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

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 (preparing stereotype matrices using presses B41D 1/06)
1/08 • • on webs
1/10 • for multi-impression printing in one or more colours, e.g. on webs
1/12 • • on sheets
1/14 • • • using swinging platens, or forme supports
1/16 • for offset printing
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
1/28 • • Sheet-conveying, -aligning or -clamping devices (in general B65H)
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
1/38 • • Platens or type-beds
1/40 • • Inking units
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
1/58 • • • 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
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

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 conveyors 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