



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/882,636	04/30/2013	Martinus Petrus Creusen	2010P00912WOUS	9638
138325	7590	12/16/2019	EXAMINER	
Signify Holding B.V. 465 Columbus Avenue Suite 330 Valhalla, NY 10595			O TOOLE, COLLEEN J	
			ART UNIT	PAPER NUMBER
			2842	
			NOTIFICATION DATE	DELIVERY MODE
			12/16/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Gigi.Miller@signify.com
jo.cangelosi@signify.com
kim.larocca@signify.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARTINUS PETRUS CREUSEN, RALPH KURT,
HAIMIN TAO, CARSTEN DEPPE, GEORG SAUERLAENDER, and
PETER HUBERTUS FRANCISCUS DEURENBERG

Appeal 2019-000535
Application 13/882,636
Technology Center 2800

Before BRADLEY R. GARRIS, JEFFREY T. SMITH, and
BRIAN D. RANGE, *Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 2–4, 9–13, 18, 19, 28, and 29. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Philips Lighting Holding B.V.. Appeal Br. 3.

CLAIMED SUBJECT MATTER

The claims are directed to an apparatus comprising a light emitting diode (LED) module comprising an LED string of a first LED segment 11 and one or more further LED segments 12–14 in combination with a current control device 45, wherein the current control device, the first LED segment and the one or more further LED segments are all connected in series with each other between first and second LED driver input terminals 30, 39 (independent claim 4, Fig 1a). The claims also are directed to a corresponding method of driving such an LED string (remaining independent claim 10). Claim 4, reproduced below, is illustrative of the claimed subject matter:

4. An apparatus, comprising:
 - a light emitting diode (LED) module comprising an LED string of a first LED segment and one or more further LED segments, wherein each LED segment comprises at least one LED; and
 - an LED driver circuit comprising:
 - first and second LED driver input terminals adapted to be connected to a rectified AC mains voltage such that the rectified AC mains voltage is applied across the first and second LED driver input terminals, wherein the first LED segment and the one or more further LED segments are connected together in series with each other between the first and second LED driver input terminals;
 - one or more switching devices, each switching device being connected across a corresponding one of the one or more further LED segments;
 - control circuitry for controlling an open state or a closed state of each of the switching devices which are connected across the further LED segments, the control circuitry being adapted to control all of the switching devices which are connected across the further LED segments to have a closed state whenever the rectified AC mains voltage is less than a predetermined voltage level, and to control a first one of the switching devices connected across a first one of the further LED segments to have an

open state whenever the rectified AC mains voltage is greater than the predetermined voltage level; and

a current control device, wherein the current control device, the first LED segment[,] and the one or more further LED segments are all connected in series with each other between the first and second LED driver input terminals, where the current control device is adapted to pulse width modulate a current flowing through it,

wherein the first LED segment emits light having a first color temperature, and the first one of the further LED segments emits light having a second color temperature higher than the first color temperature, and the light emitted by the first LED segment and the light emitted by the first one of the further LED segments are superimposed.

REJECTIONS

Under pre-AIA 35 U.S.C. § 103(a), the Examiner rejects claims 2, 4, 9–13, 18, 19, 28, and 29 as unpatentable over Yamamoto (US 7,564,198 B2, issued July 21, 2009) in view of Grootes (US 7,317,403 B2, issued Jan. 8, 2008) and rejects claims 3 as unpatentable over these references in combination with Melanson (US 7,288,902 B1, issued Oct. 30, 2007).²

OPINION

We sustain the Examiner’s rejections for the reasons expressed in the Final Office Action, the Examiner’s Answer, and below.

In rejecting claim 4, the Examiner finds that Yamamoto discloses all aspects of the claimed apparatus except for the limitation concerning a current control device (Final Act. 2–3 (citing Yamamoto Fig. 7)), and Appellant does not argue otherwise (*see generally* Appeal Br.). The

² Appellant submits arguments specifically directed to independent claim 4 (Appeal Br. 11–14) and relies on these arguments in addressing the other claims under rejection (*id.* at 14–15). Therefore, claims 2, 3, 9–13, 18, 19, 28, and 29 will stand or fall with representative claim 4.

Examiner finds that Grootes teaches a current control device and concludes that it would have been obvious “to use the current control device taught by Grootes in the circuit of Yamamoto to separately control the brightness of the LEDs” (Final Act. 3 (citing Grootes Fig. 4 elements 40–42, col. 3, ll. 23–28)).

Referring to Grootes’s Figure 4, Appellant argues “Grootes permits separate control of the LEDs by placing each string of LEDs in parallel with the other LED strings, destroying the serial relationship required by the independent claims” (Appeal Br. 13). Appellant further argues “Yamamoto cannot be combined with Grootes in a way that preserves the series relationship required by the claims and also provides the separate control of the LEDs segments of Grootes that the Final Office Action relies on for the motivation to combine” (*id.*). According to Appellant, “any combination of Yamamoto with Grootes that did retain a series combination of the LEDs would necessarily lack any ability to control the LEDs separately, thus destroying the Final Office Action’s motivation to combine” (*id.* at 13–14).

Contrary to Appellant’s arguments, the parallel connection of multiple LED strings shown in Figure 4 of Grootes does not result in “destroying the serial relationship required by the independent claims” (Appeal Br. 13). More specifically, claim 4 does not require multiple LED strings and correspondingly does not require a serial connection of multiple LED strings. Rather, the claim recites “a light emitting diode (LED) module comprising an LED string of a first LED segment and one or more further LED segments” in combination with “a current control device, wherein the current control device, the first LED segment, and the one or more further LED segments are all connected in series with each other” (claim 4). The

Figure 4 embodiment of Grootes includes a serial connection between a current control device (e.g., Grootes element 40) and the multiple LED segments of an individual LED string (e.g., Grootes element 32) as required by claim 4.

In responding to Appellant's arguments, the Examiner finds that Figure 7 of Yamamoto discloses an LED module comprising an LED string of multiple serially connected LED segments (e.g., Yamamoto blocks (N-1), 1, 0) (Ans. 2). The Examiner additionally finds that Figure 4 of Grootes discloses plural current control devices 40–42 and LED strings 32–34 where each current control device is serially connected to its associated LED string and the segments contained therein (*id.* at 3 (citing Grootes col. 3, ll. 23–28, col. 4, ll. 52–54)). We observe that Appellant does not challenge these particular findings in the record before us (i.e., no Reply Brief has been filed). We agree with the Examiner that the above findings support a conclusion that it would have been obvious to provide Yamamoto with an individual current control device for each LED string to separately control LED brightness as taught by Grootes.

These circumstances lead us to determine that Appellant's arguments fail to reveal error in the Examiner's rejection of representative claim 4.

CONCLUSION

We affirm the Examiner's decision to reject claims 2–4, 9–13, 18, 19, 28, and 29.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
2, 4, 9–13, 18, 19, 28, 29	103(a)	Yamamoto, Grootes	2, 4, 9–13, 18, 19, 28, 29	
3	103(a)	Yamamoto, Grootes, Melanson	3	
Overall Outcome			2–4, 9–13, 18, 19, 28, 29	

TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED