

CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

SHAPING

B25 HAND TOOLS; PORTABLE POWER-DRIVEN TOOLS; MANIPULATORS

(NOTE omitted)

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](#))}

WARNINGS

- The following IPC groups are not in the CPC scheme. The subject matter for these IPC 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
B25D 17/14	covered by	B23Q 11/0042
B25D 17/16	covered by	B23Q 11/0042
B25D 17/18	covered by	B23Q 11/0042

- In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

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	9/005	• {Devices for testing the tool's performance}
		9/02	• of the tool-carrier piston type, i.e. in which the tool is connected to an impulse member
1/005	• {with nail feeding devices}	9/04	• of the hammer piston type, i.e. in which the tool bit or anvil is hit by an impulse member
1/02	• Inserts or attachments forming the striking part of hammer heads (B25D 1/08 - B25D 1/14 take precedence)	9/06	• Means for driving the impulse member
1/04	• with provision for withdrawing or holding nails or spikes	9/08	• • comprising a built-in air compressor {, i.e. the tool being driven by air pressure}
1/045	• • {with fulcrum member for extracting long nails}	9/10	• • comprising a built-in internal-combustion engine
1/06	• • Magnetic holders	9/11	• • operated by combustion pressure generated by detonation of a cartridge
1/08	• having deformable heads (B25D 1/12 takes precedence)	9/12	• • comprising a built-in liquid motor {, i.e. the tool being driven by hydraulic pressure}
1/10	• having work protector surrounding faces {(B25D 1/12 takes precedence)}	9/125	• • • {driven directly by liquid pressure working with pulses}
1/12	• having shock-absorbing means	9/14	• Control devices for the reciprocating piston
1/14	• having plural striking faces	9/145	• • {for hydraulically actuated hammers having an accumulator}
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	9/16	• • Valve arrangements therefor {(B25D 9/145 takes precedence)}
3/00	Hand chisels	9/18	• • • involving a piston-type slide valve
5/00	Centre punches	9/20	• • • involving a tubular-type slide valve
5/02	• Automatic centre punches	9/22	• • • involving a rotary-type slide valve
7/00	Picks {(combined with other tools B25F)}	9/24	• • • involving a rocking-plate type valve
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)}	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)}
		9/265	• • • {with arrangements for automatic stopping when the tool is lifted from the working face or suffers excessive bore resistance}

11/00	Portable percussive tools with electromotor {or other motor} drive	17/11	• Arrangements of noise-damping means {(noise damping in general G10K 11/16)}
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}	17/12	• • of exhaust silencers {(exhaust silencers in general F01N)}
11/02	• in which the tool is connected to an impulse member	17/20	• Devices for cleaning or cooling tool or work
11/04	• in which the tool bit or anvil is hit by an impulse member	17/22	• • using pressure fluid
11/06	• Means for driving the impulse member	17/24	• Damping the reaction force {(resiliently mounted handles B25D 17/043 ; dampers in connections of hammers to backhoes E02F 3/966)}
11/062	• • {comprising a wobbling mechanism, swash plate}	17/245	• • {using a fluid}
11/064	• • {using an electromagnetic drive}	17/26	• Lubricating {(in general F16N)}
11/066	• • {using centrifugal or rotary impact elements}	17/265	• • {the lubricant being entrained to the machine parts by the driving fluid}
11/068	• • • {in which the tool bit or anvil is hit by a rotary impulse member}	17/28	• Supports; Devices for holding power-driven percussive tools in working position {(connections of hammers to backhoes E02F 3/966)}
11/08	• • comprising a worm mechanism {, i.e. a continuous guide surface with steadily rising and falling incline}	17/30	• • Pillars and struts
11/10	• • comprising a cam mechanism	17/32	• • Trolleys
11/102	• • • {the rotating axis of the cam member being coaxial with the axis of the tool}	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
11/104	• • • • {with rollers or balls as cam surface}	2209/002	• Pressure accumulators
11/106	• • • • {cam member and cam follower having the same shape (B25D 11/104 takes precedence)}	2209/005	• having a tubular-slide valve, which is coaxial with the piston
11/108	• • • {the rotation axis of the cam member being parallel but offset to the tool axis}	2209/007	• having a tubular-slide valve, which is not coaxial with the piston
11/12	• • comprising a crank mechanism	2211/00	Details of portable percussive tools with electromotor or other motor drive
11/125	• • • {with a fluid cushion between the crank drive and the striking body}	2211/003	• Crossed drill and motor spindles
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)}	2211/006	• Parallel drill and motor spindles
16/003	• {Clutches specially adapted therefor}	2211/06	• Means for driving the impulse member
16/006	• {Mode changers; Mechanisms connected thereto}	2211/061	• • Swash-plate actuated impulse-driving mechanisms
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)}	2211/062	• • Cam-actuated impulse-driving mechanisms
17/005	• {Attachments or adapters placed between tool and hammer}	2211/064	• • • Axial cams, e.g. two camming surfaces coaxial with drill spindle
17/02	• Percussive tool bits {(drill bits for earth drilling E21B 10/00)}	2211/065	• • • with ball-shaped or roll-shaped followers
17/04	• Handles; Handle mountings	2211/067	• • • wherein the cams are involved in a progressive mutual engagement with increasing pressure of the tool to the working surface
17/043	• • {Handles resiliently mounted relative to the hammer housing (B25D 17/046 takes precedence)}	2211/068	• • Crank-actuated impulse-driving mechanisms
17/046	• • {Sleeve-like handles surrounding the tool bit}	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
17/06	• Hammer pistons; Anvils {; Guide-sleeves for pistons}	2216/0007	• Details of percussion or rotation modes
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)}	2216/0015	• • Tools having a percussion-only mode
17/082	• • {Retainers consisting of a swinging yoke or latching means (B25D 17/086 takes precedence)}	2216/0023	• • Tools having a percussion-and-rotation mode
17/084	• • {Rotating chucks or sockets}	2216/003	• • • comprising de-phasing of percussion and rotation
17/086	• • • {with a swinging yoke or latching means}	2216/0038	• • Tools having a rotation-only mode
17/088	• • • {with radial movable locking elements co-operating with bit shafts specially adapted therefor}	2216/0046	• • Preventing rotation
		2216/0053	• • • and percussion
		2216/0061	• • • preventing reverse rotation
		2216/0069	• Locking means
		2216/0076	• Angular position of the chisel modifiable by hand
		2216/0084	• Mode-changing mechanisms
		2216/0092	• • Tool comprising two or more collaborating mode-changing mechanisms

2217/00	Details of, or accessories for, portable power-driven percussive tools	
2217/0003	. Details of shafts of percussive tool bits	
2217/0007	. . Shaft ends	
2217/0011	. Details of anvils, guide-sleeves or pistons	
2217/0015	. . Anvils	
2217/0019	. . Guide-sleeves	
2217/0023	. . Pistons	
2217/0026	. . . Double pistons	
2217/003	. Details relating to chucks with radially movable locking elements	
2217/0034	. . Details of shank profiles	
2217/0038	. . Locking members of special shape	
2217/0042	. . . Ball-shaped locking members	
2217/0046	. . . Conically-shaped locking members	
2217/0049	. . . Roll-shaped locking members	
2217/0053	. . Devices for securing the tool retainer to the machine part	
2217/0057	. Details related to cleaning or cooling the tool or workpiece	
2217/0061	. . related to cooling	
2217/0065	. . Use of dust covers	
2217/0069	. . . Protecting chucks against entering of chip dust	
2217/0073	. Arrangements for damping of the reaction force	
2217/0076	. . by use of counterweights	
2217/008	. . . being electronically-driven	
2217/0084	. . . being fluid-driven	
2217/0088	. . . being mechanically-driven	
2217/0092	. . . being spring-mounted	
2217/0096	. Details of lubrication means	
2222/00	Materials of the tool or the workpiece	
2222/03	. Ceramics	
2222/06	. Composite materials	
2222/09	. Diamond	
2222/12	. Glass	
2222/15	. Ice	
2222/18	. Leather	
2222/21	. Metals	
2222/24	. . Aluminium	
2222/27	. . Brass	
2222/31	. . Bronze	
2222/33	. . Copper	
2222/36	. . Lead	
2222/39	. . Mercury	
2222/42	. . Steel	
2222/45	. . Titanium	
2222/48	. . Zinc	
2222/51	. . Hard metals, e.g. tungsten carbide	
2222/54	. Plastics	
2222/57	. . Elastomers, e.g. rubber	
2222/61	. . Polyamides, e.g. Nylon	
2222/66	. . Polypropylene	
2222/69	. . Foamed polymers, e.g. polyurethane foam	
2222/72	. Stone, rock or concrete	
2222/75	. Wood	
2250/00	General details of portable percussive tools; Components used in portable percussive tools	
2250/005	. Adjustable tool components; Adjustable parameters	
2250/011	. . Bits, e.g. adjusting bits by setting in the desired angular position	
2250/015	. . Heads	
2250/021	. . Stroke length	
2250/025	. Auxiliary percussive devices	
2250/035	. Bleeding holes, e.g. in piston guide-sleeves	
2250/041	. Cable management or routing of electrical cables and wires	
2250/045	. Cams used in percussive tools	
2250/051	. Couplings, e.g. special connections between components	
2250/055	. Depth properties, e.g. tools having depth indicator or depth control	
2250/065	. Details regarding assembling of the tool	
2250/071	. . Assembled by brazing	
2250/075	. . Assembled by welding	
2250/085	. Elastic behaviour of tool components	
2250/091	. Electrically-powered tool components	
2250/095	. . Electric motors	
2250/101	. Emitting warning signals, e.g. visual or sound	
2250/105	. Exchangeable tool components	
2250/111	. . Bits, i.e. inserts or attachments for hammer, chisel, pick	
2250/115	. Foldable parts of the tool, e.g. in order to reduce its size	
2250/121	. Housing details	
2250/125	. Hydraulic tool components	
2250/131	. Idling mode of tools	
2250/141	. Magnetic parts used in percussive tools	
2250/145	. . Electro-magnetic parts	
2250/155	. Marks, e.g. identification marks, indication scales, visualising means	
2250/161	. . Indication scales	
2250/165	. Overload clutches, torque limiters	
2250/171	. Percussive pulling action of tools for extraction of elements	
2250/175	. Phase shift of tool components	
2250/181	. Pneumatic tool components	
2250/185	. Pressure equalising means between sealed chambers	
2250/191	. Ram catchers for stopping the ram when entering idling mode	
2250/195	. Regulation means	
2250/201	. . for speed, e.g. drilling or percussion speed	
2250/205	. . for torque	
2250/211	. Cross-sections of the tool	
2250/215	. . Narrowing cross-sections	
2250/221	. Sensors	
2250/225	. Serrations	
2250/231	. Sleeve details	
2250/235	. . Sleeve couplings	
2250/241	. Sliding impact heads, i.e. impact heads sliding inside a rod or around a shaft	
2250/245	. Spatial arrangement of components of the tool relative to each other	
2250/255	. Switches	
2250/261	. . Means for locking an operative switch on	
2250/265	. . Trigger mechanism in handle	
2250/271	. Tools for breaking windows	
2250/275	. Tools having at least two similar components	
2250/281	. . Double motors	
2250/285	. . Tools having three or more similar components, e.g. three motors	
2250/291	. . . Tools having three or more parallel bits, e.g. needle guns	

B25D

- 2250/295 . Tools used in automobiles or automobile manufacture
- 2250/301 . Torque transmission means
- 2250/305 . Twisted part of a chisel or percussive non-drilling tool bit
- 2250/311 . Ultrasonic percussion means
- 2250/315 . Use of adhesives
- 2250/321 . Use of balls
- 2250/325 . Use of bayonets
- 2250/331 . Use of bearings
- 2250/335 . . Supports therefor
- 2250/341 . Use of external compressors
- 2250/345 . Use of o-rings
- 2250/351 . Use of pins
- 2250/355 . Use of rolls
- 2250/361 . Use of screws or threaded connections
- 2250/365 . Use of seals
- 2250/371 . Use of springs
- 2250/375 . . Fluid springs
- 2250/381 . . Leaf springs
- 2250/385 . Use of thrust-washers, e.g. for limiting the course of the impulse member
- 2250/391 . Use of weights; Weight properties of the tool