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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JAMES M. SMITHWICK

Appeal 2019-003187
Application 12/708,697
Technology Center 3700

Before LINDA E. HORNER, MICHAEL J. FITZPATRICK, and
NATHAN A. ENGELS, *Administrative Patent Judges*.

HORNER, *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, 3–10, 14, and 17–21.² We have jurisdiction under 35 U.S.C. § 6(b).

The Examiner rejected one of the claims on appeal as indefinite and rejected all of the claims on appeal as either anticipated by or unpatentable

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 Container Graphics Corporation. Appeal Br. 2.

² The appeal is taken from the Examiner's decision as set forth in the Non-Final Office Action dated January 3, 2017 (“Non-Final Act.”).

over the prior art. Appellant does not contest the indefiniteness rejection. Appellant argues, however, that the prior art does not anticipate or render obvious the claimed subject matter. We agree with Appellant that the Examiner's findings as to anticipation are not supported by a preponderance of the evidence and that the Examiner's rationale in support of obviousness is not sufficient. Thus, we do not sustain the anticipation and obviousness rejections over the prior art. We sustain the uncontested indefiniteness rejection. Thus, we affirm in part.

CLAIMED SUBJECT MATTER

The claims are directed to rotary cutting dies for cutting and scoring corrugated board. Spec. ¶ 1. Most rotary cutting dies include a die cylinder, having a die board mounted on the cylinder, and an anvil disposed adjacent the die cylinder so as to define a nip between the cylinder and the anvil. *Id.* ¶ 2. The die board typically includes cutting blades, so that as the corrugated board is fed through the nip, the edges of the board are trimmed. *Id.* ¶¶ 2, 3. Elastomer trim transfer devices are mounted to the die board adjacent the cutting blades to engage and separate the cut pieces of trim from the resulting product board. *Id.* ¶ 3.

The Specification describes that over time, due to compression, the elastomer trim transfer devices tend to bow and a small gap occurs between the trim transfer devices and the adjacent trim cutting blades, in which small pieces of trim can become lodged. *Id.* ¶ 4. In one aspect of the claimed subject matter, the rotary cutting die includes a retainer mounted on the die board adjacent the trim transfer device to confine the trim transfer device between the retainer and the trim cutting blade to prevent a gap from occurring. *Id.* ¶ 5.

In another aspect of the claimed subject matter, the rotary cutting die includes a preloading device mounted ahead of a leading trim cutting blade. *Id.* ¶ 6. The preloading device engages the anvil and preloads the rotary die cylinder ahead of the leading trim cutting blade loading the die cylinder. *Id.* This gradual preloading of the die cylinder makes upstream printing operations more efficient and avoids ink smudging. *Id.*

Claims 1, 14, and 18 are independent. Claims 1 and 14 are illustrative of the subject matter on appeal and are reproduced below.

1. A rotary cutting die adapted to be mounted on a rotary die cylinder for cutting corrugated board fed between the cutting die and an anvil disposed adjacent the cutting die and rotary die cylinder, the rotary cutting die comprising:

a. a die board configured to fit on the rotary die cylinder;

b. a trim cutting blade mounted on the die board for cutting an outside trim piece from a sheet of corrugated board to yield a die cut product;

c. the trim cutting blade having an outboard side and an inboard side and disposed and positioned on the die board for cutting an outer overall dimension of the die cut product;

d. an elastomer trim transfer device secured to the die board adjacent the outboard side of the trim cutting blade for engaging a cut trim piece and separating the cut trim piece from the die cut product;

e. the elastomer trim transfer device having an outboard side and an inboard side and wherein the elastomer trim transfer device is secured to the die board directly adjacent the trim cutting blade such that the inboard side of the elastomer trim transfer device faces the outboard side of the trim cutting blade;

f. a retainer for engaging the elastomer trim transfer device and causing the elastomer trim transfer device to be held closely adjacent the outboard side of the trim cutting blade so as

to generally prevent the cut trim piece from being wedged between the outboard side of the trim cutting blade and the inboard side of the elastomer trim transfer device;

g. the retainer being mounted on the die board such that the retainer confines the elastomer trim transfer device between the retainer and the outboard side of the trim cutting blade; and

h. wherein the elastomer trim transfer device is movable back and forth within a space defined between the retainer and the trim cutting blade.

14. A rotary cutting die adapted to be mounted on a rotary die cylinder for cutting corrugated board fed between the cutting die and an anvil disposed adjacent the cutting die and rotary die cylinder, the rotary cutting die comprising:

a. a die board configured to fit on the rotary die cylinder;

b. a trim cutting blade mounted on the die board for cutting an outside trim piece from a sheet of corrugated board to yield a die cut product;

c. the trim cutting blade having an outboard side and an inboard side and disposed and positioned on the die board for cutting an outer overall dimension of the die cut product;

d. an elastomer trim transfer device secured to the die board adjacent the outboard side of the trim cutting blade for engaging the trim piece and transferring the trim piece away from the trim cutting blade;

e. the elastomer trim transfer device having an outboard side and an inboard side and wherein the elastomer trim transfer device is secured to the die board directly adjacent the trim cutting blade such that the inboard side of the elastomer trim transfer device faces and engages the outboard side of the trim cutting blade;

f. a pre loading device mounted on a leading area of the die board for engaging the anvil on each revolution of the rotary die cylinder and preloading the rotary die cylinder; and

g. wherein the trim cutting blade is a leading trim cutting blade and is disposed transversely across the die board and wherein the preloading device is aligned with the trim cutting blade and disposed ahead of the trim cutting blade such that on each revolution of the rotary die cylinder, the preloading device engages the anvil and preloads the rotary die cylinder prior to the leading trim cutting blade loading the rotary die cylinder.

Appeal Br. 16–19, Claims Appendix.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Takeda	US 4,968,292	Nov. 6, 1990
Matsumoto	US 6,688,198 B2	Feb. 10, 2004
Simpson	US 7,017,463 B1	Mar. 28, 2006
Luquette	US 2010/0037741 A1	Feb. 18, 2010

REJECTIONS

The following rejections are on appeal:

1. Claim 4 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.
2. Claims 1, 3–10, 18, 19, and 21 are rejected under 35 U.S.C. § 103(a) as unpatentable over Simpson and Matsumoto.
3. Claims 14 and 20 are rejected under 35 U.S.C. § 102(a) as anticipated by Luquette.

4. Claim 17 is rejected under 35 U.S.C. § 103(a) as unpatentable over Luquette and Takeda.³

OPINION

Rejection of claim 4 as indefinite

The Examiner rejected claim 4 as indefinite because it is unclear whether the recitations in dependent claim 4 of “at least one trim cutting blade” and “at least one retainer” refer to the blade and retainer recited in claim 1 or refer to additional blades and retainers. Non-Final Act. 3.

Appellant did not address this rejection of claim 4 in the Appeal Brief. Appellant filed a Supplemental Appeal Brief to correct this omission. In the Supplemental Appeal Brief, Appellant acknowledges that the recitations in claim 4 “should have been prefaced with the word ‘the’” to make clear that claim 4 is referring to the blade and retainer of claim 1. Supp. Appeal Br. 1. Because Appellant has not asserted error in the Examiner’s rejection of claim 4, we summarily sustain this ground of rejection.

Rejection of claims 1, 3–10, 18, 19, and 21 as unpatentable over Simpson and Matsumoto

The Examiner found that Simpson discloses the claimed rotary cutting die comprising a die board, a trim cutting blade, and a trim transfer device secured to the die board directly adjacent the trim cutting blade, as recited in claims 1 and 18. Non-Final Act. 3–4. The Examiner found that Simpson

³ The Non-Final Office Action included rejections under 35 U.S.C. § 103(a) of claims 14 and 20 as unpatentable over Gordon (US 6,162,155, issued Dec. 19, 2000) and of claim 17 as unpatentable over Gordon and Takeda. Non-Final Act. 8–14. The Examiner later withdrew these rejections and entered new grounds of rejection based on Luquette. Ans. 7–12.

fails to disclose the claimed retainer. *Id.* at 4–5. The Examiner found that Matsumoto discloses “a cutting device with a blade (10) and similar elastomer trim transfer device (13, 14; column 2, lines 35–38), wherein the cutting device further includes a retainer (20, 21).” *Id.* at 5. The Examiner found it would have been obvious to one having ordinary skill in the art at the time of the invention to modify Simpson to add the retainer, as taught in Matsumoto, along the outboard side of Simpson’s trim transfer device “to prevent movement of the elastomer trim transfer device in the traveling direction of the work piece during the cutting process and to prevent crack formation.” *Id.* at 6 (citing Matsumoto, col. 7, ll. 9–13); *see also* Ans. 5.

The Examiner further explained that Simpson’s trim transfer device (stripper 10) is designed to remain in contact with the trim cutting blade (44, 46), and, thus, “it is advantageous for the stripper (10) to remain in contact with the blade throughout the cutting cycle.” Notice of Panel Decision from Pre-Appeal Brief Review, dated June 12, 2017. The Examiner found that Matsumoto’s teaching of a retainer (20, 21) is applicable to Simpson to “improve[e] the ability of the elastomeric trim transfer device to remain in contact with the blade” before, during, and after the cut and “limit[] the movement of Simpson’s elastomeric trim transfer device such that it remains in the intended location during operation, thereby reducing the likely hood [sic] of undue stress being placed upon the workpiece which could result in cracks or other damage[s], improving the accuracy of the cut and ensuring the trim properly separates from the blade and product.” *Id.*⁴

⁴ Appellant seeks to have the Board dismiss the reasoning set forth in the Pre-Appeal Brief Review Decision because Appellant asserts that this reasoning amounts to a new ground of rejection. Appeal Br. 11. We do not

Appellant argues the Examiner's reasoning is flawed because the Examiner has not shown adequate evidence that Simpson suffered from problems with either movement of its trim transfer device or cracking. Appeal Br. 10. Appellant also argues that the Examiner has failed to provide adequate evidence to support finding that Simpson has a problem with maintaining the trim transfer device flush against the trim cutting blade. Appeal Br. 12. Appellant further argues that nothing in the record supports the Examiner's findings that Simpson's work piece experiences undue stress, inaccurate cuts, or problems with the trim separating from the blade that would be cured by adding Matsumoto's retainer. *Id.*

The Examiner responds that “[o]ne of ordinary skill in the art recognizes that elastic materials deform when compressed, and in the situation presented by a travelling cutting die, the elastomeric trim transfer device will tend to compress and press away from the trim blade in the travelling direction.” Ans. 14 (finding that Matsumoto recognizes the problem of displacement of the devices 13, 14, in the traveling direction).

The Examiner's reasoning is not based on rational underpinnings. The Examiner fails to recognize that the problems addressed by Matsumoto occur in a different environment than the rotary cutting die of Simpson. The

need to decide whether this reasoning constitutes a new ground of rejection because the Examiner presented it to Appellant *prior to* Appellant's filing of its Appeal Brief. Thus, Appellant had a full and fair opportunity to address this reasoning in this appeal. *See* 37 C.F.R. § 41.39(a)(1) (an appeal is taken from the “rejection set forth in the Office action from which the appeal is taken (as modified by any advisory action and pre-appeal brief conference decision).”). Further, a request to seek review of an examiner's failure to designate a rejection as a new ground of rejection must be by way of petition to the Director under 37 C.F.R. § 1.181. *See* 37 C.F.R. § 41.40(a).

Examiner has not provided adequate evidence that the problems addressed in Matsumoto are problems existing in Simpson.

Simpson, similar to Appellant's invention, relates to a rotary cutting die for cutting corrugated board by passing the board through the nip between a rotating die and a rotating anvil. Simpson, 2:31–36, Fig. 1. By contrast, Matsumoto relates to an apparatus for cutting sheet-shaped materials such as Fresnel lens sheets, lenticular lens sheets or the like. Matsumoto, 1:8–14. Matsumoto's apparatus does not cut this sheet-shaped material using a rotary die. Rather, Matsumoto's apparatus includes a cutting unit 7 that has a pair of blades 9 and 10 that face each other in the vertical direction, while the sheet-shaped material 5 is supplied horizontally between the blades. *Id.* at 4:30–37, 8:27–9:6, Figs. 1–3.

In Matsumoto, the holding members disposed on either side of the blades prevent the sheet from cracking while it is cut. Specifically, holding members 11 and 12 are disposed on opposite sides of blade 9 and holding members 13 and 14 are disposed on opposite sides of blade 10. *Id.* at 4:37–41. Matsumoto teaches that upper and lower blades 9, 10 can be aligned in a manner to reduce the stress applied on the sheet-shaped material 5 and prevent cracks from occurring on the product side 5*b* of the sheet-shaped material 5. *Id.* at 5:23–34. Matsumoto describes that, in one embodiment, blades 9, 10 are arranged to provide a horizontal gap between the blade edges so as to form notches on opposite surfaces of sheet-shaped material 5 during a first half of the cutting process, and then break the portion of sheet-shaped material 5 corresponding to this gap during a second half of the cutting process. *Id.* at 5:35–47, Figs. 5B, 6B. In the context of this gap embodiment, Matsumoto describes that, when the notches are formed on

opposite surfaces of sheet-shaped material 5, the material is held from the opposite surfaces by holding members 11, 12, 13, and 14, which prevents cracks from occurring on the finished product side 5*b* of the sheet-shaped material and prevents burrs from occurring on the cutting surface. *Id.* at 5:52–64. Matsumoto describes that holding members 13 and 14 are kept in their appropriate positions by means of displacement prevention members 20 and 21 abutting the holding members and preventing them from being “displaced in the traveling direction of the sheet-shaped material 5.” *Id.* at 6:65–7:16.

First, the Examiner has not provided adequate evidence that Simpson is concerned with formation of cracks when using its rotary cutting die to process corrugated board. Notably, Matsumoto’s apparatus is designed to process different material than Simpson’s rotary cutting die. The sheet-shaped material processed in Matsumoto appears to be made of a hardened resin (Matsumoto 1:16–43), which may be prone to cracking when stresses from holding and cutting are placed upon the material, whereas Simpson is directed to cutting corrugated board, which may not have similar problems with cracking. The Examiner has not provided sufficient evidence to substantiate the finding that the cracking problem being address in Matsumoto is one that also is encountered in Simpson, such that Matsumoto’s teachings would benefit Simpson’s device in the same manner.

Second, the Examiner has not provided adequate evidence that Simpson’s cutting die would otherwise benefit from the addition of retainers, as taught in Matsumoto. Although Simpson describes that filler region 20 of stripper 10 “is designed to fit flush against the upper beveled area of a respective trim blade 44 or 46,” Simpson does not describe that a problem

exists with maintaining stripper 10 flush against the trim blade. Further, Matsumoto uses retainers 20, 21 to address a problem of displacement of holding members 13, 14 in the horizontal traveling direction of the sheet-shaped material. It is not clear from this disclosure in Matsumoto that movement of the corrugated board through the rotary cutting die of Simpson would cause the same displacement problem. Further, as noted by Appellant, the Examiner does not provide any evidentiary support in the record for the findings that use of a retainer in Simpson would “improv[e] the accuracy of the cut and ensur[e that] the trim properly separates from the blade and product.” Panel Decision from Pre-Appeal Brief Review.

Third, the only support for the Examiner’s finding (Ans. 14) that “[o]ne of ordinary skill in the art recognizes that elastic materials deform when compressed, and in the situation presented by a travelling cutting die, the elastomeric trim transfer device will tend to compress and press away from the trim blade in the travelling direction” is found in Appellant’s Specification. The Examiner improperly relied on the problem identified in Appellant’s Specification, without sufficient evidence to show that compression of the trim transfer device was an art-recognized problem at the time of the invention.

Thus, the Examiner’s reasoning for modifying Simpson with the teaching of Matsumoto lacks adequate factual underpinnings. For this reason, we do not sustain the Examiner’s rejection of independent claims 1 and 18 and their dependent claims 3–10, 19, and 21 as unpatentable under 35 U.S.C. § 103(a) over Simpson and Matsumoto.

Rejection of claims 14 and 20 under 35 U.S.C. § 102(a) as anticipated by Luquette

Independent claim 14 recites a rotary cutting die comprising “a preloading device mounted on a leading area of the die board for engaging the anvil on each revolution of the rotary die cylinder and preloading the rotary die cylinder.” Appeal Br. 19 (Claims Appendix). The Examiner found that Luquette discloses a rotary cutting die comprising the claimed preloading device (30). Ans. 8–9. The Examiner explained that Luquette’s “scrap cutting blade 30 contacts the anvil die before the elastomer trim transfer device and therefore is preloading the rotary cutting die against the anvil die.” Ans. 9. Appellant argues that the Examiner’s interpretation of “preloading device” to encompass the prior art scrap cutting blade 30 relies on an unreasonably broad interpretation of the term “preloading device.” Reply Br. 7.

We examine the description of the preloading device provided in Appellant’s Specification. The Specification describes that “preloading devices 150 provide a gradual load to the rotary die cutting apparatus 30 prior to the leading trim cutting blades 44 engaging the corrugated board and cutting the trim against the anvil 50.” Spec. ¶ 43. This preloading device “avoid[s] the abrupt loads caused by the leading trim blades on each revolution of the rotary die cylinder 40.” *Id.* ¶ 42. In one example, the Specification describes the preloading device as “one or more ramps that are aligned with the leading trim cutting blades 44 and spaced ahead of the trim cutting blades.” *Id.* ¶ 44 (describing preloading ramps depicted in Figure 2), ¶ 45 (describing that the ramps comprise urethane of a particular durometer that engage the anvil so as to gradually load the rotary die cylinder). In another embodiment, the preloading device is a segmented ramp formed of a

series of upstanding elements that gradually preload the die cylinder. *Id.*
¶ 46.

Appellant argues that when viewed in light of the Specification, the “preloading device” is “a device that applies a mechanical load to the rotary die cylinder.” Reply Br. 7. We agree with Appellant’s interpretation of the term in light of the description provided in the Specification discussed above. Specifically, the preloading device calls for a structure capable of applying a gradual load to the rotary die cylinder prior to the leading trim blade loading the die cylinder on each revolution of the rotary die cylinder.

We further agree with Appellant that the Examiner’s finding that Luquette’s scrap cutting blade 30 acts as a preloading device, i.e., applies a mechanical load to the rotary die cylinder, by virtue of simply contacting the anvil first during the cutting process, is speculative. Luquette is silent as to whether scrap cutting blade 30 applies a load to the rotary die cylinder, and the Examiner has not explained adequately how the interaction of scrap cutting blade 30 with the anvil necessarily applies a pre-load to the rotary die cylinder in Luquette. For these reasons, we do not sustain the rejection of independent claim 14 or its dependent claim 20 as anticipated by Luquette.

Rejection of claim 17 under 35 U.S.C. § 103(a) as unpatentable over Luquette and Takeda

The rejection of dependent claim 17 suffers from the same deficiencies as discussed above in our analysis of claim 14. Thus, we likewise do not sustain the rejection of claim 17 as unpatentable over Luquette and Takeda.

CONCLUSION

We sustain the rejection of claim 4 under 35 U.S.C. § 112, second paragraph. We do not sustain the rejection of claims 14 and 20 under 35 U.S.C. § 102(a) and the rejections of claims 1, 3–10, 17–19, and 21 under 35 U.S.C. § 103(a). Thus, we affirm in part.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
4	112, second paragraph	Indefiniteness	4	
1, 3–10, 18, 19, 21	103(a)	Simpson, Matsumoto		1, 3–10, 18, 19, 21
14, 20	102(a)	Luquette		14, 20
17	103(a)	Luquette, Takeda		17
Overall Outcome			4	1, 3, 5–10, 14, 17–21

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 IN PART