

CPC**COOPERATIVE PATENT CLASSIFICATION****B25D**

PERCUSSIVE TOOLS {(percussive machines for forging [B21J](#); hand-held drilling machines, in general [B23B 45/00](#), for wood [B27C 3/08](#); drilling machines, used for mining or quarrying, with reciprocating tool which is turned intermittently when out of contact with the working face [E21B 1/00](#))}

WARNING

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

| | | |
|----------------------------|------------|---|
| B25D 13/00 | covered by | B25D 11/064 |
| B25D 15/00 | covered by | B25D 11/066 |
| B25D 15/02 | covered by | B25D 11/068 |
| B25D 17/10 | covered by | B25D 17/00 , F16P |
| B25D 17/14 | covered by | B23Q 11/0042 |
| B25D 17/16 | covered by | B23Q 11/0042 |
| B25D 17/18 | covered by | B23Q 11/0042 |

B25D 1/00

Hand hammers {(handles therefor [B25G 1/00](#); attachment of handles to the hammer head [B25G 3/00](#))}; **Hammer heads of special shape or materials**

[B25D 1/005](#)

- {with nail feeding devices}

[B25D 1/02](#)

- Inserts or attachments forming the striking part of hammer heads ([B25D 1/08](#) to [B25D 1/14](#) take precedence)

[B25D 1/04](#)

- with provision for withdrawing or holding nails or spikes

[B25D 1/045](#)

- . {with fulcrum member for extracting long nails}

[B25D 1/06](#)

- . Magnetic holders

[B25D 1/08](#)

- having deformable heads ([B25D 1/12](#) takes precedence)

[B25D 1/10](#)

- having work protector surrounding faces {(B25D 1/12 takes precedence)}

[B25D 1/12](#)

- having shock-absorbing means

[B25D 1/14](#)

- having plural striking faces

[B25D 1/16](#)

- having the impacting head in the form of a sleeve slidable on a shaft, e.g. hammers for driving a valve or draw-off tube into a barrel

B25D 3/00**Hand chisels****B25D 5/00****Centre punches**[B25D 5/02](#)

- Automatic centre punches

B25D 7/00**Picks** {(combined with other tools [B25F](#))}**B25D 9/00**

Portable percussive tools with fluid-pressure drive, {i.e. driven directly by fluids}, e.g. having several percussive tool bits operated simultaneously {(portable non-percussive drilling tools driven by fluid pressure or pneumatic power [B23B 45/04](#))}

[B25D 9/005](#)

- {Devices for testing the tool's performance}

- B25D 9/02
 - of the tool-carrier piston type, i.e. in which the tool is connected to an impulse member
- B25D 9/04
 - of the hammer piston type, i.e. in which the tool bit or anvil is hit by an impulse member
- B25D 9/06
 - Means for driving the impulse member
- B25D 9/08
 - . comprising a built-in air compressor, {i.e. the tool being driven by air pressure}
- B25D 9/10
 - . comprising a built-in internal-combustion engine
- B25D 9/11
 - . operated by combustion pressure generated by detonation of a cartridge
- B25D 9/12
 - . comprising a built-in liquid motor, {i.e. the tool being driven by hydraulic pressure}
- B25D 9/125
 - . . {driven directly by liquid pressure working with pulses}
- B25D 9/14
 - Control devices for the reciprocating piston
- B25D 9/145
 - . {for hydraulically actuated hammers having an accumulator}
- B25D 9/16
 - . Valve arrangements therefor {(B25D 9/145 takes precedence)}
- B25D 9/18
 - . . involving a piston-type slide valve
- B25D 9/20
 - . . involving a tubular-type slide valve
- B25D 9/22
 - . . involving a rotary-type slide valve
- B25D 9/24
 - . . involving a rocking-plate type valve
- B25D 9/26
 - . Control devices for adjusting the stroke of the piston or the force or frequency of impact thereof {(control systems adapted for earth drilling E21B 44/00)}
- B25D 9/265
 - . . {with arrangements for automatic stopping when the tool is lifted from the working face or suffers excessive bore resistance}
- B25D 11/00**
 - Portable percussive tools with electromotor {or other motor} drive**
- B25D 11/005
 - {Arrangements for adjusting the stroke of the impulse member or for stopping the impact action when the tool is lifted from the working surface}
- B25D 11/02
 - in which the tool is connected to an impulse member
- B25D 11/04
 - in which the tool bit or anvil is hit by an impulse member
- B25D 11/06
 - Means for driving the impulse member
- B25D 11/062
 - . {comprising a wobbling mechanism, swash plate}
- B25D 11/064
 - . {using an electromagnetic drive}
- B25D 11/066
 - . {using centrifugal or rotary impact elements}
- B25D 11/068
 - . . {in which the tool bit or anvil is hit by a rotary impulse member}
- B25D 11/08
 - . comprising a worm mechanism, {i.e. a continuous guide surface with steadily rising and falling incline}
- B25D 11/10
 - . comprising a cam mechanism
- B25D 11/102
 - . . {the rotating axis of the cam member being coaxial with the axis of the tool}
- B25D 11/104
 - . . . {with rollers or balls as cam surface}
- B25D 11/106
 - . . . {cam member and cam follower having the same shape (B25D 11/104 takes precedence)}

- B25D 11/108 . . . {the rotation axis of the cam member being parallel but offset to the tool axis}
- B25D 11/12 . . comprising a crank mechanism
- B25D 11/125 . . . {with a fluid cushion between the crank drive and the striking body}
- B25D 16/00** **Portable percussive machines with superimposed rotation, {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 E21B 6/00)}**
- B25D 16/003 . {Clutches specially adapted therefor}
- B25D 16/006 . {Mode changers; Mechanisms connected thereto}
- B25D 17/00** **Details of, or accessories for, portable power-driven percussive tools {(details or components, e.g. casings, bodies, of portable power-driven tools not particularly related to the operation performed B25F 5/00)}**
- B25D 17/005 . {Attachments or adapters placed between tool and hammer}
- B25D 17/02 . Percussive tool bits {(drill bits for earth drilling E21B 10/00)}
- B25D 17/04 . Handles; Handle mountings
- B25D 17/043 . . {Handles resiliently mounted relative to the hammer housing (B25D 17/046 takes precedence)}
- B25D 17/046 . . {Sleeve-like handles surrounding the tool bit}
- B25D 17/06 . Hammer pistons; Anvils; {Guide-sleeves for pistons}
- B25D 17/08 . Means for retaining and guiding the tool bit, e.g. chucks {allowing axial oscillation of the tool bit (B25D 17/005 takes precedence)}
- B25D 17/082 . . {Retainers consisting of a swinging yoke or latching means (B25D 17/086 takes precedence)}
- B25D 17/084 . . {Rotating chucks or sockets}
- B25D 17/086 . . . {with a swinging yoke or latching means}
- B25D 17/088 . . . {with radial movable locking elements co-operating with bit shafts specially adapted therefor}
- B25D 17/11 . Arrangements of noise-damping means {(noise damping in general G10K 11/16)}
- B25D 17/12 . . of exhaust silencers {(exhaust silencers in general F01N)}
- B25D 17/20 . Devices for cleaning or cooling tool or work
- B25D 17/22 . . using pressure fluid
- B25D 17/24 . Damping the reaction force {(resiliently mounted handles B25D 17/043; dampers in connections of hammers to backhoes E02F 3/966)}
- B25D 17/245 . . {using a fluid}
- B25D 17/26 . Lubricating {(in general F16N)}
- B25D 17/265 . . {the lubricant being entrained to the machine parts by the driving fluid}
- B25D 17/28 . Supports; Devices for holding power-driven percussive tools in working position {(connections of hammers to backhoes E02F 3/966)}
- B25D 17/30 . . Pillars and struts
- B25D 17/32 . . Trolleys

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| B25D 2209/00 | Details of portable percussive tools with fluid-pressure drive, i.e. driven directly by fluids, e.g. having several percussive tool bits operated simultaneously |
| B25D 2209/002 | . Pressure accumulators |
| B25D 2209/005 | . having a tubular-slide valve, which is coaxial with the piston |
| B25D 2209/007 | . having a tubular-slide valve, which is not coaxial with the piston |
| B25D 2211/00 | Details of portable percussive tools with electromotor or other motor drive |
| B25D 2211/003 | . Crossed drill and motor spindles |
| B25D 2211/006 | . Parallel drill and motor spindles |
| B25D 2211/06 | . Means for driving the impulse member |
| B25D 2211/061 | . . Swash-plate actuated impulse-driving mechanisms |
| B25D 2211/062 | . . Cam-actuated impulse-driving mechanisms |
| B25D 2211/064 | . . . Axial cams, e.g. two camming surfaces coaxial with drill spindle |
| B25D 2211/065 | . . . with ball-shaped or roll-shaped followers |
| B25D 2211/067 | . . . wherein the cams are involved in a progressive mutual engagement with increasing pressure of the tool to the working surface |
| B25D 2211/068 | . . Crank-actuated impulse-driving mechanisms |
| B25D 2216/00 | Details of portable percussive machines with superimposed rotation, the rotational movement of the output shaft of a motor being modified to generate axial impacts on the tool bit |
| B25D 2216/0007 | . Details of percussion or rotation modes |
| B25D 2216/0015 | . . Tools having a percussion-only mode |
| B25D 2216/0023 | . . Tools having a percussion-and-rotation mode |
| B25D 2216/003 | . . . comprising de-phasing of percussion and rotation |
| B25D 2216/0038 | . . Tools having a rotation-only mode |
| B25D 2216/0046 | . . Preventing rotation |
| B25D 2216/0053 | . . . and percussion |
| B25D 2216/0061 | . . . preventing reverse rotation |
| B25D 2216/0069 | . Locking means |
| B25D 2216/0076 | . Angular position of the chisel modifiable by hand |
| B25D 2216/0084 | . Mode-changing mechanisms |
| B25D 2216/0092 | . . Tool comprising two or more collaborating mode-changing mechanisms |
| B25D 2217/00 | Details of, or accessories for, portable power-driven percussive tools |
| B25D 2217/0003 | . Details of shafts of percussive tool bits |
| B25D 2217/0007 | . . Shaft ends |
| B25D 2217/0011 | . Details of anvils, guide-sleeves or pistons |
| B25D 2217/0015 | . . Anvils |
| B25D 2217/0019 | . . Guide-sleeves |
| B25D 2217/0023 | . . Pistons |

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| B25D 2217/0026 | . . . Double pistons |
| B25D 2217/003 | . Details relating to chucks with radially movable locking elements |
| B25D 2217/0034 | . . Details of shank profiles |
| B25D 2217/0038 | . . Locking members of special shape |
| B25D 2217/0042 | . . . Ball-shaped locking members |
| B25D 2217/0046 | . . . Conically-shaped locking members |
| B25D 2217/0049 | . . . Roll-shaped locking members |
| B25D 2217/0053 | . . Devices for securing the tool retainer to the machine part |
| B25D 2217/0057 | . Details related to cleaning or cooling the tool or workpiece |
| B25D 2217/0061 | . . related to cooling |
| B25D 2217/0065 | . . Use of dust covers |
| B25D 2217/0069 | . . . Protecting chucks against entering of chip dust |
| B25D 2217/0073 | . Arrangements for damping of the reaction force |
| B25D 2217/0076 | . . by use of counterweights |
| B25D 2217/008 | . . . being electronically-driven |
| B25D 2217/0084 | . . . being fluid-driven |
| B25D 2217/0088 | . . . being mechanically-driven |
| B25D 2217/0092 | . . . being spring-mounted |
| B25D 2217/0096 | . Details of lubrication means |

B25D 2222/00 Materials of the tool or the workpiece

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| B25D 2222/03 | . Ceramics |
| B25D 2222/06 | . Composite materials |
| B25D 2222/09 | . Diamond |
| B25D 2222/12 | . Glass |
| B25D 2222/15 | . Ice |
| B25D 2222/18 | . Leather |
| B25D 2222/21 | . Metals |
| B25D 2222/24 | . . Aluminium |
| B25D 2222/27 | . . Brass |
| B25D 2222/31 | . . Bronze |
| B25D 2222/33 | . . Copper |
| B25D 2222/36 | . . Lead |
| B25D 2222/39 | . . Mercury |
| B25D 2222/42 | . . Steel |
| B25D 2222/45 | . . Titanium |
| B25D 2222/48 | . . Zinc |
| B25D 2222/51 | . . Hard metals, e.g. tungsten carbide |
| B25D 2222/54 | . Plastics |
| B25D 2222/57 | . . Elastomers, e.g. rubber |

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| B25D 2222/61 | <ul style="list-style-type: none"> • . Polyamides, e.g. Nylon |
| B25D 2222/66 | <ul style="list-style-type: none"> • . Polypropylene |
| B25D 2222/69 | <ul style="list-style-type: none"> • . Foamed polymers, e.g. polyurethane foam |
| B25D 2222/72 | <ul style="list-style-type: none"> • Stone, rock or concrete |
| B25D 2222/75 | <ul style="list-style-type: none"> • Wood |
| B25D 2250/00 | General details of portable percussive tools; Components used in portable percussive tools |
| B25D 2250/005 | <ul style="list-style-type: none"> • Adjustable tool components; Adjustable parameters |
| B25D 2250/011 | <ul style="list-style-type: none"> • . Bits, e.g. adjusting bits by setting in the desired angular position |
| B25D 2250/015 | <ul style="list-style-type: none"> • . Heads |
| B25D 2250/021 | <ul style="list-style-type: none"> • . Stroke length |
| B25D 2250/025 | <ul style="list-style-type: none"> • Auxiliary percussive devices |
| B25D 2250/035 | <ul style="list-style-type: none"> • Bleeding holes, e.g. in piston guide-sleeves |
| B25D 2250/041 | <ul style="list-style-type: none"> • Cable management or routing of electrical cables and wires |
| B25D 2250/045 | <ul style="list-style-type: none"> • Cams used in percussive tools |
| B25D 2250/051 | <ul style="list-style-type: none"> • Couplings, e.g. special connections between components |
| B25D 2250/055 | <ul style="list-style-type: none"> • Depth properties, e.g. tools having depth indicator or depth control |
| B25D 2250/065 | <ul style="list-style-type: none"> • Details regarding assembling of the tool |
| B25D 2250/071 | <ul style="list-style-type: none"> • . Assembled by brazing |
| B25D 2250/075 | <ul style="list-style-type: none"> • . Assembled by welding |
| B25D 2250/085 | <ul style="list-style-type: none"> • Elastic behaviour of tool components |
| B25D 2250/091 | <ul style="list-style-type: none"> • Electrically-powered tool components |
| B25D 2250/095 | <ul style="list-style-type: none"> • . Electric motors |
| B25D 2250/101 | <ul style="list-style-type: none"> • Emitting warning signals, e.g. visual or sound |
| B25D 2250/105 | <ul style="list-style-type: none"> • Exchangeable tool components |
| B25D 2250/111 | <ul style="list-style-type: none"> • . Bits, i.e. inserts or attachments for hammer, chisel, pick |
| B25D 2250/115 | <ul style="list-style-type: none"> • Foldable parts of the tool, e.g. in order to reduce its size. |
| B25D 2250/121 | <ul style="list-style-type: none"> • Housing details |
| B25D 2250/125 | <ul style="list-style-type: none"> • Hydraulic tool components |
| B25D 2250/131 | <ul style="list-style-type: none"> • Idling mode of tools |
| B25D 2250/141 | <ul style="list-style-type: none"> • Magnetic parts used in percussive tools |
| B25D 2250/145 | <ul style="list-style-type: none"> • . Electro-magnetic parts |
| B25D 2250/155 | <ul style="list-style-type: none"> • Marks, e.g. identification marks, indication scales, visualising means |
| B25D 2250/161 | <ul style="list-style-type: none"> • . Indication scales |
| B25D 2250/165 | <ul style="list-style-type: none"> • Overload clutches, torque limiters |
| B25D 2250/171 | <ul style="list-style-type: none"> • Percussive pulling action of tools for extraction of elements |
| B25D 2250/175 | <ul style="list-style-type: none"> • Phase shift of tool components |
| B25D 2250/181 | <ul style="list-style-type: none"> • Pneumatic tool components |
| B25D 2250/185 | <ul style="list-style-type: none"> • Pressure equalising means between sealed chambers |
| B25D 2250/191 | <ul style="list-style-type: none"> • Ram catchers for stopping the ram when entering idling mode |

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| B25D 2250/195 | . Regulation means |
| B25D 2250/201 | . . for speed, e.g. drilling or percussion speed |
| B25D 2250/205 | . . for torque |
| B25D 2250/211 | . Cross-sections of the tool |
| B25D 2250/215 | . . Narrowing cross-sections |
| B25D 2250/221 | . Sensors |
| B25D 2250/225 | . Serrations |
| B25D 2250/231 | . Sleeve details |
| B25D 2250/235 | . . Sleeve couplings |
| B25D 2250/241 | . Sliding impact heads, i.e. impact heads sliding inside a rod or around a shaft |
| B25D 2250/245 | . Spatial arrangement of components of the tool relative to each other. |
| B25D 2250/255 | . Switches |
| B25D 2250/261 | . . Means for locking an operative switch on |
| B25D 2250/265 | . . Trigger mechanism in handle |
| B25D 2250/271 | . Tools for breaking windows |
| B25D 2250/275 | . Tools having at least two similar components |
| B25D 2250/281 | . . Double motors |
| B25D 2250/285 | . . Tools having three or more similar components, e.g. three motors |
| B25D 2250/291 | . . . Tools having three or more parallel bits, e.g. needle guns |
| B25D 2250/295 | . Tools used in automobiles or automobile manufacture |
| B25D 2250/301 | . Torque transmission means |
| B25D 2250/305 | . Twisted part of a chisel or percussive non-drilling tool bit |
| B25D 2250/311 | . Ultrasonic percussion means |
| B25D 2250/315 | . Use of adhesives |
| B25D 2250/321 | . Use of balls |
| B25D 2250/325 | . Use of bayonets |
| B25D 2250/331 | . Use of bearings |
| B25D 2250/335 | . . Supports therefor |
| B25D 2250/341 | . Use of external compressors |
| B25D 2250/345 | . Use of o-rings |
| B25D 2250/351 | . Use of pins |
| B25D 2250/355 | . Use of rolls |
| B25D 2250/361 | . Use of screws or threaded connections |
| B25D 2250/365 | . Use of seals |
| B25D 2250/371 | . Use of springs |
| B25D 2250/375 | . . Fluid springs |
| B25D 2250/381 | . . Leaf springs |
| B25D 2250/385 | . Use of thrust-washers, e.g. for limiting the course of the impulse member |
| B25D 2250/391 | . Use of weights; Weight properties of the tool |