

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](#) - [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

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

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

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

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

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