

CPC COOPERATIVE PATENT CLASSIFICATION

G PHYSICS (NOTES omitted)

INSTRUMENTS

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

- 7/081 . . Analogue circuits

WARNING

Groups [G03B 7/081](#) - [G03B 7/089](#) are incomplete pending reclassification of documents from group [G03B 7/0807](#).

Group [G03B 7/0807](#) should be considered when searching any group of the range [G03B 7/081](#) - [G03B 7/089](#) in order to perform a complete search.

- 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

WARNING

Groups [G03B 7/091](#) - [G03B 7/097](#) are incomplete pending reclassification of documents from group [G03B 7/0807](#).

Group [G03B 7/0807](#) should be considered when searching any group of the range [G03B 7/091](#) - [G03B 7/097](#) in order to perform a complete search.

- 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
- 7/12 . . 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
- 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

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 5/238](#))**

WARNING

Group [G03B 7/00](#) is impacted by reclassification into groups [G03B 7/01](#) and [G03B 7/30](#).

Groups [G03B 7/00](#), [G03B 7/01](#) and [G03B 7/30](#) should be considered in order to perform a complete search.

- 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

WARNING

Group [G03B 7/01](#) is incomplete pending reclassification of documents from group [G03B 7/00](#).

Groups [G03B 7/00](#) and [G03B 7/01](#) should be considered in order to perform a complete search.

- 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
- 7/0807 . . {Control circuits ([G03B 7/10](#) takes precedence)}
- (Frozen)

WARNING

Group [G03B 7/0807](#) is no longer used for the classification of documents as of July 1, 2014. The content of this group is being reclassified into groups [G03B 7/081](#) - [G03B 7/097](#).

Until reclassification is complete, groups [G03B 7/0807](#) and [G03B 7/081](#) - [G03B 7/097](#) should be considered in order to perform a complete search.

- 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
- WARNING**
- Group [G03B 7/16](#) is impacted by reclassification into group [G03B 7/17](#).
- Groups [G03B 7/16](#) and [G03B 7/17](#) should be considered in order to perform a complete search.
- 7/17 . . Selection of modes in flash units by exposure control arrangements
- WARNING**
- Group [G03B 7/17](#) is incomplete pending reclassification of documents from group [G03B 7/16](#).
- Groups [G03B 7/16](#) and [G03B 7/17](#) should be considered in order to perform a complete search.
- 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
- WARNING**
- Group [G03B 7/30](#) is incomplete pending reclassification of documents from group [G03B 7/00](#).
- Groups [G03B 7/00](#) and [G03B 7/30](#) should be considered in order to perform a complete search.
- 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, 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
- 9/36 . . Sliding rigid plate
- 9/38 . . . Single rigid plate with multiple slots or other apertures
- 9/40 . . . Double plate
- 9/42 with adjustable slot; with mechanism controlling relative movement of plates to form slot
- 9/44 . . . Curved track and plate
- 9/46 . . Flap shutters pivoting about axis in plane of flap
- 9/48 . . . Double flap
- 9/50 . . . Louvre type
- 9/52 . . Barrel shutters
- 9/54 . . Conical shutters; Rotating plate with axis of rotation inclined to optical axis of shutter
- 9/58 . Means for varying duration of "open" period of shutter
- 9/60 . . by varying speed of movement of obturating members
- 9/62 . . by varying interval of time between end of opening movement and beginning of closing movement
- 9/64 . Mechanism for delaying opening of shutter ([separate from shutter G03B 17/38](#))
- 9/66 . Means for cocking shutter separate from means for releasing shutter
- 9/68 . . Cocking effected by movement of film
- 9/70 . with flash-synchronising contacts
- 11/00 Filters or other obturators specially adapted for photographic purposes**
- 11/02 . Sky masks
- 11/04 . Hoods or caps for eliminating unwanted light from lenses, viewfinders or focusing aids
- 11/041 . . {[Lens caps as separate accessory \(accessories in general G03B 17/56\)](#)}
- 11/043 . . {[Protective lens closures or lens caps built into cameras](#)}
- 11/045 . . {[Lens hoods or shields](#)}
- 11/046 . . {[for viewfinders or eyepieces](#)}
- 11/06 . . Lens caps for exposure making
- 13/00 Viewfinders; Focusing aids for cameras; Means for focusing for cameras; Autofocus systems for cameras**
- 13/02 . Viewfinders
- 13/04 . . of direct vision type, e.g. frame, sighting mark
- 13/06 . . with lenses with or without reflectors
- 13/08 . . . with reflected image of frame

13/10	. . adjusting viewfinders field	15/0484	. . . . . {Constructional details of the flash apparatus}
13/12	. . . to compensate for change of camera lens or size of picture	15/0489	. . . . . {Means for ignition by percussion}
13/14	. . . to compensate for parallax due to short range	15/0494	. . . . . {Means for mounting percussion type flash apparatus}
13/16	. . combined with focusing aids	15/05	. . . Combinations of cameras with electronic flash apparatus; Electronic flash units
13/18	. Focusing aids	15/06	. . Special arrangements of screening, diffusing, or reflecting devices, e.g. in studio
13/20	. . Rangefinders coupled with focusing arrangements, e.g. adjustment of rangefinder automatically focusing camera	15/07	. . . Arrangements of lamps in studios
13/22	. . . coupling providing for compensation upon change of camera lens	15/08	. Trick photography
13/24	. . Focusing screens	15/10	. . using back-projection, i.e. blending artificial background with real foreground
13/26	. . . with magnifiers for inspecting image formed on screen	15/12	. . using mirrors
13/28	. . . Image-splitting devices	15/14	. for taking photographs during medical operations
13/30	. . indicating depth of field	15/16	. for photographing the track of moving objects (high-speed photography G03B 39/00)
13/32	. Means for focusing	17/00	Details of cameras or camera bodies; Accessories therefor (lens hoods or caps G03B 11/04)
13/34	. . Power focusing	17/02	. Bodies
13/36	. . . Autofocus systems	17/04	. . collapsible, foldable or extensible, e.g. book type
15/00	Special procedures for taking photographs; Apparatus therefor	17/045	. . . {Bellows}
15/003	. {Apparatus for photographing CRT-screens}	17/06	. . with exposure meters or other indicators built into body but not connected to other camera members
15/006	. {Apparatus mounted on flying objects}	17/08	. . Waterproof bodies or housings
15/02	. Illuminating scene	17/10	. . Soundproof bodies
15/03	. . Combinations of cameras with lighting apparatus; Flash units	17/12	. . with means for supporting objectives, supplementary lenses, filters, masks, or turrets
15/035	. . . Combinations of cameras with incandescent lamps	17/14	. . . interchangeably
15/04	. . . Combinations of cameras with non-electronic flash apparatus; Non-electronic flash units	17/16	. . for containing both motion-picture camera and still-picture camera
15/0405	. . . . {Non-electronic flash apparatus incorporated in photographic apparatus}	17/17	. . with reflectors arranged in beam forming the photographic image, e.g. for reducing dimensions of camera
15/041	. . . . {Separatable flash apparatus; Means for mounting the flash apparatus on the photographic apparatus}	17/18	. Signals indicating condition of a camera member or suitability of light (indicating depth of field G03B 13/30)
15/0415	. . . . . {Mounting means comprising transversal slide and separate cable}	17/20	. . visible in viewfinder
15/0421	. . . . . {Mounting means comprising transversal slide and incorporated contacts of the type "Hot shoe"}	17/22	. with means for cutting-off film
15/0426	. . . . . {Mounting means comprising longitudinal slide and incorporated contacts (for multiple lamps)}	17/24	. with means for separately producing marks on the film, e.g. title, time of exposure
15/0431	. . . . . {Rotatable mounting means}	17/245	. . {Optical means}
15/0436	. . . . . {Mounting means for sequential translation}	17/26	. Holders for containing light sensitive material and adapted to be inserted within the camera (holders for X-ray films G03B 42/04)
15/0442	. . . . . {Constructional details of the flash apparatus; Arrangement of lamps, reflectors, or the like (G03B 15/0484 takes precedence)}	17/265	. . {specially adapted for motion picture film, e.g. cassettes (cassettes for projection purposes G03B 21/323)}
15/0447	. . . . . {Energy sources; Batteries; Capacitors}	17/28	. Locating light-sensitive material within camera
15/0452	. . . . . {Electrical ignition means connected to the shutter}	17/30	. . Locating spools or other rotatable holders of coiled film
15/0457	. . . . . {Ignition mechanisms for sequential ignition of flash lamps}	17/305	. . . {for roll film cameras}
15/0463	. . . . . {Piezo-electric ignition mechanisms}	17/32	. . Locating plates or cut films
15/0468	. . . . . {Ignition mechanisms permitting choice of multiple ignition modes; Adaptors for different modes}	17/34	. . . Changing plates or cut films
15/0473	. . . . . {Remote controlled ignition mechanisms}	17/36	. Counting number of exposures (of film strips G03B 1/66)
15/0478	. . . . . {Combinations of photographic apparatus with percussion type flash ignition systems}	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)}	23/046	. . . . {Picture changing devices}
21/325	. . . . . {Endless cassettes}	23/048	. . . . {with horizontally sliding mechanism}
21/326	. . . . . {Means for fixing the film on the axis of a reel or spindle}	23/06	. . with rotary movement
21/328	. . . . . {Means for fixing the film on the periphery of a reel}	23/08	. in which pictures are attached to a movable carrier
21/34	. . . Change-over arrangements	23/10	. . drum or disc carrier
21/36	. . . . Fades, dissolves, or wipes	23/105	. . . {disc carriers}
21/38	. . . Prolonged exhibition of single frame	23/12	. . linear strip carrier
21/40	. . . Eliminating or reducing effect of flicker	23/125	. . . {the pictures being attached to a chain or linked up to form a chain}
21/42	. . . Preventing damage to film due to abnormal operation of projector	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}
21/43	. . . Driving mechanisms	23/18	. with fade-in and fade-out effects
21/44	. . . . Mechanisms transmitting motion to film-strip feed; Mechanical linking of shutter and intermittent feed	25/00	Viewers, other than projection viewers, giving motion-picture effects by persistence of vision, e.g. zoetrope
21/46	. . . . . affording adjustment for framing	25/02	. with interposed lenticular or line screen
21/48	. . . . . for altering frame speed; for regulating constancy of film speed	27/00	Photographic printing apparatus
21/50	. . . Control devices operated by the film strip during the run	27/02	. Exposure apparatus for contact printing
21/52	. . . . by prepared film	27/04	. . Copying apparatus without a relative movement between the original and the light source during exposure, e.g. printing frame or printing box
21/53	. . Means for automatic focusing, e.g. to compensate thermal effects	27/06	. . . for automatic repeated copying of the same original
21/54	. Accessories	27/08	. . . for automatic copying of several originals one after the other, e.g. for copying cinematograph film
21/56	. . Projection screens	27/10	. . Copying apparatus with a relative movement between the original and the light source during exposure
21/562	. . . {Screens moving during projection (G03B 21/58 - G03B 21/62 take precedence)}	27/12	. . . for automatic repeated copying of the same original
21/565	. . . {Screens allowing free passage of sound (G03B 21/58 - G03B 21/62 take precedence)}	27/14	. . Details
21/567	. . . {for colour projection (G03B 21/58 , G03B 21/60 take precedence)}	27/16	. . . Illumination arrangements, e.g. positioning of lamps, positioning of reflectors (controlling the exposure G03B 27/72)
21/58	. . . collapsible, e.g. foldable; of variable area	27/18	. . . Maintaining or producing contact pressure between original and light-sensitive material
21/585	. . . . Inflatable screens	27/20	. . . . by using a vacuum or fluid pressure
21/60	. . . characterised by the nature of the surface	27/22	. . . . by stretching over a curved surface
21/602	. . . . Lenticular screens (G03B 21/625 takes precedence)	27/24	. . . Separating the original from the print
21/604	. . . . Polarised screens	27/26	. . . Cooling
21/606	. . . . for relief projection	27/28	. . . Edge-masking devices
21/608	. . . . Fluid screens	27/30	. . . adapted to be combined with processing apparatus
21/62	. . . . Translucent screens	27/303	. . . . {Gas processing (gas processing apparatus G03D 7/00)}
21/625	. . . . . Lenticular translucent screens	27/306	. . . . {Heat development (heat development apparatus G03D 13/002)}
21/64	. . Means for mounting individual pictures to be projected, e.g. frame for transparency	27/32	. Projection printing apparatus, e.g. enlarger, copying camera
23/00	Devices for changing pictures in viewing apparatus or projectors	27/323	. . {Copying cameras (G03B 27/34 - G03B 27/70 take precedence)}
	NOTE	27/326	. . {Enlargers (G03B 27/34 - G03B 27/70 take precedence)}
	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	27/34	. . Means for automatic focusing therefor
23/02	. in which a picture is removed from a stock and returned to the same stock or another one; Magazines therefor	27/36	. . . by mechanical connections, e.g. by cam, by linkage
23/04	. . with linear movement	27/38	. . . . embodying screws with non-uniform pitch
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}		

- 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}
- 27/6271 {in enlargers}
- 27/6278 {Handling single frame negatives}
- 27/6285 {Handling strips ([G03B 1/00](#) takes precedence)}
- 27/6292 {Handling microfiche}
- 27/64 using a vacuum or fluid pressure
- 27/66 . . . specially adapted for holding half-tone screens
- 27/68 . . . Introducing or correcting distortion, e.g. in connection with oblique projection
- 27/70 . . . Reflectors in printing beam
- 27/72 . . Controlling or varying light intensity, spectral composition, or exposure time in photographic printing apparatus
- 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)}
- 27/727 . . {Optical projection devices wherein the contrast is controlled optically (e.g. uniform exposure, two colour exposure on variable contrast sensitive material)}
- 27/73 . . Controlling exposure by variation of spectral composition, e.g. multicolor printers
- 27/735 . . . {in dependence upon automatic analysis of the original}
- 27/74 . . Positioning exposure meters in the apparatus
- 27/80 . . in dependence upon automatic analysis of the original ([G03B 27/73](#) takes precedence)
- 29/00** **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 (combinations with flash apparatus [G03B 15/03](#))**
- 30/00** **Camera modules comprising integrated lens units and imaging units, specially adapted for being embedded in other devices, e.g. mobile phones or vehicles**

NOTE

When classification is made in this main group, further classification should be made in other groups of subclass [G03B](#) or in group [G02B 7/00](#) according to the functional aspects of the camera.

G03B 30/00

(continued)

The classification symbol of this group is not listed first when assigned to patent documents.

WARNING

Group [G03B 30/00](#) is incomplete pending reclassification of documents from groups [G02B 7/00](#), [G02B 7/02](#), [G02B 7/021](#), [G02B 7/022](#), [G02B 7/023](#), [G02B 7/027](#), [G02B 7/028](#), [G02B 7/04](#), [G02B 7/06](#), [G02B 7/09](#), [G02B 7/10](#), [G02B 7/102](#), [G02B 7/105](#), [G02B 13/001](#), [G02B 13/0015](#), [G02B 13/002](#), [G02B 13/0025](#), [G02B 13/003](#), [G02B 13/0035](#), [G02B 13/004](#), [G02B 13/0045](#), [G02B 13/005](#), [G02B 13/0055](#), [G02B 13/006](#), [G02B 13/0065](#), [G02B 13/007](#), [G02B 13/0075](#), [G02B 13/008](#), [G02B 13/0085](#), [G02B 13/009](#), [G03B 5/00](#), [G03B 17/02](#), [G03B 17/04](#), [G03B 17/08](#), and [G03B 17/55](#).

All groups listed in this Warning should be considered in order to perform a complete search.

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

33/00 Colour photography, other than mere exposure or projection of a colour film (printing apparatus [G03B 27/00](#); stereoscopic colour photography [G03B 35/00](#))

- 33/02 . by two-colour separation records, e.g. red-aspect and white complete records; using Land effect
- 33/04 . by four or more separation records
- 33/06 . by additive-colour projection apparatus
- 33/08 . Sequential recording or projection ([G03B 33/02](#), [G03B 33/04](#), [G03B 33/06](#) take precedence)
- 33/10 . Simultaneous recording or projection ([G03B 33/02](#), [G03B 33/04](#) [G03B 33/06](#) take precedence)
- 33/12 . . using beam-splitting or beam-combining systems, e.g. dichroic mirrors
- 33/14 . . using lenticular screens (integral with film [G03C](#))
- 33/16 . . using colour-pattern screens (integral with film [G03C](#))

35/00 Stereoscopic photography

- 35/02 . by sequential recording
- 35/04 . . with movement of beam-selecting members in a system defining two or more viewpoints
- 35/06 . . with axial movement of lens or gate between exposures
- 35/08 . by simultaneous recording
- 35/10 . . having single camera with stereoscopic-base-defining system
- 35/12 . . involving recording of different viewpoint images in different colours on a colour film
- 35/14 . Printing apparatus specially adapted for conversion between different types of record ([G03B 42/08](#) takes precedence)
- 35/16 . by sequential viewing
- 35/18 . by simultaneous viewing

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- . . using two or more projectors

- . . using single projector with stereoscopic-base-defining system

- . . using apertured or refractive resolving means on screens or between screen and eye

- . . using polarised or coloured light separating different viewpoint images

Panoramic or wide-screen photography; Photographing extended surfaces, e.g. for surveying; Photographing internal surfaces, e.g. of pipe

- . {Photographing internal surfaces, e.g. of pipe, ([G03B 37/02](#) - [G03B 37/06](#) take precedence; instruments for performing medical examinations of cavities or tubes of the body by photographic inspection [A61B 1/00](#))}

- . with scanning movement of lens or cameras

- . with cameras or projectors providing touching or overlapping fields of view

- . involving anamorphosis ([G03B 37/02](#), [G03B 37/04](#) take precedence)

High-speed photography

- . {using image converters or amplifiers}

- . using stationary plate or film ([G03B 39/06](#) takes precedence)

- . using moving plate or film ([G03B 39/06](#) takes precedence)

- . using light-guides for transferring image frame or elements thereof into different array, e.g. into a line

41/00 Special techniques not covered by groups [G03B 31/00](#) - [G03B 39/00](#); Apparatus therefor

- . using non-intermittently running film

- . . {combined with shutter}

- . . {combined with slit}

- . . with optical compensator

- . . . with rotating reflecting member

- . . . with rotating transmitting member

- . . . with oscillating reflecting member

- . . . with oscillating transmitting member

- . . Overcoming image movement by brief flashes of light

42/00 Obtaining records using waves other than optical waves; Visualisation of such records by using optical means

- . using X-rays

- . {Apparatus for direct X-ray cinematography (circuit arrangements for obtaining a series of X-ray photographs or for X-ray cinematography [H05G 1/60](#))}

- . . {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](#))}

- . . {Positioning or masking the X-ray film cartridge in the radiographic apparatus}

- . . {for obtaining three-dimensional pictures}

- . . {Industrial applications}

- . . Holders for X-ray films

42/042	. . . {for dental applications (see also A61B 6/14); (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
43/00	Testing correct operation of photographic apparatus or parts thereof	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
2205/00	Adjustment of optical system relative to image or object surface other than for focusing	2215/056	. . . Connection with camera, e.g. adapter
2205/0007	. Movement of one or more optical elements for control of motion blur (imaging systems in general using optical elements for stabilisation of the position of the image G02B 27/64)	2215/0564	. . characterised by the type of light source
2205/0015	. . by displacing one or more optical elements normal to the optical axis	2215/0567	. . . Solid-state light source, e.g. LED, laser
2205/0023	. . by tilting or inclining one or more optical elements with respect to the optical axis	2215/0571	. . . With second light source
2205/003	. . by a prism with variable angle or the like	2215/0575	. . . Ring shaped lighting arrangements
2205/0038	. . by displacing the image plane with respect to the optical axis (in case of an electronic image sensor H04N 5/23248)	2215/0578	. . . Flashtube mounting
2205/0046	. Movement of one or more optical elements for zooming (for optical zoom lenses in general G02B 7/10)	2215/0582	. . Reflectors
2205/0053	. Driving means for the movement of one or more optical element	2215/0585	. . . Movable reflectors, e.g. change of illumination angle or direction
2205/0061	. . using piezoelectric actuators	2215/0589	. . Diffusors, filters or refraction means
2205/0069	. . using electromagnetic actuators, e.g. voice coils	2215/0592	. . . installed in front of light emitter
2205/0076	. . using shape memory alloys	2217/00	Details of cameras or camera bodies; Accessories therefor
2205/0084	. . using other types of actuators	2217/002	. Details of arrangement of components in or on camera body
2206/00	Systems for exchange of information between different pieces of apparatus, e.g. for exchanging trimming information, for photo finishing	2217/005	. Blur detection
2206/002	. using detachable memory means	2217/007	. Details of energy supply or management
2206/004	. using markings on the photographic material, e.g. to indicate pseudo-panoramic exposure	2217/18	. Signals indicating condition of a camera member or suitability of light
2206/006	. . of the bar-code type	2217/185	. . providing indication that the picture may be blurred
2206/008	. using holders for the photographic material	2217/24	. with means for separately producing marks on the film
2207/00	Control of exposure by setting shutters, diaphragms, or filters separately or conjointly	2217/241	. . with means for producing composite exposures, e.g. exposing an image and a border, producing identity cards
2207/005	. involving control of motion blur	2217/242	. . Details of the marking device
2213/00	Viewfinders; Focusing aids for cameras; Means for focusing for cameras; Autofocus systems for cameras	2217/243	. . . Optical devices
2213/02	. Viewfinders	2217/244	. . . Magnetic devices
2213/025	. . Sightline detection	2217/245	. . . Mechanical devices
2215/00	Special procedures for taking photographs; Apparatus therefor	2217/246	. . Details of the markings
2215/05	. Combinations of cameras with electronic flash units	2217/247	. . . Bar codes
2215/0503	. . Built-in units	2217/248	. . with means for masking
2215/0507	. . . Pop-up mechanisms	2217/26	. Holders for containing light-sensitive material and adapted to be inserted within the camera
2215/051	. . . . with movable reflector, e.g. change of illumination angle or illumination direction	2217/261	. . Details of spools
2215/0514	. . Separate unit	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

G03B

- 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