

CPC COOPERATIVE PATENT CLASSIFICATION

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

WEAPONS; BLASTING

F41 WEAPONS (NOTES omitted)

F41A FUNCTIONAL FEATURES OR DETAILS COMMON TO BOTH SMALLARMS AND ORDNANCE, e.g. CANNONS; MOUNTINGS FOR SMALLARMS OR ORDNANCE

NOTES

1. This subclass covers those features or details which are considered to be of a kind generally applicable to, or to be concerned with intrinsic functions common to, both smallarms and ordnance.
2. Such features or details are classified in this subclass, even if they are stated to be applied only to smallarms or only to ordnance.
3. Attention is drawn to the definitions given in Note (2) following the title of class [F41](#).

WARNING

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	Missile propulsion characterised by the use of explosive or combustible propellant charges (projecting missiles without use of explosive or combustible propellant charge F41B ; launching rockets or torpedoes F41F 3/00 ; missile self-propulsion F42B 15/00)	3/14	. . Rigid bolt locks, i.e. having locking elements rigidly mounted on the bolt or bolt handle and on the barrel or breech-housing respectively
1/02	. Hypervelocity missile propulsion using successive means for increasing the propulsive force, e.g. using successively initiated propellant charges arranged along the barrel length; Multistage missile propulsion	3/16	. . . the locking elements effecting a rotary movement about the barrel axis, e.g. rotating cylinder bolt locks
1/04	. Missile propulsion using the combustion of a liquid, {loose powder} or gaseous fuel, e.g. hypergolic fuel	3/18 hand-operated
1/06	. Adjusting the range without varying elevation angle or propellant charge data, e.g. by venting a part of the propulsive charge gases, or by adjusting the capacity of the cartridge or combustion chamber {(adjusting the range by using gas-relieving ports in the barrel F41A 21/28)}	3/20 Straight-pull operated bolt locks, i.e. the operating hand effecting only a straight movement parallel to the barrel axis
1/08	. Recoilless guns, i.e. guns having propulsion means producing no recoil	3/22 the locking being effected by rotating the operating handle or lever transversely to the barrel axis
1/10	. . a counter projectile being used to balance recoil	3/24 the locking elements forming part of the operating handle or lever
3/00	Breech mechanisms, e.g. locks	3/26 semi-automatically or automatically operated, e.g. having a slidable bolt-carrier and a rotatable bolt
3/02	. Block action, i.e. the main breech opening movement being transverse to the barrel axis	3/28 having fixed locking elements on the non-rotating bolt and rotating locking elements mounted on the barrel or breech housing, e.g. rotatable rings
3/04	. . with pivoting breech-block	3/30 Interlocking means, e.g. locking lugs, screw threads
3/06	. . . about a horizontal axis transverse to the barrel axis at the rear of the block (F41A 3/08 takes precedence)	3/32	. . . the bolt being rocked about a notional axis transverse to the barrel axis
3/08	. . . carrying a rotably mounted obturating plug of the screw-thread or the interrupted-thread type (F41A 3/30 takes precedence)	3/34	. . . the bolt additionally effecting a sliding movement transverse to the barrel axis
3/10	. . with sliding breech-block, e.g. vertically	3/36	. . Semi-rigid bolt locks, i.e. having locking elements movably mounted on the bolt or on the barrel or breech housing
3/12	. Bolt action, i.e. the main breech opening movement being parallel to the barrel axis	3/38	. . . having rocking locking elements, e.g. pivoting levers or vanes
		3/40 mounted on the bolt (F41A 3/42 takes precedence)
		3/42 hand-operated

- 3/44 . . . having sliding locking elements, e.g. balls, rollers
- 3/46 mounted on the bolt ([F41A 3/48 takes precedence](#))
- 3/48 hand-operated
- 3/50 Toggle-joint locks, e.g. crank-operated
- 3/52 hand-operated
- 3/54 . . Bolt locks of the unlocked type, i.e. being inertia operated
- 3/56 . . . the bolt being provided with an additional slidable mass
- 3/58 . Breakdown breech mechanisms, e.g. for shotguns
- 3/60 . Breech mechanisms for guns having two or more barrels ([F41A 3/58 takes precedence](#); for revolving-cannon guns [F41F 1/10](#))
- 3/62 . using combustion gas pressure for adding to the mechanical locking action, or for delaying breech opening movement
- 3/64 . Mounting of breech-blocks; Accessories for breech-blocks or breech-block mountings
- 3/66 . . Breech housings or frames; Receivers
- 3/68 . . Bolt stops, i.e. means for limiting bolt opening movement
- 3/70 . . Anti-rebound arrangements, i.e. preventing rebound of the bolt out of the firing position
{(safeties for locking the breech-block or bolt in a safety position [F41A 17/42](#))}
- 3/72 . . Operating handles or levers; Mounting thereof in breech-blocks or bolts {([F41C 7/02](#), [F41C 7/06 take precedence](#))}
- 3/74 . . Obturating or packing devices for gas leak prevention in breech mechanisms
- 3/76 . . . specially adapted for sealing the gap between the forward end of the cartridge chamber and the rearward end of the barrel, e.g. sealing devices for revolvers or revolver-type guns
- 3/78 . . Bolt buffer or recuperator means
- 3/80 . . . Adjustable spring buffers
- 3/82 . . . Coil spring buffers ([F41A 3/80 takes precedence](#))
- 3/84 mounted within the gun stock
- 3/86 mounted under {or above} the barrel
- 3/88 mounted around the barrel
- 3/90 . . . Fluid buffers {([F41A 3/62 takes precedence](#))}
- 3/92 adjustable
- 3/94 in combination with spring buffers
- 5/00 Mechanisms or systems operated by propellant charge energy for automatically opening the lock**
- 5/02 . recoil-operated
- 5/04 . . the barrel being tilted during recoil
- 5/06 . . the barrel being rotated about its longitudinal axis during recoil
- 5/08 . . having an accelerator lever acting on the breech-block or bolt during the opening movement
- 5/10 . . having a movable inertia weight {, e.g. for storing energy}
- 5/12 . . . mounted in a gun having a fixed barrel
- 5/14 . . Barrel stops, i.e. devices for holding the recoiling barrel in a predetermined position, e.g. the recoil position
- 5/16 . . having a barrel moving forwardly after the firing of a shot
- 5/18 . gas-operated
- 5/20 . . using a gas piston arranged concentrically around the barrel
- 5/22 . . having two or more gas pistons
- 5/24 . . by direct action of gas pressure on bolt or locking elements
- 5/26 . . Arrangements or systems for bleeding the gas from the barrel ([F41A 5/20 - F41A 5/24 take precedence](#))
- 5/28 . . . Adjustable systems
- 5/30 . Gas- or recoil-operated, e.g. selection of gas- or recoil-operated systems
- 5/32 . Energy accumulator systems, i.e. systems for opening the breech-block by energy accumulated during barrel or gas piston recoil
- 5/34 . . with spring accumulators
- 5/36 . . with fluid accumulators
- 7/00 Auxiliary mechanisms for bringing the breech-block or bolt or the barrel to the starting position before automatic firing; Drives for externally-powered guns; Remote-controlled gun chargers**
- 7/02 . Machine gun rechargers, e.g. manually operated ([F41A 3/72 takes precedence](#))
- 7/04 . . fluid operated
- 7/06 . . electrically operated
- 7/08 . Drives for externally-powered guns, i.e. drives for moving the breech-block or bolt by an external force during automatic firing
- 7/10 . . using a rotating cylindrical drum having a camming groove ([F41F 1/10 takes precedence](#))
- 9/00 Feeding or loading of ammunition ({conveying ammunition through pipes by the action of flowing gases [B65G 51/025](#)}; adaptations for feeding or loading missiles from magazines in air guns [F41B 11/50](#)); Magazines; Guiding means for the extracting of cartridges (cartridge extractors or ejectors [F41A 15/00](#))**
- 9/01 . Feeding of unbelted ammunition
- 9/02 . . using wheel conveyors, e.g. star-wheel-shaped conveyors
- 9/03 . . using screw or rotary-spiral conveyors
- 9/04 . . using endless-chain belts carrying a plurality of ammunition
- 9/05 . . . in tandem sequence
- 9/06 . . using cyclically moving conveyors, i.e. conveyors having ammunition pusher or carrier elements which are emptied or disengaged from the ammunition during the return stroke
- 9/07 . . . Reciprocating conveyors, i.e. conveyors pushing a plurality of ammunition during the feeding stroke
- 9/09 . . . Movable ammunition carriers or loading trays, e.g. for feeding from magazines {(locking of ammunition in ammunition containers or loading trays [F42B 39/22](#))}
- 9/10 pivoting or swinging
- 9/11 in a horizontal plane
- 9/12 mounted within a smallarm
- 9/13 in a vertical plane
- 9/14 {which is} transverse to the barrel axis
- 9/15 mounted within a smallarm
- 9/16 {which is} parallel to the barrel axis
- 9/17 mounted within a smallarm

- 9/18 feeding from a {**tubular**} magazine under the barrel
- 9/19 feeding from a {**tubular**} magazine mounted in the stock
- 9/20 sliding, e.g. reciprocating
- 9/21 in a vertical direction ([F41A 9/23 takes precedence](#))
- 9/22 in a horizontal direction ([F41A 9/23 takes precedence](#))
- 9/23 mounted within a smallarm
- 9/24 . . using a movable magazine or clip as feeding element
- 9/25 . . . using a sliding clip
- 9/26 . . . using a revolving drum magazine
- 9/27 in revolver-type guns
- 9/28 of smallarm type ([in revolvers F41C 3/14](#))
- 9/29 . Feeding of belted ammunition
- 9/30 . . Sprocket-type belt transporters
- 9/31 . . . with cartridge stripping means
- 9/32 . . Reciprocating-slide-type belt transporters
- 9/33 . . . with cartridge stripping means
- 9/34 . . from magazines ([magazines for belted ammunition per se F41A 9/79](#))
- 9/35 . Feeding multibarrel guns
- NOTE**
- Feeding elements or concepts of general interest, not specially adapted for feeding multibarrel guns, are classified in groups [F41A 9/01](#) or [F41A 9/29](#).
- 9/36 . . Feed mechanisms for revolving-cannon guns
- 9/37 . Feeding two or more kinds of ammunition to the same gun; Feeding from two sides
- 9/375 . . {**Feeding propellant charges and projectiles as separate units**}
- NOTE**
- Feeding elements or concepts of general interest, not specially adapted for feeding two or more kinds of ammunition or from two sides, are classified in groups [F41A 9/01](#) - [F41A 9/29](#).
- 9/38 . Loading arrangements, i.e. for bringing the ammunition into the firing position
- 9/39 . . Ramming arrangements
- 9/40 . . . the breech-block itself being the rammer
- 9/41 pushing unbelted ammunition from a box magazine on the gun frame into the cartridge chamber
- 9/42 . . . Rammers separate from breech-block
- 9/43 Chain rammers
- 9/44 Fluid-operated piston rammers
- 9/45 . . the cartridge chamber or the barrel as a whole being tiltable {**or transversely slidable**} between a loading and a firing position {([F41A 9/25 and F41A 9/27 take precedence](#))}
- 9/46 . . the cartridge chamber being formed by two complementary elements, movable one relative to the other for loading
- 9/47 . . using forwardly-sliding barrels or barrel parts for loading
- 9/48 . . Loading by gravitational force
- 9/49 . Internally-powered drives, i.e. operated by propellant charge energy, e.g. couplings, clutches, energy accumulators
- 9/50 . External power or control systems
- 9/51 . . Boosters, i.e. externally-powered motors
- 9/52 . Arrangements for changing from automatic or magazine-loading to hand-loading
- 9/53 . Charged-condition indicators, i.e. indicating the presence of a cartridge in the cartridge chamber
- 9/54 . Cartridge guides, stops or positioners, e.g. for cartridge extraction
- 9/55 . . Fixed {**or movable**} guiding means, mounted on, or near, the cartridge chamber
- 9/56 . . Movable guiding means {([F41A 9/55 takes precedence](#))}
- 9/57 . . . Flexible chutes, e.g. for guiding belted ammunition from the magazine to the gun
- 9/58 . . Cartridge stops; Cartridge positioners
- 9/59 . Ejectors for clips or magazines, e.g. when empty
- 9/60 . Empty-cartridge-case or belt-link collectors or catchers ([F41A 9/81 takes precedence](#))
- 9/61 . Magazines
- 9/62 . . having means for indicating the number of cartridges left in the magazine, e.g. last-round indicators ([last-round safeties F41A 17/40](#))
- 9/63 . . specially adapted for releasable connection with other magazines
- 9/64 . . for unbelted ammunition
- 9/65 . . . Box magazines having a cartridge follower
- 9/66 Arrangements thereon for charging, i.e. reloading ([apparatus or tools for reloading of magazines F41A 9/83](#))
- 9/67 having means for depressing the cartridge follower, or for locking it in a depressed position
- 9/68 Plural magazines, e.g. tandem magazines {; **Arrangements of cartridges in two or more independent rows or channels which are selectively or sequentially brought into operative position**}
- 9/69 characterised by multiple-row or zigzag arrangement of cartridges
- 9/70 Arrangements thereon for discharging, e.g. cartridge followers or discharge throats
- 9/71 Arrangements thereon for varying capacity; Adapters or inserts for changing cartridge size or type
- 9/72 . . . Tubular magazines, i.e. magazines containing the ammunition in lengthwise tandem sequence
- 9/73 . . . Drum magazines
- 9/74 with radially disposed cartridges
- 9/75 having a spiral cartridge channel
- 9/76 . . . Magazines having an endless-chain conveyor
- 9/77 . . . Magazines having a screw conveyor
- 9/78 . . . Magazines having a reciprocating conveyor
- 9/79 . . for belted ammunition
- 9/80 . . . having provision for quick-coupling of the belts of adjacent magazines
- 9/81 . . . having provision for collecting belt links or empty cartridge cases
- 9/82 . Reloading {**or unloading**} of magazines
- 9/83 . . Apparatus or tools for reloading magazines with unbelted ammunition, e.g. cartridge clips
- 9/84 . . . Clips

- 9/85 for reloading revolver-type magazines
- 9/86 . . Feeding belted ammunition into magazines
- 9/87 . Ammunition handling dollies or transfer carts
([F41A 9/86 takes precedence](#))
- 11/00 Assembly or disassembly features; Modular concepts; Articulated or collapsible guns**
([F41A 3/64](#), [F41A 19/10](#) - [F41A 19/15](#), [F41A 21/48](#), [F41A 25/26 take precedence](#))
- 11/02 . Modular concepts, e.g. weapon-family concepts
- 11/04 . Articulated or collapsible guns, i.e. with hinged or telescopic parts for transport or storage ([breakdown shotguns or rifles F41C 7/11](#); [folding or telescopic stocks or stock parts F41C 23/04](#))
- 11/06 . . Telescopic guns
- 13/00 Cooling or heating systems; Blowing-through of gun barrels; Ventilating systems**
- 13/02 . Heating systems
- 13/04 . Injecting fluids into barrels or cartridge chambers
([F41A 13/08 takes precedence](#))
- 13/06 . Evacuating combustion gas from barrels
([F41A 13/10 takes precedence](#))
- 13/08 . . Bore evacuators, i.e. chambers disposed around barrels for storing part of the combustion gas and subsequently injecting it into the barrel to provide suction
- 13/10 . Blowers or turbines for evacuating or cooling guns, e.g. driven by combustion gas pressure or recoil
- 13/12 . Systems for cooling the outer surface of the barrel
([F41A 13/10](#), [F41A 21/24 take precedence](#))
- 15/00 Cartridge extractors, i.e. devices for pulling cartridges or cartridge cases at least partially out of the cartridge chamber; Cartridge ejectors, i.e. devices for throwing the extracted cartridges or cartridge cases free of the gun** ([F41A 9/54](#), [F41C 9/08](#)) take precedence; {Means for removing duds or misfires in rocket throwers [F41F 3/058](#)})
- 15/02 . for revolver-type guns, e.g. revolvers
- 15/04 . specially adapted for cartridge cases being deformed when fired, e.g. of plastics
- 15/06 . for breakdown guns
- 15/08 . for block-action guns
- 15/10 . . of sliding-block type
- 15/12 . for bolt-action guns
- 15/14 . . the ejector being mounted on or within the bolt;
{[Extractors per se](#)}
- 15/16 . . the ejector being mounted on the breech housing or frame
- 15/18 . for guns with forwardly slidable barrels
- 15/20 . specially adapted for caseless-ammunition duds
- 15/22 . Tools for extracting cartridges
- 17/00 Safety arrangements, e.g. safeties**
- 17/02 . Key-operated safeties {([F41A 17/44 takes precedence](#))}
- 17/04 . Safeties of the combination-lock type ([F41A 17/02 takes precedence](#))
- 17/06 . Electric or electromechanical safeties ([F41A 17/04](#), [F41A 17/08 take precedence](#))
- 17/063 . . {[comprising a transponder](#)}
- 17/066 . . {[having means for recognizing biometric parameters, e.g. voice control, finger print or palm print control](#)}
- 17/08 . for inhibiting firing in a specified direction, e.g. at a friendly person or at a protected area ([F41A 27/02 takes precedence](#))
- 17/10 . . Firing mechanisms with elevation stop
- 17/12 . . Firing mechanisms with anti-canting safety
- 17/14 . Double-loading prevention
- 17/16 . Cook-off prevention, i.e. prevention of spontaneous firing of a cartridge by chamber wall heat
- 17/18 . Hang-fire prevention
- 17/20 . Grip or stock safeties, i.e. safeties disengaged by clasping the grip or stock ([thumb-operated sliding safeties F41A 17/52](#), [F41A 17/62](#), [F41A 17/70](#), [F41A 17/80](#))
- 17/22 . . acting on the trigger
- 17/24 . . acting on the firing pin
- 17/26 . . acting on the hammer
- 17/28 . . acting on the sear
- 17/30 . Multiple safeties, i.e. {[one safety element](#)} acting on at least one element of the firing mechanism and at least one other element of the gun, e.g. the moving barrel
- 17/32 . . the other element being the breech-block or bolt
- 17/34 . Magazine safeties
- 17/36 . . locking the gun {[automatically](#)} in a safety condition when the magazine is empty or removed {([F41A 17/44 takes precedence](#))}
- 17/38 . . {[Magazine mountings, e.g. for](#)} locking the magazine in the gun
- 17/40 . Last-round safeties ([F41A 17/34 takes precedence](#))
- 17/42 . Safeties for locking the breech-block or bolt in a safety position ([F41A 17/32](#), [F41A 17/36](#), [F41A 17/40 take precedence](#) {; [anti-rebound arrangements F41A 3/70](#)})
- 17/44 . Safety plugs, e.g. for plugging-up cartridge chambers {, [barrels](#), [magazine spaces](#)}
- 17/46 . Trigger safeties, i.e. means for preventing trigger movement ([F41A 17/02](#) - [F41A 17/40 take precedence](#))
- 17/48 . . Automatically operated trigger safeties, i.e. operated by breech opening or closing movement
- 17/50 . . . by breakdown action
- 17/52 . . Thumb-operated sliding safeties mounted on the upside of the stock, e.g. for shotguns
- 17/54 . . Protecting-caps for trigger guards; Trigger locking pieces mounted on, or within, the trigger guard
- 17/56 . Sear safeties, i.e. means for rendering ineffective an intermediate lever transmitting trigger movement to firing pin, hammer, bolt or sear
([F41A 17/02](#) - [F41A 17/40 take precedence](#))
- 17/58 . . automatically operated, i.e. operated by breech opening or closing movement
- 17/60 . . . by breakdown action
- 17/62 . . Thumb-operated sliding safeties mounted on the upside of the stock, e.g. for shotguns
- 17/64 . Firing-pin safeties, i.e. means for preventing movement of slidably- mounted strikers
([F41A 17/02](#) - [F41A 17/40 take precedence](#))
- 17/66 . . automatically operated, i.e. operated by breech opening or closing movement
- 17/68 . . . by breakdown action
- 17/70 . . Thumb-operated sliding safeties mounted on the upside of the stock, e.g. for shotguns

- 17/72 . . trigger-operated, i.e. the movement of the trigger bringing a firing-pin safety into inoperative position during the firing
- 17/74 . Hammer safeties, i.e. means for preventing the hammer from hitting the cartridge or the firing pin ([F41A 17/02 - F41A 17/40 take precedence](#))
- 17/76 . . automatically operated, i.e. operated by breech opening or closing movement
- 17/78 . . . by breakdown action
- 17/80 . . Thumb-operated sliding safeties mounted on the upside of the stock, e.g. for shotguns
- 17/82 . . trigger-operated, i.e. the movement of the trigger bringing a hammer safety into inoperative position during firing
- 19/00 Firing or trigger mechanisms; Cocking mechanisms**
- 19/01 . Counting means indicating the number of shots fired
- 19/02 . . Burst limiters ([F41A 19/67 takes precedence](#))
- 19/03 . Shot-velocity control ([F41A 3/78](#), [F41A 5/28](#), [F41A 19/05](#), [F41A 19/66 take precedence](#))
- 19/04 . . by controlling the time of release of the firing pin or hammer
- 19/05 . Synchronising for firing through the propeller of an aircraft
- 19/06 . Mechanical firing mechanisms, {e.g. counterrecoil firing, recoil actuated firing mechanisms} ([F41A 19/01 - F41A 19/05](#), [F41A 19/59 take precedence](#))
- 19/07 . . press-button actuated, e.g. with thumb rest
- 19/08 . . remote actuated; lanyard actuated
- 19/09 . . Auxiliary trigger devices ([F41A 19/08 takes precedence](#))
- 19/10 . . Triggers; Trigger mountings
- 19/11 . . Trigger guards; Trigger-guard mountings ([F41A 19/15 takes precedence](#))
- 19/12 . . Sear; Sear mountings
- 19/13 . . Percussion or firing pins, i.e. fixed or slidably-mounted striker elements; Mountings therefor ([F41A 19/26 takes precedence](#))
- 19/14 . . Hammers, i.e. pivotably-mounted striker elements; Hammer mountings
- 19/15 . . Modular firing mechanism units
- 19/16 . . Adjustable firing mechanisms; Trigger mechanisms with adjustable trigger pull ([F41A 19/17 takes precedence](#))
- 19/17 . . Hair-trigger mechanisms
- 19/18 . . for multibarrel guns {or multiple guns} ([F41A 19/68 takes precedence](#))
- 19/183 . . . {for multiple guns, i.e. a plurality of guns being actuated by a single firing mechanism}
- 19/186 . . . {having only one striker element and more than one trigger, each trigger acting on a single element (firing mechanisms having only one trigger and only one striker element [F41A 19/22](#))}
- 19/19 . . . with single-trigger firing possibility
- 19/20 . . . Double-trigger arrangements having the possibility of single-trigger actuation
- 19/21 . . . having only one trigger
- 19/22 and only one striker element
- 19/23 rotatable about an axis parallel to the barrel axis for firing subsequent barrels
- 19/24 . . Release-trigger mechanisms, i.e. the striker element being released during the return movement of the trigger subsequent to trigger pull
- 19/25 . . having only slidably-mounted striker elements, i.e. percussion or firing pins
- 19/26 . . . the percussion or firing pin and the breech-block or bolt forming one piece ([F41A 19/34 takes precedence](#))
- 19/27 . . . the percussion or firing pin being movable relative to the breech-block
- 19/28 propelled by a cam or lever when the breech-block or bolt arrives in a closing position
- 19/29 propelled by a spring under tension
- 19/30 in bolt-action guns
- 19/31 Sear arrangements therefor ([F41A 19/33 takes precedence](#))
- 19/32 for catching the percussion or firing pin after each shot, i.e. in single-shot or semi-automatic firing mode
- 19/33 Arrangements for the selection of automatic or semi-automatic fire
- 19/34 Cocking mechanisms
- 19/35 Double-action mechanisms, i.e. the cocking being effected during the first part of the trigger pull movement
- 19/36 in block-action guns
- 19/37 Cocking mechanisms
- 19/38 Double-action mechanisms, i.e. the cocking being effected during the first part of the trigger pull movement
- 19/39 Cocking {or firing} mechanisms for other types of guns, e.g. fixed breech-block types, forwardly-slidable barrel types
- 19/40 Double-action mechanisms, i.e. the cocking being effected during the first part of the trigger pull movement
- 19/41 for breakdown guns
- 19/42 . . having at least one hammer
- 19/43 . . . in bolt-action guns
- 19/44 Sear arrangements therefor ([F41A 19/46 takes precedence](#))
- 19/45 for catching the hammer after each shot, i.e. in single-shot or semi-automatic firing mode
- 19/46 Arrangements for the selection of automatic or semi-automatic fire
- 19/47 Cocking mechanisms
- 19/48 Double-action mechanisms, i.e. the cocking being effected during the first part of the trigger pull movement
- 19/49 . . . in block-action guns
- 19/50 Cocking mechanisms
- 19/51 Double-action mechanisms, i.e. the cocking being effected during the first part of the trigger pull movement
- 19/52 . . . Cocking {or firing} mechanisms for other types of guns, e.g. fixed breech-block types, revolvers
- 19/53 Double-action mechanisms, i.e. the cocking being effected during the first part of the trigger pull movement
- 19/54 for breakdown guns
- 19/55 . Fluid-operated firing mechanisms

19/56	• • Ignition of the propellant charge by contact with air heated by adiabatic compression	21/325	• • {Mountings for muzzle attachments}
19/57	• Firing mechanisms operating with primer cartridge	21/34	• • Flash dampers
19/58	• Electric firing mechanisms (F41A 17/10 , F41A 17/12 take precedence)	21/36	• • for recoil reduction (recoil reduction arrangements in general F41A 25/00); Stabilisers; Compensators, e.g. for muzzle climb prevention}
19/59	• • Electromechanical firing mechanisms, i.e. the mechanical striker element being propelled or released by electric means	21/38	• • • adjustable {, i.e. the vent holes or the vent area being adjustable}
19/60	• • characterised by the means for generating electric energy	21/40	• • Chokes for shotguns {, e.g. automatic chokes}
19/61	• • • Inductive generators {(F41A 19/63 takes precedence)}	21/42	• • • {manually} adjustable
19/62	• • • Piezoelectric generators	21/44	• Insulation jackets; Protective jackets
19/63	• • having means for contactless transmission of electric energy, e.g. by induction, by sparking gap	21/46	• Barrels having means for separating sabots from projectiles
19/64	• • for automatic or burst-firing mode	21/48	• Barrel mounting means, e.g. releasable mountings for replaceable barrels
19/65	• • • for giving ripple fire, i.e. using electric sequencer switches for timed multiple-charge launching, e.g. for rocket launchers	21/481	• • {using partial or interrupted threads, e.g. bayonet-type mountings}
19/66	• • • Electronic shot-velocity control (F41A 19/65 takes precedence)	21/482	• • {using continuous threads on the barrel}
19/67	• • • Burst limiters	21/484	• • {using interlocking means, e.g. by sliding pins}
19/68	• • for multibarrel guns {or multibarrel rocket launchers or multicanisters} (F41A 19/65 takes precedence)	21/485	• • {using screws or bolts}
19/69	• • Electric contacts or switches peculiar thereto (F41A 19/65 takes precedence)	21/487	• • {using friction, e.g. by clamping a barrel surface}
19/70	• • • Electric firing pins; Mountings therefor	21/488	• • {Mountings specially adapted for pistols or revolvers}
21/00	Barrels; Gun tubes; Muzzle attachments; Barrel mounting means (F41A 25/00 takes precedence; barrel attachments for firing grenades or riot-control ammunition from smallarms F41C 27/06)	23/00	Gun mountings, e.g. on vehicles; Disposition of guns on vehicles (F41A 25/00, F41A 27/00 take precedence)
21/02	• Composite barrels, i.e. barrels having multiple layers, e.g. of different materials	23/005	• {Locks for connecting guns to their mountings (F41A 23/50 takes precedence)}
21/04	• • Barrel liners	23/02	• Mountings without wheels
21/06	• Plural barrels		NOTE
21/08	• • Barrel junctions		Shooting stands for hunting A01M 31/02
21/10	• Insert barrels, i.e. barrels for firing reduced calibre ammunition and being mounted within the normal barrels	23/04	• • Unipods
21/12	• Cartridge chambers; Chamber liners (F41A 3/74 , F41A 9/46 , F41A 21/04 take precedence)	23/06	• • • adjustable
21/14	• • Arrangement of cartridge chambers lateral to the barrel axis	23/08	• • Bipods
21/16	• Barrels or gun tubes characterised by the shape of the bore	23/10	• • • adjustable
21/18	• • Grooves-Rifling	23/12	• • Tripods {; Mountings having at least three legs}
21/20	• Barrels or gun tubes characterised by the material (F41A 21/02 takes precedence)	23/14	• • • adjustable
21/22	• Barrels which have undergone surface treatment, e.g. phosphating {(F41A 21/44 takes precedence)}	23/16	• • Testing mounts
21/24	• Barrels or gun tubes with fins or ribs, e.g. for cooling (F41G 1/42 takes precedence)	23/18	• • Rests for supporting smallarms in non-shooting position (racks for storage A47B 81/00 ; racks in vehicles { B60R 7/14 })
21/26	• specially adapted for recoil reinforcement, e.g. for training purposes	23/20	• for disappearing guns
21/28	• Gas-expansion chambers; Barrels provided with gas-relieving ports (F41A 1/06 , F41A 13/08 {and F41A 21/36 } take precedence)	23/22	• • on board of submarines
21/30	• Silencers	23/24	• Turret gun mountings (feeding, loading or guiding ammunition F41A 9/00 ; mechanical elevating or traversing systems for turret guns F41A 27/18)
21/32	• Muzzle attachments or glands (F41A 21/26 , F41A 21/30 , F41A 21/46 take precedence {; for projectile velocity measurements G01P 3/665 , G01P 3/685 })	23/26	• Mountings for transport only; Loading or unloading arrangements for guns for use with carrier vehicles (F41A 23/50 takes precedence)
		23/28	• Wheeled-gun mountings; Endless-track gun mountings
		23/30	• • the wheels being liftable from the ground for firing
		23/32	• • with split trails (F41A 23/30 , F41A 23/46 takes precedence)
		23/34	• on wheeled or endless-track vehicles
		23/36	• • on trailers (F41A 23/42 takes precedence)
		23/38	• • on motorcycles
		23/40	• • on rail vehicles
		23/42	• • for rocket throwers
		23/44	• on sledges

23/46	• Trail spades	29/00	Cleaning or lubricating arrangements (injecting fluids into barrels or cartridge chambers F41A 13/04 {; ammunition for cleaning purposes F42B 5/24 })
23/48	• . elastic	29/02	• Scrapers or cleaning rods
23/50	• Travelling locks; Brakes for holding the gun platform in a fixed position during transport	29/04	• Lubricating, oiling or greasing means, e.g. operating during use
23/52	• Base plates for gun mountings		
23/54	• . for mortars		
23/56	• Arrangements for adjusting the gun platform in the vertical or horizontal position (F41A 17/10 , F41A 17/12 take precedence {; ground engaging vehicle fittings for lifting or supporting it B60S 9/04 ; supports for mobile cranes B66C 23/78 })	31/00	Testing arrangements (testing mounts F41A 23/16)
23/58	• . Hydraulic jacks	31/02	• for checking gun barrels
23/60	• . Screw-operated jacks		
25/00	Gun mountings permitting recoil or return to battery, e.g. gun cradles; Barrel buffers or brakes (recoilless guns F41A 1/08)	33/00	Adaptations for training (adaptations of barrels for recoil reinforcement F41A 21/26); Gun simulators (teaching or practice apparatus for gun-aiming or gun-laying F41G 3/26 {; shooting games A63F 9/02 ; military simulation G09B 9/003 })
25/02	• Fluid-operated systems	33/02	• Light- or radiation-emitting guns {; Light- or radiation-sensitive guns ; Cartridges carrying light emitting sources, e.g. laser }
25/04	• . adjustable {, e.g. in relation to the elevation of the gun }	33/04	• Acoustical simulation of gun fire, e.g. by pyrotechnic means
25/06	• Friction-operated systems	33/06	• Recoil simulators
25/08	• . adjustable	35/00	Accessories or details not otherwise provided for
25/10	• Spring-operated systems	35/02	• Dust- or weather-protection caps or covers (protecting-caps for trigger guards F41A 17/54)
25/12	• . using coil springs	35/04	• . Muzzle covers
25/14	• . . adjustable	35/06	• Adaptation of guns to both right and left hand use
25/16	• Hybrid systems		
25/18	• . Hydroelastic systems	99/00	Subject matter not provided for in other groups of this subclass
25/20	• . Hydropneumatic systems		
25/22	• Bearing arrangements for the reciprocating gun-mount or barrel movement		
25/24	• . using ball or roller bearings		
25/26	• Assembling or dismounting recoil elements or systems		
27/00	Gun mountings permitting traversing or elevating movement, e.g. gun carriages		
27/02	• Control systems for preventing interference between the moving gun and the adjacent structure		
27/04	• Scatter-fire arrangements, i.e. means for oscillating guns automatically during firing		
27/06	• Mechanical systems (F41A 27/02 , F41A 27/04 , F41A 27/30 take precedence)		
27/08	• . Bearings, e.g. trunnions; Brakes or blocking arrangements		
27/10	• . . Bearings for supporting a pivoting gun in a wall, e.g. a turret wall		
27/12	• . . Brakes or locks for blocking traversing or elevating gear in a fixed position		
27/14	• . . Central-pivot bearings		
27/16	• . . using raceway bearings, e.g. for supporting the turret		
27/18	• . for gun turrets (F41A 27/08 takes precedence)		
27/20	• . . Drives for turret movements		
27/22	• . Traversing gear (F41A 27/18 takes precedence)		
27/24	• . Elevating gear (F41A 27/18 takes precedence)		
27/26	• Fluid-operated systems (F41A 27/02 , F41A 27/04 , F41A 27/30 take precedence)		
27/28	• Electrically-operated systems (F41A 27/02 , F41A 27/04 , F41A 27/30 take precedence)		
27/30	• Stabilisation or compensation systems, e.g. compensating for barrel weight or wind force (on the barrel)		