Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS B. BRUST
and JAMES T. KOFRON



Appeal No. 94-2263
Application 07/656,660[1]

HEARD: June 3, 1996

Before KIMLIN, JOHN D. SMITH and PAK, Administrative Patent Judges.

JOHN D. SMITH, Administrative Patent Judge.

**DECISION ON APPEAL**

This is an appeal from the final rejection of claims 1-9.

[1] Application for patent filed February 19, 1991. According to applicant, the application is a continuation-in-part of Application 07/632,686, filed December 24, 1990 (ABN).

Appealed claims 1 and 4 are representative and are reproduced below:

1. A color photographic negative film wherein a blue sensitive layer is below a green sensitive layer and said blue sensitive layer comprises blue-sensitized tabular grains with an aspect ratio of at least 5 that are sensitized with a blue dye which absorbs light primarily in the region between 450 and 520 nanometers.

4. The film of Claim 1 wherein said film further comprises a yellow colored masking coupler that forms magenta dye when developed and absorbs blue light in the 400-450 nanometer range during exposure.

The references of record now relied upon by the examiner are:

| | | |
|---|---|---|
| Kofron et al. (Kofron) | 4,439,520 | Mar. 27, 1984 |
| House | 4,490,458 | Dec. 25, 1984 |
| Daubendiek et al. (Daubendiek) | 4,672,027 | Jun. 9, 1987 |

The appealed claims stand rejected under 35 USC 103 as unpatentable over House, Kofron or Daubendiek.

We affirm as to claims 1-3 and 5-9. We reverse as to claim 4.

The subject matter on appeal is directed to a color photographic negative film having a blue sensitive layer below a green sensitive layer. Such a film is known in the art and is referred to as an "inverted structure" film. Appellants' "inverted structure" film utilizes a blue sensitive layer

comprised of tabular grains with an aspect ratio of at least 5 that are sensitized with a blue dye which absorbs light primarily in the region between 450 and 520 nanometers.

Appellants acknowledge (Brief, page 8) that each of the references relied upon by the examiner teach "inverted structure" films having a blue sensitive layer formed of blue sensitized silver halide tabular grains. Further, appellants acknowledge that the blue region of the visible spectrum extends from about 400 to about 520 nanometers, thus confirming the examiner's factual finding (Answer, page 6) that light of wavelength in the claimed region between 450-520 nanometers is "light in the visible blue region". However, appellants emphasize that conventional practice in the art is to sensitize throughout the entire range to obtain maximum blue adsorption while, in contrast, their invention involves the discovery that there is an advantage in sensitizing primarily in the 450 to 520 range to obtain superior performance of the high aspect tabular silver halide grains.

Initially, it is important to note that the appealed claims do not define a blue sensitive layer, itself, sensitized in a restricted range of 450 to 520 nanometers, as argued by appellants. The claims simply require the presence of a blue sensitive layer comprised of "blue sensitizing tabular grains"

of a certain aspect ratio "that are sensitized with a dye which absorbs light primarily in the region between 450 and 520 nanometers." In this regard, the relied upon House reference discloses multicolor photographic elements inclusive of "inverted structure" films which use at least one emulsion layer containing high aspect ratio tabular silver iodide grains to record image-wise exposure to the blue portion of the visible spectrum at very high absorption levels in the spectral region of less than about 430 nanometers (column 33, lines 58-60). However, House recognizes that such silver iodide grain absorption is "not high over the entire blue region of the spectrum" (column 34, lines 55-59). Thus House specifically contemplates the use of "one or more blue sensitizing dyes" in combination with the high aspect ratio silver iodide tabular grains to achieve a photographic response over the entire region of the blue spectrum (column 34, lines 55-63). Importantly, these dyes, according to House, preferably exhibit a wavelength longer than 430 nanometers so that absorption will extend "over a larger wavelength range of the blue spectrum" (column 34, lines 63-68).

Thus House's teachings above point one of ordinary skill in the art to the use of blue sensitizing dyes which absorb light "primarily" in the region claimed, i.e., between 450 and 520 nanometers. Accordingly, we agree with the examiner that it would have been obvious to a person of ordinary skill in this art

to use known spectral blue sensitizing dyes which absorb light primarily in the region claimed to provide a blue sensitive layer having light absorption capability over the entire blue region of the spectrum. The broad claims on appeal call for nothing more. Thus we affirm the examiner's rejection of claim 1 as obvious over House. Since dependent claims 2, 3, 6, and 9 stand or fall with claim 1 (Brief, page 2) we necessarily affirm the rejection of those claims over House.

Appellants ask for separate and special consideration of dependent claims 4, 5, 7, and 8. Appealed claim 4 requires that the photographic film is comprised of a yellow colored masking coupler that forms magenta dye when developed and absorbs blue light in the 400-450 nanometer range. This coupler is typically placed in the magenta (green absorbing) layer above the blue sensitive layer and serves as a filter for short blue (400-450 nanometers) light (specification, page 8, lines 33-37). Notwithstanding the argument of the examiner, we find no clear suggestion in the relied upon references to utilize a coupler as defined in this claim. We observe that the disclosure of House (column 42, lines 19-37) said to suggest the claimed feature involves a regular order film in which the blue sensitive layer lies above the green sensitive layer. Accordingly, we reverse the rejection of this claim as unpatentable over House.

Dependent claim 5 specifies that the tabular grain in the blue sensitive layer has an aspect ratio of greater than 8 and makes up greater than 90% of the grains in the layer. We agree with the examiner that these additional claimed features are fairly suggested by the disclosure of House. See, for example, the disclosure of House at column 10, line 46 to column 11, line 21 and column 15, lines 19-30. We affirm the rejection of this claim as obvious over House.

Dependent claim 7 on appeal requires that the green sensitive layer pass "most light in the 450-520 nanometer range". That there is no express statement in the relied upon references that green sensitive layers "pass most light" in this region of the spectrum is of no moment, since the claimed limitation merely sets forth a generally inherent absorption property of typical prior art green and red sensitive layers. See the Brief at page 7, second full paragraph. Thus the rejection as applied to dependent claim 7 was appropriate.

Dependent claim 8 sets forth a preferred blue dye for absorbing light in the range of 450-520 nanometers. Initially, we observe that no allegation has been made by appellants that this dye itself is novel. Moreover, as observed by the examiner, the claimed dye is a species within the genus of dyes defined by Formula I of House. We also observe that the claimed dye bears a close structural correspondence to exemplified dye 4 disclosed by

House at column 22, lines 35-53, a prior art dye specifically taught as useful as a blue sensitizer. Thus, we agree with the examiner that the subject matter defined by dependent claim 8 would have been prima facie obvious to a person of ordinary skill in the art. Accordingly, we also affirm the rejection of claim 8 as unpatentable over House.

A somewhat similar analysis may be made with the respect to the rejections of the appealed claims over Daubendiek and Kofron. Each of these references suggests the use of one or more spectral sensitizing dyes in combination with high aspect ratio tabular silver halide emulsion layers for "inverted order" color photographic negative films. With respect to such dyes, these references teach that the choice of dye depends upon the region of the spectrum to which sensitivity is desired and upon the shape of the spectral sensitivity curve desired. See Kofron at column 24, lines 51-65 and Daubendiek at column 12, line 65 through column 13, line 3. Again, we hold that it would have been obvious to a person of ordinary skill in the art to use known spectral blue sensitizing dyes which absorb light primarily in the region claimed to provide a blue sensitive layer having light absorption capability over the entire blue region of the spectrum.

In summary, we affirm the examiner's rejections of appealed claims 1-3 and 5-9. We reverse the examiner's rejections of claim 4. Accordingly, the decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR 1.136(a).

**AFFIRMED-IN-PART**

EDWARD C. KIMLIN )
Administrative Patent Judge)
)
)
JOHN D. SMITH ) BOARD OF PATENT
Administrative Patent Judge) APPEALS
) AND
) INTERFERENCES
)
CHUNG K. PAK )
Administrative Patent Judge)

Appeal No. 94-2263
Application 07/656,660

Joshua G. Levitt
Eastman Kodak Company
Patent Department
343 State Street
Rochester, New York 14650-2201