

# CPC COOPERATIVE PATENT CLASSIFICATION

## G PHYSICS (NOTES omitted)

### INSTRUMENTS

## G03 PHOTOGRAPHY; CINEMATOGRAPHY; ANALOGOUS TECHNIQUES USING WAVES OTHER THAN OPTICAL WAVES; ELECTROGRAPHY; HOLOGRAPHY (NOTES omitted)

## G03B APPARATUS OR ARRANGEMENTS FOR TAKING PHOTOGRAPHS OR FOR PROJECTING OR VIEWING THEM; APPARATUS OR ARRANGEMENTS EMPLOYING ANALOGOUS TECHNIQUES USING WAVES OTHER THAN OPTICAL WAVES; ACCESSORIES THEREFOR (optical parts of such apparatus [G02B](#); photosensitive materials or processes for photographic purposes [G03C](#); apparatus for processing exposed photographic materials [G03D](#))

### NOTES

1. This subclass covers, as far as processes are concerned, only processes characterised by the use or manipulation of apparatus classifiable per se in this subclass.
2. In this subclass, the following term is used with the meaning indicated:  
"camera" means apparatus or arrangements for taking photographs.

### 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.

**Details common to at least two of the following types of apparatus: cameras, projectors, printers** (details common to cameras only [G03B 7/00 - G03B 17/00](#), to projectors only [G03B 21/00, G03B 23/00](#), to printers only [G03B 27/00](#))

#### **1/00 Film strip handling**

- 1/02 . Moving film strip by pull on end thereof
- 1/04 . . Pull exerted by take-up spool
- 1/06 . . . rotated by lever operated ratchet and pawl
- 1/08 . . . rotated by band, chain, rack, or other linear reciprocating operation
- 1/10 . . . rotated by knob through gearing
- 1/12 . . . rotated by motor, e.g. spring
- 1/14 . . Special arrangements to ensure constant length of movement of film
- 1/16 . . . by film-arresting pins
- 1/18 . Moving film strip by means which act on the film between the ends thereof
- 1/20 . . Acting means
- 1/22 . . . Claws or pins engaging holes in the film
- 1/24 . . . Sprockets engaging holes in the film
- 1/26 . . . Spiked wheels or pins not penetrating the film
- 1/28 . . . Shuttle feed
- 1/30 . . . Belt feed
- 1/32 . . . Friction grippers or rollers
- 1/34 . . . Beaters
- 1/36 . . . Pneumatic acting means
- 1/38 . . embodying Geneva motion, e.g. Maltese-cross gearing
- 1/40 . embodying frictional coupling or clutches

- 1/42 . Guiding, framing, or constraining film in desired position relative to lens system
- 1/44 . . Guides engaging edge of film ([gates G03B 1/48](#))
- 1/46 . . Rollers engaging face of film, e.g. barrel, waisted, conical ([gates G03B 1/48](#))
- 1/48 . . Gates or pressure devices, e.g. plate
- 1/50 . . . adjustable or interchangeable, e.g. for different film widths
- 1/52 . . . Pneumatic pressure devices
- 1/54 . . Tensioning or loop-maintaining devices
- 1/56 . Threading; Loop forming
- 1/58 . . automatic
- 1/60 . Measuring or indicating length of the used or unused film; Counting number of exposures
- 1/62 . . involving locking or stop-motion devices
- 1/64 . . by means which ascertain the radius of the film coiled on a spool
- 1/66 . . Counting number of exposures

#### **3/00 Focusing arrangements of general interest for cameras, projectors or printers**

- 3/02 . moving lens along baseboard
- 3/04 . adjusting position of image plane without moving lens
- 3/06 . . using movable reflectors to alter length of light path
- 3/10 . Power-operated focusing
- 3/12 . . adapted for remote control

#### **5/00 Adjustment of optical system relative to image or object surface other than for focusing**

- 5/02 . Lateral adjustment of lens
- 5/04 . Vertical adjustment of lens; Rising fronts
- 5/06 . Swinging lens about normal to the optical axis
- 5/08 . Swing backs

- 7/12 . . a hand-actuated member moved from one position to another providing the energy to move the setting member, e.g. depression of shutter release button causes a stepped feeler to co-operate with the pointer of the light-sensitive device to set the diaphragm and thereafter release the shutter

**Details common to cameras**

- 7/00 Control of exposure by setting shutters, diaphragms or filters, separately or conjointly (control of exposure in television cameras by means of circuitry influencing the optical part of the camera H04N 23/75)**
- 7/003 . {setting of both shutter and diaphragm (G03B 7/02 - G03B 7/22 take precedence)}
- 7/006 . {setting of both diaphragm and distance (G03B 7/02 - G03B 7/22 take precedence)}
- 7/01 . with selection of either manual or automatic mode
- 7/02 . Control effected by setting a graduated member on the camera in accordance with indication or reading afforded by a light meter, which may be either separate from or built into camera body
- 7/04 . Control effected by hand adjustment of a member that senses indication of a pointer of a built-in light-sensitive device, e.g. by restoring point to a fixed associated reference mark
- 7/06 . . by a follow-up movement of an associated reference mark to the pointer
- 7/08 . Control effected solely on the basis of the response, to the intensity of the light received by the camera, of a built-in light-sensitive device
- 7/0805 . . Setting of priority modes
- 7/081 . . Analogue circuits
- 7/083 . . . for control of exposure time
- 7/085 . . . for control of aperture
- 7/087 . . . for control of both exposure time and aperture
- 7/089 . . . for storage of exposure value in mirror reflex cameras
- 7/091 . . Digital circuits
- 7/093 . . . for control of exposure time
- 7/095 . . . for control of aperture
- 7/097 . . . for control of both exposure time and aperture
- 7/099 . . Arrangement of photoelectric elements in or on the camera
- 7/09908 . . . {on the camera or in the objective}
- 7/0993 . . . in the camera
- 7/0997 . . . . Through the lens [TTL] measuring
- 7/09971 . . . . {in mirror-reflex cameras (G03B 7/09979 takes precedence)}
- 7/09972 . . . . . {using the mirror as sensor light reflecting or transmitting member}
- 7/09973 . . . . . {using the mirror as sensor}
- 7/09974 . . . . . {using the film or shutter as sensor light reflecting member}
- 7/09976 . . . . . {the sensor being mounted in, before, or behind the porro-prism}
- 7/09977 . . . . . {with a movable light-measuring element}
- 7/09978 . . . . . {Protection against viewer backlight or integration of the viewer light into the measured light}
- 7/09979 . . . . . {Multi-zone light measuring}
- 7/10 . . a servo-motor providing energy to move the setting member

- 7/14 . . . setting of both shutter and diaphragm aperture being effected so as to give the optimum compromise between depth of field and shortness of exposure
- 7/16 . in accordance with both the intensity of the flash source and the distance of the flash source from the object, e.g. in accordance with the "guide number" of the flash bulb and the focusing of the camera
- 7/17 . . Selection of modes in flash units by exposure control arrangements
- 7/18 . in accordance with light-reducing "factor" of filter or other obturator used with or on the lens of the camera
- 7/20 . in accordance with change of lens
- 7/22 . in accordance with temperature or height, e.g. in aircraft
- 7/24 . automatically in accordance with markings or other means indicating film speed or kind of film on the magazine to be inserted in the camera
- 7/26 . Power supplies; Circuitry or arrangement to switch on the power source; Circuitry to check the power source voltage
- 7/28 . Circuitry to measure or to take account of the object contrast
- 7/30 . Safety arrangements for control of exposure

**9/00 Exposure-making shutters; Diaphragms**

- 9/02 . Diaphragms
- 9/04 . . Single movable plate with two or more apertures of graded size, e.g. sliding plate or pivoting plate
- 9/06 . . Two or more co-operating pivoted blades, e.g. iris type (shutters functioning as diaphragms by limiting extent of opening movement G03B 9/08)
- 9/07 . . with means for presetting the diaphragm
- 9/08 . Shutters
- 9/10 . . Blade or disc rotating or pivoting about axis normal to its plane
- 9/12 . . . Two relatively-adjustable aperture-defining members moving as a unit
- 9/14 . . . Two separate members moving in opposite directions
- 9/16 . . . Two separate members moving in the same direction
- 9/18 . . . More than two members
- 9/20 . . . . each moving in a single direction first to open and then to reclose
- 9/22 . . . . each moving in one direction to open and then in opposite direction to close, e.g. iris type
- 9/24 . . . Adjusting size of aperture formed by members when fully open so as to constitute a virtual diaphragm that is adjustable
- 9/26 . . . incorporating cover blade or blades
- 9/28 . . Roller blind or flexible plate
- 9/30 . . . Single blind with multiple slots or other aperture
- 9/32 . . . Double blind

9/34	. . . . with adjustable slot; with mechanism controlling relative movement of blinds to form slot	13/26	. . . . with magnifiers for inspecting image formed on screen
9/36	. . Sliding rigid plate	13/28	. . . . Image-splitting devices
9/38	. . . Single rigid plate with multiple slots or other apertures	13/30	. . indicating depth of field
9/40	. . . Double plate	13/32	. Means for focusing
9/42	. . . . with adjustable slot; with mechanism controlling relative movement of plates to form slot	13/34	. . Power focusing
9/44	. . . Curved track and plate	13/36	. . . Autofocus systems
9/46	. . Flap shutters pivoting about axis in plane of flap	<b>15/00</b>	<b>Special procedures for taking photographs; Apparatus therefor</b>
9/48	. . . Double flap	15/003	. {Apparatus for photographing CRT-screens}
9/50	. . . Louvre type	15/006	. {Apparatus mounted on flying objects}
9/52	. . Barrel shutters	15/02	. Illuminating scene
9/54	. . Conical shutters; Rotating plate with axis of rotation inclined to optical axis of shutter	15/03	. . Combinations of cameras with lighting apparatus; Flash units
9/58	. Means for varying duration of "open" period of shutter	15/035	. . . Combinations of cameras with incandescent lamps
9/60	. . by varying speed of movement of obturating members	15/04	. . . Combinations of cameras with non-electronic flash apparatus; Non-electronic flash units
9/62	. . by varying interval of time between end of opening movement and beginning of closing movement	15/0405	. . . . {Non-electronic flash apparatus incorporated in photographic apparatus}
9/64	. Mechanism for delaying opening of shutter (separate from shutter <a href="#">G03B 17/38</a> )	15/041	. . . . {Separatable flash apparatus; Means for mounting the flash apparatus on the photographic apparatus}
9/66	. Means for cocking shutter separate from means for releasing shutter	15/0415	. . . . . {Mounting means comprising transversal slide and separate cable}
9/68	. . Cocking effected by movement of film	15/0421	. . . . . {Mounting means comprising transversal slide and incorporated contacts of the type "Hot shoe"}
9/70	. with flash-synchronising contacts	15/0426	. . . . . {Mounting means comprising longitudinal slide and incorporated contacts (for multiple lamps)}
<b>11/00</b>	<b>Filters or other obturators specially adapted for photographic purposes</b>	15/0431	. . . . . {Rotatable mounting means}
11/02	. Sky masks	15/0436	. . . . . {Mounting means for sequential translation}
11/04	. Hoods or caps for eliminating unwanted light from lenses, viewfinders or focusing aids	15/0442	. . . . . {Constructional details of the flash apparatus; Arrangement of lamps, reflectors, or the like ( <a href="#">G03B 15/0484</a> takes precedence)}
11/041	. . {Lens caps as separate accessory ( <a href="#">accessories in general G03B 17/56</a> )}	15/0447	. . . . . {Energy sources; Batteries; Capacitors}
11/043	. . {Protective lens closures or lens caps built into cameras}	15/0452	. . . . . {Electrical ignition means connected to the shutter}
11/045	. . {Lens hoods or shields}	15/0457	. . . . . {Ignition mechanisms for sequential ignition of flash lamps}
11/046	. . {for viewfinders or eyepieces}	15/0463	. . . . . {Piezoelectric ignition mechanisms}
11/06	. . Lens caps for exposure making	15/0468	. . . . . {Ignition mechanisms permitting choice of multiple ignition modes; Adaptors for different modes}
<b>13/00</b>	<b>Viewfinders; Focusing aids for cameras; Means for focusing for cameras; Autofocus systems for cameras</b>	15/0473	. . . . . {Remote controlled ignition mechanisms}
13/02	. Viewfinders	15/0478	. . . . . {Combinations of photographic apparatus with percussion type flash ignition systems}
13/04	. . of direct vision type, e.g. frame, sighting mark	15/0484	. . . . . {Constructional details of the flash apparatus}
13/06	. . with lenses with or without reflectors	15/0489	. . . . . {Means for ignition by percussion}
13/08	. . . with reflected image of frame	15/0494	. . . . . {Means for mounting percussion type flash apparatus}
13/10	. . adjusting viewfinders field	15/05	. . . Combinations of cameras with electronic flash apparatus; Electronic flash units
13/12	. . . to compensate for change of camera lens or size of picture	15/06	. . Special arrangements of screening, diffusing, or reflecting devices, e.g. in studio
13/14	. . . to compensate for parallax due to short range	15/07	. . . Arrangements of lamps in studios
13/16	. . combined with focusing aids	15/08	. Trick photography
13/18	. Focusing aids	15/10	. . using back-projection, i.e. blending artificial background with real foreground
13/20	. . Rangefinders coupled with focusing arrangements, e.g. adjustment of rangefinder automatically focusing camera		
13/22	. . . coupling providing for compensation upon change of camera lens		
13/24	. . Focusing screens		

- 15/12 . . using mirrors
- 15/14 . for taking photographs during medical operations
- 15/16 . for photographing the track of moving objects  
([high-speed photography G03B 39/00](#))
- 17/00 Details of cameras or camera bodies; Accessories therefor (lens hoods or caps [G03B 11/04](#))**
- 17/02 . Bodies
- 17/04 . . collapsible, foldable or extensible, e.g. book type
- 17/045 . . . {[Bellows](#)}
- 17/06 . . with exposure meters or other indicators built into body but not connected to other camera members
- 17/08 . . Waterproof bodies or housings
- 17/10 . . Soundproof bodies
- 17/12 . . with means for supporting objectives, supplementary lenses, filters, masks, or turrets
- 17/14 . . . interchangeably
- 17/16 . . for containing both motion-picture camera and still-picture camera
- 17/17 . . with reflectors arranged in beam forming the photographic image, e.g. for reducing dimensions of camera
- 17/18 . Signals indicating condition of a camera member or suitability of light ([indicating depth of field G03B 13/30](#))
- 17/20 . . visible in viewfinder
- 17/22 . with means for cutting-off film
- 17/24 . with means for separately producing marks on the film, e.g. title, time of exposure
- 17/245 . . {[Optical means](#)}
- 17/26 . Holders for containing light sensitive material and adapted to be inserted within the camera ([holders for X-ray films G03B 42/04](#))
- 17/265 . . {[specially adapted for motion picture film, e.g. cassettes \(cassettes for projection purposes G03B 21/323\)](#)}
- 17/28 . Locating light-sensitive material within camera
- 17/30 . . Locating spools or other rotatable holders of coiled film
- 17/305 . . . {[for roll film cameras](#)}
- 17/32 . . Locating plates or cut films
- 17/34 . . . Changing plates or cut films
- 17/36 . Counting number of exposures ([of film strips G03B 1/66](#))
- 17/38 . Releasing-devices separate from shutter ([integral with shutter G03B 9/08](#))
- 17/40 . . with delayed or timed action
- 17/42 . Interlocking between shutter operation and advance of film or change of plate or cut-film
- 17/425 . . {[motor drive cameras](#)}
- 17/44 . Means for exchanging focusing screen and light sensitive material
- 17/46 . Means for exposing single frames in motion-picture camera
- 17/48 . adapted for combination with other photographic or optical apparatus
- 17/50 . . with both developing and finishing apparatus
- 17/52 . . . of the Land type
- 17/53 . . . for automatically delivering a finished picture after a signal causing exposure has been given, e.g. by pushing a button, by inserting a coin
- 17/54 . . with projector
- 17/55 . with provision for heating or cooling, e.g. in aircraft
- 17/56 . Accessories ([carrying-cases A45C 11/38](#))
- 17/561 . . {[Support related camera accessories](#)}
- 17/563 . . {[Camera grips, handles \(means in general for steadying hand-held apparatus F16M 13/00\)](#)}
- 17/565 . . {[Optical accessories, e.g. converters for close-up photography, tele-convertors, wide-angle convertors](#)}
- 17/566 . . {[Accessory clips, holders, shoes to attach accessories to camera \(if integral part of camera body G03B 17/02\)](#)}
- 17/58 . . Attachments for converting cameras into reflex cameras
- 19/00 Cameras (details [G03B 17/00](#))**
- 19/02 . Still-picture cameras
- 19/023 . . {[Multi-image cameras](#)}
- 19/026 . . . {[Sequence cameras](#)}
- 19/04 . . Roll-film cameras
- 19/06 . . . adapted to be loaded with more than one film, e.g. with exposure of one or the other at will ([G03B 19/07 takes precedence](#))
- 19/07 . . . having more than one objective
- 19/08 . . . with provision for alternative use with plates or cut-films
- 19/10 . . Plate or cut-film cameras ([with provision for alternative use with roll film G03B 19/08](#))
- 19/12 . . Reflex cameras with single objective and a movable reflector or a partly-transmitting mirror
- 19/14 . . with paired lenses, one of which forms image on photographic material and the other forms a corresponding image on a focusing screen
- 19/16 . . Pin-hole cameras
- 19/18 . Motion-picture cameras ([with non-intermittently running film G03B 41/02](#))
- 19/20 . . Reflex cameras
- 19/22 . . Double cameras
- 19/24 . . adapted to be loaded with more than one film, e.g. with exposure of one or the other at will
- 19/26 . . with fade-in and fade-out effects
- 21/00 Projectors or projection-type viewers; Accessories therefor (devices for changing pictures [G03B 23/00](#))**
- 21/001 . {[Slide projectors](#)}
- 21/003 . {[Cine-projectors](#)}
- 21/005 . {[Projectors using an electronic spatial light modulator but not peculiar thereto](#)}
- 21/006 . . {[using LCD's](#)}
- 21/008 . . {[using micromirror devices](#)}
- 21/02 . Multiple-film apparatus
- 21/04 . . Picture "juke-boxes"
- 21/06 . . affording only episcopic projection
- 21/08 . . affording epidiascopic projection
- 21/10 . Projectors with built-in or built-on screen
- 21/11 . . for microfilm reading
- 21/111 . . . {[of roll films](#)}
- 21/113 . . . . {[Handling roll films](#)}
- 21/115 . . . {[of microfiches](#)}
- 21/116 . . . . {[Handling microfiches](#)}
- 21/118 . . . {[Reader-printers](#)}
- 21/12 . adapted for projection of either still pictures or motion pictures ([prolonged exhibition of single frame G03B 21/38](#))
- 21/13 . Projectors for producing special effects at the edges of picture, e.g. blurring



- 21/132 . . . . . Overhead projectors, i.e. capable of projecting hand-writing or drawing during action ([epidiascopic projectors G03B 21/08](#))
- 21/134 . . . . . Projectors combined with typing apparatus or with printing apparatus
- 21/14 . . . . . Details
- 21/142 . . . . . {Adjusting of projection optics}
- 21/145 . . . . . {Housing details, e.g. position adjustments thereof}
- 21/147 . . . . . {Optical correction of image distortions, e.g. keystone}
- 21/16 . . . . . Cooling; Preventing overheating
- 21/18 . . . . . Fire preventing or extinguishing
- 21/20 . . . . . Lamp housings
- 21/2006 . . . . . {characterised by the light source}
- 21/2013 . . . . . {Plural light sources}
- 21/202 . . . . . {Incandescent light sources}
- 21/2026 . . . . . {Gas discharge type light sources, e.g. arcs}
- 21/2033 . . . . . {LED or laser light sources}
- 21/204 . . . . . {using secondary light emission, e.g. luminescence or fluorescence ([using different colours G03B 33/00](#); if related to video signals [H04N 9/3197](#))}
- 21/2046 . . . . . {Positional adjustment of light sources}
- 21/2053 . . . . . {Intensity control of illuminating light ([controlled by video signal processing H04N 5/74 or H04N 9/31](#))}
- 21/206 . . . . . {Control of light source other than position or intensity}
- 21/2066 . . . . . {Reflectors in illumination beam ([in projection beam G03B 21/28](#))}
- 21/2073 . . . . . {Polarisers in the lamp house ([peculiar to electronic spatial light modulators H04N 9/3197](#))}
- 21/208 . . . . . {Homogenising, shaping of the illumination light}
- 21/2086 . . . . . {Security or safety means in lamp houses}
- 21/22 . . . . . Soundproof bodies
- 21/26 . . . . . Projecting separately subsidiary matter simultaneously with main image
- 21/28 . . . . . Reflectors in projection beam ([in illumination beam G03B 21/2066](#))}
- 21/30 . . . . . adapted to collapse or fold, e.g. for portability
- 21/32 . . . . . Details specially adapted for motion-picture projection ([with film moving continuously through the gate G03B 41/02](#))
- 21/321 . . . . . {Holders for films, e.g. reels, cassettes, spindles}
- 21/323 . . . . . {Cassettes ([G03B 21/326](#), [G03B 21/328](#) take precedence; for containing light-sensitive material [G03B 17/265](#))}
- 21/325 . . . . . {Endless cassettes}
- 21/326 . . . . . {Means for fixing the film on the axis of a reel or spindle}
- 21/328 . . . . . {Means for fixing the film on the periphery of a reel}
- 21/34 . . . . . Change-over arrangements
- 21/36 . . . . . Fades, dissolves, or wipes
- 21/38 . . . . . Prolonged exhibition of single frame
- 21/40 . . . . . Eliminating or reducing effect of flicker
- 21/42 . . . . . Preventing damage to film due to abnormal operation of projector
- 21/43 . . . . . Driving mechanisms
- 21/44 . . . . . Mechanisms transmitting motion to film-strip feed; Mechanical linking of shutter and intermittent feed
- 21/46 . . . . . affording adjustment for framing
- 21/48 . . . . . for altering frame speed; for regulating constancy of film speed
- 21/50 . . . . . Control devices operated by the film strip during the run
- 21/52 . . . . . by prepared film
- 21/53 . . . . . Means for automatic focusing, e.g. to compensate thermal effects
- 21/54 . . . . . Accessories
- 21/56 . . . . . Projection screens
- 21/562 . . . . . {Screens moving during projection ([G03B 21/58 - G03B 21/62](#) take precedence)}
- 21/565 . . . . . {Screens allowing free passage of sound ([G03B 21/58 - G03B 21/62](#) take precedence)}
- 21/567 . . . . . {for colour projection ([G03B 21/58](#), [G03B 21/60](#) take precedence)}
- 21/58 . . . . . collapsible, e.g. foldable; of variable area
- 21/585 . . . . . Inflatable screens
- 21/60 . . . . . characterised by the nature of the surface
- 21/602 . . . . . Lenticular screens ([G03B 21/625](#) takes precedence)
- 21/604 . . . . . Polarised screens
- 21/606 . . . . . for relief projection
- 21/608 . . . . . Fluid screens
- 21/62 . . . . . Translucent screens
- 21/625 . . . . . Lenticular translucent screens
- 21/64 . . . . . Means for mounting individual pictures to be projected, e.g. frame for transparency
- 23/00** **Devices for changing pictures in viewing apparatus or projectors**
- NOTE**
- For the purposes of this group the term "picture" denotes any flat representation, whether transparent or not, e.g. produced by photography, writing or printing
- 23/02 . . . . . in which a picture is removed from a stock and returned to the same stock or another one; Magazines therefor
- 23/04 . . . . . with linear movement
- 23/042 . . . . . {whereby the picture is not returned to the same stock after projection}
- 23/044 . . . . . {whereby the picture is returned to the same stock}
- 23/046 . . . . . {Picture changing devices}
- 23/048 . . . . . {with horizontally sliding mechanism}
- 23/06 . . . . . with rotary movement
- 23/08 . . . . . in which pictures are attached to a movable carrier
- 23/10 . . . . . drum or disc carrier
- 23/105 . . . . . {disc carriers}
- 23/12 . . . . . linear strip carrier
- 23/125 . . . . . {the pictures being attached to a chain or linked up to form a chain}
- 23/14 . . . . . Carriers operable to move pictures into, and out of, the projection or viewing position and carrying one or two pictures only in a removable manner ([G03B 23/18](#) takes precedence){also other devices not provided with a stock, e.g. chutes}
- 23/18 . . . . . with fade-in and fade-out effects

- 25/00 Viewers, other than projection viewers, giving motion-picture effects by persistence of vision, e.g. zoetrope**
- 25/02 . with interposed lenticular or line screen
- 27/00 Photographic printing apparatus**
- 27/02 . Exposure apparatus for contact printing
  - 27/04 . . Copying apparatus without a relative movement between the original and the light source during exposure, e.g. printing frame or printing box
  - 27/06 . . . for automatic repeated copying of the same original
  - 27/08 . . . for automatic copying of several originals one after the other, e.g. for copying cinematograph film
  - 27/10 . . Copying apparatus with a relative movement between the original and the light source during exposure
  - 27/12 . . . for automatic repeated copying of the same original
  - 27/14 . . Details
  - 27/16 . . . Illumination arrangements, e.g. positioning of lamps, positioning of reflectors ([controlling the exposure G03B 27/72](#))
  - 27/18 . . . Maintaining or producing contact pressure between original and light-sensitive material
  - 27/20 . . . . by using a vacuum or fluid pressure
  - 27/22 . . . . by stretching over a curved surface
  - 27/24 . . . Separating the original from the print
  - 27/26 . . . Cooling
  - 27/28 . . . Edge-masking devices
  - 27/30 . . . adapted to be combined with processing apparatus
  - 27/303 . . . . { [Gas processing \(gas processing apparatus G03D 7/00\)](#) }
  - 27/306 . . . . { [Heat development \(heat development apparatus G03D 13/002\)](#) }
  - 27/32 . Projection printing apparatus, e.g. enlarger, copying camera
  - 27/323 . . { [Copying cameras \(G03B 27/34 - G03B 27/70 take precedence\)](#) }
  - 27/326 . . { [Enlargers \(G03B 27/34 - G03B 27/70 take precedence\)](#) }
  - 27/34 . . Means for automatic focusing therefor
  - 27/36 . . . by mechanical connections, e.g. by cam, by linkage
  - 27/38 . . . . embodying screws with non-uniform pitch
  - 27/40 . . . . adapted for use with lenses of different focal length
  - 27/42 . . for automatic sequential copying of the same original ([G03B 27/34](#), [G03B 27/53 take precedence](#))
  - 27/423 . . . { [in copying cameras](#) }
  - 27/426 . . . { [in enlargers](#) }
  - 27/44 . . for multiple copying of the same original at the same time ([G03B 27/34](#), [G03B 27/53 take precedence](#))
  - 27/46 . . for automatic sequential copying of different originals, e.g. enlargers, roll film printers ([G03B 27/34](#), [G03B 27/50](#), [G03B 27/53 take precedence](#))
  - 27/462 . . . { [in enlargers, e.g. roll film printers](#) }
  - 27/465 . . . at different positions of the same strip, e.g. microfilm
  - 27/47 . . . at different positions of the same sheet, e.g. microfiche
  - 27/475 . . . copying cinematographic film ([G03B 27/48 takes precedence](#))
  - 27/48 . . . with original in the form of a film strip moving continuously and compensation for consequent image movement
  - 27/50 . . with slit or like diaphragm moving over original for progressive exposure ([G03B 27/34 takes precedence](#) ; [projection optics per se G03B 27/525](#) )
  - 27/52 . . Details
  - 27/521 . . . { [Arrangements for applying a supplementary information onto the sensitive material, e.g. coding \(producing marks on the film in cameras G03B 17/24\)](#) }
  - 27/522 . . . { [Projection optics \(for electro-photographic copiers in particular G03G 15/04\)](#) }
  - 27/523 . . . . { [for full time exposure](#) }
  - 27/525 . . . . { [for slit exposure](#) }
  - 27/526 . . . . . { [in which the projection optics move](#) }
  - 27/527 . . . . . { [as a whole in a translatory movement](#) }
  - 27/528 . . . . . { [in which the projection optics remain stationary](#) }
  - 27/53 . . . Automatic registration or positioning of originals with respect to each other or the photosensitive layer
  - 27/54 . . . Lamp housings; Illuminating means
  - 27/542 . . . . { [for copying cameras, reflex exposure lighting](#) }
  - 27/545 . . . . { [for enlargers](#) }
  - 27/547 . . . . . { [colour mixing heads](#) }
  - 27/56 . . . Mounting enlarger head on column ; [Mounting reproduction camera on column](#) }
  - 27/58 . . . Baseboards, masking frames, or other holders for the sensitive material ([G03B 27/53 takes precedence](#) ; [for electrophotographic copiers G03G 15/65](#) )
  - 27/581 . . . . { [in copying cameras \(G03B 27/60 takes precedence\)](#) }
  - 27/582 . . . . { [Baseboards, easels](#) }
  - 27/583 . . . . { [Handling microfiche](#) }
  - 27/585 . . . . { [Handling cut photosensitive sheets](#) }
  - 27/586 . . . . . { [Supply stacks; Peeling off](#) }
  - 27/587 . . . . { [Handling photosensitive webs \(G03B 1/00 takes precedence\)](#) }
  - 27/588 . . . . . { [Supply rolls; Cutting arrangements](#) }
  - 27/60 . . . . using a vacuum or fluid pressure
  - 27/62 . . . Holders for the original ([G03B 27/53 takes precedence](#) ; [for electrophotographic copiers G03G 15/60](#) )
  - 27/6207 . . . . { [in copying cameras](#) }
  - 27/6214 . . . . . { [Copy boards](#) }
  - 27/6221 . . . . . { [Transparent copy platens](#) }
  - 27/6228 . . . . . { [Platen covers](#) }
  - 27/6235 . . . . . { [Reciprocating copy platens](#) }
  - 27/6242 . . . . . { [Masks; Overlays; Transparent carriers](#) }
  - 27/625 . . . . . { [Apparatus which relate to the handling of originals, e.g. presence detectors, inverters](#) }
  - 27/6257 . . . . . { [Arrangements for moving an original once or repeatedly to or through an exposure station](#) }

27/6264	. . . . . {Arrangements for moving several originals one after the other to or through an exposure station}	33/00	<b>Colour photography, other than mere exposure or projection of a colour film</b> (printing apparatus <a href="#">G03B 27/00</a> ; stereoscopic colour photography <a href="#">G03B 35/00</a> )
27/6271	. . . . {in enlargers}		
27/6278	. . . . . {Handling single frame negatives}	33/02	. by two-colour separation records, e.g. red-aspect and white complete records; using Land effect
27/6285	. . . . . {Handling strips ( <a href="#">G03B 1/00</a> takes precedence)}	33/04	. by four or more separation records
27/6292	. . . . . {Handling microfiche}	33/06	. by additive-colour projection apparatus
27/64	. . . . using a vacuum or fluid pressure	33/08	. Sequential recording or projection ( <a href="#">G03B 33/02</a> , <a href="#">G03B 33/04</a> , <a href="#">G03B 33/06</a> take precedence)
27/66	. . . specially adapted for holding half-tone screens	33/10	. Simultaneous recording or projection ( <a href="#">G03B 33/02</a> , <a href="#">G03B 33/04</a> <a href="#">G03B 33/06</a> take precedence)
27/68	. . . Introducing or correcting distortion, e.g. in connection with oblique projection	33/12	. . using beam-splitting or beam-combining systems, e.g. dichroic mirrors
27/70	. . . Reflectors in printing beam	33/14	. . using lenticular screens (integral with film <a href="#">G03C</a> )
27/72	. Controlling or varying light intensity, spectral composition, or exposure time in photographic printing apparatus	33/16	. . using colour-pattern screens (integral with film <a href="#">G03C</a> )
27/722	. . {when the reproduction scale is changed}		
27/725	. . {Optical projection devices wherein the contrast is controlled electrically (e.g. cathode ray tube masking)}	35/00	<b>Stereoscopic photography</b>
27/727	. . {Optical projection devices wherein the contrast is controlled optically (e.g. uniform exposure, two colour exposure on variable contrast sensitive material)}	35/02	. by sequential recording
27/73	. . Controlling exposure by variation of spectral composition, e.g. multicolor printers	35/04	. . with movement of beam-selecting members in a system defining two or more viewpoints
27/735	. . . {in dependence upon automatic analysis of the original}	35/06	. . with axial movement of lens or gate between exposures
27/74	. . Positioning exposure meters in the apparatus	35/08	. by simultaneous recording
27/80	. . in dependence upon automatic analysis of the original ( <a href="#">G03B 27/73</a> takes precedence)	35/10	. . having single camera with stereoscopic-base-defining system
29/00	<b>Combinations of cameras, projectors or photographic printing apparatus with non-photographic non-optical apparatus, e.g. clocks or weapons; Cameras having the shape of other objects</b> (combinations with flash apparatus <a href="#">G03B 15/03</a> )	35/12	. . involving recording of different viewpoint images in different colours on a colour film
30/00	<b>Camera modules comprising integrated lens units and imaging units, specially adapted for being embedded in other devices, e.g. mobile phones or vehicles</b>	35/14	. Printing apparatus specially adapted for conversion between different types of record ( <a href="#">G03B 42/08</a> takes precedence)
	<b>NOTE</b>	35/16	. by sequential viewing
	When classification is made in this main group, further classification should be made in other groups of subclass <a href="#">G03B</a> or in group <a href="#">G02B 7/00</a> according to the functional aspects of the camera. The classification symbol of this group is not listed first when assigned to patent documents.	35/18	. by simultaneous viewing
		35/20	. . using two or more projectors
		35/22	. . using single projector with stereoscopic-base-defining system
		35/24	. . using apertured or refractive resolving means on screens or between screen and eye
		35/26	. . using polarised or coloured light separating different viewpoint images
		37/00	<b>Panoramic or wide-screen photography; Photographing extended surfaces, e.g. for surveying; Photographing internal surfaces, e.g. of pipe</b>
		37/005	. {Photographing internal surfaces, e.g. of pipe, ( <a href="#">G03B 37/02</a> - <a href="#">G03B 37/06</a> take precedence; instruments for performing medical examinations of cavities or tubes of the body by photographic inspection <a href="#">A61B 1/00</a> )}
		37/02	. with scanning movement of lens or cameras
		37/04	. with cameras or projectors providing touching or overlapping fields of view
		37/06	. involving anamorphosis ( <a href="#">G03B 37/02</a> , <a href="#">G03B 37/04</a> take precedence)
		39/00	<b>High-speed photography</b>
		39/005	. {using image converters or amplifiers}
		39/02	. using stationary plate or film ( <a href="#">G03B 39/06</a> takes precedence)
		39/04	. using moving plate or film ( <a href="#">G03B 39/06</a> takes precedence)
		39/06	. using light-guides for transferring image frame or elements thereof into different array, e.g. into a line

**Special techniques**

- 31/00 Associated working of cameras or projectors with sound-recording or sound-reproducing means**
- 31/02 . in which sound track is on a moving-picture film
  - 31/04 . in which sound track is not on, but is synchronised with, a moving-picture film
  - 31/06 . in which sound track is associated with successively-shown still pictures
  - 31/08 . with fade-in and fade-out effects

<b>41/00</b>	<b>Special techniques not covered by groups G03B 31/00 - G03B 39/00; Apparatus therefor</b>	2205/0076	. . using shape memory alloys
41/02	. using non-intermittently running film	2205/0084	. . using other types of actuators
41/023	. . {combined with shutter}	<b>2206/00</b>	<b>Systems for exchange of information between different pieces of apparatus, e.g. for exchanging trimming information, for photo finishing</b>
41/026	. . {combined with slit}	2206/002	. using detachable memory means
41/04	. . with optical compensator	2206/004	. using markings on the photographic material, e.g. to indicate pseudo-panoramic exposure
41/06	. . . with rotating reflecting member	2206/006	. . of the bar-code type
41/08	. . . with rotating transmitting member	2206/008	. using holders for the photographic material
41/10	. . . with oscillating reflecting member	<b>2207/00</b>	<b>Control of exposure by setting shutters, diaphragms, or filters separately or conjointly</b>
41/12	. . . with oscillating transmitting member	2207/005	. involving control of motion blur
41/14	. . Overcoming image movement by brief flashes of light	<b>2213/00</b>	<b>Viewfinders; Focusing aids for cameras; Means for focusing for cameras; Autofocus systems for cameras</b>
<b>42/00</b>	<b>Obtaining records using waves other than optical waves; Visualisation of such records by using optical means</b>	2213/02	. Viewfinders
42/02	. using X-rays	2213/025	. . Sightline detection
42/021	. . {Apparatus for direct X-ray cinematography (circuit arrangements for obtaining a series of X-ray photographs or for X-ray cinematography H05G 1/60)}	<b>2215/00</b>	<b>Special procedures for taking photographs; Apparatus therefor</b>
42/023	. . . {Apparatus for indirect X-ray cinematography, i.e. by taking pictures on ordinary film from the images on the fluorescent screen (by transforming the picture information intermediately into electrical signals G03B 27/725)}	2215/05	. Combinations of cameras with electronic flash units
42/025	. . {Positioning or masking the X-ray film cartridge in the radiographic apparatus}	2215/0503	. . Built-in units
42/026	. . {for obtaining three-dimensional pictures}	2215/0507	. . . Pop-up mechanisms
42/028	. . {Industrial applications}	2215/051	. . . . with movable reflector, e.g. change of illumination angle or illumination direction
42/04	. . Holders for X-ray films	2215/0514	. . Separate unit
42/042	. . . {for dental applications (radiation diagnosis specially adapted for dentistry A61B 6/51; individual packages for X-ray film G03C 3/003)}	2215/0517	. . . Housing
42/045	. . . {apparatus for loading or unloading the holders}	2215/0521	. . . . movable housing, e.g. bounce-light
42/047	. . . {provided with marking means}	2215/0525	. . . . Reflector
42/06	. using ultrasonic, sonic or infrasonic waves	2215/0528	. . . . . movable reflector, e.g. change of illumination angle or illumination direction
42/08	. Visualisation of records by optical means	2215/0532	. . . . . Flashtube mounting
<b>43/00</b>	<b>Testing correct operation of photographic apparatus or parts thereof</b>	2215/0535	. . . . . Built-in diffusor
43/02	. Testing shutters	2215/0539	. . . . Ringflash
		2215/0542	. . . . watertight
		2215/0546	. . . . modular
		2215/055	. . . . Clamp-on device, e.g. filter
		2215/0553	. . . . with second integrated flash
		2215/0557	. . . Multiple units, e.g. slave-unit
		2215/056	. . . Connection with camera, e.g. adapter
		2215/0564	. . characterised by the type of light source
		2215/0567	. . . Solid-state light source, e.g. LED, laser
		2215/0571	. . . With second light source
		2215/0575	. . . Ring shaped lighting arrangements
		2215/0578	. . . Flashtube mounting
		2215/0582	. . Reflectors
		2215/0585	. . . Movable reflectors, e.g. change of illumination angle or direction
		2215/0589	. . Diffusors, filters or refraction means
		2215/0592	. . . installed in front of light emitter
<b>2205/00</b>	<b>Adjustment of optical system relative to image or object surface other than for focusing</b>	<b>2217/00</b>	<b>Details of cameras or camera bodies; Accessories therefor</b>
2205/0007	. Movement of one or more optical elements for control of motion blur	2217/002	. Details of arrangement of components in or on camera body
2205/0015	. . by displacing one or more optical elements normal to the optical axis	2217/005	. Blur detection
2205/0023	. . by tilting or inclining one or more optical elements with respect to the optical axis	2217/007	. Details of energy supply or management
2205/003	. . by a prism with variable angle or the like	2217/18	. Signals indicating condition of a camera member or suitability of light
2205/0038	. . by displacing the image plane with respect to the optical axis		
2205/0046	. Movement of one or more optical elements for zooming		
2205/0053	. Driving means for the movement of one or more optical element		
2205/0061	. . using piezoelectric actuators		
2205/0069	. . using electromagnetic actuators, e.g. voice coils		



- 2217/185 . . providing indication that the picture may be blurred
- 2217/24 . . with means for separately producing marks on the film
- 2217/241 . . with means for producing composite exposures, e.g. exposing an image and a border, producing identity cards
- 2217/242 . . Details of the marking device
- 2217/243 . . . Optical devices
- 2217/244 . . . Magnetic devices
- 2217/245 . . . Mechanical devices
- 2217/246 . . Details of the markings
- 2217/247 . . . Bar codes
- 2217/248 . . with means for masking
- 2217/26 . . Holders for containing light-sensitive material and adapted to be inserted within the camera
- 2217/261 . . Details of spools
- 2217/263 . . Details of exposure status indicators; Double exposure prevention
- 2217/265 . . Details of light-proofing
- 2217/266 . . Thrust-type cartridges
- 2217/268 . . Unloading the cartridge from the camera; Loading the cartridge into the camera
- 2219/00      Cameras**
- 2219/02 . . Still-picture cameras
- 2219/04 . . Roll-film cameras
- 2219/045 . . . adapted for unloading the film in the processing laboratory, e.g. disposable, reusable or recyclable cameras
- 2227/00      Photographic printing apparatus**
- 2227/005 . . Matrix print; Index print
- 2227/32 . . Projection printing apparatus, e.g. enlarging apparatus, copying camera
- 2227/325 . . Microcapsule copiers