

## SECTION G — PHYSICS

**G03 PHOTOGRAPHY; CINEMATOGRAPHY; ANALOGOUS TECHNIQUES USING WAVES OTHER THAN OPTICAL WAVES; ELECTROGRAPHY; HOLOGRAPHY**

**G03G ELECTROGRAPHY; ELECTROPHOTOGRAPHY; MAGNETOGRAPHY** (information storage based on relative movement between record carrier and transducer G11B; static stores with means for writing-in or reading-out information G11C; recording of television signals H04N 5/76)

**Note(s)**

1. This subclass covers:
  - the production of permanent directly-visible pictures in conformity with an original picture or document, using an intermediate imagewise distribution of an electric or magnetic quantity, such as a charge pattern, an electric conductivity pattern, or a magnetic pattern;
  - the production of permanent directly-visible pictures using an intermediate imagewise distribution of an electric or magnetic quantity, when the origin and the way of generating said intermediate distribution are not relevant.
2. This subclass does not cover:
  - use of electric signals for the transmission of the picture information from the original to the reproduction, i.e. pictorial communication, which is covered by subclass H04N;
  - production of pictures by heat patterns exclusively, not using an electrostatic or magnetic pattern, which is covered by group B41M 5/00;
  - production of prints by transferring ink from a printing form to a printing surface, without physical contact and using the force of an electrostatic field, which is covered by subclass B41M;
  - selective printing mechanisms characterised by the selective supply of electric current, or the selective application of magnetism or radiation, to a printing material or impression-transfer material, which are covered by groups B41J 2/385, B41J 2/435.

**Subclass index**

ORIGINAL RECORDING, MEMBERS AND MATERIALS.....	5/00, 7/00, 9/00
ELECTROGRAPHIC PROCESSES AND APPARATUS	
Using a charge pattern.....	13/00, 15/00
Using patterns other than charge patterns.....	17/00
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5/00	<b>Recording-members for original recording by exposure e.g. to light, to heat, to electrons; Manufacture thereof; Selection of materials therefor</b> (recording surfaces for measuring apparatus G01D 15/34; photosensitive materials for photographic purposes G03C)	5/043	• • • Photoconductive layers characterised by having two or more layers or characterised by their composite structure [5]
5/02	• Charge-receiving layers (G03G 5/153 takes precedence) [5]	5/047	• • • characterised by the charge-generation layers or charge-transporting layers [5]
5/022	• • Layers for surface-deformation imaging, e.g. frost imaging [2]	5/05	• • • Organic bonding materials; Methods for coating a substrate with a photoconductive layer; Inert supplements for use in photoconductive layers [2]
5/024	• • Photoelectret layers [2]	5/06	• • • characterised by the photoconductive material being organic [5]
5/026	• • Layers in which during the irradiation a chemical reaction occurs whereby electrically conductive patterns are formed in the layers, e.g. for chemixerography [2]	5/07	• • • • Polymeric photoconductive materials [2]
5/028	• • Layers in which after being exposed to heat patterns electrically conductive patterns are formed in the layers, e.g. for thermoxerography [2]	5/08	• • • characterised by the photoconductive material being inorganic [2, 5]
5/04	• • Photoconductive layers; Charge-generation layers or charge-transporting layers; Additives therefor; Binders therefor [2, 5]	5/082	• • • • and not being incorporated in a bonding material, e.g. vacuum deposited [2]
		5/085	• • • • and being incorporated in an inorganic bonding material, e.g. glass-like layers [2]
		5/087	• • • • and being incorporated in an organic bonding material [2]
		5/09	• • • Sensitisers or activators, e.g. dyestuffs (G03G 5/12 takes precedence) [2]

- 5/10 • Bases for charge-receiving or other layers
- 5/12 • Recording members for multicolour processes [2]
- 5/14 • Inert intermediate or cover layers for charge-receiving layers (G03G 5/04 takes precedence) [2, 5]
- 5/147 • • Cover layers [5]
- 5/153 • Charge-receiving layers combined with additional photo- or thermo-sensitive, but not photoconductive, layers, e.g. silver-salt layers [5]
- 5/16 • Layers for recording by changing the magnetic properties, e.g. for Curie-point-writing [3]
- 7/00 Selection of materials for use in image-receiving members, i.e. for reversal by physical contact; Manufacture thereof** (photosensitive materials for photographic purposes G03C)
- 8/00 Layers covering the final reproduction, e.g. for protecting, for writing thereon [2]**
- 9/00 Developers [5]**
  - 9/06 • the developer being electrolytic
  - 9/08 • with toner particles [2]

**Note(s)**

In groups G03G 9/083-G03G 9/12, in the absence of an indication to the contrary, classification is made in the last appropriate place.

  - 9/083 • • Magnetic toner particles [5]
  - 9/087 • • Binders for toner particles [5]
  - 9/09 • • Colouring agents for toner particles [5]
  - 9/093 • • Encapsulated toner particles [5]
  - 9/097 • • Plasticisers; Charge controlling agents [5]
  - 9/10 • • characterised by carrier particles [2, 5]
  - 9/107 • • • having magnetic components [5]
  - 9/113 • • • having coatings applied thereto [5]
  - 9/12 • • in liquid developer mixtures [2]
  - 9/125 • • • characterised by the liquid [5]
  - 9/13 • • • characterised by polymer components [5]
  - 9/135 • • • characterised by stabiliser or charge-controlling agents [5]
  - 9/16 • Developers not provided for in groups G03G 9/06-G03G 9/135, e.g. solutions, aerosols [2]
  - 9/18 • • Differentially-wetting liquid developers [2]
- 11/00 Selection of substances for use as fixing agents**
- 13/00 Electrographic processes using a charge pattern** (G03G 15/00, G03G 16/00, G03G 17/00 take precedence) [2, 5]
  - 13/01 • for multicoloured copies [2]
  - 13/02 • Sensitising, i.e. laying-down a uniform charge (devices for corona discharge per se H01T 19/00)
  - 13/04 • Exposing, i.e. imagewise exposure by optically projecting the original image on a photoconductive recording material [6]
  - 13/045 • • Charging or discharging distinct portions of the charge pattern on the recording material, e.g. discharging non-image areas, contrast enhancement (G03G 13/34, G03G 15/36, G03G 21/06 take precedence) [6]
  - 13/05 • Imagewise charging, i.e. laying-down a charge in the configuration of an original image using a modulated stream of charged particles, e.g. of corona ions, modulated by a photoconductive control screen bearing a charge pattern or by optically activated charging means (using charging means controlled by electric image signals B41J) [6]
  - 13/054 • using X-rays, e.g. electroradiography [6]
- 13/056 • using internal polarisation [2, 6]
- 13/06 • Developing
  - 13/08 • • using a solid developer, e.g. powder developer
  - 13/09 • • • using magnetic brush [2]
  - 13/095 • • • Removing excess solid developer [6]
  - 13/10 • • using a liquid developer
  - 13/11 • • • Removing excess liquid developer, e.g. by heat [6]
  - 13/14 • Transferring a pattern to a second base
    - 13/16 • • of a toner pattern, e.g. a powder pattern
    - 13/18 • • of a charge pattern
  - 13/20 • Fixing, e.g. by using heat
  - 13/22 • Processes involving the combination of more than one step according to groups G03G 13/02-G03G 13/20 (G03G 13/01 takes precedence) [2]
  - 13/23 • • specially adapted for copying both sides of an original or for copying on both sides of a recording or image-receiving material [6]
  - 13/24 • • whereby at least two steps are performed simultaneously [2]
  - 13/26 • for the production of printing plates for non-xerographic printing processes [2]
    - 13/28 • • Planographic printing plates [2]
    - 13/30 • • Hectographic masters [2]
    - 13/32 • • Relief printing plates [2]
    - 13/34 • Editing, i.e. producing a composite image by copying one or more original images or parts thereof [6]
- 15/00 Apparatus for electrographic processes using a charge pattern** (G03G 16/00, G03G 17/00 take precedence) [2, 5]
 

**Note(s)**

This group covers also processes in so far as they are characterised by the use or manipulation of apparatus classifiable per se in this group.

  - 15/01 • for producing multicoloured copies [2]
  - 15/02 • for laying down a uniform charge, e.g. for sensitising; Corona discharge devices (G03G 15/14 takes precedence) [6]
  - 15/04 • for exposing, i.e. imagewise exposure by optically projecting the original image on a photoconductive recording material [6]
    - 15/041 • • with variable magnification [6]
    - 15/043 • • with means for controlling illumination or exposure (G03G 15/041 takes precedence) [6]
    - 15/045 • • with means for charging or discharging distinct portions of the charge pattern on the recording material, e.g. for contrast enhancement or discharging non-image areas (G03G 15/36, G03G 21/06 take precedence) [6]
    - 15/047 • • • for discharging non-image areas [6]
    - 15/05 • for imagewise charging, e.g. photoconductive control screen, optically activated charging means (charging means controlled by electric image signals B41J) [6]
    - 15/054 • using X-rays, e.g. electroradiography [6]
    - 15/056 • using internal polarisation [2, 6]
    - 15/06 • for developing
      - 15/08 • • using a solid developer, e.g. powder developer
      - 15/09 • • • using magnetic brush [2]
      - 15/095 • • • Removing excess solid developer [6]
      - 15/10 • • using a liquid developer
      - 15/11 • • • Removing excess liquid developer e.g. by heat [6]
    - 15/14 • for transferring a pattern to a second base
      - 15/16 • • of a toner pattern, e.g. a powder pattern

- 15/18 • • of a charge pattern
- 15/20 • for fixing, e.g. by using heat
- 15/22 • involving the combination of more than one step according to groups G03G 13/02-G03G 13/20 (G03G 15/01 takes precedence) [2]
- 15/23 • • specially adapted for copying both sides of an original or for copying on both sides of a recording or image-receiving material [6]
- 15/24 • • whereby at least two steps are performed simultaneously [2]
- 15/26 • • in which the charge pattern is obtained by projection of the entire image, i.e. whole-frame projection (G03G 15/04 takes precedence) [2, 6]
- 15/28 • • in which projection is obtained by line scanning (G03G 15/04 takes precedence) [2, 6]
- 15/30 • • • in which projection is formed on a drum [2]
- 15/32 • • in which the charge pattern is formed dotwise (G03G 15/04, G03G 15/05, G03G 15/34 take precedence) [2, 6]
- 15/34 • • in which the powder image is formed directly on the recording material [6]
- 15/36 • Editing, i.e. producing a composite image by copying one or more original images or parts thereof [6]
- 16/00 Electrographic processes using deformation of thermoplastic layers** (layers for surface-deformation imaging G03G 5/022); **Apparatus therefor** [2, 6]
- 17/00 Electrographic processes using patterns other than charge patterns, e.g. an electric conductivity pattern; Processes involving a migration; e.g. photoelectrophoresis, photoelectrosolography; Processes involving a selective transfer, e.g. electrophoto-adhesive processes; Apparatus essentially involving a single such process** [5]
  - 17/02 • with electrolytic development [2]
  - 17/04 • using photoelectrophoresis [2]
  - 17/06 • • Apparatus therefor [5]
  - 17/08 • using an electrophoto-adhesive process, e.g. manifold imaging [5]
  - 17/10 • using migration imaging, e.g. photoelectrosolography (G03G 17/04 takes precedence) [5]
- 19/00 Processes using magnetic patterns; Apparatus therefor**
- 21/00 Arrangements not provided for by groups G03G 13/00-G03G 19/00, e.g. cleaning, elimination of residual charge** [2]
  - 21/02 • Counting the number of copies; Billing [6]
  - 21/04 • Preventing copies being made of an original [6]
  - 21/06 • Eliminating residual charges from a reusable imaging member [6]
  - 21/08 • • using optical radiation [6]
  - 21/10 • Collecting or recycling waste developer [6]
  - 21/12 • • Toner waste containers [6]
  - 21/14 • Electronic sequencing control [6]
  - 21/16 • Mechanical means for facilitating the maintenance of the apparatus, e.g. modular arrangements [6]
  - 21/18 • • using a processing cartridge [6]
  - 21/20 • Humidity or temperature control [6]