

## B25D

**PERCUSSIVE TOOLS [N: (percussive machines for forging B21J; hand-held drilling machines, in general B23B45/00, for wood B27C3/08; drilling machines, used for mining or quarrying, with reciprocating tool which is turned intermittently when out of contact with the working face E21B1/00) ]**

### Definition statement

*This subclass/group covers:*

- Hand tools for carrying out strokes, e.g. hammers or picks.
- Hand tools for transmitting strokes, e.g. chisels or punches.
- Portable power-driven percussive tools with fluid-pressure drive, electromotor drive or electromagnetic drive, e.g. compressed-air hammers.
- Portable percussive tools using centrifugal or rotary impact elements for axial percussion.
- Portable percussive machines with superimposed rotation, e.g. drill hammers.
- Details of, or accessories for, portable power-driven percussive tools.

### Relationship between large subject matter areas

This subclass is a function-oriented place for classifying percussive hand tools and portable power-driven percussive tools, the primary function of which is to generate percussive action.

Hand tools and portable power-driven tools with percussive action for supporting another primary function, e.g. cutting, are classified in the relevant places for the primary function. For example, hand-held cutting tools employing percussive action for cutting, such as axes or hatchets, are classified in [B26B 23/00](#). However, impact drilling machines with percussive action for supporting the drilling operation are classified in [B25D 11/00](#), [B25D 16/00](#) and/or [B25D 17/00](#).

Hand tools and portable power-driven tools with percussive action which are specially adapted or used for a particular purpose are classified in the relevant application-oriented places. For example, hand tools especially for nailing or stapling are classified in subclass [B25C](#), e.g. nail punches. Pick hammers and chisels especially for mining or quarrying are classified in [E21C 37/24](#) and [E21C 37/26](#). Mortise chisels for wood-working are classified in [B27G 17/08](#).

## References relevant to classification in this subclass

*This subclass/group does not cover:*

Non-abrasive sharpening devices for scythes, sickles, or the like with percussive tools	<a href="#">A01D 3/02</a>
Hand-operated implements for threshing	<a href="#">A01F 5/00</a>
Meat pounders	<a href="#">A22C 9/00</a>
Carpet beaters	<a href="#">A47L 13/36</a>
Instruments for medical or veterinary examination by percussion	<a href="#">A61B 9/00</a>
Drill bits for combined rotation and percussion	<a href="#">B23B 51/00, B23B 51/02</a>
Machines or apparatus for embossing decorations or marks	<a href="#">B44B 5/00</a>
Hand-held nailing or stapling tools	<a href="#">B25C</a>
Combination or multi-purpose hand tools not otherwise provided for	<a href="#">B25F 1/00</a>
Mortise chisels for wood-working	<a href="#">B27G 17/08</a>
Pick hammers for mining or quarrying, specially adapted for dislodging minerals	<a href="#">E21C 37/24</a>
Chisels for mining or quarrying	<a href="#">E21C 37/26</a>

## Informative references

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

Emergency hammer to break car windows	<a href="#">A62B 3/005</a>
Golf clubs	<a href="#">A63B 53/00</a>

Bats, rackets, or the like, for other games	<a href="#">A63B 59/00</a>
Disintegrating by mills having rotary beater elements	<a href="#">B02C 13/00</a>
Processes or apparatus for generating mechanical vibrations making use of mechanical energy	<a href="#">B06B 1/10</a>
Removing local distortions	<a href="#">B21D 1/06</a>
Deforming sheet metal, tubes or profiles by sequential impacts, e.g. hammering	<a href="#">B21D 31/06</a>
Forging machines with hammers or die jaws acting by impact	<a href="#">B21J 7/00, B21J 11/00</a>
Treating or finishing surfaces by hammering	<a href="#">B23P 9/04</a>
Impact wrenches or screwdrivers	<a href="#">B25B 19/00</a>
Portable power-driven screw or nut setting or loosening tools with means for imparting impact to screwdriver blade or nut socket	<a href="#">B25B 21/02</a>
Hand tools for fitting together or separating parts employing impacting means	<a href="#">B25B 27/067</a>
Axes or hatches	<a href="#">B26B 23/00</a>
Working stone or stone-like materials by impact tools, e.g. by chisels	<a href="#">B28D 1/26</a>
Knocking devices for preventing bridge formation in large containers	<a href="#">B65D 88/66</a>
Tamping apparatus for consolidating or finishing laid-down unset paving material	<a href="#">E01C 19/30</a>
Tampers for compacting soil	<a href="#">E02D 3/046</a>

Methods or apparatus for placing sheet pile bulkheads, piles, mould-pipes, or other moulds by driving	<a href="#">E02D 7/00</a>
Percussion drilling of earth or rock	<a href="#">E21B 1/00</a> , <a href="#">E21B 4/06</a> , <a href="#">E21B 6/00</a> , <a href="#">E21B 10/36</a>
Fishing for or freeing objects in boreholes or wells using impact means for releasing stuck parts	<a href="#">E21B 31/107</a>
Cutting machines slitting solely by one or more percussive tools moved through the seam in mining or quarrying applications	<a href="#">E21C 25/02</a>
Ice picks	<a href="#">F25C 5/043</a>
Percussion or firing pins or hammers of firearms	<a href="#">F41A 19/13</a> , <a href="#">F41A 19/14</a>
Batons, truncheons, sticks, shillelaghs	<a href="#">F41B 15/02</a>
Percussive musical instruments	<a href="#">G10D 13/00</a>
Clappers or other strikers for bells	<a href="#">G10K 1/10</a>

## Glossary of terms

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

Hand hammer	Hand tool for carrying out a stroke with a striking face which is not intended to penetrate the material or object to be struck.
Pick	Hand tool for carrying out a stroke with a pointed striking tip or edge which is intended to penetrate the material or object to be struck.

## B25D 1/00

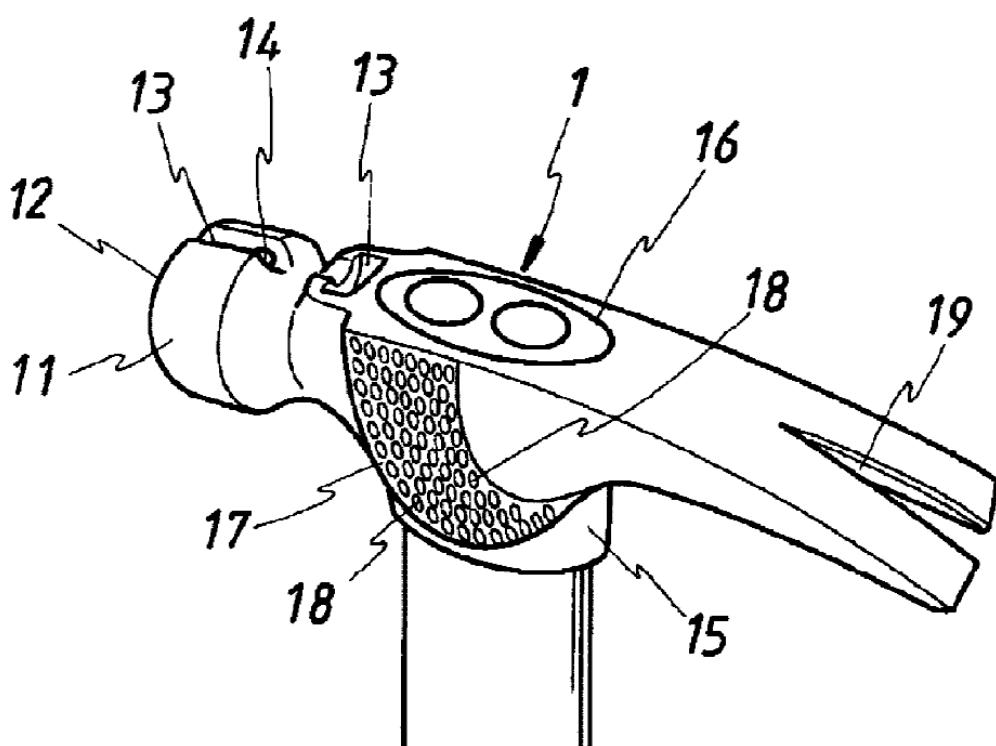
**Hand hammers [N: (handles therefor B25G1/00; attachment of handles to the hammer head B25G3/00)]; Hammer heads of special shape or materials**

### Definition statement

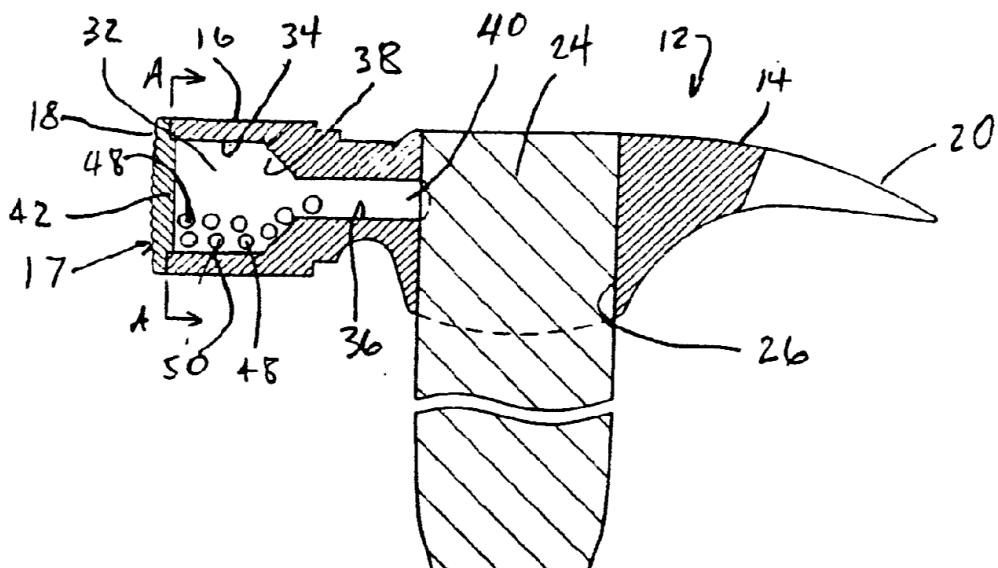
*This subclass/group covers:*

*This main group covers:*

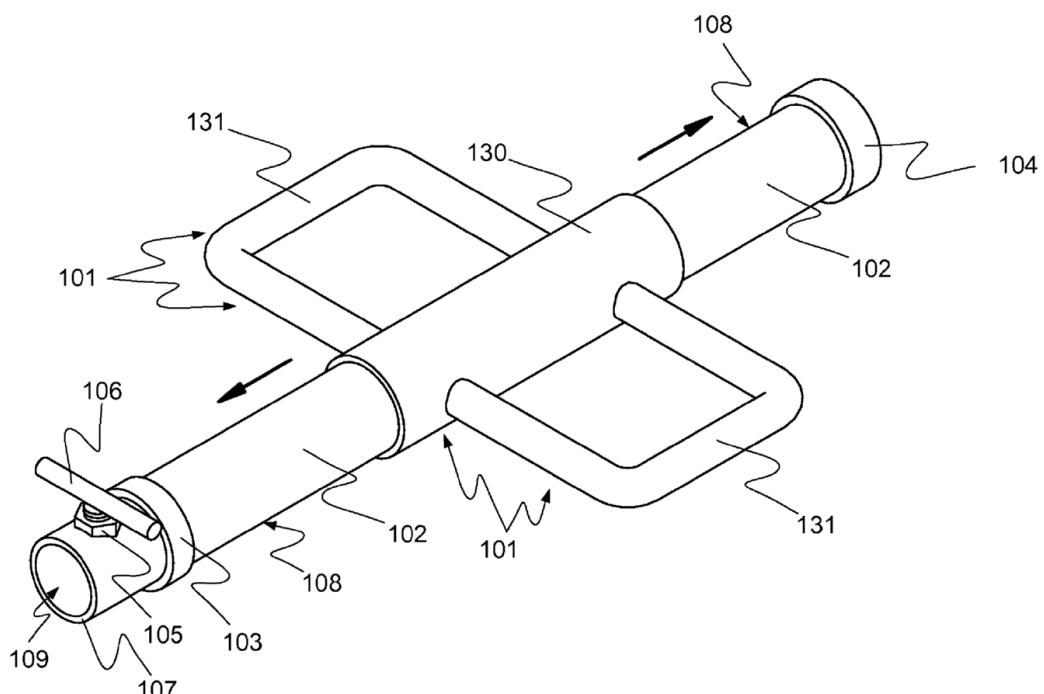
*Hand hammers, e.g. with details of hammer head, shock-absorbing means, etc. Examples:*



Withdrawing or holding nails, [B25D 1/04](#) (US2007/089571 A)



Shock-absorbing means, [B25D 1/12](#) (US2007/113709 A)



Impacting head in the form of a sleeve slidable on a shaft, [B25D 1/16](#) (US2007/181320 A)

### References relevant to classification in this group

*This subclass/group does not cover:*

Handles for hand hammers	<a href="#">B25G 1/00</a>
Attachment of handles to the hammer head	<a href="#">B25G 3/00</a>



## B25D 3/00

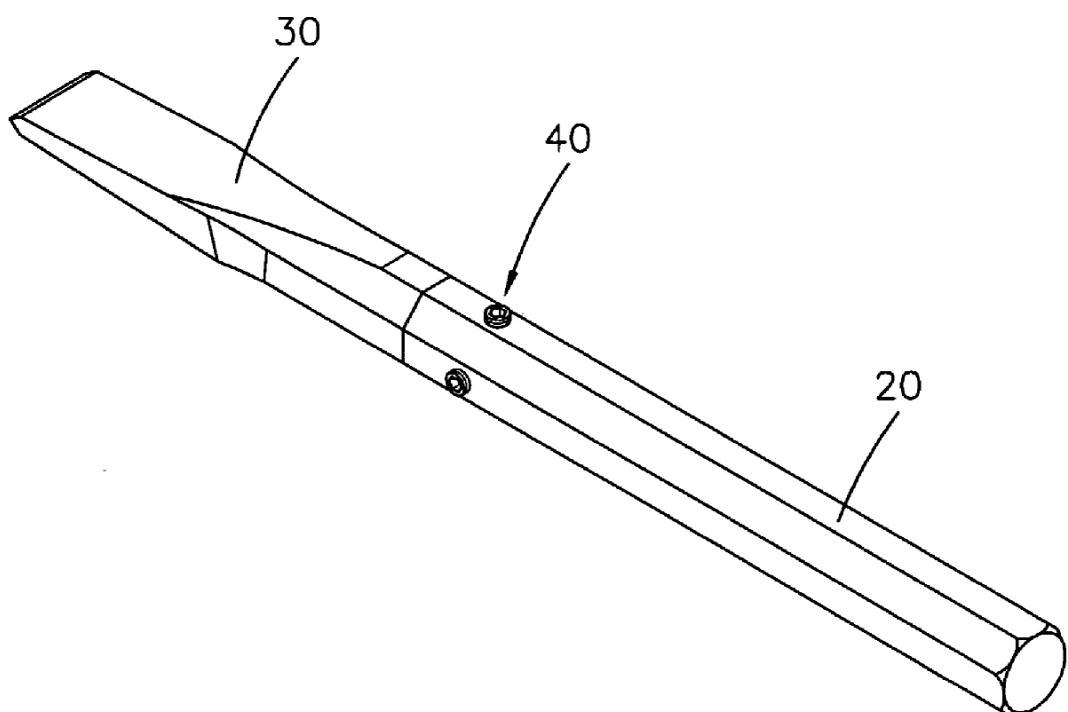
### Hand chisels

#### Definition statement

*This subclass/group covers:*

This main group covers:

Hand chisels. Example:



[B25D 3/00](#) (US2007/062046 A)

#### References relevant to classification in this group

*This subclass/group does not cover:*

Examples of places where the subject matter of this group is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Mortise chisels for wood-working

[B27G 17/08](#)

## Informative references

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

Working stone or stone-like materials by impact tools, e.g. by chisels	<a href="#">B28D 1/26</a>
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## B25D 5/00

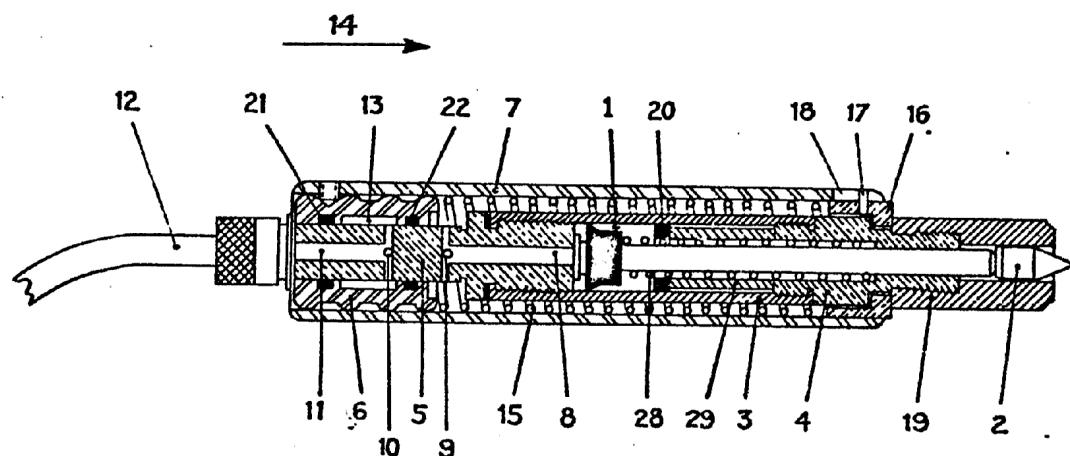
### Centre punches

#### Definition statement

*This subclass/group covers:*

This main group covers:

Centre punches, also automatic. Example :



Automatic centre punch, [B25D 5/02](#) (FR1509013 A)

## B25D 7/00

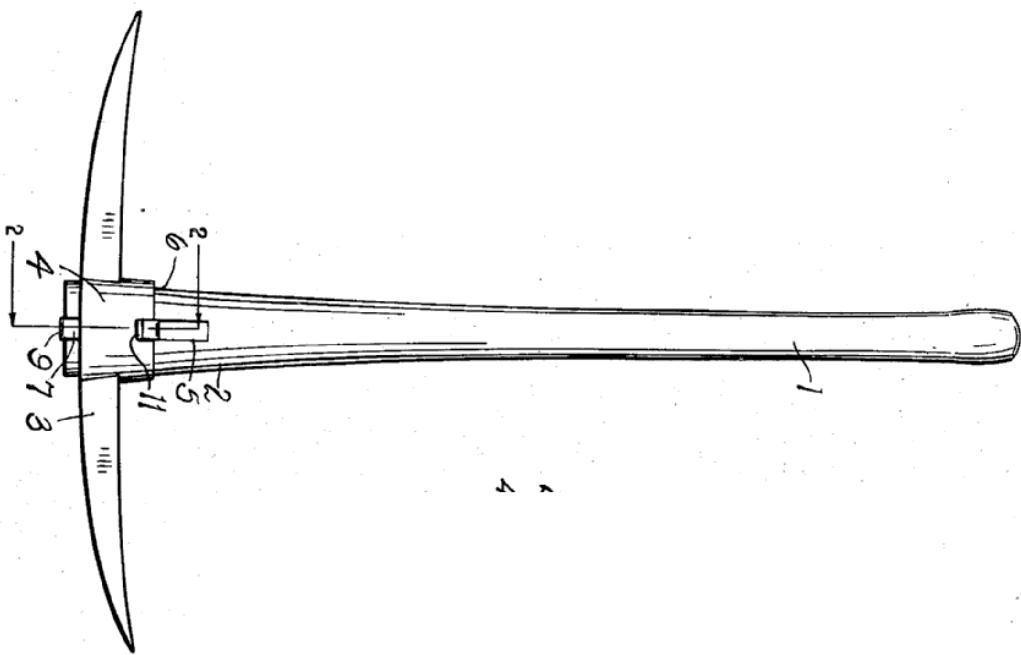
### Picks [N: (combined with other tools B25F)]

#### Definition statement

*This subclass/group covers:*

This main group covers:

Picks. Example:



[B25D 7/00](#) (US2462427 A)

### Informative references

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

Picks combined with other tools	<a href="#"><u>B25F</u></a>
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## B25D 9/00

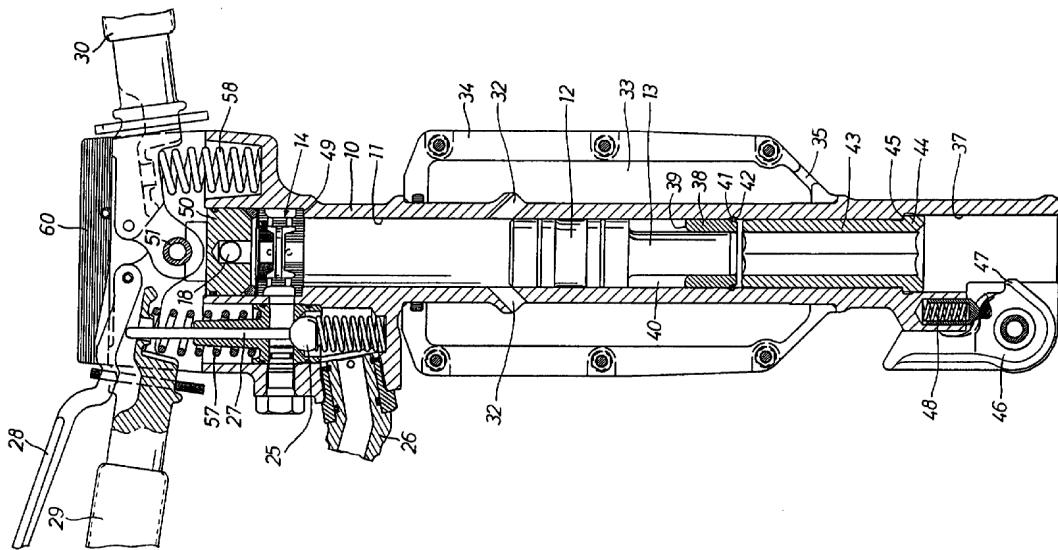
**Portable percussive tools with fluid-pressure drive, [N: i.e. driven directly by fluids], e.g. having several percussive tool bits operated simultaneously [N: (B25D15/00; portable non-percussive drilling tools driven by fluid pressure or pneumatic power B23B45/04 )]**

### Definition statement

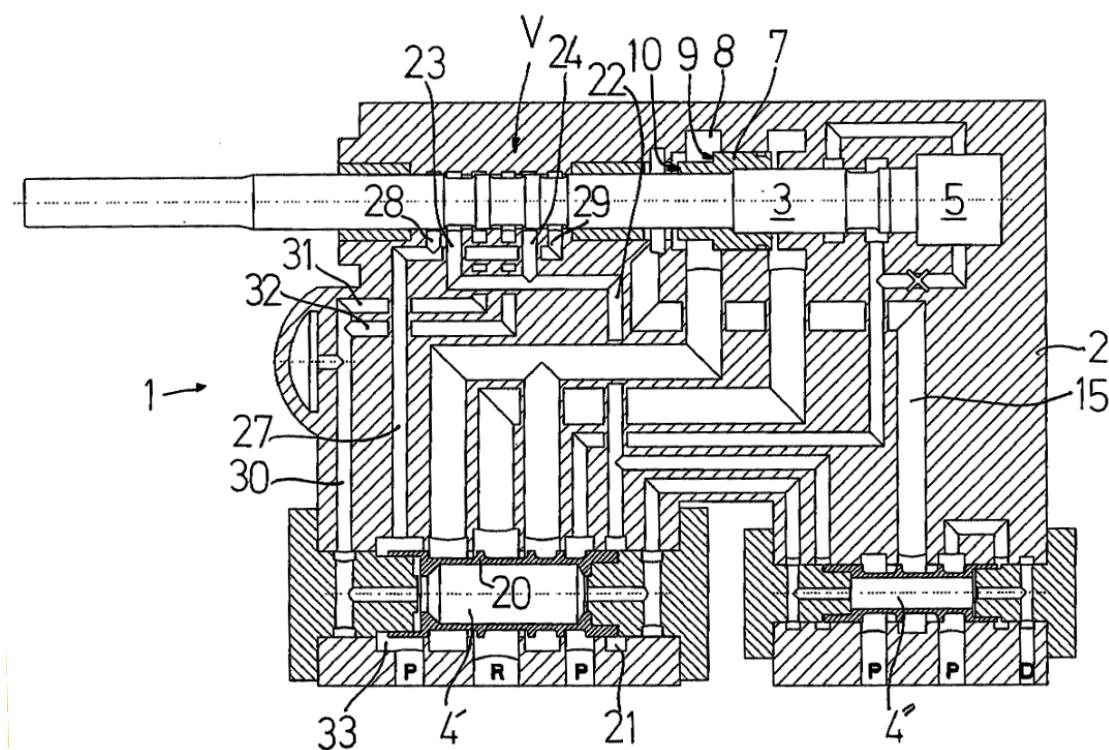
*This subclass/group covers:*

*This main group covers:*

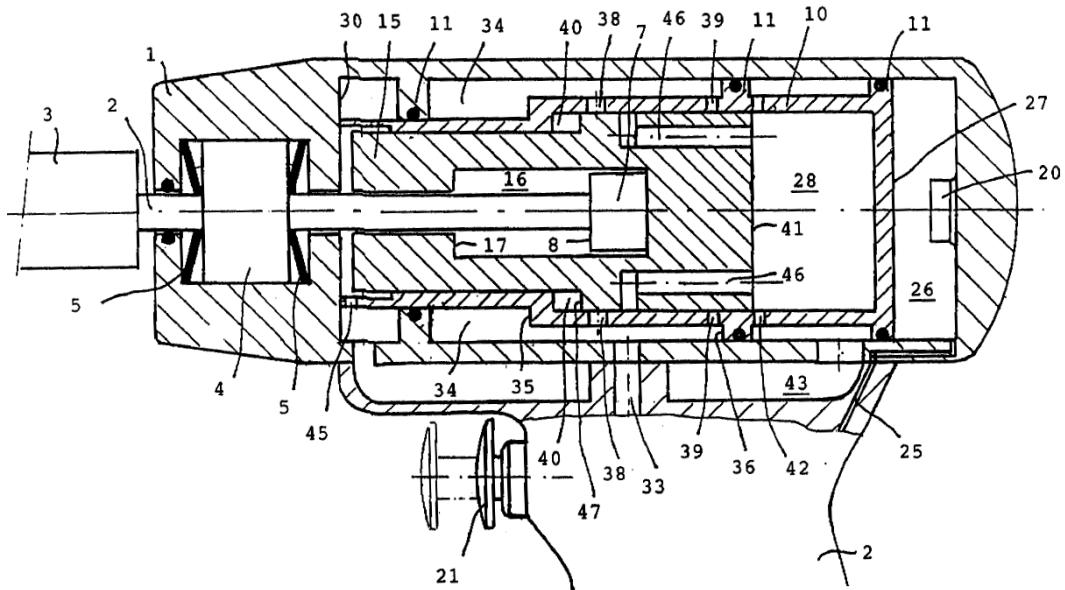
Means for driving the impulse member in a portable percussive tool with fluid-pressure drive, e.g. air pressure, internal-combustion engine, detonation of a cartridge, hydraulic pressure. Control devices for the reciprocating piston, details of valve arrangements therefore. Examples:



Tool bit is hit by an impulse member, [B25D 9/04](#) (EP0836545 A)



Piston-type slide valves, [B25D 9/18](#), and tubular-type slide valves, [B25D 9/20](#)  
(EP1907141 A)



Automatic stopping when the tool is lifted from the working face, [B25D 9/265](#)  
(EP0617926 A)

### Informative references

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

Portable non-percussive drilling tools driven by fluid pressure or pneumatic power	<a href="#">B23B 45/04</a>
Control systems for adjusting the stroke of the piston, or the force or frequency of impact thereof, adapted for earth drilling	<a href="#">E21B 44/00</a>

## B25D 11/00

**Portable percussive tools with electromotor [N: or other motor] drive**

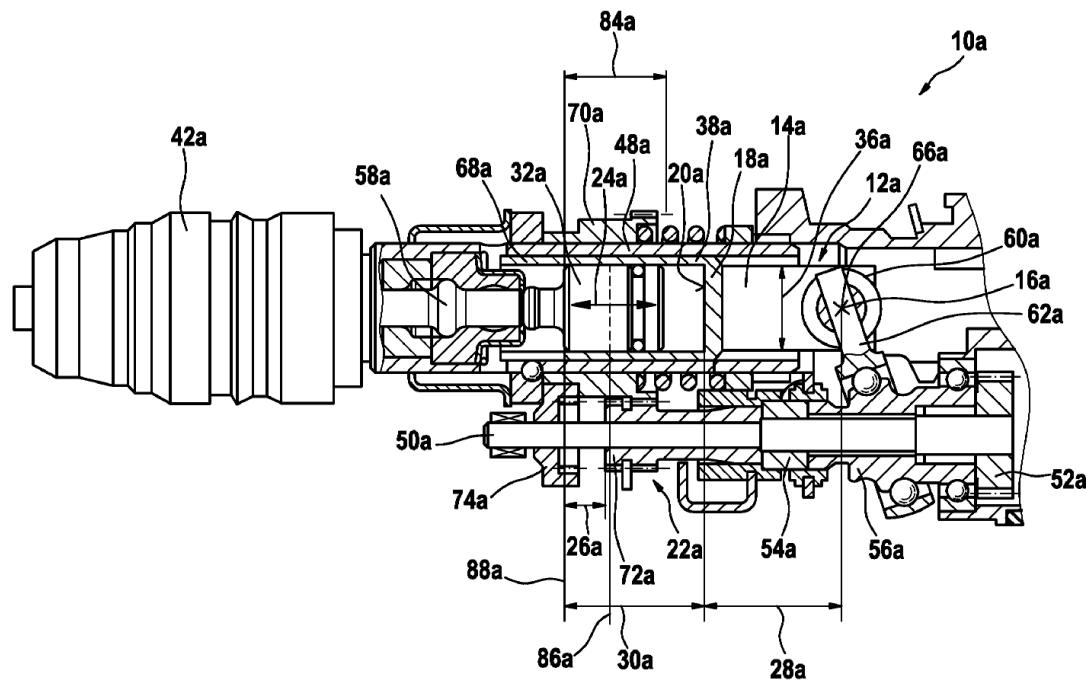
### Definition statement

*This subclass/group covers:*

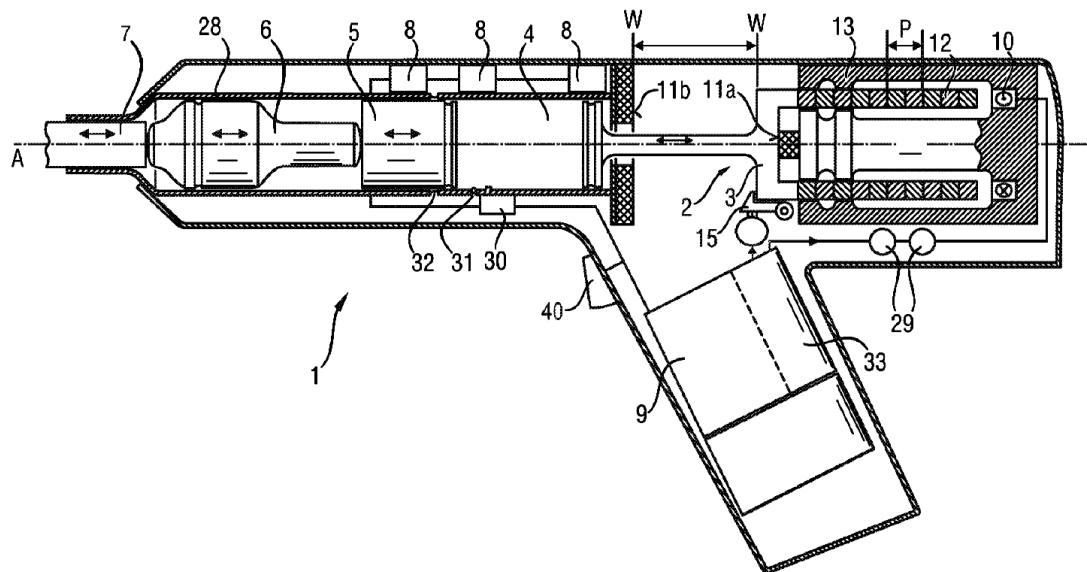
*This main group covers:*

Means for driving the impulse member in a portable percussive tool with electromotor drive, e.g. wobbling mechanism, electromagnetic drive,

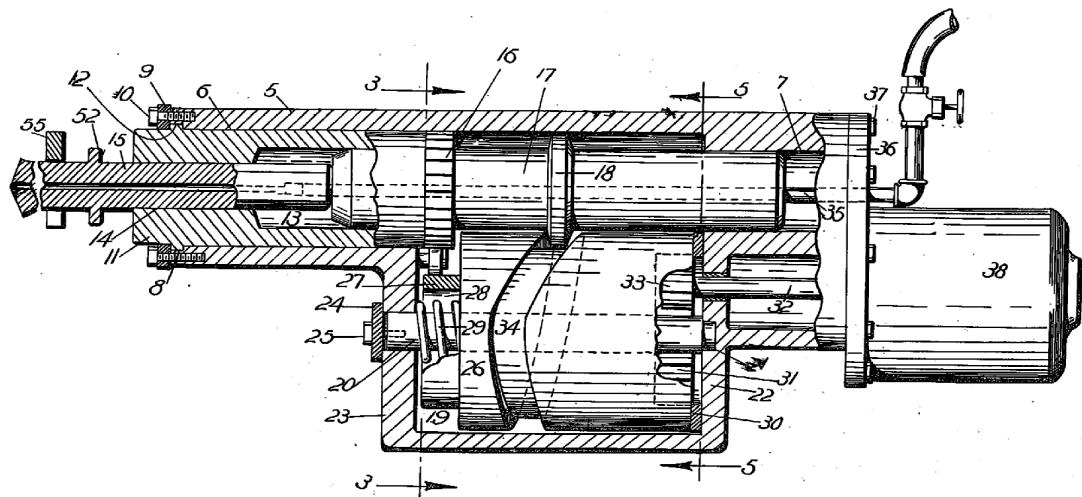
centrifugal or rotary impact elements, worm mechanism, cam mechanism, crank mechanism. Examples:



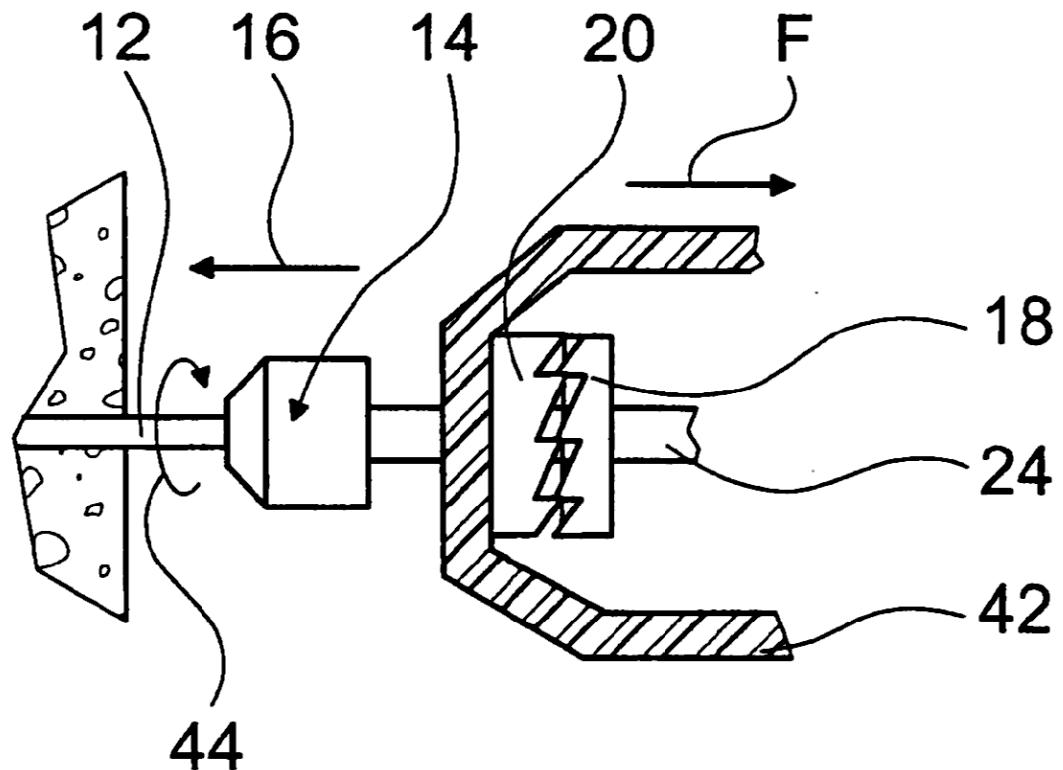
Wobbling mechanism / swash plate, [B25D 11/062](#) (EP2129494 A)



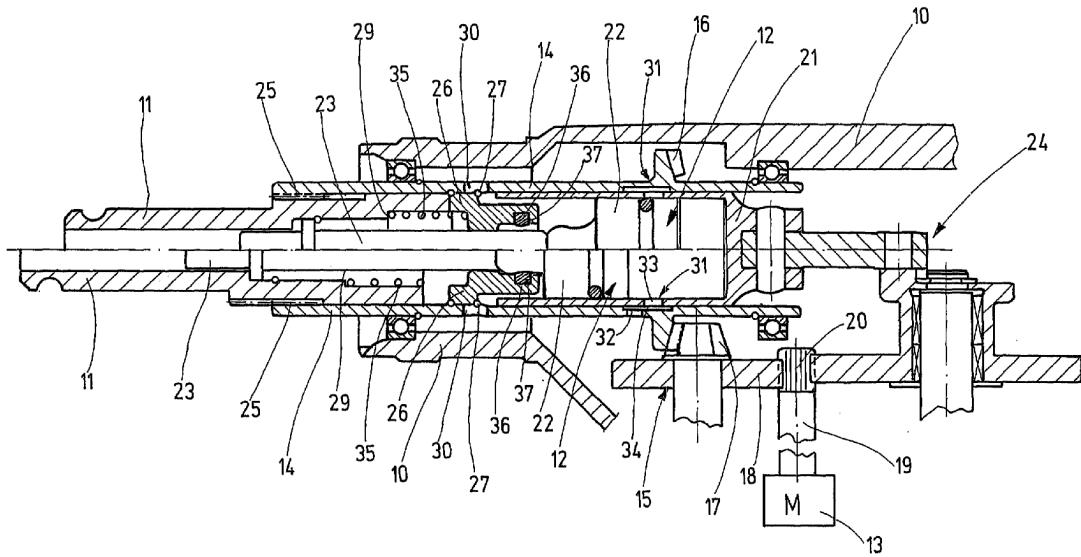
Electromagnetic drive, [B25D 11/064](#) (EP2036680 A)



Worm mechanism, [B25D 11/08](#) (US2051053 A)



Cam mechanism, coaxial cam member and cam follower of the same shape,  
[B25D 11/11B4](#) (FR2868977 A)



Crank mechanism with fluid cushion, [B25D 11/125](#) (WO2004060615 A)

### References relevant to classification in this group

*This subclass/group does not cover:*

Portable power-driven tools with rotary impact	<a href="#">B25B 21/02</a>
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### Glossary of terms

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

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

Cam mechanism	Comprising a rotating cam member which might be coaxial with the tool, and interacting with a cam surface defined by rollers, balls, or the same shape as the cam member.
Crank mechanism	Comprising a rotating plate, an offset pin, a crank arm, a piston, and optionally a fluid cushion.
Wobbling mechanism	Comprising a swash-plate, attached to a rotating shaft with a slight angular displacement, and provoking an oscillating linear movement of a

	follower
Worm mechanism	A continuous guide surface with steadily rising and falling incline

## B25D 16/00

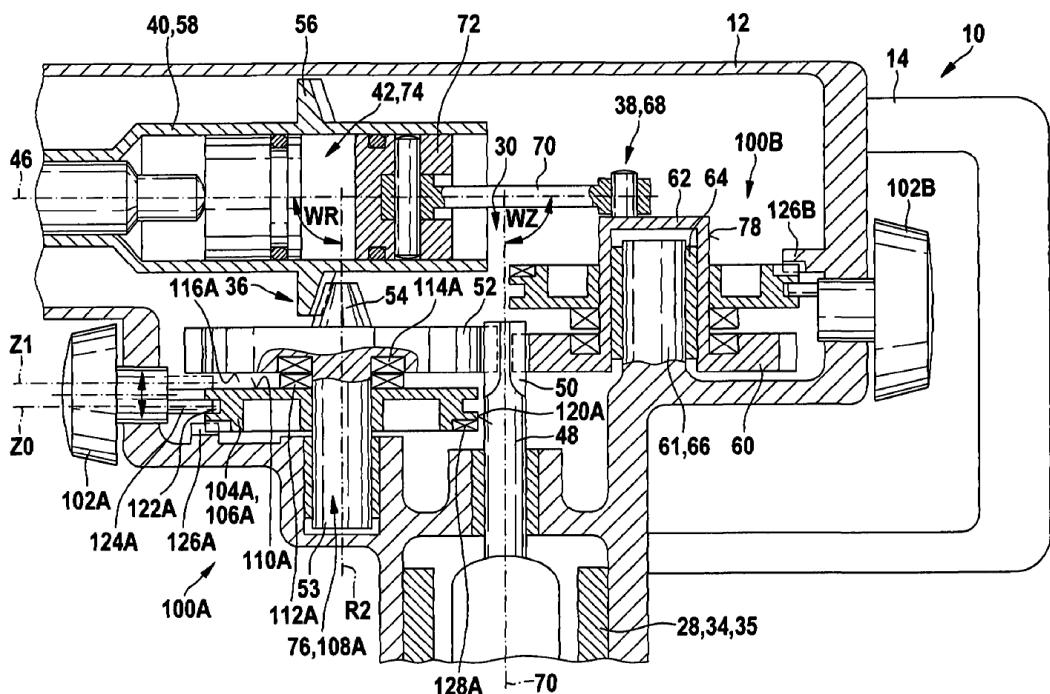
**Portable percussive machines with superimposed rotation, [N: the rotational movement of the output shaft of a motor being modified to generate axial impacts on the tool bit (combined percussion and rotary drilling adapted for earth drilling E21B6/00 )]**

### Definition statement

*This subclass/group covers:*

This main group covers:

Also clutches and mode changers specially adapted for portable percussive machines with superimposed rotation. Example:



Mode changer, [B25D 16/006](#) (GB2472890 A)

### Informative references

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

Gear boxes, clutches, bearings, feeding mechanisms or like equipment for hand-held portable drilling machines	<a href="#">B23B 45/008</a>
Gearings, speed selectors, clutches or the like specially adapted for rotary tools	<a href="#">B25F 5/001</a>

## B25D 17/00

**Details of, or accessories for, portable power-driven percussive tools [N: (details or components, e.g. casings, bodies, of portable power-driven tools not particularly related to the operation performed B25F5/00 )]**

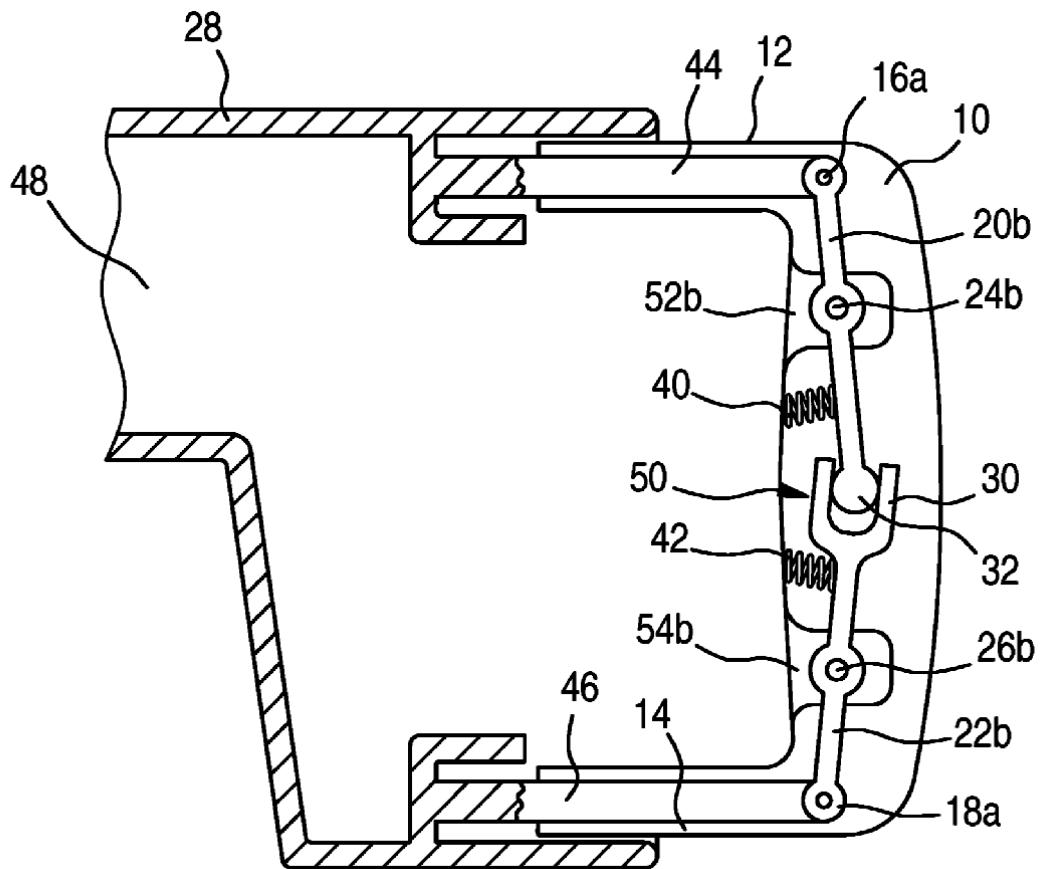
### Definition statement

*This subclass/group covers:*

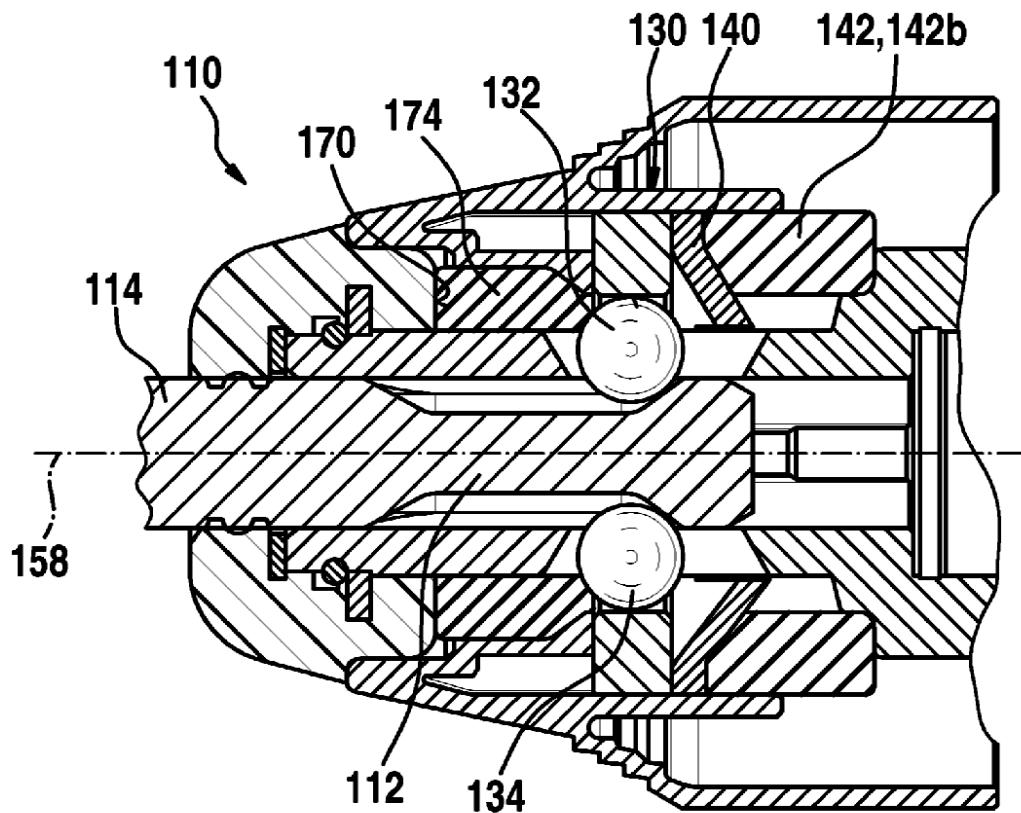
This main group covers:

Attachments or adapters, percussive tool bits, constructional details.

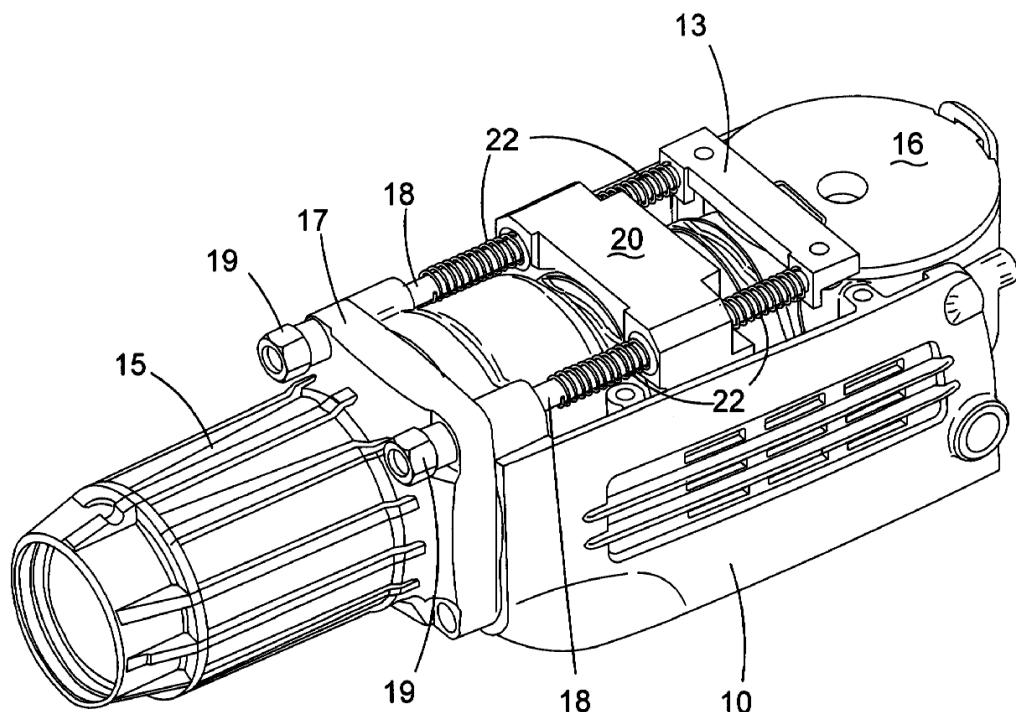
Examples:



Handles resiliently mounted relative to the hammer housing, [B25D 17/043](#)  
(WO2007115845 A)



Means for retaining and guiding the tool bit, with radial movable locking elements, [B25D 17/088](#) (EP2170562 A)



Damping the reaction force, [B25D 17/24](#) (EP1736283 A)

## Informative references

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

Details or components, e.g. casings, bodies, of portable power-driven tools not particularly related to the operation performed	<a href="#">B25F 5/00</a>
Drill bits for earth drilling	<a href="#">E21B 10/00</a>
Drill bits for rotation and/or percussion	<a href="#">B23B 51/00</a>
Noise damping in general	<a href="#">G10K 11/16</a>
Exhaust silencers in general	<a href="#">F01N</a>
Dampers in connections of hammers to backhoes; connections of hammers to backhoes	<a href="#">E02F 3/96D6</a>
Lubricating in general	<a href="#">F16N</a>