . of tracer type	12/80	. . . Coatings
		12/82	. . . . reducing friction
		14/00	Projectiles or missiles characterised by arrangements for guiding or sealing them inside barrels, or for lubricating or cleaning barrels
		14/02	. Driving bands; Rotating bands (F42B 14/04 takes precedence)

- 14/04 . Lubrication means in missiles ([coatings for reducing friction F42B 12/82](#))
- 14/06 . Sub-calibre projectiles having sabots; Sabots therefor
- 14/061 . . {Sabots for long rod fin stabilised kinetic energy projectiles, i.e. multisegment sabots attached midway on the projectile}
- 14/062 . . . {characterised by contact surfaces between projectile and sabot}
- 14/064 . . {Sabots enclosing the rear end of a kinetic energy projectile, i.e. having a closed disk shaped obturator base and petals extending forward from said base}
- 14/065 . . {Sabots carrying several projectiles}
- 14/067 . . {Sealing aspects in sabots, e.g. sealing between individual segments of the sabots or sealing between the outer surface of the sabot and the inner surface of the barrel}
- 14/068 . . {Sabots characterised by the material ([F42B 14/067 takes precedence](#))}
- 14/08 . . Sabots filled with propulsive charges; Removing sabots by combustion of pyrotechnic elements or by propulsive-gas pressure ([arrangements on barrels for removing sabots from projectiles F41A 21/46](#))
- 15/00 Self-propelled projectiles or missiles, e.g. rockets; Guided missiles ([F42B 10/00](#), [F42B 12/00](#), [F42B 14/00](#) take precedence: for practice or training [F42B 8/12](#); rocket torpedoes [F42B 17/00](#); marine torpedoes [F42B 19/00](#); cosmonautic vehicles [B64G](#); jet-propulsion plants [F02K](#))**
- 15/01 . Arrangements thereon for guidance or control ({[steering arrangements F42B 10/60](#)}; [aircraft flight control B64C](#); guidance systems other than those installed aboard [F41G 7/00](#), [F41G 9/00](#); locating by use of radio or other waves [G01S](#); flight control in general [G05D 1/00](#); computer aspects [G06](#))
- 15/04 . . using wire, e.g. for guiding ground-to-ground rockets
- 15/08 . for carrying measuring instruments; {[Arrangements for mounting sensitive cargo within a projectile](#)} ([adaptations for meteorology G01W 1/08](#)); {[Arrangements for acoustic sensitive cargo within a projectile](#)}
- 15/10 . Missiles having a trajectory only in the air
- 15/105 . . {Air torpedoes, e.g. projectiles with or without propulsion, provided with supporting air foil surfaces}
- 15/12 . . Intercontinental ballistic missiles ([F42B 15/01 takes precedence](#))
- 15/20 . Missiles having a trajectory beginning below water surface ([having additional propulsion means for movement through water F42B 17/00](#))
- 15/22 . Missiles having a trajectory finishing below water surface ([having additional propulsion means for movement through water F42B 17/00](#))
- 15/34 . Protection against overheating or radiation, e.g. heat shields; Additional cooling arrangements ({[thermal protection fitted in or to cosmonautic vehicles B64G 1/58](#)})
- 15/36 . Means for interconnecting rocket-motor and body section; Multi-stage connectors; Disconnecting means
- 15/38 . . Ring-shaped explosive elements for the separation of rocket parts ({[systems for coupling or separating cosmonautic vehicles or parts thereof B64G 1/64](#)})
- 17/00 Rocket torpedoes, i.e. missiles provided with separate propulsion means for movement through air and through water ([F42B 12/00 takes precedence](#))**
- 19/00 Marine torpedoes, e.g. launched by surface vessels or submarines; Sea mines having self-propulsion means ([F42B 12/00 takes precedence](#); launching means [F41F](#); locating by use of radio or other waves [G01S](#); automatic control of course [G05D 1/00](#); firing directors or calculators [G06G](#))**
- 19/005 . {Nose caps for torpedoes; Coupling torpedo-case parts together}
- 19/01 . Steering control
- 19/04 . . Depth control
- 19/06 . . Directional control
- 19/08 . . with means for preventing rolling or pitching
- 19/12 . Propulsion specially adapted for torpedoes ([having additional propulsion means for movement through air F42B 17/00](#); marine propulsion in general [B63H](#))
- 19/125 . . {Torpedoes provided with drag-reducing means ([projectiles with drag-reducing means F42B 10/38](#))}
- 19/14 . . by compressed-gas motors
- 19/16 . . . of cylinder type
- 19/18 . . . of turbine type
- 19/20 . . . characterised by the composition of propulsive gas; Manufacture or heating thereof in torpedoes
- 19/22 . . by internal-combustion engines
- 19/24 . . by electric motors
- 19/26 . . by jet propulsion
- 19/28 . . with means for avoiding visible wake
- 19/30 . . with timing control of propulsion
- 19/36 . adapted to be used for exercise purposes, e.g. indicating position or course
- 19/38 . . with means for causing torpedoes to surface at end of run
- 19/40 . . . by expelling liquid ballast
- 19/42 . . . by releasing solid ballast
- 19/44 . . . by enlarging displacement
- 19/46 . adapted to be launched from aircraft
- 21/00 Depth charges ([F42B 12/00 takes precedence](#); for practice or training [F42B 8/28](#); laying aspects [B63G](#))**
- 22/00 Marine mines, e.g. launched by surface vessels or submarines ([F42B 12/00 takes precedence](#); for practice or training [F42B 8/28](#); mine laying or sweeping [B63G](#))**
- 22/02 . Contact mines {, e.g. [antenne-type mines](#)} ([contact fuzes F42C 7/02](#))
- 22/04 . Influenced mines, e.g. by magnetic or acoustic effect
- 22/06 . Ground mines
- 22/08 . Drifting mines ([with propulsion means F42B 19/00](#))
- 22/10 . Moored mines
- 22/12 . . at a fixed depth setting
- 22/14 . . at a variable depth setting

- 22/16 . . . using mechanical means, e.g. plummet and float
- 22/18 . . . using hydrostatic means
- 22/20 . . . using magnetic or acoustic depth-control means
- 22/22 . having self-contained sinking means
- 22/24 . Arrangement of mines in fields or barriers ([net barriers for harbour defence F41H 11/05](#))
- 22/42 . with anti-sweeping means, e.g. electrical
- 22/44 . adapted to be launched from aircraft
- 23/00 Land mines; {Land torpedoes} (F42B 12/00 takes precedence; for practice or training F42B 8/28)**
 - 23/005 . {Selfpropelled land mines}
 - 23/04 . anti-vehicle {, e.g. anti-aircraft or anti tank ([hollow charges per se F42B 1/02](#); [artillery projectiles having hollow charges F42B 12/10](#))}
 - 23/08 . . non-metallic
 - 23/10 . anti-personnel
 - 23/14 . . non-metallic
 - 23/16 . . of missile type, i.e. {all kinds of mines launched} for detonation after ejection from ground ([fuzes for initiating mine ejection F42C 1/09](#))
 - 23/24 . Details
- 25/00 Fall bombs (F42B 10/00, F42B 12/00 take precedence; for practice or training F42B 8/12; {gliding type bombs F42B 15/105})**
- 27/00 Hand grenades (F42B 12/00 takes precedence; for practice or training F42B 8/12)**
 - 27/08 . with handle
- 29/00 Noiseless, smokeless, or flashless missiles launched by their own explosive propellant**
- 30/00 Projectiles or missiles, not otherwise provided for, characterised by the ammunition class or type, e.g. by the launching apparatus or weapon used (F42B 10/00, F42B 12/00, F42B 14/00 take precedence)**
 - 30/003 . {Closures or baseplates therefor (closures for [blasting cartridges F42B 3/24](#), for [shotgun cartridges F42B 7/12](#))}
 - 30/006 . {Mounting of sensors, antennas or target trackers on projectiles}
 - 30/02 . Bullets
 - 30/04 . Rifle grenades
 - 30/06 . . Bullet traps or bullet decelerators therefor
 - 30/08 . Ordnance projectiles or missiles, e.g. shells
 - 30/10 . . Mortar projectiles
 - 30/12 . . . with provision for additional propulsive charges, or for varying the length
 - 30/14 . Harpoons ([for hand-held spring or air guns F42B 6/02](#))
- 33/00 Manufacture or ammunition: Dismantling or ammunition; Apparatus therefor (F42B 5/188 takes precedence; manufacturing processes for hollow charges F42B 1/036; manufacture of [blasting cartridge initiators F42B 3/195](#))**
 - 33/001 . {Devices or processes for assembling ammunition, cartridges or cartridge elements from parts}
 - 33/002 . {Orienting or guiding means for cartridges or cartridge parts during the manufacturing or packaging process; Feeding cartridge elements to automatic machines}
- 33/004 . {Cartridge loaders of the rotatable-turret type}
- 33/005 . {Crimping cartridge cases on projectiles}
- 33/007 . {Making cavities in an explosive or propulsive charge}
- 33/008 . {Cutting explosive or propulsive charges}
- 33/02 . Filling cartridges, missiles, or fuzes; Inserting propellant or explosive charges {(F42B 33/004 takes precedence)}
- 33/0207 . . {Processes for loading or filling propulsive or explosive charges in containers}
- 33/0214 . . {by casting (F42B 33/004 takes precedence)}
- 33/0221 . . . {by centrifugal casting}
- 33/0228 . . . {Funnel arrangements therefor}
- 33/0235 . . . {Heating of casting equipment or explosive charge containers during the loading process}
- 33/0242 . . . {by pressure casting}
- 33/025 . . {by compacting (F42B 33/004 takes precedence)}
- 33/0257 . . . {by vibration compacting}
- 33/0264 . . {by using screw-type feeders (F42B 33/004 takes precedence)}
- 33/0271 . . . {for extruding blasting cartridges}
- 33/0278 . . {Safety arrangements therefor (F42B 33/004 takes precedence)}
- 33/0285 . . {Measuring explosive-charge levels in containers or cartridge cases; Methods or devices for controlling the quantity of material fed or filled (F42B 33/004 takes precedence; controlling the quantity of material fed in packaging [B65B 3/26](#))}
- 33/0292 . . . {by volumetric measurement, i.e. the volume of the material being determined before filling}
- 33/04 . Fitting or extracting primers in or from fuzes or charges {(F42B 33/004 takes precedence)}
- 33/06 . Dismantling fuzes, cartridges, projectiles, missiles, rockets or bombs {(F42B 33/004 and} [F42B 33/04 take precedence](#); {elimination of undesirable components of explosives [C06B 21/0091](#))}
- 33/062 . . {by high-pressure water jet means}
- 33/065 . . {by laser means}
- 33/067 . . {by combustion (incineration apparatuses or processes for used articles [F23G 7/003](#))}
- 33/10 . Reconditioning used cartridge cases {(F42B 33/004 takes precedence)}
- 33/12 . Crimping shotgun cartridges {(F42B 33/004 takes precedence)}
- 33/14 . Surface treatment of cartridges or cartridge cases {(F42B 33/004 takes precedence)}
- 35/00 Testing or checking of ammunition {(apparatus for measuring the energy of projectiles [G01L 5/14](#))}**
 - 35/02 . Gauging, sorting, trimming or shortening cartridges or missiles
- 39/00 Packaging or storage of ammunition or explosive charges; Safety features thereof; Cartridge belts or bags**
 - 39/002 . {Cartridge containers provided with cartridge-dispensing means}
 - 39/005 . {Protection for driving bands}
 - 39/007 . {Packaging or storage of arrows or darts ([quivers for arrows F41B 5/06](#))}
 - 39/02 . Cartridge bags; Bandoleers
 - 39/08 . Cartridge belts
 - 39/082 . . {for caseless ammunition}

- 39/085 . . {for blank cartridges}
- 39/087 . . {Feed belts manufactured from fabric or plastics material}
- 39/10 . . Machines for charging or for extracting cartridges from feed belts
- 39/14 . Explosion or fire protection arrangements on packages or ammunition ([F42B 39/20](#) {and [F42B 39/24](#)} take precedence; {wall or panel structure of fireproof safes or storage containers [E05G 1/024](#)})
- 39/16 . . Fire-extinguishing
- 39/18 . . Heat shields; Thermal insulation
- 39/20 . Packages or ammunition having valves for pressure-equalising; Packages or ammunition having plugs for pressure release, e.g. meltable {[Blow-out panels](#); [Venting arrangements](#) ([ventilating arrangements on packages formed from foldable or erectable blanks B65D 5/4295](#); packages with pressure-relief valves incorporated in a container wall [B65D 77/225](#))}
- 39/22 . Locking of ammunition in transport containers
- 39/24 . Shock-absorbing arrangements in packages, {e.g. [for shock waves](#)}
- 39/26 . Packages or containers for a plurality of ammunition, e.g. cartridges ([F42B 39/14](#) - [F42B 39/24](#), [F42B 39/28](#) take precedence)
- 39/28 . Ammunition racks, e.g. in vehicles
- 39/30 . Containers for detonators or fuzes ([F42B 39/14](#), [F42B 39/20](#) take precedence)
- 99/00 Subject matter not provided for in other groups of this subclass**