

## F41B

**WEAPONS FOR PROJECTING MISSILES WITHOUT USE OF EXPLOSIVE OR COMBUSTIBLE PROPELLANT CHARGE; WEAPONS NOT OTHERWISE PROVIDED FOR (projectiles for fishing, e.g. fish-spears, A01K81/00; sports implements for throwing A63B65/00, e.g. boomerangs A63B65/08; stationary apparatus for projecting sports balls, e.g. tennis balls, A63B69/40; throwing or slinging toys A63H33/18; knives, axes B26B; projectiles or missiles other than those incorporating springs as projecting means F42B6/00)**

### Definition statement

*This subclass/group covers:*

All weapons propelling a missile but not using an explosive or combustible pyrotechnic propellant charge as the energy to launch the missile, i.e. using accumulated potential energy such as:

air or gas pressure

elastic deformation (bow, crossbow, spring, elastic)

kinetic energy (slings, friction wheels)

electromagnetism.

The subclass further includes thrusting, hitting and hand-thrown weapons.

### References relevant to classification in this subclass

*This subclass/group does not cover:*

Projectiles for fishing, e.g. fish-spears	<a href="#">A01K 81/00</a>
Sports implements for throwing	<a href="#">A63B 65/00</a> , <a href="#">A63B 65/08</a>
Stationary apparatus for projecting sports balls, e.g. tennis balls, <a href="#">A63B 69/40</a>	<a href="#">A63B 69/40</a>
Throwing or slinging toys	<a href="#">A63H 33/18</a>
Knives, axes	<a href="#">B26B</a>
Electrical discharge weapons	<a href="#">F41H 13/0012</a>
Directed energy weapons	<a href="#">F41H 13/0043</a>

Devices generating an electromagnetic pulse	<a href="#">F41H 13/0093</a>
Hand-held or body-worn self-defence devices using repellent gases or chemicals	<a href="#">F41H 9/10</a>
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	<a href="#">F42B 6/00</a>

### Special rules of classification within this subclass

As an exception to the general philosophy, liquid ejecting guns in main group [F41B 9/00](#) may include documents, where the pressurisation of the liquid is achieved with explosive means.

## F41B 1/00

**Blow guns, i.e. tubes for impelling projectiles, e.g. peas or darts, by the force of the breath (pop guns A63H)**

### Definition statement

*This subclass/group covers:*

Guns for launching the missile with the force of the breath only. The configuration ranges from a simple tube with a mouthpiece at the end, a tube with an appendix offset from the tube's axis carrying the mouthpiece or a tube with a mouthpiece attached at the end of a flexible tube.

### References relevant to classification in this group

*This subclass/group does not cover:*

Toys, including pop guns	<a href="#">A63H</a>
Actuating the trigger of a firearm with the help of breath	<a href="#">F41A 19/08</a>

## F41B 3/00

## Sling weapons (throwing-apparatus for clay-pigeon or clay-disc targets F41J9/18)

### References relevant to classification in this group

*This subclass/group does not cover:*

Bows, crossbows	<a href="#">F41B 5/00</a>
Spring guns	<a href="#">F41B 7/00</a>
Traps or throwing-apparatus for throwing clay target discs	<a href="#">F41J 9/18</a>

### Special rules of classification within this group

Launchers using the potential energy stored in a flexible, tensioned member (except for bows, spring guns), e.g. elastic band or elastic rope (catapults, sling shots, classified in parallel main groups) in sizes ranging from hand-held to multiple meters high.

Launchers using gravitational potential energy.

Launchers using the kinetic potential energy, in particular centrifugal force.

### Glossary of terms

*In this subclass/group, the following terms (or expressions) are used with the meaning indicated:*

Trebuchet:	a type of catapult that works by using the energy of a raised counterweight to throw the projectile
Sling	a projectile receiving patch with two non-elastic ropes, bands or cords attached, the projectile being launched by centrifugal force
Catapult	a projectile receiving patch with two elastic bands attached, said elastic bands at the other end being attached to a fork shape handle
Catapult (siege engine)	device with a rotary arm carrying a projectile receiving element at one end, the other end either being attached to a heavy weight, the arm

	having an intermediate turning axle or being fixedly held, the arm being flexible.
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## **F41B 4/00**

### **Friction-wheel operated launchers**

#### **References relevant to classification in this group**

*This subclass/group does not cover:*

Stationary-arranged devices for projecting balls	<a href="#">A63B 69/40</a>
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## **F41B 5/00**

### **Bows; Crossbows**

#### **Definition statement**

*This subclass/group covers:*

Covers the classic types of bows:

standard bow with unidirectional curvature

recurve bows with the curvatures of the bow being inverted towards its ends

compound bows using pulleys for force amplification

crossbows, wherein the bow is mounted on a frame with stock to be able to use it supported against the shoulder

Bows or crossbows with rigid bow arms, the potential energy being provided by a coil spring, a pneumatic spring or an elastic band

Further includes functional details of the bow as well as accessories.

#### **References relevant to classification in this group**

*This subclass/group does not cover:*

Sights for bows	<a href="#">F41G 1/467</a>
Spring guns adapted to discharge harpoons	<a href="#">F41B 7/04</a>

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## **Special rules of classification within this group**

Crossbows with a particular shape of the bow itself must be double classified in the crossbow group [F41B 5/12](#) and in the respective group for the conventional, standalone bow shape, i.e. [F41B 5/0005](#) for recurve or [F41B 5/10](#) for compound crossbows.

Crossbow with the classic unidirectional curvatures geometry bow or completely different (cross-bow unique) geometries, are classified in the crossbow group [F41B 5/12](#) only.

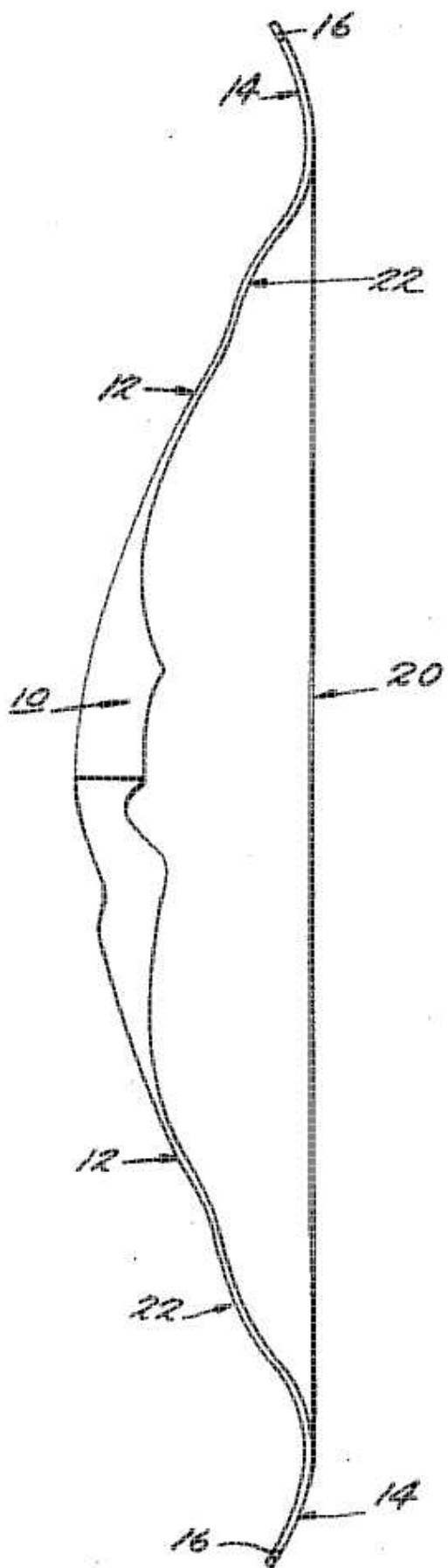
## **F41B 5/0005**

**[N: Recurve bows]**

## **Special rules of classification within this group**

Illustrative example of subject matter classified in [F41B 5/0005](#)

US3901210



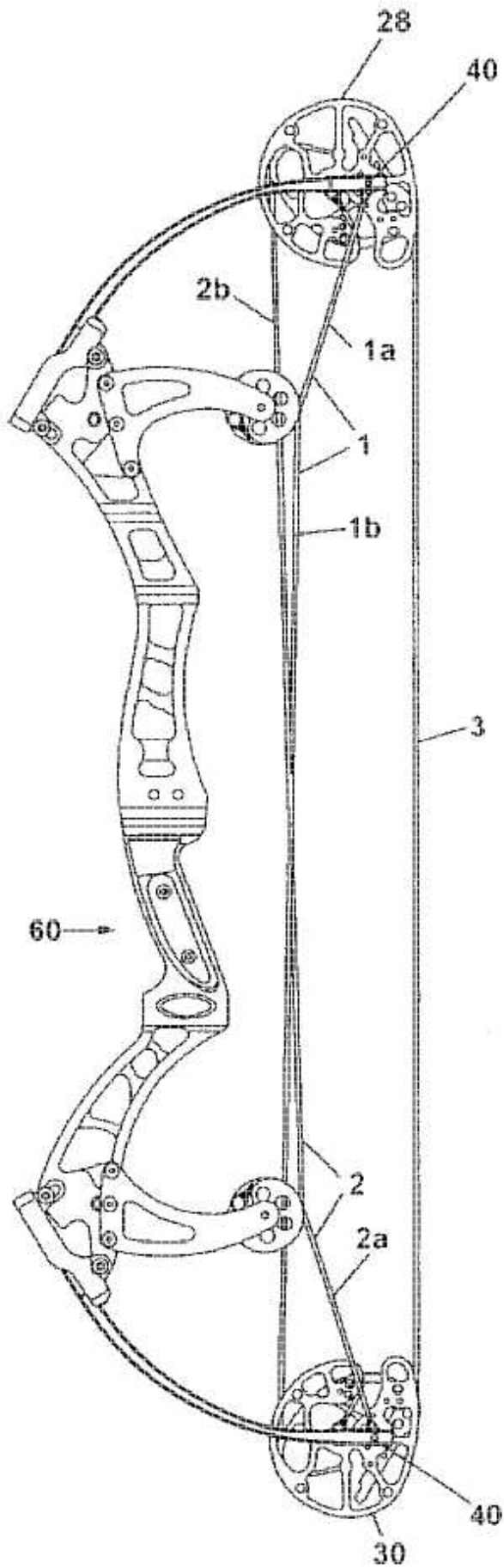
## **F41B 5/10**

### **Compound bows**

#### **Special rules of classification within this group**

Illustrative example of subject matter classified in [F41B 5/10](#)

US2010154762





## **F41B 5/12**

### **Crossbows**

#### **Definition statement**

*This subclass/group covers:*

US2008127956

Compound crossbow

US4947822

Recurve crossbow

US4388914

Particular geometry

It further includes functional details as well as accessories peculiar to crossbows.

## **F41B 5/14**

### **Details of bows; Accessories for arc shooting (Sighting devices for bows F41G1/467)**

#### **Definition statement**

*This subclass/group covers:*

Includes:- devices on the bow itself and, e.g. vibration dampers, bowstring silencers, buttons or clickers; and- devices for archery, e.g. arrow pullers, fletching jigs, bowstring releasing devices, bow presses, bow cases.

#### **References relevant to classification in this group**

*This subclass/group does not cover:*

Sights for bows	<a href="#">F41G 1/467</a>
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## **F41B 5/16**

### **Archer`s finger tabs (sporting arm or hand protectors, e.g. gloves, in general A41D13/08)**

#### **Definition statement**

*This subclass/group covers:*

Finger protections or gloves, fully or partially protecting the hand, specially adapted for archers

### References relevant to classification in this group

*This subclass/group does not cover:*

Sporting arm or hand protectors, e.g. gloves, in general	<a href="#">A41D 13/08</a>
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## F41B 6/00

**Electromagnetic launchers; [N: Plasma-actuated launchers (projectiles for electromagnetic or plasma guns F42B6/006)]**

### References relevant to classification in this group

*This subclass/group does not cover:*

Projectiles for electromagnetic or plasma guns	<a href="#">F42B 6/006</a>
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### Special rules of classification within this group

Launchers using dynamic electromagnetic fields for accelerating a missile which is itself magnetic/magnetisable or which is carried by a magnetic/magnetisable sabot.

## F41B 7/00

**Spring guns ([N: F41J9/18 takes precedence; catapults having a cocking device F41B3/005]; catapults F41B3/02; [N: throwing apparatus for boomerangs A63B65/08; spring-loaded devices for projecting sporting balls A63B69/407])**

### Definition statement

*This subclass/group covers:*

Guns using the potential energy stored in a tensioned spring for expelling a missile, the spring can be one of the following:

coil spring

torsion spring

pneumatic spring

## References relevant to classification in this group

*This subclass/group does not cover:*

Spring-loaded devices for projecting sporting balls	<a href="#">A63B 69/407</a>
Throwing apparatus for boomerangs	<a href="#">A63B 65/08</a>
Catapults, e.g. slingshots	<a href="#">F41B 2/02</a>
Sling weapons	<a href="#">F41B 3/00</a>
Catapults having a cocking device	<a href="#">F41B 3/005</a>
Bows, crossbows	<a href="#">F41B 5/00</a>
Air guns	<a href="#">F41B 11/00</a>
Traps or throwing-apparatus for clay pigeon targets	<a href="#">F41J 9/18</a>

## Special rules of classification within this group

Toy guns need to be interpreted narrowly in the context of [F41B 7/00](#). In patent literature, toy guns are sometimes used as a synonym to simulation guns. However, only guns specially adapted to be used by children for playing should be classified in [F41B 7/08](#)

### **F41B 7/04**

**adapted to discharge harpoons**

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Equipment for hunting fish under water	<a href="#">A01K 81/00</a>
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## F41B 7/08

Toy guns, [N: i.e. guns launching objects of the gliding type, e.g. airplanes, parachute missiles (F41B7/006 and F41B7/02 take precedence)]

### References relevant to classification in this group

*This subclass/group does not cover:*

Adaptations for feeding or loading missiles from magazines into spring guns	<a href="#">F41B 7/006</a>
The spring gun's propelling spring forming part of the missile or projectile	<a href="#">F41B 7/02</a>

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Starting or launching devices for toy aircraft	<a href="#">A63H 27/14</a>
Toy air guns	<a href="#">F41B 11/00C</a>
Toys simulating firearms using pyrotechnics	<a href="#">F41C 3/06</a>

## F41B 9/00

Liquid ejecting guns, e.g. water pistols, [N: devices ejecting electrically charged liquid jets, devices ejecting liquid jets by explosive pressure] [C1010]

### Definition statement

*This subclass/group covers:*

Guns for expelling liquid at high pressure and high velocity, i.e. the liquid is the missile in this main group.

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Hand fire-extinguishers essentially in the form of pistols or rifles	<a href="#">A62C 17/00</a>
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### Special rules of classification within this group

As an exception the general philosophy, liquid ejecting guns in this main group may include documents, where the pressurisation of the liquid is achieved with explosive means, e.g. disruptors.

### F41B 9/0087

**[N: characterised by the intended use, e.g. for self-defence, law-enforcement, industrial use, military purposes (F41B9/0046 takes precedence)]**

### Definition statement

*This subclass/group covers:*

Liquid ejecting guns or devices for serious purposes, i.e. NOT for leisure, games, toys, play or fun

### References relevant to classification in this group

*This subclass/group does not cover:*

Adaptations for feeding or loading missiles from magazines into spring guns	<a href="#">F41B 9/0046</a>
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### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Needleless syringes	<a href="#">A60M 30/00</a>
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### F41B 9/009

**[N: for ejecting electrically charged jets] [N1010]**

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Electrical discharge weapon for remote electrical discharge via liquid jets	<a href="#">F41H 13/0037</a>
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### Special rules of classification within this group

This group is not in use.

### F41B 11/00

**Air guns, e.g. air pistols; Steam guns; [N: Compressed gas guns]**

### Definition statement

*This subclass/group covers:*

Guns or devices for discharging projectiles through a barrel by conversion of the potential energy stored in a compressed gas into kinetic energy for the propulsion of the projectile. The compressed gas is either available in a pre-compressed form or compressed with mechanical means, i.e. without use of explosive or combustible propellant charge, immediately before or during the launching of each projectile.

### Relationship between large subject matter areas

Aspects concerning details or functions of the compressed gas gun, which could be applied directly to firearms should also be classified in the relevant groups in [F41A](#) or [F41C](#)

### References relevant to classification in this group

*This subclass/group does not cover:*

Devices for dispensing balls, e.g. from a reservoir	<a href="#">A63B 47/002</a>
Stationary arranged devices for projecting balls	<a href="#">A63B 69/40</a>
Hand-held nailing tools operated by fluid pressure	<a href="#">B25C 1/04</a>

### Informative references

Attention is drawn to the following places, which may be of interest for search:

Projectiles for airguns	<a href="#">F42B 6/10</a>
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### Special rules of classification within this group

Every single compressed gas gun will inherently comprise a valve - DO NOT classify them in [F41B 11/32](#) if the valve as such is not relevant for the invention.

Toy guns need to be interpreted narrowly in the context of [F41B 11/00C](#). In patent literature, toy guns are sometimes used as a synonym to simulation guns. However, only guns specially adapted to be used by children for playing should be classified in [F41B 11/00C](#)

### Glossary of terms

*In this subclass/group, the following terms (or expressions) are used with the meaning indicated:*

Airgun	generic term for compressed gas guns, sometimes used for guns using compressed gas other than air, most commonly CO <sub>2</sub> . Classical airguns project so-called airgun pellets, wasted projectile hollowed at the base and available in a variety of head styles
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In patent documents the following expressions/words "Gas gun", "compressed gas gun", "CO<sub>2</sub>-gun", "air rifle", "air pistol", "marker", "paintball gun" and "pneumatic gun" are often used as synonyms:

### Synonyms and Keywords

Softair/Airsoft gun	also sometimes referred to as BB guns, however using plastic pellets of 6mm diameter. Softair guns are usually externally shaped like firearms.
BB gun	gun for projecting BBs (birdshot pellets), usually rounded 4.5 mm diameter metallic pellets
Marker/Paintball marker	guns for projecting paintballs, i.e.

	hollow gelatine balls filled with paint, for marking the point of impact
Hopper	magazine for loosely holding projectiles above the air gun
Blowback	or blow back mechanism, used for the cycling, i.e. automatic reloading, or for simulating recoil operation

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Hopper	magazine for loosely holding projectiles above the air gun
Blowback	or blow back mechanism, used for the cycling, i.e. automatic reloading, or for simulating recoil operation

## **F41B 11/00C**

**[N: Toys launching a projectile by air pressure (F41B11/24 takes precedence)]**

### **Definition statement**

*This subclass/group covers:*

Devices for launching a projectile by air or gas pressure, typically with low energy, with the main purpose of amusement, suitable for use by children without any particular safety precautions.



## References relevant to classification in this group

*This subclass/group does not cover:*

Starting or launching devices for toy aircraft; Arrangements on toy aircraft for starting or launching	<a href="#">A63H 27/14</a>
Air guns having a deformable bellows or bulb pressed during the firing	<a href="#">F41B 11/24</a>

## Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Toy aircraft; Other flying toys	<a href="#">A63H 27/00</a>
Throwing or slinging toys	<a href="#">A63H 33/18</a>

## Special rules of classification within this group

This group being a pure application related group, any document classified here must also be classified in one of the groups defining the compressed gas gun by its structure or function. The mere use of the term toy gun in the publication does not imply classification in this group. If the airgun is clearly a sports gun, a training or simulation gun it should not be classified in this group.

## Glossary of terms

*In this subclass/group, the following terms (or expressions) are used with the meaning indicated:*

Toy gun	is often erroneously used in order to differentiate the air gun from a firearm, see also special rule of classification below
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## **F41B 11/00E**

**[N: Electronic or electric systems in air guns, e.g. for safety purposes, for feeding or loading ]**

## Definition statement

*This subclass/group covers:*

Electric systems for powering of motors for the active force feeding, loading or agitating of the projectiles. Electronic systems for the control of active force feeding, loading, agitating systems.

Electronic safeties for compressed gas guns or electric drives for the cycling of these guns.

Electric systems for powering the various functions of the compressed gas gun such as electric drives for the compression system (in air guns having a piston or pump compressing the air before or during the firing of each shot), driving the movement of a safety element in and out of operative position or for supplying power to accessories.

Electronic systems for the control of said various functions of the compressed gas gun.

Electronic systems for the sensing gun component configurations, such as presence of a magazine or projectiles and positions of the movable parts of the gun, e.g. slide, bolt, trigger, safeties.

Electronic systems for controlling the firing rate or the number of rounds in a burst.

Electronic systems for controlling the initial velocity  $V_0$  of the projectiles.

## Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Electronic safeties in firearms	<a href="#">F41A 17/06</a>
Burst limiters in firearms	<a href="#">F41A 19/02</a>
Shot velocity control in firearms	<a href="#">F41A 19/03</a>
Electric firing mechanisms in firearms	<a href="#">F41A 19/69</a>

## F41B 11/02

**Magazines [N: F41B11/00E takes precedence]**

## Definition statement

*This subclass/group covers:*

Containers for holding a plurality of missiles to be projected by a compressed

gas gun, i.e. magazines. Devices or mechanisms for sequentially bringing such missiles from an external magazine into the gun frame/casing/housing/receiver, i. e. feeding arrangements. Devices or mechanisms for sequentially bringing such missiles into the position inside the compressed gas gun ready to be projected ("firing" chamber), i.e. loading arrangements.

## References relevant to classification in this group

*This subclass/group does not cover:*

Electronic or electric systems in air guns, e.g. for safety purposes, for feeding or loading	<a href="#">F41B 11/00E</a>
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## Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Feeding or loading of ammunition for firearms	<a href="#">F41A 9/00</a>
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## F41B 11/02B

**[N: the projectiles being loosely held in a fixed magazine above the gun housing, e.g. in a hopper]**

### Definition statement

*This subclass/group covers:*

Magazines holding projectiles in a removable magazine above the gun housing which implies the following: the projectiles will be fed primarily by gravity; the projectiles are spherical so that there is no need for orienting the projectiles in a specific way for feeding or loading.

The hopper might further contain secondary means to assist the gravity powered feeding of the projectiles, such as:

an agitator so as to release jams at the exit opening of the hopper

a rotor type force feeding the projectiles through the exit opening of the hopper

a screw type conveyor force feeding the projectiles through the exit opening of the hopper

a linear pusher force feeding the projectiles through the exit opening of the

hopper

## **F41B 11/02D**

**[N: the projectiles being stored in a rotating drum magazine]**

### **Definition statement**

*This subclass/group covers:*

The projectiles are stored in an ordered fashion, i.e. the order in which the projectiles will be discharged is pre-defined. Drum magazines can be in any of the known types, e.g.: - Stationary drum, the projectiles being force fed out of the drum by a spring/motor, the projectiles being arranged around the periphery of the drum. - Stationary drum, the projectiles being force fed out of the drum by a spring/motor, the projectiles being arranged in a spiralling fashion. - Revolver type drum, the drum rotating incrementally, the rotation being indexed so as to position the projectile to be fired in alignment with the firing chamber

### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Feeding of unbelted ammunition for firearms using a revolving drum magazine	<a href="#">F41A 9/26</a>
Drum magazines for firearms	<a href="#">F41A 9/73</a>

## **F41B 11/02F**

**[N: the projectiles being stored in a removable box, rack or tubular magazine in stacked order]**

### **Definition statement**

*This subclass/group covers:*

The projectiles are stored in an ordered fashion, i.e. the order in which the projectiles will be discharged is pre-defined, the arrangement of projectile is substantially linear inside the magazine. This arrangement implies a so-called follower, i. e. a spring biased element pushing the stack of projectiles out the magazine. The magazine is removable from the gun, often as a look alike to a firearm magazine.

### **References relevant to classification in this group**

*This subclass/group does not cover:*

Magazines formed integrally in the gun at the position where the box magazine of a firearm would be	<a href="#">F41B 11/02H</a>
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### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Box magazines for firearms having a cartridge follower	<a href="#">F41A 9/65</a>
Tubular magazines for firearms	<a href="#">F41A 9/72</a>

### **F41B 11/02F2**

**[N: the magazine also housing a gas cartridge]**

#### **Definition statement**

*This subclass/group covers:*

The removable magazine carrying the projectiles also carries a exchangeable or refillable pressurised cartridge such as a CO2 cartridge, usually for soft-air guns.

### **F41B 11/02H**

**[N: the magazine being an integral, internal part of the gun housing]**

#### **Definition statement**

*This subclass/group covers:*

Magazines integrally formed with the gun, i.e. the magazine is not removable. The missiles to be projected by the compressed gas gun are inserted and stored directly in a space/cavity formed in the gun.

### **F41B 11/04**

**for ejecting a powder, e.g. pepper**

#### **Definition statement**

*This subclass/group covers:*

Devices for pneumatic ejection or marking/irritating powders, either by: • propelling capsules frangible on impact containing the powder, or

- by spreading the powder directly from a nozzle.

### References relevant to classification in this group

*This subclass/group does not cover:*

Gas-blowing apparatus, e.g. for tear gas	<a href="#">F41H 9/04</a>
Apparatus for generating artificial fog or smoke screens	<a href="#">F41H 9/06</a>

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Hand-held or body-worn self-defence devices using repellant gases or chemicals	<a href="#">F41H 9/10</a>
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## F41B 11/06

**with pressure supplied by gas cartridge (F41B11/08 takes precedence; valves therefor F41B11/32)**

### Definition statement

*This subclass/group covers:*

Compressed gas guns, wherein the pre-compressed gas is stored in an exchangeable/refillable gas cartridge, which can be housed either inside the gun body (housing, hand grip, magazine or stock) or alternatively in a gas reservoir which is connectable by a gas tight connection to the pneumatic components of gun body, the gun reservoir being either mounted on the gun or carried by the shooter.

### References relevant to classification in this group

*This subclass/group does not cover:*

Air guns adapted to discharge harpoons	<a href="#">F41B 11/08</a>
Arrangement of valves in, or valves	<a href="#">F41B 11/32</a>

<p>specially adapted for, air guns</p>	
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## F41B 11/08

**adapted to discharge harpoons [N: (trigger mechanisms for harpoon guns F41B7/046)]**

### Definition statement

*This subclass/group covers:*

Devices for propelling harpoons or fishing spears with pneumatic pressure, wherein at least part of the shaft of the harpoon is held in the barrel of the compressed gas gun and guided inside the barrel when discharged by the expanding compressed gas. The group includes both, devices for use by divers in submerged condition or by fishers standing on land/ship and propelling the harpoon/spear into the water.

### References relevant to classification in this group

*This subclass/group does not cover:*

<p>Trigger mechanisms for harpoon guns</p>	<p><a href="#">F41B 7/046</a></p>
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### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

<p>Fishing with projectile</p>	<p><a href="#">A01K 81/00</a></p>
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### Glossary of terms

*In this subclass/group, the following terms (or expressions) are used with the meaning indicated:*

<p>Wet firing</p>	<p>discharge of the harpoon wherein the barrel holding the shaft of the harpoon is partially filled with water</p>
<p>Dry firing</p>	<p>discharge of the harpoon with a sealed off dry (air filled) barrel, either for one time use or else with means for keeping the barrel sealed under water (sealed piston pusher or</p>

	draining means)
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## Synonyms and Keywords

Spear gun, harpoon gun, harpoon spear.

## F41B 11/12

**having an air piston effecting a compressor stroke during the firing of each shot**

### Definition statement

*This subclass/group covers:*

Airguns with a piston to compress the air for propelling the projectile at the moment of the firing, i.e. the triggering action of the gun activates the compression means and the resulting compressed air is used directly for launching the projectile. This implies that no intermediate compressed air storage chamber (pressure accumulation tank) is present (an expansion or equalisation chamber in the sense of transit chambers might be present). The piston is either hand operated or spring operated

### References relevant to classification in this group

*This subclass/group does not cover:*

Shooting devices for shooting or hurling games	<a href="#">A63F 9/0252</a>
Toys launching a projectile by air pressure	<a href="#">F41B 11/00C</a>
The electric driving motor aspects	<a href="#">F41B 11/00E</a>
Compressed gas guns with pressure supplied by a gas cartridge	<a href="#">F41B 11/06</a>
Compressed gas guns having precompressed air before he firing	<a href="#">F41B 11/26</a>

### Special rules of classification within this group

The airguns in [F41B 11/12](#) (and its subgroups) and in [F41B 11/26](#) (and its subgroups) are structurally very similar to each other, always comprising an



air piston, means for actuating said piston to compress the air, valve arrangements and triggering means.

The classification criteria are the following:

IF the compressor stroke is effected at the moment of firing THEN [F41B 11/12](#)

IF the compressor stroke is effected before firing and the gas is stored in a compression chamber or accumulation tank THEN [F41B 11/26](#)

IF the trigger activates the compressor arrangement THEN [F41B 11/12](#).

IF the trigger activates the opening of the discharge valve THEN [F41B 11/26](#).

## **F41B 11/12B**

**[N: the air piston being hand operated]**

### **Definition statement**

*This subclass/group covers:*

Airguns with manually operated pistons, the piston directly delivering the compressed air to the "firing chamber", i.e. hand-pumps directly feeding compressed air to the "firing chamber".

### **References relevant to classification in this group**

*This subclass/group does not cover:*

Pumping or compressor arrangements for pre-compressed air	<a href="#">F41B 11/28</a>
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## **F41B 11/14**

**spring-operated**

### **Definition statement**

*This subclass/group covers:*

Arrangements wherein the energy for moving the piston in the cylinder is delivered by a spring under tension.

## **F41B 11/14B**

**[N: the piston being arranged concentrically with the barrel]**

### **Definition statement**

*This subclass/group covers:*

Arrangements wherein the longitudinal axis of the spring coincides with the longitudinal axis of the barrel. The spring may be arranged around or behind the barrel.

## **F41B 11/16**

**having an additional slidable mass moving in the opposite direction of the piston, e.g. for recoil reduction**

### **Definition statement**

*This subclass/group covers:*

Airguns with spring operated pistons compressing the air during the launch of the projectile will inherently create considerable recoil deteriorating precision. This group covers counter-mass-type recoil reduction mechanism, wherein, synchronised with the movement of the piston, a counter-mass will be accelerated in the opposite direction to neutralise the reaction force caused by the movement of the piston.

### **Informative references**

*Attention is drawn to the following places, which may be of interest for search:*

Recoil reduction using the counter-mass principle in firearms	<a href="#">F41A 1/10</a>
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## **F41B 11/16B**

**[N: the element being also a compressor piston]**

### **Definition statement**

*This subclass/group covers:*

Systems with two spring operated pistons with the same mass acting in opposite direction so as to eliminate the recoil force induced by the reaction to the piston acceleration.

## **F41B 11/18**

**Arrangements for putting the spring under tension**

### **Definition statement**

*This subclass/group covers:*

Arrangements for pre-tensioning the spring and holding the piston in the fully

spring-loaded position, i.e. cocking. The arrangements do not compress any air, they only accumulate energy in the spring that will, upon trigger actuation, compress air in the cylinder.

## References relevant to classification in this group

*This subclass/group does not cover:*

Pumping arrangements for pre-compressing air for storing it in a pressurised air storage tank	<a href="#">F41B 11/28</a>
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## Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Cocking mechanisms for bolt action firearms	<a href="#">F41A 19/34</a>
Cocking mechanisms for block action firearms	<a href="#">F41A 19/37</a>
Cocking mechanisms for other firearms (not block/bolt action)	<a href="#">F41A 19/39</a>

## F41B 11/20

### by a rocking lever

#### Definition statement

*This subclass/group covers:*

A rocking lever being mechanically linked to the spring-piston arrangement, so as to put the spring under tension and hold the piston in the fully spring-loaded position, i.e. cocking by rocking lever.

## References relevant to classification in this group

*This subclass/group does not cover:*

Rocking-lever activated pumping arrangements for pre-compressing air for storing it in a pressurised air storage tank	<a href="#">F41B 11/30</a>
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## Informative references

Attention is drawn to the following places, which may be of interest for search:

Cocking mechanisms for other firearms (not block/bolt action)	<a href="#">F41A 19/39</a>
Lever-action guns per se, i.e. shoulder fired smallarms having a rocking lever for loading or cocking	<a href="#">F41C 7/06</a>

## F41B 11/22

### in breakdown air guns

#### Definition statement

*This subclass/group covers:*

The breaking of the airgun, i.e. the relative movement of two hinged parts of the airgun, usually the barrel and the receiver, actuates the spring-piston arrangement so as to put the spring under tension and hold the piston in the fully spring-loaded position, i.e. cocking by breakdown mechanism.

#### References relevant to classification in this group

*This subclass/group does not cover:*

Breakdown activated pumping arrangements for pre-compressing air for storing it into a pressurised air storage tank	<a href="#">F41B 11/30B</a>
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## Informative references

Attention is drawn to the following places, which may be of interest for search:

Cocking mechanisms in breakdown firearms	<a href="#">F41A 19/41</a>
Conventional breakdown guns per se	<a href="#">F41C 7/11</a>

## F41B 11/24

**having a deformable bellows or bulb pressed during the firing**

**Definition statement**

*This subclass/group covers:*

Airguns with a deformable container, e.g. bellows, a bulb or other substantially air-tight part of the airgun, holding a quantity of air, which is pressurised by the squeezing or deformation of the container, so as to decrease the internal volume of the container and urge the air into the "firing chamber" in order to directly launch the projectile.

**References relevant to classification in this group**

*This subclass/group does not cover:*

Bellow or bulb activated pumping arrangements for pre-compressing air for storing it into a pressurised air storage tank	<a href="#">F41B 11/28</a>
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**F41B 11/26**

**having precompressed air before the firing (F41B11/06, F41B11/08, F41B11/32 take precedence)**

**Definition statement**

*This subclass/group covers:*

Airguns comprising a compressed air storage chamber (pressure accumulation tank), filled with compressed air before the firing, i.e. the triggering action of the gun activates a valve or other mechanism to fluidly connect the air storage chamber (pressure accumulation tank) with the "firing chamber", thereby allowing the compressed air to launch the projectile. The exclusion of the group [F41B 11/06](#) implies that some means to pre-compress the air, e.g. pump or compressor, must be an integral part of the gun.

**References relevant to classification in this group**

*This subclass/group does not cover:*

Airguns with pressure supplied by gas cartridge	<a href="#">F41B 11/06</a>
Airguns adapted to discharge harpoons	<a href="#">F41B 11/08</a>
Airguns having an air piston effecting a compressor stroke during the firing	<a href="#">F41B 11/12</a>

of each shot	
Arrangement of valves in, or valves specially adapted for, air guns	<a href="#">F41B 11/32</a>

### Special rules of classification within this group

The airguns in [F41B 11/12](#) (and its subgroups) and in [F41B 11/26](#) (and its subgroups) are structurally very similar to each other, always comprising an air piston, means for actuating said piston to compress the air, valve arrangements and triggering means.

The classification criteria are the following:

IF the compressor stroke is effected at the moment of firing THEN [F41B 11/12](#)

IF the compressor stroke is effected before firing and the gas is stored in a compression chamber or accumulation tank then [F41B 11/26](#)

IF the trigger activates the compressor arrangement then [F41B 11/12](#).

IF the trigger activates the opening of the discharge valve then [F41B 11/26](#).

## F41B 11/28

### Pumping or compressor arrangements therefor

#### Definition statement

*This subclass/group covers:*

Arrangements for compressing the air in the air storage chamber (pressure accumulation tank), i.e. hand-pumps or electrically powered pumps integrated into the gun or permanently attached thereto for compressing atmospheric air into the pressure accumulation tank.

This group further includes airguns with integral or permanently attached pressure accumulation tanks for storing the atmospheric air compressed by a pump or compressor, in particular documents wherein the teaching is specifically aimed at the particular shape/arrangement/configuration/material of the pressure accumulation tank per se.

#### References relevant to classification in this group

*This subclass/group does not cover:*

The electric driving motor aspects	<a href="#">F41B 11/00E</a>
Exchangeable/refillable gas	<a href="#">F41B 11/06</a>

cartridges for use in air guns	
Arrangements for putting the spring under tension, in airguns with a spring loaded compressor piston	<a href="#">F41B 11/18</a>

### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Compressors in general; general concepts of compressors	<a href="#">F04B</a>
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### F41B 11/30

**operated by a rocking-lever system, e.g. in breakdown air guns**

### Definition statement

*This subclass/group covers:*

A rocking lever being directly mechanically linked to a piston arrangement, so as to compress the air inside the compressed air storage tank, i.e. the piston itself is pressure accumulation tank.

### References relevant to classification in this group

*This subclass/group does not cover:*

Rocking lever mechanism for cocking a spring in a spring operated piston airgun	<a href="#">F41B 11/20</a>
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### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Cocking mechanisms for other firearms (not bolt/block action)	<a href="#">F41A 19/39</a>
Lever-action guns per se	<a href="#">F41C 7/06</a>

## F41B 11/30B

[N: in breakdown air guns]

### Definition statement

*This subclass/group covers:*

The breaking of the airgun, i.e. the relative movement of two hinged parts of the airgun, usually the barrel and the receiver, actuates the piston so as to compress the air inside the compressed air storage tank, i.e. the piston itself is the pressure accumulation tank. The two hinged parts of the airgun take over the function of a dedicated rocking lever for actuating the piston.

### References relevant to classification in this group

*This subclass/group does not cover:*

Breakdown mechanism for cocking a spring in a spring operated piston airgun	<a href="#">F41B 11/22</a>
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### Informative references

*Attention is drawn to the following places, which may be of interest for search:*

Cocking mechanisms in breakdown firearms	<a href="#">F41A 19/41</a>
Breakdown firearms per se	<a href="#">F41C 7/11</a>

## F41B 11/32

**Arrangement of valves in, or valves specially adapted for, air guns, [N: e.g. pressure regulating valves]**

### Definition statement

*This subclass/group covers:*

Valve arrangements integrated in compressed gas guns for regulating the various pneumatic functions of an compressed gas gun, such as:

- pressure regulation for reliably ensuring constant fire power (pressure reducing valves)
- pressure regulation for reliably ensuring constant feeding/loading



power (pressure reducing valves)

- on/off valves for immediate supply of air to the firing chamber upon a triggering event o valves opening on mechanical impact o electrically controlled solenoid valves
- venting valves in case of over-pressure in fluid-tight components of the airgun (pressure accumulation tanks)
- valves for actuating secondary functions, such as blowback mechanisms, recoil simulation, (semi-)automatic cycling of the gun

## Informative references

Attention is drawn to the following places, which may be of interest for search:

Valves in general	<a href="#">F16K</a>
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## Special rules of classification within this group

Every single compressed gas gun will inherently comprise a valve - DO NOT classify them in [F41B 11/32](#) if the valve as such is not relevant for the invention.

## F41B 11/34

### Sealing arrangements; Pistons

#### Definition statement

*This subclass/group covers:*

Arrangements of seals in a compressed air gun sealing off any pneumatic component of the compressed gas gun, including in particular the interface between an external gas cartridge or pressure accumulation tank with the internal pneumatic components of the gun. This group contains documents wherein the teaching is specifically aimed at the particular shape, arrangement, configuration or material of the sealing arrangement. This group contains documents wherein the teaching is specifically aimed at the particular shape, arrangement, configuration or material of pistons in air guns having precompressed air before the firing or having an air piston effecting a compressor stroke during the firing of each shot.

## Special rules of classification within this group

Every single compressed gas gun will inherently comprise sealing arrangements - DO NOT classify them in [F41B 11/34](#) if the seal as such is not relevant for the invention. Every single airgun classified in the groups [F41B 11/12](#) and below will inherently comprise a piston - DO NOT classify them in

[F41B 11/34](#) if the piston as such is not relevant for the invention.

## F41B 13/00

**Thrusting-weapons (bayonets F41C27/18); Cutting-weapons carried as side-arms (training appliances for fencing A63B69/02; sheaths for hand cutting tools B26B29/00; [N: firearms combined with thrusting or cutting weapons F41C27/16])**

### Definition statement

*This subclass/group covers:*

Hand held thrusting and cutting weapons, to be kept in hand during the use, i.e. not intended to be thrown.

### References relevant to classification in this group

*This subclass/group does not cover:*

Fencing equipment	<a href="#">A63B 69/02</a>
Sheaths for hand cutting tools	<a href="#">B26B 29/00</a>
Throwing knives	<a href="#">F41B 15/00</a>
Bolas	<a href="#">F41B 15/10</a>
Bayonets	<a href="#">F41C 27/18</a>
Firearms combined with thrusting or cutting weapons	<a href="#">F41C 27/16</a>

## F41B 15/00

**Weapons not otherwise provided for [N: e.g. nunchakus, throwing knives]**

### Definition statement

*This subclass/group covers:*

Residual group for weapons which do not use pyrotechnic charges to propel a missile, it includes in particular blunt hitting weapons such as batons or sticks and hand thrown weapons such as bolas and throwing knives or shuriken

## References relevant to classification in this group

*This subclass/group does not cover:*

Darts	<a href="#">F42B 6/003</a>
Electric prods	<a href="#">A01K 15/02</a>
Electric stunning means	<a href="#">F41H 13/0012</a>