B41F  PRINTING MACHINES OR PRESSES (manifolding devices or office printing machines B41L)

NOTE
Attention is drawn to Notes 1 and 2 following the title of subclass B41L.

WARNING
In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

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
1/02 . . . Hand-operated platen presses
1/04 . . . for mono-impression printing, e.g. on sheets
1/06 . . . with platen maintained parallel to bed during movement
1/08 . . . on webs
1/10 . . . for multi-impression printing in one or more colours, e.g. on webs
1/12 . . .
1/14 . . . using swinging platens, or forme supports
1/16 . . . for offset printing [(pad printing B41F 17/001)]
1/18 . . . for lithography
1/20 . . . for perfecting sheets, i.e. for printing on both sides of sheets
1/22 . . . specially adapted for printing heads, e.g. letter heads
1/24 . . . specially adapted for proof printing
1/26 . . . Details
1/265 . . . [Conveying webs (in general B65H)]
1/28 . . . Sheet-conveying, -aligning or -clamping devices
1/30 . . . using rotary grippers
1/32 . . . using air pressure, e.g. vacuum
1/34 . . . Registering devices, e.g. gauges
1/36 . . . Clamps for conveying sheets and for holding same on the platens [(clamps in manifolding devices B41L 3/02)]
1/38 . . . Platens or type-beds
1/40 . . . Inking units [(for pad printing B41F 17/001)]
1/42 . . . using flat inking elements, e.g. discs
1/44 . . . using inking ribbons
1/46 . . . using rollers
1/48 . . . pivoting around the platen or base
1/50 . . . supported on carriages for movement in or on runways
1/52 . . . Carriage driving gear
1/54 . . . Printing-pressure control devices
1/56 . . . Auxiliary devices
1/565 . . . [Numbering devices (stamping numbering devices B41K)]
1/58 . . . Arrangements of counting devices for counting sheets
1/60 . . . Safety devices
1/62 . . . for preventing injury to operator
1/64 . . . . . . . to the hands of the operator
1/66 . . . . . . . responsive to incorrect operating conditions
3/00  Cylinder presses, i.e. presses essentially comprising at least one cylinder co-operating with at least one flat type-bed
3/02 . . . with impression cylinder or cylinders rotating unidirectionally
3/04 . . . intermittently; Stop-cylinder presses
3/06 . . . continuously
3/08 . . . Single-revolution presses
3/10 . . . Two-revolution presses
3/12 . . . Twin presses, i.e. with more than one cylinder or type-bed
3/14 . . . with impression cylinder or cylinders rotating in opposite directions during each working cycle
3/16 . . . Twin presses, i.e. with more than one cylinder or type-bed
3/18 . . . of special construction or for particular purposes
3/20 . . . with fixed type-beds and travelling impression cylinders
3/22 . . . with more than one type-bed
3/24 . . . with cylinders travelling around type-beds having upper and lower printing surfaces
3/26 . . . with type-beds and impression cylinders simultaneously movable relative to one another
3/28 . . . Proof-print presses for relief printing, lithography or intaglio printing, i.e. presses for checking accuracy of printing surfaces
3/30 . . . for lithography [(proof-print presses B41F 3/28)]
3/32 . . . Damping devices
3/34 . . . for offset printing
3/36 . . . for intaglio or heliogravure printing [(proof-print presses B41F 3/28)]
3/38 . . . Wiping mechanisms
3/40 . . . for perfecting sheets, i.e. for printing on both sides thereof
For Rotary machines:

5/00 Rotary letterpress machines { (office printing machines B41L 15/00) }
- 5/02 . . . . . for printing on sheets
- 5/04 . . . . . for printing on webs
- 5/06 . . . . . with several printing units in sequential arrangement
- 5/08 . . . . . with several printing units in both superimposed and sequential arrangement
- 5/10 . . . . . with several printing units arranged side by side
- 5/12 . . . . . for printing on one side and on the other side of webs between the same forme and impression cylinders
- 5/14 . . . . . with several impression cylinders arranged around a forme cylinder
- 5/16 . . . . . for multicolour printing
- 5/18 . . . . . using one impression cylinder co-operating with several forme cylinders
- 5/20 . . . specially adapted for proof printing
- 5/22 . . . for indirect printing
- 5/24 . . . for flexographic printing

7/00 Rotary lithographic machines { (such office printing machines B41L 7/00) }
- 7/02 . . . . . for offset printing
- 7/025 . . . . . [Multicolour printing or perfecting on sheets or on one or more webs, in one printing unit]
- 7/04 . . . using printing units incorporating one forme cylinder, one transfer cylinder, and one impression cylinder, e.g. for printing on webs

7/06 . . . . . for printing on sheets
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
7/10 . . . using one impression cylinder co-operating with several transfer cylinders for printing on sheets or webs, e.g. satellite-printing units
7/12 . . . using two cylinders one of which serves two functions, e.g. as a transfer and impression cylinder in perfecting machines
7/14 . . . with two or more impression cylinders coacting with a single transfer cylinder
7/15 . . . . . for printing on more than one web simultaneously
7/16 . . . . for printing on non-deformable material, e.g. sheet metal
7/18 . . . specially adapted for proof printing
7/20 . . . Details
7/24 . . . Damping devices
7/26 . . . . . using transfer rollers
7/265 . . . . . . [for damping from the inside of the cylinders]
7/28 . . . using brushes
7/30 . . . using spraying elements
7/32 . . . ducts, containers, or like supply devices for liquids
7/34 . . . Endless bands
7/36 . . . Inking-rollers serving also to apply ink repellent
7/37 . . . with supercooling for condensation of air moisture
7/38 . . . Absorbent pads
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)

9/00 Rotary intaglio printing presses
9/001 . . . . . . { Heliostatic printing }
9/002 . . . . . . { Sheet printing presses ( B41F 9/021 takes precedence) }
9/003 . . . . . . { Web printing presses ( B41F 9/023 takes precedence) }
9/004 . . . . . . { Printing two webs with the same printing cylinder }
9/005 . . . . . . { Printing on two sides of the same web }
9/006 . . . . . . . simultaneously
9/007 . . . . . . . with the same printing cylinder
9/008 . . . . . . { Means for preventing egress of vapours }
9/009 . . . . . . { Reversible printing presses ( B41F 9/02 takes precedence) }
9/01 . . . . . . for indirect printing ( B41F 9/02 takes precedence)
9/02 . . . . . . for multicolour printing
9/021 . . . . . . { Sheet printing presses }
9/023 . . . . . . { Web printing presses }
9/025 . . . . . . { with horizontally arranged printing units }
9/026 . . . . . . { with vertically arranged printing units }
9/028 . . . . . . . [of the satellite type]
9/04 . . . . . . . specially adapted for proof printing
9/06 . . . . . . Details
9/061 . . . . . . { Inking devices }
9/063 . . . . . . { Using inking rollers }
9/065 . . . . . . { Using inking rails }

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Rotary presses or machines having forme cylinders

11/00 Rotary presses or machines having forme cylinders carrying a plurality of printing surfaces, or for performing letterpress, lithographic, or intaglio processes selectively or in combination

11/02 for securities (security printing B41M 3/14)

13/00 Common details of rotary presses or machines

13/0008 [Driving devices (B41F 13/0004 and B41F 13/0008 take precedence)]

13/0008 [Storage devices for printing cylinders]

13/0024 [Frames]

13/0032 [Auxiliary numbering devices]

13/004 Electric or hydraulic features of drives

13/0045 [Electric driving devices]

13/008 Mechanical features of drives, e.g. gears, clutches

13/012 Taking-up backlash [(devices for taking-up backlash in general F16H 55/00, e.g. F16H 55/18)]

13/016 Brakes

13/02 Conveying or guiding webs through presses or machines

13/025 [Registering devices]

13/03 Threading webs into printing machines

13/04 intermittently

13/06 Turning-bar arrangements

13/08 Cylinders

13/085 [with means for preventing or damping vibrations or shocks]

13/10 Forme cylinders

13/11 Gravure cylinders (attaching cylindrical forms B41F 27/105)

13/12 Registering devices

13/14 with means for displacing the cylinders

13/16 with means for displacing the printing forms on the cylinders

13/18 Impression cylinders

13/187 for rotogravure

13/193 Transfer cylinders; Offset cylinders (attaching blankets B41F 30/04)

13/20 Supports for bearings or supports for forme, offset, or impression cylinders

13/21 Bearer rings

13/22 Means for cooling or heating forme or impression cylinders

13/24 Cylinder-tripping devices; Cylinder-impression adjustments

13/26 Arrangement of cylinder bearings

13/28 Bearings mounted eccentrically of the cylinder axis

13/30 Bearings mounted on sliding supports

13/32 Bearings mounted on swinging supports

13/34 Cylinder lifting or adjusting devices

13/36 Cams, eccentrics, wedges, or the like

13/38 electrically or magnetically operated

13/40 fluid-pressure operated

13/42 Guards or covers, e.g. for preventing ingress or egress of foreign matter

13/44 Arrangements to accommodate interchangeable cylinders of different sizes to enable machine to print on areas of different sizes

13/46 Printing units for inserting latest news

13/48 Arrangements to enable printing to be effected over selected areas of a single forme cylinder (by inking selected areas B41F 31/18)

13/50 by effecting relative movement of forme and impression cylinders during printing cycle

13/52 by projecting and retracting parts of the surface of the forme cylinder

13/54 Auxiliary folding, cutting, collecting or depositing of sheets or webs

13/56 Folding or cutting

13/58 lengthwise

13/60 crosswise

13/62 Folding-cylinders or drums

13/64 Collecting (gathering sheets or signatures in bookbinding B42C 1/00)

13/66 and stapling

13/68 Adding inserts

13/70 Depositing

13/705 [Interleaving slip sheets]

15/00 Screen printers

15/02 Manually-operable devices

15/04 for multicolour printing

15/06 with auxiliary equipment, e.g. for drying printed articles

15/08 Machines

15/0804 [for printing sheets]

15/0809 [with cylindrical or belt-like screens]

15/0813 [with flat screens]

15/0818 [with a stationary screen and a moving squeegee]

15/0822 [on a stack of sheets]

15/0827 [with a stationary squeegee and a moving screen]

15/0831 [for printing webs]

15/0836 [by means of cylindrical screens or screens in the form of endless belts]

15/084 [simultaneously printing on two sides]

15/0845 [with flat screens]

15/085 [with a stationary screen and a moving squeegee]

15/0854 [with a stationary squeegee and a moving screen]

15/0859 [movable on a long printing table]
Rotary machines

15/0863 . . . [with a plurality of flat screens mounted on a turntable]
15/0868 . . . [for printing on filamentary articles]
15/0872 . . . [for printing on articles having essentially cylindrical surfaces]
15/0877 . . . [of varying cross-section]
15/0881 . . . [for printing on polyhedral articles]
15/0886 . . . [for printing on conical or frusto-conical surfaces]
15/089 . . . [for printing on essentially spherical surfaces]
15/0895 . . . [for printing on curved surfaces not otherwise provided for]
15/10 . . . for multicolour printing
15/12 . . . with auxiliary equipment, e.g. for drying printed articles
15/14 . . . Details
15/16 . . . Printing tables
15/18 . . . . Supports for workpieces
15/20 . . . . . with suction-operated elements
15/22 . . . . . for single sheets
15/24 . . . . . for webs
15/26 . . . . . for articles with flat surfaces
15/28 . . . . . for elongated flat articles, e.g. strips, bands
15/30 . . . . . for articles with curved surfaces
15/32 . . . . . for articles with conical surfaces
15/34 . . . Screens, Frames; Holders therefor
15/36 . . . . . flat
15/38 . . . . . curved
15/40 . . . . Inking units
15/405 . . . . . [Spraying apparatus]
15/42 . . . . . comprising squeegees or doctors
15/423 . . . . . [Driving means for reciprocating squeegees]
15/426 . . . . . [the squeegees or doctors being magnetically attracted]
15/44 . . . . Squeegees or doctors
15/46 . . . . with two or more operative parts

16/00 Transfer printing apparatus
16/0006 . . . [for printing from an inked or preprinted foil or band]
16/0013 . . . [combined with other printing presses]
16/002 . . . . [Presses of the rotary type]
16/0026 . . . . [with means for applying print under heat and pressure, e.g. using heat activable adhesive]
16/0033 . . . . [with means for applying print under pressure only, e.g. using pressure sensitive adhesive]
16/004 . . . . [Presses of the reciprocating type]
16/0046 . . . . [with means for applying print under heat and pressure, e.g. using heat activable adhesive]
16/0053 . . . . [with means for applying print under pressure only, e.g. using pressure sensitive adhesive]
16/006 . . . . . [Arrangements for moving, supporting or positioning the printing foil or band]
16/0066 . . . . . [Printing dies or forms]
16/0073 . . . . [with means for printing on specific materials or products]
16/008 . . . . . . [for printing on three-dimensional articles]
16/0086 . . . . . . [for printing on articles with cylindrical surfaces]
16/0093 . . . . . . [Attachments or auxiliary devices]
16/02 . . . . for textile material

17/00 Printing apparatus or machines of special types or for particular purposes, not otherwise provided for
17/001 . . . . [Pad printing apparatus or machines]
17/002 . . . . [Supports of workpieces in machines for printing on hollow articles]
17/003 . . . . [Special types of machines for printing textiles (using the screen printing process B41F 15/00; printing on knitted fabrics B41F 17/38)]
17/005 . . . . [Supports for workpieces; Devices for securing the workpieces to the supports]
17/006 . . . . [for printing on curved surfaces not otherwise provided for]
17/007 . . . . [Use of printing belts]
17/008 . . . . [Numbering devices for printing on articles other than sheets or webs]
17/009 . . . . for printing books or manifolding sets
17/01 . . . . for printing calendars
17/010 . . . . for printing on filamentary or elongated articles, or on articles with cylindrical surfaces
17/012 . . . . . on articles of indefinite length, e.g. wires, hoses, tubes, yarns
17/013 . . . . . at an angle to axis
17/014 . . . . . for printing on rolls of material, the roll serving as impression cylinder, e.g. strip printers
17/016 . . . . . on end or bottom surfaces thereof
17/017 . . . . . on curved surfaces of articles of varying cross-section, e.g. bottles, lamp glasses
17/019 . . . . . on articles of uniform cross-section, e.g. pencils, rulers, resistors
17/02 . . . . . by rolling contact
17/022 . . . . . for printing on flat surfaces of polyhedral articles
17/026 . . . . . by rolling contact
17/028 . . . . . for printing on curved surfaces of conical or frusto-conical articles
17/03 . . . . . for printing on curved surfaces of essentially spherical, or part-spherical, articles
17/032 . . . . . on lamp bulbs
17/034 . . . . . on articles with surface irregularities, e.g. fruits, nuts
17/036 . . . . . for printing on tablets, pills, or like small articles
17/038 . . . . . for printing on knitted fabrics

19/00 Apparatus or machines for carrying out printing operations combined with other operations
19/001 . . . . . [with means for coating or laminating]
19/002 . . . . . [with means for applying specific material other than ink]
19/004 . . . . . [with means for applying adhesive]
19/005 . . . . . [with means for applying metallic, conductive or chargeable material]
19/007 . . . . . [with selective printing mechanisms, e.g. ink-jet or thermal printers]
19/008 . . . . . [with means for stamping or cutting out]
19/009 . . . . . with embossing
19/004 . . . . . using intaglio printing forms and wipers
19/006 . . . . . 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"
19/002 . . . . . [Presses of the rotary type]
19/004 . . . . . [Presses of the reciprocating type]
19/006 . . . . . . . [hand-driven]
19/008 . . . . . . . [motor-driven]
Common details of printing machinery

21/00 Devices for conveying sheets through printing apparatus or machines (through platen presses B41F 1/28)

21/005 . . . [Electrostatic holding down devices]
21/02 . . . Pins (B41F 21/12, B41F 21/14 takes precedence)
21/04 . . . Grippers (B41F 21/08, B41F 21/10, B41F 21/12, B41F 21/14 takes precedence)
21/05 . . . In-feed grippers (B41F 21/06 takes precedence)
21/06 . . . Suction-operated grippers
21/08 . . . Combinations of endless conveyors and grippers
21/10 . . . Combinations of transfer drums and grippers
21/102 . . . (with pneumatic means (B41F 21/108 takes precedence))
21/104 . . . {Gripper details (B41F 21/102 takes precedence)}
21/106 . . . {for reversing sheets, e.g. for perfecting machine}
21/108 . . . {with pneumatic means}
21/12 . . . Adjusting leading edges, e.g. front stops
21/14 . . . Adjusting lateral edges, e.g. side stops

22/00 Means preventing smudging of machine parts or printed articles (B41F 23/00 takes precedence)

22/005 . . . (using a back grey cloth)

23/00 Devices for treating the surfaces of sheets, webs, or other articles in connection with printing

23/002 . . . (cleaning devices for sheets or webs)
23/005 . . . [of non-flat articles]
23/007 . . . [with heat treatment before printing]
23/02 . . . by dampening (in rotary lithographic machines B41F 7/24; : B41F 23/005 takes precedence))
23/04 . . . by heat drying, by cooling, by applying powders (B41F 23/005 takes precedence)
23/0403 . . . {Drying webs (B41F 23/0486 takes precedence)}
23/0406 . . . {by radiation (B41F 23/0436 takes precedence)}
23/0409 . . . . . . [Ultra-violet dryers]
23/0413 . . . . . . [Infra-red dryers]
23/0416 . . . . . . {by conduction (B41F 23/0436 takes precedence)}
23/042 . . . . . . [using heated rolls]
23/0423 . . . . . . [by convection (B41F 23/0436 takes precedence)]
23/0426 . . . . . . [using heated air]
23/043 . . . . . . [using gas or fuel burners]
23/0433 . . . . . . [using steam]
23/0436 . . . . . . {using a combination of radiation, conduction or convection}
23/044 . . . . . . {Drying sheets, e.g. between two printing stations (B41F 23/0486 takes precedence)}
23/0443 . . . . . . [after printing]
23/0446 . . . . . . [Wicket conveyors]
23/045 . . . . . . [by radiation]
23/0453 . . . . . . [by ultra-violet dryers]
23/0456 . . . . . . [by infrared dryers]
23/0459 . . . . . . [by conduction, e.g. using heated rolls]
23/0463 . . . . . . [by convection]
23/0466 . . . . . . [by using heated air]
23/0469 . . . . . . [by using gas or fuel burners]
23/0473 . . . . . . [by using steam]
23/0476 . . . . . . {Cooling (B41F 23/0483 takes precedence)}

23/0479 . . . . . . [using chill rolls]
23/0483 . . . . . . [Drying combined with cooling]
23/0486 . . . . . . [Particular types of dryers]
23/0489 . . . . . . [Vacuum dryers]
23/0493 . . . . . . [Microwave dryers]
23/0496 . . . . . . [Proof dryers]
23/06 . . . . . . [Powdering devices, e.g. for preventing set-off]
23/065 . . . . . . . [for thermography]
23/08 . . . . . . [Print finishing devices, e.g. for glossing prints (B41F 23/005 takes precedence)]

25/00 Devices for pressing sheets or webs against cylinders, e.g. for smoothing purposes

27/00 Devices for attaching printing elements or formes to supports (attaching by chemical means B41N 6/00)

27/005 . . . . . . {Attaching and registering printing formes to supports}
27/002 . . . . . . Magnetic devices
27/004 . . . . . . for attaching printing elements to flat type-beds
27/006 . . . . . . for attaching printing elements to forme cylinders
27/008 . . . . . . for attaching printing formes to flat type-beds
27/10 . . . . . . for attaching non-deformable curved printing formes to forme cylinders
27/105 . . . . . . {for attaching cylindrical printing formes}
27/12 . . . . . . for attaching flexible printing formes
27/1206 . . . . . . {Feeding to or removing from the forme cylinder}
27/1212 . . . . . . [using pneumatic force]
27/1218 . . . . . . [comprising printing plate tensioning devices]
27/1225 . . . . . . . [moving in the printing plate end substantially rectilinearly]
27/1231 . . . . . . . . [by translatory motion substantially tangential to support surface]
27/1237 . . . . . . . . [by translatory motion substantially perpendicular to support surface]
27/1243 . . . . . . . . [by pivotal or swivelling motion, e.g. by means of a rocking lever]
27/125 . . . . . . . . [moving in the printing plate end on a curvilinear path, e.g. by winding on a roll]
27/1256 . . . . . . . . [with two semi-cylinders movable relative to each other]
27/1262 . . . . . . . . [without tensioning means]
27/1268 . . . . . . . . [by self-locking or snap-on means]
27/1275 . . . . . . . . [by means of adhesives, staples]
27/1281 . . . . . . . . [details of the printing plate ends]
27/1287 . . . . . . . . . [devices for bending the printing plates or the printing plate ends]
27/1293 . . . . . . . . . {Devices for filling up the cylinder gap; Devices for removing the filler}
27/14 . . . . . . . . . . . for attaching printing formes to intermediate supports, e.g. adapter members

30/00 Devices for attaching coverings or make-ready devices; Guiding devices for coverings (make-ready devices B41N 6/00)

30/02 . . . . . . attaching to impression cylinders
30/04 . . . . . . attaching to transfer cylinders
30/06 . . . . . . attaching of endless or like continuously-fed coverings

31/00 Inking arrangements or devices (inking units for platen presses B41F 1/40; inking units for cylinder presses B41F 3/81)
Common details of printing machinery

33/00 [Indicating, counting, warning, control or safety devices (arrangements of counting devices in platen presses B41F 1/00; B41F 1/58; arrangements of counting devices) in cylinder presses B41F 3/84; ink supply or metering devices B41F 31/02]

33/0009 . . (Central control units)
33/0018 . . (Protection means against injury to the operator)
33/0027 . . (Devices for scanning originals, printing forms or the like for determining or presetting the ink supply)
33/0036 . . (Devices for scanning or checking the printed matter for quality control)

33/0045 . . (for automatically regulating the ink supply)
33/0054 . . (Devices for controlling dampening)
33/0063 . . (Devices for measuring the thickness of liquid films on rollers or cylinders)
33/0072 . . (Devices for measuring the pressure between cylinders or bearer rings)
33/0081 . . (Devices for scanning register marks)
33/009 . . (Devices for controlling numbering)
33/02 . . (Arrangements of indicating devices, e.g. counters)
33/025 . . . (Counters)
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))
33/045 . . . (for starting or stopping operation of numbering devices)
33/06 . . . (for starting or stopping operation of sheet or web feed)
33/08 . . . (for starting or stopping operation of cylinders)
33/10 . . . (for starting or stopping operation of dampening or inking units)
33/12 . . . (for starting or stopping the machine as a whole)
33/14 . . . (Automatic control of tripping devices by feelers, photoelectric devices, pneumatic devices, or other detectors)
33/16 . . . (Programming systems for automatic control of sequence of operations)
33/18 . . . (Web break detection (B41F 33/04 takes precedence)

35/00 Cleaning arrangements or devices {((in manifolding apparatus or the like B41L 41/00})

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