

**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

**Guidance heading: 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 [B41F 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

**Guidance heading: 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 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