

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 manifold 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 conveyers}
- 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 forms 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