

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, [A01K 81/00](#); sports implements for throwing [A63B 65/00](#), e.g. boomerangs [A63B 65/08](#); stationary apparatus for projecting sports balls, e.g. tennis balls, [A63B 69/40](#); throwing or slinging toys [A63H 33/18](#); knives, axes [B26B](#); projectiles or missiles other than those incorporating springs as projecting means [F42B 6/00](#))

Definition statement

This place 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

Limiting references

This place does not cover:

Projectiles for fishing, e.g. fish-spears	A01K 81/00
Sports implements for throwing	A63B 65/00 , A63B 65/08
Stationary apparatus for projecting sports balls, e.g. tennis balls, A63B 69/40	A63B 69/40
Throwing or slinging toys	A63H 33/18
Knives, axes	B26B
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	F42B 6/00

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 repellent gases or chemicals	F41H 9/10
Electrical discharge weapons	F41H 13/0012
Directed energy weapons	F41H 13/0043
Devices generating an electromagnetic pulse	F41H 13/0093

Special rules of classification

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 place 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

Limiting references

This place does not cover:

Toys, including pop guns	A63H
Actuating the trigger of a firearm with the help of breath	F41A 19/08

F41B 3/00

Sling weapons (throwing-apparatus for clay-pigeon or clay-disc targets [F41J 9/18](#))

References

Limiting references

This place does not cover:

Bows, crossbows	F41B 5/00
Spring guns	F41B 7/00
Traps or throwing-apparatus for throwing clay target discs	F41J 9/18

Special rules of classification

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 place, 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
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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.

F41B 4/00

Friction-wheel operated launchers

References

Limiting references

This place does not cover:

Stationary-arranged devices for projecting balls	A63B 69/40
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F41B 5/00

Bows; Crossbows

Definition statement

This place 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 pullies 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

Limiting references

This place does not cover:

Spring guns adapted to discharge harpoons	F41B 7/04
Sights for bows	F41G 1/467

Special rules of classification

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.

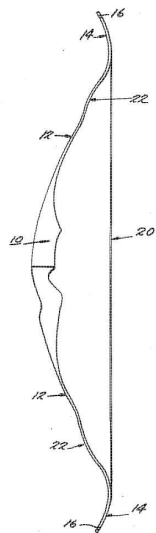
F41B 5/0005

{Single stave recurve bows}

Special rules of classification

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

US3901210



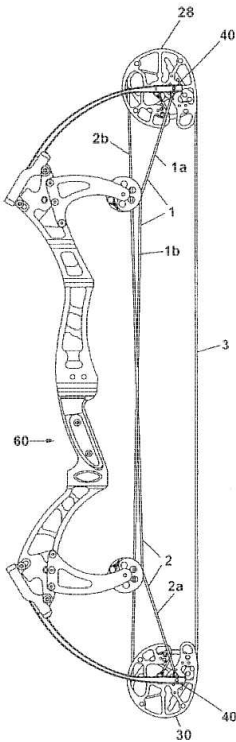
F41B 5/10

Compound bows {(compound crossbows [F41B 5/123](#))}

Special rules of classification

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

US2010154762



F41B 5/12

Crossbows

Definition statement

This place 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 [F41G 1/467](#))

Definition statement

This place 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

Limiting references

This place does not cover:

Sights for bows	F41G 1/467
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F41B 5/1473

{Archer's finger tabs}

Definition statement

This place covers:

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

References

Limiting references

This place does not cover:

Sporting arm or hand protectors, e.g. gloves, in general	A41D 13/08
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F41B 6/00

Electromagnetic launchers {; Plasma-actuated launchers (projectiles for electromagnetic or plasma guns [F42B 6/006](#))}

References

Limiting references

This place does not cover:

Projectiles for electromagnetic or plasma guns	F42B 6/006
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Special rules of classification

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 ({[F41J 9/18](#) takes precedence; catapults having a cocking device [F41B 3/005](#)}; catapults [F41B 3/02](#); {throwing apparatus for boomerangs [A63B 65/08](#); spring-loaded devices for projecting sporting balls [A63B 69/407](#)})

Definition statement

This place 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

Limiting references

This place does not cover:

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

Special rules of classification

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

References

Informative references

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

Equipment for hunting fish under water	A01K 81/00
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F41B 7/08

Toy guns {, i.e. guns launching objects of the gliding type, e.g. airplanes, parachute missiles ([F41B 7/006](#) and [F41B 7/02](#) take precedence)}

References

Limiting references

This place does not cover:

Adaptations for feeding or loading missiles from magazines into spring guns	F41B 7/006
The spring gun's propelling spring forming part of the missile or projectile	F41B 7/02

Informative references

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

Toy air guns	F41B 11/89
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Starting or launching devices for toy aircraft	A63H 27/14
Toys simulating firearms using pyrotechnics	F41C 3/06

F41B 9/00

Liquid ejecting guns, e.g. water pistols {, devices ejecting electrically charged liquid jets, devices ejecting liquid jets by explosive pressure}

Definition statement

This place covers:

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

References

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	A62C 17/00
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Special rules of classification

As an exception to 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

{characterised by the intended use, e.g. for self-defence, law-enforcement, industrial use, military purposes ([F41B 9/0046](#) takes precedence)}

Definition statement

This place covers:

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

References

Limiting references

This place does not cover:

Adaptations for feeding or loading missiles from magazines into spring guns	F41B 9/0046
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Informative references

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

Needleless syringes	A60M30/00
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F41B 9/009

{for ejecting electrically charged jets}

References

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	F41H 13/0037
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Special rules of classification

This group is not in use.

F41B 11/00

Compressed-gas guns, e.g. air guns; Steam guns

Definition statement

This place 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.

Relationships with other classification places

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

Informative references

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

Devices for dispensing balls, e.g. from a reservoir	A63B 47/002
Stationary arranged devices for projecting balls	A63B 69/40
Hand-held nailing tools operated by fluid pressure	B25C 1/04
Projectiles for airguns	F42B 6/10

Special rules of classification

Every single compressed gas gun will inherently comprise a valve - Do not classify them in [F41B 11/72](#) if the valve as such is not relevant for the invention.

Toy guns need to be interpreted narrowly in the context of [F41B 11/89](#). 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 11/89](#)

Glossary of terms

In this place, 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 ₂ . 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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Synonyms and Keywords

In patent documents the following expressions/words "Gas gun", "compressed gas gun", "CO₂-gun", "air rifle", "air pistol", "marker", "paintball gun" and "pneumatic gun" are often used as synonyms:

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

F41B 11/50

Magazines for compressed-gas guns; Arrangements for feeding or loading projectiles from magazines

Definition statement

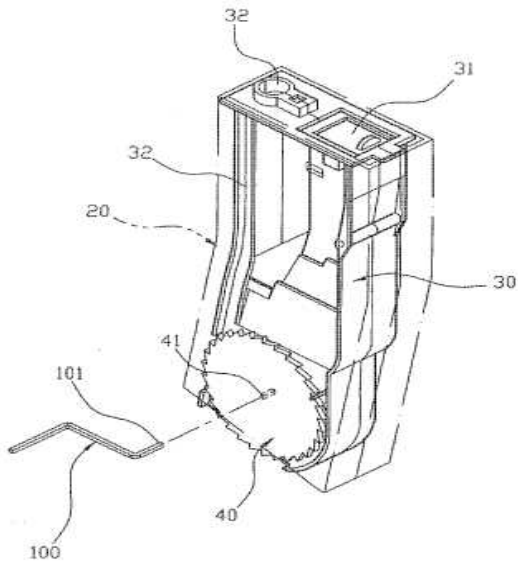
This place covers:

Containers for holding a plurality of missiles to be projected by a compressed gas gun, i.e. magazines.

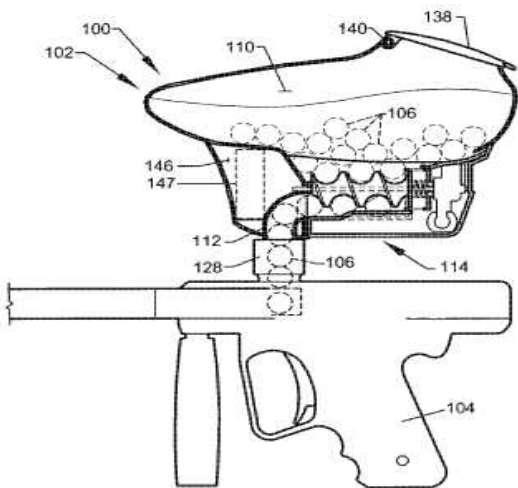
Devices or mechanisms for sequentially bringing such missiles from an external magazine into the gun frame/casing/housing/receiver, i.e. feeding arrangements.

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.

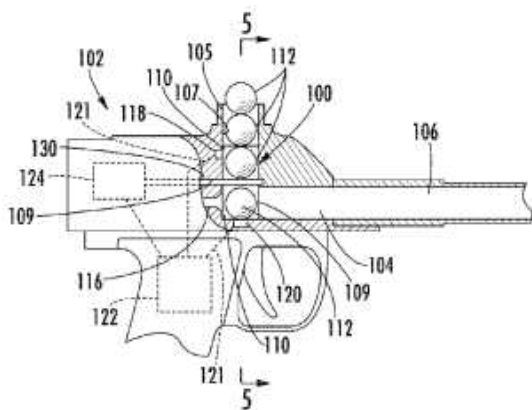
- Magazine



• Feeding arrangement



• Loading arrangement



References

Informative references

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

Feeding or loading of ammunition for firearms	F41A 9/00
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F41B 11/51

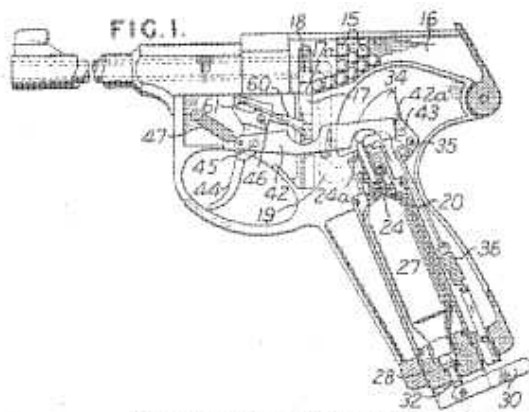
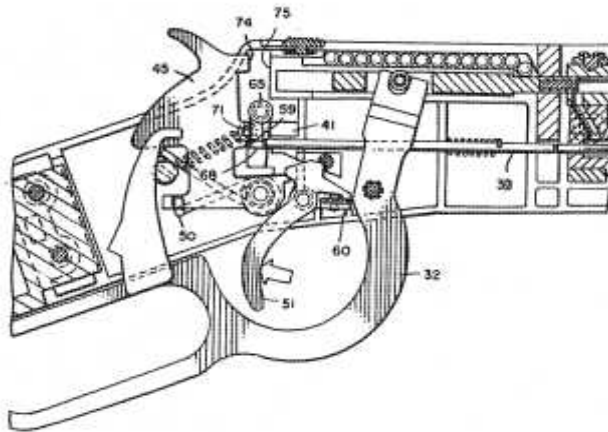
the magazine being an integral, internal part of the gun housing

Definition statement

This place 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 11/52

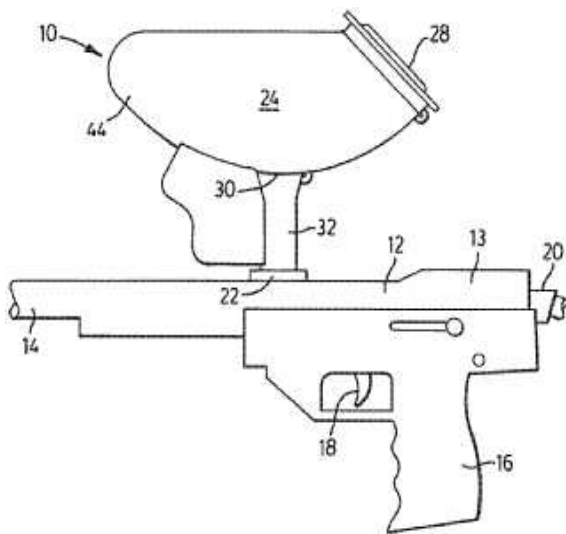
the projectiles being loosely held in a magazine above the gun housing, e.g. in a hopper

Definition statement

This place 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.



F41B 11/53

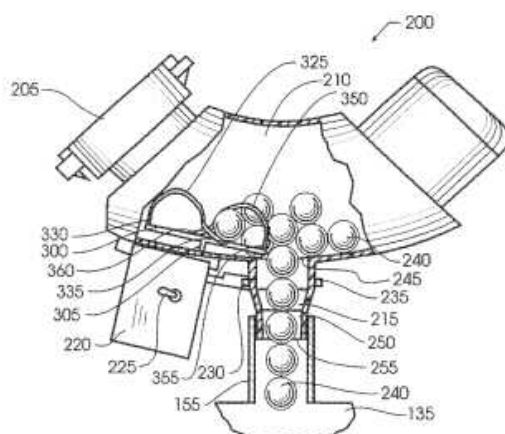
the magazine having motorised feed-assisting means

Definition statement

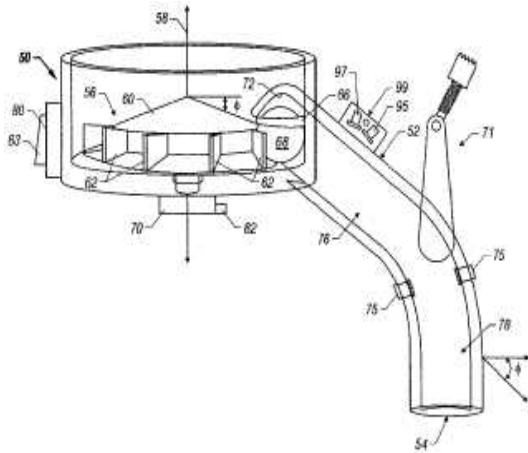
This place covers:

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

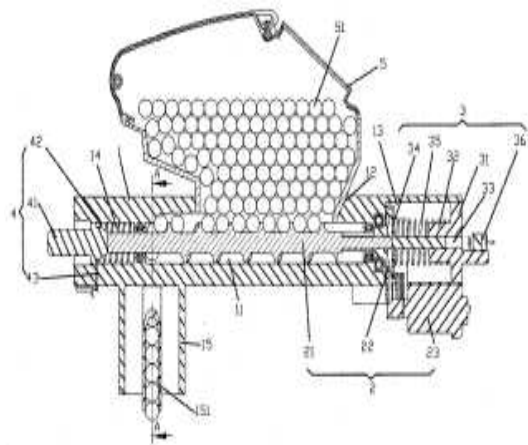
- An agitator to avoid/release jams at the exit opening of the hopper



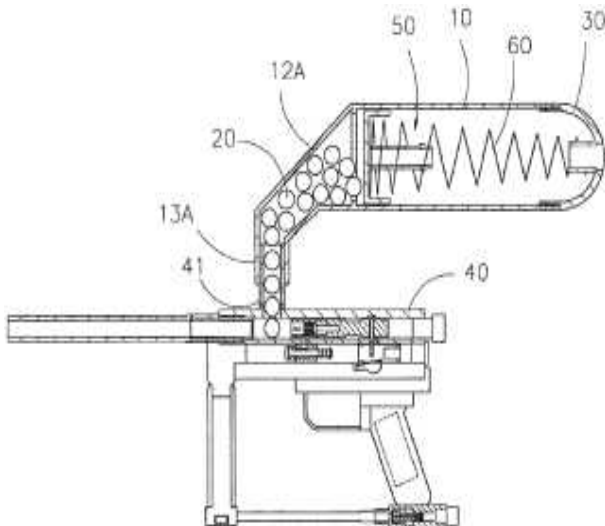
- A rotor-type device force-feeding the projectiles through the exit opening of the hopper



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



- Linear pusher force-feeding the projectiles through the exit opening of the hopper



F41B 11/54

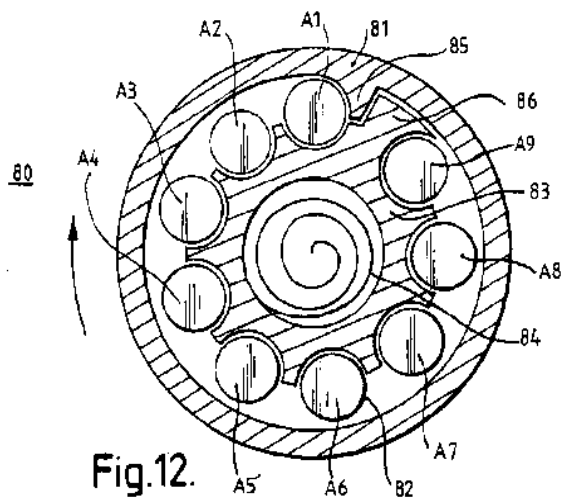
the projectiles being stored in a rotating drum magazine

Definition statement

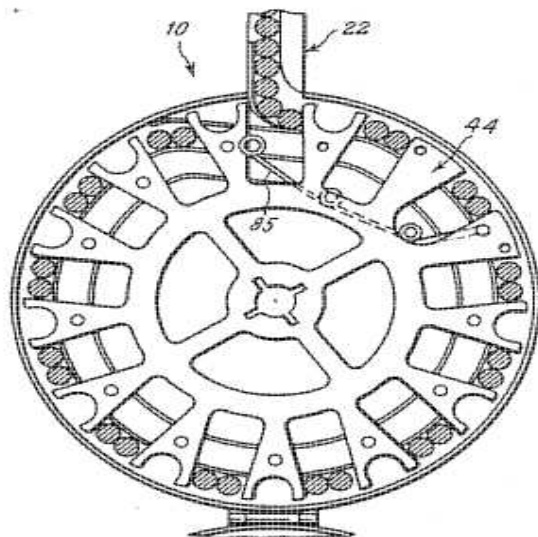
This place covers:

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, for example:

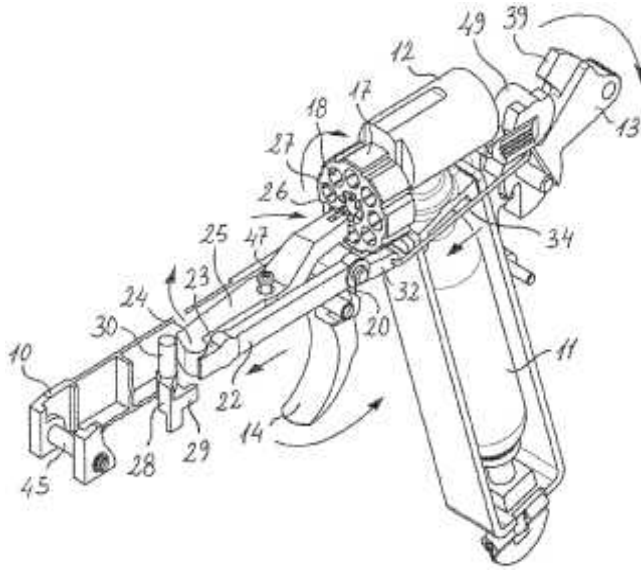
- Stationary drum, the projectiles being force fed out of the drum by a spring/motor, the projectiles being arranged around the periphery of the drum.



- 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.



References

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	F41A 9/26
Drum magazines for firearms	F41A 9/73

F41B 11/55

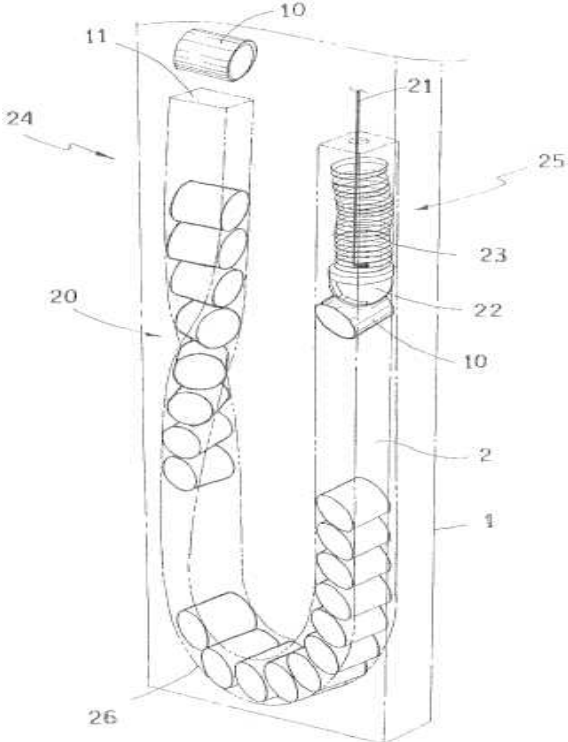
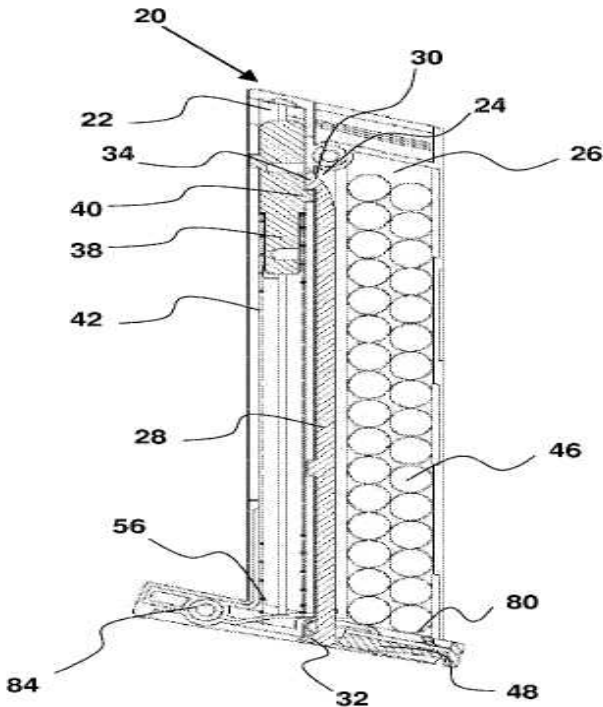
the projectiles being stored in stacked order in a removable box magazine, rack or tubular magazine

Definition statement

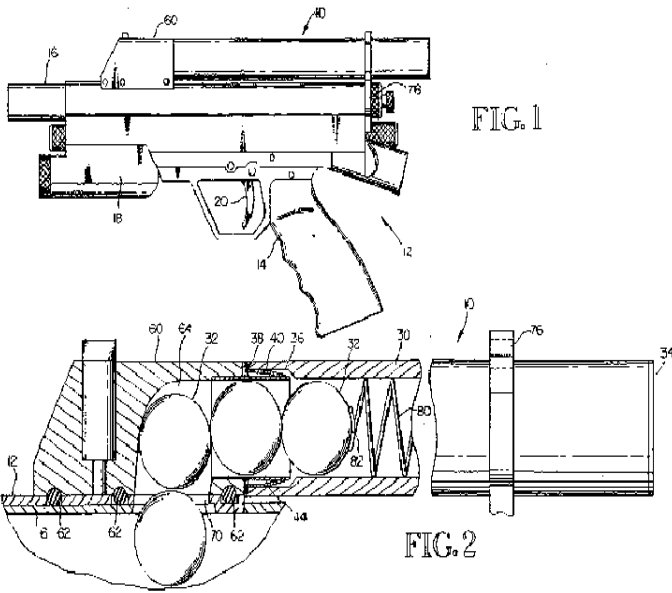
This place covers:

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.

- Box magazines



• Tubular magazine



References

Informative references

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

Magazines formed integrally in the gun	F41B 11/51
Box magazines for firearms having a cartridge follower	F41A 9/65
Tubular magazines for firearms	F41A 9/72

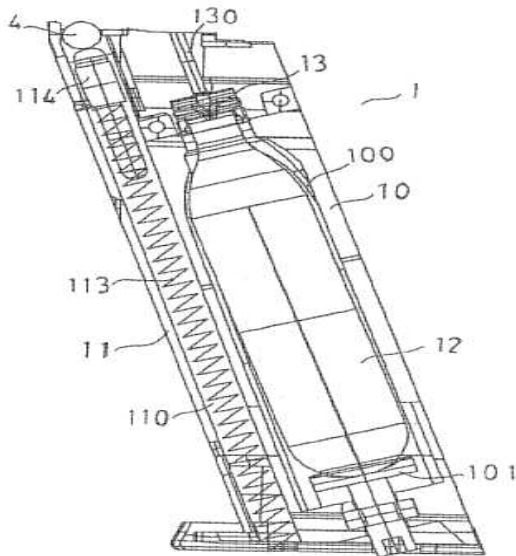
F41B 11/56

the magazine also housing a gas cartridge

Definition statement

This place covers:

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



References

Informative references

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

Magazines formed integrally in the gun adjacent to a space for a gas cartridge	F41B 11/51
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F41B 11/57

Electronic or electric systems for feeding or loading ([F41B 11/53](#) takes precedence)

Definition statement

This place covers:

Electric systems for powering of motors for the active force feeding or loading of the projectiles, except for the hoppers having motorised agitation and/or feed assisting means (precedence of [F41B 11/53](#)).

Electronic systems for the control of active force feeding or loading systems, except for the hoppers having motorised agitation and/or feed assisting means (precedence of [F41B 11/53](#)).

References

Limiting references

This place does not cover:

for controlling motorised feed assisting means associated with the projectile magazine	F41B 11/53
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Informative references

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

Electronic safeties for compressed-gas guns	F41B 11/71
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F41B 11/60

characterised by the supply of compressed gas

Definition statement

This place covers:

Residual group including compressed-gas guns with particular means for supplying compressed gas which are not covered in any of the groups [F41B 11/62](#) – [F41B 11/684](#).

F41B 11/62

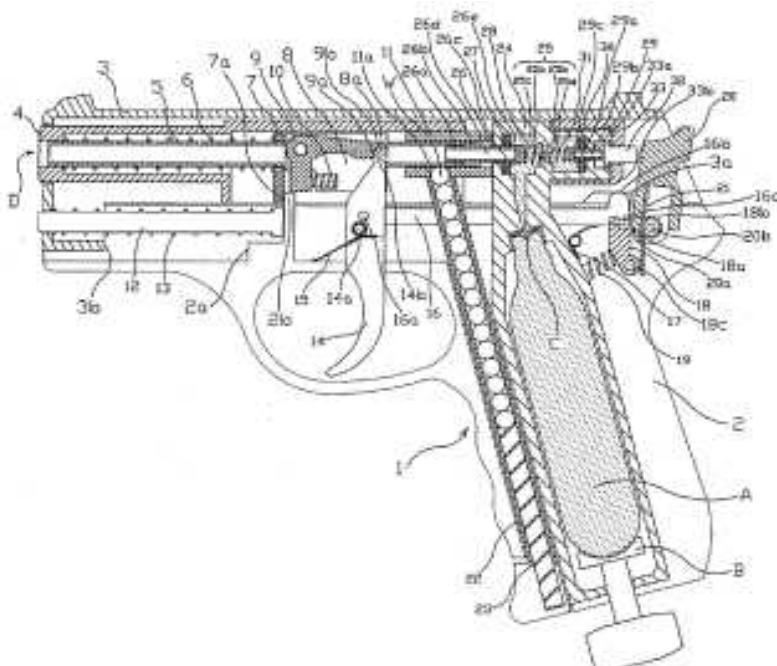
with pressure supplied by a gas cartridge

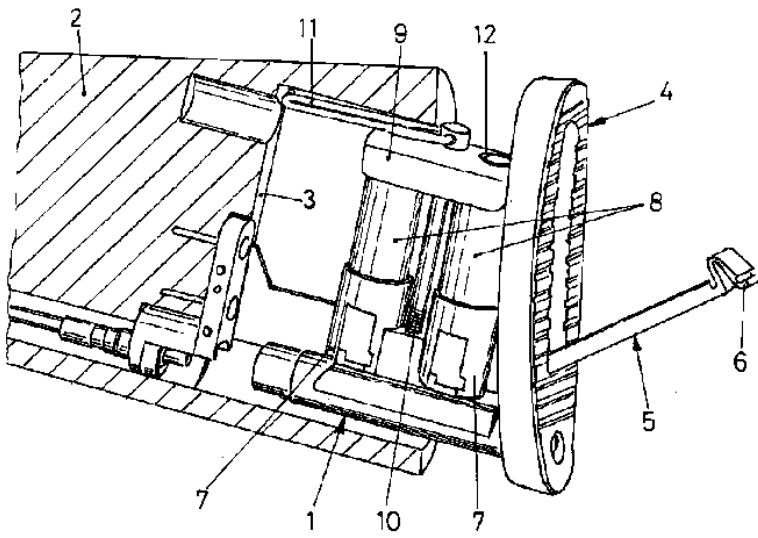
Definition statement

This place covers:

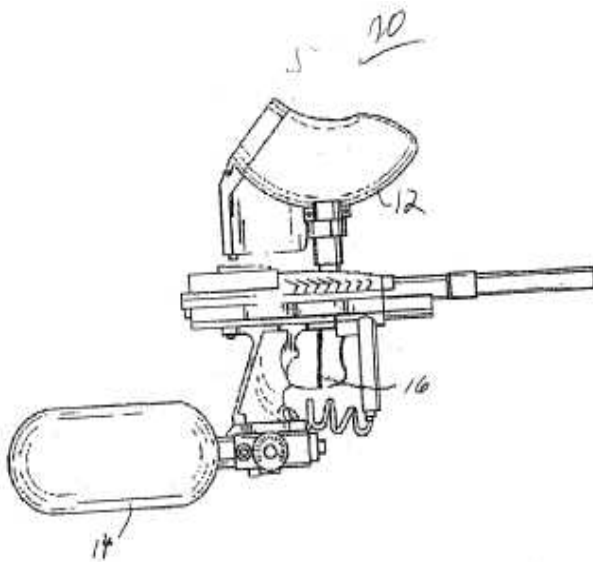
Compressed gas guns, wherein the pre-compressed gas is stored in an exchangeable/refillable gas cartridge, which can be housed either:

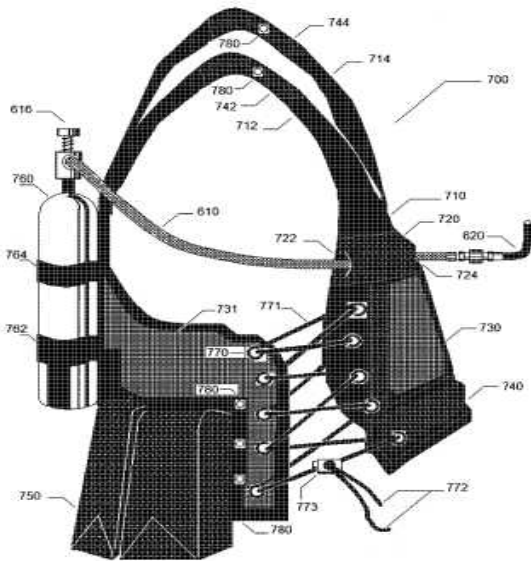
- Inside the gun body (housing, hand grip, magazine or stock)





- 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

Informative references

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

Valves or valve arrangements for regulating gas pressures for loading, feeding or firing the projectile

F41B 11/72

F41B 11/64

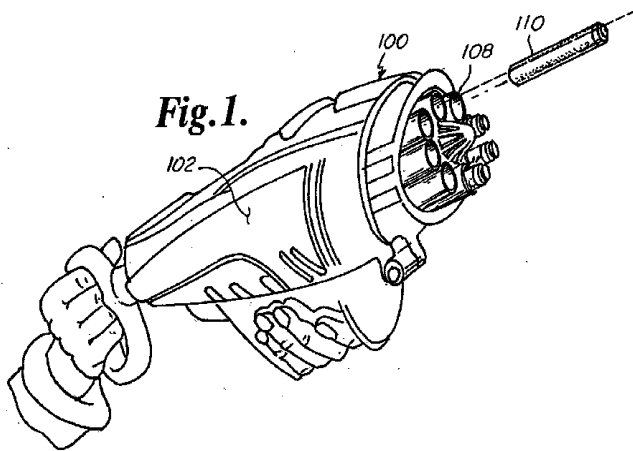
having a piston effecting a compressor stroke during the firing of each shot

Definition statement

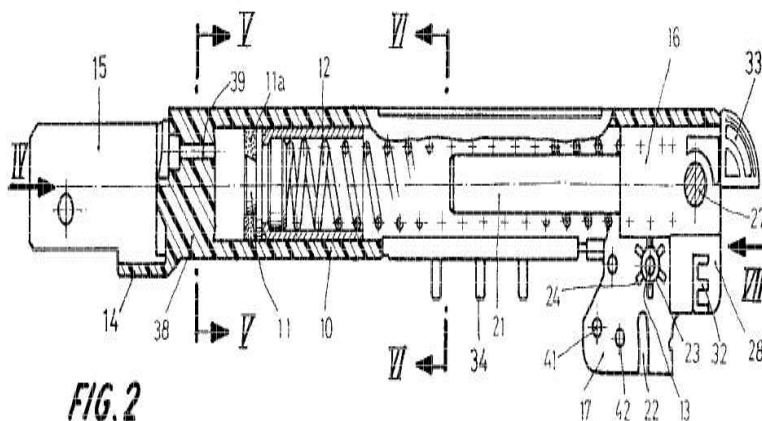
This place covers:

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



Relationships with other classification places

The airguns classified in group [F41B 11/64](#) (and its subgroups) and in group [F41B 11/68](#) (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 11/64](#).
- If the compressor stroke is effected before firing and the gas is stored in a compression chamber or accumulation tank — then [F41B 11/68](#).
- If the trigger activates the compressor arrangement — then [F41B 11/64](#).
- If the trigger activates the opening of the discharge valve — then [F41B 11/68](#).

References

Informative references

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

Compressed gas guns with pressure supplied by a gas cartridge	F41B 11/62
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Compressed gas guns having precompressed air before the firing	F41B 11/68
Electronic or electric systems, e.g. electric drive motor aspects	F41B 11/71
Toys launching a projectile by air pressure	F41B 11/89
Shooting devices for shooting or hurling games	A63F 9/0252

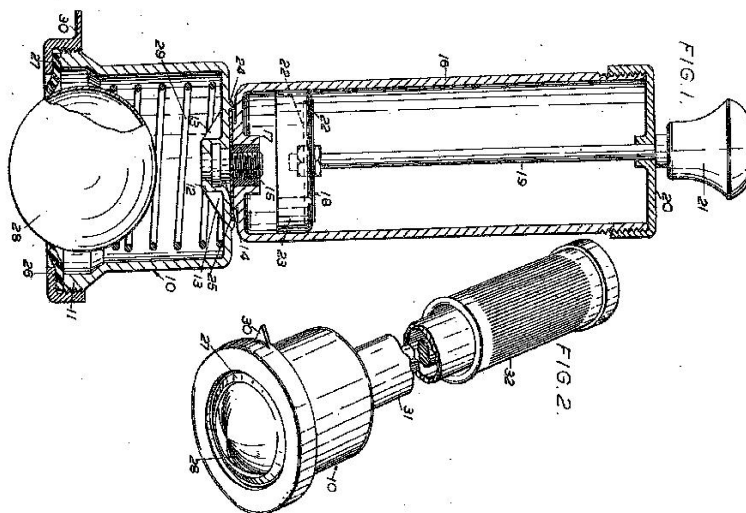
F41B 11/641

the piston being hand operated

Definition statement

This place 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

Limiting references

This place does not cover:

Pumping or compressor arrangements for pre-compressed air	F41B 11/681
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F41B 11/642

the piston being spring operated

Definition statement

This place covers:

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

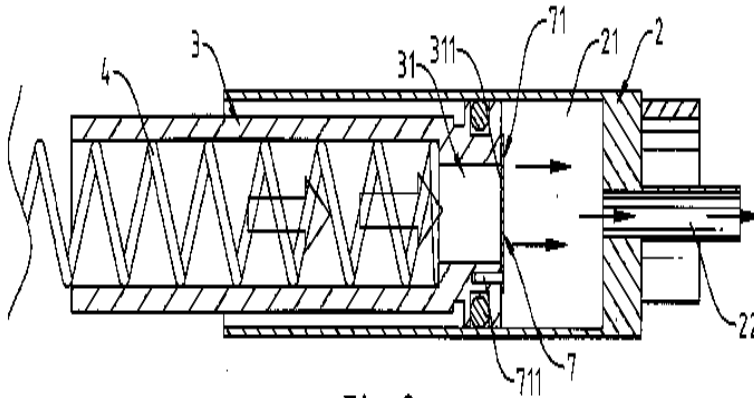


Fig. 2

F41B 11/643

the piston being arranged concentrically with the barrel

Definition statement

This place 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.



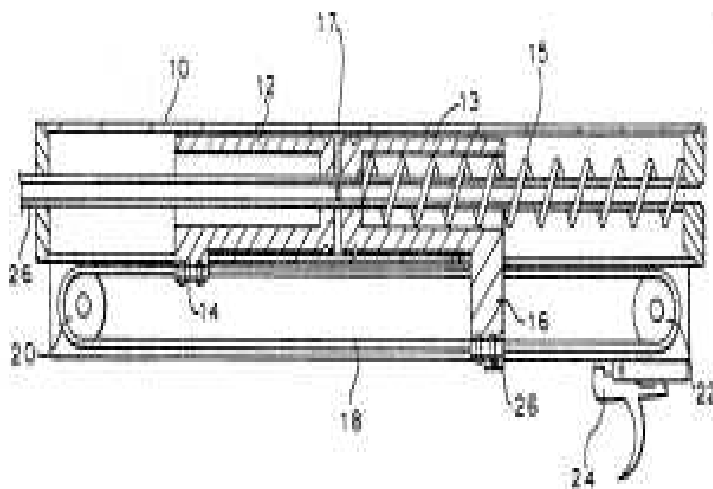
F41B 11/644

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

Definition statement

This place 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 the piston, a counter-mass will be accelerated in the opposite direction to neutralise the reaction force caused by the movement of the piston.



References

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	F41A 1/10
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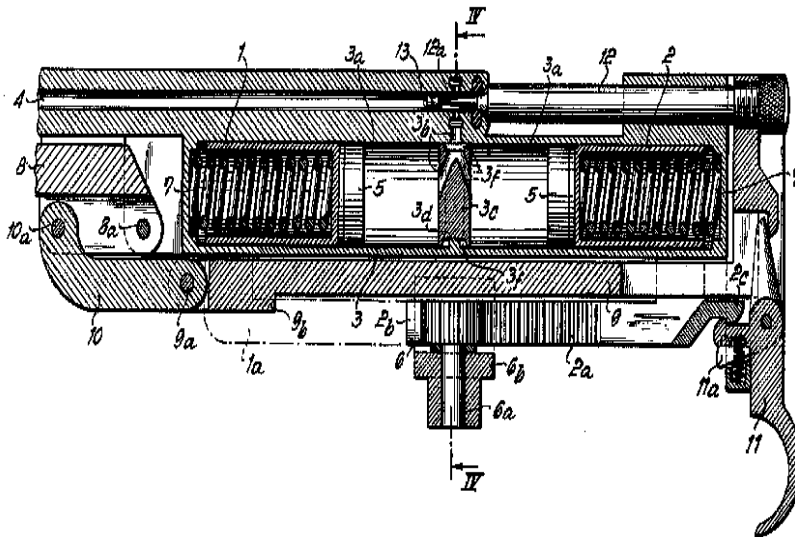
F41B 11/645

the slidable mass being a compressor piston

Definition statement

This place 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.

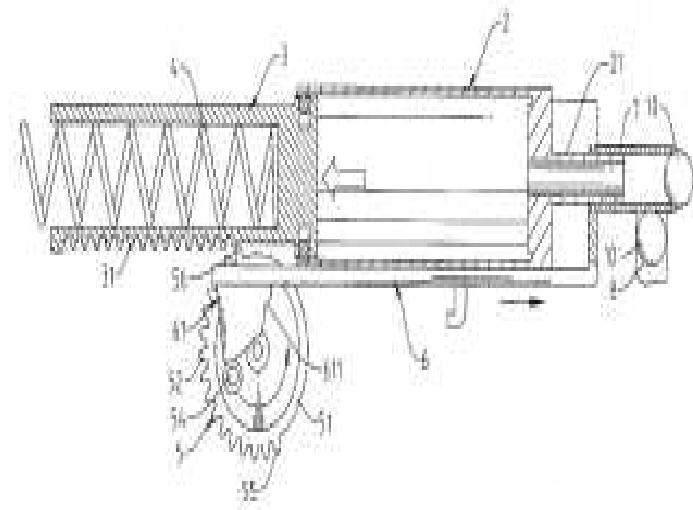
**F41B 11/646**

Arrangements for putting the spring under tension

Definition statement

This place 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.



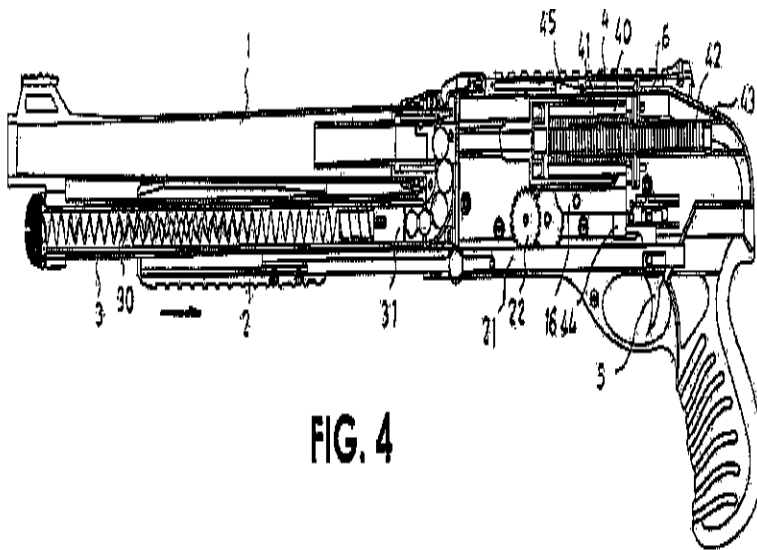


FIG. 4

References

Informative references

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

Pumping arrangements for pre-compressing air for storing it in a pressurised air storage tank	F41B 11/681
Cocking mechanisms for bolt action firearms	F41A 19/34
Cocking mechanisms for block action firearms	F41A 19/37
Cocking mechanisms for other firearms (not block/bolt action)	F41A 19/39

F41B 11/647

by a rocker lever

Definition statement

This place 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.

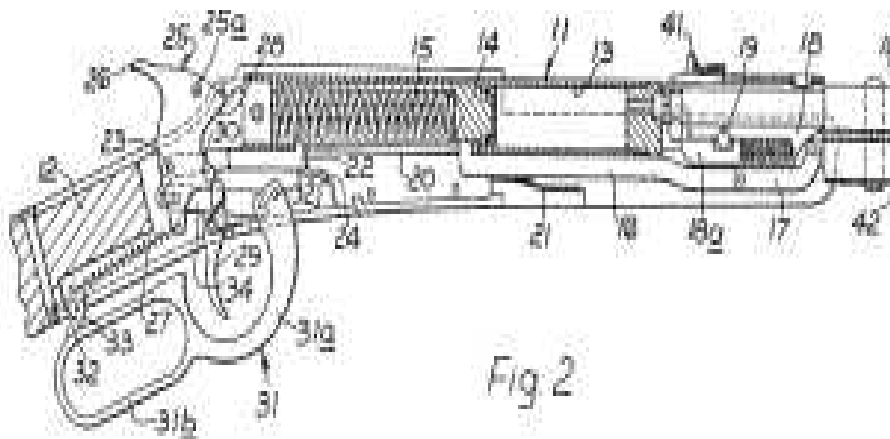


Fig 2

References

Informative references

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

Rocker lever activated pumping arrangements for pre-compressing air for storing it in a pressurised air storage tank	F41B 11/683
Cocking mechanisms for other firearms (not block/bolt action)	F41A 19/39
Lever-action guns per se, i.e. shoulder fired small arms having a rocking lever for loading or cocking	F41C 7/06

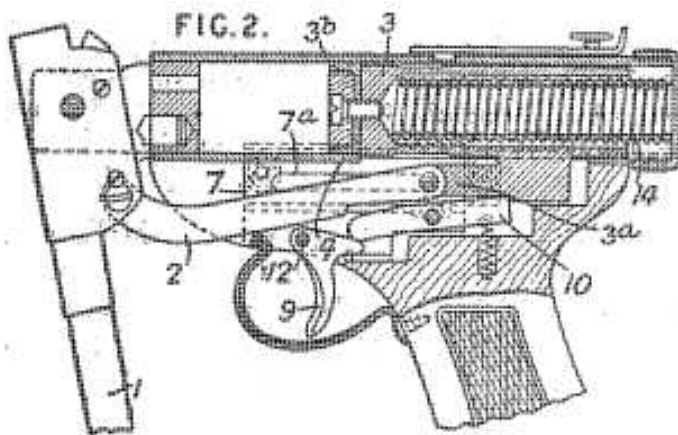
F41B 11/648

in breakdown air guns

Definition statement

This place 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

Informative references

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

Breakdown activated pumping arrangements for pre-compressing air for storing it into a pressurised air storage tank	F41B 11/684
Cocking mechanisms in breakdown firearms	F41A 19/41
Breakdown firearms per se	F41C 7/11

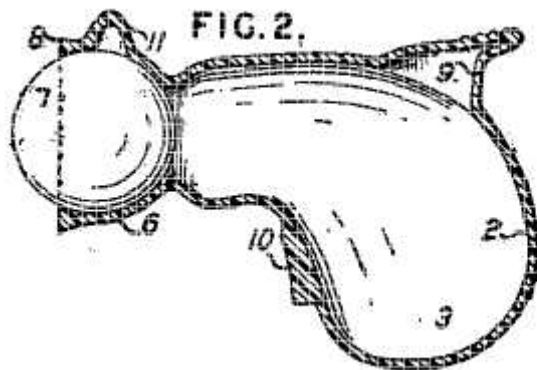
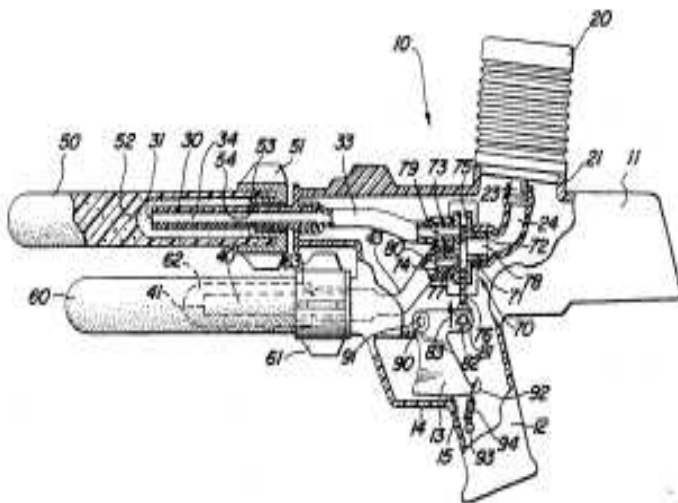
F41B 11/66

having deformable bellows or chambers pressed during firing, e.g. by deformation of the body of the gun

Definition statement

This place 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

Informative references

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

Bellow or bulb activated pumping arrangements for pre-compressing air for storing it into a pressurised air storage tank	F41B 11/681
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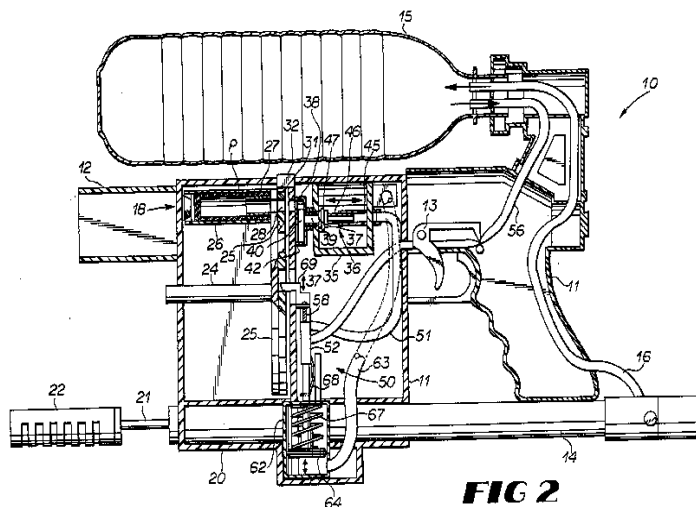
F41B 11/68

the gas being pre-compressed before firing ([F41B 11/62](#) takes precedence)

Definition statement

This place 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 11/62](#) implies that some means to pre-compress the air, e.g. pump or compressor, must be an integral part of the gun.



Relationships with other classification places

The airguns classified in group in [F41B 11/64](#) (and its subgroups) and in group [F41B 11/68](#) (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 11/64](#).
- If the compressor stroke is effected before firing and the gas is stored in a compression chamber or accumulation tank — then [F41B 11/68](#).
- If the trigger activates the compressor arrangement — then [F41B 11/64](#).
- If the trigger activates the opening of the discharge valve — then [F41B 11/68](#).

References

Limiting references

This place does not cover:

Compressed gas guns characterised by the supply of compressed gas with pressure supplied by a gas cartridge	F41B 11/62
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Informative references

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

Airguns with pressure supplied by gas cartridge	F41B 11/62
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Airguns having an air piston effecting a compressor stroke during the firing of each shot	F41B 11/64
Arrangement of valves in, or valves specially adapted for, air guns	F41B 11/72
Airguns adapted to discharge harpoons	F41B 11/83

F41B 11/681

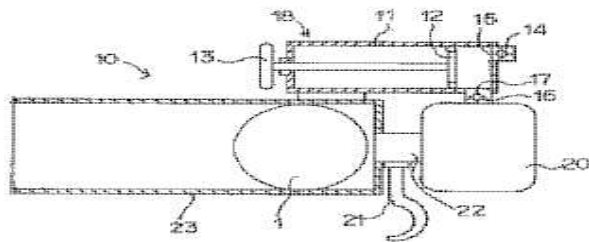
Pumping or compressor arrangements therefor

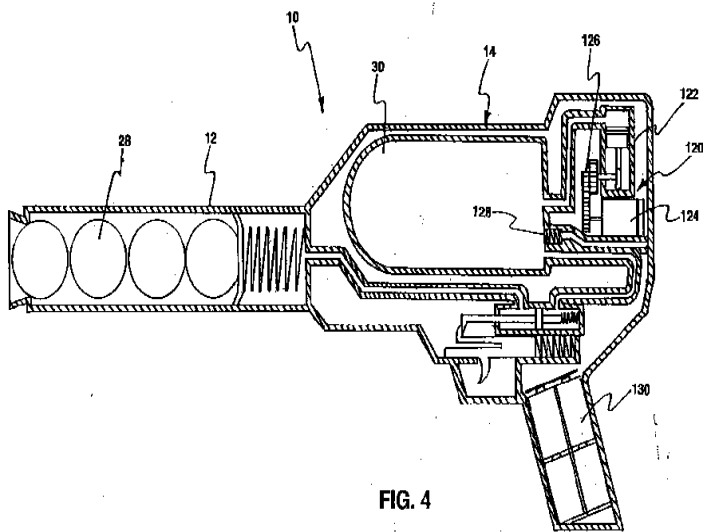
Definition statement

This place 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

Informative references

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

Exchangeable/refillable gas cartridges for use in air guns	F41B 11/62
Arrangements for putting the spring under tension, in airguns with a spring loaded compressor piston	F41B 11/646
Electronic or electric systems, e.g. electric drive motor aspects	F41B 11/71
Compressors in general; general concepts of compressors	F04B

F41B 11/682

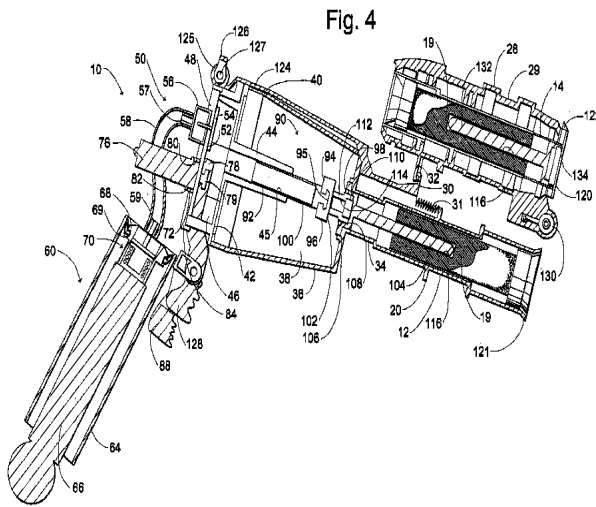
Pressure accumulation tanks

Definition statement

This place covers:

Air guns with integral or permanently attached pressure accumulation tanks for storing the atmospheric air compressed by a pump or compressor. This group contains documents wherein

the teaching is specifically aimed at the particular shape/arrangement/configuration/material of the pressure accumulation tank per se.



References

Informative references

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

Exchangeable or refillable gas cartridges for use in air guns	F41B 11/62
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Special rules of classification

Every single air gun classified in the groups [F41B 11/68](#) and below will inherently comprise a pressure accumulation tank. Classification will be given in this group only, if the tank as such is specially adapted or relevant for the invention.

Lever-action guns per se	F41C 7/06
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F41B 11/683

operated by a rocker-lever system

Definition statement

This place 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 one of the boundaries of the pressure accumulation tank.

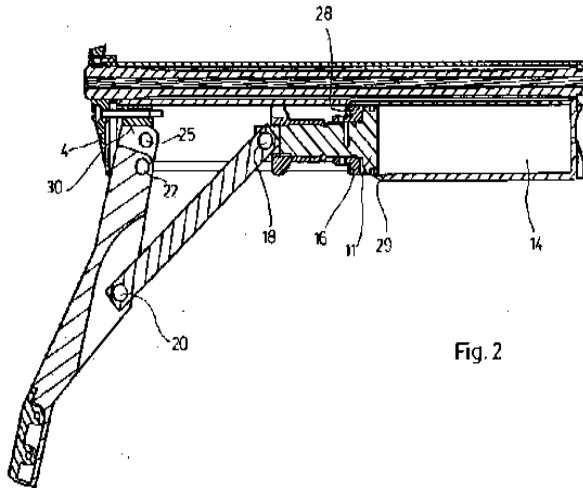


Fig. 2

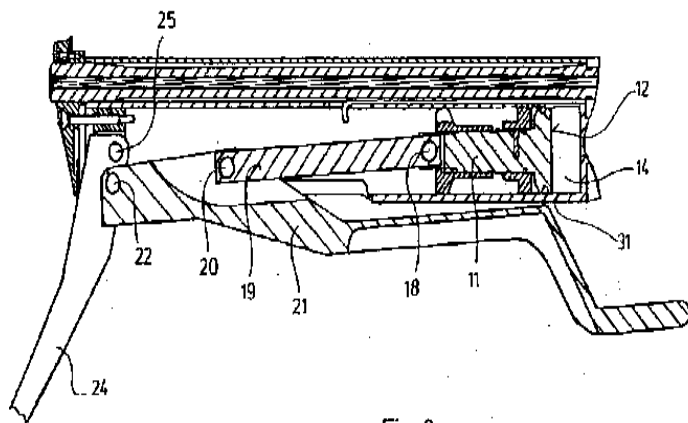


Fig. 3

References**Informative references**

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

Rocking lever mechanism for cocking a spring in a spring operated piston airgun	F41B 11/647
Cocking mechanisms for other firearms (not bolt/block action)	F41A 19/39
Lever-action guns per se	F41C 7/06

F41B 11/684

in breakdown air guns

Definition statement

This place 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

Limiting references

This place does not cover:

Breakdown activated pumping arrangements for pre-compressing air for storing it into a pressurised air storage tank	F41B 11/648
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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	F41A 19/41
Conventional breakdown guns per se	F41C 7/11

F41B 11/72

Valves; Arrangement of valves

Definition statement

This place 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

References

Informative references

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

Valves in general	F16K
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Special rules of classification

Every single compressed gas gun will inherently comprise a valve - Do not classify them in [F41B 11/72](#) if the valve as such is not relevant for the invention.

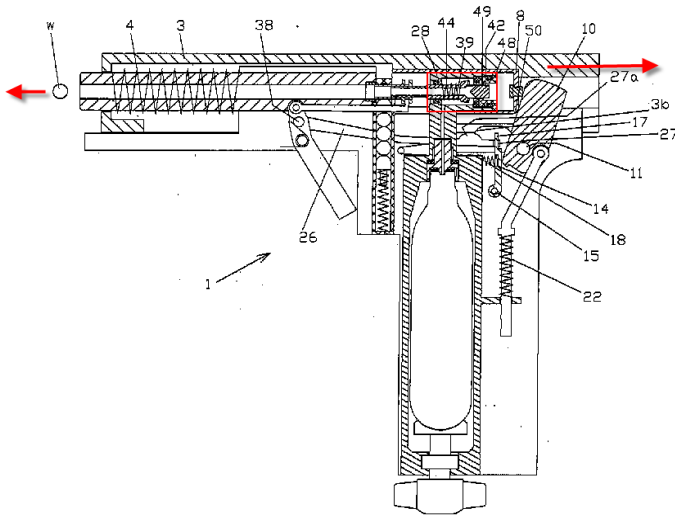
F41B 11/721

for controlling gas pressure for both firing the projectile and for loading or feeding

Definition statement

This place covers:

Compressed gas gun comprising a single valve performing the dual function of firing the projectile and feeding or loading the consecutive projectile in a (semi-)automatic compressed gas gun.



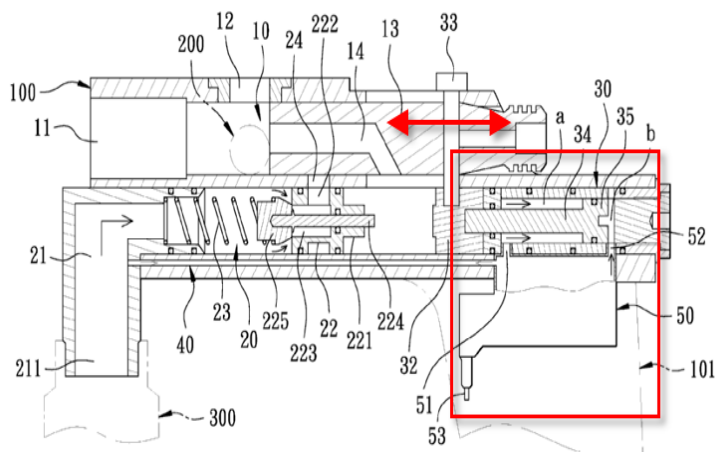
F41B 11/722

for controlling gas pressure for loading or feeding only

Definition statement

This place covers:

A valve in a compressed gas gun, the valve being a dedicated valve for performing the function of feeding or loading of the consecutive projectile in a (semi-)automatic compressed gas gun.



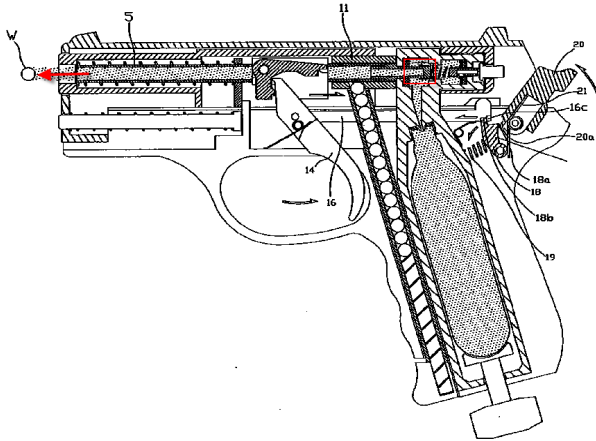
F41B 11/723

for controlling gas pressure for firing the projectile only

Definition statement

This place covers:

A valve in a compressed gas gun, the valve being a valve specifically dedicated for performing the function of firing the projectile.

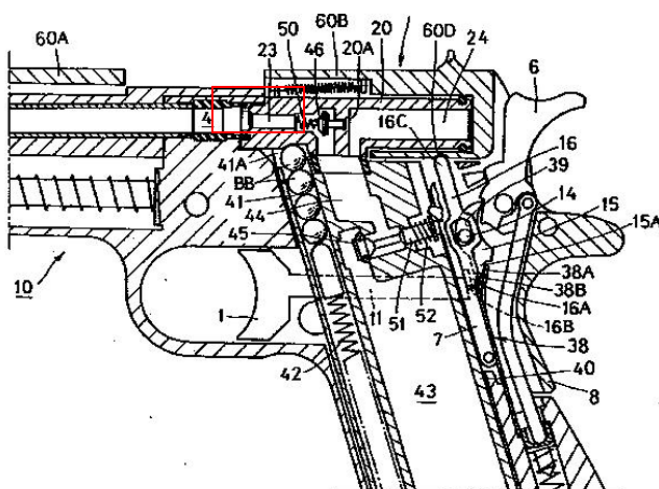
**F41B 11/724**

for gas pressure reduction

Definition statement

This place covers:

A valve in a compressed air gun situated on the pneumatic path between the over-pressurised compressed gas source, i.e. accumulation tank, gas cartridge, piston-cylinder, and the firing chamber reducing the pressure to a predefined pressure. The aim is to achieve pressure regulation for reliably ensuring constant fire power, to reduce the firing power to levels accepted under national laws or to levels corresponding to competition regulations.



F41B 11/73

Sealing arrangements; Pistons

Definition statement

This place 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 the sealing arrangement.

Special rules of classification

Every single compressed gas gun will inherently comprise sealing arrangements. Classification will be given in this group only, if the seal as such is specially adapted or relevant for the invention.

F41B 11/80

specially adapted for particular purposes

Definition statement

This place covers:

Residual group including compressed-gas guns for particular purposes not covered by [F41B 11/81](#) – [F41B 11/89](#).

F41B 11/81

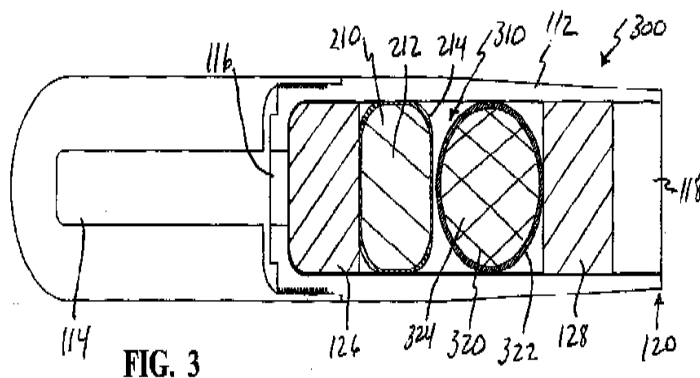
for ejecting powder, e.g. pepper

Definition statement

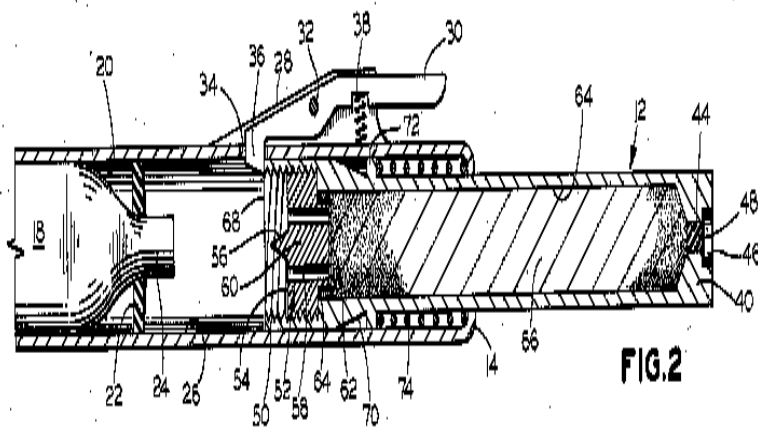
This place covers:

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

Informative references

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

Gas-blowing apparatus, e.g. for tear gas	F41H 9/04
Apparatus for generating artificial fog or smoke screens	F41H 9/06
Hand-held or body-worn self-defence devices using repellent gases or chemicals	F41H 9/10

F41B 11/83

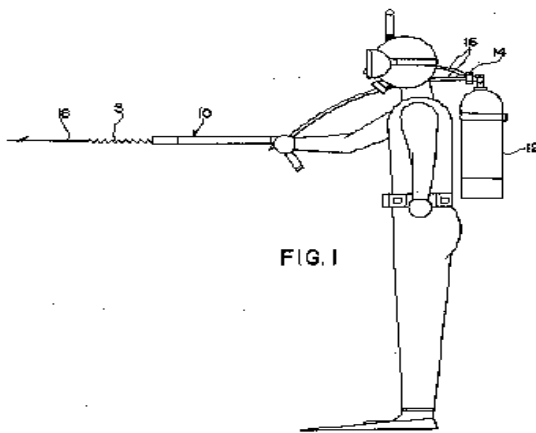
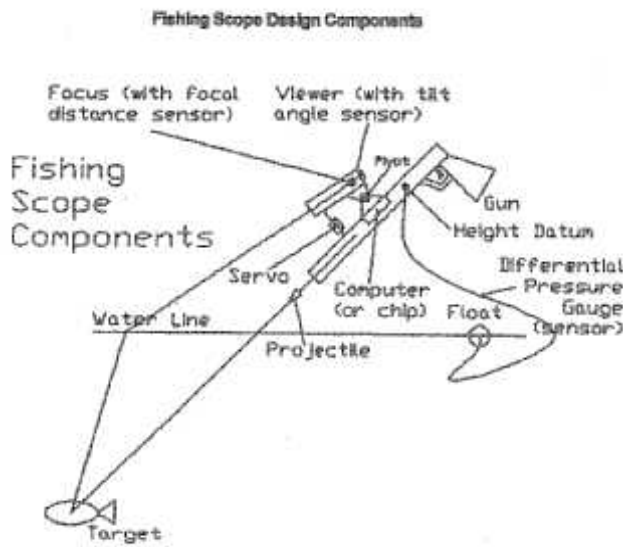
for launching harpoons

Definition statement

This place 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

Limiting references

This place does not cover:

Trigger mechanisms for harpoon guns	F41B 7/046
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Informative references

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

Spring guns adapted to discharge harpoons	F41B 7/04
Equipment for hunting fish under water	A01K 81/00

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Wet firing	discharge of the harpoon wherein the barrel holding the shaft of the harpoon is partially filled with water
Dry firing	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 draining means)

Synonyms and Keywords

In patent documents, the following words/expressions are often used as synonyms:

- Spear gun, harpoon gun, harpoon spear.

F41B 11/85

for launching hypodermic projectiles

Definition statement

This place covers:

Compressed gas guns specifically designed for the intended use as a launcher for hypodermic projectiles, e.g.:

- projectiles used in the veterinary field for delivering medication to an animal from a distance.

References

Informative references

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

Electrical discharge weapons, e.g. for stunning	F41H 13/0012
Hypodermic projectiles	F42B 12/54

Special rules of classification

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.

F41B 11/87

for industrial purposes, e.g. for surface treatment

Definition statement

This place covers:

Compressed gas guns specifically designed for the intended use in industry, e.g. for cleaning/descaling of ovens, furnaces, kilns or pipes where burning residues or slag is removed by impacting it with projectiles propelled by pneumatic launchers.

References

Informative references

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

Hand-held nailing tools operated by fluid pressure	B25C 1/04
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Special rules of classification

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.

F41B 11/89

for toys

Definition statement

This place 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. The term "toy gun" is often erroneously used in order to differentiate the air gun from a firearm, see also special rule of classification below.

References

Informative references

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

Air guns having a deformable bellows or bulb pressed during the firing	F41B 11/66
Toy aircraft; Other flying toys	A63H 27/00
Starting or launching devices for toy aircraft; Arrangements on toy aircraft for starting or launching	A63H 27/14
Throwing or slinging toys	A63H 33/18

Special rules of classification

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 compressed-gas gun is clearly a sports gun, a training or simulation gun it should not be classified in this group.

Glossary of terms

In this place, 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 rules of classification above
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F41B 13/00

Thrusting-weapons (bayonets [F41C 27/18](#)); Cutting-weapons carried as side-arms (training appliances for fencing [A63B 69/02](#); sheaths for hand cutting tools [B26B 29/00](#) {; firearms combined with thrusting or cutting weapons [F41C 27/16](#)})

Definition statement

This place covers:

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

References

Limiting references

This place does not cover:

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

F41B 15/00

Weapons not otherwise provided for {, e.g. nunchakus, throwing knives}

Definition statement

This place 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

Limiting references

This place does not cover:

Electric prods	A01K 15/02
Electric stunning means	F41H 13/0012
Darts	F42B 6/003