

CLASS 355, PHOTOCOPYING**SECTION I - CLASS DEFINITION****GENERAL STATEMENT OF THE CLASS SUBJECT MATTER**

A. This class provides for apparatus and methods for photographically copying information from an original or carrier that is not classified elsewhere, generally employing a concentrated source of light and an image receiving medium with a photosensitive emulsion surface.

B. Various plural and composite types of copies are included such as those involving plural projected images including multicolor and duplex.

C. Copies selective at the operator's choice are also included where one original of a group of similar originals may be selected for copying.

D. Certain combinations, subcombinations and perfecting features are included such as with film developing or severing, with temperature control, and with a viewing screen. Included also are subcombinations which are peculiar to copies such as holders for the original or photosensitive paper. The class also contains improvement in particular elements of or their relationship to the copies when the elements are claimed in combination with other photographic copying structure. These improvements may be in filters, shutters, gates, reflectors, lens mounts, condensers, or means to convey the original.

E. Methods of copying are also provided for here where all the steps are for copying a sheet film strip.

SECTION II - LINES WITH OTHER CLASSES AND WITHIN THIS CLASS**PHOTOCOPYING APPARATUS CLASSIFIED ELSEWHERE**

Xerographic copying methods and apparatus which utilize invisible radiation, for infrared or thermal image document pattern copying methods or apparatus, and methods and apparatus to expose by invisible radiant energy a recording detector are classified elsewhere. Copying structure or methods including specific chemical emulsions on the photosensitive paper are classified elsewhere. Copying which includes the use of a motion picture camera or a motion picture projector is provided

for elsewhere. However, this class, 355, has means for copying motion picture film which does not include such motion picture camera or projector. (See References to Other Classes, below.)

PHOTOCOPYING APPARATUS COMBINED WITH OTHER STRUCTURE AND CLASSIFIED ELSEWHERE

Patents which claim apparatus for photographing plural images such as an object and a carrier (e.g., an identification card) are classified elsewhere. Photocopying which includes forming a television image where a detailed cathode-ray tube is claimed; where only a nominal cathode-ray tube is set forth is classified elsewhere. The combination of a detailed register with a broadly or specifically claimed copier is classified elsewhere. (See References to Other Classes, below.)

PHOTOCOPYING SUBCOMBINATIONS CLASSIFIED ELSEWHERE

Film advancing mechanisms where no more than a nominal optical or photocopying element is claimed is classified elsewhere. Photographic lights and projection lights, per se, are elsewhere. Sheet feeding or delivering means where no specific optical or photographic structure is set forth is classified elsewhere. Lenses, reflectors, and optical filters are provided for elsewhere.

SECTION III - REFERENCES TO OTHER CLASSES**SEE OR SEARCH CLASS:**

- 226, Advancing Material of Indeterminate Length, especially subclasses 52+ for film advancing means in a copier where no more than one optical element is claimed and where no detailed optics is recited. (See Lines With Other Classes and Within This Class, "Photocopying Subcombinations Classified Elsewhere," above.)
- 235, Registers, for the combination of a detailed register with a broadly or specifically claimed copier. See the first paragraph of the Class 235 definitions. (Lines With Other Classes and Within This Class "Photocopying Apparatus Combined With Other Structure and Classified Elsewhere.")
- 242, Winding, Tensioning, or Guiding, subclasses 324+ for unwinding and rewinding a machine convertible information carrier; e.g., an image film, with no more than a typical relationship

- between an optical system and the unwinding/rewinding, and subclasses 520+ for convolute winding of an elongated material of general use.
- 250, Radiant Energy, subclass 315.3 provides for xerographic copying methods and apparatus which utilize invisible radiation, subclass 317.1 provides for infrared or thermal image document pattern copying methods or apparatus, and subclasses 580+ for methods and apparatus to expose by invisible radiant energy a recording detector. (Lines With Other Classes and Within This Class, "Photocopying Apparatus Classified Elsewhere.")
- 271, Sheet Feeding or Delivering, for a sheet feeding or delivering subcombination where no specific optical or photographic structure is set forth.
- 345, Computer Graphics Processing and Selective Visual Display Systems, subclasses 467 through 472.3 for character font generation.
- 346, Recorders, subclasses 107.1+ for light or beam recording of phenomenon.
- 346, Recorders, for patents which claim apparatus for photographing plural images such as an object and a carrier (e.g., an identification card). (Lines With Other Classes and Within This Class "Photocopying Apparatus Combined With Other Structure and Classified Elsewhere.")
- 347, Incremental Printing of Symbolic Information, subclasses 112+ for electrostatic marking, subclasses 224+ for light or beam marking apparatus or processes.
- 352, Optics: Motion Pictures, for photocopying apparatus and methods involving a motion picture camera or motion picture projector. (Lines With Other Classes and Within This Class "Photocopying Apparatus Classified Elsewhere.")
- 358, Facsimile and Static Presentation Processing, subclasses 1.1 through 1.18 for data processing for static presentation on fixed medium (e.g., for printer).
- 359, Optical: Systems and Elements, for lenses in subclasses 642+, reflectors in subclasses 838+ and optical filters in subclasses 885+. (See Lines With Other Classes and Within This Class, "Photocopying Subcombinations Classified Elsewhere," above.)
- 362, Illumination, subclass 3 and 257 for photographic and projection light source subcombinations which may include condenser lenses having no other photocopying structure. (See Lines With Other Classes and Within This Class, "Photocopying Subcombinations Classified Elsewhere," above.)
- 386, Motion Video Signal Processing for Recording or Reproducing, appropriate subclasses for recording television or video signal.
- 396, Photography, appropriate subclasses and particularly subclasses 322+ for patents which claim apparatus for photographing plural images such as an object and a carrier (e.g., an identification card) and subclasses 429+ for a nominal or broadly recited cathode-ray tube upon which a television image of an original is formed and then photographed. (Lines With Other Classes and Within This Class, "Photocopying Apparatus Combined With Other Structure and Classified Elsewhere.")
- 430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof, appropriate subclasses for radiation imagery chemistry, process, composition, or product.
- 430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof, for copying structure or methods including specific chemical emulsions on photosensitive paper. (Lines With Other Classes and Within This Class "Photocopying Apparatus Classified Elsewhere.")
- 715, Data Processing: Presentation Processing of Document, Operator Interface Processing, and Screen Saver Display Processing, subclasses 200 through 277 for document processing performed by a computer for presentation, and subclasses 700-866 for operator interface processing.

SECTION IV - GLOSSARY

CARRIER

- (a) The element that contains the original image to be imaged onto a receiver. The carrier is commonly a photographic negative, but may be a positive, a document, a book page, etc.; and (b) a substance in electrophotographic developer which conveys a toner material to a copy substrate but which does not, itself, become a part of the developed copy.

CONCENTRATED LIGHT SOURCE

The source of illumination for the copier. It is usually a projection lamp but may be a lens or mirror system utilizing sunlight.

CONDENSING LENS

A lens or combination of lenses used to gather light from a source and converge (condense) it onto an image plane.

COPYING CAMERA OR PROJECTION PRINTER

Apparatus for projecting an image of an original, by passing light through or around the original or reflecting light from the original, onto a photosensitive recording surface for the purpose of making a copy of the original. The image is usually enlarged or reduced in size with reference to the original. A copying camera or projection printer generally includes (a) a concentrated light source from either an artificial or natural emanation, (b) a condensing lens or other light paralleling element, (c) a holding or positioning device for the original, (d) a projection objective or projection lens system for directing light after it passes through or is reflected from the original to form an image, (e) a holder for the photosensitive medium which receives the image, and (f) opaque structure to keep unwanted light from reaching the photosensitive medium. The cameras or projectors in this class utilize artificial or natural light within the visible spectrum. The original to be projected is planar in nature with the plane extending transverse to the direction of projection, and may be transparent or opaque. The planar original is usually in the form of flexible film and may be caused to take a curved form in the original holder or film gate. In operation the original is positioned outside one focal plane of the projection lens system and an image is formed on a photosensitive medium outside the opposite focal plane of the projection lens system. The closer the original is to one focal plane the farther the image will be from the other focal plane, and the bigger the image will be. In the camera or projector, the relative positioning of the object is usually obtained by moving the projection lens system and adjusting its focal length rather than by changing the position of the original.

FILM STRIP

An indeterminate length of film having either a plurality of images thereon or enough space for a plurality of images.

IMAGE

The representation of an object (original or carrier) produced by the transmission or reflection of light incident upon the original or carrier.

IMAGE, LATENT

The invisible image produced by the action of light alone or with other electrostatic charge producing means on, or in, a photoreceptor. A latent image may be made visible by development.

LIGHT SOURCE

The source of illumination for the copier. It includes filters, reflectors, screens and other light modifiers used to affect the spectral distribution, spatial distribution and intensity of the illumination.

MACHINE

A complete unit in itself for imaging an original or carrier onto a receiver. It may also include means for developing, transferring and fixing the image, as well as means for handling the record carrier on which the image is fixed.

MASTER

(a) The negative or positive original from which reproductions are made; (b) a microform copy which is used for the production of copies; or (c) a copy from which additional reproductions are made.

NEGATIVE

A visible image on a copy material in which the dark portions of an original appear light and the light portions appear dark.

ORIGINAL

Any object from which a copy is made by forming an image thereof on a photoreceptor.

PHOTORECEPTOR

A medium which changes its chemical or mechanical properties when exposed to light. This term includes photosensitive members, etc.

PLATEN

A flat or curved piece of rigid material on or against which an original is placed for imaging the original onto a photoreceptor.

PROJECTION OBJECTIVE OR PROJECTION LENS SYSTEM 2

A lens or lens systems used to optically form an image of an original onto a sensitized surface, viewing screen, or other image plane with or without magnification or reduction of the original in the image plane.

PROJECTION PRINTER

See Copying Camera, defined herein.

RECEIVER

The light sensitive element onto which the image from the carrier is recorded.

TONER

A material, e.g., finely divided (usually thermoplastic) powder, or pigmented polymer particles, an ink, or magnetic particles, used in electrostatic processes to make visible a latent image and which is treated, e.g., fused, dried, etc., to render the image permanent. It may include or exclude a carrier element.

SUBCLASSES**1 INCLUDING FIBER OPTICS:**

This subclass is indented under the class definition. Subject matter wherein the coping device includes one or more transparent elongated structures (e.g., fibers, rods, or pipes) to transmit light rays from one point to another (usually from the original to the photosensitive medium) by internal reflections or modal transmission.

SEE OR SEARCH CLASS:

- 348, Television, subclasses 197, 359, and 804 for fiber optics utilized with television systems.
- 358, Facsimile and Static Presentation Processing, subclasses 484 and 901.1 for fiber optics or optical waveguides utilized with facsimile systems.
- 385, Optical Waveguides, appropriate subclasses for fiber optics structure, per se.

HOLOGRAM, SEISMOGRAM, GRAPH OR SCALE COPYING:

This subclass is indented under the class definition. Subject matter wherein the device is adapted to produce precision photographic copies of a master hologram, seismogram, graph or scale; the master being on a sheet or strip of paper or film.

- (1) Note. This subclass provides for copying by image projection or contact printing. However, where a mechanical means controls structure to project a mere spot or line of light on a light sensitive material the device is classified in Class 396, Photography, subclass 548. Subclasses 429+ in Class 396 provide for a camera combined with a diverse art device.

SEE OR SEARCH CLASS:

- 33, Geometrical Instruments, for seismogram, graph or scale copying which includes scribing.
- 396, Photography, subclass 548 for means to project a mere spot or line of light on a light sensitive material and subclasses 429+ for a camera combined with a diverse art device.

18 PROJECTION PRINTING AND COPYING CAMERAS:

This subclass is indented under the class definition. Subject matter including an apparatus or a method for projecting an image of an original, by passing light through or around the original or reflecting light from the original, on a photosensitive recording surface for the purpose of making a copy of the original; the image is usually enlarged or reduced in size with respect to the original and the apparatus contains a projection lens or lens system for forming the image.

- (1) Note. See the Glossary in Class Definition of this class (355) for further explanation of how a Copying Camera or Projection Printer operates.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 1, for photocopying involving fiber optics.

- 2, for photocopying a halogram, seismogram, graph, or scale.
- 133, for means to photocopy an original where the original and photosensitive paper are spaced apart (i.e., not contact printing) but where there is no lens between them.

SEE OR SEARCH CLASS:

- 226, Advancing Material of Indeterminate Length, especially subclasses 52+ for film advancing means in a copy camera where no more than one optical of photocopying element is claimed and where no detailed optical or photocopying element is recited.
- 235, Registers, for a detailed register in combination with a broadly or specifically claimed copying camera.
- 242, Winding, Tensioning, or Guiding, subclasses 324+ for unwinding and rewinding a machine convertible information carrier; e.g., an image film, with no more than a typical relationship between an optical system and the unwinding/rewinding, and subclasses 520+ for convolute winding of an elongated material of general use.
- 250, Radiant Energy, subclass 317.1 for document copies using infrared or thermal patterns of the document on a copy paper, and subclasses 580+ for methods and apparatus to expose a recording detector to invisible radiation patterns generally.
- 271, Sheet Feeding or Delivering, for a sheet feeding or delivering subcombination where no specific optical or photographic structure is set forth.
- 346, Recorders, subclasses 107.1+ for phenomenal information optical recorders, and particularly subclass 107.2 for such apparatus including a camera.
- 347, Incremental Printing of Symbolic Information, subclasses 224+ for apparatus or processes using light or beam for printing the information.
- 352, Optics: Motion Pictures, for photocopying, apparatus and methods involving a motion picture cameras or a motion picture projector.

- 359, Optical: Systems and Elements, for lenses in subclasses 642+, reflectors in subclasses 838+, and optical filters in subclasses 885+.
- 362, Illumination, subclasses 3 and 257 for photographic and projection light source subcombinations, which may include condenser lenses having no other projection printing structure.
- 386, Motion Video Signal Processing for Recording or Reproducing, subclass 342 for utilizing CRT or beam of light for recording television or video signal on a medium.
- 396, Photography, appropriate subclasses and particularly subclasses 322+ for plural image recording and subclasses 429+ for a nominal or broadly recited cathode-ray tube upon which a television image of an original is formed and then photographed.
- 399, Electrophotography, subject matter under subclass 364 for duplex copying where an electrophotographic copying apparatus is employed.
- 430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof, appropriate subclasses for photocopying involving chemical process or materials.

19 Combined with or convertible to a contact printer:

This subclass is indented under subclass 18. Subject matter in combination with means to copy film or sheets by contact printing or wherein parts are relatively movable or interchangeable to convert the projection printer to a contact printer.

- (1) Note. This subclass does not provide for mere subcombinations, such as means to control light intensity, which are useful in both projection and contact printing. Patents of this type are classified in the appropriate projection printing subclasses below.
- (2) Note. This subclass does not provide for patents which set forth a projection and a contact printing species. Such patents are classified in the appropriate projection printing subclass below and cross

referenced in the appropriate contact printing subclass.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

78+, for contact printing apparatus, per se.

- 20 With cathode ray tube for light source:**
This subclass is indented under subclass 18. Subject matter including a cathode-ray tube for illuminating the original to be copied.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

81, for contact printing with scanning for contrast control.

84, for contact printer utilizing scanning means.

SEE OR SEARCH CLASS:

386, Motion Video Signal Processing for Recording or Reproducing, subclass 342 for utilizing CRT or beam of light for recording television or video signal on a medium.

- 21 Collapsible or portable:**
This subclass is indented under subclass 18. Subject matter wherein the device has a handle or is collapsible into a compact unit for carrying by a person.

- 22 Stereoscopic:**
This subclass is indented under subclass 18. Subject matter wherein the device is adapted to copy pairs of individual picture elements having separate perspectives corresponding to the perspectives offered by the right and left eyes of a viewer.

SEE OR SEARCH CLASS:

396, Photography, subclasses 324+ for a system for stereoscopically photographing plural images in general.

399, Electrophotography, subject matter under subclasses 177+ for electric photographic apparatus utilizing optical scanning.

- 23 Copying both sides of original:**
This subclass is indented under subclass 18. Subject matter wherein the device is particularly adapted for copying the obverse side and

the reverse side of the original strip, page, or sheet.

- 24 Duplex:**
This subclass is indented under subclass 23. Subject matter wherein the device includes a plurality of optical paths for simultaneously copying the obverse and the reverse sides of the original on either one or on a plurality of photosensitive sheets or strips.

- 25 Book page copying:**
This subclass is indented under subclass 23. Subject matter wherein the copier is adapted to copy information from the pages of books and usually includes means to hold the pages flat during photographing thereof.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

82, for book page copier of the contact printing type.

- 26 Photographing on both sides of photo-sensitive paper:**
This subclass is indented under subclass 18. Subject matter wherein the device is particularly adapted to photograph complete pictures on the obverse side and the reverse side of photographic paper which is light sensitive on both sides.

(1) Note. The pictures on the two sides must be complete in themselves and not cooperate with each other to form a composite picture as may be true in some of the patents in subclasses 32+ below.

(2) Note. The picture images may be focused on the two sides of the paper either simultaneously or successively and the picture on the reverse side may be either the same or different from the picture on the obverse side.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

23+, for a device for copying both sides of an original on both sides of a photo-sensitive paper.

- 27 With developing:**
This subclass is indented under subclass 18. Subject matter including means to develop the exposed photosensitive film, usually by immersing it in a solution which chemically reacts therewith to form a visible image of the original on the film.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
100, for contact printing machines with flat exposure station including developing processing means.
106, for contact printing machines with curved exposure station including developing processing means.
- SEE OR SEARCH CLASS:
399, Electrophotography, subject matter under subclasses 233+ for electric photographic apparatus utilizing liquid development.
- 28 And film severing:**
This subclass is indented under subclass 27. Subject matter including means to perforate, cut, crop, punch or notch the film.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
29, for projection printing and copying cameras with film severing means.
- SEE OR SEARCH CLASS:
399, Electrophotography, subject matter under subclasses 385+ for electric photography apparatus with cutting means for the image carrier.
- 29 With film severing:**
This subclass is indented under subclass 18. Subject matter including means to perforate, cut, crop, punch, or notch the film.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
28, for a copier with both film severing and developing means.
- SEE OR SEARCH CLASS:
83, Cutting, for the subcombination of a paper or film cutting device.
- 399, Electrophotography, subject matter under subclasses 385+ for electric photography apparatus with cutting means for the image carrier.
- 30 With temperature or foreign particle control:**
This subclass is indented under subclass 18. Subject matter including means to heat, cool, or ventilate any part of the projection or photographing system; or including means to prevent moisture, dust or other foreign matter from coming in contact with the projection or photographing system or including means to remove such foreign matter from the projection or photographing system.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
52, for a copier having means to compensate for dust or scratches on the original.
- 31 Copying sound record:**
This subclass is indented under subclass 18. Subject matter wherein the copying device is especially adapted to copy a sound record which is on an original document or film onto photosensitive material.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
98, for contract printing machines with sound track printing means.
- SEE OR SEARCH CLASS:
369, Dynamic Information Storage or Retrieval, subclasses 84+ for dynamic duplication of a sound track.
- 32 Multicolor picture:**
This subclass is indented under subclass 18. Subject matter including means to copy a composite picture which is made up of a set of pictures wherein the color of each picture of the set is different from the color of the other picture of the set and wherein each picture of the set is copied on separate portions of a film or wherein the pictures are copied on an emulsion having parts which are sensitive only to certain wave lengths of light.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

22, for devices for copying stereoscopic pictures wherein one picture of a stereo pair is a different color than the other picture of the pair.

88, for multicolor contact printers.

SEE OR SEARCH CLASS:

399, Electrophotography, subject matter under subclasses 223+ for electrophotographic apparatus utilized for multiple color developing.

33 Lenticular film:

This subclass is indented under subclass 32. Subject matter wherein either the original or the photosensitive paper is a lenticular film.

SEE OR SEARCH CLASS:

353, Optics: Image Projectors, subclass 32 for an image projector for projecting images from lenticular film.

34 Including detailed diaphragm:

This subclass is indented under subclass 33. Subject matter including detailed structure for limiting the size or shape of the aperture of the optical system.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

71, for a projection printing or copying camera with diaphragm in the illumination system.

35 Regulating light intensity or exposure time:

This subclass is indented under subclass 32. Subject matter wherein the intensity of the light reaching the light sensitive paper is variable, wherein the time interval during which light reaches the photosensitive paper is variable, wherein the contrast of relative brightness of a portion of the picture or margin is regulated in accordance with other portions, or wherein the relative brightness of the various colors (color balance) is controlled.

(1) Note. This subclass provides for copiers having a claimed shutter, adjustable diaphragm, diffraction grating, multicolor filter, variable or neutral density filter, a filter selectively placed in the light path,

and means to vary the length of time a filter is in the light path. The subclass does not include a copier having a mere stationary color filter or unadjustable diaphragm but is in parent subclass 32 above.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

83, for a contact printer with light monitoring exposure control means.

115, for contact printer light box structure with exposure timing means.

36 Including electromagnet:

This subclass is indented under subclass 35. Subject matter including an intermittently energized electromagnet which may be termed a solenoid or electrical relay.

(1) Note. The electromagnet usually is employed to move a shutter into and out of the optical path but it may be employed for other purposes in the copy device.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

42, for a projection copier having means to identify, compose, or select which includes an electromagnet.

37 Plural lamps:

This subclass is indented under subclass 35. Subject matter wherein the apparatus includes a plurality of light sources for simultaneous or separate use.

(1) Note. One of the light sources may be spaced from the projector or copier.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

70, for a projection copier illumination means in general utilizing plural lamps.

38 Including:

This subclass is indented under subclass 35. Subject matter including a photocell or photomultiplier tube and related electrical circuitry to detect the intensity of light in some part of the optical path.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 41, for a projection copier in general with identifying, composing, or selecting means including a photocell.
- 68, for a projection copier in general with a photocell or phototube utilized in the illumination system.

39 Tilting:

This subclass is indented under subclass 18. Subject matter including means to photographically record a title or legend on a sheet, slide, or film strip either simultaneously with or at a different time from the recording of the major subject matter.

- (1) Note. This subclass provides for a nominally claimed still camera in combination with means to record a title or legend on the film in the camera. However, a claimed motion picture camera in combination with titling means is provided for in Class 352, Optics: Motion Pictures, subclass 90. This subclass 39 does provide for apparatus designed to record a title on a motion picture film where said apparatus is neither a motion picture camera nor projector.
- (2) Note. This subclass provides for means to record titles, legends, or inscriptions on film. Subclasses 40+ below has devices for designating or identifying film by numbers or codes rather than by using words.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 40, for means to identify film. See (2) Note above.

SEE OR SEARCH CLASS:

- 396, Photography, subclasses 419+ for a photographic support which may be adjustable.

40 Identifying, composing, or selecting:

This subclass is indented under subclass 18. Subject matter including means to make film strip or sheets identifiable by photographing codes, numbers, or symbols thereon; or including means to photograph a plurality of original

parts in superposed or in side by side relationship so that each part contributes a composite photograph; or including means to select or copy certain data from a group of such data.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 29, for a copier with means to notch, punch, or cut a film for identifying it.
- 39, for devices which photograph titles on film strips or sheets.
- 72+, for holders for halftone screens.

SEE OR SEARCH CLASS:

- 340, Communications: Electrical, subclass 146.2 for selective photography devices including means to compare signals.
- 365, Static Information Storage and Retrieval, subclass 127 for reading information into and out of a static storage systems.
- 386, Motion Video Signal Processing for Recording or Reproducing, subclass 342 for utilizing CRT or beam of light for recording television or video signal on a medium.
- 396, Photography, subclasses 322+ for a camera used to photograph plural images on a photosensitive paper and subclasses 549+ for phototypographs which include means to select letters to form words and sentences.

41 Including photocell:

This subclass is indented under subclass 40. Subject matter including a photocell and related electrical circuits.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 38, for a multicolor projection copier with means to regulate light intensity or exposure time utilizing a photocell or phototube.
- 68, for a projection copier in general with photocell or phototube means in the illumination system.

42 Including electromagnet:

This subclass is indented under subclass 40. Subject matter including an intermittently energized electromagnet which may be termed a solenoid or electrical relay.

SEE OR SEARCH THIS CLASS, SUBCLASS:

36, for a multicolor projection copier with light intensity or exposure time regulating means including an electromagnet.

43 Including reflector between original and photosensitive paper:

This subclass is indented under subclass 40. Subject matter including a mirror or reflecting prism positioned between the object to be copied and the photographic paper to direct light along the optical path.

(1) Note. For other projection copiers utilizing reflectors in this class, see the subclasses listed under SEARCH THIS CLASS, SUBCLASS in subclass 66.

44 With focusing or projection screen:

This subclass is indented under subclass 18. Subject matter including a sheet which is adapted to render an image of an object which is projected thereon visible for the purpose of photographing the image on the sheet, previewing the image on the sheet which is identical to one that will be projected on a photosensitive paper, or focusing the optical system.

SEE OR SEARCH CLASS:

352, Optics: Motion Pictures, especially subclass 133 for similar structure where either a motion picture projector or a motion picture camera is employed.

399, Electrophotography, subject matter under subclass 158 for electrophotographing devices with reproduced image projection or display of developed image.

45 Reflector in optical path:

This subclass is indented under subclass 44. Subject matter including a mirror or reflecting prism positioned between the object and the photographic paper or the screen to direct light to the screen or to the photosensitive paper.

(1) Note. For other projection copiers utilizing reflectors in this class, see the sub-

classes listed under SEARCH THIS CLASS, SUBCLASS in subclass 66.

46 Plural:

This subclass is indented under subclass 18. Subject matter including a plurality of copiers or a plurality of projection paths for projecting images on photosensitive surfaces or on different areas of a single photosensitive surface.

(1) Note. This subclass includes apparatus having a beam splitter or a plurality of objective lenses for making plural projection paths from a single projection path for projecting images to photosensitive film. However, apparatus including a beam splitter for directing some light to a photocell are in subclass 68 below.

SEE OR SEARCH THIS CLASS, SUBCLASS:

21, for a contact printer in combination with a projection printer or copy camera.

22, for apparatus employed to copy stereoscopic pictures.

24, for copiers which simultaneously copy both sides of a document and have plural optical paths.

26, for a copier having plural optical paths for photographing on both sides of the photosensitive paper.

40+, for apparatus having plural optical paths for making a composite image by superimposing images or by focusing images adjacent each other.

47 Image transferred to or from curved surface:

This subclass is indented under subclass 18. Subject matter wherein the original or the photographic paper is in a curved position in the optical path during copying.

(1) Note. Many of the patents in this subclass relate to distortion introducing or rectifying.

SEE OR SEARCH CLASS:

353, Optics: Image Projectors, subclasses 5+ and 69+ for image projectors having distortion compensating or rectifying means, some of which

projectors are for transferring images to or from a curved surface.

- 48 Original moves continuously:**
This subclass is indented under subclass 47. Subject matter wherein the original moves continuously while an image is being projected therefrom to the photosensitive paper.

SEE OR SEARCH THIS CLASS, SUBCLASS:

50+, for projection copiers in general wherein the original moves continuously.

- 49 Reflector between original and photosensitive paper:**
This subclass is indented under subclass 48. Subject matter including a mirror or reflecting prism positioned between the object to be copied and the photosensitive paper to direct light along the optical path to the photosensitive paper.

(1) Note. For other projection copiers utilizing reflector means see the subclasses listed under SEARCH THIS CLASS, SUBCLASS in subclass 66.

- 50 Original moves continuously:**
This subclass is indented under subclass 18. Subject matter wherein the original moves continuously while an image is being projected therefrom to the photosensitive paper.

SEE OR SEARCH THIS CLASS, SUBCLASS:

48, for a copier for transferring an image to or from a curved surface while the original is moving.

- 51 Reflector between original and photosensitive paper:**
This subclass is indented under subclass 50. Subject matter including a mirror or reflecting prism positioned between the object to be copied and the photosensitive paper to direct light along the optical path to the photosensitive paper.

SEE OR SEARCH THIS CLASS, SUBCLASS:

49, for structure similar to that in this subclass where the image is transferred to or from a curved surface.

- 52 Distortion introducing or rectifying:**
This subclass is indented under subclass 18. Subject matter including means to distort the image transferred to the photosensitive paper, such as magnifying or reducing the image in one direction more than in the other, or including means to correct or compensate for distortion present in the original which is to be copied, such as when the original was taken from an airplane which was at an angle to the earth.

SEE OR SEARCH THIS CLASS, SUBCLASS:

31, for distortion prevention when copying sound recorders.

47+, for distortion prevention or imparting when the image is transferred to or from a curved surface.

50+, for distortion prevention or imparting when the image of a continuously moving original is transferred.

SEE OR SEARCH CLASS:

353, Optics: Image Projectors, subclasses 5+ and 69+ for image projectors having distortion compensation or rectifying means where no camera, copier, or photosensitive paper is claimed.

- 53 Step and repeat:**
This subclass is indented under subclass 18. Subject matter including means to reposition the photosensitive paper relative to the objective lens after each exposure for repeated copying of the same original on either different sheets of photosensitive paper or on different areas of a photosensitive sheet or film.

SEE OR SEARCH THIS CLASS, SUBCLASS:

46+, for devices having a plurality of projection lens for producing plural images on a photosensitive paper.

86+, for contact printers of the step and repeat type wherein a sensitized printing press plate or cylinder is utilized.

95+, for contact printers of the step and repeat type in general.

54 Producing plural rows of pictures on photosensitive paper:

This subclass is indented under subclass 18. Subject matter including structure, such as a mask having a plurality of apertures therein, for making a plurality of images on photosensitive film strip or sheets in the form of rows and columns.

(1) Note. One row of picture on a film strip does not constitute rows and columns.

SEE OR SEARCH THIS CLASS, SUBCLASS:

46+, for copiers which include plural optical paths for imaging plural rows of pictures on photosensitive material.

53, for repeated copying the same original onto a photographic paper in rows and columns.

64+, for making a single row of pictures on a film strip.

55 Focus or magnification control:

This subclass is indented under subclass 18. Subject matter including means to move the holder for the original, the objective lens, and the photosensitive paper holder relative to each other for focusing or changing and degree of magnification or reduction; or including structure adapted to allow interchanging of objective lenses of different focal lengths.

SEE OR SEARCH THIS CLASS, SUBCLASS:

44+, for a copier including a focusing screen.

75+, for means to tilt the original relative to the optical axis.

SEE OR SEARCH CLASS:

359, Optical: Systems and Elements, subclasses 432 and 821 for selective lenses to change the focus or magnification in optical systems.

56 Automatic or semiautomatic focusing when varying image size:

This subclass is indented under subclass 55. Subject matter including means to automatically move the objective lens or lens system

relative to the original and photosensitive paper for proper focusing when the original and photosensitive paper are moved relative to each other to vary the size of the image projected on the photosensitive paper.

SEE OR SEARCH CLASS:

359, Optical: Systems and Elements, subclasses 672 and 821 for selective lenses to change the focus or magnification in optical systems and subclasses 432, 676+, and 823+ for lens systems.

57 Reflector between original and photosensitive paper:

This subclass is indented under subclass 56. Subject matter including a mirror or reflecting prism positioned between the object to be copied and the photosensitive paper to direct light along the optical path to the photosensitive paper.

58 Including a cam or a screw with nonuniform pitch:

This subclass is indented under subclass 56. Subject matter including a sliding or rotating piece that imparts motion to a pin free to move in a groove on its face or to a roller moving against its edge, or including a screw having threads of nonuniform pitch; to aid in moving the lens, original, and photosensitive paper relative to each other.

59 And an indicator or scale:

This subclass is indented under subclass 58. Subject matter including a scale or indicator to denote the degree of enlargement or reduction or to show when the lens is properly focused.

SEE OR SEARCH THIS CLASS, SUBCLASS:

61+, for projection copiers in general with focus or magnification control including indicator or scale means.

60 Reflector between original and photosensitive paper:

This subclass is indented under subclass 55. Subject matter including a mirror or reflecting prism positioned between the object to be copied and the photosensitive paper to direct light along the optical path to the photosensitive paper.

- (1) Note. For other projection copiers utilizing reflector means see the subclasses listed under SEARCH THIS CLASS, SUBCLASS in subclass 66.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 45, for copiers having a focusing screen and a reflector.

61 Including indicator or scale:

This subclass is indented under subclass 55. Subject matter including a scale or indicator to denote the degree of enlargement or reduction or to show when the lens is properly focused.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 59, for automatic or semiautomatic focusing projection copiers with indicator or scale.

62 Vertical optical path:

This subclass is indented under subclass 61. Subject matter where the optical path between the original and the photosensitive paper is vertical.

63 Vertical optical path:

This subclass is indented under subclass 55. Subject matter where the optical path between the original and the photosensitive paper is vertical.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 60, for similar devices where part of the optical path is vertical and part is horizontal with a mirror or prism to change the direction of the optical path.
62, for similar devices which have a scale for indicating the degree of enlargement or if the system is properly focused.

64 Image transferred from individual documents to film strip:

This subclass is indented under subclass 18. Subject matter wherein the original is an individual sheet or document and the photosensitive paper is a strip of film having indeterminate length and wherein a plurality of

sheets or documents are copied in sequence on the film strip.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 23+, for devices which copy both sides of an original.
48+, and 50+, for copying on a strip of film where the original moves continuously during the copying operation.
53, for devices which make a plurality of copies of the same original.
54, for devices for copying sheets wherein both rows and columns of pictures are obtained on the film strip.
75+, for means to hold the individual document in position for projection of the image.

SEE OR SEARCH CLASS:

- 271, Sheet Feeding or Delivering, for sheet feeding or delivering means where no specific optical or photographic structure is set forth.

65 Reflector between original and photo-sensitive paper:

This subclass is indented under subclass 64. Subject matter including a mirror or reflecting prism positioned between the object to be copied and the photosensitive paper to direct light along the optical path to the photosensitive paper.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 49, and 51, for structure similar to that in this subclass 65 where the original moves continuously while an image is being projected therefrom.

66 Reflector between original and photo-sensitive paper:

This subclass is indented under subclass 18. Subject matter including a mirror reflecting prism positioned between the object to be copied and the photosensitive paper to direct light along the optical path to the photosensitive paper.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 24, for a duplex, projection copier having a reflector in the optical path.

- 43, for a projection copier which includes means to designate, compose or select which has a reflector in the optical path.
- 45, for a projection copier having a reflector and also a viewing or focusing screen.
- 49, for a projection copier of the curved surface type for copying a continuously moving original and including a reflector.
- 51, for devices for projection copying a continuously moving original and including a reflector.
- 60, for a projection copier having means to control the focus or magnification and including a reflector in the optical path.
- 65, for a projection copier of the individual document to film strip type utilizing a reflector.
- 68, for projection copier having a photocell to control the illumination including a reflector to direct light to the photocell.

SEE OR SEARCH CLASS:

- 399, Electrophotography, subject matter under subclass 158 for electrophotography apparatus with projection means.

67 Illumination systems or details:

This subclass is indented under subclass 18. Subject matter including a plural or particular light source, or means such as a reflector, condenser lens or diffusing plate to direct light from the source to the original, or means to control the intensity or time interval of light reaching the photosensitive paper, or means to regulate the contrast or relative brightness of one portion of a picture or margin with another portion.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 30, for a copier including means to cool or ventilate the lamp housing.
- 35+, for illumination system for copying multicolor pictures.
- 74, for adjustable masks over the photosensitive paper.
- 113+, for light bores for contact printers.

SEE OR SEARCH CLASS:

- 352, Optics: Motion Pictures, appropriate subclasses, especially subclasses 198+, for light sources utilized in motion picture apparatus.
- 362, Illumination, subclass 3 for photographic lights where no other camera structure is claimed.

68 Including photocell or phototube:

This subclass is indented under subclass 67. Subject matter including a photoelectric cell or photomultiplier tube and related electric circuitry to detect the intensity of light in some part of the optical path.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 38, for a copier including a photocell or phototube for copying multicolor pictures.
- 41, for a projection copier with identifying, composing, or selecting means including a photocell means.

69 Electricity to lamp controlled:

This subclass is indented under subclass 67. Subject matter wherein the light flux given off by the lamp is controlled by varying the voltage applied to the lamp or wherein the time interval during which the lamp is on is variable by interrupting the electricity thereto, usually according to the light transmitting or reflecting quality of the original; or wherein a light switch is set forth to control the electricity to the lamp.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 64+, for a copier which transfers images from individual documents to a film strip having light control which usually includes a light switch actuated by a document.

70 Plural lamps:

This subclass is indented under subclass 67. Subject matter wherein the apparatus includes a plurality of light sources for simultaneous or separate use.

- (1) Note. One of the light sources may be spaced from the projector or copier.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

37, for a copier including a plurality of lamps for copying a multicolor picture.

71 Including shutter, diaphragm, polarizer or filter:

This subclass is indented under subclass 67. Subject matter including an opaque element which is insertable in the optical path to temporarily block the light or a diaphragm, polarizer, or filter in the optical path to partially block the light.

(1) Note. The diaphragms of this subclass are usually between the light source and the original and do not regulate the size of the final picture as do the masks in subclass 74 below which are between the original and the photosensitive paper.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

34, for a copier having a detailed diaphragm for copying lenticular film.

35+, for a device for copying multicolor pictures including a shutter, diaphragm, polarizer, or filter.

64+, for a copier which transfers images from individual documents to film strips having light control wherein the shutter is usually actuated by a document.

74, for a holder for the photosensitive paper having an adjustable mask over the paper.

101, for contact printing machine with shutters.

116, for contact printer light box with foot operated shutter.

121, for contact printer light box with shutter.

124, for contact printer frame with shutter.

72 Detailed holder for photosensitive paper:

This subclass is indented under subclass 18. Subject matter including detailed means to maintain the photographic paper in position while the image of the original is being focused on its surface.

(1) Note. This subclass provides for the subcombination of a holder for photosensitive paper disclosed as being for a copying camera. Class 396, Photography, has similar subcombinations disclosed as being for a camera in general or disclosed as having general utility in the photographic arts.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

47+, for a holder which holds the paper in a curved position.

65, for strip film holders or film gates.

73 Including vacuum or fluid pressure:

This subclass is indented under subclass 72. Subject matter wherein the photographic paper is held by air or atmospheric pressure caused either by forming a partial vacuum on one side of the paper or by blowing air against the paper.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

76, for vacuum, fluid, or spring pressure meant for holder of original.

SEE OR SEARCH CLASS:

248, Supports, subclasses 362 and 363 for vacuum holddown devices of general utility.

74 Including adjustable or selective masking frame:

This subclass is indented under subclass 72. Subject matter including adjustable or selective, opaque means for selectively defining the area or size of the photographic paper which will receive the light coming from the object by blocking the unwanted light at the edges or border of what will be the new photograph.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

54, for masks which are for making a plurality of rows and columns of pictures on one photosensitive sheet.

72, for simple masks which are not adjustable or selective to determine the size of the photograph.

75 Detailed holder for original:

This subclass is indented under subclass 18. Subject matter including detailed structure to maintain the object to be copied in position while its image is being focused on the photosensitive paper.

(1) Note. This subclass provides for the subcombination of a holder for an original which disclosed as being for use with a copying camera or projection printer while Class 353 provides for a film gate in a device for projecting an image on a viewing screen.

(2) Note. The object to be copied is often designated the original copy or negative and the holder is sometimes called a copyboard.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 23, for a reversible holder for copying both sides of a document.
- 25, for an original holder where the original is a book.
- 47+, for a holder which holds the original in a curved position.

SEE OR SEARCH CLASS:

- 353, Optics: Image Projectors, subclasses 23+ and 95+ for an image projector having a film gate.

76 Including vacuum, fluid or spring pressure:

This subclass is indented under subclass 75. Subject matter wherein the object is held by air or atmospheric pressure caused either by forming a partial vacuum on one side of the object or by blowing air against the object; or wherein the object is held between two members which are being pushed toward each other by a coil or leaf spring.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 25, for a book holder having spring or suction means.
- 73, for holder for photosensitive medium utilizing vacuum or fluid pressure means.

SEE OR SEARCH CLASS:

- 248, Supports, subclasses 362 and 363 for vacuum holddown devices of general utility.

77 Methods:

This subclass is indented under subclass 18. Subject matter including process steps for use in projecting an image of the subject matter on an original sheet or film strip onto a photosensitive paper to make a copy of the original.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 132, for contact printing methods in general.

SEE OR SEARCH CLASS:

- 353, Optics: Image Projectors, subclass 121 for a method of projecting an image on a viewing screen.
- 399, Electrophotography, subject matter under subclasses 130+ for methods of forming images electrophotographically.

78 CONTACT PRINTING:

This subclass is indented under the class definition. Subject matter wherein the picture or other information on the carrier is transferred to a light sensitive receiver in surface engagement over the entire area of the carrier surface at least at the time of exposure to produce in the carrier by photographic effect a recording of the same dimensions as that of the picture or other information on the carrier.

(1) Note. In case where there is an optical system placed between the carrier and receiver, the subject matter will appear higher in the schedule even though there is no enlargement or reduction of the size of the image.

(2) Note. For the chemical aspects of the photographic contact printing art as well as other nonchemical process and article features closely related thereto, Class 430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
19, for projection type copiers combined with or convertible to a contact printer.
- 79 Superimposed carriers (e.g., montage or combination printing):**
This subclass is indented under subclass 78. Subject matter wherein the image from two or more stacked carriers are simultaneously transferred to one side of a receiver.
- SEE OR SEARCH CLASS:
352, Optics: Motion Pictures, subclass 97 for superimposed film strips.
- 80 Localized contrast modification (e.g., dodging or fading):**
This subclass is indented under subclass 78. Subject matter wherein the contrast of the receiver is changed over the area of the frame or along the length of the continuous strip with respect to the contrast of corresponding areas or length of the carrier (i.e., the change in contrast over various portions of the receiver is different from any change of contrast of corresponding portions of the carrier by modifying the light intensity or duration).
- (1) Note. In vignetting as classified in subclass 125 below, light is usually completely blocked and stray light around the blocking portion produces the diffusing effect. However, in this subclass (80) the contrast is modified by altering the light passing directly through or from the carrier object to be transferred.
- 81 With scanning:**
This subclass is indented under subclass 80. Subject matter wherein the contrast on the receiver is different from that of the carrier over the frame area, as a result of varying the intensity or the duration of the illumination over selected portions of the frame area by a scanning motion of the light.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
20, for projection printing and copying camera utilizing cathode-ray tube illumination.
- 84, for contact printers in general with scanning means.
- SEE OR SEARCH CLASS:
399, Electrophotography, subject matter under subclasses 177+ for electric photographic apparatus utilizing scanning.
- 82 Book page copying:**
This subclass is indented under subclass 78. Subject matter adapted to produce prints from the pages of books with or without reflex printing.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
25, for book page copier of the projection printing and copying type.
- 83 Light monitoring exposure control:**
This subclass is indented under subclass 78. Subject matter having apparatus that controls the light intensity or shutter size during exposure in accordance with light passing through or reflected from the carrier as monitored by a light sensitive element, commonly a photoelectric cell, which controls the light intensity or shutter size.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
35+, for multicolor projection printing and copying cameras with means to regulate the light intensity or exposure time.
115, for contact printing light boxes with exposure timing means.
- SEE OR SEARCH CLASS:
250, Radiant Energy, subclasses 200+ for photoelectric cells and circuits and apparatus combined therewith.
- 84 With scanning:**
This subclass is indented under subclass 78. Subject matter wherein the light source unit is moved over or past the carrier and receiver frame area to transfer frame portions sequentially from the carrier to the receiver as opposed to the usual simultaneous transfer of the entire frame.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 20, for projection printing and copying camera utilizing cathode-ray tube illumination.
- 81, for cathode-ray tube scanning devices used for contrast control.
- 102, 103 and 108+, for transferring the frame image portions sequentially by moving the combined carrier and receiver continuously past the light source.

SEE OR SEARCH CLASS:

- 178, Telegraphy, subclasses 15 and 90 for photographic recorder receiver.
- 359, Optical: Systems and Elements, subclasses 196.1 through 226.3 for deflection by a moving element which may be reflective.
- 386, Motion Video Signal Processing for Recording or Reproducing, subclass 342 for utilizing CRT or beam of light for recording television or video signal on a medium.
- 399, Electrophotography, subject matter under subclasses 177+ for electrophotographic apparatus utilizing scanning.

85 Exposing on sensitized printing press plate or cylinder (e.g., photocomposers):

This subclass is indented under subclass 78. Subject matter having apparatus for image transfer to a sensitized receiver in the form of a printing press plate or cylinder.

- (1) Note. Printing press elements exposed as in photocomposers normally require further processing, as by etching, before being useable in a printing press.

SEE OR SEARCH CLASS:

- 101, Printing, subclasses 368+ for printing members.
- 216, Etching a Substrate: Processes, subclasses 1+ for chemical etching combined with additional manufacturing steps, particularly subclass 10 for printing roll manufacture.

86 Step and repeat:

This subclass is indented under subclass 85. Subject matter wherein a single carrier or receiver is stepped or moved between repeated exposures until the sensitized receiver surface is utilized or covered to the desired extent.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 53, for projection copiers of the step and repeat type.
- 64+, for projection copiers wherein images are transferred from individual documents to film strip.
- 95+, for step and repeat contact printers in general.

SEE OR SEARCH CLASS:

- 399, Electrophotography, subject matter under appropriate subclasses for full color electrophotographic apparatus.

87 Fluid pressure:

This subclass is indented under subclass 86. Subject matter wherein the step and repeat photocomposers utilize fluid pressure for contact or retention of carrier and receiver in exposing position.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 91+, for machines generally involving fluid pressure contact and retention structure.

88 Multicolor printing:

This subclass is indented under subclass 78. Subject matter having apparatus adapted to produce color prints otherwise than by the mere use of colored printing materials.

- (1) Note. Printers utilizing plural color beams, even though combined into one beam at the printing station, are included herein.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 32+, for projection printing and copying cameras for multiple color reproduction.

SEE OR SEARCH CLASS:

- 399, Electrophotography, subject matter under appropriate subclasses for electrophotographic apparatus for color reproduction.
- 430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof, appropriate subclasses for chemical natural color techniques.

89 Plural exposure stations or plural machines:
This subclass is indented under subclass 78. Subject matter wherein the machine (as defined in subclass 97) has a plurality of exposure stations at each of which the carrier and receiver are held together and exposed to light, or including a plurality of such machines.

- (1) Note. Subject matter where one of the exposure stations is for printing a sound track is included in this subclass.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 114, for light boxes with plural image transfer.
- 127, for frames for transfer of plural images.

90 With plural webs of indeterminate length (e.g., motion picture film):

This subclass is indented under subclass 89. Subject matter including structure for moving indeterminate lengths of carrier and receiver to, past, and from the exposure stations, the second exposure station commonly being for printing a sound track on the receiver.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 31, for project on type copier with means to copy a sound record.
- 98, for other sound track printers.
- 111, for continuous running machines with indeterminate length carrier and receiver.

SEE OR SEARCH CLASS:

- 352, Optics: Motion Pictures, subclasses 1+, with sound accompaniment, subclasses 12+, picture and sound synchronizing, subclasses 26+, common

picture and sound systems, subclasses 221+, for film gates.

91 Fluid pressure retention of carrier and receiver in exposure position:

This subclass is indented under subclass 78. Subject matter wherein contact between the carrier and receiver during exposure is secured by direct acting fluid pressure.

- (1) Note. In this subclass a suction is maintained between the pressure applying surfaces or a fluid pressure is applied through a flexible member. Where the pressure is applied through a mechanical linkage actuated by fluid such as a mechanical connected piston, classification is elsewhere in the schedule.

92 Air-inflated cushion:

This subclass is indented under subclass 91. Subject matter wherein air inflated cushions are used to force the carrier and receiver into secure contact for exposure.

93 Pivoted frame:

This subclass is indented under subclass 91. Subject matter wherein the complete frame is pivotal after the carrier and receiver are secured together for the exposure operation.

94 With pump:

This subclass is indented under subclass 91. Subject matter wherein there is a pump included in the disclosed fluid pressure system.

95 Step and repeat:

This subclass is indented under subclass 78. Subject matter wherein the same carrier is moved over the receiver or vice versa to discrete and distinct positions, the same image being transferred from the carrier to the receiver at each position.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 53, for projection copiers of the step and repeat type.
- 66+, for step and repeat photocomposers for printing plates.

96 Strip receiver:

This subclass is indented under subclass 95. Subject matter wherein the receiver is in the form of a strip and the successive printing is done longitudinally along the strip.

97 Machine (i.e., having at least partly automatic feed):

This subclass is indented under subclass 78. Subject matter including complete units for transferring the image from the carrier to the receiver and including structure for moving or transporting either the carrier or receiver to, from, or past the exposure station without direct manual engagement during this moving.

(1) Note. The moving structure need not move the carrier or receiver through the complete operating cycle for classification here. Classification is here when the cycle and machine operation is in sequence. The moving structure may operate on only one of the carrier and receiver, and classification is here. A gravity operated slot is classified here. The moving structure may be manually or motor operated.

(2) Note. A complete unit would include at least the supporting structure for the receiver and carrier and the illuminating structure for image transfer. See subclasses 113+ for light boxes which include supporting the illuminating structure but lack the transporting or moving structure. See subclass 123 below for frames which include the carrier transporting or moving structure, but which lack the illuminating structure the frames being parts merely intended for ready manipulation with respect to the illuminating structure.

SEE OR SEARCH THIS CLASS, SUBCLASS:

89+, for contact printers of the plural exposure station or plural machine type.

98 Sound track printing:

This subclass is indented under subclass 97. Subject matter including apparatus for printing a sound track on a receiver or for eliminating

extraneous noise on the printed sound track of a receiver.

SEE OR SEARCH THIS CLASS, SUBCLASS:

31, for projection printing and copying cameras with means to copy a sound record.

86, for sound printer combined with other printing stations.

SEE OR SEARCH CLASS:

352, Optics: Motion Pictures, subclasses 12+ for picture and sound synchronization, 26+ for common picture and sound record carrier, and 221+ for gates.

369, Dynamic Information Storage or Retrieval, subclasses 84+ for dynamic duplication of a sound track.

99 With flat exposure station structure:

This subclass is indented under subclass 97. Subject matter wherein the receiver is fixed or movably positioned on a flat surface during exposure.

100 With further developing processing:

This subclass is indented under subclass 99. Subject matter including apparatus for wet or dry developing processing after the printing operation.

SEE OR SEARCH THIS CLASS, SUBCLASS:

27+, for projection printing and copying cameras with developing means.

106+, for developing processing after exposure at a curved or cylindrical exposure station.

SEE OR SEARCH CLASS:

396, Photography, subclasses 564+ for fluid treatment apparatus used to develop photographic material.

399, Electrophotography, subject matter under subclasses 233+ for electric photographic apparatus utilizing liquid development.

430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof, subclasses 434+ for chemical developing.

- 101 With shutters:**
This subclass is indented under subclass 99. Subject matter including structure for selectively blocking and unblocking the light path to expose the light sensitive material to photographic light.
- (1) Note. See subclass 121 below for a field of search for shutters.
- 102 Repeated printing from a carrier:**
This subclass is indented under subclass 99. Subject matter wherein an image on a carrier is copied on a plurality of separate receivers.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
86+, for step and repeat copying on printing.
95+, for step and repeat copying generally.
101, for repeat printers having shutters.
109, for repeat printing machine of the cylindrical or curved exposure station structure type.
- 103 Continuous running:**
This subclass is indented under subclass 99. Subject matter wherein the sheets or web which comprise the carrier and receiver travels past the exposure station during exposure (i.e., they do not stop during exposure).
- (1) Note. The light may or may not move with the sheets or webs.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
108, for continuously running machines with curved or cylindrical exposure stations.
- 104 With cylindrical or curved exposure station structure:**
This subclass is indented under subclass 97. Subject matter wherein the receiver is on a cylindrical or curved surface during exposure.
- (1) Note. Subject matter concerned only with the cylinder, its cooling, or the means for imparting motion to it is classifiable here.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
117, for light box with cylindrical or curved exposure station.
- 105 Light lowered into vertical cylinder:**
This subclass is indented under subclass 104. Subject matter wherein the exposure station comprises a vertical cylinder with exposure of the printing materials effected by the lowering of a light into the cylinder.
- (1) Note. The inventions herein are representative of the older blue print machines.
- 106 With further developing processing:**
This subclass is indented under subclass 104. Subject matter including apparatus for wet or dry developing processing after the printing operation.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
27+, for projection printing and copying cameras with developing means.
100, for developing processing after exposure at a flat exposure station.
- SEE OR SEARCH CLASS:
396, Photography, subclasses 564+ for fluid treatment apparatus used to develop photographic material.
399, Electrophotography, subject matter under subclasses 233+ for electric photographic apparatus utilizing liquid development.
- 107 With intermediate printing material:**
This subclass is indented under subclass 106. Subject matter having developing processing wherein the image is transferred to an intermediate sheet from which the image is subsequently transferred to a receiver.
- (1) Note. An intermediate sheet is most commonly used with the wet diffusion process.
- 108 Continuous running:**
This subclass is indented under subclass 104. Subject matter wherein the sheets or web which comprise the receiver travel past the

exposure station during exposure, and usually without stopping.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

103, for continuously running flat printing machines.

109 Repeated printing from a carrier:

This subclass is indented under subclass 108. Subject matter with repeated printing from one or more carriers, i.e., more than one receiver copy is made from a single carrier.

- (1) Note. A carrier whose picture, pattern or design completely encompasses a cylindrical exposure station and which is used in making strips with the picture, pattern or design repeated would be classifiable here, e.g., wall paper or textiles.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

102, for noncontinuous repeated printing in flat machines.

110 Rotating exposure station cylinder:

This subclass is indented under subclass 108. Subject matter wherein an exposure station cylinder rotates as the carrier and receiver pass thereover past the exposure station.

111 Indeterminate-length carrier and receiver:

This subclass is indented under subclass 108. Subject matter wherein both the carrier and receiver are webs of indeterminate length which may be perforated (e.g., motion picture film).

112 Print counting and marking:

This subclass is indented under subclass 78. Subject matter including mechanisms for automatically marking numbers or indicia on prints and also including devices for counting the number of prints made.

113 Light boxes:

This subclass is indented under subclass 78. Subject matter including structure for shielding or shading the light used for printing from the surrounding work area.

- (1) Note. Usually the shielding or shading structure is a box enclosing the light

source or the associated reflectors or lenses which light source lenses or reflector may or may not be claimed in the patents here classified. Structure for facilitating the use of natural light such as an opening in the box or mirror is classified here where the box is claimed. Structure in the form of a frame and constituting the top of a light box is classified in subclasses 122+ below where the box structure is not claimed.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

67+, for illumination systems or details utilized in projection type copiers.

SEE OR SEARCH CLASS:

352, Optics: Motion Pictures, appropriate subclasses, especially subclasses 198+ for projection light sources utilized in motion picture apparatus.

114 Transfer of plural images:

This subclass is indented under subclass 113. Subject matter where the exposure station or stations have structure for producing a plurality of positive images usually simultaneously and usually from a corresponding number of negative images.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

89, for contact printers having plural exposure stations or comprising plural machines.

110, for frames for making plural images.

115 With exposure timing:

This subclass is indented under subclass 113. Subject matter including means for controlling the period of exposure of the light sensitive material.

- (1) Note. Usually the means consists of a mechanism which closes a shutter after a predetermined period of time or which opens or closes the electrical circuit containing the light source after a predetermined period of time.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 35+, for multicolor projection printing or copying cameras with means to regulate the light intensity or exposure time.
 83, for contact printers with light monitoring exposure control means.
- 116 Foot-operated platen or shutter:**
 This subclass is indented under subclass 113. Subject matter wherein the platen or shutter of the light box is foot operated (e.g., with a treadle).
 (1) Note. For other shutters see the field of search appended to the definition of subclass 121.
- 117 Cylindrical or curved exposure station:**
 This subclass is indented under subclass 113. Subject matter wherein the exposure station has a surface which is cylindrical or curved.
 SEE OR SEARCH THIS CLASS, SUB-CLASS:
 104+, for printing machines with cylindrical or curved exposure station structure.
- 118 Divided or flexible platen:**
 This subclass is indented under subclass 113. Subject matter wherein the platen is formed in two or more distinct parts which are completely separable or attached together to provide movement or flexibility between the attached parts.
 SEE OR SEARCH THIS CLASS, SUB-CLASS:
 129+, for divided platens.
- 119 Indirect illumination:**
 This subclass is indented under subclass 113. Subject matter wherein the exposure station is illuminated by indirect light rays.
- 120 Platen-controlled illumination circuit:**
 This subclass is indented under subclass 113. Subject matter wherein the illumination circuit is closed when the platen is manually moved into pressure contact or locked into contact position with the receiver and carrier and the circuit is broken when the platen is manually
- unlocked from its contact position or manually moved away from pressure contact with the carrier and receiver.
- 121 With shutter:**
 This subclass is indented under subclass 113. Subject matter including structure for selectively blocking and unblocking the light path to expose the light sensitive material to the photographic light.
 SEE OR SEARCH THIS CLASS, SUB-CLASS:
 71, for projection type copier with shutter in the illumination system.
 101, for printing machines with shutters.
 116, for foot operated shutters.
 121, for light box with shutters.
 123, for strip film frames having shutters.
 124, for frames with shutters.
 SEE OR SEARCH CLASS:
 352, Optics: Motion Pictures, appropriate subclasses, especially subclasses 204+ for shutters utilized in motion picture apparatus.
 359, Optical: Systems and Elements, subclasses 227+ for shutters generally; and subclasses 738+ for lenses with shutters.
 396, Photography, subclasses 452+ for camera shutters.
- 122 Frames:**
 This subclass is indented under subclass 78. Subject matter including portable devices as for ready manipulation before a source of illumination usually flat and usually including a border structure for holding negatives and sensitized surfaces in their proper relative positions for printing.
 SEE OR SEARCH THIS CLASS, SUB-CLASS:
 123, for continuous film frames.
- 123 Strip film:**
 This subclass is indented under subclass 122. Subject matter including structure for moving or transporting either the carrier or receiver at least one of which is a film strip to, from or past the exposure station in the frame.

- (1) Note. All units additionally providing to the moving and transporting structure a light source are classified in subclasses 97+ above.

124 With shutters:

This subclass is indented under subclass 122. Subject matter including structure for selectively blocking and unblocking the light path to expose the light sensitive material to the photographic light.

- (1) Note. The shutter need not be completely opaque, but only opaque to the photographic light. A shutter formed as a ruby filter would be classified here.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 71, for projection type copiers with shutter in the illumination system.
101, for printing machines with shutters.
116, for fast operated shutters.
121, for light box with shutter.
123, for strip film frames having shutters.

SEE OR SEARCH CLASS:

- 352, Optics: Motion Pictures, appropriate subclasses, especially subclasses 204+ for shutter utilized in motion picture apparatus.
359, Optical: Systems and Elements, subclasses 227+, for shutters generally; and subclasses 738+ for lenses with shutter.
396, Photography, subclasses 452+ for camera shutters.

125 With diffusing or masking (e.g., vignetting):

This subclass is indented under subclass 122. Subject matter including structure for blocking a portion of the transverse area of the light path usually at the border, the blocking being either abrupt at the edge or gradual to produce a graduated shading effect or including structure to diffuse the light in the light path to produce a softening effect.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 80, for contact printers with localized contrast modification.

126 Adjustable parameters:

This subclass is indented under subclass 125. Subject matter wherein the blocking structure is movable over the transverse area of the light path to change the parameters of the opening in the light blocking structure, as for example to change the picture dimensions.

127 Transfer of plural images:

This subclass is indented under subclass 122. Subject matter wherein the frame is adapted to produce a plurality of positive images usually simultaneously and usually from a corresponding number of negative images.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 89+, for contact printers of the plural station or plural machine type.
114, for light box with means to transfer plural images.

128 With platen:

This subclass is indented under subclass 122. Subject matter including a flat plate of rigid material distinct from the remaining frame and substantially covering the back of structure the receiver for pressing the carrier and receiver together when they are disposed in the remaining frame structure.

129 Divided platen:

This subclass is indented under subclass 128. Subject matter wherein the platen is formed in two or more distinct parts which are completely separable or attached together to provide movement or flexibility between the attached parts.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 118, for light box with divided or flexible platen.

130 With closing spring bias:

This subclass is indented under subclass 129. Subject matter wherein a spring is provided to maintain the platen in the pressure applying position.

131 Attached platen:

This subclass is indented under subclass 128. Subject matter wherein the platen is permanently movably secured to the remaining frame structure as by hinges to permit movement of the platen from the pressure applying position to and from a position to permit ready insertion of the carrier and receiver.

SEE OR SEARCH THIS CLASS, SUBCLASS:

129+, for divided platens which are attached to remaining frame structure.

132 Methods:

This subclass is indented under subclass 78. Subject matter comprising methods of contact printing.

- (1) Note. Patents within the subclass 78 definition including both article and method claims are classified on the basis of the article claims in the higher subclasses. This subclass (132) only provides for patents with all method claims.

SEE OR SEARCH THIS CLASS, SUBCLASS:

77, for projection printing and copying methods in general.

210+, for methods of forming images electro-photographically.

133 MISCELLANEOUS:

This subclass is indented under the class definition. Subject matter which is not provided for in any of the preceding subclasses of this class.

- (1) Note. This subclass includes printing apparatus having the receiver and carrier spaced apart from one another during the exposure operation, as long as the image reproduced on the receiver has not been reduced or enlarged.

SEE OR SEARCH THIS CLASS, SUBCLASS:

1, for the use of fiber optics in the space between the carrier and the receiver.

400 USING MICROCAPSULES:

This subclass is indented under the class definition. Subject matter wherein an image is formed by exposing a layer of photosensitive microcapsules containing chromogenic material to radiant energy and rupturing the capsule in the presence of a developing arrangement.

SEE OR SEARCH CLASS:

430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof, subclass 138 for a product, process, or composition using microcapsules.

401 Condition responsive control:

This subclass is indented under subclass 400. Subject matter wherein the imaging or developing of the microcapsules is controlled in response to a randomly occurring, sensed condition.

402 Exposure:

This subclass is indented under subclass 400. Subject matter wherein a means or method is provided for projecting light or radiant energy from an original to a layer of microcapsules.

403 Using mask original:

This subclass is indented under subclass 402. Subject matter wherein an imaged transparency is located between a source of radiant energy and a layer of microcapsules.

404 Of selected area or border:

This subclass is indented under subclass 402. Subject matter wherein exposure of the microcapsules is limited or controlled in extent.

405 Heating (e.g., thermal fixing):

This subclass is indented under subclass 400. Subject matter wherein a means or method is provided for applying heat to an exposed, microcapsule-coated medium before, during, or after developing.

406 Pressure developing:

This subclass is indented under subclass 400. Subject matter wherein a force is applied to rupture the microcapsules in the presence of a developing arrangement.

SEE OR SEARCH CLASS:

100, Presses, appropriate subclasses for a press.

407 Sheet feeding:

This subclass is indented under subclass 400. Subject matter wherein a means or method is provided for handling an original, a medium with the microcapsules, a developing sheet, or a copy medium.

SEE OR SEARCH CLASS:

271, Sheet Feeding or Delivering, appropriate subclasses for sheet feeding.

408 Having document handling detection:

This subclass is indented under subclass 407. Subject matter wherein a means or method is provided for sensing the position or condition of transportable media.

END