

CPC**COOPERATIVE PATENT CLASSIFICATION****B21K**

MAKING FORGED OR PRESSED METAL PRODUCTS, e.g. HORSE-SHOES, RIVETS, BOLTS OR WHEELS (making particular articles by working sheet metal without essentially removing material [B21D](#); processing wire [B21E](#); making pins, needles or nails [B21G](#); making particular articles by rolling [B21H](#); forging machines, pressing machines, hammering machines, in general [B21J](#); making chains [B21L](#); plating [B23K](#))

NOTE

This subclass includes only forging, pressing, or hammering operations which are specially adapted for use in the manufacture of particular objects and which, so far as the invention is concerned, are not combined with any different metal-working operation unless the latter is a subsidiary operation performed in the same machine.

Making particular articles by forging, pressing, or hammering; Equipment therefor**B21K 1/00****Making machine elements**

- B21K 1/02 . balls, rolls, or rollers, e.g. for bearings
- B21K 1/025 . . {of bullets}
- B21K 1/04 . ball-races {or sliding bearing races}
- B21K 1/05 . cages for bearings
- B21K 1/06 . axles or shafts
- B21K 1/063 . . {hollow (hollow racks [B21K 1/768](#))}
- B21K 1/066 . . {splined}
- B21K 1/08 . . crankshafts
- B21K 1/10 . . of cylindrical form
- B21K 1/12 . . of specially-shaped cross-section
- B21K 1/14 . fittings
- B21K 1/16 . . parts of pipe or hose couplings
- B21K 1/18 . pistons or plungers
- B21K 1/185 . . {with cooling channels}
- B21K 1/20 . valve parts
- B21K 1/205 . . {rocker arms}
- B21K 1/22 . . poppet valves, e.g. for internal-combustion engines
- B21K 1/24 . . valve bodies; valve seats
- B21K 1/26 . housings or supporting parts, e.g. axle housings, engine mountings
- B21K 1/28 . wheels; discs
- B21K 1/30 . . with gear-teeth
- B21K 1/305 . . . {helical}

B21K 1/32	. . discs, e.g. disc wheels
B21K 1/34	. . wheels with spokes
B21K 1/36	. . with blades
B21K 1/38	. . rims; tyres
B21K 1/40	. . hubs
B21K 1/42	. . pulleys, e.g. cable pulleys
B21K 1/44	. bolts, studs, or the like (making screw-thread B21K 1/56 ; making U-bolts B21K 1/74)
B21K 1/46	. . with heads
B21K 1/463	. . . {with recessed heads}
B21K 1/466	. . . {Heading machines with an oscillating die block}
B21K 1/48	. . . Machines working with hammers, e.g. beating in a radial direction, for forming heads
B21K 1/50	. . . Trimming or shearing formed heads, e.g. working with dies
B21K 1/52	. . double-ended, e.g. with heads on both ends (forming heads B21K 1/46)
B21K 1/54	. . with grooves or notches
B21K 1/56	. screw-threaded elements
B21K 1/58	. rivets
B21K 1/60	. . hollow or semi-hollow rivets
B21K 1/62	. . special rivets, e.g. with electrical contacts
B21K 1/64	. nuts (making screw-thread B21K 1/56)
B21K 1/66	. . form strip bars
B21K 1/68	. . from round or profiled bars
B21K 1/70	. . of special shape, e.g. self-locking nuts, wing nuts
B21K 1/701	. . . {Weld nuts}
B21K 1/702	. . . {Clinch nuts}
B21K 1/704	. . . {Cap nuts}
B21K 1/705	. . . {Castellated nuts}
B21K 1/707	. . . {Self-locking nuts}
B21K 1/708	. . . {wing nuts}
B21K 1/72	. hooks, e.g. crane hooks, railway track spikes (making nails in general B21G)
B21K 1/74	. forked members or members with two or more limbs, e.g. U-bolts, anchors
B21K 1/76	. elements not mentioned in one of the preceding groups
B21K 1/761	. . {rings}
B21K 1/762	. . {Coupling members for conveying mechanical motion, e.g. universal joints}
B21K 1/763	. . . {Inner elements of coupling members}
B21K 1/765	. . . {Outer elements of coupling members}
B21K 1/766	. . {Connecting rods}
B21K 1/767	. . {Toothed racks}
B21K 1/768	. . . {hollow}

B21K 3/00	Making engine or like machine parts not covered by sub-groups of B21K 1/00; Making propellers or the like
B21K 3/02	. cylinder heads
B21K 3/04	. blades, e.g. for turbines; Upsetting of blade roots
B21K 5/00	Making tools or tool parts, e.g. pliers
B21K 5/02	. drilling-tools or other for making or working on holes
B21K 5/04	. . twisting-tools, e.g. drills, reamers
B21K 5/06	. . Dressing, e.g. sharpening rock drills
B21K 5/08	. . drifting tools
B21K 5/10	. . Forming drill-bit shanks
B21K 5/12	. other cutting tools (cutlery wares B21K 11/00)
B21K 5/14	. hand hammers
B21K 5/16	. tools for turning nuts
B21K 5/18	. handles or parts therefor
B21K 5/20	. Making working faces of dies, either recessed or outstanding
B21K 7/00	Making railway appurtenances; Making vehicle parts
B21K 7/02	. parts for permanent way (spikes B21K 1/72)
B21K 7/04	. . switch tongues
B21K 7/06	. . sleepers
B21K 7/08	. . base plates for rails, e.g. chairs
B21K 7/10	. . rails joints
B21K 7/12	. parts for locomotives or vehicles, e.g. frames, underframes
B21K 7/14	. . brake rigging or brake parts
B21K 9/00	Reconditioning railroad accessories, e.g. rails
B21K 11/00	Making cutlery wares; Making garden tools or the like
B21K 11/02	. knives
B21K 11/04	. spoons; table forks
B21K 11/06	. scissors
B21K 11/08	. sickles; scythes
B21K 11/10	. axes; picks
B21K 11/12	. spades; shovels
B21K 11/14	. rakes; garden forks
B21K 13/00	Making locksmiths' goods, e.g. handles for cases
B21K 13/02	. hinges
B21K 15/00	Making blacksmiths' goods
B21K 15/02	. horseshoes; appurtenances therefor

- B21K 15/04 . . . caulks
- B21K 15/06 . metal attachments for footwear, e.g. wearresisting plates

- B21K 17/00 Making sport articles, e.g. skates**

- B21K 19/00 Making articles for agricultural machinery**
- B21K 19/02 . plough blades; ploughshares

- B21K 21/00 Making hollow articles not covered by a single preceding sub-group
(essentially from sheet-metal or uniform thin-walled tubes [B21D](#), e.g. [B21D 41/00](#),
[B21D 51/00](#))**
- B21K 21/02 . Producing blanks in the shape of discs or cups as semifinished articles for making hollow articles, e.g. to be deep-drawn or extruded
- B21K 21/04 . Shaping thin-walled hollow articles, e.g. cartridges
- B21K 21/06 . Shaping thick-walled hollow articles, e.g. projectiles
- B21K 21/08 . Shaping hollow articles with different cross-section in longitudinal direction, e.g. nozzles, spark-plugs
- B21K 21/10 . . cone-shaped or bell-shaped articles, e.g. insulator caps
- B21K 21/12 . Shaping end portions of hollow articles
- B21K 21/14 . . closed or substantially-closed ends, e.g. cartridge bottoms
- B21K 21/16 . Remodelling hollow bodies with respect to the shape of the cross-section ([remodelling end portions only B21K 21/12](#))

- B21K 23/00 Making other articles**
- B21K 23/02 . members of endless tracks, e.g. track guides, shoes ([making from sheet-metal B21D](#))
- B21K 23/04 . flanged articles ([B21K 1/28 takes precedence](#); [flanging tubes B21D](#))

- B21K 25/00 Uniting components to form integral members, e.g. turbine wheels and shafts, caulks with inserts, with or without shaping of the components
(uniting by interference- or press-fitting [B23P 11/02](#), [B21K 19/02](#))**
- B21K 25/005 . {[by friction heat forging \(B21J 15/027 takes precedence; friction heat forging per se B21J 5/063\)](#)}

Accessories; Auxiliary devices

- B21K 27/00 Handling devices, e.g. for feeding, aligning, discharging, Cutting-off means; Arrangement thereof**
- B21K 27/02 . Feeding devices for rods, wire, or strips
- B21K 27/04 . . allowing successive working steps
- B21K 27/06 . Cutting-off means; Arrangements thereof

- B21K 29/00 Arrangements for heating or cooling during processing (for preparing metal stock to be forged or pressed [B21J 1/06](#); heating equipment per se, see the appropriate classes, e.g. [H05B](#))**

- B21K 31/00 Control devices specially adapted for positioning tool carriers**