

CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

PRINTING

B41 PRINTING; LINING MACHINES; TYPEWRITERS; STAMPS (reproduction or duplication of pictures or patterns by scanning and converting into electrical signals [H04N](#))

B41M PRINTING, DUPLICATING, MARKING, OR COPYING PROCESSES; COLOUR PRINTING, (correction of typographical errors [B41J](#); processes for applying transfer pictures or the like [B44C 1/16](#); fluid media for correction of typographical errors by coating [C09D 10/00](#); printing textiles [D06P](#))

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.

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|-------------|--|-------------|--|
| 1/00 | Inking and printing with a printer's forme | 1/38 | . . on wooden surfaces, leather, or linoleum (printing on matches or match boxes when combined with match manufacture C06F 1/18) |
| 1/02 | . Letterpress printing, e.g. book printing | | |
| 1/04 | . . Flexographic printing | | |
| 1/06 | . Lithographic printing | 1/40 | . Printing on bodies of particular shapes, e.g. golf balls, candles, wine corks {(sublimation or volatilisation of pre-printed design B41M 5/035)} |
| 1/08 | . . Dry printing | | |
| 1/10 | . Intaglio printing {; Gravure printing} | 1/42 | . Printing without contact between forme and surface to be printed, e.g. by using electrostatic fields {(using a stencil or screen B41M 1/125)} |
| 1/12 | . Stencil printing; Silk-screen printing | | |
| 1/125 | . . {using a field of force, e.g. an electrostatic field, or an electric current} | | |
| 1/14 | . Multicolour printing | 3/00 | Printing processes to produce particular kinds of printed work, e.g. patterns (special designs or pictures per se B44E; {printing apparatus or machines of special type or for particular purposes B41F 17/00; manufacturing organic semiconductor devices using printing techniques H01L 51/0004}; manufacturing printed circuits using printing techniques H05K 3/12) |
| 1/16 | . . using different inks which flow into one another to produce iridescent effects | | |
| 1/18 | . . Printing one ink over another | | |
| 1/20 | . . by applying differently-coloured inks simultaneously to different parts of the printing surface | | |
| 1/22 | . Metallic printing; Printing with powdered inks | 3/001 | . {using chemical colour-formers or chemical reactions, e.g. leuco dyes or acids} |
| 1/24 | . combined with embossing (printing machines for carrying out printing operations combined with embossing B41F 19/02) | 3/003 | . {on optical devices, e.g. lens elements; for the production of optical devices (production by thermal imaging means B41M 5/265)} |
| 1/26 | . Printing on other surfaces than ordinary paper (B41M 1/40 takes precedence) | 3/005 | . {Colour cards; Painting supports; Latent or hidden images, e.g. for games; Time delayed images} |
| 1/28 | . . on metals | 3/006 | . {Patterns of chemical products used for a specific purpose, e.g. pesticides, perfumes, adhesive patterns; use of microencapsulated material; Printing on smoking articles} |
| 1/30 | . . on organic plastics, horn or similar materials {(recording sheets having a coating to improve ink, dye or pigment receptivity B41M 5/50 ; marking or recording on plastic by irradiation with electromagnetic beams, e.g. laser, B41M 5/267)} | 3/008 | . {Sequential or multiple printing, e.g. on previously printed background; Mirror printing; Recto-verso printing; using a combination of different printing techniques; Printing of patterns visible in reflection and by transparency; by superposing printed artifacts} |
| 1/305 | . . . {using mechanical, physical or chemical means, e.g. corona discharge, etching or organic solvents, to improve ink retention} | 3/02 | . Maps; Sea or meteorological charts |
| 1/32 | . . on rubber | 3/04 | . Music |
| 1/34 | . . on glass or ceramic surfaces {(ink-jet printing on glass or ceramic surfaces B41M 5/00)} | 3/06 | . Veined printings; Fluorescent printings; Stereoscopic images; Imitated patterns, e.g. tissues, textiles |
| 1/36 | . . on pretreated paper, e.g. parchment, oiled paper, paper for registration purposes {(B41M 5/50 takes precedence)} | 3/10 | . Watermarks |

- 3/12 . . Transfer pictures or the like, e.g. decalcomanias
{(processes for producing decorative surface effects
[B44C 1/00](#); [B41M 5/0256](#) takes precedence)}
- 3/14 . . Security printing {(securities [B42D 25/29](#))}
- 3/142 . . {using chemical colour-formers or chemical
reactions, e.g. leuco-dye/acid, photochromes}
- 3/144 . . {using fluorescent, luminescent or iridescent
effects}
- 3/146 . . {using a non human-readable pattern which
becomes visible on reproduction, e.g. a void
mark}
- 3/148 . . {Transitory images, i.e. images only visible from
certain viewing angles}
- 3/16 . . Braille printing (typewriters or selective printing
mechanisms for Braille printing [B41J 3/32](#))
- 3/18 . . Particular kinds of wallpapers
- 5/00 Duplicating or marking methods; Sheet materials
for use therein (by using light-sensitive materials
[G03](#); electrography, magnetography [G03G](#) {;
repeatedly usable boards or tablets for writing or
drawing [B43L 1/00](#))}**
- 5/0005 . . {Enlarging or reduction of graphic information on
a support by stretching or contracting the support,
optionally in combination with the recording}
- 5/0011 . . {Pre-treatment or treatment during printing of the
recording material, e.g. heating, irradiating (after-
treatment of prints [B41M 7/00](#); printers for treating
or overcoating copy materials before, during or after
printing [B41J 11/0015](#))}
- 5/0017 . . {Application of ink-fixing material, e.g. mordant,
precipitating agent, on the substrate prior to
printing, e.g. by ink-jet printing, coating or
spraying}
- 5/0023 . . {Digital printing methods characterised by the inks
used (inks per se [C09D 11/00](#))}
- 5/0029 . . {Formation of a transparent pattern using a liquid
marking fluid}
- 5/0035 . . {Uncoated paper (paper making [D21](#))}
- 5/0041 . . {Digital printing on surfaces other than ordinary
paper ([B41M 5/0082](#) takes precedence; printing on
textiles [D06P 5/00](#))}
- 5/0047 . . {by ink-jet printing}
- 5/0052 . . {by thermal printing}
- 5/0058 . . {on metals and oxidised metal surfaces}
- 5/0064 . . {on plastics, horn, rubber, or other organic
polymers}
- 5/007 . . {on glass, ceramic, tiles, concrete, stones, etc.}
- 5/0076 . . {on wooden surfaces, leather, linoleum, skin, or
flowers}
- 5/0082 . . {Digital printing on bodies of particular shapes
(sublimation or volatilisation of pre-printed design
[B41M 5/035](#))}
- 5/0088 . . {by ink-jet printing}
- 5/0094 . . {by thermal printing}
- 5/025 . . by transferring ink from the master sheet
- 5/0253 . . {using a chemical colour-forming ink, e.g.
chemical hectography ([B41M 5/035](#) takes
precedence)}
- 5/0256 . . {the transferable ink pattern being obtained by
means of a computer driven printer, e.g. an ink jet
or laser printer, or by electrographic means}
- 5/03 . . by pressure
- 5/035 . . by sublimation or volatilisation of {pre-printed}
design {, e.g. sublistatic ([B41M 5/0256](#) takes
precedence; printing on textiles [D06P 5/00](#))}
- 5/0351 . . . {on anodized aluminium}
- 5/0353 . . . {using heat shrinkable film material;
Thermotransfer combined with the shaping of
the workpiece; Recto-verso printing; Image
correction}
- 5/0355 . . . {characterised by the macromolecular coating
or impregnation used to obtain dye receptive
properties}
- 5/0356 . . . {characterised by the inks used for printing the
pattern on the temporary support or additives
therefor, e.g. dyes, transferable compounds,
binders or transfer promoting additives}
- 5/0358 . . . {characterised by the mechanisms or artifacts
to obtain the transfer, e.g. the heating means,
the pressure means or the transport means}
- 5/04 . . using solvent-soluble dyestuffs on the master
sheets, e.g. alcohol-soluble
- 5/06 . . using master sheets coated with jelly-like
materials, e.g. gelatin
- 5/08 . . . Sheet materials therefor
- 5/10 . . by using carbon paper or the like
- 5/124 . . using pressure to make a masked colour visible,
e.g. to make a coloured support visible, to create an
opaque or transparent pattern, or to form colour by
uniting colour-forming components
- 5/1243 . . {Inert particulate additives, e.g. protective stilt
materials}
- 5/1246 . . {Application of the layer, e.g. by printing}
- 5/128 . . Desensitisers; Compositions for fault correction,
detection or identification of the layers
- 5/132 . . Chemical colour-forming components; Additives
or binders therefor
- 5/136 . . . Organic colour formers, e.g. leuco dyes
- 5/1363 {Leuco dyes forming a complex with a metal
cation}
- 5/1366 {characterised solely by tri (ary) or
hetary)methane derivatives ([B41M 5/1363](#)
takes precedence)}
- 5/145 with a lactone or lactam ring
- 5/1455 {characterised by fluoran compounds}
- 5/15 Spiro-pyrans
- 5/155 Colour-developing components, e.g. acidic
compounds; Additives or binders therefor;
Layers containing such colour-developing
components, additives or binders
- 5/1555 {Inorganic mineral developers, e.g. clays}
- 5/165 . . characterised by the use of microcapsules; Special
solvents for incorporating the ingredients
- 5/1655 {Solvents}
- 5/20 . . using electric current ([B41M 5/24](#) takes precedence
{; processes in which the current is transformed into
a heat pattern for obtaining transfer to a receptor
sheet [B41M 5/382](#); electro-coagulable or electro-
adhesive printing or recording [B41C 1/105](#))}
- 5/205 . . {and an eroding electrode}
- 5/24 . . Ablative recording, e.g. by burning marks; Spark
recording {(marking by high energetic means, e.g.
by laser otherwise than burning or ablative removal
[B41M 5/26](#); materials or methods for recording or
reproduction by optical means [G11B 7/00](#))}
- 5/245 . . {Electroerosion or spark recording}

- 5/26 . . Thermography ([B41M 5/20](#), [B41M 5/24](#) take precedence); {Marking by high energetic means, e.g. laser otherwise than by burning, and characterised by the material used ([B23K](#) takes precedence; thermographic or photothermographic systems using noble metal compounds [G03C 1/494](#))}
- 5/262 . . {recording or marking of inorganic surfaces or materials, e.g. glass, metal, or ceramics (marking of plastic artifacts with inorganic additives [B41M 5/267](#))}
- 5/265 . . {for the production of optical filters or electrical components}
- 5/267 . . {Marking of plastic artifacts, e.g. with laser}
- 5/28 . . using thermochromic compounds or layers containing liquid crystals, microcapsules, bleachable dyes or heat- decomposable compounds, e.g. gas- liberating { ([B41M 5/38271](#) takes precedence)}
- 5/281 . . . {using liquid crystals only}
- 5/282 . . . {using thermochromic compounds}
- 5/283 {Inorganic thermochromic compounds}
- 5/284 {Organic thermochromic compounds}
- 5/285 {Polyacetylenes}
- 5/286 . . . {using compounds undergoing unimolecular fragmentation to obtain colour shift, e.g. bleachable dyes}
- 5/287 . . . {using microcapsules or microspheres only}
- 5/288 . . . {using gas liberating compounds, e.g. to obtain vesicular or blow-up images ([B41M 3/16](#), [B41M 9/04](#) take precedence; thermogravure printing [B41M 7/02](#))}
- 5/30 . . using chemical colour formers ([B41M 5/34](#) takes precedence)
- 5/305 . . . {with reversible electron-donor electron-acceptor compositions}
- 5/32 . . . one component being a heavy metal compound, {e.g. lead or iron}
- 5/323 . . . Organic colour formers, e.g. leuco dyes
- 5/327 with a lactone or lactam ring
- 5/3275 {Fluoran compounds}
- 5/333 . . . Colour developing components therefor, e.g. acidic compounds
- 5/3331 {Macromolecular compounds}
- 5/3333 {Non-macromolecular compounds}
- 5/3335 {Compounds containing phenolic or carboxylic acid groups or metal salts thereof}
- 5/3336 {Sulfur compounds, e.g. sulfones, sulfides, sulfonamides}
- 5/3338 {Inorganic compounds}
- 5/337 . . . Additives; Binders {([B41M 5/46](#) takes precedence)}
- 5/3372 {Macromolecular compounds}
- 5/3375 {Non-macromolecular compounds}
- 5/3377 {Inorganic compounds, e.g. metal salts of organic acids}
- 5/34 . . Multicolour thermography
- 5/345 . . . {by thermal transfer of dyes or pigments}
- 5/36 . . using a polymeric layer, which may be particulate and which is deformed or structurally changed with modification of its' properties, e.g. of its' optical hydrophobic-hydrophilic, solubility or permeability properties { ([B41C 1/10](#) takes precedence)}
- 5/361 . . . {using a polymeric matrix with inorganic particles forming an image by orientation or agglomeration}
- 5/363 . . . {using materials comprising a polymeric matrix containing a low molecular weight organic compound such as a fatty acid, e.g. for reversible recording}
- 5/366 . . . {using materials comprising a polymeric matrix containing a polymeric particulate material, e.g. hydrophobic heat coalescing particles}
- 5/368 . . . {involving the creation of a soluble/insoluble or hydrophilic/hydrophobic permeability pattern; Peel development ([B41M 5/366](#) takes precedence)}
- 5/382 . . Contact thermal transfer or sublimation processes (sublistatic printing using a pre-formed image [B41M 5/035](#); ink-, dye- or pigment-receptive coatings [B41M 5/52](#))
- 5/38207 . . . {characterised by aspects not provided for in groups [B41M 5/385](#) - [B41M 5/395](#)}
- 5/38214 {Structural details, e.g. multilayer systems (composition of individual layers [B41M 5/42](#))}
- 5/38221 {Apparatus features}
- 5/38228 . . . {characterised by the use of two or more ink layers}
- 5/38235 . . . {characterised by transferable colour-forming materials}
- 5/38242 . . . {characterised by the use of different kinds of energy to effect transfer, e.g. heat and light}
- 5/3825 . . . {Electric current carrying heat transfer sheets}
- 5/38257 . . . {characterised by the use of an intermediate receptor}
- 5/38264 . . . {Overprinting of thermal transfer images}
- 5/38271 . . . {using microcapsules}
- 5/38278 . . . {using ink-containing structures, e.g. porous or microporous layers, alveoles or cellules}
- 5/38285 . . . {characterised by magnetic components in the transfer ink}
- 5/38292 . . . {with correction means}
- 5/385 . . . characterised by the transferable dyes or pigments {([infra-red absorbing dyes](#) [B41M 5/465](#))}
- 5/3852 {Anthraquinone or naphthoquinone dyes}
- 5/3854 {Dyes containing one or more acyclic carbon-to-carbon double bonds, e.g., di- or tri-cyanovinyl, methine}
- 5/3856 {Dyes characterised by an acyclic -X=C group, where X can represent both nitrogen and a substituted carbon atom}
- 5/3858 {Mixtures of dyes, at least one being a dye classifiable in one of groups [B41M 5/385](#) - [B41M 5/39](#)}
- 5/388 Azo dyes
- 5/39 Dyes containing one or more carbon-to-nitrogen double bonds, e.g. azomethine

- 5/392 . . . Additives, other than colour forming substances, dyes or pigments, e.g. sensitisers, transfer promoting agents
- 5/395 Macromolecular additives, e.g. binders
- 5/398 . . Processes based on the production of stickiness patterns using powders
- 5/40 . . characterised by the base {backcoat}, intermediate, or covering layers, {e.g. for thermal transfer dye-donor or dye-receiver sheets}; Heat, radiation filtering or absorbing means or layers; combined with other image registration layers or compositions; Special originals for reproduction by thermography {(macromolecular ink- or dye-receptive coatings [B41M 5/52](#))}
- 5/405 . . . {characterised by layers cured by radiation (layers cured after recording [B41M 7/0072](#))}
- 5/41 . . . Base layers {supports or substrates}
- 5/42 . . . Intermediate, {backcoat}, or covering layers {([B41M 5/405](#) takes precedence; multilayer thermal transfer systems in general [B41M 5/38214](#))}
- NOTE**
- When the invention information lies in the combination of features covered by more than one of the subgroups of [B41M 5/42](#), classification is made in [B41M 5/42](#), using the corresponding indexing codes of its subgroups to identify the individual features
- 5/423 {characterised by non-macromolecular compounds, e.g. waxes}
- 5/426 {characterised by inorganic compounds, e.g. metals, metal salts, metal complexes}
- 5/44 characterised by the macromolecular compounds
- 5/443 {Silicon-containing polymers, e.g. silicones, siloxanes}
- 5/446 {Fluorine-containing polymers}
- 5/46 . . . characterised by the light-to-heat converting means; characterised by the heat or radiation filtering or absorbing means or layers
- 5/465 {Infra-red radiation-absorbing materials, e.g. dyes, metals, silicates, C black}
- 5/48 . . . combined with other image registration layers or compositions; Special originals for reproduction by thermography
- 5/50 . . Recording sheets characterised by the coating used to improve ink, dye or pigment receptivity, e.g. for ink-jet or thermal dye transfer recording {(printing on organic plastics using a printer's form [B41M 1/30](#); printing on pre-treated paper with a printer's form [B41M 1/36](#))}
- 5/502 . . {characterised by structural details, e.g. multilayer materials (supports, backcoats or intermediate layers for thermal dye transfer donor and receiver sheets [B41M 5/41](#), [B41M 5/42](#))}
- 5/504 . . . {Backcoats}
- 5/506 . . . {Intermediate layers}
- 5/508 . . . {Supports}
- 5/52 . . Macromolecular coatings
- 5/5209 . . . {Coatings prepared by radiation-curing, e.g. using photopolymerisable compositions}
- 5/5218 . . . {characterised by inorganic additives, e.g. pigments, clays}
- 5/5227 . . . {characterised by organic non-macromolecular additives, e.g. UV-absorbers, plasticisers, surfactants}
- 5/5236 . . . {characterised by the use of natural gums, of proteins, e.g. gelatins, or of macromolecular carbohydrates, e.g. cellulose}
- 5/5245 . . . {characterised by the use of polymers containing cationic or anionic groups, e.g. mordants}
- 5/5254 . . . {characterised by the use of polymers obtained by reactions only involving carbon-to-carbon unsaturated bonds, e.g. vinyl polymers}
- 5/5263 . . . {characterised by the use of polymers obtained otherwise than by reactions only involving carbon-to-carbon unsaturated bonds}
- 5/5272 {Polyesters; Polycarbonates}
- 5/5281 {Polyurethanes or polyureas}
- 5/529 . . . {characterised by the use of fluorine- or silicon-containing organic compounds}
- 7/00 After-treatment of prints, e.g. heating, irradiating, setting of the ink, protection of the printed stock (pre-treatment or treatment during printing [B41M 5/0011](#); printers for treating or overcoating copy materials before, during or after printing [B41J 11/0015](#))**
- 7/0009 . . {Obliterating the printed matter; Non-destructive removal of the ink pattern, e.g. for repetitive use of the support}
- 7/0018 . . {using ink-fixing material, e.g. mordant, precipitating agent, after printing, e.g. by ink-jet printing, coating or spraying}
- 7/0027 . . {using protective coatings or layers by lamination or by fusion of the coatings or layers}
- 7/0036 . . {using protective coatings or layers dried without curing}
- 7/0045 . . {using protective coatings or film forming compositions cured by mechanical wave energy, e.g. ultrasonics, cured by electromagnetic radiation or waves, e.g. ultraviolet radiation, electron beams, or cured by magnetic or electric fields, e.g. electric discharge, plasma}
- 7/0054 . . {using protective coatings or film forming compositions cured by thermal means, e.g. infrared radiation, heat}
- 7/0063 . . {Preservation or restoration of currency, books or archival material, e.g. by deacidifying}
- 7/0072 . . {using mechanical wave energy, e.g. ultrasonics; using magnetic or electric fields, e.g. electric discharge, plasma}
- 7/0081 . . {using electromagnetic radiation or waves, e.g. ultraviolet radiation, electron beams}
- 7/009 . . {using thermal means, e.g. infrared radiation, heat}

NOTE

{ In this group, when the invention information lies in a combination of features covered by more than one of its subgroups,

B41M

- 7/02 . Dusting {, e.g. with an anti-offset powder for obtaining raised printing such as by thermogravure ([B41M 7/0027](#), [B41M 7/0036](#), [B41M 7/0045](#), [B41M 7/0054](#), [B41M 7/0072](#), [B41M 7/0081](#), [B41M 7/009](#) take precedence); Varnishing (devices for treating the surfaces of sheets, webs, or other articles in connection with printing [B41F 23/00](#), [B41L 23/00](#))}

9/00 Processes wherein make-ready devices are used (make-ready devices *per se* [B41N 6/00](#))

- 9/02 . Relief make-readies
- 9/04 . . photomechanical

99/00 Subject matter not provided for in other groups of this subclass

2205/00 Printing methods or features related to printing methods; Location or type of the layers

- 2205/02 . Dye diffusion thermal transfer printing (D2T2)
- 2205/04 . Direct thermal recording [DTR]
- 2205/06 . relating to melt (thermal) mass transfer
- 2205/08 . Ablative thermal transfer, i.e. the exposed transfer medium is propelled from the donor to a receptor by generation of a gas
- 2205/10 . Post-imaging transfer of imaged layer; transfer of the whole imaged layer
- 2205/12 . Preparation of material for subsequent imaging, e.g. corona treatment, simultaneous coating, pre-treatments
- 2205/14 . Production or use of a mask
- 2205/16 . Correction processes or materials
- 2205/18 . Erasure; Erasable marking; Non-permanent marking
- 2205/20 . Stability against chemicals, e.g. grease
- 2205/22 . improving gradation of image
- 2205/24 . Reactive compound reacting in image receiving layer other than leuco dyes or mordants
- 2205/26 . Donor or receiver with registry means
- 2205/28 . Storage stability; Improved self life
- 2205/30 . Thermal donors, e.g. thermal ribbons
- 2205/32 . Thermal receivers
- 2205/34 . Both sides of a layer or material are treated, e.g. coated
- 2205/36 . Backcoats; Back layers
- 2205/38 . Intermediate layers; Layers between substrate and imaging layer
- 2205/40 . Cover layers; Layers separated from substrate by imaging layer; Protective layers; Layers applied before imaging ([protective layers applied after imaging B41M 7/00](#))
- 2205/42 . Multiple imaging layers