

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 41

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

Ex parte MASAYA IMAMURA and HIROMI OGATA

---

Appeal No. 1997-0897  
Application No. 08/227,992

---

HEARD: August 15, 2002

---

Before BARRETT, LEVY, and BLANKENSHIP, Administrative Patent Judges.

LEVY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection<sup>1</sup> of claims 1-5, 12-15, 20-23, and 25-27, which are all of the claims pending in this application.

---

<sup>1</sup> The amendments (Paper No. 21, filed April 24, 1995, and Paper No. 37, which includes a supplemental appendix, filed July 26, 2001) filed subsequent to the final rejection (Paper No. 20, mailed January 25, 1995) have been entered.

BACKGROUND

Appellants' invention relates to an image sensor and optical character reader. An understanding of the invention can be derived from a reading of exemplary claim 12, which is reproduced as follows:

12. An image sensor, comprising:

a frame, including an opening, for housing said image sensor;

optical means for irradiating light on and receiving light reflected by a document;

focal length changing means, including a transparent covering, for changing a focal length formed by said frame, and said transparent covering, and said optical means by changing a thickness of said transparent covering above the top portion of said frame, along a light receiving axis of said image sensor.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Rhodes	434,807	Aug. 19, 1890
Koch	3,825,938	Jul. 23, 1974

Claims 1, 2, 13, and 25 stand rejected under 35 U.S.C. § 101 as inoperative and therefore lacking utility.

Claims 1-5, 12-15, 20-23, and 25-27 stand rejected under 35 U.S.C. § 101 on the basis that the invention as now claimed lacks utility.

Claims 1-5, 12-15, 20-23, and 25-27 stand rejected, and the specification stands objected to under 35 U.S.C. § 112, first paragraph, on the basis that the specification as originally filed does not provide support for the invention as now claimed<sup>2</sup>.

Claims 1-5, 12-15, 20-23, and 25-27 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite.

Claims 12-15, 23, and 25-27<sup>3</sup> stand rejected under 35 U.S.C. § 103 as being unpatentable over Koch and the admitted prior art.

Claims 1-5 and 20-22 stand rejected under 35 U.S.C. § 103 as being unpatentable over Rhodes and the admitted prior art.

Rather than reiterate the conflicting viewpoints advanced by the examiner and appellants regarding the above-noted rejections, we make reference to the examiner's answer (Paper No. 29, mailed April 17, 1996) for the examiner's complete reasoning in support of the rejections, and to appellant's brief<sup>4</sup> (Paper No. 28, filed January 11, 1996) and reply brief (Paper No. 30, filed June 17, 1996) for appellants' arguments thereagainst. Only those

---

<sup>2</sup> We observe that the examiner has objected to the specification under 35 U.S.C. § 112, first paragraph. It is unclear from the record why the objection was not made under 35 U.S.C. § 132. See MPEP § 2163.06 (Eight Edition, August 2001).

<sup>3</sup> The examiner's answer additionally lists claims 19 and 24. However, these claims have been canceled (Paper No. 19, mailed November 22, 1994).

<sup>4</sup> Supplemental brief.

arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered. See 37 CFR 1.192(a).

#### OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the rejections advanced by the examiner, and the evidence relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer. Upon consideration of the record before us, we reverse.

We turn first to the rejection of claims 1, 2, 13, and 25 under 35 U.S.C. § 101 as being inoperative and therefore lacking utility. The examiner's position (answer, page 3) is that under the Scheimpflug principle, if the angle of the document image plane, i.e., the transparent covering, changes relative to the fixed sensor, areas of the image will be out of focus. According

to the examiner, "[t]hus this embodiment . . . lacks utility, ie, it cannot provide a focused image to the sensor."

From our review of the record before us, we find that if the dimensional accuracy of the frame 110 is very low, the focal length will be varied, leading to the light being out of focus (specification, page 3). The specification additionally discloses that an object of the invention is to provide an image sensor which can have its focus easily adjusted even if the dimensional accuracy of the frame is low (page 4). From the disclosure of appellants, we find that adjustment of the transparent cover 111 will result in the image sensor being brought into focus, and will not make the image out of focus as asserted by the examiner. Accordingly, the rejection of claims 1, 2, 13, and 25 under 35 U.S.C. § 101 is reversed.

We turn next to the rejection of claims 1-5, 12-15, 20-23, and 25-27 under 35 U.S.C. § 101 on the basis that the invention now claimed lacks utility. The examiner's position (answer, pages 3 and 4) is that in response to an objection to the specification that the specification fails to teach how a focal length may be adjusted, appellants replaced "adjusting" a focal length to "changing" a focal length. The examiner argues to the effect that the purpose of the invention is to "adjust" the focal

length, and that "changing" is random and unfocused and cannot reasonably be considered to contribute to adjustment, which regulates the focus. In the examiner's opinion, appellants have "explicitly disclaimed" (answer, page 4) adjusting the focal length, and that appellants admit that "adjusting" is not enabled.

Appellants disagree with the examiner's assertion (brief, pages 13 and 14) that they have disclaimed the function of adjusting, or that adjusting is not enabled, as asserted by the examiner. Appellants assert that the term "change" is a broader term than "adjust."

At the outset, we note that there has been no disclaimer or acquiescence by appellants because the examiner's rejection has been appealed. In addition, as stated by the court in Abbott Laboratories v. Torpharm, Inc., Apotex, Inc., and Apotex Corp., 02-1014, decided August 13, 2002 (Fed. Cir.), the court stated that:

[P]rosecution history may limit claim scope if the patentee disclaimed or disavowed a particular interpretation of the claims during prosecution. Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452, 227 USPQ 293, 296 (Fed. Cir. 1985). This principle does not, however, mean that any words appearing in the prosecution history but not in the issued claims are forever banished. The prosecution history inquiry asks not what words the patentee

discarded, but what subject matter the patentee relinquished or disclaimed.

From our review of the record, we agree with appellants that "change" is a broader term than "adjust." We are not persuaded by the examiner's argument that "change" is random and unfocused. Neither "adjust" nor "change" necessarily results in a more or less precise focus, and either term can relate to making the focal length more precise. Accordingly, we find no disclaimer of any subject matter. Nor do we find any admission by appellants that the term "adjusting" is nonenabled. Accordingly, the rejection of claims 1-5, 12-15, 20-23, and 25-27 is reversed.

We turn next to the objection to the specification and rejection of claims 1-5, 12-15, 20-23, and 25-27 under 35 U.S.C. § 112, first paragraph on the basis that the specification as originally filed does not provide support for the invention now claimed. The examiner's position (answer, pages 4 and 5) is that the phrase "light receiving axis" is new matter. The examiner asserts (answer, page 4) that figure 1 shows a line labeled "H" which is described as a focal length, and that there is no indication that this line represents a light receiving axis.

Appellants' assert (brief, page 21) that one of ordinary skill in the art would ascertain that the light receiving axis

is "the perpendicular direction between the bottom surface of the transparent covering and the light receiving element 15." We agree. In order to satisfy the written description requirement, the disclosure as originally filed does not have to provide in haec verba support for the claimed subject matter at issue. See Fujikawa v. Wattanasin, 93 F.3d 1559, 1570, 30 USPQ2d 1895, 1904 (Fed. Cir. 1996). Nonetheless, the disclosure "must ... convey with reasonable clarity to those skilled in the art that ... [the inventor] was in possession of the invention." Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991). From the language in the specification (pages 10 and 11) that "the optical path from the original document W to the light receiving element 15 will be called a focal length H from the top of the transparent covering 11 to the light receiving element 15" we find that a skilled artisan would immediately discern that the light receiving axis is the optical path from the document to the light receiving element. Accordingly, the objection of the specification and rejection of claims 1-5, 12-15, 20-23, and 25-27 under 35 U.S.C. § 112, first paragraph is reversed.

We turn next to the rejection of claims 1-5, 12-15, 20-23, and 25-27 under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims are considered to be definite, as required by

the second paragraph of 35 U.S.C. § 112, when they define the metes and bounds of a claimed invention with a reasonable degree of precision and particularity. See In re Venezia, 530 F.2d 956, 958, 189 USPQ 149, 151 (CCPA 1976).

The examiner asserts (answer, page 5) that claim 1 is incomplete because the claim recites a first transparent covering, which implies additional transparent coverings, but that no additional transparent coverings are recited. Appellants point out (brief, page 23) that the second transparent covering is recited in claim 2, which depends from claim 1.

From our review of the claims, we find that claim 1 does not require additional transparent coverings, and that the metes and bounds of the claim would have been readily understood by one of ordinary skill in the art for the reasons set forth by appellants in the brief. We make similar findings with respect to claims 3, 4, 20, and 21 for the same reasons.

The examiner further asserts (answer, page 5) that claims 2, 5, 15, 22, and 27 recite improper negative limitations e.g., "said first transparent covering is removed . . . and replaced" (claim 2, lines 3-5). The examiner asserts (answer, page 13) that "The rejection is made because an essential element of the

claim --the first transparent covering-- from which various parameters are defined (eg focal length) has been eliminated."

Appellants assert (brief, page 23) that the "claims recite changes under which the image sensor undergoes in order to perform the stated objective." We observe that claim 2 recites a second transparent covering having a different thickness from the first transparent covering, and that when the first transparent covering is removed and replaced with the second transparent covering, a focal length from a top of the second transparent covering to said light receiving section is different from the focal length from the top of the first transparent covering. From the language of claim 2, we find that appellants have not eliminated the first transparent covering from the claim as asserted by the examiner, but rather that the claim recites two transparent coverings of different thicknesses, and that replacing the first transparent covering with the second transparent covering results in a different focal length. With respect to the examiner's assertion (answer, page 14) that claim 2 is vague because the term "top" is undefined, we find the language of claim 2 that "a focal length from a top of said second transparent opening . . ." to clearly define the top surface of the second transparent covering. We make similar

findings with respect to claims 5, 15, 22, and 27 for the same reasons.

The examiner asserts (answer, pages 5 and 14) that with respect to claims 12 and 23, there is no indication as to how a focal length is defined from "said frame and said optical means." We find that as set forth on page 3 of the specification, the light receiving element 115 is fixedly mounted within the exterior of frame 110, and that if the dimensional accuracy of the frame is very low, the focal length will be greatly varied. We therefore find that the claim language in question is supported by appellants' specification, and would be readily understood by one of ordinary skill in the art. With respect to the examiner's additional argument that "[w]hat part of the 'transparent covering' forms the focal length?" We find that as recited in claim 12 (penultimate line) it is the thickness of the transparent covering that contributes to the focal length. We make similar findings with respect to claim 23 for the same reasons.

From all of the above, the rejection of claims 1-5, 12-15, 20-23, and 25-27 under 35 U.S.C. § 112, second paragraph, is reversed.

We turn next to the rejection of claims 12-15, 23, and 25-27 under 35 U.S.C. § 103 as unpatentable over Koch and the admitted prior art. We begin with independent claims 12 and 23. The examiner's position (answer, pages 5 and 6) with respect to independent claims 12 and 23, is that the admitted prior art of figure 5 does not show focal length changing means. To overcome this deficiency of the admitted prior art, the examiner turns to Koch for a teaching of this feature, relying upon col. 1, lines 1-7 of Koch. The examiner states (answer, page 6) that:

These claims, as best understood, are directed to a method of selecting from a plurality of variations the item or position which gives the best result, in this case, a correct focal length.

It is well-known in assembling devices of any kind that when parts available vary in dimension, best results can be obtained by trial and error, ie, by trying different specimens of a given part or trying a single part in different attitudes, until a best result is obtained. This approach is not just well-known, but intuitive. It can be observed on an assembly line or in a sandwich shop.

It is common to chamfer the edges of transparent coverings on imaging devices in order to reduce the risk of injury to a user. Further, it is inherent in the manufacture of chamfered transparent coverings that variations in thickness or chamfer depth may occur, and also that dimensions of inner sidewalls of a device frame may vary. Thus it would have been obvious to one of ordinary skill in the art to select an appropriate covering through trial and error, ie, trying different coverings, or trying a single covering in different orientations or angles, until a best result was obtained.

Appellants assert (brief, pages 25 and 26, and reply brief, page 15) that neither the admitted prior art nor Koch disclose changing the thickness of the transparent covering above the open top of the frame along the light receiving axis of the image sensor, and that (reply brief, page 12) appellants image sensor reads the document in portions whereas the camera reads the entire image at one time.

We find that the admitted prior art found in figure 5 is directed to a line image sensor that is used in the image reading section of an optical character reader such as facsimile machine (specification, page 1). A problem in the admitted prior art is that the focal length is varied due to low dimensional accuracy of frame 110 (id., page 3). The admitted prior art addresses this problem by providing for an adjustment of the rod lens array 114, which is used for condensing the light (id., pages 2-4). In the admitted prior art, the transparent covering is not adjusted. In contrast to the admitted prior art, Koch is directed to a focusing screen camera that reads an entire image at one time, and is not directed to a line reader. Koch is directed to changing the focusing arrangement between an image carrier and a lens carrier (col. 1, lines 2-7). In order to permit a simultaneous sharp image to be taken of two or three points of an

object lying at various distances from the camera (col. 1, lines 15-18, and col. 3, lines 58-65), picture carrier 13 is adjusted longitudinally by a distance  $\Delta S$  (figure 1) and the picture carrier 13 and/or lens carrier 11 is swung at an angle alpha ( $\alpha$ ) (figures 2 and 3). Because the admitted prior art is directed to a line reader, and Koch is directed to a camera which reads an entire image and is not directed to correcting manufacturing defects in the frame of a line reader, we find that one of ordinary skill in the art would not have been motivated to combine the teachings of the admitted prior art and Koch. Assuming arguendo that one of ordinary skill was motivated to combine the teachings of the admitted prior art and Koch, the claims would still not be met because neither reference teaches changing the thickness of a transparent cover. In Koch, the picture carrier 13 and/or the lens carrier may be adjusted in a longitudinal or angular fashion, but there is no teaching of changing the thickness of the transparent covering of the admitted prior art above the frame, along the light receiving axis, to change the focal length. In addition, with respect to claims 14 and 25, while we agree with the examiner (answer, page 6) that chamfers are known to be used to reduce the risk of injury to a user, we find no suggestion of providing top and

bottom chamfers of different depths on the transparent covering to change the thickness of the transparent covering above the top portion of the frame. Moreover, we find the examiner's conclusion (answer, page 6) that it would have been obvious to select appropriate coverings through trial and error, by trying different coverings, or trying a single covering in different orientations or angles until a best result is obtained, to be speculation, unsupported by evidence in the record. From all of the above, we find that the examiner has failed to establish a prima facie case of obviousness of the invention set forth in claims 12-15, 23, and 25-27. Accordingly, the rejection of claims 12-15, 23, and 25-27 under 35 U.S.C. § 103 is reversed.

We turn next to the rejection of claims 1-5 and 20-22 under 35 U.S.C. § 103 as unpatentable over Rhodes and the admitted prior art. The examiner's position (answer, page 6) is that with respect to claims 1 and 20, the admitted prior art does not show opposing tapered inner side walls or chamfered edges. As to claim 3, the examiner's position is that the admitted prior art does not show chamfered edges. To overcome these deficiencies of the admitted prior art, the examiner turns to Rhodes for a teaching of a camera having opposed inner tapered sidewalls which support a sensitized plate on which the image is formed. The

examiner adds (id., page 17) that the strips k of Rhodes can also be adjusted so as to take up any aberration or defect in the lens. The examiner asserts (id., page 6) that it would have been obvious to combine the teachings of Rhodes and the admitted prior art for the reasons discussed in the combination of Koch and the admitted prior art. As to claims 2, 4, 5, 21, and 22, the examiner's position is that (id.) "these [claims] recite the same three ideas of changing focal length by altering chamfer depth, thickness, or angle of the transparent covering." The examiner asserts that these limitations would also have been obvious for the reasons discussed in the combination of Koch and the admitted prior art.

Appellants assert (brief, pages 29 and 30) that with respect to claim 1, the admitted prior art does not teach or suggest changing a thickness of a transparent covering along a light receiving axis, and that the examiner has not relied upon Rhodes for this feature. Appellants argue that the admitted prior art and Rhodes therefore do not teach or suggest all of the features of claim 1. With respect to independent claims 3 and 20, appellants assert (brief, pages 30 and 31) that the admitted prior art and Rhodes do not teach or suggest changing the thickness of a transparent covering along a light receiving axis,

and do not teach a transparent covering having top and bottom chamfers of different depths to change the thickness of the transparent covering above the open top of the frame along the light receiving axis.

We make reference to our findings, supra, with respect to the teachings of the admitted prior art. In addition, we find that Rhodes, like Koch, is directed to a photographic camera (page 1, lines 15-17) that reads an entire image at one time and is not directed to a line reader. Rhodes discloses frame C to include a ground glass plate. Frame C is hinged to the camera-box so that it can be reversed to bring the ground glass nearer to or farther away from the lens (page 1, lines 19-22). Rhodes discloses frame D<sup>2</sup> to have a deep-seated recess h', which is about the thickness of a sensitized plate (page 2, lines 17-22), and that the recess includes a tapered edge, as shown in figure 8. Blocks h<sup>2</sup> are secured to the corners of the frame, and the partition board I, which holds the sensitized plates, is supported by the blocks (page 2, lines 22-26 and 41-43, and figure 3). As shown in figure 4, the sensitized plates are held in place by slotted corner-pieces j, spring l, and projecting strips k. The slotted corner-pieces j are adjustable longitudinally or laterally. The strips k can be adjusted away

from the partition so as to take up any aberration or defect in the lens (page 2, lines 56-80). Because the admitted prior art is directed to a line reader, and Rhodes is directed to a camera which reads an entire image at one time by adjusting the sensitized plates to correct for defects in the lens, we find that one of ordinary skill in the art would not have been motivated to combine the teachings of the admitted prior art and Rhodes. Assuming arguendo that one of ordinary skill was motivated to combine the teachings of the admitted prior art and Rhodes, claim 1 would not be met because Rhodes' teaching of adjusting the sensitized plates would suggest changing the light receiving element 115 laterally, longitudinally, or away from base plate 116, but would not suggest changing the incline of the transparent covering. In addition, we find no suggestion of supporting the partition board I on the tapered edge of the recess of Rhodes, but find, rather, that the partition board I rests against blocks h<sup>2</sup>. In any event, the tapered portion of Rhodes is not for adjusting focus, and the frame D<sup>2</sup> having the tapered portion would correspond to the portion of the frame 110 of the admitted prior art that secures base plate 116 in place, and not to the portion of the frame that receives the transparent covering. We find that the only suggestion of inclining the

transparent covering on the frame having tapered sides to increase the thickness of the transparent covering along a light receiving axis to change the focal length comes from appellants' disclosure.

With respect to independent claims 3 and 20, while we agree with the examiner that chamfers are known to be used to reduce the risk of injury to a user, we find no suggestion of providing top and bottom chamfers of different depths on the transparent covering to change the thickness of the transparent covering above the top portion of the frame. Moreover, we find the examiner's conclusionary statement (answer, page 6) that it would have been obvious to select appropriate coverings through trial and error, by trying different coverings, or trying a single covering in different orientations and angles until a best result is obtained, to be speculation, unsupported by evidence in the record. From all of the above, we find that the examiner has failed to establish a prima facie case of obviousness of claims 1-5 and 20-22. Accordingly, the rejection of claims 1-5 and 20-22 under 35 U.S.C. § 103 is reversed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1-5, 12-15, 20-23, and 25-27 under 35 U.S.C. § 101; 35 U.S.C. § 112, first paragraph; 35 U.S.C. § 112, second paragraph, and 35 U.S.C. § 103 is reversed.

REVERSED

LEE E. BARRETT	)	
Administrative Patent Judge	)	
	)	
	)	
	)	
	)	BOARD OF PATENT
STUART S. LEVY	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
HOWARD B. BLANKENSHIP	)	
Administrative Patent Judge	)	

Appeal No. 1997-0897  
Application No. 08/227,992

Page 21

BIRCH, STEWART, KOLASCH & BIRCH  
P. O. BOX 747  
FALLS CHURCH, VA 22040-0747