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.
13/266,210	10/25/2011	Thomas Meier	155.176	1398

22846 7590 10/31/2016

BRIAN ROFFE, ESQ
9206 Avers Avenue, Unit 2
Evanston, IL 60203-1502

EXAMINER
YOON, KEVIN E

ART UNIT	PAPER NUMBER
1735	

MAIL DATE	DELIVERY MODE
10/31/2016	PAPER

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.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte THOMAS MEIER and KLAUS VON EYNATTEN

Appeal 2015-002687
Application 13/266,210
Technology Center 1700

Before PETER F. KRATZ, N. WHITNEY WILSON, and
BRIAN D. RANGE, *Administrative Patent Judges*.

WILSON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants[1] appeal under 35 U.S.C. § 134(a) from the Examiner's February 24, 2014 decision finally rejecting claims 6, 12–20, 23–27, and 31–35 ("Final Act"). We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We reverse.

---

[1] Appellants identify the Real Party in Interest as SMS Concast AG (Appeal Br. 3).

CLAIMED SUBJECT MATTER

Appellants' invention is directed to a method and a device for guiding and orienting a strand in a continuous casting facility for large-sized round profiles made of steel or a similar material (Spec. 1). According to the Specification, the production of strands with rounded profiles (*i.e.*, no edges) can be difficult because the outer surfaces cool much more quickly than the interior of the strand, which can cause cracking if the strand is bent as part of the production process (Spec. 2–3). According to Appellants, the invention of the application on appeal prevents the formation of cracks while the strand is oriented by heating the outer surface of the strand from above and below using porous burners which emit hot gases which flow entirely around the outer surface of the strand (Abstract).

According to Appellants:

> To optimize heating of a strand by burners as the strand is guided along a curved guide track after outlet from a die, the temperature of each burner is controlled based on the position of the burner along the guide track. The distance from the outlet of the die to the absolute location of the burner along the guide track is used to determine the heating effect provided by that burner. As such, the burners independently heat the strand since each burner is individually controlled based on its position along the guide track, and the burners are situated at different positions along the guide track. By controlling burners based on their specific position along the guide track, the heating effect provided by each burner is tailored uniquely to the position of that burner with an overall view toward optimizing the heating of the strand to provide for desired working of the strand during its passage along the guide track.

(Appeal Br. 10). Details of the claimed invention are set forth in illustrative representative claim 6, which is reproduced below from the Claims Appendix of the Appeal Brief (emphasis added):

> 6. An arrangement for guiding and orienting a strand in a continuous casting facility for large-sized round profiles made of steel or a similar material, comprising:
>
> a guide track comprising:
>
> a strand guide that guides the strand in a curvature after an outlet of a die; and
>
> an orienting driver device adjoining said strand guide and comprising a plurality of pairs of opposed straightening rolls configured to act upon the strand and porous burners arranged in spaces between said pairs of straightening rolls and configured to heat the strand, said orienting driver device also being configured to guide the strand in a curvature, said pairs of opposed rolls being spaced apart from one another along said guide track to thereby define the spaces in which said burners are arranged, said burners being arranged at different positions along said guide track to thereby heat the strand at different positions; and
>
> temperature sensors arranged along said guide track for sensing temperature, *said burners being individually controlled based on the sensed temperature and a position of each of said burners along said guide track such that said burners individually heat the strand based on the position along said guide track at which each of said burners is arranged*;
>
> at least one of said burners including a reactor cell that generates hot exhaust gasses that act upon at least an upper side of a surface of the strand.

REJECTIONS

Claims 6, 12–20, 23–27, and 31–35 (all of the claims on appeal), stand rejected under 35 U.S.C. § 103(a) as being unpatentable over von Hagen[2] in view of Scholz,[3] Weischedel,[4] Cordier,[5] Kinto,[6] Adams,[7] and Teraoka.[8]

DISCUSSION

The principal dispute is whether the cited art renders obvious the following limitation from claim 6: "said burners being individually controlled based on the sensed temperature and a position of each of said burners along said guide track such that said burners individually heat the strand based on the position along said guide track at which each of said burners is arranged." Appellants contend that "associating the position of a burner with the heating effect provided by that burner" is not disclosed by nor rendered obvious by the cited art (Appeal Br. 10). The Examiner, in contrast, determines that this limitation would have been obvious in view of the combined teachings of Adams and Teraoka (Final Act. 6; Ans. 11).

Appellants offer separate, though related, arguments with respect to dependent claims 31 and 35 (Appeal Br. 13–14), and independent claim 32 (*id.*). However, because we decide this appeal based on limitations which

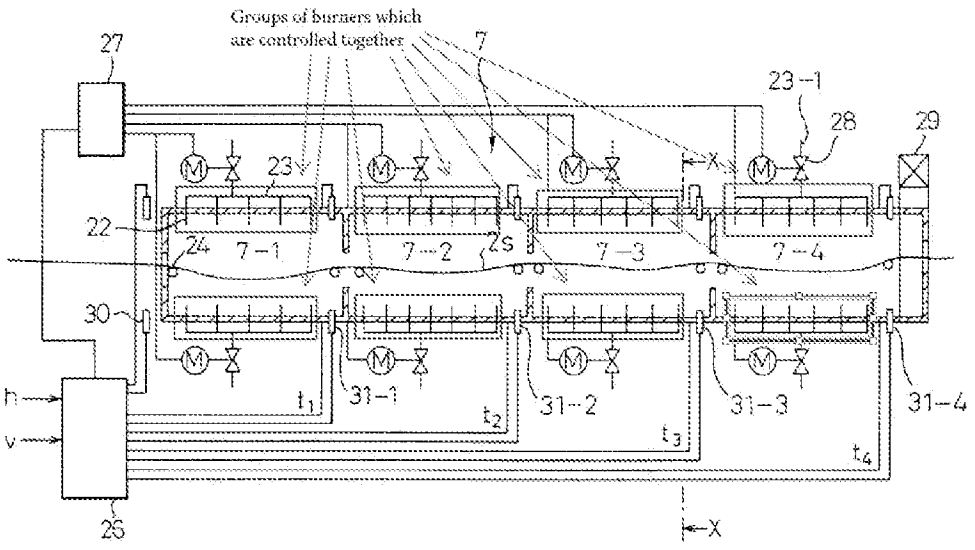
---

[2] Von Hagen et al., U.S. Patent No. 6,491,771 B1, issued December 10, 2002.
[3] Scholz et al., U.S. Patent No. 5,065,811, issued November 19, 1991.
[4] Weischedel et al., WO 2007/131584 A1, published November 22, 2007.
[5] Cordier et al., FR 2 513 552, published April 1, 1983.
[6] Kinto, U.S. Patent No. 4,444,558, issued April 24, 1984.
[7] Adams, U.S. Patent No. 3,478,808, issued November 18, 1969.
[8] Teraoka et al., U.S. Patent No. 5,904,204, issued May 18, 1999.

are common to each of the claims, we limit our discussion to the rejection of claim 6. The reasoning is equally applicable to independent method claim 32 and, naturally, to the dependent claims.

Claim 6 recites the presence of certain burners "being individually controlled based on the sensed temperature and a position of each of said burners along said guide track such that said burners individually heat the strand based on the position" of each burner. The Examiner relies on Teraoka – which is directed to an apparatus producing stainless steel - for teaching a control system which is connected to burners and temperature sensors (Final Act. 6, citing Teraoka, FIG. 9, 15:43–65). However, as noted by Appellants, Teraoka discloses a system in which groups of burners, which are shown as circled together, are controlled together, as shown below in the annotated version of Teraoka's FIG. 9:

Fig.9



An annotated version of Teraoka's FIG. 9 shows that groups of burners are controlled together

The Examiner has not adequately explained why the claimed recitation of burners which are *individually* controlled based the sensed temperature and the *position* of the burners would have been obvious in view of Teraoka's teachings (whether or not combined with the teachings of Adams). In particular, although the Examiner does find that the controller in Teraoka necessarily knows the position of each burner and hence controls the burner at least with knowledge of its position (Ans. 12), the Examiner does not show how each burner is individually controlled,[9] or that such individual control would have been obvious. Moreover, as explained by Appellants, that the position of each temperature sensor may be known does not teach or suggest (at least without benefit of Appellants' invention) the position of the burners, or how the position of the burners can affect the way in which they are heated.

Appellants argue that Teraoka is directed to an apparatus for producing a steel strip using a heating furnace divided in several parts with a plurality of burners for each furnace part connected to a common header with a valve controlling combustion gas (heating medium) flow to each header, and the Examiner has not identified where Teraoka teaches or suggests "burners that heat a strand and are individually controlled based on a position of each burner along the guide track" (App. Br. 12). Furthermore and as argued by Appellants, the Examiner has not established that Adams teaches or suggests controlling heat supplied by burners, much less

[9] The Examiner explicitly finds that "each *group* of burners of Teraoka can be controlled individually," not each burner (Ans. 11, emphasis added).

individually by burner position along a guide track for a strand (App. Br. 11).

In order to reject a claim in a patent application as obvious under 35 U.S.C. § 103(a), the Examiner must establish a prima facie case of obviousness, including the presence of each element of the claim. In the absence of a proper prima facie case of obviousness, an applicant who complies with the other statutory requirements is entitled to a patent. *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998); *see also In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). In this instance, we determine that the preponderance of the evidence does not support a finding that the combined prior art, as applied by the Examiner, teaches, suggests, or renders obvious each of the limitations in claim 6, in particular that the burners are individually controlled based on sensed temperatures and their positions in a manner as required by the appealed claims. This determination necessarily leads us to reversal of the obviousness rejections.

CONCLUSION

We REVERSE the rejection of claims 6, 12–20, 23–27, and 31–35 under 35 U.S.C. § 103(a) as being unpatentable over von Hagen in view of Scholz, Weischedel, Cordier, Kinto, Adams, and Teraoka.

REVERSED