CPC  COOPERATIVE PATENT CLASSIFICATION

F  MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING
(NOTE omitted)

WEAPONS; BLASTING

F42  AMMUNITION; BLASTING
(NOTES omitted)

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

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following
CPC groups:
F42B 5/14  covered by F42B 12/40, A01K 11/00

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the
scheme.

1/00  Explosive charges characterised by form or shape but not dependent on shape of container
1/02  .  Shaped or hollow charges (blasting cartridges with cavities in the charge F42B 3/08; oil winning using shaped-charge perforators F21B 43/116)
1/024  .  provided with embedded bodies of inert material
1/028  .  characterised by the form of the liner
1/032  .  characterised by the material of the liner
1/036  .  Manufacturing processes therefor: (F42B 33/0214 - F42B 33/0292 take precedence)
1/04  .  Detonator charges not forming part of the fuze

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)
3/003  .  [Liquid-oxygen cartridges]
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)]
3/02  .  adapted to be united into assemblies
3/04  .  for producing gas under pressure: (generators of inflation fluid especially adapted for vehicle air bags B60R 21/26)
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]
3/06  .  with re- utilisable case
3/08  .  with cavities in the charge, e.g. hollow-charge blasting cartridges
3/087  .  Flexible or deformable blasting cartridges, e.g. bags or hoses: (for slurries) (loaded cartridge bags F42B 5/38)
3/093  .  in mat or tape form
3/10  .  Initiators therefor: (percussion fuzes F42C 7/00; percussion caps F42C 19/10; electric primers F42C 19/12)

NOTE

Group F42B 3/18 takes precedence over groups F42B 3/103 - F42B 3/16.

3/103  .  Mounting initiator heads in initiators; Sealing-plugs
3/107  .  .  Sealing-plugs characterised by the material used
3/11  .  .  characterised by the material used, e.g. for initiator case or electric leads (F42B 3/107 takes precedence)
3/113  .  .  activated by optical means, e.g. laser, flashlight
3/117  .  .  activated by friction
3/12  .  .  Bridge initiators: (F42B 3/103, F42B 3/11, F42B 3/195 take precedence; electric igniters in propellant charges F42C 19/12)
3/121  .  .  [Initiators with incorporated integrated circuit]
3/122  .  .  .  [Programmable electronic delay initiators]
3/124  .  .  .  [characterised by the configuration or material of the bridge (F42B 3/13 takes precedence)]
3/125  .  .  .  [characterised by the configuration of the bridge initiator case (F42B 3/11 takes precedence)]
3/127  .  .  .  [the case having burst direction defining elements]
3/128  .  .  .  [characterised by the composition of the pyrotechnic material]
3/13  .  .  with semiconductive bridge
3/14  .  .  Spark initiators: (F42B 3/195 takes precedence)
3/16  .  .  [Pyrotechnic] delay initiators: (F42B 3/195 takes precedence; programmable electronic delay initiators F42C 11/065)
3/18  .  .  Safety initiators resistant to premature firing by static electricity or stray currents
3/182  .  .  having shunting means: (F42B 3/185 takes precedence; details of shunting devices H01R 13/7032)
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))

4/00

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
4/18 . . . 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
5/156 . . . 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, [. . . 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, [. . . 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 8/20

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 cannuled 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) 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

12/10 . . . with shaped or hollow charge (shaped or hollow charges per se F42B 1/02; ; mines having hollow charges F42B 23/04)

12/105 . . . [Protruding target distance or stand-off members therefor, e.g. slidable mounted (fuze aspects F42C 1/14)]

12/12 . . . rotatably mounted with respect to missile housing

12/14 . . . the symmetry axis of the hollow charge forming an angle with the longitudinal axis of the projectile

12/16 . . . in combination with an additional projectile or charge, acting successively on the target (see also F42B 12/625)

12/18 . . . Hollow charges in tandem arrangement

12/20 . . . of high-explosive type (F42B 12/44 takes precedence)

12/201 . . . [characterised by target class]

12/202 . . . [for attacking land area or area targets, e.g. airburst]

12/204 . . . [for attacking structures, e.g. specific buildings or fortifications, ships or vehicles]

12/205 . . . [for attacking aerial targets]

12/207 . . . [characterised by the explosive material or the construction of the high explosive warhead, e.g. insensitive ammunition]

12/208 . . . [characterised by a plurality of charges within a single high explosive warhead]

12/22 . . . with fragmentation-hull construction

12/24 . . . with grooves, recesses or other wall weakenings ([F42B 12/26, F42B 12/28 take precedence])

12/26 . . . . . . the projectile wall being formed by a spirally-wound element

12/28 . . . . . . the projectile wall being built from annular elements

12/30 . . . Continuous-rod warheads

12/32 . . . the hull or case comprising a plurality of discrete bodies, e.g. steel balls, embedded therein (or disposed around the explosive charge)

12/34 . . . expanding before or on impact, i.e. of dumdum or mushroom type

12/36 . . . for dispensing materials; for producing chemical or physical reaction; for signalling ( ; for transmitting information)

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)]

12/365 . . . [Projectiles transmitting information to a remote location using optical or electronic means (F42B 12/385 takes precedence)]

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)]

12/38 . . . of tracer type

12/382 . . . [emitting an electromagnetic radiation, e.g. laser beam or infra-red emission]

12/385 . . . [Arrow or dart carrying a radio transmitter for signalling]

12/387 . . . [Passive tracers, e.g. using a reflector mounted on the projectile]

12/40 . . . of target-marking, i.e. impact-indicating type (F42B 12/48, [F42B 12/50 take precedence]

12/42 . . . of illuminating type, e.g. carrying flares

12/44 . . . of incendiary type (F42B 12/46 takes precedence)

12/46 . . . for dispensing gases, vapours, powders or chemically-reactive substances (F42B 12/70 takes precedence)

12/48 . . . smoke-producing ( ; e.g. infrared clouds)

12/50 . . . by dispersion

12/52 . . . Fuel-air explosive devices

12/54 . . . by implantation, e.g. hypodermic projectiles

12/56 . . . for dispensing discrete solid bodies (F42B 12/70 takes precedence)

12/58 . . . Cluster or cargo ammunition, i.e. projectiles containing one or more submissiles (F42B 12/32 takes precedence)

12/60 . . . the submissiles being ejected radially

12/62 . . . the submissiles being ejected parallel to the longitudinal axis of the projectile

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)]

12/64 . . . the submissiles being of shot- or flechette-type
12/66 . . . . Chain-shot, i.e. the submissiles being interconnected by chains or the like (ballistically deployed systems for restraining persons or animals F41H 13/006)

12/68 . . . . Line-carrying missiles, e.g. for life-saving (harpoons F42B 30/14, mine-clearing snakes F41H 11/14)

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)

12/72 . . characterised by the material (heat treatment for explosive shells C21D 9/16)

12/74 . . . . of the core or solid body

12/74/5 . . [the core being made of plastics; Compounds or blends of plastics and other materials, e.g. fillers]

12/76 . . . . of the casing

12/78 . . . . of jackets for smallarm bullets [: Jacketed bullets or projectiles]

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 sabot; Sabots therefor

14/06/1 . . [Sabots for long rod fin stabilised kinetic energy projectiles, i.e. multisegment sabots attached midway on the projectile]

14/06/2 . . . . [characterised by contact surfaces between projectile and sabot]

14/06/4 . . [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]

14/06/5 . . [Sabots carrying several projectiles]

14/06/7 . . [Sealing aspects in sabots, e.g. sealing between individual segments of the sabot or sealing between the outer surface of the sabot and the inner surface of the barrel]

14/06/8 . . . . [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)

15/01 . . Arrangements thereon for guidance or control (tuning 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

15/06 . . . . 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

15/10/5 . . . . [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 (having additional propulsion means for movement through air F42B 17/00); Sea mines having self-propulsion means (F42B 12/00 takes precedence; launching means F41E; locating by use of radio or other waves G01S; automatic control of course G05D 1/00; firing directors or calculators G06G)

19/00/5 . . [Nose caps for torpedoes; Coupling torpedo-case parts together]

19/01 . . Steering control

WARNING

Group F42B 19/01 is incomplete pending reclassification of documents from group F42B 19/10.

Group F42B 19/01 is also impacted by reclassification into groups F42B 19/10 and F41G 7/32.

All groups listed in this Warning should be considered in order to perform a complete search.

19/04 . . Depth control
Directional control

with means for preventing rolling or pitching

remotely controlled, e.g. by sonic or radio control (control systems using wire F41G 7/32)

**WARNING**

Group F42B 19/10 is incomplete pending reclassification of documents from group F42B 19/01.

Group F42B 19/10 is also impacted by reclassification into groups F42B 19/01 and F41G 7/32.

All groups listed in this Warning should be considered in order to perform a complete search.

Propulsion specially adapted for torpedoes (having additional propulsion means for movement through air F42B 17/00; marine propulsion in general B63H)

Torpedoes provided with drag-reducing means (projectiles with drag-reducing means F42B 10/38)

by compressed-gas motors

of cylinder type

of turbine type

characterised by the composition of propulsive gas; Manufacture or heating thereof in torpedoes

by internal-combustion engines

by electric motors

by jet propulsion

with means for avoiding visible wake

with timing control of propulsion

adapted to be used for exercise purposes, e.g. indicating position or course

with means for causing torpedoes to surface at end of run

by expelling liquid ballast

by releasing solid ballast

by enlarging displacement

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)**

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)

Contact mines [ e.g. antenne-type mines ] (contact fuzes F42C 7/02)

Influenced mines, e.g. by magnetic or acoustic effect

Ground mines

Drifting mines (with propulsion means F42B 19/00)

Moored mines

at a fixed depth setting

at a variable depth setting

using mechanical means, e.g. plummet and float

using hydrostatic means

using magnetic or acoustic depth-control means

having self-contained sinking means

Arrangement of mines in fields or barriers (net barriers for harbour defence F41H 11/05)

with anti-sweeping means, e.g. electrical

adapted to be launched from aircraft

**23/00 Land mines [ Land torpedoes ] (F42B 12/00 takes precedence; for practice or training F42B 8/28)**

Selfpropelled land mines

anti-vehicle [ e.g. anti-aircraft or anti tank (hollow charges per se F42B 1/02; artillery projectiles having hollow charges F42B 12/10) ]

non-metallic

anti-personnel

non-metallic

of missile type, i.e. [all kinds of mines launched] for detonation after ejection from ground (fuzes for initiating mine ejection F42C 1/00)

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)**

Hand grenades (F42B 12/00 takes precedence; for practice or training F42B 8/12)

with handle

**29/00 Noiseless, smokeless, or flashless missiles launched by their own explosive propellant**

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)

Closures or baseplates therefor (closures for blasting cartridges F42B 3/24, for shotgun cartridges F42B 7/12)

Mounting of sensors, antennas or target trackers on projectiles

Bullets

Rifle grenades

Bullet traps or bullet decelerators therefor

Ordnance projectiles or missiles, e.g. shells

Mortar projectiles

with provision for additional propulsive charges, or for varying the length

Harpoons (for hand-held spring or air guns F42B 6/02)

**33/00 Manufacture of ammunition; Dismantling of ammunition; Apparatus therefor (F42B 5/188 takes precedence; manufacturing processes for hollow charges F42B 1/036; manufacture of blasting cartridge initiators F42B 3/195)**

Devices or processes for assembling ammunition, cartridges or cartridge elements from parts

Orienting or guiding means for cartridges or cartridge parts during the manufacturing or packaging process; Feeding cartridge elements to automatic machines

Cartridge loaders of the rotatable-turret type

Crimping cartridge cases on projectiles

Making cavities in an explosive or propulsive charge

Cutting explosive or propulsive charges
33/02 . Filling cartridges, missiles, or fuzes; Inserting propellant or explosive charges \((F42B\hspace{1em}33/004\hspace{1em}takes\hspace{1em}precedence)\)

33/0207 . . (Processes for loading or filling propulsive or explosive charges in containers)

33/0214 . . (by casting \((F42B\hspace{1em}33/004\hspace{1em}takes\hspace{1em}precedence)\))

33/0221 . . (by centrifugal casting)

33/0228 . . (by 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 \((F42B\hspace{1em}33/004\hspace{1em}takes\hspace{1em}precedence)\))

33/0257 . . (by vibration compacting)

33/0264 . . (by using screw-type feeders \((F42B\hspace{1em}33/004\hspace{1em}takes\hspace{1em}precedence)\))

33/0271 . . (for extruding blasting cartridges)

33/0278 . . (safety arrangements therefor \((F42B\hspace{1em}33/004\hspace{1em}takes\hspace{1em}precedence)\))

33/0285 . . (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 \((F42B\hspace{1em}33/004\hspace{1em}takes\hspace{1em}precedence)\)

33/06 . Dismantling fuzes, cartridges, projectiles, missiles, rockets or bombs \((F42B\hspace{1em}33/004\hspace{1em}and\hspace{1em}F42B\hspace{1em}33/04\hspace{1em}take\hspace{1em}precedence;\hspace{1em}elimination\hspace{1em}of\hspace{1em}undesirable\hspace{1em}components\hspace{1em}of\hspace{1em}explosives\hspace{1em}C06B\hspace{1em}21/0091)\)

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 \((F42B\hspace{1em}33/004\hspace{1em}takes\hspace{1em}precedence)\)

33/12 . Crimping shotgun cartridges \((F42B\hspace{1em}33/004\hspace{1em}takes\hspace{1em}precedence)\)

33/14 . Surface treatment of cartridges or cartridge cases \((F42B\hspace{1em}33/004\hspace{1em}takes\hspace{1em}precedence)\)

35/00 Testing or checking of ammunition \((\text{apparatus for measuring the energy of projectiles G01L 5/14})\)

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\hspace{1em}39/20\hspace{1em}[and\hspace{1em}F42B\hspace{1em}39/24\hspace{1em}take\hspace{1em}precedence];\hspace{1em}wall\hspace{1em}or\hspace{1em}panel\hspace{1em}structure\hspace{1em}of\hspace{1em}fireproof\hspace{1em}safes\hspace{1em}or\hspace{1em}storage\hspace{1em}containers\hspace{1em}E05G\hspace{1em}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 \(,\hspace{1em}e.g.\hspace{1em}for\hspace{1em}shock\hspace{1em}waves\)

39/26 . Packages or containers for a plurality of ammunition, e.g. cartridges \((F42B\hspace{1em}39/14,\hspace{1em}F42B\hspace{1em}39/24,\hspace{1em}F42B\hspace{1em}39/28\hspace{1em}take\hspace{1em}precedence)\)

39/28 . Ammunition racks, e.g. in vehicles

39/30 . Containers for detonators or fuzes \((F42B\hspace{1em}39/14,\hspace{1em}F42B\hspace{1em}39/20\hspace{1em}take\hspace{1em}precedence)\)

99/00 Subject matter not provided for in other groups of this subclass