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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/399,795	01/06/2017	James Alan Sines	291448-01368	9954

3705 7590 06/15/2020

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ART UNIT	PAPER NUMBER
3725	

NOTIFICATION DATE	DELIVERY MODE
06/15/2020	ELECTRONIC

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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 JAMES ALAN SINES and
CHRISTOPHER MICHAEL HARMON

_____

Appeal 2019-006877
Application 15/399,795
Technology Center 3700

_____

Before JONI Y. CHANG, MICHAEL R. ZECHER, and
BARBARA A. BENOIT, *Administrative Patent Judges*.

ZECHER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's Final Office Action rejecting claims 2–5, 7–10, 12–15, and 17–20. Appeal Br. 1, 9–22. Claims 1, 6, 11, and 16 have been cancelled. *Id.* at 2. We have jurisdiction under 35 U.S.C. § 6(b).

We *affirm in part*.

[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 Stolle Machinery Company, LLC. Appeal Br. 1.

CLAIMED SUBJECT MATTER

The disclosed invention generally relates to "a can bodymaker" and, in particular, "to a can bodymaker having a redraw assembly including a redraw sleeve with a shaped contour." Spec. 1:5–7. Some examples of cans include beverage cans, such as beer and soda cans, and food cans, such as a soup can. *Id.* at 7:16–21.

A can bodymaker is used to convert a metal cup into a can body. Spec. 1:10–14, 8:7–8. Specifically, a ram forces the cup through a redraw sleeve assembly, such that the cup is elongated and resized to have a smaller diameter, and the cup is formed into a can body by a die pack and redraw die. *Id.* at 1:25–27, 8:26–29, 11:20, 17:6–7, 17:10–14.

The redraw assembly includes a redraw sleeve. Spec. 9:4, 17:5. Before the can body is formed, the redraw sleeve is placed inside the cup to clamp the bottom of the cup against the die pack and redraw die. *Id.* at 1:17–18, 1:23, 9:15–16, 11:17–20, 16:6–7, 17:6. According to the Specification, providing a shaped contour to the redraw sleeve substantially prevents wrinkles, tears, or other problems when forming thin metal. *Id.* at 2:1–14.

The Specification indicates that a "tapered contour" is a type of shaped contour. Spec. 12:19. The Specification states: "[A]s used herein, a tapered contour is either an 'inwardly' tapered contour, an 'outwardly' tapered contour, or a 'variably' tapered contour" and "a 'variably' tapered contour . . . includes both inwardly and outwardly tapered portions." *Id.* at 12:28–29, 13:4–5. Another type of shaped contour is an "offset contour." *Id.* at 12:24. Similar to the tapered contour, the offset contour may be inwardly offset, outwardly offset, or variably offset. *Id.* at 13:14–15.

The Specification also describes a "tangent and congruent" contour. Spec. 16:3–13. A redraw sleeve with a tangent and congruent contour has a "transition surface" that substantially corresponds to the inner surface of the cup at the time when an end of the sleeve body initially engages the cup. *Id.* at 16:9–11. The transition surface is a curved surface that transitions between the redraw sleeve's axial surface (which is generally perpendicular to the redraw sleeve's body longitudinal axis) and radial surface (which is generally parallel to the redraw sleeve's body longitudinal axis). *Id.* at 7:10–16, 11:14, 11:21–31; *see also* Fig. 3 (illustrating cup 2 and a redraw sleeve with axial surface 100, transition surface 102, and radial surface 104).

Claims 2, 7, 8, 12, 17, and 18 are independent claims. Independent claims 2, 7, and 8 are each directed to "[a] redraw sleeve for a redraw assembly in a can bodymaker." Appeal Br. 23–24 (Claim Appendix). Independent claims 12, 17, and 18 are each directed to "[a] bodymaker" comprising a redraw assembly including a redraw sleeve. *Id.* at 25–27. Claims 3–5 directly or indirectly depend from independent claim 2, claims 9 and 10 directly or indirectly depend from independent claim 8, claims 13–15 directly or indirectly depend from independent claim 12, and claims 19 and 20 directly or indirectly depend from independent claim 18. *Id.* at 23–28.

Independent claim 2, reproduced below, is illustrative of a redraw sleeve having an axial surface that is inwardly tapered.

> 2. A redraw sleeve for a redraw assembly in a can bodymaker, said bodymaker including a die pack, said die pack including a redraw die, said die pack and said redraw die including a longitudinal axis, said redraw sleeve comprising:
>
> a body including a second end; said body second end includes an axial surface; and

> *wherein said second end axial surface is an inwardly tapered second end axial surface*.

Appeal Br. 23 (emphasis added). Independent claim 7, reproduced below, is illustrative of a redraw sleeve having a radial surface that is inwardly offset.

> 7. A redraw sleeve for a redraw assembly in a can bodymaker, said bodymaker including a die pack, said die pack including a redraw die, said die pack and said redraw die including a longitudinal axis, said redraw sleeve comprising:
>
> a body including a second end;
>
> said second end includes a radial surface;
>
> *wherein said second end radial surface is an inwardly offset second end radial surface*;
>
> said second end radial surface includes a radial perimeter portion and an offset portion; and
>
> wherein said second end offset portion is inwardly offset relative to the second end radial surface radial perimeter portion *by a distance of between about 0.002 inch and 0.003 inch*.

Id. at 23–24 (emphases added). Independent claim 8, reproduced below, is illustrative of a redraw sleeve with a transition surface that has a tangent and congruent contour.

> 8. A redraw sleeve for a redraw assembly in a can bodymaker, said bodymaker including a die pack, said die pack including a redraw die, said die pack and said redraw die including a longitudinal axis, said redraw sleeve comprising:
>
> a body including a second end;
>
> said second end includes an axial surface, a transition portion, and a radial surface; and
>
> *wherein said second end transition portion has a tangent and congruent contour*.

Id. at 24 (emphasis added).

REFERENCES

The prior art relied upon by the Examiner is set forth in the table below.

Name[2]	Reference	Date
Saunders	US 5,343,729	Issued Sept. 6, 1994
Snyder	US 5,946,964	Issued Sept. 7, 1999
Haulsee	US 2015/0068268 A1	Published Mar. 12, 2015

REJECTIONS

The Examiner's rejections in the Final Office Action on appeal are set forth in the table below.

Claims Rejected	35 U.S.C. §[3]	Reference(s)
2, 3, 8	102(a)(1)	Snyder
4, 5, 7	103	Snyder
9, 10	103	Snyder, Saunders
12–15, 17, 18	103	Snyder, Haulsee
19, 20	103	Snyder, Haulsee, Saunders

EXAMINER'S FINDINGS AND CONCLUSIONS

1. The Examiner finds that Snyder discloses the limitation of independent claims 2 and 12 reciting that the "second [end] axial surface is an inwardly tapered second end axial surface." Final Act. 4–5, 9 (finding

[2] For clarity and ease of reference, we only list the first named inventor.

[3] The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) ("AIA"), amended 35 U.S.C. §§ 102 and 103. Because the application at issue contains claims having an effective filing date after March 16, 2013, which is the effective date of the applicable AIA amendments, we refer to the post-AIA version of 35 U.S.C. §§ 102 and 103.

that, in Figure 5 of Snyder, "there are numerous portions of (18) that taper inwardly from (42) to (40)").

2. The Examiner finds that Snyder also discloses the limitation of independent claims 8 and 18 reciting that the "second end transition portion has a tangent and congruent contour." Final Act. 5, 10 (citing Snyder Fig. 5, item R_3).

3. For independent claims 7 and 17, the Examiner finds that Snyder discloses a second end radial surface having an inwardly offset portion. Final Act. 6, 11 ("Snyder discloses said second end radial surface (16) includes a radial perimeter portion (Figure 5, portion of 16 above 34) and an offset portion (16 inwardly offsets at 34, Figures 2, 4, 5)."). The Examiner finds that Snyder does not disclose explicitly an inwardly offset distance of between about 0.002–0.003 inches. *Id.* The Examiner, however, concludes that, when taking into account the teachings of Snyder, it would have been obvious to a person of ordinary skill in the art to obtain the claimed distance of between about 0.002–0.003 inches. *Id.* at 6–7, 11 (citing *In re Aller*, 220 F.2d 454 (CCPA 1955)).

APPELLANT'S CONTENTIONS

1. Appellant asserts that Snyder does not disclose that the "second [end] axial surface is an inwardly tapered second end axial surface," as recited in each of independent claims 2 and 12. Appeal Br. 10–16, 21. Appellant argues that the Examiner interprets this limitation in an overly broad manner because the claim recites that the "second [end] axial surface is an inwardly tapered second end axial surface"—not that a "portion" or some other section or fragment is inwardly tapered. *Id.* at 10–12. Appellant

explains that the Examiner improperly relies on Figure 5 of Snyder because the axial surface only includes "*numerous portions* . . . that taper inwardly." *Id.* at 12–13, 15 (boldface omitted; italics added) (quoting Final Act. 5).

Appellant indicates that the Specification defines a tapered contour as either "inwardly," "outwardly," or "variably" tapered. Appeal Br. 12–13, 15 (citing Spec. 12:28–13:6). Specifically, "an 'inwardly' tapered contour . . . is tapered toward the redraw sleeve body first end," whereas "a 'variably' tapered contour . . . includes both inwardly and outwardly tapered portions." *Id.* at 9, 11–12, 15 (quoting Spec. 12:29–31, 13:4–5). In accordance with the Specification, Appellant asserts that Snyder discloses an axial surface that is variably tapered, not inwardly tapered. *Id.* at 12, 15. Appellant argues that the Examiner's interpretation of Snyder to disclose an inwardly-tapered axial surface is contrary to the explicit definitions set forth in the Specification. *Id.* at 10, 13, 15–16.

2. As for independent claims 8 and 18, Appellant argues that Snyder does not disclose that the redraw sleeve includes a transition portion having "a tangent and congruent contour." Appeal Br. 16–19, 21. Appellant explains that the Specification defines a "tangent and congruent" contour as "a transition surface contour that substantially corresponds to the inner surface of a cup at the time when the sleeve body second end initially engages the cup." *Id.* at 16 (quoting Spec. 16:9–11). Also, the Specification states that "'corresponding' surfaces . . . have generally the same size, shape, and contours" and "'substantially' means 'for the most part.'" *Id.* at 16–17 (quoting Spec. 5:21–22, 8:3).

Appellant points to Snyder's disclosure that "[t]he diameter of the end wall 22 of the cup is slightly larger than the diameter of the end 18 of the

redraw sleeve." Appeal Br. 17 (alteration in original) (quoting Snyder 4:20–22). According to Appellant, if the diameter of the end wall of the cup is slightly larger than the diameter of the end of the redraw sleeve, then the two surfaces cannot substantially correspond to each other when considering how the term *substantially* is defined in the Specification. *Id.* at 17–18. Appellant also argues that the Examiner improperly relies on Figure 5 of Snyder because this figure does not show how a cup interacts with the redraw sleeve and, therefore, does not show all the claimed structural features and how they are put together in the manner required by independent claims 8 and 18. *Id.* at 18–19.

3. Regarding independent claims 7 and 17, Appellant disagrees with the Examiner's finding that, when taking into account the teachings of Snyder, it would have been obvious to a person of ordinary skill in the art to obtain the claimed offset distance of between about 0.002–0.003 inches. *See* Appeal Br. 19, 21. Appellant argues that the recited shaped contour is not merely an optimum range because the Specification identifies stated problems and the configuration of the shaped contour required by independent claims 7 and 17 solves those problems. *Id.* at 19–20 (citing *In re Dailey*, 357 F.2d 669 (CCPA 1966) and *Ex parte Moore*, Appeal No. 96-2852, 1996 WL 1796237 (BPAI Sept. 16, 1997)).

ISSUES

1. Has the Examiner presented sufficient evidence to support a finding that Snyder discloses an axial surface that is inwardly tapered, as required by each of independent claims 2 and 12?

2. Has the Examiner presented sufficient evidence to support a finding that Snyder discloses a redraw sleeve that has a transition portion with a tangent and congruent contour, as required by each of independent claims 8 and 18?

3. Has the Examiner presented sufficient evidence to support a finding that, when taking into account the teachings of Snyder, it would have been obvious to a person of ordinary skill in the art to obtain a radial surface that is inwardly offset by a distance of between about 0.002–0.003 inches, as required by each of independent claims 7 and 17?

ANALYSIS

Issue 1: Inwardly-Tapered Axial Surface

Claim 2

Based on the record before us, we discern error in the Examiner's anticipation rejection of independent claim 2, which requires a redraw sleeve to include an axial surface that is inwardly tapered.

There is no dispute between the Examiner and Appellant that Snyder discloses a redraw sleeve having a variably-tapered axial surface. *Compare* Appeal Br. 12 ("*Snyder* discloses a redraw sleeve body with a variably tapered second end axial surface."), *with* Ans. 14 ("The examiner recognizes that Snyder has both inwardly and outwardly tapered surfaces and [is] therefore a variably tapered surface."). Rather, the Examiner and Appellant disagree as to whether the claimed axial surface can include portions that are both inwardly-tapered and variably-tapered.

According to the Examiner, the Specification does not exclude or limit the surface to a single type. Ans. 14 (citing Spec. 12:28–13:6). The

Examiner also contends that "[t]he claim is constructed with an open-ended transitional phrase[,] i.e. 'comprising;' therefore, additional elements not claimed are allowed to be present in the reference." *Id.* In our view, however, both the language of independent claim 2 and the Specification support Appellant's position that the inwardly-tapered axial surface recited in independent claim 2 does, in fact, exclude a variably-tapered surface.

First, the plain language that the "second [end] axial surface is an inwardly tapered second end axial surface" is not open-ended. For example, this limitation does not state that the axial surface *comprises* or *includes* an inwardly-tapered axial surface or that *portions* of an axial surface taper inwardly.

Second, we agree with Appellant that the Specification establishes that a variably-tapered surface is not an inwardly-tapered surface. Although the Specification does not state explicitly that an inwardly-tapered surface cannot also be a variably-tapered surface, the Specification nevertheless establishes with reasonable clarity, deliberateness, and precision that three categories of tapers are mutually exclusive. Spec. 12:28–13:6. If a taper is present, there are only three possibilities for contouring the taper—inward, outward, or a combination of inward and outward. Because the Specification lists only three possibilities and distinguishes them using separate and distinct terminology (i.e., inward, outward, and variable), it is reasonably clear that each type of tapered contour is mutually exclusive of the other types of tapered contours. Accordingly, Snyder's variably-tapered surface is not an inwardly-tapered surface, as claimed.

Furthermore, when the Specification allows for a combination of different tapered contours, it makes this explicit. *See* Spec. 13:24–31 ("The

redraw sleeve body second end 80 has, in one exemplary embodiment, a tapered contour including an inwardly tapered contour, an outwardly tapered contour, a variably tapered contour, or a *combination of such contours*. . . . In an alternative embodiment, the redraw sleeve body second end 80 has a combination of a tapered contour, including an inwardly tapered contour, an outwardly tapered contour, a variably tapered contour, or a *combination of such contours*." (emphases added)). Independent claim 2, on the other hand, does not contain language permitting a combination of tapered contours.

As for the Examiner's position that the transitional phrase *comprising* is open-ended, this "standard transition term [is] used to make clear that the claim does not preclude the presence of components or steps that are in addition to, *though not inconsistent with*, those recited in the limitations that follow." *Amgen Inc. v. Amneal Pharm. LLC*, 945 F.3d 1368, 1379 (Fed. Cir. 2020) (emphasis added). Here, the Examiner's interpretation that independent claim 2 allows for an axial surface to include portions that are both inwardly tapered and variably tapered is inconsistent with the limitation requiring that the "second [end] axial surface is an inwardly tapered second end axial surface" when the term "inwardly tapered" is considered in the context of the Specification. Therefore, the Examiner has erred in determining that Snyder renders the subject matter of independent claim 2 unpatentable.

Claims 3–5

By virtue of their dependency, claims 3–5 include the same limitations as independent claim 2. Appeal Br. 23. In rejecting each of these claims, the Examiner relies on the same finding with respect to independent claim 2 that Snyder discloses an inwardly-tapered axial surface.

See Final Act. 4–6. Therefore, for the same reasons set forth above in our discussion of independent claim 2, the Examiner has erred in determining that Snyder renders the subject matter of dependent claims 3–5 unpatentable.

Claims 12–15

Like independent claim 2, independent claim 12 recites a limitation describing a redraw sleeve as having a "second end axial surface [that] is an inwardly tapered second end axial surface." Appeal Br. 25. By virtue of their dependency, claims 13–15 include the same limitation. *Id.* at 26. As applied by the Examiner, Haulsee does not remedy the deficiency in Snyder identified above. *See* Final Act. 9–11. Therefore, for the same reasons discussed above with respect to independent claim 2, the Examiner has erred in determining that the combined teachings of Snyder and Haulsee render the subject matter of independent claim 12 and dependent claims 13–15 unpatentable.

Issue 2: Tangent and Congruent Transition Portion

Claim 8

Based on the record before us, we discern no error in the Examiner's anticipation rejection of independent claim 8, which requires a redraw sleeve to include a transition portion that has a tangent and congruent contour.

There is no dispute that the Specification defines a "tangent and congruent" contour as "a transition surface contour that substantially corresponds to the inner surface of a cup at the time when the sleeve body second end initially engages the cup." *See* Appeal Br. 16 (quoting Spec. 16:9–11); Ans. 14–15. Appellant, however, argues that Snyder does not disclose a redraw sleeve that has "a transition surface contour that substantially corresponds to the inner surface of a cup." Appeal Br. 16–17.

Specifically, Appellant relies on Snyder's disclosure that "[t]he diameter of the end wall 22 of the cup is slightly larger than the diameter of the end 18 of the redraw sleeve." *Id.* at 17 (quoting Snyder 4:20–22). We, however, agree with the Examiner that Snyder's disclosure that the diameter of the end wall of the cup is "slightly larger" than the sleeve is sufficient to meet the claim requirement that the transition surface contour substantially corresponds to the inner surface of the cup. *See* Ans. 15. On this record, we view the distinction between the terminology of Snyder and the Specification (i.e., the distinction between "slightly larger" and "substantially corresponds") to be a distinction without a material difference.

Appellant further relies on the definitions of the terms *correspond* and *substantially*, which are used in the definition of a tangent and congruent contour. Appeal Br. 16–17; Reply Br. 6–7. Specifically, the Specification defines *correspond* to mean that "[w]ith regard to surfaces, shapes, and lines, two, or more, 'corresponding' surfaces, shapes, or lines have generally the same size, shape, and contours." Appeal Br. 16 (quoting Spec. 5:20–22). Meanwhile, the Specification defines *substantially* as "for the most part." *Id.* at 17 (quoting Spec. 8:3–4). Importantly, however, neither of these explicit definitions require the cup to have the exact same shape as the redraw sleeve. Appellant points out that the definition of the term *correspond* uses the words "same size [and] shape" (Reply Br. 6–7) (emphasis omitted), but this argument overlooks that the explicit definition only requires "*generally* the same size, shape, and contours," not the exact same size, shape, and contours. *Id.* at 7 (emphasis added).

Appellant also argues that the Examiner improperly relies on Figure 5 of Snyder because this figure does not show a cup that interacts with the

redraw sleeve and, therefore, the figure does not show "all the claimed structural features and how they are put together." Appeal Br. 18–19 (quoting Manual of Patent Examining Procedure § 2125 (9th ed. rev. 08.2017 Jan. 2018)). A cup, however, is not a claimed structural feature. Appellant admits this point. *See id.* at 17 ("Appellants agree that a 'cup' is not positively recited."). Moreover, although Figure 5 of Snyder does not illustrate a cup, Snyder's teaching that "[t]he diameter of the end wall 22 of the cup is slightly larger than the diameter of the end 18 of the redraw sleeve" (Snyder 4:19–20), shows that the end of the redraw sleeve substantially corresponds to the size and shape of the cup. Accordingly, we sustain the Examiner's obviousness rejection of independent claim 8.

Claims 9 and 10

Claims 9 and 10 depend from independent claim 8. Appeal Br. 24–25. Appellant does not present separate arguments regarding dependent claims 9 and 10. *See id.* at 21. Accordingly, we sustain the Examiner's obviousness rejection of dependent claims 9 and 10.

Claims 18, 19, and 20

Like independent claim 8, independent claim 18 recites a limitation describing a redraw sleeve as having a "second end transition portion [that] has a tangent and congruent contour." Appeal Br. 27. Appellant relies on the same arguments presented with respect to independent claim 8 in arguing that Snyder does not disclose this limitation of independent claim 18. *Id.* at 21. Claims 19 and 20 depend from independent claim 18 (*id.* at 28), but Appellant does not present separate arguments regarding these dependent claims (*see id.* at 21). Accordingly, we sustain the Examiner's obviousness rejections of independent claim 18 and dependent claims 19 and 20.

Issue 3: Inwardly-Offset Radial Surface
Claim 7

Based on the record before us, we discern no error in the Examiner's obviousness rejection of independent claim 7, which requires a redraw sleeve to include a radial surface that is inwardly offset by a distance of between about 0.002–0.003 inches.

We are not persuaded by Appellant's argument that the claimed contours are not merely optimum ranges because they solve the problems identified in the Specification. Appeal Br. 19–20. The case that Appellant relies on, *In re Dailey*, rejected the "appellants' position that the prior art recognizes neither the problem nor result desired and cannot be said to suggest a solution to the problem." 357 F.2d at 672. Similarly here, Snyder recognizes the same problem as Appellant. *Compare* Snyder 1:11–13 ("The redraw sleeve has several novel features that help prevent wrinkles from forming in the bottom profile of the can . . . ."), *with* Spec. 2:1–2 ("Thin metal, however, tends to wrinkle and/or tear when acted upon by a redraw sleeve."). Snyder also proposes the same solution, in part, by providing an inwardly offset radial surface. *See* Final Act. 6 (citing Snyder Figs. 2, 4, 5).

The only difference between the limitations of independent claim 7 and Snyder is that independent claim 7 recites that the offset is "a distance of between about 0.002 inch and 0.003 inch." Accordingly, the relevant issue is whether this claimed *distance* would have been obvious to a person of ordinary skill in the art in light of the teachings of Snyder.

Under *In re Aller*, "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." 220 F.2d at 456. The

Examiner applies this standard in the Final Office Action on appeal (Final Act. 6–7), and Appellant does not contest specifically the Examiner's finding that, as an initial matter, Snyder discloses the general conditions of independent claim 7 (*see* Appeal Br. 19–20).

Appellant, therefore, has the burden of demonstrating, for example, that the claimed distance range is critical. *See, e.g.*, *Aller*, 220 F.2d at 456. We, however, agree with the Examiner that Appellant has not provided sufficient evidence to show that the claimed distance range of between about 0.002 and 0.003 inches is critical. *See* Ans. 16. Appellant merely relies on a sentence in the Specification stating: "The configurations of the shaped contour as described above solves a number of the problems identified above." Appeal Br. 19–20 (emphases omitted) (quoting Spec. 17:3–4); Reply Br. 7–8 (emphasis omitted) (quoting Spec. 17:3–4). Appellant suggests that the claimed distance range of between about 0.002 and 0.003 inches is included within "[t]he configurations of the shaped contour as described above." Appeal Br. 20 (emphasis omitted); Reply Br. 7–8. This phrase, however, is a broad, general statement that covers all of the configurations set forth in the Specification. This statement, by itself, imparts no specific significance to the claimed distance range, and is not enough to conclude that it is the radial surface inward offset distance of about 0.002–0.003 inches, in particular, that solves the problems identified in the Specification. Furthermore, Appellant does not allege that the claimed distance range provides unexpected results or a substantial improvement over the teachings of Snyder. Accordingly, we sustain the Examiner's obviousness rejection of independent claim 7.

Claim 17

Like independent claim 7, independent claim 17 recites a limitation describing a redraw sleeve as having a "second end radial surface [that] is an inwardly offset second end radial surface . . . by a distance of between about 0.002 inch and 0.003 inch." Appeal Br. 27. Appellant relies on the same arguments presented with respect to independent claim 7 in arguing that Snyder does not disclose this limitation of independent claim 17. *Id.* at 21. Accordingly, we sustain the Examiner's obviousness rejection of independent claim 17.

CONCLUSION

For the foregoing reasons, the Examiner has erred in rejecting claims 2–5 and 12–15 as unpatentable. We, therefore, reverse the Examiner's decision to reject claims 2–5 and 12–15. We, however, are not persuaded that the Examiner erred in rejecting claims 7–10 and 17–20. Accordingly, we affirm the Examiner's decision to reject claims 7–10 and 17–20.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	References	Affirmed	Reversed
2, 3, 8	102	Snyder	8	2, 3
4, 5, 7	103	Snyder	7	4, 5
9, 10	103	Snyder, Saunders	9, 10	
12–15, 17, 18	103	Snyder, Haulsee	17, 18	12–15
19, 20	103	Snyder, Haulsee, Saunders	19, 20	

Claims Rejected	35 U.S.C. §	References	Affirmed	Reversed
Overall Outcome			7–10, 17–20	2–5, 12–15

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