

**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
<b>B41F 17/00</b>	<b>Printing apparatus or machines of special types or for particular purposes, not otherwise provided for</b> (hand stamps, plier-like tools for printing or punching tickets or the like <a href="#">B41K</a> ; addressographs or other office printing equipment <a href="#">B41L</a> ; coding or marking of packaging material or of completed packages in packaging machines <a href="#">B65B 61/00</a> ; ticket printing and issuing apparatus <a href="#">G07B</a> )
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 <a href="#">B41F 15/00</a> ; printing on knitted fabrics <a href="#">B41F 17/38</a> )}
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

<b>B41F 19/00</b>	<b>Apparatus or machines for carrying out printing operations combined with other operations</b> (auxiliary perforating apparatus associated with printing devices <a href="#">B41G 7/00</a> ; coding or marking in association with packaging <a href="#">B65B 61/00</a> ; label dispensers having printing equipment <a href="#">B65C</a> )
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 <a href="#">B41M 1/24</a> )
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

<b>B41F 21/00</b>	<b>Devices for conveying sheets through printing apparatus or machines</b> (through platen presses <a href="#">B41F 1/28</a> ; feeding sheets to or from printing apparatus or machines <a href="#">B65H</a> ; { through manifolding apparatus or the like <a href="#">B41L 21/00</a> })
B41F 21/005	. {Electrostatic holding down devices}
B41F 21/02	. Pins ( <a href="#">B41F 21/12</a> , <a href="#">B41F 21/14</a> take precedence)
B41F 21/04	. Grippers ({ <a href="#">B41F 21/08</a> , <a href="#">B41F 21/10</a> }) <a href="#">B41F 21/12</a> , <a href="#">B41F 21/14</a> take precedence)
B41F 21/05	.. In-feed grippers ( <a href="#">B41F 21/06</a> 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 ( <a href="#">B41F 21/108</a> takes precedence)}
B41F 21/104	.. {Gripper details ( <a href="#">B41F 21/102</a> 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
<b>B41F 22/00</b>	<b>Means preventing smudging of machine parts or printed articles</b> ( <a href="#">B41F 23/00</a> 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