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ESSITY HYGIENE AND HEALTH AKTIEBOLAG c/o Buchanan Ingersoll & Rooney, PC 1737 King Street, Suite 500 Alexandria, VA 22314			RANDALL, JR., KELVIN L	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ANDERS STRÅHLIN, GUNILLA HIMMELMANN,
ROBERT KLING, PETER REHNSTRÖM, and JERRY SVEDLUND

Appeal 2019-006551
Application 13/823,307
Technology Center 3600

Before CHARLES N. GREENHUT, JAMES P. CALVE, and
GEORGE R. HOSKINS, *Administrative Patent Judges*.

HOSKINS, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–7, 9–17, and 23–27 in this application.

We REVERSE.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies Essity Hygiene and Health Aktiebolag as the real party in interest. Appeal Br. 2.

CLAIMED SUBJECT MATTER

Claim 1 illustrates the subject matter on appeal, and it recites, with our emphases added:

1. A tissue dispensing system, comprising:
 - a tissue holder arranged to receive a tissue product to be dispensed from the tissue holder, the tissue holder comprising at least one sensor collection unit arranged on the tissue holder, the at least one sensor collection unit comprising:
 - at least one sensor collection processing unit,
 - at least one communication interface,
 - at least two sensor elements, each of the two sensor elements comprising a light source and a light detector and the two sensor elements being separated a distance from each other in at least one direction relative to the tissue product, each of the at least two sensor elements is arranged to transmit light from the light source towards the tissue product and detect reflected light in the light detector, and
 - wherein the at least one sensor collection processing unit is configured such that *sensing intervals at which the at least the two sensor elements transmit light is adjustable*, and wherein *an interval at which the at least one communication interface communicates results of the at least two sensor elements is adjustable*;
 - a data collection unit comprising at least one data collection processing unit and a communication unit configured to receive difference signals from the at least one sensor collection unit; and
 - a third processing unit configured to receive and analyze data from the communication unit and determine a level of the tissue product in the tissue holder; and
 - wherein the data collection unit is arranged to receive difference signals from the at least one sensor collection unit, and to communicate information to the third processing unit for analysis and level determination.

Appeal Br., Claims App. 1–2 (emphases added).

REJECTIONS ON APPEAL

In the Final Office Action, claims 1–7, 9–17, and 23–27 are rejected under 35 U.S.C. § 112, first paragraph,² as failing to comply with the written description requirement. Final Act. 4–5. The Answer then indicates this rejection is withdrawn as to “[c]laims 1–7, 10–7, and 23–27.” Ans. 3. Having reviewed the rejection in the Final Office Action, we conclude the reasoning behind the rejection applies equally to all claims 1–7, 9–17, and 23–27, so we understand this rejection to have been withdrawn as to all claims. We therefore do not discuss this rejection further.

Claims 1–7, 10–17, and 23–27 are rejected under 35 U.S.C. § 103(a) as having been obvious over Goerg (US 2010/0268381 A1, pub. Oct. 21, 2010), Schneider (US 6,314,971 B1, iss. Nov. 13, 2001), and Ramsey (US 4,928,949, iss. May 29, 1990).

Claim 9 is rejected under 35 U.S.C. § 103(a) as having been obvious over Goerg, Schneider, Ramsey, and Kling (US 2007/0236110 A1, pub. Oct. 11, 2007).

OPINION

A. Obviousness over Goerg, Schneider, and Ramsey (Claims 1–7, 10–17, and 23–27)

1. Claims 1–7, 10–14, and 23–27

In rejecting claim 1, the Examiner finds Ramsey discloses, in Figure 4, a sensor collection unit comprising “multiple sensors (54),” and

² The application on appeal is a national stage entry (completed in June 2013) of a PCT application (filed in September 2010). Based on the PCT application filing date, the pre-AIA versions of 35 U.S.C. § 112 and § 103 apply here. See MPEP §§ 2159.01 & 2161.

having the claimed adjustable sensing interval and adjustable communication interval. Final Act. 7. The Examiner interprets the claim term “adjustable” as encompassing “any instance that is more than one or once of something happening.” *Id.* at 3. The Examiner then finds that, in Ramsey, the “sensing intervals at which the at least the two sensor elements transmit light is adjustable,” because “there are multiple detectors which are placed at multiple adjustable locations.” *Id.* at 7 (citing Ramsey, 4:53–67). The Examiner also finds Ramsey, “[i]n combination with Goerg and Schneider teaches multiple types of adjustable (various) sensor types and alternative multiple sensor elements at variable locations by way of corresponding parts.” *Id.* The Examiner further finds that, in Ramsey, the “interval at which the at least one communication interface communicates results of the at least two sensor elements is adjustable,” because “the communication interface communicates various states and thus, is adjustable.” *Id.* The Examiner concludes it would have been obvious to incorporate adjustable sensing and communication intervals into the tissue dispensing system of Goerg and Schneider, based on these teachings in Ramsey. *Id.* at 7–8.

Appellant argues Ramsey does not disclose a sensor collection unit configured to have an adjustable sensing interval, or an adjustable communication interval. Appeal Br. 12–14; Reply Br. 3–4. As to sensing intervals, Appellant contends “the claimed intervals relate to the frequency at which the sensor elements transmit light,” whereas Ramsey’s two sensors 54 “are intended to show two condition levels based on the amount of product remaining in the dispenser,” and there is no discussion or hint in Ramsey “that the spacing between the sensors 54 is adjustable” within the

housing shown in Figure 4. Appeal Br. 13; Reply Br. 3. As to communication intervals, Appellant contends “there is simply no discussion of adjusting communication intervals” in the Ramsey disclosure cited by the Examiner. Appeal Br. 13–14; Reply Br. 3–4.

The Examiner answers that, “although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.” Ans. 7, 8 (citing *In re Van Geuns*, 988 F.2d 1181 (Fed. Cir. 1993)). As to sensing intervals, the Examiner concludes: “‘Frequency at which the sensor elements transmit light’ has not been claimed in claim 1.” *Id.* at 7. As to communication intervals, the Examiner finds Ramsey discloses “multiple detectors which are placed at multiple adjustable locations,” and the combined disclosures of Ramsey, Goerg, and Schneider “teach[] multiple types of adjustable (various) sensor types and alternative multiple sensor elements at variable locations by way of corresponding parts.” *Id.* at 8.

We address the foregoing arguments, firstly as they relate to an adjustable sensing interval, and secondly as they relate to an adjustable communication interval.

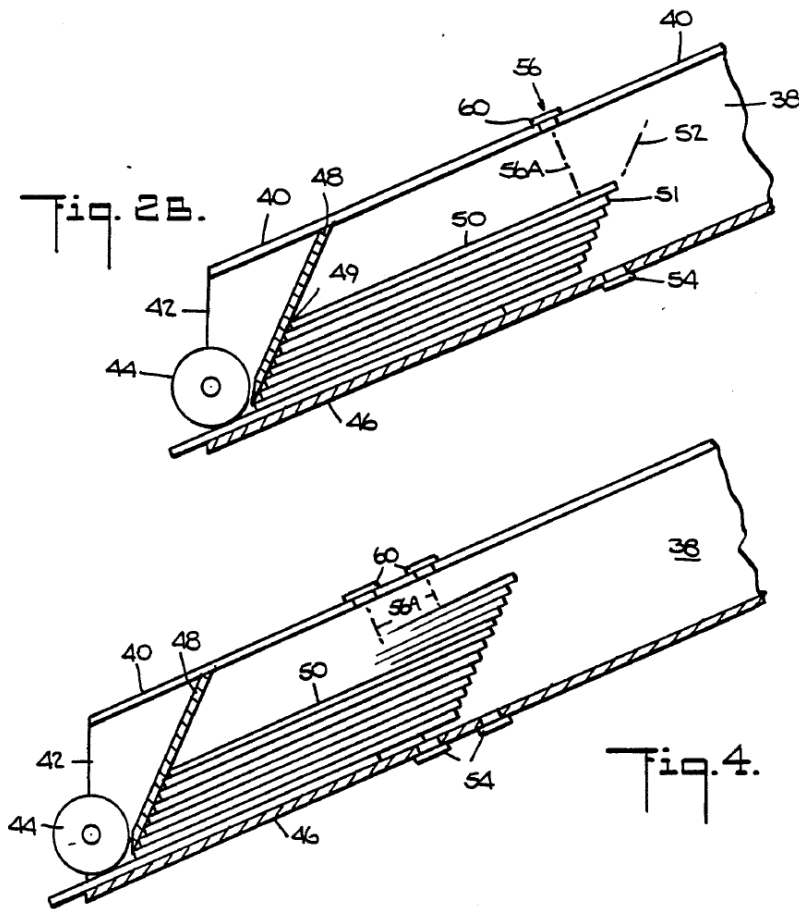
a. Adjustable Sensing Interval

Claim 1 recites a “sensor collection processing unit is configured such that sensing intervals at which the at least the two sensor elements transmit light is adjustable.” Appeal Br., Claims App. 1. We give claim 1 the broadest reasonable construction that is consistent with Appellant’s Specification. *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004).

The Specification correspondingly describes a sensor control unit (SCU) in which “[t]he frequency interval for the sensing . . . may be changed according to different demands, for instance depending on type of dispenser or battery consumption demands.” Spec. (filed Mar. 14, 2013), 7:18, 8:15–9:8. For example, the sensing “might e.g. be in intervals of 1 per second, 1 per 10 seconds,” or have some other time interval. *Id.* at 9:8–11. Thus, based on Appellant’s Specification, it is clear that claim 1 encompasses at least an adjustable *time* interval between each transmission of light to perform a sensing operation. Claim interpretations excluding the preferred embodiment are rarely, if ever, correct. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1997).

The disputed issue is whether claim 1 additionally encompasses an adjustable *spatial* interval between two sensor elements. The Examiner’s position is that spatial intervals are encompassed, and Appellant’s position is that spatial intervals are not encompassed. We need not resolve this dispute, because even if the Examiner is correct, we cannot sustain the Examiner’s finding that Ramsey discloses an adjustable sensing interval.

Figures 2B and 4 of Ramsey are reproduced below.



These Figures illustrate two different embodiments of a document feeder module. Ramsey, 2:16–22, 3:12–13, 4:53–54. Both modules hold a stack of documents 50 fed out of the module, one at a time, by feeder roll 44. *Id.* at 3:13–29.

The module of Figure 2B includes light source 56 on top wall 40 above stack 50, and light sensor 54 on bottom wall 46 below stack 50, so the decreasing height of stack 50 permits an increasing amount of light to pass from source 56 to sensor 54. *Id.* at 3:13–58. Thus, “[b]y appropriately positioning” sensor 54 along bottom wall 46, “the sensing of predetermined diminishment of the paper supply rather [than] absolute depletion can be accomplished.” *Id.* at 3:58–4:7. In particular, sensor 54 provides a low warning indication “[a]t a predetermined light level.” *Id.* at 4:1–5.

The module of Figure 4 includes two light sources 56 and two light sensors 54, “for indicating two conditions, first an early warning condition where approximately 25–40 percent of the documents have been fed, and a second more urgent later condition indicating that approximately 80–90 percent of the documents have been fed.” *Id.* at 4:53–61.

There is clearly no indication in the foregoing disclosure that the *timing* of when source(s) 56 emit light, or sensor(s) 54 sense light, is adjustable.

We, further, agree with Appellant’s argument that the foregoing disclosure does not reflect an adjustable *spatial* position of light source(s) 56 on top wall 40, or of light sensor(s) 54 on bottom wall 46. At best, Ramsey indicates that the position of sensor(s) 54 on bottom wall 46 may be selected at the time of manufacture, based on the width of the documents forming stack 50. *Id.* at 3:58–4:7. There is no indication that sensor(s) 54 is or are thereafter “adjustable” to more than one position, as is required by claim 1. Just as important, even if such spatial position adjustability of sensor(s) 54 were contemplated by Ramsey, this adjustability would be unrelated to the specific requirement of claim 1 that the “sensing *intervals at which* the at least the two sensor elements *transmit light* is adjustable” (emphasis added).

We have further considered the Examiner’s determination that Ramsey, “[i]n combination with Goerg and Schneider,” discloses the claimed adjustable sensing interval “by way of corresponding parts.” Final Act. 7; Ans. 8. However, the Examiner does not explain, and we are unable to discern, how the addition of Goerg and Schneider to the disclosure of Ramsey discussed above might lead to the claimed adjustable sensing interval. *See* Final Act. 6–8.

Thus, we determine the Examiner erred in relying on Ramsey as disclosing an adjustable sensing interval as recited in claim 1 and its dependent claims 2–7, 10–14, and 23–27. For this first reason, we do not sustain the rejection of these claims as having been obvious over Goerg, Schneider, and Ramsey.

b. Adjustable Communication Interval

Claim 1 recites a “sensor collection processing unit is configured such that . . . an interval at which the at least one communication interface communicates . . . is adjustable.” Appeal Br., Claims App. 1. We give claim 1 the broadest reasonable construction that is consistent with Appellant’s Specification. *Am. Acad.*, 367 F.3d at 1364.

The Examiner construes this claim limitation as encompassing a communication interface that “communicates various states” (Final Act. 7), because the term “adjustable” encompasses “any instance that is more than one or once of something happening” (*id.* at 3). We conclude this construction is unreasonably broad, because it conflates *what* is communicated (i.e., various states of the tissue holder) with *how* it is communicated (i.e., at various intervals). The basic purpose of a sensor is to sense and communicate different states of the sensed device or property over the course of time. Therefore, if we were to apply the Examiner’s interpretation of the term “adjustable,” claim 1 would cover any sensor that is working properly, rendering this claim term essentially meaningless.

The Examiner finds Ramsey discloses an adjustable communication interval in Figure 4 and column 4, lines 53–67. *Id.* at 7. The cited written description indicates Figure 4 (which is reproduced above) illustrates:

[T]he document feeder module may be provided with a plurality of sensors 54, driven either by ambient light or by artificial light, located along the path of the feed line, for indicating two conditions, first an early warning condition where approximately 25–40 percent of the documents have been fed, and a second more urgent later condition indicating that approximately 80–90 percent of the documents have been fed.

Ramsey, 4:53–67. According to the Examiner, this passage discloses an adjustable communication interval, because “the communication interface communicates various states.” *Id.*; Ans. 8. However, as discussed above, this finding rests upon an unreasonably broad construction of the claimed adjustable communication interval. Further, we discern no indication in the foregoing disclosure that the interval at which Ramsey’s sensor collection unit (i.e., light source(s) 56 and light sensor(s) 54) communicates its collected data is adjustable.

We have further considered the Examiner’s determination that Ramsey, “[i]n combination with Goerg and Schneider,” discloses the claimed adjustable communication interval “by way of corresponding parts.” Ans. 8. However, the Examiner does not explain, and we are unable to discern, how the addition of Goerg and Schneider to the disclosure of Ramsey discussed above might lead to the claimed adjustable communication interval. *See id.* The Examiner does find in passing that “Goerg teaches an alternative adjustable means of communication as seen in paragraphs [0160 and 0167].” Final Act. 6–7. However, the Examiner does not relate this finding to Ramsey’s disclosure. *See id.* at 6–8. Our review of paragraphs 160 and 167 in Goerg does not reveal anything that might reflect

the interval at which Goerg's sensor collection unit (i.e., DSU 1014) communicates its collected data is adjustable.

Thus, we determine the Examiner erred in relying on Ramsey and Goerg as disclosing an adjustable communication interval as recited in claim 1 and its dependent claims 2–7, 10–14, and 23–27. For this second reason, we do not sustain the rejection of these claims as having been obvious over Goerg, Schneider, and Ramsey.

2. *Claims 15–17*

Independent claim 15 recites substantially the same adjustable sensing and communication interval limitations discussed above in connection with claim 1. Appeal Br., Claims App. 5. The Examiner's rejection, and Appellant's arguments, are likewise substantially the same. *See* Final Act. 8–10; Appeal Br. 19–20. For the reasons provided in connection with claim 1, we do not sustain the rejection of claim 15 and its dependent claims 16 and 17 as having been obvious over Goerg, Schneider, and Ramsey.

B. Obviousness over Goerg, Schneider, Ramsey, and Kling (Claim 9)

Independent claim 9 recites substantially the same adjustable sensing and communication interval limitations discussed above in connection with claim 1. Appeal Br., Claims App. 3. The Examiner's rejection, and Appellant's arguments, are likewise substantially the same. *See* Final Act. 11–13; Appeal Br. 15–16. For the reasons provided in connection with claim 1, we do not sustain the rejection of claim 9 as having been obvious over Goerg, Schneider, Ramsey, and Kling.

CONCLUSION

In summary, we reverse the Examiner's decision to reject claims 1–7, 9–17, and 23–27, as summarized in this table:

Claims Rejected	35 U.S.C. §	Reference(s) / Basis	Affirmed	Reversed
1–7, 9–17, 23–27	112 ¶ 1	Written Description ³		
1–7, 10–17, 23–27	103(a)	Goerg, Schneider, Ramsey		1–7, 10–17, 23–27
9	103(a)	Goerg, Schneider, Ramsey, Kling		9
Overall Outcome				1–7, 9–17, 23–27

REVERSED

³ As explained above, we do not reach this rejection, because it was withdrawn in the Answer.