

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](#)) [M1204] }

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 { ([B25D 15/00](#) ; 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 3/96D6) }
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 3/96D6) }
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	.. Polyamides, e.g. Nylon
B25D 2222/66	.. Polypropylene
B25D 2222/69	.. Foamed polymers, e.g. polyurethane foam
B25D 2222/72	. Stone, rock or concrete
B25D 2222/75	. Wood
B25D 2250/00	General details of portable percussive tools; Components used in portable percussive tools
B25D 2250/005	. Adjustable tool components; Adjustable parameters
B25D 2250/011	.. Bits, e.g. adjusting bits by setting in the desired angular position
B25D 2250/015	.. Heads
B25D 2250/021	.. Stroke length
B25D 2250/025	. Auxiliary percussive devices
B25D 2250/035	. Bleeding holes, e.g. in piston guide-sleeves
B25D 2250/041	. Cable management or routing of electrical cables and wires
B25D 2250/045	. Cams used in percussive tools

- B25D 2250/051 . Couplings, e.g. special connections between components
- B25D 2250/055 . Depth properties, e.g. tools having depth indicator or depth control
- B25D 2250/065 . Details regarding assembling of the tool
- B25D 2250/071 . . Assembled by brazing
- B25D 2250/075 . . Assembled by welding
- B25D 2250/085 . Elastic behaviour of tool components
- B25D 2250/091 . Electrically-powered tool components
- B25D 2250/095 . . Electric motors
- B25D 2250/101 . Emitting warning signals, e.g. visual or sound
- B25D 2250/105 . Exchangeable tool components
- B25D 2250/111 . . Bits, i.e. inserts or attachments for hammer, chisel, pick
- B25D 2250/115 . Foldable parts of the tool, e.g. in order to reduce its size.
- B25D 2250/121 . Housing details
- B25D 2250/125 . Hydraulic tool components
- B25D 2250/131 . Idling mode of tools
- B25D 2250/141 . Magnetic parts used in percussive tools
- B25D 2250/145 . . Electro-magnetic parts
- B25D 2250/155 . Marks, e.g. identification marks, indication scales, visualising means
- B25D 2250/161 . . Indication scales
- B25D 2250/165 . Overload clutches, torque limiters
- B25D 2250/171 . Percussive pulling action of tools for extraction of elements
- B25D 2250/175 . Phase shift of tool components
- B25D 2250/181 . Pneumatic tool components
- B25D 2250/185 . Pressure equalising means between sealed chambers
- B25D 2250/191 . 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