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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/380,439	12/15/2016	Steven E. Adams	16-197-WI	3310
32118	7590	05/28/2020	EXAMINER	
LAMBERT SHORTELL & CONNAUGHTON 92 STATE STREET BOSTON, MA 02109-2004			TADESSE, YEWEBDAR T	
			ART UNIT	PAPER NUMBER
			1717	
			NOTIFICATION DATE	DELIVERY MODE
			05/28/2020	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte STEVEN E. ADAMS, ANDREW T. SINCLAIR,
ROBERT J. ROSE, and IAN L. CHURCHER

Appeal 2019-004301
Application 15/380,439
Technology Center 1700

Before JAMES C. HOUSEL, MICHELLE N. ANKENBRAND, and
JULIA HEANEY, *Administrative Patent Judges*.

HOUSEL, *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 1–7, 10, and 12–21. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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 Worthen Industries. Appeal Brief (“Appeal Br.”) filed December 4, 2018, at 2.

CLAIMED SUBJECT MATTER²

The invention relates to a two component adhesive application system having a first roller portion for applying a stabilized adhesive to a substrate, and a second sprayer portion for spraying an activator to destabilize the adhesive after it is applied to the substrate. Spec. 2:1–3. Appellant discloses that this system allows a thinner layer of stabilized adhesive to be applied to the substrate than can be done without stabilized adhesive. *Id.* at 2:7–9. Appellant also discloses that the sprayed activator may be applied to a full area, or substantially less area, of the adhesive application on the substrate. *Id.* at 2:10–11.

Claim 1, reproduced below from the Claims Appendix to the Appeal Brief with the limitation at issue in italics, is illustrative of the claimed subject matter:

1. An adhesive application apparatus comprising:

a roll applicator configured to roll-apply an adhesive to a substrate;

an activator sprayer positioned downstream of the application direction, the activator sprayer positioned in a direction to spray an adhesive activator on the substrate after the application of the adhesive; and

wherein the activator sprayer is positioned to cause an activator spray to contact approximately 5%–50% of the surface area of the substrate.

² This Decision also refers to the Specification (“Spec.”) filed December 15, 2016, the Final Office Action (“Final Act.”) dated July 9, 2018, the Examiner’s Answer (“Ans.”) dated March 6, 2019, and the Reply Brief (“Reply Br.”) filed May 6, 2019.

Independent claim 14 recites an adhesive application conveyor system including, *inter alia*, a roll applicator and a plurality of adhesive applicator sprayers downstream of the roll applicator, wherein the plurality of sprayers are positioned to spray activator on approximately 5–50% of the substrate surface area. Appeal Br. 19 (Claim App’x).

REFERENCES

The Examiner relies on the following prior art:

Name	Reference	Date
MacLaurin	US 2,118,212	May 24, 1938
Huber et al. (“Huber”)	US 5,670,211	Sept. 23, 1997
Allman et al. (“Allman”)	US 6,540,829 B2	Apr. 01, 2003
Doe et al. (“Doe”)	US 6,730,411 B1	May 04, 2004
Frezza et al. (“Frezza”)	US 7,014,724 B2	Mar. 21, 2006
Lee et al. (“Lee”)	US 2008/0105200 A1	May 08, 2008
Parker et al. (“Parker”)	US 2011/0311833 A1	Dec. 22, 2011

REJECTIONS

The Examiner maintains, and Appellant requests our review of, the following rejections:

1. Claims 1, 3–5, 10, and 12 under 35 U.S.C. § 102(a)(1) as anticipated by or, in the alternative, under 35 U.S.C. § 103 as unpatentable over Lee;
2. Claims 1–5, 10, and 12 under 35 U.S.C. § 103 as unpatentable over Huber;
3. Claims 14, 15, and 17–21 under 35 U.S.C. § 103 as unpatentable over Huber in view of Parker and Doe;

4. Claims 6 and 16 under 35 U.S.C. § 103 as unpatentable over Huber alone, or in view of Parker and Doe, and further in view of Allman;
5. Claim 7 under 35 U.S.C. § 103 as unpatentable over Huber in view of Frezza; and
6. Claim 13 under 35 U.S.C. § 103 as unpatentable over Huber or Lee in view of MacLaurin.

OPINION

Rejection 1: Anticipation/Obviousness based on Lee

The Examiner rejects claims 1, 3–5, 10, and 12 under 35 U.S.C. § 102(a)(1) as anticipated by or, in the alternative, under 35 U.S.C. § 103 as unpatentable over Lee. The Examiner finds that Lee discloses an adhesive application apparatus comprising a roll applicator configured to roll-apply an adhesive to a substrate, and an activator sprayer positioned downstream in the application direction and configured to spray an adhesive activator on the substrate, “wherein the activator sprayer is capable of causing an activator spray contact on approximately 5%–50% of the surface of the substrate.” Final Act. 5. The Examiner concludes that it would have been obvious to position Lee’s activator sprayer causing an activator spray contact on approximately 5–50% of the substrate surface “to apply different types of texture surface on the substrate as desired.” *Id.*

Moreover, the Examiner finds that the “wherein” clause of claim 1 is an intended use, and not a structural limitation, of the activator sprayer positioned over the substrate. Ans. 4. The Examiner finds that as Lee’s sprayer moves relative to the substrate, the amount of spraying material coverage varies depending on the length of application time, and the size and

type of substrate. *Id.* In this regard, the Examiner finds that Lee teaches controlling the positioning of the sprayer relative to the substrate and that the sprayer is automatically controlled. *Id.* The Examiner further finds that because Appellant discloses spray coverage may range from 5–100%, “there is no criticality or unexpected result taught with respect to the application spray contact between 5%–50% of the surface of the substrate.” *Id.* at 5. The Examiner concludes that

it would have been an obvious matter of design choice bounded by well-known manufacturing constraints and ascertainable by routine experimentation and optimization to choose these particular dimensions/ranges because applicant has not disclosed that the dimensions are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical, and it appears prima facie that the process would possess utility using another dimension.

Id.

Appellant argues that Lee fails to teach a sprayer positioned to cause 5–50% coverage of the substrate surface as required by claim 1. Appeal Br. 8. Appellant contends that the “wherein” clause of claim 1 is a structural limitation involving the structural positioning of the sprayer, rather than an intended use recitation. *Id.* Appellant urges that even if the clause recites a functional limitation, the recited function imposes a structural limitation on the configuration of the sprayer such that it must be arranged to function as claimed. *Id.* Appellant also contends that Lee is not capable of 5–50% substrate surface coverage because Lee completely coats the substrate with sprayed paint and teaches away from less coating coverage. *Id.* at 10. According to Appellant, Lee’s automatic control merely turns the sprayer on when a substrate approaches and turns the sprayer off when the substrate is not present. *Id.*

Appellant’s arguments are persuasive of reversible error in both the Examiner’s finding of anticipation and the Examiner’s conclusion of obviousness of claim 1 based on Lee. To begin, we note that claim 1 recites that “the activator sprayer *is positioned* to cause an activator spray to contact approximately 5%–50% of the surface area of the substrate.” Claim 1 (emphasis added). This clause recites that the sprayer performs the function of causing an activator spray to contact approximately 5–50% of the substrate surface based on the sprayer’s structural positioning. As such, we agree with Appellant that the clause at issue recites a structural limitation.³

In addition, Lee teaches that the sprayer’s automatic control operation is based on the sensor sensing whether or not a substrate is approaching, thereby operating the sprayer when the substrate approaches a predetermined position, but not operating the sprayer when the substrate does not approach the position. Lee ¶ 49. Lee further teaches that this is done to prevent any unnecessary spraying of the texture paints. The Examiner does not direct us to any disclosure in Lee teaching or suggesting that only part of the substrate surface may or should be painted. To the contrary, Lee teaches that the sensor and control ensure that the substrate is completely coated, without wasting paint. Lee ¶¶ 18, 62, 63.

With regard to the Examiner’s position that the “wherein” clause of claim 1 would have been an obvious matter of design choice bounded by well-known manufacturing constraints and ascertainable by routine experimentation and optimization, we note that, contrary to the Examiner’s finding, the “wherein” clause is for a particular purpose. Specifically,

³ We note that claim 1 does not exclude plural sprayers, wherein *each* sprayer is positioned to spray only 5–50% of a substrate surface.

Appellant discloses applying the activator to less than the entire substrate surface when bonding light or non-porous materials to achieve a bonding that reinforces the activated adhesive bond area, which may result in less activator and adhesive use. Spec. 3 ¶ 3, 5 ¶2; see *In re Kuhle*, 526 F.2d 553, 555 (CCPA 1975) (finding that the use of the claimed feature “would be an obvious matter of design choice” when it “solves no stated problem” and “presents no novel or unexpected result” over the disclosed alternatives). Moreover, the Examiner fails to establish that Lee teaches or suggests that the substrate area is a result effective variable that would be subject to routine experimentation and optimization. See *In re Antonie*, 559 F.2d 618, 620, 195 USPQ 6, 8 (CCPA 1977) (where the parameter optimized was not recognized in the prior art as one which would affect the results, the discovery of an optimum value may be unobvious).

Accordingly, we cannot sustain the Examiner’s anticipation and obviousness rejections of claim 1, and dependent claims 3–5, 10, and 12, based on Lee.

Rejection 2: Obviousness over Huber

The Examiner rejects claims 1–5, 10, and 12 under 35 U.S.C. § 103 as unpatentable over Huber. The Examiner finds that Huber discloses an adhesive application apparatus comprising a roll applicator and an activator sprayer positioned downstream of the application direction, wherein the activator sprayer is capable of causing an activator spray contact on approximately 5–50% of the substrate surface. Final Act. 6. The Examiner concludes that it would have been obvious to position Huber’s sprayer to cause an activator spray contact on approximately 5–50% or other

percentage of the substrate surface to apply different patterns on the substrate as desired. *Id.*

As before, the Examiner finds that the “wherein” clause of claim 1 is an intended use, and not a structural limitation, of the activator sprayer positioned over the substrate. Ans. 6. The Examiner finds that as Huber’s sprayer moves relative to the substrate, the amount of spraying material coverage varies depending on the length of application time, and the size and type of substrate. *Id.* at 7. In this regard, the Examiner finds that Huber provides independent control of the liquid and spray pattern. Final Act. 6. The Examiner further finds that Huber’s sprayer is positioned over the substrate in the same manner as in Appellant’s Figure 1. Ans. 7. The Examiner concludes that the ordinary artisan “can apply spray on the substrate for couple of seconds, minutes or hours to vary the coverage depending [on] the size and type of the substrate.” *Id.*

Appellant argues that Huber fails to teach a sprayer positioned to cause 5–50% coverage of the substrate surface as claim 1 requires. Appeal Br. 12. As discussed above, Appellant contends that the “wherein” clause of claim 1 is a structural limitation involving the structural positioning of the sprayer, rather than an intended use recitation, which imposes a structural limitation on the configuration of the sprayer such that it must be arranged to function as claimed. *Id.* at 13–14. Appellant also contends that Huber is not capable of 5–50% substrate surface coverage because Huber completely coats the substrate with sprayed activator and teaches away from less coating coverage. *Id.* at 14.

Appellant’s arguments are persuasive of reversible error in the Examiner’s conclusion of obviousness of claim 1 based on Huber. As set

forth above, we note that claim 1 recites that “the activator sprayer *is positioned* to cause an activator spray to contact approximately 5%–50% of the surface area of the substrate.” Claim 1 (emphasis added). This clause recites the function of causing an activator spray to contact approximately 5–50% of the substrate surface is performed by the sprayer based on its structural positioning. As such, we agree with Appellant that the clause at issue recites a structural limitation.

In addition, Huber teaches that independent control of the spray nozzles allows drop size and spray pattern to be controlled, but does not teach or suggest that such control is for operating the sprayer to spray less than the entire surface of the substrate. Huber 3:12–15. Rather, as Appellant asserts, Huber intends to coat the entire substrate surface with the activator to react with the roll applied adhesive. *Id.* at 2:19–29. The Examiner does not direct us to any disclosure in Huber teaching or suggesting that only part of the substrate surface may or should be coated with activator, nor do we find any.

Accordingly, we cannot sustain the Examiner’s obviousness rejection of claim 1, and dependent claims 3–5, 10, and 12, based on Huber.

Rejection 3: Obviousness over Huber, Parker, and Doe

The Examiner rejects claims 14, 15, and 17–21 under 35 U.S.C. § 103 as unpatentable over Huber in view of Parker and Doe. Claim 14 requires a plurality of activator sprayers that, similarly to claim 1, are positioned to spray activator on approximately 5–50% of the substrate surface area. As discussed above, Huber fails to teach or suggest a sprayer is positioned to spray approximately 5–50% of the substrate surface. Even more so, Huber fails to teach or suggest that a plurality of sprayers are positioned to spray

activator on approximately 5–50% of the substrate surface area. The Examiner does not rely on Parker or Doe to remedy these deficiencies in Huber. Accordingly, we cannot sustain the Examiner’s obviousness rejection of claim 14, and dependent claims 15 and 17–21 based on the combination of Huber, Parker, and Doe.

Rejections 4–6: Obviousness over Huber, Parker, Doe, Allman, and/or Frezza, and Huber or Lee and MacLaurin

The Examiner rejects claims 6 and 16 under 35 U.S.C. § 103 as unpatentable over Huber alone, or in view of Parker and Doe, and further in view of Allman; claim 7 under 35 U.S.C. § 103 as unpatentable over Huber in view of Frezza; and claim 13 under 35 U.S.C. § 103 as unpatentable over Huber or Lee in view of MacLaurin. As discussed above, Lee and Huber fail to teach or suggest that the sprayer(s) is/are positioned to spray activator on approximately 5–50% of the substrate surface area. The Examiner does not rely on any of the secondary and tertiary prior art references to remedy this deficiency in Lee and Huber. Accordingly, we cannot sustain the Examiner’s obviousness rejections of dependent claims 6, 7, 13, and 16 based on the combination of Huber, alone or combined with Parker, Doe, Allman, and/or Frezza, and Huber or Lee combined with MacLaurin.

CONCLUSION

The Examiner’s decision to reject claims 1–7, 10, and 12–21 is *reversed*.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 3-5, 10, 12	102(a)(1)/103	Lee		1, 3-5, 10, 12
1-5, 10, 12	103	Huber		1-5, 10, 12
14, 15, 17-21	103	Huber, Parker, Doe		14, 15, 17-21
6, 16	103	Huber, Parker, Doe, Allman		6, 16
7	103	Huber, Frezza		7
13	103	Huber, Lee, MacLaurin		13
Overall Outcome				1-7, 10, 12-21

REVERSED