

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](#))

Definition statement

This place covers:

Details not specific to the following types of photographic apparatus: cameras, projectors, or printers

- Film-strip handling
- Focusing arrangements
- Adjustment of optical system relative to image or object surface, other than for focusing

Details of cameras

- Control of exposure by setting shutters, diaphragms, or filters separately or conjointly, in particular remote control
- Exposure-making shutters
- Diaphragms
- Filters or other obturators specially adapted for photographic purposes
- Optical viewfinders
- Devices used in connection with camera focusing, including focusing aids or autofocus systems
- Special procedures or apparatus for taking photographs

Photographic apparatus

- Cameras
- Projectors or projection-type viewers, or their details
- Devices for changing pictures in viewing apparatus or projectors
- Viewers giving motion-picture effects by persistence of vision
- Photographic printing apparatus, or their details
- Combinations of cameras, projectors, or photographic printing apparatus with nonphotographic non-optical apparatus
- Camera modules (i.e. integrated lens and imaging units), specially adapted for embedding in other devices

Photographic techniques and processes

Processes – and solely those processes – characterised by the use or manipulation of apparatus classifiable in this subclass, in particular

- Associated working of cameras or projectors with sound-recording or -reproducing means
- Colour photography, other than mere exposure or projection of a colour film
- Stereoscopic photography
- Panoramic or wide-screen photography
- Photographing extended surfaces
- Photographing internal surfaces
- High-speed photography
- Other special photographic techniques

- Obtaining records using waves other than optical waves, or visualising such records by using optical means
- Testing correct operation of photographic apparatus or parts thereof

Relationships with other classification places

Photographic processes are covered by subclass [G03B](#) when the process relates to the exposure of the photosensitive medium, in order to generate the latent image, whereas subclass [G03C](#) covers the photographic processes that involve a chemical transformation of the photosensitive medium, such that the latent image is transformed into a visible and permanent record.

The printing of a record obtained via the processes or apparatus of subclass [H04N](#) is classified in class [B41](#) if the only chemical processing involved consists in the after-treatment of ink applied to the recording surface but is classified in subclass [G03B](#) if a latent image is produced.

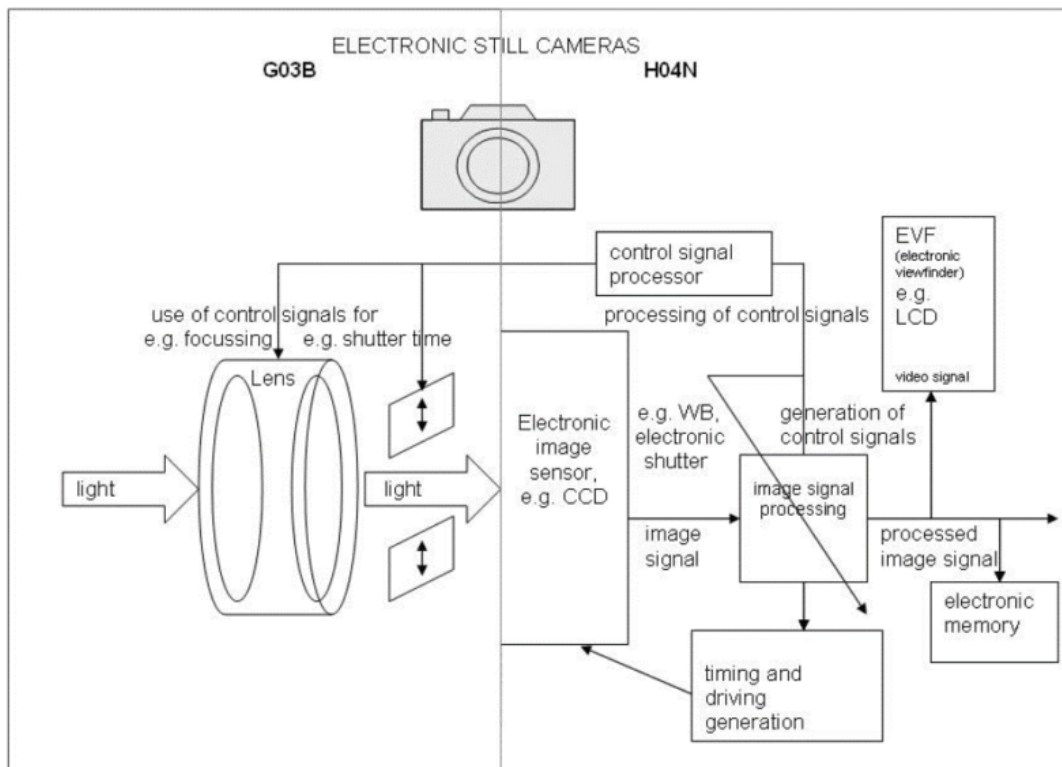
Subclass [H04N](#) covers the electronic image capturing apparatus or processes where an electronic image sensor converts an optical image into electrical signals, e.g. by controlling the electronic image sensor or by processing the electrical signals.

Subclass [H04N](#) covers the electronic image projection apparatus or processes where an electronic image modulator converts electrical signals into an optical image, e.g. by controlling the electronic image modulator or by processing the electrical signals.

Therefore, when the following subject matter is classified in this subclass, it is desirable to also classify it in subclass [H04N](#), when some aspects are considered of interest for search purposes:

- Digital still cameras, or their details
- Projectors or projection-type viewers using an electronic spatial light modulator, or their details
- Video cameras, CCTV cameras, surveillance cameras and camcorders, or details thereof

The following diagrams are intended to illustrate the relationship between [H04N](#) and [G03B](#).

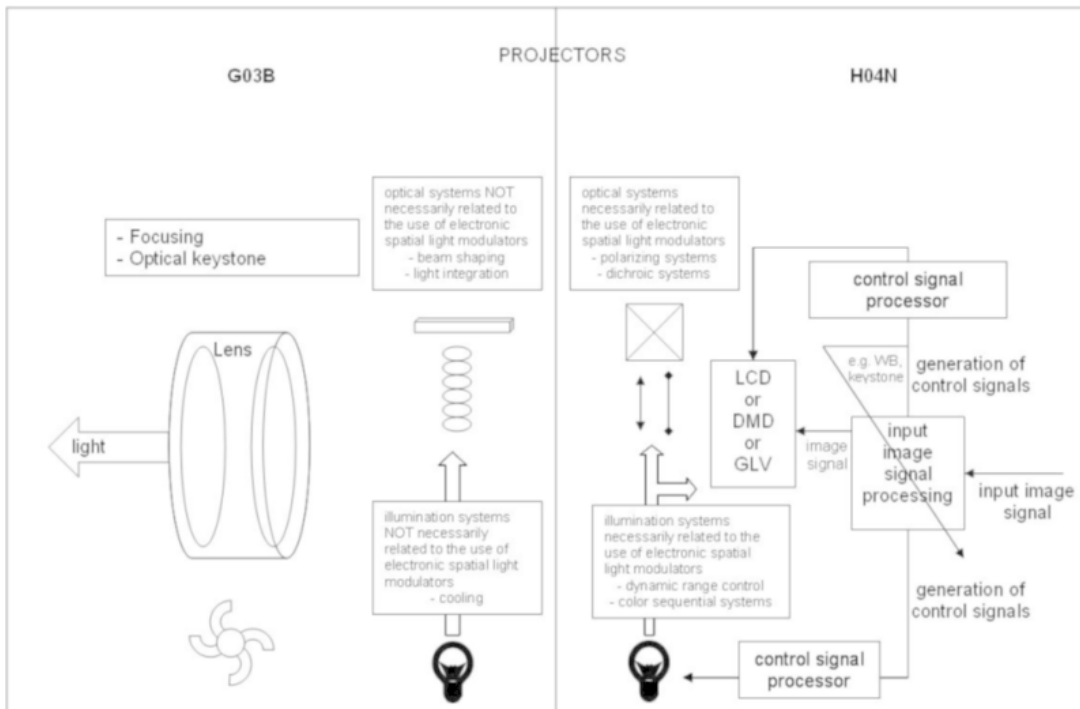


In the above image, elements on the left side correspond to [G03B](#) (e.g. light, use of control signals for focussing and shutter time). Elements on the right side correspond to [H04N](#) (e.g. control signal

Relationships with other classification places

processor, processing of control signals, electronic image sensor, electronic shutter, generation of control signals, image signal processing, timing and driving generation, EVF, LCD, processed signal memory, and electronic memory).

Thus, in [G03B](#) aspects of apparatus or methods for taking photographs using an electronic image sensor [EIS] for image capture are classified insofar as they correspond to those of said apparatus or methods for taking photographs using light sensitive film, i.e. insofar not peculiar to the presence or use of the EIS, e.g. mounting of optical elements or flashes, and their related controls insofar they are not peculiar to the presence of the EIS, e.g. exposure, focus, (opto-) mechanical motion blur (anti-shake);



In [G03B](#), aspects of apparatus or methods for projecting or viewing images using an electronic spatial light modulator [ESLM] are classified insofar as they correspond to those of said apparatus or methods for projecting or viewing images using film stock, photographic film or slides, i.e. insofar as not peculiar to the presence of the ESLM, e.g. mounting of optical elements not peculiar to the presence of the ESLM, and their related controls not peculiar to the presence of the ESLM, e.g. cooling, beam shaping, optical keystone correction.

As far as processes are concerned, only processes characterised by the use or manipulation of apparatus classified in [G03B](#).

References

Limiting references

This place does not cover:

Optical parts for apparatus or arrangements for taking photographs or for projecting or viewing them	G02B
Photosensitive materials for photographic purposes	G03C
Apparatus for processing exposed photographic materials; Accessories therefor	G03D

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Instruments for performing medical examinations of the interior of cavities or tubes of the body by photographic inspection	A61B 1/00
Objective-type instruments for examining the eyes specially adapted for eye photography	A61B 3/14
Photographic composing devices	B41B 13/00 - B41B 23/00
Photogrammetry; Photographic surveying	G01C 11/00
Recording indications of measuring instruments by photographic means	G01D 9/42
Indicating the weight by photographic recording	G01G 23/35
Photometry using photographic effects	G01J 1/52
Measuring linear or angular speed using photographic means; Measuring differences of linear or angular speeds using photographic means	G01P 3/38
Photographic dosimeters	G01T 1/08
Microscopes arranged for photographic purposes or projection purposes	G02B 21/36
Arrangements for producing a permanent visual presentation of the output data by photographic printing	G06K 15/12
Photographic arrangements structurally combined with discharge tubes or lamps	H01J 5/16
Photographic arrangements structurally combined with cathode-ray tubes or electron-beam tubes	H01J 29/89
Photographic arrangements structurally combined with discharge tubes with provision for introducing objects or material to be exposed to the discharge	H01J 37/22
Particle spectrometers or separator tubes with detection performed by photographic film	H01J 49/00
Projectors or projection-type viewers using an electronic spatial light modulator	H04N 5/74 , H04N 9/31
Video cameras; Digital still cameras	H04N 23/00

Informative references

Attention is drawn to the following places, which may be of interest for search:

Photographic exposure meters	G01J 1/00
Adjusting means for lenses adapted for automatic focusing	G02B 7/09
Systems for automatic generation of focusing signals	G02B 7/28
Means for focusing of apparatus for photomechanical production of textured or patterned surfaces	G03F 7/20
Image data processing, in general	G06T
Information storage based on relative movement between record carrier and transducer; Static stores	G11B , G11C
Optical elements or arrangements associated with solid state imager structures;	H01L 27/146

Transforming light or analogous information into electric image information	H04N 5/30
Transforming X-rays into electric image information	H04N 5/32
Transforming infrared radiation into electric image information	H04N 5/33
Processing or use of electrical image signals from the EIS for the generation of camera control signals. e.g. focusing, exposure control, electronic blur correction, display in electronic viewfinder	H04N 23/60 , H04N 23/70
Transforming light into electric information using solid-state image sensors	H04N 25/00

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Photography	Process of recording pictures by means of capturing light on a light-sensitive medium, e.g. silver halide based chemical or an electronic image sensor. Light patterns reflected or emitted from objects expose such a light sensitive medium during a timed exposure, usually through a photographic lens in a device known as a camera
Camera	Apparatus or arrangements for taking photographs
Projector	Device displaying image information by projection of light patterns, usually through an optical lens, wherein the light patterns are generated by illuminating an image, e.g. film or slide, or by converting an electric image signal into an optical signal using an electronic spatial light modulator
EIS	Electronic image sensor: optoelectronic transducer, converting optical image information into an electrical signal susceptible of being processed, stored, transmitted or displayed
Additional sensor	Sensor, other than the electronic image sensor, used for controlling a camera
ESLM	Electronic spatial light modulator: optoelectronic transducer converting electric signals representing image information into optical image information
Record	Photographs or any other kind of latent, directly-visible or permanent storage of pictorial information, which consist of an imagewise distribution of a quantity, e.g. an electric charge pattern, recorded on a carrier member
Optical	Applies to visible light but also to ultraviolet radiation or infrared radiation

Synonyms and Keywords

In patent documents, the following abbreviations are often used:

AE	Automatic Exposure
AF	Auto Focus
APS	Advanced Photographic System
DEP	Double Exposure Prevention
DSLR	Digital Single Lens Reflex Camera

EVF	Electronic Viewfinder
OVF	Optical Viewfinder
SLR	Single Lens Reflex Camera

G03B 1/60

Measuring or indicating length of the used or unused film; Counting number of exposures

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Measuring length in general	G01B
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G03B 1/66

Counting number of exposures

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Measuring length per se	G01B
Counting mechanisms per se	G06M

G03B 3/00

Focusing arrangements of general interest for cameras, projectors or printers

Definition statement

This place covers:

Mechanical and electromechanical details of driving and guiding a focusing lens or other optical elements in photographic devices.

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Focusing aids for cameras	G03B 13/18
Means for focusing for cameras	G03B 13/32
Means for automatic focusing of projectors or projection-type viewers	G03B 21/53
Means for automatic focusing of photographic printing apparatus or copying cameras	G03B 27/34 , G03F

G03B 3/10

Power-operated focusing

Definition statement

This place covers:

Mechanical and electromechanical details of driving and guiding a power operated focusing lens or other optical elements for focusing .

References

Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Means for automatic focusing of projectors or projection type viewers	G03B 21/53
Means for automatic focusing of photographic printing apparatus or copying cameras	G03B 27/34

Informative references

Attention is drawn to the following places, which may be of interest for search:

Algorithms, control systems and user interfaces for performing autofocus and for generating focusing signals in photographic cameras as long as the focusing signal is not generated in the main electronic image sensor	G03B 13/36
Means for automatic focusing of projectors or projection type viewers	G03B 21/53
Means for automatic focusing of photographic printing apparatus or copying cameras	G03B 27/34
Driving means for the movement of one or more optical elements	G03B 2205/0053
Motorized focusing of fixed focus lenses in general	G02B 7/08
Motorized focusing of variable focus lenses in general	G02B 7/102
Systems for automatic generation of focusing signals in general	G02B 7/28
Algorithms, control systems and user interfaces for performing autofocus and for generating focusing signals in photographic cameras based on image signal provided by the main electronic image sensor	H04N 23/67

G03B 3/12

adapted for remote control

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Control systems in general	G05
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G03B 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](#))

References**Limiting references**

This place does not cover:

Shutters functioning as diaphragms by limiting extent of opening movement	G03B 9/08
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G03B 9/08**Shutters****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Devices or arrangements for the control of the intensity, colour, phase, polarisation or direction of light arriving from an independent light source	G02F 1/00
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G03B 9/64

Mechanism for delaying opening of shutter (separate from shutter [G03B 17/38](#))

References**Limiting references**

This place does not cover:

Mechanism for delaying opening of shutter separate from shutter	G03B 17/38
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G03B 11/00

Filters or other obturators specially adapted for photographic purposes

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Optical filters per se	G02B 5/20
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G03B 11/041**{Lens caps as separate accessory (accessories in general [G03B 17/56](#))}****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Accessories in general	G03B 17/56
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G03B 13/00**Viewfinders; Focusing aids for cameras; Means for focusing for cameras; Autofocus systems for cameras****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Hoods or caps for eliminating unwanted light from lenses, viewfinders or focusing aids	G03B 11/04
Reflex cameras with single objective and a movable reflector or a partly-transmitting mirror	G03B 19/12
Cameras with paired lenses, one of which forms image on photographic material and the other forms a corresponding image on a focusing screen	G03B 19/14
Optical rangefinders	G01C 3/00
Automatic focusing in general	G02B 7/09
Systems for automatic generation of focusing signals	G02B 7/28
Devices or arrangements for the control of the intensity, colour, phase, polarisation or direction of light arriving from an independent light source	G02F 1/00
Focus control based upon image signals from electronic image sensors	H04N 23/67

G03B 13/02**Viewfinders****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Viewfinders per se	G02B 23/14
Electronic viewfinders	H04N 23/00 , H04N 23/60

G03B 13/12**to compensate for change of camera lens or size of picture****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Zoom viewfinders per se	G02B 23/145
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G03B 13/32**Means for focusing****References****Informative references***Attention is drawn to the following places, which may be of interest for search:*

Mechanical and electromechanical details of arrangements for focusing	G03B 3/00
Mechanical and electromechanical details of driving and guiding a power operated focusing lens or other optical elements for focusing	G03B 3/10
Mechanisms for focusing a lens in general	G02B 7/04

G03B 13/36**Autofocus systems****Definition statement***This place covers:*

Algorithms, control systems and user interfaces for performing autofocus and for generating focusing signals in photographic cameras as long as the focusing signal is not generated in the main electronic image sensor.

References**Informative references***Attention is drawn to the following places, which may be of interest for search:*

Mechanical and electromechanical details of arrangements for focusing	G03B 3/00
Mechanical and electromechanical details of driving and guiding a power operated focusing lens or other optical elements for focusing	G03B 3/10
Systems for automatic generation of focusing signals in general	G02B 7/28
Algorithms, control systems and user interfaces for performing autofocus and for generating focusing signals in photographic cameras based on image signal provided by the main electronic image sensor	H04N 23/67

G03B 15/02**Illuminating scene****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Functional features or details of lighting devices or systems thereof; Structural combinations of lighting devices with other articles, not otherwise provided for	F21V
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G03B 15/04**Combinations of cameras with non-electronic flash apparatus; Non-electronic flash units****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Control of exposure in accordance with both the intensity of the flash source and the distance of the flash source from object, e.g. in accordance with "guide number" of flash bulb and the focusing of the camera	G03B 7/16
Testing correct operation of photographic apparatus or parts thereof, e.g. flash apparatus	G03B 43/00
Light sources using charges of combustible material	F21K 5/00
Circuit arrangements for light sources using a charge of combustible material	H05B 46/00

G03B 15/05**Combinations of cameras with electronic flash apparatus; Electronic flash units****Definition statement**

This place covers:

e.g. flash units without mechanical connection to the camera

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Discharge lamps	H01J 61/00 - H01J 65/00
Circuit arrangements or apparatus for igniting or operating discharge lamps	H05B 41/00

G03B 15/16

for photographing the track of moving objects (high-speed photography
[G03B 39/00](#))

References**Limiting references**

This place does not cover:

High-speed photography	G03B 39/00
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Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Plates or blocks in which tracks of nuclear particles are made visible by after treatment, using photographic emulsion	G01T 5/10
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G03B 17/00

Details of cameras or camera bodies; Accessories therefor (lens hoods or caps
[G03B 11/04](#))

References**Limiting references**

This place does not cover:

Lens barriers, covers, shields (for retractable lenses) if not integral part of camera body	G03B 11/04
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G03B 17/04

collapsible, foldable or extensible, e.g. book type

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Bellows per se	F16J 3/00
Hollow bodies having parts which are deformable or displaceable under pressure, e.g. bellows	G12B 1/04

G03B 17/18

Signals indicating condition of a camera member or suitability of light
(indicating depth of field [G03B 13/30](#))

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Indicating depth of field	G03B 13/30
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G03B 17/36

Counting number of exposures (of film strips [G03B 1/66](#))

References**Limiting references**

This place does not cover:

Of film strips	G03B 1/66
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Counting mechanisms	G06M
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G03B 17/48

adapted for combination with other photographic or optical apparatus

References**Application-oriented references**

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Microscopes	G02B 21/00
Telescopes	G02B 23/00

G03B 17/50

with both developing and finishing apparatus

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Processing apparatus	G03D
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G03B 17/56**Accessories (carrying-cases [A45C 11/38](#))****Definition statement**

This place covers:

external battery compartments, support of camera body

References**Limiting references**

This place does not cover:

Camera cases	A45C 11/38
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Lens caps	G03B 11/041
Camera tripods	F16M
Stands or trestles as support for apparatus or articles placed thereon	F16M 11/00
Means for attachment of apparatus allowing quick-release	F16M 11/041
Movement that the support can allow for the object to be supported	F16M 11/043- F16M 11/14, F16M 11/2007- F16M 11/24
Tripods	F16M 11/24
Monopod or tripod having a central telescopic column	F16M 11/28
Tripods with telescopic legs	F16M 11/32
Means for supporting on, or holding steady relative to, a person,	F16M 13/04

G03B 19/00**Cameras (details [G03B 17/00](#))****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Details of cameras or camera bodies;Accessories therefor	G03B 17/00
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G03B 19/10

Plate or cut-film cameras (with provision for alternative use with roll film [G03B 19/08](#))

Definition statement

This place covers:

e.g. cameras with a (movable) ground glass screen.

References**Limiting references**

This place does not cover:

Plate or cut-film cameras with provision for alternative use with roll film	G03B 19/08
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G03B 19/18

Motion-picture cameras (with non-intermittently running film [G03B 41/02](#))

References**Limiting references**

This place does not cover:

Motion-picture cameras with non-intermittently running film	G03B 41/02
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G03B 21/00

Projectors or projection-type viewers; Accessories therefor (devices for changing pictures [G03B 23/00](#))

References**Limiting references**

This place does not cover:

Devices for changing pictures	G03B 23/00
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Optical distortion correction, e.g. keystone	G03B 21/147
Viewers, other than projection viewers, giving motion-picture effects by persistence of vision, e.g. zoetrope	G03B 25/00
Photographic printing apparatus	G03B 27/00
Tables specially adapted to be used with domestic photographic projectors	A47B 37/02
Lighting devices or systems producing a varying lighting effect	F21S 10/00
Optical projection comparators	G01B 9/08

Interactive projectors (whiteboards) with input means to control the projection	G06F 3/00
Television systems' projection arrangements for image reproduction	H04N 5/74
Electronic correction of distortions, e.g. video signal processing	H04N 5/7475
Laser projectors using scanning devices	H04N 9/3129
Projectors peculiar to the use of an electronic spatial light modulator	H04N 9/3197

G03B 21/10

Projectors with built-in or built-on screen

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Projection screens	G03B 21/56
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G03B 21/20

Lamp housings

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Condensers	G02B 19/00
Microscope condensers	G02B 21/08

G03B 21/26

Projecting separately subsidiary matter simultaneously with main image

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Light pointers	G02B 27/20
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G03B 21/323

{Cassettes ([G03B 21/326](#), [G03B 21/328](#) take precedence; for containing light-sensitive material [G03B 17/265](#))}

References**Limiting references**

This place does not cover:

Means for fixing the film on the axis of a reel or spindle	G03B 21/326
Means for fixing the film on the periphery of a reel	G03B 21/328

Informative references

Attention is drawn to the following places, which may be of interest for search:

Holders for containing light sensitive material and adapted to be inserted within the camera, e.g. cassettes specially adapted for motion picture film	G03B 17/265
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G03B 21/44

Mechanisms transmitting motion to film-strip feed; Mechanical linking of shutter and intermittent feed

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Film-strip handling of general interest for cameras, projectors or printers	G03B 1/00
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G03B 21/50

Control devices operated by the film strip during the run

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Mechanical linking of shutter and intermittent feed for altering frame speed or regulating constancy of film speed	G03B 21/48
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G03B 21/53

Means for automatic focusing, e.g. to compensate thermal effects

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Automatic focusing in general	G02B 7/09
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Systems for automatic generation of focusing signals	G02B 7/28
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G03B 21/54

Accessories

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Tables specially adapted to be used with domestic photographic projectors	A47B 37/02
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G03B 23/00

Devices for changing pictures in viewing apparatus or projectors

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

Film-strip handling of general interest for cameras, projectors or printers	G03B 1/00
Telescopes, e.g. binoculars; Periscopes; Instruments for viewing the inside of hollow bodies	G02B 23/00
Viewing or reading apparatus	G02B 27/02

Glossary of terms

In this place, the following terms or expressions are used with the meaning indicated:

Picture	Any flat representation, whether transparent or not, e.g. produced by photography, writing, or printing
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G03B 25/00

Viewers, other than projection viewers, giving motion-picture effects by persistence of vision, e.g. zoetrope

References

Informative references

Attention is drawn to the following places, which may be of interest for search:

High-speed photography	G03B 39/00
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G03B 27/00**Photographic printing apparatus****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Film-strip handling of general interest for cameras, projectors or printers	G03B 1/00
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G03B 27/16**Illumination arrangements, e.g. positioning of lamps, positioning of reflectors (controlling the exposure [G03B 27/72](#))****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Controlling or varying light intensity, spectral composition, or exposure time in photographic printing apparatus	G03B 27/72
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G03B 27/30**adapted to be combined with processing apparatus****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Processing apparatus per se	G03D
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G03B 27/303**{Gas processing (gas processing apparatus [G03D 7/00](#))}****References****Informative references**

Attention is drawn to the following places, which may be of interest for search:

Gas processing apparatus	G03D 7/00
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G03B 27/306

{Heat development (heat development apparatus [G03D 13/002](#))}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Heat development apparatus	G03D 13/002
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G03B 27/34

Means for automatic focusing therefor

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Systems for automatic generation of focusing signals	G02B 7/28
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G03B 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](#)})

References**Limiting references**

This place does not cover:

Means for automatic focusing for projection printing apparatus	G03B 27/34
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Projection optics for slit exposure	G03B 27/525
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G03B 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](#))}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Producing marks on the film in cameras	G03B 17/24
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G03B 27/522

{Projection optics (for electro-photographic copiers in particular [G03G 15/04](#))}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Projection optics for electro-photographic copiers	G03G 15/04
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G03B 27/53

Automatic registration or positioning of originals with respect to each other or the photosensitive layer

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Registration or positioning of originals, masks, frames, photographic sheets or textured or patterned surfaces in photo-mechanical production of textured or patterned surfaces, e.g. of integrated circuits	G03F 9/00
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G03B 27/54

Lamp housings; Illuminating means

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Controlling or varying light intensity, spectral composition, or exposure time in photographic printing apparatus	G03B 27/72
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G03B 27/58

Baseboards, masking frames, or other holders for the sensitive material ([G03B 27/53](#) takes precedence {; for electrophotographic copiers [G03G 15/65](#)})

References**Limiting references**

This place does not cover:

Automatic registration or positioning of originals with respect to each other or the photosensitive layer	G03B 27/53
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Apparatus relating to the handling of copy material for electrographic processes using a charge pattern	G03G 15/65
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G03B 27/62

Holders for the original ([G03B 27/53](#) takes precedence {; for electrophotographic copiers [G03G 15/60](#)})

References**Limiting references**

This place does not cover:

Automatic registration or positioning of originals with respect to each other or the photosensitive layer	G03B 27/53
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Apparatus relating to the handling of originals for electrographic processes using a charge pattern	G03G 15/60
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G03B 27/72

Controlling or varying light intensity, spectral composition, or exposure time in photographic printing apparatus

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Exposure meters per se	G01J
Control of light, e.g. intensity, colour, phase	G05D 25/00

G03B 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](#))

References**Limiting references**

This place does not cover:

Combinations with flash apparatus	G03B 15/03
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Application-oriented references

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Instruments for performing medical examinations of the interior of cavities or tubes of the body by visual or photographic inspection, e.g. endoscopes	A61B 1/00
Arrangements specially adapted for eye photography	A61B 3/14
Theodolites combined with cameras	G01C 1/04
Structural combination of reactor core or moderator structure with viewing means, e.g. with television camera, periscope, window	G21C 17/08
Optical or photographic arrangements structurally combined with the vessel	H01J 5/16
Optical or photographic arrangements structurally combined	H01J 29/89
Optical or photographic arrangements associated with the tube	H01J 37/22

Informative references

Attention is drawn to the following places, which may be of interest for search:

Time-pieces combined with other articles which do not interfere with the running or time-keeping of the time-piece	G04B 47/00
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G03B 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

Relationships with other classification places

[G03B 29/00](#) covers constructional details of the combination of cameras with other non-optical apparatus. On the other hand, [G03B 30/00](#) covers the camera modules themselves, which are to be embedded in other devices.

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Optical viewing arrangements for vehicles	B60R 1/00
Mounting of cameras operative during drive; Arrangement of controls thereof relative to the vehicle	B60R 11/04
Mounting of lenses in general	G02B 7/02
Mechanisms for focusing or varying magnification	G02B 7/04
Miniaturized objectives characterized by the optical design	G02B 13/001
Television cameras	H04N 23/00

G03B 31/00

Associated working of cameras or projectors with sound-recording or sound-reproducing means

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Cinematographic processes of taking pictures or printing combined with sound-recording	G03C 5/14
Record carriers characterised by the selection of the material and comprising cinematographic film or slide with integral magnetic track	G11B 5/633

G03B 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](#))

References**Limiting references**

This place does not cover:

Stereoscopic colour photography	G03B 35/00
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Printing apparatus	G03F35/00
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G03B 33/14

using lenticular screens (integral with film [G03C](#))

References**Application-oriented references**

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Colour photography using lenticular screens integral with film	G03C
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G03B 33/16

using colour-pattern screens (integral with film [G03C](#))

References**Application-oriented references**

Examples of places where the subject matter of this place is covered when specially adapted, used for a particular purpose, or incorporated in a larger system:

Colour photography using lenticular screens integral with film	G03C
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G03B 35/00

Stereoscopic photography

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Panoramic or wide-screen photography	G03B 37/00
Photogrammetry	G01C

G03B 37/005

{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](#))}

References**Limiting references**

This place does not cover:

Automatic registration or positioning of originals with respect to each other or the photosensitive layer	G03B 27/53
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Informative references

Attention is drawn to the following places, which may be of interest for search:

Instruments for performing medical examinations of the interior of cavities or tubes of the body by visual or photographic inspection, e.g. endoscopes	A61B 1/00
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G03B 41/00

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

References**Limiting references**

This place does not cover:

Associated working of cameras or projectors with sound-recording or -reproducing means	G03B 31/00
Colour photography, other than mere exposure or projection of a colour film	G03B 33/00
Stereoscopic photography	G03B 35/00
Panoramic or wide-screen photography; Photographing extended surfaces, e.g. for surveying; Photographing internal surfaces, e.g. of pipe	G03B 37/00
High-speed photography	G03B 39/00

G03B 42/00

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

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Investigating or analysing materials using electromagnetic radiation, other than infrared, visible or ultraviolet radiation, e.g. microwaves, or particles	G01N 22/00 , G01N 23/00
Investigating or analysing materials by the use of ultrasonic, sonic or infrasonic waves; Visualisation of the interior of objects by transmitting ultrasonic or sonic waves through the object	G01N 29/00
Radar or analogous systems specially adapted for mapping or imaging	G01S 13/89
Sonar systems specially adapted for mapping or imaging	G01S 15/89
Holography	G03H

G03B 42/02

using X-rays

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Measurement of nuclear or X-radiation	G01T
X-ray apparatus involving X-ray tubes; Circuits therefor	H05G 1/00

G03B 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](#))}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Circuit arrangements for obtaining a series of X-ray photographs or for X-ray cinematography	H05G 1/60
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G03B 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](#))}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Controlling or varying light intensity in photographic printing apparatus by transforming the picture information intermediately into electrical signals	G03B 27/725
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G03B 42/042

{for dental applications (radiation diagnosis specially adapted for dentistry [A61B 6/51](#); individual packages for X-ray film [G03C 3/003](#))}

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Apparatus for radiation diagnosis, applications or adaptations for dentistry	A61B 6/51
Individual packages for X-ray film, e.g. for dental applications	G03C 3/003

G03B 42/06

using ultrasonic, sonic or infrasonic waves

References**Informative references**

Attention is drawn to the following places, which may be of interest for search:

Diagnosis using ultrasonic, sonic or infrasonic waves	A61B 8/00
Measurement of ultrasonic, sonic or infrasonic waves	G01H

G03B 42/08**Visualisation of records by optical means****References*****Informative references***

Attention is drawn to the following places, which may be of interest for search:

Diffraction optics systems using spatial filters;	G02B 27/46
Optics for phase object visualising	G02B 27/50

G03B 43/00**Testing correct operation of photographic apparatus or parts thereof****References*****Informative references***

Attention is drawn to the following places, which may be of interest for search:

Measuring specific variables	G01
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G03B 43/02**Testing shutters****References*****Informative references***

Attention is drawn to the following places, which may be of interest for search:

Time-interval measuring	G04F
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