

CPC**COOPERATIVE PATENT CLASSIFICATION****B41F**

PRINTING MACHINES OR PRESSES (machines for manufacturing footwear incorporating printing or embossing apparatus [A43D](#), e.g. [A43D 8/26](#), [A43D 95/14](#); presses in general [B30B](#); making of printing surfaces [B41C](#), [B41D](#); manifolding devices, office printing machines [B41L](#); stencilling [B41L](#), [{B44D}](#) ; printing processes not dependent on the use of special machines [B41M](#); duplicating or marking by sublimation or volatilisation of design [B41M 5/035](#); thermography [B41M 5/26](#); embossing decorations or marks [B44B 5/00](#); {applying transfers or decalcomanias [B44C 1/16](#)} ; handling thin or filamentary material [B65H](#); electrography, electrophotography, magnetography [G03G](#))

NOTE

Attention is drawn to Notes 1 and 2 following the title of subclass [B41L](#).

B41F 1/00

Platen presses, i.e. presses in which printing is effected by at least one essentially-flat pressure-applying member co-operating with a flat type-bed

- B41F 1/02
 - Hand-operated platen presses
- B41F 1/04
 - for mono-impression printing, e.g. on sheets
- B41F 1/06
 - . with platen maintained parallel to bed during movement ([preparing stereotype matrices using presses B41D 1/06](#); {presses [B30B](#)})
- B41F 1/08
 - . . on webs
- B41F 1/10
 - for multi-impression printing in one or more colours, e.g. on webs
- B41F 1/12
 - . . on sheets
- B41F 1/14
 - . . . using swinging platens, or forme supports
- B41F 1/16
 - for offset printing ([{pad printing B41F 17/001}](#))
- B41F 1/18
 - for lithography
- B41F 1/20
 - for perfecting sheets, i.e. for printing on both sides of sheets
- B41F 1/22
 - specially adapted for printing heads, e.g. letter heads
- B41F 1/24
 - specially adapted for proof printing
- B41F 1/26
 - Details
- B41F 1/265
 - . [{Conveying webs \(in general B65H\)}](#)
- B41F 1/28
 - . Sheet-conveying, -aligning or -clamping devices ([in general B65H](#))
- B41F 1/30
 - . . using rotary grippers
- B41F 1/32
 - . . using air pressure, e.g. vacuum
- B41F 1/34
 - . . Registering devices, e.g. gauges
- B41F 1/36
 - . . Clamps for conveying sheets and for holding same on the platens ([{clamps in manifolding devices B41L 3/02}](#))
- B41F 1/38
 - . Platens or type-beds
- B41F 1/40
 - . Inking units ([{for pad printing B41F 17/001}](#))
- B41F 1/42
 - . . using flat inking elements, e.g. discs
- B41F 1/44
 - . . using inking ribbons

B41F 1/46	. . . using rollers
B41F 1/48	. . . pivoting around the platen or base
B41F 1/50	. . . supported on carriages for movement in or on runways
B41F 1/52 Carriage driving gear
B41F 1/54	. . Printing-pressure control devices
B41F 1/56	. . Auxiliary devices
B41F 1/565	. . . { Numbering devices (stamping numbering devices B41K)}
B41F 1/58	. . . Arrangements of counting devices for counting sheets
B41F 1/60	. . Safety devices
B41F 1/62	. . . for preventing injury to operator
B41F 1/64 to the hands of the operator
B41F 1/66	. . . responsive to incorrect operating conditions
B41F 3/00	Cylinder presses, i.e. presses essentially comprising at least one cylinder co-operating with at least one flat type-bed
B41F 3/02	. with impression cylinder or cylinders rotating unidirectionally
B41F 3/04	. . intermittently; Stop-cylinder presses
B41F 3/06	. . continuously
B41F 3/08	. . . Single-revolution presses
B41F 3/10	. . . Two-revolution presses
B41F 3/12	. . Twin presses, i.e. with more than one cylinder or type-bed
B41F 3/14	. with impression cylinder or cylinders rotating in opposite directions during each working cycle
B41F 3/16	. . Twin presses, i.e. with more than one cylinder or type-bed
B41F 3/18	. of special construction or for particular purposes
B41F 3/20	. . with fixed type-beds and travelling impression cylinders
B41F 3/22	. . . with more than one type-bed
B41F 3/24	. . . with cylinders travelling around type-beds having upper and lower printing surfaces
B41F 3/26	. . with type-beds and impression cylinders simultaneously movable relative to one another
B41F 3/28	. . Proof-print presses for relief printing, lithography or intaglio printing, i.e. presses for checking accuracy of printing surfaces
B41F 3/30	. . for lithography (proof-print presses B41F 3/28)
B41F 3/32	. . . Damping devices
B41F 3/34	. . . for offset printing
B41F 3/36	. . for intaglio or heliogravure printing (proof-print presses B41F 3/28)
B41F 3/38	. . . Wiping mechanisms
B41F 3/40	. . for perfecting sheets, i.e. for printing on both sides thereof
B41F 3/42	. . for multicolour printing on sheets
B41F 3/44	. . for monocolour or multicolour printing on one side of webs, or for perfecting webs, i.e. monocolour or multicolour printing on both sides of webs

- B41F 3/46 . Details
- B41F 3/48 . . Press frames
- B41F 3/51 . . Type-beds; Supports therefor ([B41F 3/52 takes precedence](#))
- B41F 3/52 . . Apparatus for cooling, heating, or drying printing surfaces
- B41F 3/54 . . Impression cylinders; Supports therefor ([blankets or like coverings B41N 10/00](#))
- B41F 3/56 . . . Devices for adjusting cylinders relative to type-beds and setting in adjusted position
- B41F 3/58 . . Driving, synchronising, or control gear
- B41F 3/60 . . . for type-beds
- B41F 3/62 Applications of linkwork or gearing for producing reciprocatory or angular motion
- B41F 3/64 of crank motions
- B41F 3/66 of rack-and-pinion gearing
- B41F 3/68 with pinion rotating unidirectionally
- B41F 3/70 Applications of directly-coupled motors
- B41F 3/72 of fluid motors
- B41F 3/74 Applications of clutches
- B41F 3/76 Applications of braking devices or of devices for stopping type-bed in registered position
- B41F 3/78 Air cushions
- B41F 3/80 . . . for impression cylinders
- B41F 3/81 . . Inking units
- B41F 3/82 . Auxiliary devices
- B41F 3/84 . . Arrangements of counting devices ([in printing machines in general B41F 33/02](#))
- B41F 3/86 . . Numbering devices

Rotary machines

- B41F 5/00** **Rotary letterpress machines** {(office printing machines [B41L 15/00](#))}
- B41F 5/02 . for printing on sheets
- B41F 5/04 . for printing on webs
- B41F 5/06 . . with several printing units in sequential arrangement
- B41F 5/08 . . with several printing units in both superimposed and sequential arrangement
- B41F 5/10 . . with several printing units arranged side by side
- B41F 5/12 . . for printing on one side and on the other side of webs between the same forme and impression cylinders
- B41F 5/14 . . with several impression cylinders arranged around a forme cylinder
- B41F 5/16 . . for multicolour printing
- B41F 5/18 . . . using one impression cylinder co-operating with several forme cylinders
- B41F 5/20 . specially adapted for proof printing

- B41F 5/22 . for indirect printing
- B41F 5/24 . for flexographic printing

- B41F 7/00** **Rotary lithographic machines {(such office printing machines [B41L 7/00](#))}**
- B41F 7/02 . for offset printing
- B41F 7/025 . . {Multicolour printing or perfecting on sheets or on one or more webs, in one printing unit}
- B41F 7/04 . . using printing units incorporating one forme cylinder, one transfer cylinder, and one impression cylinder, e.g. for printing on webs
- B41F 7/06 . . . for printing on sheets
- B41F 7/08 . . using one transfer cylinder co-operating with several forme cylinders for printing on sheets or webs, e.g. sampling of colours on one transfer cylinder
- B41F 7/10 . . using one impression cylinder co-operating with several transfer cylinders for printing on sheets or webs, e.g. satellite-printing units
- B41F 7/12 . . using two cylinders one of which serves two functions, e.g. as a transfer and impression cylinder in perfecting machines
- B41F 7/14 . . with two or more impression cylinders coacting with a single transfer cylinder
- B41F 7/15 . . . for printing on more than one web simultaneously
- B41F 7/16 . for printing on non-deformable material, e.g. sheet metal
- B41F 7/18 . specially adapted for proof printing
- B41F 7/20 . Details
- B41F 7/24 . . Damping devices
- B41F 7/26 . . . using transfer rollers
- B41F 7/265 {for damping from the inside of the cylinders}
- B41F 7/28 . . . using brushes
- B41F 7/30 . . . using spraying elements
- B41F 7/32 . . . Ducts, containers, or like supply devices for liquids
- B41F 7/34 . . . Endless bands
- B41F 7/36 . . . Inking-rollers serving also to apply ink repellent
- B41F 7/37 . . . with supercooling for condensation of air moisture ([cooling forme or impression cylinders \[B41F 13/22\]\(#\); \[cooling ink or ink rollers \\[B41F 31/002\\]\\(#\\)\]\(#\)](#))
- B41F 7/38 . . . Absorbent pads
- B41F 7/40 . . . Devices for tripping or lifting damping rollers; Supporting, adjusting, or removing arrangements therefor ([such arrangements or devices for inking rollers \[B41F 31/30\]\(#\)](#))

- B41F 9/00** **Rotary intaglio printing presses**
- B41F 9/001 . {Heliostatic printing}
- B41F 9/002 . {Sheet printing presses ([B41F 9/021](#) takes precedence)}
- B41F 9/003 . {Web printing presses ([B41F 9/023](#) takes precedence)}
- B41F 9/004 . . {Printing two webs with the same printing cylinder}
- B41F 9/005 . . {Printing on two sides of the same web}
- B41F 9/006 . . . {simultaneously}

- B41F 9/007 . . . {with the same printing cylinder}
- B41F 9/008 . {Means for preventing egress of vapours}
- B41F 9/009 . {Reversible printing presses ([B41F 9/02](#) takes precedence)}
- B41F 9/01 . for indirect printing ([B41F 9/02](#) takes precedence)
- B41F 9/02 . for multicolour printing
- B41F 9/021 . . {Sheet printing presses}
- B41F 9/023 . . {Web printing presses}
- B41F 9/025 . . . {with horizontally arranged printing units}
- B41F 9/026 . . . {with vertically arranged printing units}
- B41F 9/028 . . . {of the satellite type}
- B41F 9/04 . specially adapted for proof printing
- B41F 9/06 . Details
- B41F 9/061 . . {Inking devices}
- B41F 9/063 . . . {Using inking rollers}
- B41F 9/065 . . . {Using inking rails}
- B41F 9/066 . . . {Enclosures}
- B41F 9/068 . . . {End seals between cylinder and housing}
- B41F 9/08 . . Wiping mechanisms
- B41F 9/10 . . . Doctors, scrapers, or like devices
- B41F 9/1009 {with reciprocating movement}
- B41F 9/1018 {using a wiping cylinder}
- B41F 9/1027 {Tripping devices}
- B41F 9/1036 {Clamping and adjusting devices}
- B41F 9/1045 {using fluid pressure}
- B41F 9/1054 {Sharpening, honing devices}
- B41F 9/1063 {Seals between blades and cylinder}
- B41F 9/1072 {Blade construction}
- B41F 9/1081 {using two or more blades}
- B41F 9/109 {exchanging doctor blades}
- B41F 9/12 . . . Absorbent pads
- B41F 9/14 . . . Continuous flexible surfaces, e.g. endless bands
- B41F 9/16 . . . Removing or recovering ink from wiping mechanisms
- B41F 9/18 . . Auxiliary devices for exchanging forme cylinders

- B41F 11/00** **Rotary presses or machines having forme cylinder carrying a plurality of printing surfaces, or for performing letterpress, lithographic, or intaglio processes selectively or in combination**
- B41F 11/02 . for securities ([security printing B41M 3/14](#))

- B41F 13/00** **Common details of rotary presses or machines**
- B41F 13/0008 . {Driving devices ([B41F 13/004](#) and [B41F 13/008](#) take precedence)}

- B41F 13/0016 . {Storage devices for printing cylinders}
- B41F 13/0024 . {Frames}
- B41F 13/0032 . {Auxiliary numbering devices}
- B41F 13/004 . Electric or hydraulic features of drives
- B41F 13/0045 . . {Electric driving devices}
- B41F 13/008 . Mechanical features of drives, e.g. gears, clutches
- B41F 13/012 . . Taking-up backlash {(devices for taking-up backlash in general [F16H 55/00](#), e.g. [F16H 55/18](#))}
- B41F 13/016 . Brakes
- B41F 13/02 . Conveying or guiding webs through presses or machines (web handling in general [B65H](#), e.g. step-by-step advancement [B41F 21/00](#), turning or reversing [B65H 23/32](#))
- B41F 13/025 . . {Registering devices}
- B41F 13/03 . . Threading webs into printing machines
- B41F 13/04 . . intermittently
- B41F 13/06 . . Turning-bar arrangements
- B41F 13/08 . Cylinders
- B41F 13/085 . . {with means for preventing or damping vibrations or shocks}
- B41F 13/10 . . Forme cylinders
- B41F 13/11 . . . Gravure cylinders {(attaching cylindrical formes [B41F 27/105](#))}
- B41F 13/12 . . . Registering devices
- B41F 13/14 with means for displacing the cylinders
- B41F 13/16 with means for displacing the printing formes on the cylinders
- B41F 13/18 . . Impression cylinders
- B41F 13/187 . . . for rotogravure
- B41F 13/193 . . Transfer cylinders; Offset cylinders {(attaching blankets [B41F 30/04](#))}
- B41F 13/20 . . Supports for bearings or supports for forme, offset, or impression cylinders
- B41F 13/21 . . . Bearer rings
- B41F 13/22 . . Means for cooling or heating forme or impression cylinders
- B41F 13/24 . . Cylinder-tripping devices; Cylinder-impression adjustments
- B41F 13/26 . . . Arrangement of cylinder bearings
- B41F 13/28 Bearings mounted eccentrically of the cylinder axis
- B41F 13/30 Bearings mounted on sliding supports
- B41F 13/32 Bearings mounted on swinging supports
- B41F 13/34 . . . Cylinder lifting or adjusting devices
- B41F 13/36 Cams, eccentrics, wedges, or the like
- B41F 13/38 electrically or magnetically operated
- B41F 13/40 fluid-pressure operated
- B41F 13/42 . . Guards or covers, e.g. for preventing ingress or egress of foreign matter
- B41F 13/44 . Arrangements to accomodate interchangeable cylinders of different sizes to enable machine to print on areas of different sizes

- B41F 13/46 . Printing units for inserting latest news
- B41F 13/48 . Arrangements to enable printing to be effected over selected areas of a single forme cylinder ([by inking selected areas B41F 31/18](#))
- B41F 13/50 . . by effecting relative movement of forme and impression cylinders during printing cycle
- B41F 13/52 . . by projecting and retracting parts of the surface of the forme cylinder
- B41F 13/54 . Auxiliary folding, cutting, collecting, or depositing of sheets or webs ([in general B26D, B65H](#))
- B41F 13/56 . . Folding or cutting
- B41F 13/58 . . . lengthwise
- B41F 13/60 . . . crosswise
- B41F 13/62 . . . Folding-cylinders or drums
- B41F 13/64 . . Collecting ([gathering sheets or signatures in bookbinding B42C 1/00](#))
- B41F 13/66 . . . and stapling
- B41F 13/68 . . Adding inserts
- B41F 13/70 . . Depositing
- B41F 13/705 . . . {Interleaving slip sheets}

B41F 15/00**Screen printers ([for selective printing B41J 2/005](#))**

- B41F 15/02 . Manually-operable devices
- B41F 15/04 . . for multicolour printing
- B41F 15/06 . . with auxiliary equipment, e.g. for drying printed articles
- B41F 15/08 . Machines
- B41F 15/0804 . . {for printing sheets}
- B41F 15/0809 . . . {with cylindrical or belt-like screens}
- B41F 15/0813 . . . {with flat screens}
- B41F 15/0818 {with a stationary screen and a moving squeegee}
- B41F 15/0822 {on a stack of sheets}
- B41F 15/0827 {with a stationary squeegee and a moving screen}
- B41F 15/0831 . . {for printing webs}
- B41F 15/0836 . . . {by means of cylindrical screens or screens in the form of endless belts}
- B41F 15/084 {simultaneously printing on two sides}
- B41F 15/0845 . . . {with flat screens}
- B41F 15/085 {with a stationary screen and a moving squeegee}
- B41F 15/0854 {with a stationary squeegee and a moving screen}
- B41F 15/0859 {movable on a long printing table}
- B41F 15/0863 . . {with a plurality of flat screens mounted on a turntable}
- B41F 15/0868 . . {for printing on filamentary articles}
- B41F 15/0872 . . {for printing on articles having essentially cylindrical surfaces}
- B41F 15/0877 . . . {of varying cross-section}
- B41F 15/0881 . . {for printing on polyhedral articles}

- B41F 15/0886 . . {for printing on conical or frusto-conical surfaces}
- B41F 15/089 . . {for printing on essentially spherical surfaces}
- B41F 15/0895 . . {for printing on curved surfaces not otherwise provided for}
- B41F 15/10 . . for multicolour printing
- B41F 15/12 . . with auxiliary equipment, e.g. for drying printed articles
- B41F 15/14 . Details
- B41F 15/16 . . Printing tables
- B41F 15/18 . . . Supports for workpieces
- B41F 15/20 with suction-operated elements
- B41F 15/22 for single sheets
- B41F 15/24 for webs
- B41F 15/26 for articles with flat surfaces
- B41F 15/28 for elongated flat articles, e.g. strips, bands
- B41F 15/30 for articles with curved surfaces
- B41F 15/32 for articles with conical surfaces
- B41F 15/34 . . Screens, Frames; Holders therefor
- B41F 15/36 . . . flat
- B41F 15/38 . . . curved
- B41F 15/40 . . Inking units
- B41F 15/405 . . . {Spraying apparatus}
- B41F 15/42 . . . comprising squeegees or doctors
- B41F 15/423 {Driving means for reciprocating squeegees}
- B41F 15/426 {the squeegees or doctors being magnetically attracted}
- B41F 15/44 . . squeegees or doctors (doctors of rotary intaglio printing presses [B41F 9/10](#) {for photographic purposes [G03D 15/00](#)})
- B41F 15/46 . . . with two or more operative parts

- B41F 16/00** **Transfer printing apparatus** (apparatus or machines for applying decalcomanias [B65C](#))
- B41F 16/0006 . {for printing from an inked or preprinted foil or band}
- B41F 16/0013 . . {combined with other printing presses}
- B41F 16/002 . . {Presses of the rotary type}
- B41F 16/0026 . . . {with means for applying print under heat and pressure, e.g. using heat activable adhesive}
- B41F 16/0033 . . . {with means for applying print under pressure only, e.g. using pressure sensitive adhesive}
- B41F 16/004 . . {Presses of the reciprocating type}
- B41F 16/0046 . . . {with means for applying print under heat and pressure, e.g. using heat activable adhesive}
- B41F 16/0053 . . . {with means for applying print under pressure only, e.g. using pressure sensitive adhesive}
- B41F 16/006 . . {Arrangements for moving, supporting or positioning the printing foil or band}

- B41F 16/0066 . . {Printing dies or forms}
- B41F 16/0073 . . {with means for printing on specific materials or products}
- B41F 16/008 . . . {for printing on three-dimensional articles}
- B41F 16/0086 {for printing on articles with cylindrical surfaces}
- B41F 16/0093 . . {Attachments or auxiliary devices}
- B41F 16/02 . for textile material

- B41F 17/00** **Printing apparatus or machines of special types or for particular purposes, not otherwise provided for** (hand stamps, plier-like tools for printing or punching tickets or the like [B41K](#); addressographs or other office printing equipment [B41L](#); coding or marking of packaging material or of completed packages in packaging machines [B65B 61/00](#); ticket printing and issuing apparatus [G07B](#))
- B41F 17/001 . {Pad printing apparatus or machines}
- B41F 17/002 . {Supports of workpieces in machines for printing on hollow articles}
- B41F 17/003 . {Special types of machines for printing textiles (using the screen printing process [B41F 15/00](#); printing on knitted fabrics [B41F 17/38](#))}
- B41F 17/005 . . {Supports for workpieces; Devices for securing the workpieces to the supports}
- B41F 17/006 . {for printing on curved surfaces not otherwise provided for}
- B41F 17/007 . {Use of printing belts}
- B41F 17/008 . {Numbering devices for printing on articles other than sheets or webs}
- B41F 17/02 . for printing books or manifolding sets
- B41F 17/04 . for printing calendars
- B41F 17/08 . for printing on filamentary or elongated articles, or on articles with cylindrical surfaces
- B41F 17/10 . . on articles of indefinite length, e.g. wires, hoses, tubes, yarns
- B41F 17/12 . . . at an angle to axis
- B41F 17/13 . . . for printing on rolls of material, the roll serving as impression cylinder, e.g. strip printers
- B41F 17/14 . . on articles of finite length
- B41F 17/16 . . . on end or bottom surfaces thereof
- B41F 17/18 . . . on curved surfaces of articles of varying cross-section, e.g. bottles, lamp glasses
- B41F 17/20 . . . on articles of uniform cross-section, e.g. pencils, rulers, resistors
- B41F 17/22 by rolling contact
- B41F 17/24 . for printing on flat surfaces of polyhedral articles
- B41F 17/26 . . by rolling contact
- B41F 17/28 . for printing on curved surfaces of conical or frusto-conical articles
- B41F 17/30 . for printing on curved surfaces of essentially spherical, or part-spherical, articles
- B41F 17/32 . . on lamp bulbs
- B41F 17/34 . . on articles with surface irregularities, e.g. fruits, nuts
- B41F 17/36 . for printing on tablets, pills, or like small articles
- B41F 17/38 . for printing on knitted fabrics

- B41F 19/00** **Apparatus or machines for carrying out printing operations combined with other operations** (auxiliary perforating apparatus associated with printing devices [B41G 7/00](#); coding or marking in association with packaging [B65B 61/00](#); label dispensers having printing equipment [B65C](#))
- B41F 19/001 . {with means for coating or laminating}
 - B41F 19/002 . {with means for applying specific material other than ink}
 - B41F 19/004 . . {with means for applying adhesive}
 - B41F 19/005 . . {with means for applying metallic, conductive or chargeable material}
 - B41F 19/007 . {with selective printing mechanisms, e.g. ink-jet or thermal printers}
 - B41F 19/008 . {with means for stamping or cutting out}
 - B41F 19/02 . with embossing (printing with a printer's forme combined with embossing [B41M 1/24](#))
 - B41F 19/04 . . using intaglio printing formes and wipers
 - B41F 19/06 . . Printing and embossing between a negative and a positive forme after inking and wiping the negative forme; Printing from an ink band treated with colour or "gold"
 - B41F 19/062 . . . {Presses of the rotary type}
 - B41F 19/064 . . . {Presses of the reciprocating type}
 - B41F 19/066 {hand-driven}
 - B41F 19/068 {motor-driven}
 - B41F 19/08 . simultaneous moulding and printing

Common details of printing machinery

- B41F 21/00** **Devices for conveying sheets through printing apparatus or machines** (through platen presses [B41F 1/28](#); feeding sheets to or from printing apparatus or machines [B65H](#); {through manifolding apparatus or the like [B41L 21/00](#)})
- B41F 21/005 . {Electrostatic holding down devices}
 - B41F 21/02 . Pins ([B41F 21/12](#), [B41F 21/14](#) take precedence)
 - B41F 21/04 . Grippers ({[B41F 21/08](#), [B41F 21/10](#)} [B41F 21/12](#), [B41F 21/14](#) take precedence)
 - B41F 21/05 . . In-feed grippers ([B41F 21/06](#) takes precedence)
 - B41F 21/06 . . Suction-operated grippers
 - B41F 21/08 . Combinations of endless conveyors and grippers
 - B41F 21/10 . Combinations of transfer drums and grippers
 - B41F 21/102 . . {with pneumatic means ([B41F 21/108](#) takes precedence)}
 - B41F 21/104 . . {Gripper details ([B41F 21/102](#) takes precedence)}
 - B41F 21/106 . . {for reversing sheets, e.g. for perfecting machine}
 - B41F 21/108 . . . {with pneumatic means}
 - B41F 21/12 . Adjusting leading edges, e.g. front stops
 - B41F 21/14 . Adjusting lateral edges, e.g. side stops
- B41F 22/00** **Means preventing smudging of machine parts or printed articles** ([B41F 23/00](#) takes precedence)

- B41F 22/005
 - . {using a back grey cloth}
- B41F 23/00**

Devices for treating the surfaces of sheets, webs, or other articles in connection with printing (cleaning in general [B08B](#); as a final step in the manufacture of such articles, see appropriate subclasses, e.g. [B29C 71/00](#), [D21H 23/00](#) or [D21H 25/00](#); {in manifolding apparatus or the like [B41L 23/00](#)} ; surface treatment in general [B44D](#), of metal [C23G](#))
- B41F 23/002
 - . {cleaning devices for sheets or webs}
- B41F 23/005
 - . {of non-flat articles}
- B41F 23/007
 - . {with heat treatment before printing}
- B41F 23/02
 - . by dampening (in rotary lithographic machines [B41F 7/24](#) {; [B41F 23/005](#) takes precedence})
- B41F 23/04
 - . by heat drying, by cooling, by applying powders {(B41F 23/005 takes precedence)}
- B41F 23/0403
 - . . {Drying webs ([B41F 23/0486](#) takes precedence)}
- B41F 23/0406
 - . . . {by radiation ([B41F 23/0436](#) takes precedence)}
- B41F 23/0409
 - {Ultra-violet dryers}
- B41F 23/0413
 - {Infra-red dryers}
- B41F 23/0416
 - . . . {by conduction ([B41F 23/0436](#) takes precedence)}
- B41F 23/042
 - {using heated rolls}
- B41F 23/0423
 - . . . {by convection ([B41F 23/0436](#) takes precedence)}
- B41F 23/0426
 - {using heated air}
- B41F 23/043
 - {using gas or fuel burners}
- B41F 23/0433
 - {using steam}
- B41F 23/0436
 - . . . {using a combination of radiation, conduction or convection}
- B41F 23/044
 - . . {Drying sheets, e.g. between two printing stations ([B41F 23/0486](#) takes precedence)}
- B41F 23/0443
 - . . . {after printing}
- B41F 23/0446
 - {Wicket conveyors}
- B41F 23/045
 - . . . {by radiation}
- B41F 23/0453
 - {by ultra-violet dryers}
- B41F 23/0456
 - {by infrared dryers}
- B41F 23/0459
 - . . . {by conduction, e.g. using heated rolls}
- B41F 23/0463
 - . . . {by convection}
- B41F 23/0466
 - {by using heated air}
- B41F 23/0469
 - {by using gas or fuel burners}
- B41F 23/0473
 - {by using steam}
- B41F 23/0476
 - . . {Cooling ([B41F 23/0483](#) takes precedence)}
- B41F 23/0479
 - . . . {using chill rolls}
- B41F 23/0483
 - . . {Drying combined with cooling}
- B41F 23/0486
 - . . {Particular types of dryers}
- B41F 23/0489
 - . . . {Vacuum dryers}

- B41F 23/0493 . . . {Microwave dryers}
- B41F 23/0496 . . {Proof dryers}
- B41F 23/06 . . Powdering devices, e.g. for preventing set-off
- B41F 23/065 . . . {for thermography}
- B41F 23/08 . Print finishing devices, e.g. for glossing prints {(B41F 23/005 takes precedence)}

- B41F 25/00** **Devices for pressing sheets or webs against cylinders, e.g. for smoothing purposes** (apparatus for taking-out curl from webs in general B65H 23/34)

- B41F 27/00** **Devices for attaching printing elements or formes to supports** (attaching by chemical means B41N 6/00)
- B41F 27/005 . {Attaching and registering printing formes to supports}
- B41F 27/02 . Magnetic devices
- B41F 27/04 . for attaching printing elements to flat type-beds
- B41F 27/06 . for attaching printing elements to forme cylinders
- B41F 27/08 . for attaching printing formes to flat type-beds
- B41F 27/10 . for attaching non-deformable curved printing formes to forme cylinders
- B41F 27/105 . . {for attaching cylindrical printing formes}
- B41F 27/12 . for attaching flexible printing formes
- B41F 27/1206 . . {Feeding to or removing from the forme cylinder}
- B41F 27/1212 . . {using pneumatic force}
- B41F 27/1218 . . {comprising printing plate tensioning devices}
- B41F 27/1225 . . . {moving in the printing plate end substantially rectilinearly}
- B41F 27/1231 {by translatory motion substantially tangential to support surface}
- B41F 27/1237 {by translatory motion substantially perpendicular to support surface}
- B41F 27/1243 {by pivotal or swivelling motion, e.g. by means of a rocking lever}
- B41F 27/125 . . . {moving in the printing plate end on a curvilinear path, e.g. by winding on a roll}
- B41F 27/1256 . . . {with two semi-cylinders movable relative to each other}
- B41F 27/1262 . . {without tensioning means}
- B41F 27/1268 . . . {by self-locking or snap-on means}
- B41F 27/1275 . . . {by means of adhesives, staples}
- B41F 27/1281 . . {details of the printing plate ends}
- B41F 27/1287 . . {devices for bending the printing plates or the printing plate ends}
- B41F 27/1293 . . {Devices for filling up the cylinder gap; Devices for removing the filler}
- B41F 27/14 . for attaching printing formes to intermediate supports, e.g. adapter members

- B41F 30/00** **Devices for attaching coverings or make-ready devices; Guiding devices for coverings** (make-ready devices B41N 6/00; blankets or like coverings B41N 10/00)
- B41F 30/02 . attaching to impression cylinders
- B41F 30/04 . attaching to transfer cylinders

- B41F 30/06
 - attaching of endless or like continuously-fed coverings
- B41F 31/00**

Inking arrangements or devices (inking units for platen presses [B41F 1/40](#); for cylinder presses [B41F 3/81](#); {for rotary intaglio printing presses [B41F 9/061](#)} ; applying liquids or other fluent materials to surfaces in general [B05](#); inking arrangements or devices for typewriters or selective printing mechanisms [B41J](#))
- B41F 31/001
 - {Ink mist preventing means}
- B41F 31/002
 - {Heating or cooling of ink or ink rollers}
- B41F 31/004
 - {Driving means for ink rollers}
- B41F 31/005
 - {Ink viscosity control means}
- B41F 31/007
 - {Removing water from ink trains}
- B41F 31/008
 - {Inking devices for reversible printing presses}
- B41F 31/02
 - Ducts, containers, supply or metering devices (level control in general [G05D 9/00](#))
- B41F 31/022
 - . {Ink level control devices}
- B41F 31/025
 - . {Ducts formed between two rollers}
- B41F 31/027
 - . {Ink rail devices for inking ink rollers}
- B41F 31/03
 - . Ink agitators
- B41F 31/04
 - . with duct-blades or like metering devices
- B41F 31/045
 - . . {Remote control of the duct keys}
- B41F 31/05
 - . . Positioning devices therefor
- B41F 31/06
 - . Troughs or like reservoirs with immersed or partly immersed, rollers or cylinders
- B41F 31/07
 - . . for rotogravure
- B41F 31/08
 - . with ink ejecting means, e.g. pumps, nozzles
- B41F 31/10
 - . Applications of feed or duct rollers (messenger or moving transfer rollers [B41F 31/14](#))
- B41F 31/12
 - . . adjustable for regulating supply
- B41F 31/13
 - . Means for driving fountain rollers ({[B41F 13/12](#) takes precedence})
- B41F 31/14
 - . Applications of messenger or other moving transfer rollers
- B41F 31/15
 - Devices for moving vibrator-rollers
- B41F 31/16
 - Continuous, e.g. endless, band apparatus
- B41F 31/18
 - for inking selected parts of printing formes
- B41F 31/20
 - Ink-removing or collecting devices
- B41F 31/22
 - for inking from interior of cylinder
- B41F 31/24
 - Absorbent pads
- B41F 31/26
 - Construction of inking rollers (inking-rollers serving also to apply ink repellent in rotary lithographic machines [B41F 7/36](#))
- B41F 31/28
 - Spray apparatus
- B41F 31/30
 - Arrangements for tripping, lifting, adjusting, or removing inking rollers; Supports, bearings, or forks therefor
- B41F 31/301
 - . {Devices for tripping and adjusting form rollers}
- B41F 31/302
 - . {Devices for tripping inking devices as a whole}

- B41F 31/304 . . {Arrangements for inking roller bearings, forks or supports ([B41F 31/301](#) takes precedence)}
- B41F 31/305 . . . {Eccentric bearings}
- B41F 31/307 . . . {Sliding bearings}
- B41F 31/308 . . . {Swinging bearings}
- B41F 31/32 . . Lifting or adjusting devices ([for damping rollers B41F 7/40](#))
- B41F 31/34 . . . Cam, eccentric, wedge, or like devices
- B41F 31/36 . . . fluid-pressure operated
- B41F 31/38 . . . magnetically operated

- B41F 33/00** **Indicating, counting, warning, control, or safety devices** ([ink supply or metering devices B41F 31/02](#); such devices in general, see the relevant subclasses, e.g. counting in general [G06M](#))
- B41F 33/0009 . {Central control units}
- B41F 33/0018 . {Protection means against injury to the operator}
- B41F 33/0027 . {Devices for scanning originals, printing formes or the like for determining or presetting the ink supply}
- B41F 33/0036 . {Devices for scanning or checking the printed matter for quality control}
- B41F 33/0045 . . {for automatically regulating the ink supply}
- B41F 33/0054 . {Devices for controlling dampening}
- B41F 33/0063 . {Devices for measuring the thickness of liquid films on rollers or cylinders}
- B41F 33/0072 . {Devices for measuring the pressure between cylinders or bearer rings}
- B41F 33/0081 . {Devices for scanning register marks}
- B41F 33/009 . {Devices for controlling numbering}
- B41F 33/02 . Arrangements of indicating devices, e.g. counters ([arrangements of counting devices in platen presses B41F 1/00](#), e.g. [B41F 1/58](#); in cylinder presses [B41F 3/84](#); in typewriters or selective printing mechanisms [B41J 29/20](#) {in manifolding apparatus or the like [B41L 39/00](#)})
- B41F 33/025 . . {Counters}
- B41F 33/04 . Tripping devices or stop-motions ({[tripping devices for doctor blades B41F 9/1027](#)}; [cylinder-tripping devices of rotary presses or machines B41F 13/24](#); [arrangements for tripping inking rollers B41F 31/30](#))
- B41F 33/045 . . {for starting or stopping operation of numbering devices}
- B41F 33/06 . . for starting or stopping operation of sheet or web feed
- B41F 33/08 . . for starting or stopping operation of cylinders
- B41F 33/10 . . for starting or stopping operation of damping or inking units
- B41F 33/12 . . for starting or stopping the machine as a whole
- B41F 33/14 . . Automatic control of tripping devices by feelers, photoelectric devices, pneumatic devices, or other detectors
- B41F 33/16 . Programming systems for automatic control of sequence of operations
- B41F 33/18 . Web break detection ([B41F 33/04](#) takes precedence)

- B41F 35/00** **Cleaning arrangements or devices** ({[in manifolding apparatus or the like B41L 41/00](#)})

- B41F 35/001
 - {Devices for cleaning parts removed from the printing machines ([B41F 35/003](#) takes precedence)}
- B41F 35/002
 - {for dampening rollers}
- B41F 35/003
 - {for screen printers or parts thereof}
- B41F 35/004
 - . {for cylindrical screens}
- B41F 35/005
 - . {for flat screens}
- B41F 35/006
 - {for impression cylinders}
- B41F 35/007
 - {for supports of workpieces}
- B41F 35/008
 - {for doctor blades}
- B41F 35/02
 - for forme cylinders
- B41F 35/04
 - for inking rollers
- B41F 35/06
 - for offset cylinders