

ECLA**EUROPEAN CLASSIFICATION****B21F**

WORKING AND PROCESSING OF WIRE ([N: reducing diameter by] rolling of metal B21B; by drawing, auxiliary operations used in connection with metal working without essentially removing material B21C)

Guide heading:

Wire working characterised by operations performed

B21F1/00

Bending wire other than coiling; Straightening wire

B21F1/00B

. [N: by means of manually operated devices, e.g. pliers]

B21F1/00D

. [N: by means of press-type tooling] [N1204]

B21F1/00F

. [N: in 3D with means to rotate the tools about the wire axis] [N1204]

B21F1/00H

. [N: in 3D with means to rotate the wire about its axis] [N1204]

B21F1/02

. Straightening

B21F1/02B

. . [N: in a device rotating about the wire axis] [N1204]

B21F1/02C

. . [N: Straightening and cutting]

B21F1/04

. Undulating

B21F1/06

. Bending wire-eyes

B21F3/00

Coiling wire into particular forms

B21F3/02

. helically

B21F3/027

. . with extended ends formed in a special shape, e.g. for clothes-pegs

B21F3/04

. . externally on a mandrel or the like

B21F3/06

. . internally on a hollow form

B21F3/08

. to flat spiral

B21F3/10

. to spirals other than flat, e.g. conical

B21F3/12

. of interconnected helical springs

B21F5/00

Upsetting wire [N: or pressing operations affecting the wire cross-section] (in the manufacture of nails or pins B21G3/12) [N1204]

B21F5/00B

. [N: Upsetting wire] [N1204]

B21F7/00

Twisting wire; Twisting wire together (for connections of limited size B21F15/04)

B21F9/00	Straining wire (straining pre-stressing wires for concrete E04G21/12 ; connections or attachments adapted for straining F16G11/00 ; [N: bundling machines or tools B65B13/00])
B21F9/00B	. [N: to maintain tension in the wire, e.g. to pull the wire taut] [N1204]
B21F9/00D	. [N: to affect the material properties of the wire] [N1204]
B21F9/00F	. [N: to induce a plastic deformation of the wire] [N1204]
B21F9/02	. by tools adapted also for making connections
B21F11/00	Cutting wire (hand cutting tools B26B)
B21F11/00B	. [N: springs]
B21F13/00	Splitting wire
B21F15/00	Connecting wire to wire or other metallic material or objects; Connecting parts by means of wire (tools for both straining and connecting B21F9/00 ; jacketing or reinforcing B21F17/00 ; manufacture of wire network B21F27/00 ; in making bands B21F43/00) [N: bundling machines or tools B65B13/00 ; for semiconductors H01L24/85] [M1204]
B21F15/02	. wire with wire
B21F15/04	. . without additional connecting elements or material, e.g. by twisting
B21F15/06	. . with additional connecting elements or material [N: (B21F27/08 takes precedence)] [N1204]
B21F15/08	. . . making use of soldering or welding [N: (B21F27/10 takes precedence)] [N1204]
B21F15/10	. wire with sheet metal
B21F17/00	Jacketing or reinforcing articles with wire (by winding B65H54/00 , B65H81/00 ; by braiding D04C)
B21F19/00	Metallic coating of wire (by extruding B21C23/24 ; by soldering or welding, e.g. cladding or plating B23K ; by other non-mechanical means C23 ; electroplating C25D)
B21F23/00	Feeding wire in wire-working machines or apparatus (applicable also to feeding rods or strips B21D43/00)
B21F23/00C	. [N: Feeding means specially adapted for handling various diameters of wire or rod] [N9712]
B21F23/00D	. [N: Feeding discrete lengths of wire or rod] [N9712]
B21F23/00D2	. . [N: using pick-up means, e.g. for isolating a predefined number of wires from a bundle] [N1204]

Guide heading:	<u>Wire working characterised by the particular articles produced</u>
B21F25/00	Making barbed wire
B21F27/00	Making wire network, i.e. wire nets (meshed-ring network B21F31/00 ; in making bands B21F43/00 ; using looms D03D)
B21F27/00B	. [N: Wire network per se]
B21F27/02	. without additional connecting elements or material at crossings, e.g. connected by knitting
B21F27/04	. . Manufacturing on machines with rotating blades or formers
B21F27/06	. . Manufacturing on twister-gear machines
B21F27/08	. with additional connecting elements or material at crossings
B21F27/10	. . with soldered or welded crossings [N: (resistance spot welding machines for manufacturing of metallic grids or mats B23K11/00F10)]
B21F27/12	. Making special types or portions of network by methods or means specially adapted therefor
B21F27/12B	. . [N: of tubular form, e.g. as reinforcements for pipes or pillars]
B21F27/12B2	. . . [N: by attaching a continuous stirrup to longitudinal wires] [N0203]
B21F27/12B2R [N: applied by rotation] [N0203]
B21F27/12B4	. . . [N: by attaching individual stirrups to longitudinal wires] [N0203]
B21F27/12B6	. . . [N: by bending preformed mesh] [N0203]
B21F27/12D	. . [N: of three-dimensional form by connecting wire networks, e.g. by projecting wires through an insulating layer] [N9611]
B21F27/14	. . Specially bending or deforming free wire ends
B21F27/16	. . for spring mattresses
B21F27/18	. . of meshed work for filters or sieves
B21F27/20	. . of plaster-carrying network
B21F27/22	. . of network for wire-reinforced glass or the like
B21F29/00	Making fencing or like material made partly of wire (B21F25/00 , B21F27/00 take precedence)
B21F29/02	. comprising bars or the like connected by wires
B21F31/00	Making meshed-ring network from wire
B21F33/00	Tools or devices specially designed for handling or processing wire fabrics or the like
B21F33/00B	. [N: Coiling or packing wire network]

B21F33/00C	<ul style="list-style-type: none"> • [N: Cutting wire network]
B21F33/00D	<ul style="list-style-type: none"> • [N: Connecting wire network]
B21F33/02	<ul style="list-style-type: none"> • Mounting of wire network on frames
B21F33/02B	<ul style="list-style-type: none"> • . [N: Mounting of mattress innersprings on borderframes]
B21F33/04	<ul style="list-style-type: none"> • Connecting ends of helical springs for mattresses
B21F35/00	Making springs from wire (by coiling wire B21F3/00 ; making resilient rings B21F37/02)
B21F35/00B	<ul style="list-style-type: none"> • [N: Multi-filament springs, e.g. made of stranded, braided, cable or multi-filament material] [N1204]
B21F35/00D	<ul style="list-style-type: none"> • [N: Double twist coil springs] [N1204]
B21F35/02	<ul style="list-style-type: none"> • Bending or deforming ends of coil springs to special shape
B21F35/04	<ul style="list-style-type: none"> • Making flat springs, e.g. sinus springs
B21F37/00	Manufacture of rings from wire (in chain making B21L ; making of tyre beads B29D30/48)
B21F37/02	<ul style="list-style-type: none"> • of resilient rings, e.g. key-rings
B21F37/04	<ul style="list-style-type: none"> • of washers (B21F37/02 takes precedence)
B21F39/00	Making wheel spokes from wire
B21F41/00	Making umbrella frames or members from wire
B21F43/00	Making bands, e.g. bracelets, or wire (making chains B21L ; using looms D03D)
B21F45/00	Wire-working in the manufacture of other particular articles (of pins, needles, nails, hairpins B21G ; of chains B21L ; [N: for semiconductor devices H01L24/42]) [C1204]
B21F45/00B	<ul style="list-style-type: none"> • [N: of frames for spectacles]
B21F45/00C	<ul style="list-style-type: none"> • [N: Mounting bails on containers]
B21F45/00E	<ul style="list-style-type: none"> • [N: of concrete reinforcement fibres] [N1204]
B21F45/00M	<ul style="list-style-type: none"> • [N: of medical instruments, e.g. stents, corneal rings (medical science A61)] [N1204]
B21F45/02	<ul style="list-style-type: none"> • of clothes hangers
B21F45/04	<ul style="list-style-type: none"> • of elements, e.g. levers or links, for bottle stoppers

- B21F45/06 . of flexible shafts or hollow conduits, e.g. for Bowden mechanisms
- B21F45/08 . of loom heddles
- B21F45/10 . of cards for fabric-napping machines
- B21F45/12 . of fishing hooks
- B21F45/14 . of end-pieces for laces or ropes
- B21F45/16 . of devices for fastening or securing purposes
- B21F45/18 . . of slide fastener elements
- B21F45/20 . . of springs hooks; of spring safety hooks
- B21F45/22 . . of paper fasteners or clips ([staples B21F45/24](#))
- B21F45/24 . . of staples; of belt-fastening elements
- B21F45/26 . . of buttons
- B21F45/28 . . . of "patent-fastener" or press-button type
- B21F99/00 Subject matter not provided for in other groups of this subclass [\[N0904\]](#)**