

Symbol	Typ	Titel
B	Sektion	PERFORMING OPERATIONS; TRANSPORTING
B21	Untersektion	SHAPING
B21	Klasse	MECHANICAL METAL-WORKING WITHOUT ESSENTIALLY REMOVING MATERIAL; PUNCHING METAL (casting, powder metallurgy B22; shearing B23D; working of metal by the action of a high concentration of electric current B23H; soldering, welding, flame-cutting B23K; other working of metal B23P; punching sheet material in general B26F; processes for changing of physical properties of metals C21D , C22F; electroforming C25D 1/00)
B21D	Unterklasse	WORKING OR PROCESSING OF SHEET METAL OR METAL TUBES, RODS OR PROFILES WITHOUT ESSENTIALLY REMOVING MATERIAL; PUNCHING (operations of the kind involved in the manufacture of such products B21B , B21C; working or processing of wire B21F; cutting or severing devices or machines in general B26; presses in general B30B) <u>Straightening; Restoring form; Bending; Corrugating; Flanging</u>
B21D 1/00	Hauptgruppe	Straightening, restoring form or removing local distortions of sheet metal or specific articles made therefrom (B21D 3/00 takes precedence); Stretching sheet metal combined with rolling (working sheet metal of limited length by stretching B21D 25/00; by localised hammering B21D 31/06) [2]
B21D 1/02	1-Punkt Untergruppe	. by rollers (B21D 1/06 takes precedence)
B21D 1/05	1-Punkt Untergruppe	. Stretching combined with rolling [2]
B21D 1/06	1-Punkt Untergruppe	. Removing local distortions
B21D 1/08	2-Punkt Untergruppe	. . of hollow bodies made from sheet metal (of substantially open bodies B21D 1/10)
B21D 1/10	2-Punkt Untergruppe	. . of specific articles made from sheet metal, e.g. mudguards
B21D 1/12	1-Punkt Untergruppe	. Straightening vehicle body parts or bodies (B21D 1/14 takes precedence)
B21D 1/14	1-Punkt Untergruppe	. Straightening frame structures
B21D 3/00	Hauptgruppe	Straightening or restoring form of metal rods, metal tubes, metal profiles, or specific articles made therefrom, whether or not in combination with sheet metal parts (straightening of well casings in situ E21B)
B21D 3/02	1-Punkt Untergruppe	. by rollers
B21D 3/04	2-Punkt Untergruppe	. . arranged on axes skew to the path of the work
B21D 3/05	2-Punkt Untergruppe	. . arranged on axes rectangular to the path of the work [2]
B21D 3/06	2-Punkt Untergruppe	. . arranged inclined to a revolving flier rolling frame
B21D 3/08	2-Punkt Untergruppe	. . which move in an orbit without rotating round the work
B21D 3/10	1-Punkt Untergruppe	. between rams and anvils or abutments
B21D 3/12	1-Punkt Untergruppe	. by stretching with or without twisting (by twisting only B21D 11/14)
B21D 3/14	1-Punkt Untergruppe	. Recontouring
B21D 3/16	1-Punkt Untergruppe	. of specific articles made from metal rods, tubes, or profiles, e.g. crankshafts, by specially-adapted methods or means
B21D 5/00	Hauptgruppe	Bending sheet metal along straight lines, e.g. to form simple curves (B21D 11/06 to B21D 11/18 take precedence; corrugating sheet metal B21D 13/00; as edge treatment B21D 19/00)
B21D 5/01	1-Punkt Untergruppe	. between rams and anvils or abutments

Symbol	Typ	Titel
B21D 5/02	1-Punkt Untergruppe	. on press brakes without making use of clamping means
B21D 5/04	1-Punkt Untergruppe	. on brakes making use of clamping means on one side of the work
B21D 5/06	1-Punkt Untergruppe	. by drawing procedure making use of dies or forming-rollers, e.g. making profiles
B21D 5/08	2-Punkt Untergruppe	. . making use of forming-rollers (B21D 5/12 takes precedence)
B21D 5/10	2-Punkt Untergruppe	. . for making tubes
B21D 5/12	3-Punkt Untergruppe	. . . making use of forming-rollers
B21D 5/14	1-Punkt Untergruppe	. by passing between rollers (B21D 5/06 takes precedence)
B21D 5/16	1-Punkt Untergruppe	. Folding; Pleating
B21D 7/00	Hauptgruppe	Bending rods, profiles, or tubes (B21D 11/02 to B21D 11/18 take precedence; using mandrels or the like B21D 9/00)
B21D 7/02	1-Punkt Untergruppe	. over a stationary forming member; by use of a swinging forming member or abutment [2]
B21D 7/022	2-Punkt Untergruppe	. . over a stationary forming member only [2]
B21D 7/024	2-Punkt Untergruppe	. . by a swinging forming member
B21D 7/025	3-Punkt Untergruppe	. . . and pulling or pushing the ends of the work
B21D 7/028	3-Punkt Untergruppe	. . . and altering the profile at the same time, e.g. forming bumpers
B21D 7/03	2-Punkt Untergruppe	. . Apparatus with means to keep the profile in shape
B21D 7/04	1-Punkt Untergruppe	. over a movably-arranged forming member (B21D 7/02 takes precedence)
B21D 7/06	1-Punkt Untergruppe	. in press brakes or between rams and anvils or abutments; Pliers with forming dies
B21D 7/08	1-Punkt Untergruppe	. by passing between rollers or through a curved die
B21D 7/10	1-Punkt Untergruppe	. by abutting members and flexible bending means, e.g. with chains, ropes
B21D 7/12	1-Punkt Untergruppe	. with programme control
B21D 7/14	1-Punkt Untergruppe	. combined with measuring of bends or lengths
B21D 7/16	1-Punkt Untergruppe	. Auxiliary equipment, e.g. for heating or cooling of bends
B21D 9/00	Hauptgruppe	Bending tubes using mandrels or the like (B21D 11/02 to B21D 11/18 take precedence)
B21D 9/01	1-Punkt Untergruppe	. the mandrel being flexible and engaging the entire tube length
B21D 9/03	2-Punkt Untergruppe	. . and built-up from loose elements, e.g. series of balls
B21D 9/04	1-Punkt Untergruppe	. the mandrel being rigid [2]
B21D 9/05	1-Punkt Untergruppe	. co-operating with forming members
B21D 9/07	2-Punkt Untergruppe	. . with one or more swinging forming members engaging tube ends only
B21D 9/08	1-Punkt Untergruppe	. in press brakes or between rams and anvils or abutments; Pliers with forming dies
B21D 9/10	1-Punkt Untergruppe	. by passing between rollers
B21D 9/12	1-Punkt Untergruppe	. by pushing over a curved mandrel; by pushing through a curved die
B21D 9/14	1-Punkt Untergruppe	. Wrinkle-bending, i.e. bending by corrugating

Symbol	Typ	Titel
B21D 9/15	1-Punkt Untergruppe	. using filling material of indefinite shape, e.g. sand, plastic material (filling of tubes with such material B21D 9/16) [2]
B21D 9/16	1-Punkt Untergruppe	. Auxiliary equipment, e.g. machines for filling tubes with sand
B21D 9/18	2-Punkt Untergruppe	. . for heating or cooling of bends
B21D 11/00	Hauptgruppe	Bending not restricted to forms of material mentioned in only one of groups B21D 5/00 , B21D 7/00 , B21D 9/00; Bending not provided for in groups B21D 5/00 to B21D 9/00 (corrugating or bending into wave form B21D 13/00 , B21D 15/00; flanging B21D 19/00); Twisting [2]
B21D 11/02	1-Punkt Untergruppe	. Bending by stretching or pulling over a die (working sheet metal of limited length by stretching B21D 25/00)
B21D 11/06	1-Punkt Untergruppe	. Bending into helical or spiral form; Forming a succession of return bends, e.g. serpentine form (making helically seamed tubing B21C 37/12)
B21D 11/07	2-Punkt Untergruppe	. . Making serpentine-shaped articles by bending essentially in one plane
B21D 11/08	1-Punkt Untergruppe	. Bending by altering the thickness of part of the cross-section of the work (B21D 11/06 takes precedence)
B21D 11/10	1-Punkt Untergruppe	. Bending specially adapted to produce specific articles, e.g. leaf springs
B21D 11/12	2-Punkt Untergruppe	. . the articles being reinforcements for concrete
B21D 11/14	1-Punkt Untergruppe	. Twisting
B21D 11/15	2-Punkt Untergruppe	. . Reinforcing rods for concrete
B21D 11/16	2-Punkt Untergruppe	. . Crankshafts
B21D 11/18	1-Punkt Untergruppe	. Jogging
B21D 11/20	1-Punkt Untergruppe	. Bending sheet metal, not otherwise provided for
B21D 11/22	1-Punkt Untergruppe	. Auxiliary equipment, e.g. positioning devices
B21D 13/00	Hauptgruppe	Corrugating sheet metal, rods or profiles; Bending sheet metal, rods or profiles into wave form (tubes B21D 15/00)
B21D 13/02	1-Punkt Untergruppe	. by pressing
B21D 13/04	1-Punkt Untergruppe	. by rolling
B21D 13/06	1-Punkt Untergruppe	. by drawing
B21D 13/08	1-Punkt Untergruppe	. by combined methods
B21D 13/10	1-Punkt Untergruppe	. into a peculiar profiling shape
B21D 15/00	Hauptgruppe	Corrugating tubes (wrinkle-bending using mandrels or the like B21D 9/14) [2]
B21D 15/02	1-Punkt Untergruppe	. longitudinally
B21D 15/03	2-Punkt Untergruppe	. . by applying fluid pressure
B21D 15/04	1-Punkt Untergruppe	. transversely, e.g. helically
B21D 15/06	2-Punkt Untergruppe	. . annularly
B21D 15/10	2-Punkt Untergruppe	. . by applying fluid pressure
B21D 15/12	1-Punkt Untergruppe	. Bending tubes into wave form
B21D 17/00	Hauptgruppe	Forming single grooves in sheet metal or tubular or hollow articles
B21D 17/02	1-Punkt Untergruppe	. by pressing (grooving or notching of bolts, studs, or the like B21K 1/54)

Symbol	Typ	Titel
B21D 17/04	1-Punkt Untergruppe	. by rolling
B21D 19/00	Hauptgruppe	Flanging or other edge treatment, e.g. of tubes (connecting by making use of folds B21D 39/00; flaring out tube ends B21D 41/02)
B21D 19/02	1-Punkt Untergruppe	. by continuously-acting tools moving along the edge (edge-curling B21D 19/12)
B21D 19/04	2-Punkt Untergruppe	. . shaped as rollers
B21D 19/06	3-Punkt Untergruppe	. . . working inwardly
B21D 19/08	1-Punkt Untergruppe	. by single or successive action of pressing tools, e.g. vice jaws
B21D 19/10	2-Punkt Untergruppe	. . working inwardly
B21D 19/12	1-Punkt Untergruppe	. Edge-curling
B21D 19/14	2-Punkt Untergruppe	. . Reinforcing edges, e.g. armouring same
B21D 19/16	1-Punkt Untergruppe	. Reverse flanging of tube ends
B21D 21/00	Hauptgruppe	Combined processes according to methods covered by groups B21D 1/00 to B21D 19/00
		<u>Stamping; Spinning; Deep-drawing; Working sheet metal of limited length by stretching; Punching</u>
B21D 22/00	Hauptgruppe	Shaping without cutting, by stamping, spinning, or deep-drawing (otherwise than using rigid devices or tools or yieldable or resilient pads B21D 26/00)
B21D 22/02	1-Punkt Untergruppe	. Stamping using rigid devices or tools
B21D 22/04	2-Punkt Untergruppe	. . for dimpling (combined with perforating B21D 28/24)
B21D 22/06	2-Punkt Untergruppe	. . having relatively-movable die parts
B21D 22/08	2-Punkt Untergruppe	. . with die parts on rotating carriers
B21D 22/10	1-Punkt Untergruppe	. Stamping using yieldable or resilient pads
B21D 22/12	2-Punkt Untergruppe	. . using enclosed flexible chambers
B21D 22/14	1-Punkt Untergruppe	. Spinning
B21D 22/16	2-Punkt Untergruppe	. . over shaping mandrels or formers
B21D 22/18	2-Punkt Untergruppe	. . using tools guided to produce the required profile
B21D 22/20	1-Punkt Untergruppe	. Deep-drawing (special deep-drawing arrangements in, or in connection with, presses B21D 24/00)
B21D 22/21	2-Punkt Untergruppe	. . without fixing the border of the blank [2]
B21D 22/22	2-Punkt Untergruppe	. . with devices for holding the edge of the blanks (B21D 22/24 to B21D 22/30 take precedence; shaping over a die without external former B21D 11/02)
B21D 22/24	2-Punkt Untergruppe	. . involving two drawing operations having effects in opposite directions with respect to the blank
B21D 22/26	2-Punkt Untergruppe	. . for making peculiarly, e.g. irregularly, shaped articles
B21D 22/28	2-Punkt Untergruppe	. . of cylindrical articles using consecutive dies
B21D 22/30	2-Punkt Untergruppe	. . to finish articles formed by deep-drawing
B21D 24/00	Hauptgruppe	Special deep-drawing arrangements in, or in connection with, presses
B21D 24/02	1-Punkt Untergruppe	. Die-cushions
B21D 24/04	1-Punkt Untergruppe	. Blank holders; Mounting means therefor

Symbol	Typ	Titel
B21D 24/06	2-Punkt Untergruppe	. . Mechanically spring-loaded blank holders
B21D 24/08	2-Punkt Untergruppe	. . Pneumatically or hydraulically loaded blank holders
B21D 24/10	1-Punkt Untergruppe	. Devices controlling or operating blank holders independently, or in conjunction with dies
B21D 24/12	2-Punkt Untergruppe	. . mechanically
B21D 24/14	2-Punkt Untergruppe	. . pneumatically or hydraulically
B21D 24/16	1-Punkt Untergruppe	. Additional equipment in association with the tools, e.g. for shearing, for trimming
B21D 25/00	Hauptgruppe	Working sheet metal of limited length by stretching, e.g. for straightening [2]
B21D 25/02	1-Punkt Untergruppe	. by pulling over a die [2]
B21D 25/04	1-Punkt Untergruppe	. Clamping arrangements [2]
B21D 26/00	Hauptgruppe	Shaping without cutting otherwise than using rigid devices or tools or yieldable or resilient pads, i.e. applying fluid pressure or magnetic forces (stamping using resilient pads B21D 22/10)
B21D 26/02	1-Punkt Untergruppe	. by applying fluid pressure [2]
B21D 26/06	2-Punkt Untergruppe	. . by shock waves
B21D 26/08	3-Punkt Untergruppe	. . . generated by explosives, e.g. chemical explosives
B21D 26/10	3-Punkt Untergruppe	. . . generated by evaporation, e.g. of wire, of liquids
B21D 26/12	3-Punkt Untergruppe	. . . initiated by spark discharge [2]
B21D 26/14	1-Punkt Untergruppe	. applying magnetic forces
B21D 28/00	Hauptgruppe	Shaping by press-cutting; Perforating
B21D 28/02	1-Punkt Untergruppe	. Punching blanks or articles with or without obtaining scrap (cutting nails or pins from strips or sheet material B21G 3/26); Notching
B21D 28/04	2-Punkt Untergruppe	. . Centering the work; Positioning the tools
B21D 28/06	2-Punkt Untergruppe	. . Making more than one part out of the same blank; Scrapless working
B21D 28/08	3-Punkt Untergruppe	. . . Zig-zag sequence working
B21D 28/10	2-Punkt Untergruppe	. . Incompletely punching in such a manner that the parts are still coherent with the work
B21D 28/12	2-Punkt Untergruppe	. . Punching using rotatable carriers
B21D 28/14	2-Punkt Untergruppe	. . Dies (ejecting or stripping-off devices arranged in punching machines or tools B21D 45/00)
B21D 28/16	2-Punkt Untergruppe	. . Shoulder or burr prevention
B21D 28/18	2-Punkt Untergruppe	. . Yieldable, e.g. rubber, punching pads
B21D 28/20	2-Punkt Untergruppe	. . Applications of drives
B21D 28/22	2-Punkt Untergruppe	. . Notching the peripheries of circular blanks, e.g. laminations for dynamo-electric machines
B21D 28/24	1-Punkt Untergruppe	. Perforating, i.e. punching holes
B21D 28/26	2-Punkt Untergruppe	. . in sheets or flat parts
B21D 28/28	2-Punkt Untergruppe	. . in tubes or other hollow bodies
B21D 28/30	2-Punkt Untergruppe	. . in annular parts, e.g. rims

Symbol	Typ	Titel
B21D 28/32	2-Punkt Untergruppe	. . in other articles of special shape
B21D 28/34	2-Punkt Untergruppe	. . Perforating tools; Die holders
B21D 28/36	2-Punkt Untergruppe	. . using rotatable work or tool holders
B21D 31/00	Hauptgruppe	Other methods for working sheet metal, metal tubes, metal profiles (deforming one surface of tubes helically by rolling B21H 3/00; upsetting B21J 5/08; working metal by removing material therefrom B23; embossing B44B)
B21D 31/02	1-Punkt Untergruppe	. Stabbing or piercing, e.g. for making sieves (dimpling B21D 22/04; perforating by punching B21D 28/24)
B21D 31/04	1-Punkt Untergruppe	. Expanding other than provided for in groups B21D 1/00 to B21D 28/00 , e.g. for making expanded metal (B21D 47/00 takes precedence; enlarging tube ends B21D 41/02) [2]
B21D 31/06	1-Punkt Untergruppe	. Deforming sheet metal, tubes or profiles by sequential impacts, e.g. hammering, beating, peen forming (forging hammers B21J 7/00)
B21D 33/00	Hauptgruppe	Special measures in connection with working metal foils, e.g. gold foils (cutting or perforating of metal foil analogous to paper B26)
B21D 35/00	Hauptgruppe	Combined processes according to methods covered by groups B21D 1/00 to B21D 31/00 (B21D 21/00 takes precedence)
B21D 37/00	Hauptgruppe	Tools as parts of machines covered by this subclass (forms or constructions of tools uniquely adapted for particular operations, see in the relevant groups for the operations)
B21D 37/01	1-Punkt Untergruppe	. Selection of materials [2]
B21D 37/02	1-Punkt Untergruppe	. Die constructions enabling assembly of the die parts in different ways (B21D 37/06 takes precedence)
B21D 37/04	1-Punkt Untergruppe	. Movable or exchangeable mountings for tools
B21D 37/06	2-Punkt Untergruppe	. . Pivotaly-arranged tools, e.g. disengageable (die sets with dies pivoted to one another B21D 37/12)
B21D 37/08	1-Punkt Untergruppe	. Dies with different parts for several steps in a process
B21D 37/10	1-Punkt Untergruppe	. Die sets; Pillar guides
B21D 37/12	2-Punkt Untergruppe	. . Particular guiding equipment; Special arrangements for interconnection or cooperation of dies
B21D 37/14	1-Punkt Untergruppe	. Particular arrangements for handling and holding in place complete dies
B21D 37/16	1-Punkt Untergruppe	. Heating or cooling
B21D 37/18	1-Punkt Untergruppe	. Lubricating
B21D 37/20	1-Punkt Untergruppe	. Making tools by operations not covered a single other subclass
B21D 39/00	Hauptgruppe	Application of procedures in order to connect objects or parts, e.g. coating with sheet metal otherwise than by plating (riveting B21J; uniting components by forging or pressing to form integral members B21K 25/00; welding B23K; press-fitting, force-fitting, or shrinking in general B23P 11/00 , B23P 19/00; by adhesives F16B 11/00); Tube expanders
B21D 39/02	1-Punkt Untergruppe	. of sheet metal by folding, e.g. connecting edges of a sheet to form a cylinder
B21D 39/03	1-Punkt Untergruppe	. of sheet metal otherwise than by folding [2]
B21D 39/04	1-Punkt Untergruppe	. of tubes with tubes; of tubes with rods
B21D 39/06	1-Punkt Untergruppe	. of tubes in openings, e.g. rolling-in
B21D 39/08	1-Punkt Untergruppe	. Tube expanders
B21D 39/10	2-Punkt Untergruppe	. . with rollers for expanding only

Symbol	Typ	Titel
B21D 39/12	2-Punkt Untergruppe	. . with rollers for expanding and flanging
B21D 39/14	2-Punkt Untergruppe	. . with balls
B21D 39/16	2-Punkt Untergruppe	. . with torque limiting devices
B21D 39/18	2-Punkt Untergruppe	. . Rollers of special shape
B21D 39/20	2-Punkt Untergruppe	. . with mandrels, e.g. expandable [2]
B21D 41/00	Hauptgruppe	Application of procedures in order to alter the diameter of tube ends (B21D 39/00 takes precedence)
B21D 41/02	1-Punkt Untergruppe	. Enlarging
B21D 41/04	1-Punkt Untergruppe	. Reducing; Closing
B21D 43/00	Hauptgruppe	Feeding, positioning or storing devices combined with, or arranged in, or specially adapted for use in connection with, apparatus for working or processing sheet metal, metal tubes or metal profiles; Associations therewith of cutting devices (cutting devices associated with the tool, see the relevant group for the tool)
B21D 43/02	1-Punkt Untergruppe	. Advancing work in relation to the stroke of the die or tool
B21D 43/04	2-Punkt Untergruppe	. . by means in mechanical engagement with the work
B21D 43/05	3-Punkt Untergruppe	. . . specially adapted for multi-stage presses
B21D 43/06	3-Punkt Untergruppe	. . . by positive or negative engaging parts co-operating with corresponding parts of the sheet or the like to be processed, e.g. carrier bolts or grooved section in the carriers
B21D 43/08	3-Punkt Untergruppe	. . . by rollers
B21D 43/09	4-Punkt Untergruppe	 by one or more pairs of rollers for feeding sheet or strip material [2]
B21D 43/10	3-Punkt Untergruppe	. . . by grippers
B21D 43/11	4-Punkt Untergruppe	 for feeding sheet or strip material [2]
B21D 43/12	3-Punkt Untergruppe	. . . by chains or belts
B21D 43/13	3-Punkt Untergruppe	. . . by linearly moving tables [2]
B21D 43/14	3-Punkt Untergruppe	. . . by turning devices, e.g. turn-tables
B21D 43/16	2-Punkt Untergruppe	. . by gravity, e.g. chutes
B21D 43/18	2-Punkt Untergruppe	. . by means in pneumatic or magnetic engagement with the work
B21D 43/20	1-Punkt Untergruppe	. Storage arrangements; Piling or unpiling (in general B65G)
B21D 43/22	2-Punkt Untergruppe	. . Devices for piling sheets
B21D 43/24	2-Punkt Untergruppe	. . Devices for removing sheets from a stack
B21D 43/26	1-Punkt Untergruppe	. Stops
B21D 43/28	1-Punkt Untergruppe	. Associations of cutting devices therewith
B21D 45/00	Hauptgruppe	Ejecting or stripping-off devices arranged in machines or tools dealt with in this subclass
B21D 45/02	1-Punkt Untergruppe	. Ejecting devices [2]
B21D 45/04	2-Punkt Untergruppe	. . interrelated with motion of tool [2]

Symbol	Typ	Titel
B21D 45/06	1-Punkt Untergruppe	. Stripping-off devices [2]
B21D 45/08	2-Punkt Untergruppe	. . interrelated with motion of tool [2]
B21D 45/10	1-Punkt Untergruppe	. Combined ejecting and stripping-off devices [2]
B21D 47/00	Hauptgruppe	<u>Processing sheet metal or metal tubes, or processing metal profiles according to any of the preceding groups, in the manufacture of finished or semi-finished articles</u> Making rigid structural elements or units, e.g. honeycomb structures
B21D 47/01	1-Punkt Untergruppe	. beams or pillars [2]
B21D 47/02	2-Punkt Untergruppe	. . by expanding [2]
B21D 47/04	1-Punkt Untergruppe	. composite sheet metal profiles
B21D 49/00	Hauptgruppe	Sheathing or stiffening objects (by winding wire or tape thereon B65H 54/00 , B65H 81/00; specially adapted for manufacturing conductors or cables H01B 13/26)
B21D 51/00	Hauptgruppe	Making hollow objects (from thick-walled or non-uniform tubes B21K 21/00)
B21D 51/02	1-Punkt Untergruppe	. not characterised by the particular use (cans or tins B21D 51/26)
B21D 51/04	2-Punkt Untergruppe	. . built-up objects, e.g. objects with rigidly-attached bottom or cover
B21D 51/06	2-Punkt Untergruppe	. . folded objects
B21D 51/08	2-Punkt Untergruppe	. . ball-shaped objects
B21D 51/10	2-Punkt Untergruppe	. . conically or cylindrically shaped objects
B21D 51/12	2-Punkt Untergruppe	. . objects with corrugated walls
B21D 51/14	2-Punkt Untergruppe	. . Flattening hollow objects for transport or storage; Re-forming same (making tubes from doubled flat material B21C 37/14)
B21D 51/16	1-Punkt Untergruppe	. characterised by the particular structure or use (making heat exchangers B21D 53/02)
B21D 51/18	2-Punkt Untergruppe	. . vessels, e.g. tubs, vats, tanks, sinks, or the like
B21D 51/20	3-Punkt Untergruppe	. . . barrels
B21D 51/22	3-Punkt Untergruppe	. . . pots, e.g. for cooking
B21D 51/24	2-Punkt Untergruppe	. . high-pressure containers, e.g. boilers, bottles
B21D 51/26	2-Punkt Untergruppe	. . cans or tins; Closing same in a permanent manner (making outlet arrangements B21D 51/38; welding or soldering B23K) [2]
B21D 51/28	3-Punkt Untergruppe	. . . Folding the longitudinal seam
B21D 51/30	3-Punkt Untergruppe	. . . Folding the circumferential seam
B21D 51/32	4-Punkt Untergruppe	 by rolling
B21D 51/34	4-Punkt Untergruppe	 by pressing
B21D 51/36	2-Punkt Untergruppe	. . collapsible or like thin-walled tubes, e.g. for toothpaste
B21D 51/38	2-Punkt Untergruppe	. . Making inlet or outlet arrangements of cans, tins, baths, bottles, or other vessels
B21D 51/40	3-Punkt Untergruppe	. . . Making outlet openings, e.g. bung holes
B21D 51/42	4-Punkt Untergruppe	 Making or attaching spouts

Symbol	Typ	Titel
B21D 51/44	3-Punkt Untergruppe	. . . Making closures, e.g. caps (folded of thin metal foils in the way of making paper caps B31D 5/00; making closures in conjunction with applying same B67B)
B21D 51/46	4-Punkt Untergruppe	 Placing sealings or sealing material
B21D 51/48	4-Punkt Untergruppe	 Making crown caps
B21D 51/50	4-Punkt Untergruppe	 Making screw caps
B21D 51/52	2-Punkt Untergruppe	. . boxes, cigarette cases, or the like
B21D 51/54	2-Punkt Untergruppe	. . cartridge cases, e.g. for ammunition, for letter carriers in pneumatic-tube plants
B21D 53/00	Hauptgruppe	Making other particular articles (making chains or chain parts B21L)
B21D 53/02	1-Punkt Untergruppe	. heat exchangers, e.g. radiators, condensers (making finned or ribbed tubes by fixing strip material or the like to tubes B21C 37/22) [2]
B21D 53/04	2-Punkt Untergruppe	. . of sheet metal
B21D 53/06	2-Punkt Untergruppe	. . of metal tubes
B21D 53/08	2-Punkt Untergruppe	. . of both metal tubes and sheet metal (connecting tubes in openings B21D 39/06)
B21D 53/10	1-Punkt Untergruppe	. parts of bearings; sleeves; valve seats or the like
B21D 53/12	2-Punkt Untergruppe	. . cages for bearings
B21D 53/14	1-Punkt Untergruppe	. belts, e.g. machine-gun belts
B21D 53/16	1-Punkt Untergruppe	. rings, e.g. barrel hoops
B21D 53/18	2-Punkt Untergruppe	. . of hollow or C-shaped cross-section, e.g. for curtains, for eyelets
B21D 53/20	2-Punkt Untergruppe	. . washers, e.g. for sealing
B21D 53/22	3-Punkt Untergruppe	. . . with means for preventing rotation
B21D 53/24	1-Punkt Untergruppe	. nuts or like thread-engaging members
B21D 53/26	1-Punkt Untergruppe	. wheels or the like
B21D 53/28	2-Punkt Untergruppe	. . gear wheels
B21D 53/30	2-Punkt Untergruppe	. . wheel rims
B21D 53/32	2-Punkt Untergruppe	. . wheel covers
B21D 53/34	2-Punkt Untergruppe	. . brake drums
B21D 53/36	1-Punkt Untergruppe	. clips, clamps, or like fastening or attaching devices, e.g. for electric installation
B21D 53/38	1-Punkt Untergruppe	. locksmith's goods, e.g. handles
B21D 53/40	2-Punkt Untergruppe	. . hinges, e.g. door hinge plates
B21D 53/42	2-Punkt Untergruppe	. . keys
B21D 53/44	1-Punkt Untergruppe	. fancy goods, e.g. jewellery products (making wire fabrics B21F)
B21D 53/46	1-Punkt Untergruppe	. haberdashery, e.g. buckles, combs; pronged fasteners, e.g. staples
B21D 53/48	2-Punkt Untergruppe	. . buttons, e.g. press-buttons, snap fasteners

Symbol	Typ	Titel
B21D 53/50	2-Punkt Untergruppe	. . metal slide-fastener parts
B21D 53/52	3-Punkt Untergruppe	. . . fastener elements; Attaching such elements so far as this procedure is combined with the process for making the elements
B21D 53/54	3-Punkt Untergruppe	. . . slides
B21D 53/56	3-Punkt Untergruppe	. . . stops
B21D 53/58	1-Punkt Untergruppe	. end-pieces for laces or ropes
B21D 53/60	1-Punkt Untergruppe	. cutlery wares; garden tools or the like
B21D 53/62	2-Punkt Untergruppe	. . spoons; table forks
B21D 53/64	2-Punkt Untergruppe	. . knives; scissors; cutting blades (B21D 53/72 takes precedence; handle portions B21D 53/70)
B21D 53/66	2-Punkt Untergruppe	. . spades; shovels (handle portions B21D 53/70)
B21D 53/68	2-Punkt Untergruppe	. . rakes, garden forks, or the like (handle portions B21D 53/70)
B21D 53/70	2-Punkt Untergruppe	. . handle portions (B21D 53/72 takes precedence)
B21D 53/72	2-Punkt Untergruppe	. . sickles; scythes
B21D 53/74	1-Punkt Untergruppe	. frames for openings, e.g. for windows, doors, handbags
B21D 53/76	1-Punkt Untergruppe	. writing or drawing instruments, e.g. writing pens, erasing pens
B21D 53/78	1-Punkt Untergruppe	. propeller blades; turbine blades
B21D 53/80	1-Punkt Untergruppe	. dustproof covers; safety covers
B21D 53/82	1-Punkt Untergruppe	. perforated music sheets; pattern sheets, e.g. for control purposes, stencils
B21D 53/84	1-Punkt Untergruppe	. other parts for engines, e.g. connecting-rods
B21D 53/86	1-Punkt Untergruppe	. other parts for bicycles or motorcycles
B21D 53/88	1-Punkt Untergruppe	. other parts for vehicles, e.g. cowlings, mudguards
B21D 53/90	2-Punkt Untergruppe	. . axle-housings
B21D 53/92	1-Punkt Untergruppe	. other parts for aircraft
B21D 55/00	Hauptgruppe	Safety devices protecting the machine or the operator, specially adapted for apparatus or machines dealt with in this subclass (for presses in general B30B; safety devices in general F16P)