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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* NICOLE GIESSLER and SEBASTIEN WEITBRUCH

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Appeal 2019-003815  
Application 14/953,919  
Technology Center 2400

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Before ROBERT E. NAPPI, THU A. DANG, and  
JOHN P. PINKERTON, *Administrative Patent Judges*.

DANG, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF THE CASE

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–15 and 17–19 (Appeal Br. 5–12), which constitute all claims pending in this application.<sup>1</sup> Claim 16 was previously cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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<sup>1</sup> We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. According to Appellant, the real party in interest is Scholly Fiberoptic GmbH. Appeal Br. 3.

### A. INVENTION

According to Appellant, the claimed invention relates to “an image processing” method, wherein “an image sequence of images is processed” in which “the image content is separated from the periphery by a separation line that describes in at least one section a circle section.” Spec. ¶ 5.

### B. ILLUSTRATIVE CLAIM

Claim 1 is illustrative of the claimed subject matter and is reproduced below:

1. An image processing method (18), comprising:  
processing an image sequence (8) of images (9) which in each case have an image content (10) and a periphery (11) that is complementary to the image content (10),  
separating the image content (10) from the periphery (11) by a separation line (12) that describes in at least a section (61) a circle section (62),  
for each of the images (9) in the image sequence (8),  
ascertaining a position indication (23) of a center (24) of the image content (10) that is defined by the circle section (62) in at least one of a computer-implemented or hardware-implemented statistical evaluation method (20), and  
carrying out at least one image editing step (60) for each said image (9) that processes at least the position indication (23) as a parameter, and centering the respective image content (10) in the image editing step (60).

### C. REJECTIONS

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

<b>Name</b>	<b>Reference</b>	<b>Date</b>
Smith	<i>SUSAN—A New Approach to Low Level Image Processing</i> , 23 Int’l J. Comp Vis., 45–78	May 6, 1997
Lazebnik	<i>A Sparse Texture Representation Using Affine-Invariant Regions</i> , 2003 IEEE Comp. Soc. Conf.	July 2003

Claims 1–3, 10–15, and 17 stand rejected under 35 U.S.C. § 102(a)(1) as being anticipated by Smith.

Claims 4–9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Smith and Lazebnik.

Claims 18 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Smith.

## II. ISSUES

The dispositive issues before us are whether the Examiner has erred in determining that Smith teaches or suggests an image processing method comprising the steps of “processing an image sequence (8) of images (9),” “separating the image content (10) from the periphery (11) by a separation line (12) that describes in at least a section (61) a circle section (62),” and for each of the images, “ascertaining a position indication (23) of a center (24) of the image content (10) that is defined by the circle section (62)” and “centering the respective image content (10) in the image editing step (60).” Claim 1.

### III. ANALYSIS

#### A. Claims 1–3, 10–15, and 17

With respect to the Examiner’s rejection of claims 1–3, 10–15, and 17 as being anticipated by Smith under 35 U.S.C. § 102(a)(1), Appellant contends that Smith does not show all of the features of independent claim 1. Appeal Br. 11. According to Appellant, the Examiner has “refused to consider what is recited in the claims.” Reply Br. 3 (emphasis omitted). In particular, Appellant contends that claim 1 “clearly sets forth that the sequence of images are processed,” where, “for each of the images in the sequence a center of the image is ascertained,” and that “in the image editing step, using the ascertained center the respective image content is centered.” *Id.* at 4 (emphasis omitted). According to Appellant, in the claimed invention, “image content” is described as “an image content 10 and a periphery 11, which are separated from one another by a separation line 12” which “cannot be equated with two-dimensional features (such as corners) as taught by Smith.” Appeal Br. 11.

We have considered all of Appellant’s arguments and evidence presented. We agree with Appellant that the preponderance of the evidence on this record does not support the Examiner’s legal conclusion that claim 1, claim 17 reciting similar limitations, and claims 2, 3, and 10–15 depending from claim 1, are anticipated by Smith.

The claimed invention is directed to “improving the representation of an image sequence recorded with an endoscope arrangement.” Spec. ¶ 11. In particular, the invention provides an image processing method in which, for each image of the image sequence, the center position of the image

content that is defined by a circle section is ascertained. *Id.* ¶ 12. Figures 3–5 are reproduced below:

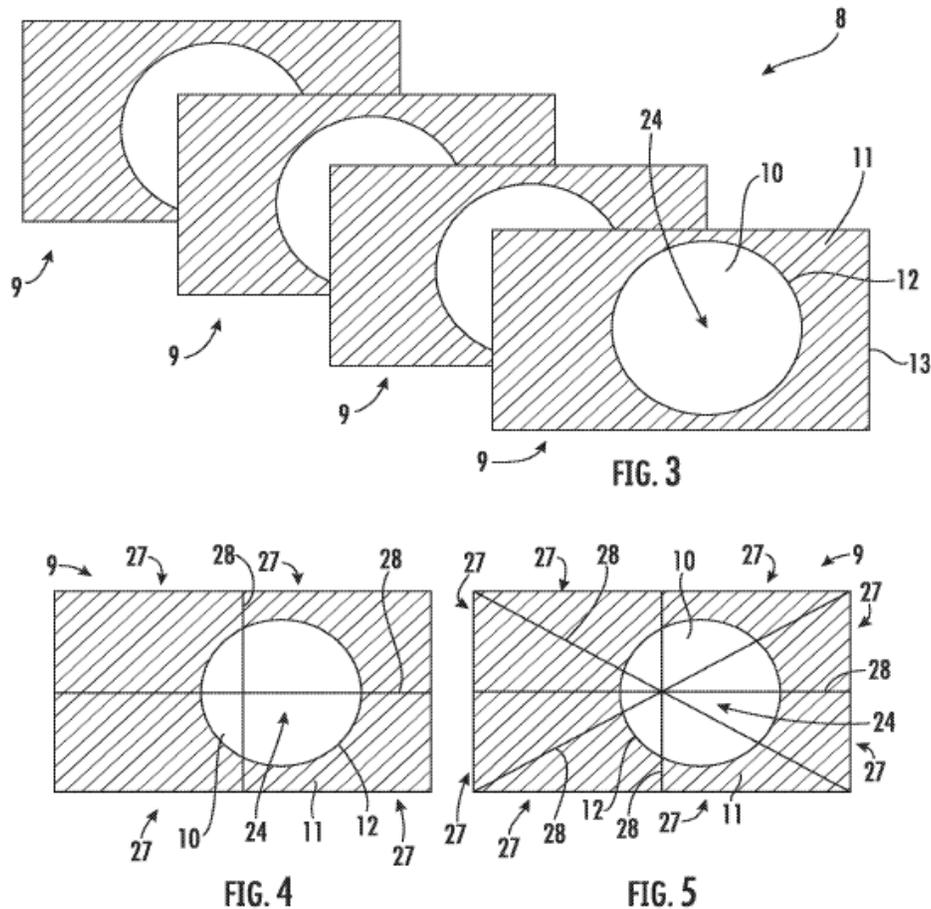


Figure 3 shows a sequence of images, Figure 4 shows segmenting of an image in the image sequence shown in Figure 3, and Figure 5 shows further segmenting of the image in the image sequence to ascertain the center position. Spec. ¶¶ 46–48.

On the record before us, we are persuaded that the Examiner erred in finding that Smith teaches: “processing an image sequence (8) of images (9),” “separating the image content (10) from the periphery (11) by a separation line (12) that describes in at least a section (61) a circle section (62),” and for each of the images, “ascertaining a position indication (23) of

a center (24) of the image content (10) that is defined by the circle section (62)” and “centering the respective image content (10) in the image editing step (60),” as recited in claim 1.

Instead, we agree with Appellant that “Smith is concerned with enabling an improved edge detection (‘corner detection’) as well as a reduction of noise,” wherein “[t]he starting point of the method of Smith et al. is a circular mask” and “[t]he image to be analyzed and its image content are described simply as ‘dark rectangle on a white background’.” Appeal Br. 7 (citing Smith § 2, first paragraph).

Smith discloses an approach to edge and corner detection in image processing. Smith Abstract. Figure 1 of Smith is reproduced below:

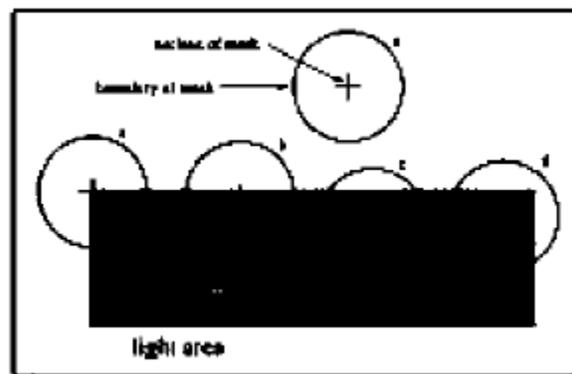


Figure 1. Four circular masks at different places on a simple image.

Figure 1 of Smith shows a dark rectangular image on a white background, wherein a circular mask is shown at five image positions with respect to the rectangular image. Smith § 2, first paragraph.

Figure 2 of Smith is reproduced below:

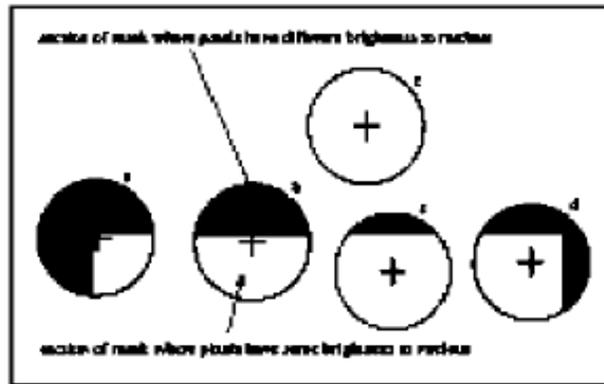


Figure 2. Four circular masks with similarity colouring; USANs are shown as the white parts of the masks.

Figure 2 of Smith shows the five circular masks respectively at the five image positions in Figure 1, wherein each mask has a defined area having the same brightness as the nucleus (“USAN”) shown in white. Smith § 2, second paragraph. As shown in Figure 2, the USAN is at maximum when the nucleus lies in a flat region of the image surface, falling to half of this maximum when near a straight edge and falling further when inside a corner, and thus, this property of the USAN’s area is used as the main determinant of the presence of edges and two-dimensional features. *Id.* § 2, fourth paragraph.

As Appellant points out, Smith, “as a starting point, uses a circular mask with a known center to sequentially analyze, in several detection steps per image, different areas of a single image, so as to detect edges of surfaces.” Appeal Br. 7 (emphasis omitted). We agree with Appellant that, as shown in Smith’s Figure 2, “[t]he image to be analyzed and its image content are described simply as ‘dark rectangle on a white background’.” Appeal Br. 7 (citing Smith § 2, first paragraph).

In rejecting the claims over Smith, the Examiner relies on Smith’s “circular mask boundaries” as the claimed “separation line (12) that

describes . . . a circle section (62).” Ans. 3. However, the Examiner also finds that “a detected edge or corner in Smith is within the scope of ‘image content’ as claimed.” Final Act. 3. As shown in Figure 2, Smith’s “circular mask boundaries” do not separate “image content,” *i.e.*, “detected edge or corner” (Final Act. 3) from the periphery, as required by the claims.

*Compare claim 1 with Smith, Fig. 2.*

The Examiner also relies on Smith’s use of the circular mask’s “nucleus” as the claimed “center of the image content.” Ans. 4. However, because the Examiner also defines “image content” as “a detected edge or corner in Smith” (Final Act. 3), Smith’s circular mask’s “nucleus” is not the center of “image content” (*i.e.*, “detected edge or corner”), as claimed. *See Smith Fig. 2.* In fact, as Appellant points out, in Smith, the circular mask already has “a known center” to sequentially analyze to detect edges and corners (Appeal Br. 7), and thus, there is no “ascertaining a position indication of a center of the image content” as claimed, because the center is already known. *Compare claim 1 with Smith Fig. 2.*

Accordingly, we are unpersuaded by the Examiner’s finding that claim 1’s “separating the image content (10) from the periphery (11) by a separation line (12) that describes in at least a section (61) a circle section (62)” encompasses Smith’s “circular mask boundaries,” or that “ascertaining a position indication of a center of the image content that is defined by the circle section” encompasses Smith’s “‘nucleus’ of mask at center indicated by crosshair marking.” Ans. 3–4. Consequently, we are constrained by the record before us to find that the Examiner erred in finding Smith anticipates Appellant’s claim 1, and independent claim 17 including limitations of commensurate scope. Dependent claims 2, 3, and 10–15 depend on claim 1,

and thus, stand therewith. Accordingly, we do not sustain the Examiner's anticipation rejection of claims 1–3, 10–15, and 17 over Smith.

B. Claims 4–9

The Examiner does not suggest, and has not established on this record, that the additionally cited Lazebnik reference overcomes the aforementioned deficiencies of Smith. *See* Final Act. 8–9. Consequently, we are constrained by the record before us to find that the Examiner erred in concluding that the combination of Smith and Lazebnik renders obvious Appellant's dependent claims 4–9 depending from independent claim 1.

C. Claims 18 and 19

The Examiner relies on the same reasoning as claim 17 reciting similar limitations as claim 1 (*supra*) for rejecting claims 18 and 19 depending from claim 17. *See* Final Act. 9–10. As discussed *supra*, the Examiner erred in concluding Smith teaches and suggests the recited limitations of claim 17. Consequently, we are constrained by the record before us to also find that the Examiner erred in concluding that Smith renders obvious Appellant's dependent claims 18 and 19 depending from independent claim 17.

#### IV. CONCLUSION AND DECISION

The Examiner's rejection of claims 1–3, 10–15, and 17 under 35 U.S.C. § 102(a)(1) and rejections of claims 4–9, 18, and 19 under 35 U.S.C. § 103(a) are reversed.

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1-3, 10-15, 17	102(a)(1)	Smith		1-3, 10-15, 17
4-9	103(a)	Smith, Lazebnik		4-9
18	103(a)	Smith		18
19	103(a)	Smith		19
<b>Overall Outcome</b>				1-15, 17-19

REVERSED