

G02C

SPECTACLES; SUNGLASSES OR GOGGLES INsofar AS THEY HAVE THE SAME FEATURES AS SPECTACLES; CONTACT LENSES (trial frames for testing the eyes [A61B 3/04](#); goggles or eyeshields not having the same features as spectacles [A61F 9/00](#))

Definition statement

This place covers:

Ophthalmic devices intended to be worn or supported by the user, either in front of the eyes or placed in contact with the eyes: spectacles (eyeglasses), contact lenses, sunglasses, goggles insofar as they have the same features as spectacles.

Optical parts of eyewear and methods of their design, e.g. lenses, filters, polarizers, mirrors, prisms, obturators, shields, auxiliary lenses.

Mechanical parts of eyewear (Means to support the optical parts) e.g. spectacle frames, bridges, nose pads, side-members.

Means to attach auxiliary optical parts to eyewear.

Means for supporting eyewear e.g. retainers, headbands.

Non-optical adjuncts to eyewear, e.g. ornaments, illumination, hearing aids and other electronic means, anti-misting means.

Assembling, repairing and cleaning of spectacles and contact lenses.

Measuring geometrical parameters for fitting or during assembling spectacles.

Relationships with other classification places

This subclass concerns only extracorporal ophthalmic devices. Owing to their medical nature, implanted devices such as intraocular lenses and corneal implants are classified in [A61F 2/00](#), as well as ophthalmologic instruments in [A61B 3/00](#)(diagnostic) and [A61F 9/00](#)(therapeutic).

This subclass covers spectacles or goggles insofar they have features of vision correction or protection. Sunglasses are covered by this subclass insofar they protect the eye against high levels of visible and ultraviolet light. Groups [A61F 9/02](#) and [A61F 9/04](#) cover goggles or eye-masks (eye-shields) as forms of protective eyewear worn to prevent particulates or chemicals from striking the eyes, and not having the features of vision correction or protection against high levels of visible and ultraviolet light, which are normally associated to spectacles. Typical examples of goggles covered by these groups are goggles worn while welding, drilling or sawing. Goggles for swimming are covered by [A63B 33/00](#), whereas diving masks are covered by [B63C 11/12](#).

References

Limiting references

This place does not cover:

Trial frames and lenses for testing the eyes	A61B 3/04
Lenses implantable into the eye	A61F 2/14 , A61F 2/16
Optical elements characterized by their material	G02B 1/00
Using polarisation multiplexing	H04N 13/337

Informative references

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

Visors for helmets	A42B 3/22
Instruments for examining the eye	A61B 3/00
Lenses implantable into the eye	A61F 2/14 , A61F 2/16
Instruments for treating the eye	A61F 9/00 - A61F 9/0136
Goggles not having the same features as spectacles	A61F 9/02
Swimming goggles	A63B 33/002
Diving masks	B63C 11/12
Instruments for testing optical devices	G01M 11/00
Optical systems in general	G02B
Simple or compound lenses	G02B 3/00

Special rules of classification

Generally, more than one subgroup should be assigned whenever applicable.

Further detail not provided for in any of the main groups is provided for in the subgroups of [G02C 2200/00](#) representing information orthogonal to one or to more than one of the groups [G02C 1/00](#) - [G02C 13/00](#) and their subgroups

symbols of the type [G02C 2200/00](#) cover mechanical features (frame)

symbols of the type [G02C 2202/00](#) cover optical features (lenses).

G02C 1/00**Assemblies of lenses with bridges or browbars****Definition statement**

This place covers:

All aspects of mounting the lenses to the frame front:

front portions of the spectacle frames to which the lenses are mounted;

assemblies of lenses with bridges or browbars and other fixing parts

Frame front types: rimless, half-rim, full-rim, split-rim.

Means for mounting: types of grooves, mounting threads, closure means of split frames.

Half lens spectacles.

Frame and lenses integrally formed .

Special rules of classification

Frame front portions enabling easy exchange of lenses: add [G02C 2200/08](#)

G02C 1/02

Bridge or browbar secured to lenses without the use of rims

Definition statement

This place covers:

Rimless spectacles, e.g. with or without holes, recesses or slits in the lenses.

means for securing: screws, nuts, washers, stems, rods, dowels.

Holes or slits provided in axial direction or in the peripheral surface of the lens (recesses).

G02C 1/023

{with lenses secured to the fixing parts by clamping, luting, soldering, gluing without holes or recesses in the lenses ([G02C 1/04](#) - [G02C 1/08](#) take precedence)}

Definition statement

This place covers:

Rimless spectacles without holes, recesses or slits in the lenses.

References

Limiting references

This place does not cover:

Bridges and browbars secured or integral with partial rims	G02C 1/04
Bridge or browbar secured or integral with closed rigid rims	G02C 1/06
The rims being transversly split and provided with securing means	G02C 1/08

G02C 1/026

{with auxiliary bars ([G02C 1/04](#) - [G02C 1/08](#) take precedence)}

Definition statement

This place covers:

Rimless spectacles with additional bar not directly fixed to the lenses. e.g. second bridge

References

Limiting references

This place does not cover:

Bridges and browbars secured or integral with partial rims	G02C 1/04
Bridge or browbar secured or integral with closed rigid rims	G02C 1/06
The rims being transversly split and provided with securing means	G02C 1/08

G02C 1/04

Bridge or browbar secured to or integral with partial rims, e.g. with partially-flexible rim for holding lens

Definition statement

This place covers:

Front frames having only an upper portion or only a lower portion.

Front frames having two halves of different material, frequently a rigid (upper) portion and a soft (lower) portion, the top portion frequently comprising a groove, the lower portion being constituted by a (nylon) thread.

G02C 1/06

Bridge or browbar secured to or integral with closed rigid rims for the lenses

Definition statement

This place covers:

Closed rims (frequently from plastics material) comprising a groove in which the lenses are held.

G02C 1/08

the rims being transversely split and provided with securing means

Definition statement

This place covers:

Rims (frequently made from metal) split (opened) for inserting the lens,

frames split at temporal or nasal side or any other location,

means for closing the split frame portions for securing the lens:

- Blocks and screw.
- Split bridge.
- Combined closing means and front hinge element ("split hinge").
- Various special closing means.

Special rules of classification

Combined closing means and front hinge element: add [G02C 5/22](#) or subgroup.

G02C 1/10

{Special mounting grooves in the rim or on the lens}

Definition statement

This place covers:

Groove profiles other than V-grooves such as (semi-) circular, rectangular, asymmetric.

Profile varying or being interrupted along the perimeter of the rim.

G02C 3/00

Special supporting arrangements for lens assemblies or monacles (lenses therefor [G02C 7/00](#); by walking-sticks [A45B 3/00](#))

Definition statement

This place covers:

Supporting lenses, front frames or spectacles on the head by other means than temples, bridge or nose pads or in addition thereto.

Supporting lenses and spectacles by neck, headgear, garment or other articles (e.g. lorgnons).

Relationships with other classification places

[G02C 3/00](#) and subgroups concern devices for supporting spectacles.

[G02C 11/00](#) and subgroups concern devices supported by spectacles.

References

Informative references

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

Lenses therefor	G02C 7/00
Lens assemblies or monacles supported by walking-sticks	A45B 3/00

Special rules of classification

If specially adapted frame portions (e.g. temple ends) are required: add respective sub-group (e.g. [G02C 5/143](#)).

G02C 3/003

{Arrangements for fitting and securing to the head in the position of use}

Definition statement

This place covers:

Retainers (straps, cords, chains, bands) for spectacles in front of the eyes:

straps, cords, chains, bands replacing the temples or in addition to temples.

Lenses or spectacle parts fixed to the face by piercings.

Means for preventing spectacles from slipping.

Means for reducing weight or pressure on the nose or on the ears, balancing the weight of the spectacles.

References

Informative references

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

Jewellery holding or retaining articles, e.g. spectacles	A44C 15/003
Piercing type jewellery	A44C 15/0035

Straps, buckles, attachment of headbands for goggles	A61F 9/027
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G02C 3/006

{Arrangements for fitting and securing to the head or neck not in the position of use}

Definition statement

This place covers:

Retainers for spectacles (straps, cords, chains, bands) to be worn around the neck when the spectacles are not in use.

Special rules of classification

Only if the retainer has a special (support) function when the spectacles are worn in front of the eyes: add [G02C 3/003](#).

G02C 3/02

Arrangements for supporting by headgear

Definition statement

This place covers:

Devices for mounting spectacles to hats, caps, sun shields, helmets, etc.

References

Informative references

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

Securing spectacles or goggles on helmet shells	A42B 3/185
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G02C 3/04

Arrangements for supporting by hand, e.g. lorgnette, Arrangements for supporting by articles (by walking-sticks [A45B 3/00](#))

Definition statement

This place covers:

Lorgnon, lorgnette.

Holding devices for spectacles e.g. on garment, clothes, in cars, on belts etc.

combination of spectacles and cases.

References

Informative references

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

Support by walking sticks	A45B 3/00
Spectacle cases	A45C 11/04

Fastening articles to the garment	A45F 5/02
Supporting spectacles in vehicles	B60R 7/082
(Hand held) magnifying glasses	G02B 25/002 , G02B 25/008 , G02B 25/02

G02C 5/00

Constructions of non-optical parts

Definition statement

This place covers:

Mechanical parts of spectacles such as bridges, nose pads, hinges, temples.

Frame (parts) made from special materials.

Frames having special properties or functions other than supporting lenses

mounting details.

References

Limiting references

This place does not cover:

Spectacle frame front portions	G02C 1/00
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Special rules of classification

Modular frames or frames comprising easily exchangeable elements: add [G02C 2200/08](#).

G02C 5/001

{specially adapted for particular purposes, not otherwise provided for or not fully classifiable according to technical characteristics, e.g. therapeutic glasses}

Definition statement

This place covers:

Frames having special properties or functions other or in addition to holding lenses.

Spectacle frames lacking conventional parts:

Spectacles having only one or no temple, having no bridge, only one rim.

Unconventional shape or use:

Asymmetric frames, attachment of the temples at the underside of the frame,

temple(s) pivotable to the front side of the frame front, convertible, reversible spectacles (front/back, up/down).

Spectacles for specially shaped faces (e.g. babies, Down-syndrome patients);

Fully individual adaption of the shape of frame portion e.g. by molding etc.

Special construction to protect the lenses when laying down the glasses.

References

Limiting references

This place does not cover:

Half-lens spectacles and frames therefor	G02C 1/00
Lorgnons	G02C 3/04
Pince-nez	G02C 5/128

Special rules of classification

Add group symbol relating to the feature providing the unconventional function, e.g. [G02C 5/12](#), [G02C 5/14](#), [G02C 5/22](#).

G02C 5/003

{Shooting or aiming glasses}

Definition statement

This place covers:

Spectacle frames for shooting glasses.

Glasses for sports requiring aiming, e.g. golf, frequently with means for adjusting the aiming elements (pin holes, cross lines).

References

Informative references

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

Lenses comprising markings	G02C 7/021
Shields, shades obturators	G02C 7/16

G02C 5/005

{Glasses allowing access to one eye, e.g. for make-up application}

Definition statement

This place covers:

Spectacles comprising individually pivotable (vertically, horizontally) rims.

References

Limiting references

This place does not cover:

Pivotaly arranged auxiliary lenses, clipons	G02C 9/02
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G02C 5/006

{Collapsible frames}

Definition statement

This place covers:

Frames having multiple possibilities to be folded (other than just the conventional opening and closing of the temples or in addition thereto).

References

Informative references

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

Hinges in the middle of the temple; or bridge	G02C 5/20 ; G02C 5/08
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Special rules of classification

Add subgroup relating to the elements involved in the collapsing action, e.g. [G02C 5/22](#), [G02C 5/20](#), [G02C 5/08](#).

G02C 5/008

{Spectacles frames characterized by their material, material structure and material properties}

Definition statement

This place covers:

Frames made from metal, polymers, horn, wood, shape memory alloy, superelastic materials, etc.

Structure of the material: layered, compound, wire, sheet type material, credit-card shaped spectacles, spectacles made from card board (e.g. polarizing stereo).

Properties of the frame resulting from materials (e.g. floating, particularly soft).

References

Informative references

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

Production of spectacle frames from metal (wire)	B21F 45/002
Shape memory alloys, super elastic metals per se	C22C 19/00
Double, galvanic layers, corrosion resistance	C23 , C25D

Special rules of classification

As for the material per se, use this sub-group only if the material is essential to achieve a particular functionality or property (e.g. floating spectacles, super elastic temples) or requires special assembly or treatment techniques (e.g. wood or horn frames).

Add one of [G02C 2200/10](#) - [G02C 2200/16](#) if applicable.

G02C 5/02

Bridges; Browbars; Intermediate bars (nose engaging-surfaces [G02C 5/12](#))

Definition statement

This place covers:

Elements joining the two rims or lenses.

Spectacles detachable or detached at the location of the bridge.

Double bridge, reinforced bridge.

Horizontally or vertically split bridge.

Special bridge for mounting nose-pad arms, pads or other nose engaging surfaces.

Bridge specially adapted for mounting decorative elements.

Bridge adapted for holding temples when closed, e.g. with magnetic means.

References

Informative references

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

Nose engaging surfaces	G02C 5/12
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Special rules of classification

Horizontally split bridges: add [G02C 1/08](#).

Special bridge for mounting pad arms, pads etc.: add [G02C 5/12](#) or subgroup.

G02C 5/08

foldable

Definition statement

This place covers:

Hinge or other element enabling folding on the bridge.

G02C 5/10

Intermediate bars or bars between bridge and side-members

Definition statement

This place covers:

Individual parts between front frame and hinge, not generally present in all kinds of frames.

G02C 5/12**Nose pads; Nose-engaging surfaces of bridges or rims****Definition statement**

This place covers:

Nose pads, elements for mounting and retaining nose pads.

Bridge type pads, bridge saddle, two individual pads, twinned pads mounted to the bridge or to the rims.

Pads integral with rims.

References**Informative references**

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

Protection of the nose	G02C 11/00
Paddings, cushions, fitting to the face for goggles	A61F 9/026

G02C 5/122

{with adjustable means}

Definition statement

This place covers:

Adjustable and resilient mounting of nose pads and other nose engaging elements.

G02C 5/124

{for vertically varying the position of the lenses}

Definition statement

This place covers:

Can be achieved by vertical or horizontal adjustment of the pads.

G02C 5/126

{exchangeable or otherwise fitted to the shape of the nose}

Definition statement

This place covers:

Exchangeable pads or pads providing particular fit and comfort.

G02C 5/128**{Pince-nez}****Definition statement***This place covers:*

Spectacles comprising a front frame only comprising clamping nose pads or other nose clamping functionality.

Special rules of classification

Use this class also in absence of (special) nose pads or pad mounting.

G02C 5/14**Side-members****Definition statement***This place covers:*

Temples, rigid side members rearwards from the hinge or directly attached to the front frame (no hinge).

Special temples for receiving non optical adjuncts.

Special temples acting as case for the front and the lenses.

Adjustable, reinforced, resilient, shortened temples.

References**Limiting references***This place does not cover:*

Side members other than temples, e.g. straps, head bands	G02C 3/003
Spectacles having only one temple	G02C 5/001

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

Non-optical adjuncts: decorative, hearing aids, illumination, etc.	G02C 11/00
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G02C 5/143**{having special ear pieces}****Definition statement***This place covers:*

Special temple ends: individual, wired, securing means.

Temples having no ear piece (shortened temples).

G02C 5/146**{having special front end}****Definition statement***This place covers:*

Special temple front ends, e.g. split front ends requiring two hinges,
front end particularly constructed for fixing the hinge or a non-optical adjunct.

G02C 5/16**resilient or with resilient parts****Definition statement***This place covers:*

Resiliently deformable temple or temple parts.

G02C 5/18**reinforced****Definition statement***This place covers:*

Temple reinforced, e.g. by a metal core.

G02C 5/20**adjustable, e.g. telescopic****Definition statement***This place covers:*

Temples having adjustable length, self adjusting length.

Temples having adjustable inclination and/or opening angle.

Foldable temples, temples having a hinge.

Temple rotatable about its longitudinal axis

Special rules of classification

If adjustable inclination and opening angle is enabled by features of the hinge, only use [G02C 5/22](#) or subgroups.

Foldable temples having a hinge: add [G02C 5/22](#) or subgroup.

G02C 5/22

Hinges (pivotal connection in general [F16C 11/00](#))

Definition statement

This place covers:

Junctions between elements of the spectacles frame:

(front frame - temple, rim - temple, intermediate portion - temple

bridge - bridge, temple - temple).

Pivotal junctions comprising or not comprising well-defined pivot axis

Elements combining hinge (front portion) and securing means for closing a rim of the front frame (split hinge).

Details of the pivot or bearing.

Special hinge screws.

Elastic hinges comprising coil springs or other springs.

Composite hinges allowing multiple axis rotation.

Hinges having an oblique axis.

References

Informative references

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

Pivotal connection in general	F16C 11/00
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Special rules of classification

Combined closing means and front hinge element ("split hinge"): add [G02C 1/08](#).

G02C 5/2209

{Pivot bearings and hinge bolts other than screws}

Definition statement

This place covers:

Hinges comprising means for providing pivotal connections other than screws, screwless hinges.

G02C 5/2218

{Resilient hinges}

Definition statement

This place covers:

Hinge comprising elastic means urging the temple towards at least one predetermined angular position (opened and/or closed position), frequently following overextension beyond the normal open position of use.

References

Limiting references

This place does not cover:

Resilient hingeless junctions	G02C 5/2272
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Special rules of classification

If applicable add suitable subgroup of [G02C 2200/00](#).

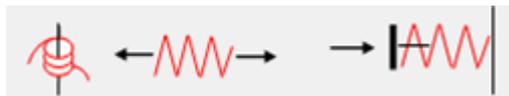
G02C 5/2227

{comprising a fixed hinge member and a coil spring}

Definition statement

This place covers:

Both hinge members are fixed with respect to the front frame and the temple; a coil is used for the overextension, the eyelets (or the coil) are fixed to front frame and temple. Illustrative example:



G02C 5/2236

{comprising a sliding hinge member and a coil spring}

Definition statement

This place covers:

At least one hinge member slidingly connected to temple or front frame, coil actuated by piston or housed in a sliding box. Illustrative example:



G02C 5/2245

{comprising a sliding box containing a spring}

Definition statement

This place covers:

Hinge comprising a slidingly arranged box shaped element housing (and actuating) a coil spring.

G02C 5/2254

{comprising elastic means other than coil spring}

Definition statement

This place covers:

Resilient part other than a coil spring generating an elastic effect

e.g. leaf spring, rubber, elastic wire.

G02C 5/2263

{Composite hinges, e.g. for varying the inclination of the lenses}

Definition statement

This place covers:

Hinges allowing multiple axis rotation.

Hinges allowing variation of inclination of the front frame.

Hinges allowing 180° folding of temples.

Hinges allowing temples to be rotated about their longitudinal axis.

Connected hinges cooperating to open both temples using one hand only.

G02C 5/2272

{Hinges without well-defined pivot axis}

Definition statement

This place covers:

Pivotal movement of the temples achieved e.g. by a bending portion, "hingeless articulations".

G02C 5/2281

{Special hinge screws}

Definition statement

This place covers:

Special screws comprising e.g. blocking means, two (different) threads, special slit, cone-shape or otherwise varying cross-section, special nuts and other special elements cooperating with screws.

G02C 5/229

{Oblique hinge axis}

Definition statement

This place covers:

Hinge comprising an oblique (not vertical) axis for enabling special folding movement of the temples, e.g. to the top or bottom of the frame rather than to the rear side.

G02C 7/00

Optical parts (characterised by the material [G02B 1/00](#))

Definition statement

This place covers:

Elements arranged in the optical path of the eye and serving for ophthalmic purposes:

Lenses, auxiliary lenses, light deflecting elements, filters, apertures, occluders.

Definition statement

Design of optical elements.

Relationships with other classification places

Only optical elements worn in front of or on the eye are contained in this group. Optical elements implanted into the eye (intra-ocular lenses, corneal inlays) requiring surgical interventions are classified in [A61F 2/14](#) and [A61F 2/16](#).

References

Informative references

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

Optical elements in general	G02B
Optical elements characterized by their material	G02B 1/00

G02C 7/02

Lenses; Lens systems {; Methods of designing lenses}

Definition statement

This place covers:

Ophthalmic lenses and their design, such as e.g.

spectacle lenses, contact lenses, multifocal lenses (including bifocal, trifocal and progressive power lenses).

Methods of designing ophthalmic lenses, e.g. individual lens design

high power ophthalmic lenses, lenticular lenses

high curvature lenses.

Lenses for correcting of higher order aberrations, e.g. spherical aberration

diffractive and Fresnel ophthalmic lenses.

Lenses for inhibiting myopia progression

Mislocation tolerant ophthalmic lenses.

Lenses comprising decentered structures.

Series of ophthalmic lenses.

Semifinished ophthalmic lenses, lens blanks.

Lenses for low vision and visual disorders other than refractive errors.

Individual lens design for impaired vision, e.g. macula degeneration.

Ophthalmic lenses having features achieved by their material or material Structure (only if specific to ophthalmic lenses):

laminated lenses, gradient index, hybrid material, photorefractive material;

mathematical description of lens surfaces e.g. spheric, aspheric, toric, atoric, by conicals, polynomials, Zernicke polynomials.

Definition statement

Ophthalmic lenses having technical markings,

Patterned lenses (cosmetic contact lenses).

Ophthalmic lenses having special protective or antireflective coatings.

References

Limiting references

This place does not cover:

Specially edged lenses for half-lens spectacles	G02C 1/00
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Informative references

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

Ophthalmic filters, sun protection	G02C 7/10
Polarizers	G02C 7/12
Edging of lenses, drilling holes, cutting recesses and instruments therefor	B24B 9/14
Positioning or marking of lenses (in preparation of grinding)	B24B 13/005
Tools for grinding lenses (surface)	B24B 13/02 - B24B 13/06
Manufacture of plastics lenses	B29D 11/00009
Applying coatings on optical elements	B29D 11/00865
Surface treatment of glass	C03C 15/00
Lenses made of organic material	G02B 1/041
Optical coatings	G02B 1/10
Anti-reflection coatings	G02B 1/11
Optical coatings by surface treatment	G02B 1/12
Simple lenses per se	G02B 3/00
Lenses per se defined by analytical functions	G02B 3/0081
Lenses per se having non-spherical surfaces	G02B 3/02
Lenses per se having cylindrical or toric surfaces	G02B 3/06
Lenses per se having discontinuous surfaces, e.g. Fresnel	G02B 3/08
Diffraction elements per se	G02B 5/18
Optical systems for correcting aberrations	G02B 27/0025
Diffraction optics in general	G02B 27/42

Special rules of classification

Add suitable sub-group of [G02C 2202/00](#)

G02C 7/021

{with pattern for identification or with cosmetic or therapeutic effects (methods and processes take preference, e.g. printing, marking or copying processes [B41M](#); identification in general [G09F 3/00](#); producing decorative effects in general [B44C](#); surface treatment of glass [C03C 15/00](#) - [C03C 23/00](#); positioning or marking of lenses [B24B 13/0055](#))}

Definition statement

This place covers:

Markings or patterns having no effect on spectral transmission or optical properties of the lens.

Markings for technical (identification or alignment) or non-technical (decorative) purposes.

Markings on progressive lenses, fitting cross, far-, near reference point name or symbol of manufacturer, cross-hairs for aiming.

References

Limiting references

This place does not cover:

Contact lenses comprising iris pattern or (printed) pin hole	G02C 7/046
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Informative references

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

Coloring having influence on spectral transmission, filters	G02C 7/10
Pin-holes and other kind of apertures formed on the lens	G02C 7/16
Positioning or marking of lenses	B24B 13/0055
Printing, marking or copying processes	B41M
Marking by laser	B41M 5/24 , B41M 5/26
Producing decorative effects in general	B44C
Surface treatment of glass	C03C 15/00 - C03C 23/00
Identification in general	G09F 3/00

G02C 7/022

{Ophthalmic lenses having special refractive features achieved by special materials or material structures ([G02C 7/049](#) takes precedence)}

Definition statement

This place covers:

Lenses essentially requiring particular materials and material structures to achieve their special refractive properties:

Locally varying refractive index (index gradient, GRIN-lenses),

photorefractive materials (refractive index can be modified by illumination),

Definition statement

laminated lens structure.

Cellular lens surface structure.

References

Limiting references

This place does not cover:

Contact lenses having special fitting or structural features achieved by their material	G02C 7/049
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Special rules of classification

Add one of [G02C 2202/12](#) - [G02C 2202/18](#) if applicable.

G02C 7/024

{Methods of designing ophthalmic lenses}

Definition statement

This place covers:

Methods of designing lenses:

For individuals or for standard user or standard situation,

considering conditions related to the viewed object, i.e. the environment in which the lenses are intended to be used,

considering conditions related to the user,

special mathematical methods and interactive techniques.

Special rules of classification

Add sub-group symbol relating to the specific type of ophthalmic lens to be designed ([G02C 7/02](#), [G02C 7/061](#), [G02C 7/04](#) and sub-groups).

G02C 7/025

{considering parameters of the viewed object}

Definition statement

This place covers:

Adapting the design and optical properties of the lens to the environment in which the lenses are intended to be used such as office, car, outdoor, particular professional environments, etc.

Generalized definition of the viewed object by defining an object distance for each direction of gaze ("Ergorama", "Objektabstandsfunktion").

G02C 7/027

{considering wearer's parameters}

Definition statement

This place covers:

- Considering wearing parameters determined by the spectacles frame used for mounting the lenses to be designed and by the position of the frame as worn by the user, such as pupillary distance, inclination, wrap angle, vertex distance, position on the face, centre of rotation, eye-length.
- User dependent determination of reference points (F, N, O) on the lens.
- Matching properties in corresponding points on the lenses in binocular use.
- Considering the user's eye and/or head movement, choice of design dependent thereon (e.g. hard/soft design in progressive lenses).
- Considering special ophthalmological conditions (not simple ametropia) such as higher order aberrations of the eye, visual performance, different cylindrical correction in far and near zones required (cylindrical addition and Listing's rule), magnification differences due to (considerably) different refraction of the two eyes, wearer's tolerance to imaging errors (distorsion, unwanted astigmatism, different magnification R/L).
- Considering different correction goals for the two eyes ("monovision") such as different correction far/near, different colour filters, arrangement of far and near zones different in left and right contact lenses.

G02C 7/028

{Special mathematical design techniques}

Definition statement

This place covers:

- Special mathematical tools and techniques:
- definition of boundary conditions for optimization and calculation,
- specific type of error function, choice of coordinate systems, superposition of surfaces and techniques therefor, power vector, mathematical representation of astigmatism, ray tracing and wavefront calculation techniques.
- Interactive design methods.
- Simulation of the view through lenses.

References

Informative references

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

Optical design, e.g. procedures, algorithms, optimization	G02B 27/0012
Complex mathematical operations	G06F 17/10
Computer aided design	G06F 30/00
3D modelling, simulation	G06T 17/20 , G06T 17/30

G02C 7/04

Contact lenses for the eyes (disinfection or sterilisation of contact lenses [A61L 12/00](#))

Definition statement

This place covers:

Lenses worn on the cornea or on the cornea and sclera of the eye,
corneal contact lenses (CLs), scleral contact lenses,
soft (including silicone hydrogels), rigid and combinations,
CLs for modifying the shape of the cornea, orthokeratology lenses,
CLs for inhibiting progression or development of myopia,
means for rotational and translational stability and control (ballast, slab-off),
CLs having decentered optical axis,
CLs having optical features providing tolerance to mislocation (angular),
CLs for imaging "around" a retinal skotom,
diffractive CLs,
CLs providing chromatic correction,
contact lenses suitable for containing (but not containing) medical preparations, drug delivery CLs,
cosmetic CLs,
CLs having grooves, holes for tear exchange,
CLs having specific optical or topological properties or features essentially achieved by their material.

References

Informative references

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

Technical marks on CLs	G02C 7/021
Different correction for the two eyes, monovision	G02C 7/028
Cleaning devices for contact lenses	G02C 13/008
Cases for contact lenses	A45C 11/005
Diagnostic measuring using contact lenses (e.g. glucose sensors)	A61B 5/14532 , A61B 3/101
Therapeutic contact lenses without optical function (e.g. bandages)	A61F 2/14
Artificial corneae and corneal implants	A61F 2/142
Intraocular lenses (multifocal, diffractive, higher order etc.	A61F 2/16
Methods or devices for treatment of the eyes	A61F 9/00
Devices for treatment of the eyes, implantable or in contact with the eye	A61F 9/0017
Devices for putting in contact lenses	A61F 9/0061

Refractive cornea treatment using laser (e.g. LASIK, ablation, disruption)	A61F 9/00804 , A61F 9/00827
Refractive cornea treatment using other instruments	A61F 9/013
Ocular implants or inserts (e.g. CLs) containing (!) medical preparations to be delivered to the ocular tissue, e.g. in combination with orthokeratologic treatment, (galenics)	A61K 9/0048
Disinfection or sterilisation of contact lenses	A61L 12/00
Manufacture of contact lenses	B29D 11/00038
Packaging of contact lenses	B65B 25/008
Cleaning agents for contact lenses	C11D 3/0078
Contact lenses characterized by their material only	G02B 1/043

G02C 7/041

{bifocal; multifocal}

Definition statement

This place covers:

Contact Lenses providing bifocal, trifocal or progressively varying power:

- simultaneous or translating type.
- annular or sectorial configuration of the viewing zones.
- special transition zone between viewing zones.

References

Informative references

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

Multifocal spectacle lenses	G02C 7/06
Intraocular lenses having special configuration, e.g. bifocal	A61F 2/1613

G02C 7/042

{Simultaneous type}

Definition statement

This place covers:

Multiple differently focussed images on the retina simultaneously formed by different regions (far/near/intermediate) of the lens.

G02C 7/043

{Translating type}

Definition statement

This place covers:

Lens translating on the cornea generating a single image pushed by the lid(s).

Translating = bivisual = alternating.

G02C 7/044

{Annular configuration, e.g. pupil tuned}

Definition statement

This place covers:

Far and near portions annularly (concentrically) arranged, amount of light in near or far focus determined by pupil size (pupil tuning).

G02C 7/045

{Sectorial configuration}

Definition statement

This place covers:

Far and near portions shaped as sectors.

G02C 7/046

{Contact lenses having an iris pattern}

Definition statement

This place covers:

Contact lenses having a (cosmetic) iris pattern.

CLs having a pinhole ("artificial pupil").

Spectral transmission in the pupil area unaffected.

References

Informative references

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

Technical markings on the lens	G02C 7/021
Coloring having influence on spectral transmission	G02C 7/10
Manufacture of marked or patterned contact lenses	B29D 11/00317

Special rules of classification

CLs having a pinhole: add [G02C 7/16](#)

G02C 7/047

{Contact lens fitting; Contact lenses for orthokeratology; Contact lenses for specially shaped corneae}

Definition statement

This place covers:

Adaption of the posterior lens surface to the cornea, particular posterior surfaces, e.g. ellipsoid surfaces,

individually designed CLs, methods of fitting and designing CLs,

trial contact lenses,

CLs for keratoconus, flat and irregular corneae

orthokeratology contact lenses: CLs having a rear surface shaped for controllably deforming the cornea to reduce ametropia (frequently myopia) or inhibit its development or progression,

CL design processes considering shrink and dwelling after production.

References

Informative references

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

Apparatuses and methods for measuring the topography (curvature) of the cornea	A61B 3/107
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G02C 7/048

{Means for stabilising the orientation of lenses in the eye}

Definition statement

This place covers:

Means for stabilizing the angular position of the contact lens (rotational stabilisation) on the cornea:

prism, slab-off, particular thickness profile, ridge, etc.

particularly relevant in translating bifocal CLs and toric CLs.

G02C 7/049

{Contact lenses having special fitting or structural features achieved by special materials or material structures}

Definition statement

This place covers:

CLs essentially requiring special (e.g. rigid or soft) material to achieve specific optical or topological properties or features.

References

Limiting references

This place does not cover:

Contact lenses characterized by their material only	G02B 1/04
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Informative references

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

Contact lens materials in general (polymers)	C08
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G02C 7/06

bifocal; multifocal {; progressive ([G02C 7/041](#) takes precedence)}

Definition statement

This place covers:

Spectacle lenses having more than one focal power, e.g. bifocal, trifocal, progressive lenses.

References

Limiting references

This place does not cover:

Bi- multifocal, progressive contact lenses	G02C 7/041
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G02C 7/061

{Spectacle lenses with progressively varying focal power}

Definition statement

This place covers:

Lenses having a power varying (in vertical direction along a principal line) from a far vision zone along a progressive zone to a near vision zone.

Progressive lenses characterized by:

- The shape of the progressive surface (e.g. distribution of unwanted astigmatism),
- The properties on the principal line
- The particular shape and location of the viewing zones
- Special properties achieved by the cooperation of the two lens surfaces

References

Informative references

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

Methods for designing (progressive) lenses	G02C 7/024
Progressive contact lenses	G02C 7/041

G02C 7/063

{Shape of the progressive surface}

Definition statement

This place covers:

Progressive lenses characterized by general aspects:

- Distribution of unwanted astigmatism in general (Minkwitz' rule).
- Distribution of other parameters (power, derivatives of astigmatism and spherical power, axis of astigmatism).
- Shape of zones such as channel length and width (in general) if not determined by particular viewing task.
- Properties on the principal line.
- Shape size and location of the viewing zones.
- Mutual dependence of the above properties.
- Combination (fusion) of progressive property with other corrective surface properties (e.g. toric) on the same (!) surfacec
- Hard / soft design and combinations, superpositions thereof on one lens surface.

G02C 7/065

{Properties on the principal line}

Definition statement

This place covers:

Progressive spectacle lenses characterized by properties on the principal line:

- Umbilic line.
- Non-umbilic principal line, astigmatism on principal line accepted.
- (mean spherical) power distribution on the principal line.
- Run of the principal line, nasal inset, unconventional run.
- Symmetry issues with respect to the principal line.

References

Informative references

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

Astigmatism vertically changing for correction purposes (cylindrical addition, near astigmatism)	G02C 7/027
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G02C 7/066

{Shape, location or size of the viewing zones}

Definition statement

This place covers:

Progressive lenses characterized by parameters related to their use:

- Shape, size and location of viewing zones for particular viewing tasks (car driver, golf, office, musician, ...).
- Special design for particular population (children, pre-presbyopes).

G02C 7/068

{Special properties achieved by the combination of the front and back surfaces}

Definition statement

This place covers:

Progressive spectacle lenses characterized by combined effects of front and back surface other than combined spherical and astigmatic power:

- Special alignment or orientation e.g. for thickness reduction (prism), appearance.
- Lenses with progressive surface on the back side.
- Double progressive lenses, one surface regressive.
- Lens magnification determining the shape of both surfaces (at least one being progressive), magnification differences within lens or lens pair, choice of base curvatures dependent on magnification.
- Progressive surface in combination with other specific surfaces on different sides (progressive and toric, atoric, aspheric, etc.)

References

Informative references

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

Combination (fusion) with other (e.g. toric) corrective surface properties (on one surface!)	G02C 7/063
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G02C 7/08

Auxiliary lenses; Arrangements for varying focal length

Definition statement

This place covers:

Lenses in addition to primary spectacles or contact lenses.

Spectacles comprising telescopes, loupes.

Lenses having variable focal length.

Telescopic systems comprising a positive spectacle lens + negative contact lens = Galilean telescope.

G02C 7/081

{Ophthalmic lenses with variable focal length}

Definition statement

This place covers:

Single or compound lens element exhibiting temporarily changeable and controllable lens power (mechanical, electrostatic, pneumatic actuation).

G02C 7/083

{Electrooptic lenses}

Definition statement

This place covers:

Lenses of which the optical index and, thus, the power are controllable.

Frequently comprising liquid crystal material.

Frequently cellular structures.

References

Informative references

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

Filter lenses having liquid crystal material acting as light valve:	G02C 7/101
Non-linear optical devices	G02F 1/29

Special rules of classification

Add [G02C 2202/18](#) (cellular structures) if applicable.

G02C 7/085

{Fluid-filled lenses, e.g. electro-wetting lenses}

Definition statement

This place covers:

Lenses comprising a (deformable) cavity which can be filled by fluid by means of pumps, etc.

Lenses comprising two immiscible fluids, the curvature of their contacting surface being electrostatically controllable (electro-wetting lenses).

References

Informative references

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

Fluid-filled lenses with variable focal length per se	G02B 3/14
Electrowetting lenses per se	G02B 3/14 , G02B 2207/115

G02C 7/086

{Auxiliary lenses located directly on a main spectacle lens or in the immediate vicinity of main spectacles}

Definition statement

This place covers:

Auxiliary lenses (removably) attached to or adhered onto the surface of a spectacle lens or contact lens.

Clip-on auxiliary lenses.

Optical elements provided on or in a lens serving as a part of a head up display.

References

Informative references

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

Mounting of auxiliary lenses	G02C 9/00
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G02C 7/088

{Lens systems mounted to spectacles}

Definition statement

This place covers:

Magnifying and telescopic spectacles, spectacles for amblyopic persons

Spectacles providing enlarged field of vision, e.g. by anamorphic lenses or lens elements.

References

Informative references

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

Telescopes per se	G02B 23/00
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Special rules of classification

For low vision devices add [G02C 2202/10](#) if applicable.

G02C 7/10

Filters, e.g. for facilitating adaptation of the eyes to the dark; Sunglasses

Definition statement

This place covers:

Coloured ophthalmic lenses with or without optical power having particular spectral transmission properties serving for sun-protection in ultraviolet, visible and infrared wavelength ranges.

Filters having special spectral characteristics other than for sun protection.

Inhomogeneously tinted filters.

Special colouring materials.

Interference filters.

Filters having a coloured layer of constant thickness irrespective of the local thickness of the lens.

Electrooptic, photochromic filters.

References

Informative references

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

Lenses having technical markings	G02C 7/021
Contact lenses having an iris pattern	G02C 7/046
Optical filters per se	G02B 5/20

Special rules of classification

Filters having a coloured layer: add [G02C 2202/16](#).

G02C 7/101

{having an electro-optical light valve (electro-optical elements per se [G02F](#))}

Definition statement

This place covers:

Electrically controlled active filters: liquid crystal, electro-optical, electro-chromic.

References

Informative references

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

Devices or arrangements, the optical operation of which is modified by changing the optical properties of the medium of the devices or arrangements for the control of the intensity, colour, phase, polarisation or direction of light	G02F
Liquid crystal filters in general	G02F 1/13
Their operation	G02F 1/133
Using temporal multiplexing	H04N 13/341

G02C 7/102

{Photochromic filters}

Definition statement

This place covers:

Filters reversibly changing their absorption upon light incidence (UV), photochromic (phototropic) filter lenses.

References

Informative references

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

Photochromic filters in general	G02B 5/23
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G02C 7/104**{having spectral characteristics for purposes other than sun-protection}****Definition statement***This place covers:*

Filters provided for medical reasons (e.g. age related macular degeneration, dyslexia).

Filters provided to enhance visibility of traffic lights and other optical signals.

Filters provided to enhance visibility of (particularly coloured) objects in (particularly coloured) environment, e.g. tennis or golf balls.

G02C 7/105**{having inhomogeneously distributed colouring}****Definition statement***This place covers:*

Filters having only portions tinted or different colour in different portions, e.g. top dark - bottom light.

G02C 7/107**{Interference colour filters}****Definition statement***This place covers:*

Spectral transmissivity achieved by interference layers.

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

Interference filters in general	G02B 5/28
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G02C 7/108**{Colouring materials}****Definition statement***This place covers:*

Ophthalmic filters characterized by their colouring material (dyes, pigments).

References***Limiting references****This place does not cover:*

Photochromic filters	G02C 7/102
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Informative references

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

Dyes, pigments	C09
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G02C 7/12**Polarisers****Definition statement**

This place covers:

Polarizing filters for ophthalmic purposes, e.g. sun protection.

References**Informative references**

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

Testing stereoscopic vision	A61B 3/08
Optical elements made of polarizing materials	G02B 1/08
Polarizing elements per se	G02B 5/30
Optical systems for producing stereoscopic or other 3D effects involving polarizing means	G02B 30/25
Stereoscopic photography by simultaneous viewing using polarized or coloured light	G03B 35/26
Using polarisation multiplexing	H04N 13/337

G02C 7/14**Mirrors; Prisms****Definition statement**

This place covers:

Prisms for treating/correcting strabismus.

Prisms, mirrors for deviating the line of sight, e.g. for looking rearwardly, for looking horizontally when lying in bed.

References**Informative references**

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

Mirrors per se	G02B 5/08
Mounts for prisms and mirrors	G02B 7/18

G02C 7/16

Shades; shields; Obturators, e.g. with pinhole, with slot {([G02C 5/003](#) takes precedence)}

Definition statement

This place covers:

Shielding elements in the optical path.

Side and top shields only if arranged for limiting the field of view.

References

Limiting references

This place does not cover:

Shooting or aiming glasses comprising such elements	G02C 5/003
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Informative references

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

Iris patterns and pin holes on contact lenses	G02C 7/041
Side shields for protection of the eyes (not in the optical path)	G02C 11/12
Diaphragms per se	G02B 5/005

Special rules of classification

Side and top shields if arranged for limiting the field of view: add [G02C 11/00](#)

pin holes (stenopaedic aperture) on contact lenses: add [G02C 7/046](#).

G02C 7/165

{with stenopaedic apertures}

Definition statement

This place covers:

Aperture(s) producing a depth of field effect.

G02C 9/00

Attaching auxiliary optical parts (auxiliary optical parts per se
[G02C 7/08](#) - [G02C 7/16](#))

Definition statement

This place covers:

Attachments of any auxiliary lens or system of [G02C 7/086](#) or [G02C 7/088](#)

mounting corrective or protective lenses in goggles, diving masks, helmets,

attaching head mounted displays [HMD].

References

Informative references

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

Spectacles allowing access to the eye	G02C 5/003
Auxiliary parts per se	G02C 7/08 - G02C 7/16
HMDs per se	G02B 27/017

G02C 11/00

Non-optical adjuncts; Attachment thereof ([G02C 7/16](#) takes precedence)

Definition statement

This place covers:

Specially adapted (parts of) spectacles for mounting or integrating or having mounted or integrated additional elements without optical function (for the eye):

- Protection for the ears (sound and sun), nose, mouth, protection against radio frequency radiation;
- Cameras mounted to the frame;
- Retroreflective elements;
- Devices for holding articles e.g. Pencil;
- Devices for retaining the hair;
- Devices for delivering air or medical gaseous compositions to the nose or the eyes;
- Devices for delivering ophthalmic solutions to the eyes;
- Tools, e.g. Bottle opener;
- Devices for dispensing perfumes, crèmes (cosmetic, medical), etc. To the face;
- Anti theft devices;
- Means for preventing wrinkles

Relationships with other classification places

[G02C 3/00](#) and subgroups concern devices for supporting spectacles.

[G02C 11/00](#) and subgroups concern devices supported by spectacles.

Whereas [G02C 11/00](#) concerns specially adapted (parts of) spectacles for mounting or integrating or having mounted or integrated non optical adjuncts, the non optical adjuncts themselves are classified in their respective groups (see e.g. the informative references in the subsequent sub-groups).

References

Limiting references

This place does not cover:

Shields, shades, obturators in the optical path of the eye	G02C 7/16
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Informative references

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

Special temple ends, e.g. for providing improved fit	G02C 5/143
Protection for the ears per se	A61F 11/06

Anti theft devices for spectacles per se	E05B 73/0035
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Special rules of classification

This group is only used if the spectacles comprise particular features enabling the attachment or integration of the non-optical adjunct (exception [G02C 11/08](#)).

G02C 11/02

Ornaments, e.g. exchangeable

Definition statement

This place covers:

Specially adapted (parts of) spectacles for attaching or having attached decorative or ornamental elements (frequently exchangeably).

G02C 11/04

Illuminating means

Definition statement

This place covers:

Specially adapted (parts of) spectacles for attaching or having attached illuminating means or lasers for pointing and aiming.

References

Limiting references

This place does not cover:

(indicator) lights of electronic devices integrated in spectacles	G02C 11/06 , G02C 11/10
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G02C 11/06

Hearing aids (construction of hearing aids [H04R 25/00](#))

Definition statement

This place covers:

Specially adapted (parts of) spectacles for attaching or having attached a hearing aids.

References

Informative references

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

Microphone arrays	H04R 1/406
Hearing aids per se	H04R 25/00

G02C 11/08

**Anti-misting means, e.g. ventilating, heating ([H05B 3/84](#) takes precedence);
Wipers**

Definition statement

This place covers:

Specially adapted (parts of) spectacles for attaching or having attached:

- Means to prevent fogging.
- Means for cleaning the lenses during wearing.
- Means other than shields to protect the eyes from dust or pollen, e.g. By ventilating, sealing.
- Sealing means, attachments on the rear side of the frame front or the lenses.

References

Limiting references

This place does not cover:

Heating arrangements specially adapted for transparent or reflecting areas	H05B 3/84
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Informative references

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

Wipers for helmets	A42B 3/26
Ventilation for goggles	A61F 9/028
Wipers for goggles	A61F 9/029

G02C 11/10

{Electronic devices other than hearing aids}

Definition statement

This place covers:

Specially adapted (parts of) spectacles for attaching or having attached any electronic device other than hearing aids, e.g. audio, radio, wireless devices, mp3, telephone, memory sticks, USB-devices, etc.

References

Limiting references

This place does not cover:

Electronic devices for controlling electro-optic elements used as auxiliary lenses and filters	G02C 7/08 , G02C 7/101
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G02C 11/12

{Side shields for protection of the eyes}

Definition statement

This place covers:

Side shields, top shields for protection against sun, dust, wind, etc.

Integral with the frame or attached thereto.

References

Informative references

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

Shields, shades, obturators in the optical path	G02C 7/16
Goggles, additional functions	A61F 9/029
Eye shades or visors for eye masks	A61F 9/045

Special rules of classification

If the side or top shields are (also) intended to limit the field of view, add [G02C 7/16](#)

G02C 13/00

Assembling (producing spectacle frames from plastics or from substances in a plastic state [B29D 12/02](#)); Repairing; Cleaning (disinfection or sterilisation of contact lenses [A61L 12/00](#))

Definition statement

This place covers:

Assembling, repairing, cleaning, measurements required for fitting of spectacles.

Computer assisted measurements for fitting or selecting of spectacle frames.

Protecting spectacles or parts thereof during assembling, repairing, cleaning.

Protecting spectacles or parts thereof during other procedures(e.g. during hair colouring).

References

Informative references

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

Cases for contact lenses	A45C 11/005
Cases for spectacles	A45C 11/04
Show cases and stands for selling spectacles	A47F 7/021
Disinfection or sterilisation of contact lenses	A61L 12/00
Cleaning in general	B08B
Grinding, polishing, edging of lenses drilling holes in lenses and instruments therefor	B24B 9/14
Moulding of plastics lenses	B29D 11/00009

Manufacture of plastics frames	B29D 12/02
Compositions for cleaning of contact lenses and spectacle lenses	C11D 3/0078
Cleaning of optical elements in general	G02B 27/0006

G02C 13/001

{Assembling; Repairing}

Definition statement

This place covers:

Maintenance, mounting tools.

Devices for supporting during assembling and repairing.

Apparatus for fitting eyewear (e.g heaters, tools).

G02C 13/003

{Measuring during assembly or fitting of spectacles}

Definition statement

This place covers:

Measuring geometrical and mechanical parameters required for fitting lenses:

instruments for measuring geometrical parameters of spectacles (length of temples, width of bridges, optometrists' ruler, etc.)

Centering of lenses in the frame

Testing spectacles without involving the designated wearer

Aids for trying spectacles, test lens holder used when trying spectacles

Measuring facial proportions

Measuring geometrical parameters for aligning the lenses in the frame

Computer assisted measuring and simulations for fitting (may additionally include remote selling, simulation of user's face wearing spectacles, computer assisted choice of frames, frame portions and lens colours)

References

Limiting references

This place does not cover:

Instruments for determining the shape of frames	G01B 5/20 , G01B 7/08
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Informative references

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

Simulation of view through lenses	G02C 7/024
Testing optical elements	G01M 11/00

Data processing for shopping, remote ordering	G06Q 30/0601
Combining figures (for overlaying images of face and spectacles frame)	G06T 11/60

G02C 13/005

{Measuring geometric parameters required to locate ophtalmic lenses in spectacles frames (apparatus for testing or instruments for examining the eyes per se [A61B 3/00](#); machines or devices and accessories for grinding the edges of lenses using spectacles as a template [B24B 9/144](#))}

Definition statement

This place covers:

Measuring geometrical, mechanical parameters of the human head and eyes with respect to the spectacles frame required for alignment of the lenses with respect to the eye:

Inclination, pantoscopic angle, wrap angle

Pupil position with respect to the frame

Direction of view, vertical, horizontal view angles

Measuring and calculating cornea-vertex, vertex-center of rotation distance

Photographic and related methods therefor

Measuring interpupillary distance

References

Informative references

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

Measurements of geometric parameters of the spectacles frame	G02C 13/003
Measuring facial proportions	G02C 13/003
Testing eyes	A61B 3/00
Instruments for measuring the interpupillary distance	A61B 3/111
Instruments for measuring the diameter of the pupils	A61B 3/112
Measuring the human body	A61B 5/103
Devices for grinding the edges of lenses using a lens or a spectacle frame as a template	B24B 9/144
Positioning or marking of lenses (in preparation of edging)	B24B 13/005

Special rules of classification

Instruments for measuring the interpupillary distance are classified in [G02C 13/005](#) as well as [A61B 3/111](#)

G02C 2200/00

**Generic mechanical aspects applicable to one or more of the groups
G02C 1/00 - G02C 5/00 and G02C 9/00 - G02C 13/00 and their subgroups**

Definition statement

This place covers:

Aspects relating to the spectacles frame occurring in various frame portions and/or not constituting per se an individual constructional concept

Special rules of classification

Do not use [G02C 2200/00](#) but only its subgroups.

Do not use the subgroups of [G02C 2200/00](#) alone but only in combination with at least one of groups [G02C 1/00](#) - [G02C 5/00](#) and [G02C 9/00](#) - [G02C 13/00](#) and their subgroups.

G02C 2200/02

Magnetic means

Definition statement

This place covers:

Magnetic element for connecting parts of a frame or for attaching auxiliary elements.

G02C 2200/04

Junctions between frame elements having a click function

Definition statement

This place covers:

Member providing the click function being part of one of the elements to be joined.

G02C 2200/06

Locking elements

Definition statement

This place covers:

Individual element for locking a junction of frame parts, the locking element not being a part or integral with the frame parts to be joined:

Locking element in elastic hinges;

Screw locking element;

Locking elements in modular frames.

G02C 2200/08

Modular frames, easily exchangeable frame parts and lenses

Definition statement

This place covers:

Elements of the frame or lenses can easily be changed without requiring tools or special skills, kits of elements.

Frames or portions made of variably combinable modules.

G02C 2200/10

Frame or frame portions made from wire

Definition statement

This place covers:

Frequently metal.

G02C 2200/12

Frame or frame portions made from sheet type material

Definition statement

This place covers:

E.g. metal, card board.

G02C 2200/14

Laminated frame or frame portions

Definition statement

This place covers:

Frame portions or elements comprising laminated or layered structure.

G02C 2200/16

Frame or frame portions made from rubber

Definition statement

This place covers:

Frame or portions made from elastic (compressible or expandable) material such as rubber or other elastomer.

G02C 2200/18

Adjustment ridges or notches

Definition statement

This place covers:

Moveable junctions between frame portions (e.g. hinges, telescopic temples, inclination adjustment) comprising ridges, notches, stripes, teeth, for temporarily locking the junction in at least two discrete angular or linear positions.

G02C 2200/20

Friction elements

Definition statement

This place covers:

Frame elements or portions (junctions) comprising frictionally cooperating features.

G02C 2200/22

Leaf spring

Definition statement

This place covers:

Leaf spring or bent coil in hinges, elastic hinges, nose pads, temples, front frames, bridges of clip-ons, etc.

G02C 2200/24

Coil spring pulled upon actuation

Definition statement

This place covers:

Coil spring extended when actuated, in elastic hinges (temple over-opened), adjustable temples, in bridges of clip-ons, closure of rims, non optical adjuncts.

G02C 2200/26

Coil spring pushed upon actuation

Definition statement

This place covers:

Coil spring compressed when actuated in elastic hinges (temple over-opened), adjustable temples in bridges of clip-ons, non optical adjuncts.

G02C 2200/28**Coil spring twisted upon actuation****Definition statement**

This place covers:

Coil spring twisted when actuated in elastic hinges (temple over-opened), bridges of clip-ons, bridges of pince-nez.

G02C 2200/30**Piston****Definition statement**

This place covers:

Piston shaped element for actuating a coil spring, used in elastic hinges, collapsible frames, length adjustable temples.

G02C 2200/32**Oblong hole****Definition statement**

This place covers:

Non-circular hole for particular function, for mounting ornaments, in hinges for displacing the hinge axis, etc.

G02C 2202/00**Generic optical aspects applicable to one or more of the subgroups of [G02C 7/00](#)****Definition statement**

This place covers:

Aspects relating to the optical elements occurring in various types of lenses or other optical element and/or not constituting per se an individual constructional concept.

Special rules of classification

Do not use [G02C 2202/00](#) but only its subgroups.

Do not use the subgroups of [G02C 2202/00](#) alone but only in combination with at least one of the subgroups of [G02C 7/00](#).

G02C 2202/02**Mislocation tolerant lenses or lens systems****Definition statement**

This place covers:

Tolerance with respect to mutual misalignment of lens surfaces .

Tolerance with respect to lateral misalignment of contact lenses on the cornea.

Tolerance with respect to astigmatism axis angular misorientation of contact lenses on the cornea.

G02C 2202/04

Lenses comprising decentered structures

Definition statement

This place covers:

Decentered front and back surfaces (e.g. contact lenses, progressive lenses).

Contact lenses decentered with respect to the eye.

Contact lenses having optical regions decentered with respect to the perimeter of the lens.

Contact lenses having mutually decentered optical regions.

G02C 2202/06

Special ophthalmologic or optometric aspects

Definition statement

This place covers:

Disclosure relating to ophthalmologic or optometric issues in general.

G02C 2202/08

Series of lenses, lens blanks

Definition statement

This place covers:

Series of lenses having a common concept, property or parameter, relations between such parameters.

Semi-finished lenses (blanks) from which representatives of such series can be manufactured.

G02C 2202/10

Optical elements and systems for visual disorders other than refractive errors, low vision

Definition statement

This place covers:

Lenses and lens systems particularly designed for vision impaired persons suffering from visual deficiencies other than those related to imaging: loss of field of view, macula degeneration, brain disorders, psychological disorders, etc.

G02C 2202/12

Locally varying refractive index, gradient index lenses

Definition statement

This place covers:

Lenses having a permanent local index variation, in monofocal as well as (multifocal) progressive lenses.

G02C 2202/14

Photorefractive lens material

Definition statement

This place covers:

Lenses made from material the index of which is (permanently) adjustable by irradiation, light adjustable material.

G02C 2202/16

Laminated or compound lenses

Definition statement

This place covers:

Lenses having laminated or layered structure, compound lens elements.

G02C 2202/18

Cellular lens surfaces

Definition statement

This place covers:

Layer of cellular compartments (microcups) filled with substances having particular optical properties, e.g. liquid crystal material having electrically controllable optical index or photochromic material.

G02C 2202/20

Diffraction and Fresnel lenses or lens portions

Definition statement

This place covers:

Ophthalmic lenses having a diffractive or Fresnel structure on at least a portion of at least one of its surfaces or sandwiched between two lens elements.

G02C 2202/22

Correction of higher order and chromatic aberrations, wave front measurement and calculation

Definition statement

This place covers:

Correction for higher order aberrations of the lens and/or of the eye (spherical aberration, koma, oblique astigmatism) description by conicals, polynomials, Zernicke polynomials, Seidl polynomials.

Correction of chromatic aberrations of the lens and/or of the eye.

G02C 2202/24

Myopia progression prevention

Definition statement

This place covers:

Lenses for inhibiting the progression of myopia or other ametropia.