

## SECTION B — PERFORMING OPERATIONS; TRANSPORTING

### B41 PRINTING; LINING MACHINES; TYPEWRITERS; STAMPS

**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; 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; handling thin or filamentary material B65H; electrography, electrophotography, magnetography G03G) **[4]**

#### Note(s)

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

#### Subclass index

PLATEN PRESSES.....	1/00
CYLINDER PRESSES.....	3/00
ROTARY MACHINES	
Letterpress, lithographic, intaglio machines.....	5/00, 7/00, 9/00
Other machines; combined machines.....	11/00, 17/00, 19/00
Details.....	13/00
Screen printers.....	15/00
Transfer printing machines.....	16/00
DETAILS	
Handling sheets or other surfaces to be printed; treating such surfaces.....	21/00, 25/00, 22/00, 23/00
Attaching printing elements; make-ready arrangements, impression or offset surfaces; inking.....	27/00, 30/00, 31/00
Auxiliary devices; cleaning.....	33/00, 35/00

<b>1/00</b>	<b>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</b>	1/40	• • Inking units
		1/42	• • • using flat inking elements, e.g. discs
		1/44	• • • using inking ribbons
1/02	• Hand-operated platen presses	1/46	• • • using rollers
1/04	• for mono-impression printing, e.g. on sheets	1/48	• • • pivoting around the platen or base
1/06	• • with platen maintained parallel to bed during movement (preparing stereotype matrices using presses B41D 1/06)	1/50	• • • supported on carriages for movement in or on runways
		1/52	• • • • Carriage driving gear
1/08	• • on webs	1/54	• • Printing-pressure control devices
1/10	• for multi-impression printing in one or more colours, e.g. on webs	1/56	• • Auxiliary devices
1/12	• • on sheets	1/58	• • • Arrangements of counting devices for counting sheets
1/14	• • • using swinging platens, or forme supports	1/60	• • Safety devices
1/16	• for offset printing	1/62	• • • for preventing injury to operator
1/18	• for lithography	1/64	• • • • to the hands of the operator
1/20	• for perfecting sheets, i.e. for printing on both sides of sheets	1/66	• • • responsive to incorrect operating conditions
1/22	• specially adapted for printing heads, e.g. letter heads	<b>3/00</b>	<b>Cylinder presses, i.e. presses essentially comprising at least one cylinder co-operating with at least one flat type-bed</b>
1/24	• specially adapted for proof printing		
1/26	• Details	3/02	• with impression cylinder or cylinders rotating unidirectionally
1/28	• • Sheet-conveying, -aligning or -clamping devices (in general B65H)	3/04	• • intermittently; Stop-cylinder presses
1/30	• • • using rotary grippers	3/06	• • continuously
1/32	• • • using air pressure, e.g. vacuum	3/08	• • • Single-revolution presses
1/34	• • • Registering devices, e.g. gauges	3/10	• • • Two-revolution presses
1/36	• • • Clamps for conveying sheets and for holding same on the platens	3/12	• • Twin presses, i.e. with more than one cylinder or type-bed
1/38	• • Platens or type-beds		

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- 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
- 3/42 • • for multicolour printing on sheets
- 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
- 3/46 • Details
- 3/48 • • Press frames
- 3/51 • • Type-beds; Supports therefor (B41F 3/52 take precedence) [3]
- 3/52 • • Apparatus for cooling, heating, or drying printing surfaces [3]
- 3/54 • • Impression cylinders; Supports therefor (blankets or like coverings B41N 10/00)
- 3/56 • • • Devices for adjusting cylinders relative to type-beds and setting in adjusted position
- 3/58 • • Driving, synchronising, or control gear
- 3/60 • • • for type-beds
- 3/62 • • • • Applications of linkwork or gearing for producing reciprocatory or angular motion
- 3/64 • • • • • of crank motions
- 3/66 • • • • • of rack-and-pinion gearing
- 3/68 • • • • • with pinion rotating unidirectionally
- 3/70 • • • • Applications of directly-coupled motors
- 3/72 • • • • • of fluid motors
- 3/74 • • • • Applications of clutches
- 3/76 • • • • Applications of braking devices or of devices for stopping type-bed in registered position
- 3/78 • • • • • Air cushions
- 3/80 • • • for impression cylinders
- 3/81 • • Inking units [3]
- 3/82 • Auxiliary devices
- 3/84 • • Arrangements of counting devices (in printing machines in general B41F 33/02) [2]
- 3/86 • • Numbering devices

### Rotary machines

#### **5/00 Rotary letterpress machines**

- 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 [3]
- 5/24 • for flexographic printing [3]

#### **7/00 Rotary lithographic machines**

- 7/02 • for offset printing
- 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 [6]
- 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 [3]
- 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 (cooling forme or impression cylinders B41F 13/22) [6]
- 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**

- 9/01 • for indirect printing [3, 5]
- 9/02 • for multicolour printing
- 9/04 • specially adapted for proof printing
- 9/06 • Details
- 9/08 • • Wiping mechanisms
- 9/10 • • • with doctors, scrapers, or like devices

- 9/12 • • • with absorbent pads
- 9/14 • • • with continuous flexible surfaces, e.g. endless bands
- 9/16 • • • Removing or recovering ink from wiping mechanisms
- 9/18 • • Auxiliary devices for exchanging 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) [3]
- 13/00 Common details of rotary presses or machines**
- 13/004 • Electric or hydraulic features of drives [6]
- 13/008 • Mechanical features of drives, e.g. gears, clutches [6]
- 13/012 • • Taking-up backlash [6]
- 13/016 • Brakes [6]
- 13/02 • Conveying or guiding webs through presses or machines (web handling in general B65H, e.g. step-by-step advancement B65H 20/00, turning or reversing B65H 23/32)
- 13/03 • • Threading webs into printing machines [6]
- 13/04 • • intermittently
- 13/06 • • Turning-bar arrangements
- 13/08 • Cylinders
- 13/10 • • Forme cylinders
- 13/11 • • • Gravure cylinders [6]
- 13/12 • • • Registering devices
- 13/14 • • • • with means for displacing the cylinders
- 13/16 • • • • with means for displacing the printing formes on the cylinders
- 13/18 • • Impression cylinders
- 13/187 • • • for rotogravure [6]
- 13/193 • • Transfer cylinders; Offset cylinders [6]
- 13/20 • • Supports for bearings or supports for forme, offset, or impression cylinders
- 13/21 • • • Bearer rings [6]
- 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 (in general B26D, B65H; gathering sheets or signatures in bookbinding B42C 1/00)
- 13/56 • • Folding or cutting
- 13/58 • • • lengthwise
- 13/60 • • • crosswise
- 13/62 • • • Folding-cylinders or drums
- 13/64 • • Collecting
- 13/66 • • • and stapling
- 13/68 • • Adding inserts
- 13/70 • • Depositing
- 15/00 Screen printers** (for selective printing B41J 2/005)
- 15/02 • Manually-operable devices
- 15/04 • • for multicolour printing
- 15/06 • • with auxiliary equipment, e.g. for drying printed articles
- 15/08 • Machines
- 15/10 • • 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
- 15/42 • • • comprising squeegees or doctors
- 15/44 • • Squeegees or doctors (doctors of rotary intaglio printing presses B41F 9/10)
- 15/46 • • • with two or more operative parts
- 16/00 Transfer printing apparatus** (apparatus or machines for applying decalcomanias B65C) [4]
- 16/02 • for textile material [4]
- 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; addressing machines 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)
- 17/02 • for printing books or manifolding sets
- 17/04 • for printing calendars
- 17/08 • for printing on filamentary or elongated articles or material, or on articles with cylindrical surfaces
- 17/10 • • on articles or material of indefinite length, e.g. wires, hoses, tubes or yarns
- 17/12 • • • at an angle to axis
- 17/13 • • • for printing on rolls of material, the roll serving as impression cylinder, e.g. strip printers [2009.01]
- 17/14 • • on articles of finite length
- 17/16 • • • on end or bottom surfaces thereof
- 17/18 • • • on curved surfaces of articles of varying cross-section, e.g. bottles, lamp glasses

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- 17/20 • • • on articles of uniform cross-section, e.g. pencils, rulers, resistors
- 17/22 • • • • by rolling contact
- 17/24 • for printing on flat surfaces of polyhedral articles
- 17/26 • • by rolling contact
- 17/28 • for printing on curved surfaces of conical or frusto-conical articles
- 17/30 • for printing on curved surfaces of essentially spherical, or part-spherical, articles
- 17/32 • • on lamp bulbs
- 17/34 • • on articles with surface irregularities, e.g. fruit, nuts
- 17/36 • for printing on tablets, pills, or like small articles
- 17/38 • for printing on knitted fabrics
- 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) [2]
- 19/02 • with embossing (printing with a printer's forme combined with embossing B41M 1/24)
- 19/04 • • using intaglio printing formes and wipers
- 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"
- 19/08 • Simultaneous moulding and printing

### Common details of printing machinery

- 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)
- 21/02 • Pins [3, 5]
- 21/04 • Grippers [3, 5]
- 21/05 • • In-feed grippers [3, 5]
- 21/06 • • Suction-operated grippers
- 21/08 • Combinations of endless conveyers and grippers
- 21/10 • Combinations of transfer drums and grippers [3]
- 21/12 • Adjusting leading edges, e.g. front stops [3]
- 21/14 • Adjusting lateral edges, e.g. side stops [3]
- 22/00 Means preventing smudging of machine parts or printed articles** (B41F 23/00 takes precedence) [6]
- 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; surface treatment in general, see the relevant places, e.g. applying liquids or other fluent materials B05, of metals C23G)
- 23/02 • by dampening (in rotary lithographic machines B41F 7/24)
- 23/04 • by heat drying, by cooling, by applying powders
- 23/06 • • Powdering devices, e.g. for preventing set-off
- 23/08 • Print-finishing devices, e.g. for glossing prints
- 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)
- 27/00 Devices for attaching printing elements or formes to supports** (attaching by chemical means B41N 6/00) [5]

- 27/02 • Magnetic devices
- 27/04 • for attaching printing elements to flat type-beds
- 27/06 • for attaching printing elements to forme cylinders
- 27/08 • for attaching printing formes to flat type-beds
- 27/10 • for attaching non-deformable curved printing formes to forme cylinders
- 27/12 • for attaching flexible printing formes
- 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; blankets or like coverings B41N 10/00) [5]
- 30/02 • attaching to impression cylinders [5]
- 30/04 • attaching to transfer cylinders [5]
- 30/06 • attaching of endless or like continuously-fed coverings [5]
- 31/00 Inking arrangements or devices** (inking units for platen presses B41F 1/40; inking units for cylinder presses B41F 3/81; applying liquids or other fluent materials to surfaces, in general B05; for typewriters or selective printing mechanisms B41J)
- 31/02 • Ducts, containers, supply or metering devices (level control in general G05D 9/00) [3]
- 31/03 • • Ink agitators [6]
- 31/04 • • with duct-blades or like metering devices
- 31/05 • • • Positioning devices therefor [6]
- 31/06 • • Troughs or like reservoirs with immersed, or partly immersed, rollers or cylinders
- 31/07 • • • for rotogravure [6]
- 31/08 • • with ink-ejecting means, e.g. pumps, nozzles
- 31/10 • • Applications of feed or duct rollers (messenger or moving transfer rollers B41F 31/14)
- 31/12 • • • adjustable for regulating supply
- 31/13 • • Means for driving fountain rollers [6]
- 31/14 • • Applications of messenger or other moving transfer rollers
- 31/15 • Devices for moving vibrator-rollers [6]
- 31/16 • Continuous, e.g. endless, band apparatus
- 31/18 • for inking selected parts of printing formes
- 31/20 • Ink-removing or collecting devices
- 31/22 • for inking from interior of cylinder
- 31/24 • Absorbent pads
- 31/26 • Construction of inking rollers (inking-rollers serving also to apply ink repellent in rotary lithographic machines B41F 7/36)
- 31/28 • Spray apparatus, e.g. containing brushes
- 31/30 • Arrangements for tripping, lifting, adjusting, or removing inking rollers; Supports, bearings, or forks therefor
- 31/32 • • Lifting or adjusting devices (for damping rollers B41F 7/40)
- 31/34 • • • Cam, eccentric, wedge, or like devices
- 31/36 • • • fluid-pressure operated
- 31/38 • • • magnetically operated
- 33/00 Indicating, counting, warning, control, or safety devices** (arrangements of counting devices in platen presses B41F 1/00, in cylinder presses B41F 3/84, in typewriters or selective printing mechanisms B41J 29/20; ink supply or metering devices B41J 31/02; such devices in general, see the relevant subclasses, e.g. counting in general G06M) [3]
- 33/02 • Arrangements of indicating devices, e.g. counters [2]

- 33/04 • Tripping devices or stop-motions (cylinder-tripping devices of rotary presses or machines B41F 13/24; arrangements for tripping inking rollers B41F 31/30) [2]
- 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 damping 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) [6]
- 35/00 Cleaning arrangements or devices**
- 35/02 • for forme cylinders
- 35/04 • for inking rollers
- 35/06 • for offset cylinders