

B21 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)

B21F WORKING OR PROCESSING OF WIRE (rolling of metal B21B; by drawing, auxiliary operations used in connection with metal-working without essentially removing material B21C; bundling articles B65B 13/00)

WIRE WORKING CHARACTERISED BY OPERATIONS PERFORMED

Bending, straightening; coiling; twisting.....	1/00; 3/00; 7/00
Upsetting, straining.....	5/00, 9/00
Cutting, splitting, connecting	11/00, 13/00, 15/00
Articles jacketed or reinforced with wire	17/00
Coating of wire	19/00

Other treatments.....	21/00
Feeding wire into apparatus	23/00

WIRE WORKING CHARACTERISED BY THE PARTICULAR ARTICLES PRODUCED

Barbed wire; network, fencing, wire fabrics	25/00; 27/00 33/00
Springs, rings.....	35/00, 37/00
other articles	39/00 45/00

Wire working characterised by operations performed

1/00 Bending wire other than coiling; Straightening wire	
1/02 . Straightening	
1/04 . Undulating	
1/06 . Bending wire-eyes	
3/00 Coiling wire into particular forms	
3/02 . helically	
3/027 . . with extended ends formed in a special shape, e.g. for clothes-pegs	
3/04 . . externally on a mandrel or the like	
3/06 . . internally on a hollow form	
3/08 . to flat spiral	
3/10 . to spirals other than flat, e.g. conical	
3/12 . of interconnected helical springs	
5/00 Upsetting wire (in the manufacture of nails or pins B21G 3/12)	
7/00 Twisting wire; Twisting wire together (for connections of limited size B21F 15/04)	
9/00 Straining wire (straining prestressing wires for concrete E04G 21/12; connections or attachments adapted for straining F16G 11/00)	
9/02 . by tools adapted also for making connections	
11/00 Cutting wire (hand cutting tools B26B)	
13/00 Splitting wire	
15/00 Connecting wire to wire or other metallic material or objects; Connecting parts by means of wire (tools for both straining and connecting B21F 9/00; jacketing or reinforcing B21F 17/00; manufacture of wire network B21F 27/00; in making bands B21F 43/00)	
15/02 . wire with wire	
15/04 . . without additional connecting elements or material, e.g. by twisting	
15/06 . . with additional connecting elements or material	
15/08 . . . making use of soldering or welding	
15/10 . wire with sheet metal	

17/00 Jacketing or reinforcing articles with wire (by winding B65H 54/00, B65H 81/00; by braiding D04C)	
19/00 Metallic coating of wire (by extruding B21C 23/24; by soldering or welding, e.g. cladding or plating, B23K; by other non-mechanical means C23; electroplating C25D)	
21/00 Working or processing wire not otherwise provided for	
23/00 Feeding wire in wire-working machines or apparatus (applicable also to feeding rods or strips B21D 43/00)	

Wire working characterised by the particular articles produced

25/00 Making barbed wire	
27/00 Making wire network, i.e. wire nets (meshed-ring network B21F 31/00; in making bands B21F 43/00; using looms D03D)	
27/02 . without additional connecting elements or material at crossings, e.g. connected by knitting	
27/04 . . Manufacturing on machines with rotating blades or formers	
27/06 . . Manufacturing on twister-gear machines	
27/08 . with additional connecting elements or material at crossings	
27/10 . . with soldered or welded crossings	
27/12 . Making special types or portions of network by methods or means specially adapted therefor	
27/14 . . Specially bending or deforming free wire ends	
27/16 . . for spring mattresses	
27/18 . . of meshed work for filters or sieves	
27/20 . . of plaster-carrying network	
27/22 . . of network for wire-reinforced glass or the like	
29/00 Making fencing or like material made partly of wire (B21F 25/00, B21F 27/00 take precedence) [2]	
29/02 . comprising bars or the like connected by wires	
31/00 Making meshed-ring network from wire	

B21F

33/00	Tools or devices specially designed for handling or processing wire fabrics or the like	45/00	Wire-working in the manufacture of other particular articles (of pins, needles, nails, hairpins B21G; of chains B21L)
33/02	. Mounting of wire network on frames	45/02	. of clothes hangers
33/04	. Connecting ends of helical springs for mattresses	45/04	. of elements, e.g. levers or links, for bottle stoppers
35/00	Making springs from wire (by coiling wire B21F 3/00; making resilient rings B21F 37/02)	45/06	. of flexible shafts or hollow conduits, e.g. for Bowden mechanisms
35/02	. Bending or deforming ends of coil springs to special shape	45/08	. of loom heddles
35/04	. Making flat springs, e.g. sinus springs	45/10	. of cards for fabric-napping machines
37/00	Manufacture of rings from wire (in chain making B21L; producing bead-rings or bead-cores for tyres B29D 30/48)	45/12	. of fishing hooks
37/02	. or resilient rings, e.g. key-rings	45/14	. of end-pieces for laces or ropes
37/04	. of washers (B21F 37/02 takes precedence)	45/16	. of devices for fastening or securing purposes
39/00	Making wheel spokes from wire	45/18	. . of slide fastener elements
41/00	Making umbrella frames or members from wire	45/20	. . of spring hooks; of spring safety hooks
43/00	Making bands, e.g. bracelets, or wire (making chains B21L; using looms D03D)	45/22	. . of paper fasteners or clips (staples B21F 45/24)
		45/24	. . of staples; of belt-fastening elements
		45/26	. . of buttons
		45/28	. . . of “patent-fastener” or press-button type