

## ECLA EUROPEAN CLASSIFICATION

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

[N: **WARNING**  
[N9601] [C0403]

- The following IPC groups are not used in the internal ECLA classification scheme. Subject matter covered by these groups is classified in the following ECLA groups:

[F42B5/14](#) covered by [F42B12/40](#), [A01K11/00](#)  
[F42B19/10](#) " " [F41G7/24](#)

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#### F42B1/00 Explosive charges characterised by form or shape but not dependent on shape of container

- F42B1/02 . Shaped or hollow charges (blasting cartridges with cavities in the charge 3/08; oil winning using shaped-charge perforators [E21B43/116](#))
- F42B1/024 . . provided with embedded bodies of inert material
- F42B1/028 . . characterised by the form of the liner
- F42B1/032 . . characterised by the material of the liner
- F42B1/036 . . Manufacturing processes therefor [N: ([F42B33/02C](#) to [F42B33/02H2](#) take precedence)]
- F42B1/04 . Detonator charges not forming part of the fuze

#### F42B3/00 Blasting cartridges, i.e. case and explosive (fuse cords, e.g. detonating fuse cords [C06C5/00](#); chemical aspects of detonators, blasting caps or primers [C06C7/00](#))

- F42B3/00B . [N: Liquid-oxygen cartridges]
- F42B3/00D . [N: Explosive bolts; Explosive actuators (explosive valves [F16K13/06](#); explosive cutting [B23D15/14B](#); explosive switches [H01H39/00](#); pyrotechnical actuators [F15B15/19](#))]
- F42B3/02 . adapted to be united into assemblies
- F42B3/04 . for producing gas under pressure [N: (generators of inflation fluid especially adapted for vehicle air bags [B60R21/26](#))] [C0407]
- F42B3/04B . . [N: Hybrid systems with previously pressurised gas using blasting to increase the pressure, e.g. causing the gas to be released from its sealed container] [N9410]
- F42B3/06 . . with re-utilisable case
- F42B3/08 . with cavities in the charge, e.g. hollow-charge blasting cartridges
- F42B3/087 . Flexible or deformable blasting cartridges e.g. bags or hoses [N: for slurries] (loaded cartridge bags [F42B5/38](#))

- F42B3/093 . . . in mat or tape form
- F42B3/10 . Initiators therefor (percussion fuzes [F42C7/00](#); percussion caps [F42C19/10](#); electric primers [F42C19/12](#))
  - Note**
  - Group [F42B3/18](#) takes precedence over groups [F42B3/103](#) to [F42B3/16](#).
- F42B3/103 . . . Mounting initiator heads in initiators; Sealing-plugs
- F42B3/107 . . . . Sealing-plugs characterised by the material used
- F42B3/11 . . . characterised by the material used, e.g. for initiator case or electric leads ([F42B3/107](#) takes precedence)
- F42B3/113 . . . activated by optical means, e.g. laser, flash-light
- F42B3/117 . . . activated by friction
- F42B3/12 . . . Bridge initiators [N: ([F42B3/103](#), [F42B3/11](#), [F42B3/195](#) take precedence; electric ignitors in propellant charges [F42C19/12](#))] [C1002]
- F42B3/12B . . . . [N: Initiators with incorporated integrated circuit] [N0403]
- F42B3/12B2 . . . . . [N: Programmable electronic delay initiators] [N0403]
- F42B3/12D . . . . [N: characterised by the configuration or material of the bridge ([F42B3/13](#) takes precedence)] [N1002]
- F42B3/12F . . . . [N: characterised by the configuration of the bridge initiator case ([F42B3/11](#) takes precedence)] [N1002]
- F42B3/12F2 . . . . . [N: the case having burst direction defining elements] [N1002]
- F42B3/12J . . . . [N: characterised by the composition of the pyrotechnic material] [N1002]
- F42B3/13 . . . . with semiconductive bridge [C0403]
- F42B3/14 . . . Spark initiators [N: [F42B3/195](#) takes precedence]
- F42B3/16 . . . [N: Pyrotechnic] delay initiators ([F42B3/195](#) takes precedence; [N: programmable electronic delay initiators [F42C11/06B](#)])
- F42B3/18 . . . Safety initiators resistant to premature firing by static electricity or stray currents
- F42B3/182 . . . . having shunting means [N: ([F42B3/185](#) takes precedence; details of shunting devices [H01R13/703B2](#))] [C0403]
- F42B3/185 . . . . having semi-conductive [N: means, e.g.] sealing plugs
- F42B3/188 . . . . having radio-frequency filters, [N: e.g. containing ferrite cores or inductances ([F42B3/185](#) takes precedence)]
- F42B3/192 . . . designed for neutralisation on contact with water
- F42B3/195 . . . Manufacture
- F42B3/198 . . . . of electric initiator heads [N: e.g., testing, machines]
- F42B3/22 . Elements for controlling or guiding the detonation wave, e.g. tubes (using inert bodies embedded in shaped or hollow charges [F42B1/024](#))
- F42B3/24 . Cartridge closures or seals (top closures for shotgun ammunition cartridges [F42B7/12](#))
- F42B3/26 . Arrangements for mounting initiators; Accessories therefor, e.g. tools
- F42B3/28 . Cartridge cases characterised by the material used, e.g. coatings (for initiator cases [F42B3/11](#))
- F42B4/00** **Fireworks, i.e. pyrotechnic devices for amusement, display, illumination or signal purposes** (signalling by explosives [G08B](#); advertising by fireworks [G09F13/46](#); [N:

signalling by pyrotechnics in railway systems [B61L5/20](#))

- F42B4/02 . in cartridge form, i.e. shell, propellant and primer
- F42B4/04 . Firecrackers
- F42B4/06 . Aerial display rockets ([rockets in general F42B15/00](#))
- F42B4/08 . . characterised by having vanes, wings, parachutes or balloons
- F42B4/10 . . characterised by having means to separate article or charge from casing without destroying the casing
- F42B4/12 . . . Parachute or flare separation
- F42B4/14 . . characterised by having plural successively-ignited charges
- F42B4/16 . Hand-thrown impact-exploded noise makers; [N: Other noise-makers generating noise via a pyrotechnic charge] ([cap pistols F41C3/06](#)) [C0403]
- F42B4/18 . Simulations, e.g. pine cone, house that is destroyed, warship, volcano
- F42B4/20 . characterised by having holder or support other than casing, e.g. whirler or spike support [N: ([supports for flares or torches F42B4/26](#))]
- F42B4/22 . characterised by having means to separate article or charge from casing without destroying the casing ([in aerial display rockets F42B4/10](#))
- F42B4/24 . characterised by having plural successively-ignited charges ([in aerial display rockets F42B4/14](#))
- F42B4/26 . Flares; Torches [N: ([mines for practice or training containing flares or illuminating charges F42B8/28](#); [projectiles of illuminating type F42B12/42](#))]
- F42B4/28 . . Parachute flares ([F42B4/12](#) takes precedence)
- F42B4/30 . Manufacture
- F42B5/00** **Cartridge ammunition, e.g. separately-loaded propellant charges**([shotgun ammunition F42B7/00](#); [practice or training ammunition F42B8/00](#); [missiles therefor F42B12/00, F42B14/00, F42B15/00](#))
- F42B5/02 . Cartridges, i.e. cases with charge and missile
- F42B5/02B . . [N: characterised by the dimension of the case or the missile] [N0403]
- F42B5/03 . . containing more than one missile
- F42B5/03B . . . [N: the cartridge or barrel assembly having a plurality of axially stacked projectiles each having a separate propellant charge] [N0205]
- F42B5/045 . . of telescopic type ([F42B5/184](#) takes precedence)
- F42B5/05 . . for recoilless guns ([recoilless guns using a counter-projectile to balance recoil F41A1/10](#))
- F42B5/067 . . Mounting or locking missiles in cartridge cases ([F42B5/18](#) takes precedence)
- F42B5/073 . . . using an auxiliary locking element
- F42B5/08 . . modified for electric ignition

- F42B5/10 . . with self-propelled bullet
- F42B5/10B . . . [N: 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]
- F42B5/145 . . for dispensing gases, vapours, powders, particles or chemically-reactive substances (from projectiles [F42B12/46](#))
- F42B5/15 . . . for creating a screening or decoy effect, e.g. using radar chaff or infra-red flares [F42B4/26](#)
- F42B5/155 . . . . Smoke-pot projectors, e.g. arranged on vehicles
- F42B5/16 . . characterised by composition or physical dimensions or form of propellant charge, [N: with or without projectile,] or powder (chemical composition [C06B](#); [N: [F42B5/24](#) takes precedence])
- F42B5/18 . . Caseless ammunition; Cartridges having combustible cases
- F42B5/18B . . . [N: consisting of a combustible casing wall and a metal base; Connectors therefor] [N0809]
- F42B5/18D . . . [N: Caseless cartridges characterised by their shape] [N0809]
- F42B5/184 . . . telescopic
- F42B5/188 . . . Manufacturing processes therefor
- F42B5/192 . . . Cartridge cases characterised by the material [N: of the casing wall (cartridge bags [F42B5/38](#))] [C0809]
- F42B5/196 . . . . Coatings
- F42B5/24 . . for cleaning; for cooling; for lubricating; [N: for wear reducing]
- F42B5/26 . Cartridge cases ([F42B5/18](#) takes precedence; [N: manufacturing of cartridge cases [B21K21/04](#)]) [C0403]
- F42B5/28 . . of metal [N: i.e. the cartridge-case tube is of metal]
- F42B5/285 . . . formed by assembling several elements
- F42B5/29 . . . . wound from sheets or strips
- F42B5/295 . . . coated
- F42B5/297 . . . . with plastics
- F42B5/30 . . of plastics [N: i.e. the cartridge-case tube is of plastics]
- F42B5/307 . . . formed by assembling several elements
- F42B5/313 . . . . all elements made of plastics
- F42B5/32 . . for rim fire
- F42B5/34 . . with provision for varying the length
- F42B5/36 . . modified for housing an integral firing-cap
- F42B5/38 . Separately-loaded propellant charges, e.g. cartridge bags [N: ([F42B5/16](#), [F42B5/192](#) take precedence)]
- F42B6/00** **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 [F42B12/54](#); projectiles or missiles incorporating springs as the projecting means [F41B7/02](#); [N: Arrows or darts for dispensing materials, for producing chemical or physical reaction, or for signalling [F42B12/36B](#)])**
- F42B6/00B . [N: Darts]

- F42B6/00C . [N: Projectiles for electromagnetic or plasma guns]
- F42B6/02 . Arrows; Crossbow bolts; Harpoons for hand-held spring or air guns
- F42B6/04 . . Archery arrows ([F42B6/08](#), [F41B5/06](#), [N: [F42B12/36B](#)] take precedence) [C0403]
- F42B6/06 . . . Tail ends, e.g. nocks, fletching
- F42B6/08 . . Arrow heads; Harpoon heads
- F42B6/10 . Air gun pellets; [N: Ammunition for air guns, e.g. propellant-gas containers]
- F42B7/00 Shotgun ammunition**
- F42B7/02 . Cartridges, i.e. cases with propellant charge and missile
- F42B7/04 . . of pellet type
- F42B7/04B . . . [N: with shot-scattering means]
- F42B7/04C . . . [N: Pellets or shot therefor]
- F42B7/06 . . with cartridge case of plastics [N: [F42B5/30](#) takes precedence]
- F42B7/08 . . Wads, [N: i.e. projectile or shot carrying devices,] therefor [C0403]
- F42B7/10 . . Ball or slug shotgun cartridges
- F42B7/12 . . Cartridge top closures, i.e. for the missile side ([closures for blasting cartridges F42B3/24](#))
- F42B8/00 Practice or training ammunition**
- F42B8/02 . Cartridges [N: ([F41A33/02](#), [F42B7/12](#) take precedence)]
- F42B8/04 . . Blank cartridges, i.e. primed cartridges without projectile but containing an explosive or combustible powder charge
- F42B8/06 . . . for cap-firing pistols
- F42B8/08 . . Dummy cartridges, i.e. inert cartridges containing neither primer nor explosive or combustible powder charge
- F42B8/10 . . with sub-calibre adaptor
- F42B8/12 . Projectiles or missiles ([F42B10/48](#), [F42B12/36](#), [F42B19/36](#) take precedence)
- F42B8/14 . . disintegrating in flight or upon impact
- Note:**  
Group [F42B8/14](#) takes precedence over groups [F42B8/18](#) to [F42B8/26](#)
- F42B8/16 . . . containing an inert filler in powder or granular form
- F42B8/18 . . Rifle grenades
- F42B8/20 . . Mortar grenades
- F42B8/22 . . Fall bombs
- F42B8/24 . . Rockets
- F42B8/26 . . Hand grenades
- F42B8/28 . Land or marine mines; Depth charges
- F42B10/00 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 ([F42B6/00](#) takes precedence)**

- F42B10/02 . Stabilising arrangements
- F42B10/02B . . [N: using giratory or oscillating masses for stabilising projectile trajectory]
- F42B10/04 . . using fixed fins ([F42B10/22](#) takes precedence)
- F42B10/06 . . . Tail fins
- F42B10/08 . . . . Flechette-type projectiles
- F42B10/10 . . . . the fins being formed in the barrel by deformation or the projectile body
- F42B10/12 . . using fins longitudinally-slidable with respect to the projectile or missile
- F42B10/14 . . using fins spread or deployed after launch, e.g. after leaving the barrel
- F42B10/14B . . . [N: Lattice or grid fins] [N0605]
- F42B10/14D . . . [N: Fabric fins, i.e. fins comprising at least one spar and a fin cover made of flexible sheet material] [N0605]
- F42B10/16 . . . Wrap-around fins
- F42B10/18 . . . using a longitudinally slidable support member
- F42B10/20 . . . deployed by combustion gas pressure, or by pneumatic or hydraulic forces
- F42B10/22 . . Projectiles of cannellured type
- F42B10/24 . . . with inclined grooves
- F42B10/26 . . using spin ([F42B10/04](#), [F42B10/12](#), [F42B10/14](#), [F42B10/24](#), [F42B14/02](#) take precedence)
- F42B10/28 . . . induced by gas action
- F42B10/30 . . . . using rocket motor nozzles
- F42B10/32 . Range-reducing or range-increasing arrangements; Fall-retarding means
- F42B10/34 . . Tubular projectiles
- F42B10/36 . . . Ring-foil projectiles
- F42B10/38 . . Range-increasing arrangements ([F42B10/34](#), [F42B14/06](#) [N: and [F42B15/10B](#)] take precedence)
- F42B10/40 . . . with combustion of a slow-burning charge, e.g. fumers, base-bleed projectiles
- F42B10/42 . . . Streamlined projectiles
- F42B10/44 . . . . Boat-tails specially adapted for drag reduction
- F42B10/46 . . . . Streamlined nose cones; Windshields; Radomes [N: ([F42B12/10B](#) takes precedence)]
- F42B10/48 . . Range-reducing, destabilising or braking arrangements, [N: e.g. impact-braking arrangements]; Fall-retarding means, [N: e.g. balloons, rockets for braking or fall-retarding] ([F42B10/34](#) takes precedence)
- F42B10/50 . . . Brake flaps, [N: e.g. inflatable]
- F42B10/52 . . . Nose cones
- F42B10/54 . . . Spin braking means
- F42B10/56 . . . of parachute [N: or paraglider] type [C9803]
- F42B10/58 . . . of rotochute type
- F42B10/60 . Steering arrangements ([F42B19/01](#) takes precedence)

- F42B10/62 . . Steering by movement of flight surfaces
- F42B10/64 . . . of fins
- F42B10/66 . . Steering by varying intensity or direction of thrust ([thrust vector control of rocket engine plants F02K9/80](#); [N: guiding or controlling apparatus using jets adapted for cosmonautic vehicles [B64G1/26](#)] [C0503])
- F42B10/66B . . . [N: using several transversally acting rocket motors, each motor containing an individual propellant charge, e.g. solid charge] [N0508]
- F42B10/66C . . . [N: using a plurality of transversally acting auxiliary nozzles, which are opened or closed by valves] [N0508]
- F42B10/66D . . . [N: characterised by using a nozzle provided with at least a deflector mounted within the nozzle] [N0508]
- F42B10/66E . . . [N: characterised by using a nozzle rotatable about an axis transverse to the axis of the projectile] [N0508]
- F42B10/66F . . . [N: 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] [N0508]

**F42B12/00** **Projectiles, missiles or mines characterised by the warhead, the intended effect, or the material** ([F42B6/00](#), [F42B10/00](#), [F42B14/00](#) take precedence; for practice or training [F42B8/12](#), [F42B8/28](#); self-propulsion or guidance aspects [F42B15/00](#))

- F42B12/02 . characterised by the warhead or the intended effect
- F42B12/04 . . of armour-piercing type
- F42B12/06 . . . with hard or heavy core; Kinetic energy penetrators ([F42B12/16](#), [F42B12/74](#) take precedence)
- F42B12/08 . . . with armour-piercing caps; with armoured cupola
- F42B12/10 . . . with shaped or hollow charge (shaped or hollow charges per se [F42B1/02](#); [N: mines having hollow charges [F42B23/04](#)])
- F42B12/10B . . . . [N: Protruding target distance or stand-off members therefor, e.g. slidably mounted (fuze aspects [F42C1/14](#))]
- F42B12/12 . . . . rotatably mounted with respect to missile housing
- F42B12/14 . . . . the symmetry axis of the hollow charge forming an angle with the longitudinal axis of the projectile
- F42B12/16 . . . . in combination with an additional projectile or charge, acting successively on the target [N: (see also [F42B12/62B](#))]
- F42B12/18 . . . . . Hollow charges in tandem arrangement
- F42B12/20 . . of high-explosive type ([F42B12/44](#) takes precedence)
- F42B12/20B . . . [N: characterised by target class] [N0710]
- F42B12/20B2 . . . . [N: for attacking land area or area targets, e.g. airburst] [N0710]
- F42B12/20B4 . . . . [N: for attacking structures, e.g. specific buildings or fortifications, ships or vehicles] [N0710]
- F42B12/20B6 . . . . [N: for attacking aerial targets] [N0710]
- F42B12/20D . . . [N: characterised by the explosive material or the construction of the high explosive warhead, e.g. insensitive ammunition] [N0710]
- F42B12/20F . . . [N: characterised by a plurality of charges within a single high explosive warhead] [N0710]
- F42B12/22 . . . with fragmentation-hull construction
- F42B12/24 . . . . with grooves, recesses or other wall weakenings [N: [F42B12/26](#), [F42B12/28](#)]

- take precedence]
- F42B12/26 . . . . the projectile wall being formed by a spirally-wound element
  - F42B12/28 . . . . the projectile wall being built from annular elements
  - F42B12/30 . . . . Continuous-rod warheads
  - F42B12/32 . . . . the hull or case comprising a plurality of discrete bodies, e.g. steel balls, embedded therein [N: or disposed around the explosive charge]
  - F42B12/34 . . expanding before or on impact, i.e. of dum dum or mushroom type
  - F42B12/36 . . for dispensing materials; for producing chemical or physical reaction; for signalling; [N: for transmitting information] [C0401]
  - F42B12/36B . . . [N: Arrows or darts (F42B12/38 takes precedence, having means for implantation, e.g. hypodermic projectiles F42B12/54; arrows or darts in general F42B6/00)] [N9909] [C0403]
  - F42B12/36C . . . [N: Projectiles transmitting information to a remote location using optical or electronic means (F42B12/38B2 takes precedence)] [N0401] [C0407]
  - F42B12/36D . . . [N: Projectiles fragmenting upon impact without the use of explosives, the fragments creating a wounding or lethal effect (practice or training projectiles disintegrating upon impact F42B8/14; projectiles of high-explosive type with fragmentation-hull construction F42B12/22)] [N0411]
  - F42B12/38 . . . of tracer type
  - F42B12/38B . . . . [N: emitting an electromagnetic radiation, e.g. laser beam or infra-red emission] [N0401] [C0411]
  - F42B12/38B2 . . . . . [N: Arrow or dart carrying a radio transmitter for signalling] [N0403]
  - F42B12/38C . . . . . [N: Passive tracers, e.g. using a reflector mounted on the projectile] [N0401]
  - F42B12/40 . . . of target-marking, i.e. impact-indicating type (F42B12/48, [N: F42B12/50] take precedence)
  - F42B12/42 . . . of illuminating type, e.g. carrying flares
  - F42B12/44 . . . of incendiary type (F42B12/46 takes precedence)
  - F42B12/46 . . . for dispensing gases, vapours, powders or chemically-reactive substances (F42B12/70 takes precedence)
  - F42B12/48 . . . . smoke-producing, [N: e.g. infrared clouds] [C0403]
  - F42B12/50 . . . . by dispersion
  - F42B12/52 . . . . . Fuel-air explosive devices
  - F42B12/54 . . . . by implantation, e.g. hypodermic projectiles
  - F42B12/56 . . . for dispensing discrete solid bodies (F42B12/70 takes precedence)
  - F42B12/58 . . . . Cluster or cargo ammunition, i.e. projectiles containing one or more submissiles (F42B12/32 takes precedence)
  - F42B12/60 . . . . . the submissiles being ejected radially
  - F42B12/62 . . . . . the submissiles being ejected parallel to the longitudinal axis of the projectile
  - F42B12/62B . . . . . . [N: 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 F42B12/16)]
  - F42B12/64 . . . . . the submissiles being of shot- or flechette-type
  - F42B12/66 . . . . . Chain-shot, i.e. the submissiles being interconnected by chains or the like; [N: (Ballistically deployed systems for restraining persons or animals F41H13/00B)] [C0009]
  - F42B12/68 . . . . . Line-carrying missiles, e.g. for life-saving (harpoons F42B30/14, [N:

- mine-clearing snakes [F41H11/14](#)) [C0502]
- F42B12/70 . . . . for dispensing radar chaff or infra-red material (radar-reflector targets, active targets transmitting infra-red radiation [F41J2/00](#); radar-reflecting surfaces [H01Q15/14](#))
- F42B12/72 . characterised by the material (heat treatment for explosive shells [C21D9/16](#))
- F42B12/74 . . of the core or solid body
- F42B12/74B . . . [N: the core being made of plastics; Compounds or blends of plastics and other materials, e.g. fillers]
- F42B12/76 . . of the casing
- F42B12/78 . . . of jackets for smallarm bullets; [N: Jacketed bullets or projectiles] [C9803]
- F42B12/80 . . . Coatings
- F42B12/82 . . . . reducing friction
  
- F42B14/00** **Projectiles or missiles characterised by arrangements for guiding or sealing them inside barrels, or for lubricating or cleaning barrels**
  
- F42B14/02 . Driving bands; Rotating bands ([F42B14/04](#) takes precedence)
- F42B14/04 . Lubrication means in missiles (coatings for reducing friction [F42B12/82](#))
- F42B14/06 . Sub-calibre projectiles having sabots; Sabots therefor
- F42B14/06B . . [N: Sabots for long rod fin stabilised kinetic energy projectiles, i.e. multisegment sabots attached midway on the projectile] [N0410]
- F42B14/06B2 . . . [N: characterised by contact surfaces between projectile and sabot] [N0601]
- F42B14/06D . . [N: 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] [N0410]
- F42B14/06F . . [N: Sabots carrying several projectiles] [N0601]
- F42B14/06H . . [N: 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] [N0601]
- F42B14/06J . . [N: Sabots characterised by the material ([F42B14/06H](#) takes precedence)] [N0601]
- F42B14/08 . . 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 [F41A21/46](#))
  
- F42B15/00** **Self-propelled projectiles or missiles, e.g. rockets; Guided missiles ([F42B10/00](#), [F42B12/00](#), [F42B14/00](#) take precedence: for practice or training [F42B8/12](#); rocket torpedoes [F42B17/00](#); marine torpedoes [F42B19/00](#); cosmonautic vehicles [B64G](#); jet-propulsion plants [F02K](#))**
  
- F42B15/01 . Arrangements thereon for guidance or control([N: steering arrangements[F42B10/60](#)]; aircraft flight control[B64C](#); guidance systems other than those installed aboard[F41G7/00](#),[F41G9/00](#); locating by use of radio or other waves[G01S](#); flight control in general[G05D1/00](#); computer aspects[G06](#))] [C0503]
- F42B15/04 . . using wire, e.g. for guiding ground-to-ground rockets
- F42B15/08 . for carrying measuring instruments; [N: Arrangements for mounting sensitive cargo within a projectile] (adaptations for meteorology [G01W1/08](#)); [N: Arrangements for acoustic sensitive cargo within a projectile]

- F42B15/10 . Missiles having a trajectory only in the air
- F42B15/10B . . [N: Air torpedoes, e.g. projectiles with or without propulsion, provided with supporting air foil surfaces]
- F42B15/12 . . Intercontinental ballistic missiles ([F42B15/01](#) takes precedence)
- F42B15/20 . Missiles having a trajectory beginning below water surface (having additional propulsion means for movement through water [F42B17/00](#))
- F42B15/22 . Missiles having a trajectory finishing below water surface (having additional propulsion means for movement through water [F42B17/00](#))
- F42B15/34 . Protection against overheating or radiation, e.g. heat shields; Additional cooling arrangements [N: (thermal protection fitted in or to cosmonautic vehicles [B64G1/58](#))] [C0403]
- F42B15/36 . Means for interconnecting rocket-motor and body section; Multi-stage connectors; Disconnecting means
- F42B15/38 . . Ring-shaped explosive elements for the separation of rocket parts [N: systems for coupling or separating cosmonautic vehicles or parts thereof [B64G1/64](#)] [C0503]
- F42B17/00** **Rocket torpedoes, i.e. missiles provided with separate propulsion means for movement through air and through water ([F42B12/00](#) takes precedence)**
- F42B19/00** **Marine torpedoes, e.g. launched by surface vessels or submarines; Sea mines having self-propulsion means ([F42B12/00](#) takes precedence; launching means [F41E](#); locating by use of radio or other waves [G01S](#); automatic control of course [G05D1/00](#); firing directors or calculators [G06G](#))**
- F42B19/00B . [N: Nose caps for torpedoes; Coupling torpedo-case parts together]
- F42B19/01 . Steering control
- F42B19/04 . . Depth control
- F42B19/06 . . Directional control
- F42B19/08 . . with means for preventing rolling or pitching
- F42B19/12 . Propulsion specially adapted for torpedoes (having additional propulsion means for movement through air [F42B17/00](#); marine propulsion in general [B63H](#))
- F42B19/12B . . [N: Torpedoes provided with drag-reducing means (projectiles with drag-reducing means [F42B10/38](#))]
- F42B19/14 . . by compressed-gas motors
- F42B19/16 . . . of cylinder type
- F42B19/18 . . . of turbine type
- F42B19/20 . . . characterised by the composition of propulsive gas; Manufacture or heating thereof in torpedoes
- F42B19/22 . . by internal-combustion engines
- F42B19/24 . . by electric motors
- F42B19/26 . . by jet propulsion
- F42B19/28 . . with means for avoiding visible wake

- F42B19/30 . . with timing control of propulsion
- F42B19/36 . adapted to be used for exercise purposes, e.g. indicating position or course
- F42B19/38 . . with means for causing torpedoes to surface at end of run
- F42B19/40 . . . by expelling liquid ballast
- F42B19/42 . . . by releasing solid ballast
- F42B19/44 . . . by enlarging displacement
- F42B19/46 . adapted to be launched from aircraft
  
- F42B21/00** **Depth charges** ([F42B12/00](#) takes precedence; for practice or training [F42B8/28](#); laying aspects [B63G](#))
  
- F42B22/00** **Marine mines, e.g. launched by surface vessels or submarines** ([F42B12/00](#) takes precedence; for practice or training [F42B8/28](#); mine laying or sweeping [B63G](#))
  
- F42B22/02 . Contact mines [[N: e.g. antenne-type mines](#)]([contact fuzes F42C7/02](#))
- F42B22/04 . Influenced mines, e.g. by magnetic or acoustic effect
- F42B22/06 . Ground mines
- F42B22/08 . Drifting mines ([with propulsion means F42B19/00](#))
- F42B22/10 . Moored mines
- F42B22/12 . . at a fixed depth setting
- F42B22/14 . . at a variable depth setting
- F42B22/16 . . . using mechanical means, e.g. plummet and float
- F42B22/18 . . . using hydrostatic means
- F42B22/20 . . . using magnetic or acoustic depth-control means
- F42B22/22 . having self-contained sinking means
- F42B22/24 . Arrangement of mines in fields or barriers ([net barriers for harbour defence F41H11/05](#))
- F42B22/42 . with anti-sweeping means, e.g. electrical
- F42B22/44 . adapted to be launched from aircraft
  
- F42B23/00** **Land mines; [[N: Land torpedoes](#)]** ([F42B12/00](#) takes precedence; for practice or training [F42B8/28](#))
  
- F42B23/00B . [[N: Selfpropelled land mines](#)]
- F42B23/04 . anti-vehicle [[N: , e.g. anti-aircraft or anti tank \(hollow charges per se F42B1/02; artillery projectiles having hollow charges F42B12/10\)](#)]
- F42B23/08 . . non-metallic

- F42B23/10 . anti-personnel
- F42B23/14 . . non-metallic
- F42B23/16 . . of missile type, i.e. [N: all kinds of mines launched] for detonation after ejection from ground (fuzes for initiating mine ejection [F42C1/09](#))
- F42B23/24 . Details
- F42B25/00** **Fall bombs** ([F42B10/00](#), [F42B12/00](#) take precedence; for practice or training [F42B8/12](#); [N: gliding type bombs [F42B15/10B](#)])
- F42B27/00** **Hand grenades** ([F42B12/00](#) takes precedence; for practice or training [F42B8/12](#))
- F42B27/08 . with handle
- F42B29/00** **Noiseless, smokeless, or flashless missiles launched by their own explosive propellant**
- F42B30/00** **Projectiles or missiles, not otherwise provided for, characterised by the ammunition class or type, e.g. by the launching apparatus or weapon used** ([F42B10/00](#), [F42B12/00](#), [F42B14/00](#) take precedence)
- F42B30/00B . [N: Closures or baseplates therefor (closures for blasting cartridges [F42B3/24](#), for shotgun cartridges [F42B7/12](#))]
- F42B30/00C . [N: Mounting of sensors, antennas or target trackers on projectiles] [N9702]
- F42B30/02 . Bullets
- F42B30/04 . Rifle grenades
- F42B30/06 . . Bullet traps or bullet decelerators therefor
- F42B30/08 . Ordnance projectiles or missiles, e.g. shells
- F42B30/10 . . Mortar projectiles
- F42B30/12 . . . with provision for additional propulsive charges, or for varying the length
- F42B30/14 . Harpoons (for hand-held spring or air guns [F42B6/02](#))
- F42B33/00** **Manufacture or ammunition: Dismantling or ammunition; Apparatus therefor** ([F42B5/188](#) takes precedence; manufacturing processes for hollow charges [F42B1/036](#): manufacture of blasing cartridge initiators [F42B3/195](#))
- F42B33/00B . [N: Devices or processes for assembling ammunition, cartridges or cartridge elements from parts] [C0403]
- F42B33/00C . [N: Orienting or guiding means for cartridges or cartridge parts during the manufacturing or packaging process; Feeding cartridge elements to automatic machines]

- F42B33/00D . [N: Cartridge loaders of the rotatable-turret type]
- F42B33/00F . [N: Crimping cartridge cases on projectiles]
- F42B33/00G . [N: Making cavities in an explosive or propulsive charge]
- F42B33/00H . [N: Cutting explosive or propulsive charges]
- F42B33/02 . Filling cartridges, missiles, or fuzes; Inserting propellant or explosive charges [N: ([F42B33/00D](#) takes precedence)]
- F42B33/02B . . [N: Processes for loading or filling propulsive or explosive charges in containers]
- F42B33/02C . . [N: by casting ([F42B33/00D](#) takes precedence)]
- F42B33/02C2 . . . [N: by centrifugal casting]
- F42B33/02C4 . . . [N: Funnel arrangements therefor]
- F42B33/02C6 . . . [N: Heating of casting equipment or explosive charge containers during the loading process]
- F42B33/02C8 . . . [N: by pressure casting]
- F42B33/02D . . [N: by compacting ([F42B33/00D](#) takes precedence)]
- F42B33/02D2 . . . [N: by vibration compacting]
- F42B33/02F . . [N: by using screw-type feeders ([F42B33/00D](#) takes precedence)]
- F42B33/02F2 . . . [N: for extruding blasting cartridges]
- F42B33/02G . . [N: Safety arrangements therefor ([F42B33/00D](#) takes precedence)]
- F42B33/02H . . [N: Measuring explosive-charge levels in containers or cartridge cases; Methods or devices for controlling the quantity of material fed or filled ([F42B33/00D](#) takes precedence; controlling the quantity of material fed in packaging [B65B3/26](#))]
- F42B33/02H2 . . . [N: by volumetric measurement, i.e. the volume of the material being determined before filling]
- F42B33/04 . Fitting or extracting primers in or from fuzes or charges [N: ([F42B33/00D](#) takes precedence)]
- F42B33/06 . Dismantling fuzes, cartridges, projectiles, missiles, rockets or bombs ([N: [F42B33/00D](#) and] [F42B33/04](#) take precedence; [N: elimination of undesirable components of explosives [C06B21/00F](#)]) [C0403]
- F42B33/06B . . [N: by high-pressure water jet means] [N0403]
- F42B33/06D . . [N: by laser means] [N0403]
- F42B33/06F . . [N: by combustion (incineration apparatuses or processes for used articles [F23G7/00G](#))] [N0403]
- F42B33/10 . Reconditioning used cartridge cases [N: ([F42B33/00D](#) takes precedence)]
- F42B33/12 . Crimping shotgun cartridges [N: ([F42B33/00D](#) takes precedence)]
- F42B33/14 . Surface treatment of cartridges or cartridge cases [N: ([F42B33/00D](#) takes precedence)]
- F42B35/00** . **Testing or checking of ammunition** [N: (apparatus for measuring the energy of projectiles [G01L5/14](#))] [C0403]

- F42B35/02 . Gauging, sorting, trimming or shortening cartridges or missiles
- F42B39/00            Packaging or storage of ammunition or explosive charges; Safety features thereof; Cartridge belts or bags**
- F42B39/00B . [N: Cartridge containers provided with cartridge-dispensing means]
- F42B39/00C . [N: Protection for driving bands]
- F42B39/00D . [N: Packaging or storage of arrows or darts (quivers for arrows [F41B5/06](#))]
- F42B39/02 . Cartridge bags; Bandoleers
- F42B39/08 . Cartridge belts
- F42B39/08B . . [N: for caseless ammunition]
- F42B39/08C . . [N: for blank cartridges]
- F42B39/08D . . [N: Feed belts manufactured from fabric or plastics material]
- F42B39/10 . . Machines for charging or for extracting cartridges from feed belts
- F42B39/14 . Explosion or fire protection arrangements on packages or ammunition ([F42B39/20](#) [N: and [F42B39/24](#)] take precedence; [N: wall or panel structure of fireproof safes or storage containers [E05G1/024](#)]) [C0403]
- F42B39/16 . . Fire-extinguishing
- F42B39/18 . . Heat shields; Thermal insulation
- F42B39/20 . Packages or ammunition having valves for pressure-equalising; Packages or ammunition having plugs for pressure release, e.g. meltable [N: Blow-out panels; Venting arrangements (ventilating arrangements on packages formed from foldable or erectable blanks [B65D5/42V](#); packages with pressure-relief valves incorporated in a container wall [B65D77/22D](#))] [C0403]
- F42B39/22 . Locking of ammunition in transport containers
- F42B39/24 . Shock-absorbing arrangements in packages, [N: e.g. for shock waves]
- F42B39/26 . Packages or containers for a plurality of ammunition, e.g. cartridges ([F42B39/14](#) to [F42B39/24](#), [F42B39/28](#) take precedence)
- F42B39/28 . Ammunition racks, e.g. in vehicles
- F42B39/30 . Containers for detonators or fuzes ([F42B39/14](#), [F42B39/20](#) take precedence)
- F42B99/00            Subject matter not provided for in other groups of this subclass [N0704]**