UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DANIEL J. BRANAGAN

Appeal 2008-3132
Application 10/752,984
Technology Center 1700

Decided: July 28, 2008

Before CHARLES F. WARREN, PETER F. KRATZ, and
JEFFREY T. SMITH, *Administrative Patent Judges*.
KRATZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 1 and 3-14. We have jurisdiction pursuant to 35 U.S.C. § 6.

Appellant's claimed invention is directed to an iron-containing wire comprising a total composition of a specified makeup of fewer than eleven elements wherein iron is present in an at least about 55 weight percent amount (Specification ¶0052). The wire can be formed with a metal sheath having a sub-composition and a core comprising a powder having its own sub-composition, wherein the wire total composition includes the sub-compositions (Specification ¶¶ 0050-0052). The specified wire total composition excludes impurities that can also be present (Specification ¶ 0010). Claims 1, 5, and 10 are illustrative and reproduced below:

1. A wire comprising:

a metal sheath comprising a first sub-composition;

a core comprising a powder having a second sub-composition;

a total composition consisting of the first and second sub-compositions and consisting of fewer than 11 elements, each of the fewer than 11 elements being selected from the group consisting of Fe, Mo, Si, Cr, Al, B, W, C, P, Mn, and Gd, the fewer than 11 elements comprising Fe and at least two elements selected from the group consisting of C, Si and B, the Fe present in the total composition being at least about 55% of the total composition by weight.

5. A wire comprising:

a total composition consisting of fewer than 11 elements, each of the fewer than 11 elements being selected from the group consisting of Fe, Mo, Si, Cr, Al, B, W, C, P, Mn, and Gd;

at least about 55% Fe, by weight; and

at least one member selected from the group consisting of 5 atomic % C, 1 atomic % Si, 2 atomic % W, and 17 atomic % B.

10. A wire having a total composition consisting of:

elements selected from the group of Fe, Mo, Si, Cr, Al, B, W, C, P, Mn, and Gd;

at least about 55% Fe, by weight; and

Cr, the total composition having a ratio of Fe to Cr of 4:1.

The Examiner relies on the following prior art reference as evidence in rejecting the appealed claims:

Kaiser	5,294,462	Mar. 15, 1994

Claims 1 and 3-14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kaiser.

We affirm the stated rejection for reasons set forth in the Examiner's Answer and as further explained below.

Appellant argues independent claims 1, 5, and 10 separately. The dependent claims are argued together as a group with their associated independent claim. Thus, we consider the independent claims separately to the extent so argued with the associated dependent claims standing or falling together therewith.

Under 35 U.S.C. § 103, the factual inquiry into obviousness requires a determination of: (1) the scope and content of the prior art; (2) the differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) any secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). "[A]nalysis [of whether the

subject matter of a claim is obvious] need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR Int'l Co. Teleflex, Inc.*, 127 S. Ct. 1727, 1741 (2007). After all, skill, not the converse, is expected from one of ordinary skill in the art. *See In re Sovish*, 769 F.2d 738 (Fed. Cir. 1985).

During prosecution of a patent application, the claims therein are given the broadest reasonable interpretation consistent with the Specification as it would be understood by one of ordinary skill in the art. *Gechter v. Davidson*, 116 F.3d 1454, 1457, 1460 n.3 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321-22 (Fed. Cir. 1989).

Claims 1, 3, and 4

Like Appellant's claim 1 wire, Kaiser discloses a wire comprising a metal sheath and a core comprising a powder (col. 5, ll. 11-24). Kaiser discloses that the wire composition contains several elements from among a small list of elements provided and Kaiser exemplifies a wire that has an overall composition which includes iron (Fe), chromium (Cr), carbon (C), boron (B), and silicon (Si) constituents, with an amount of Fe (67 weight percent) that corresponds to the claim 1 requirement for over about 55 weight percent iron (col. 5, ll. 10-36, col. 6, ll. 1-11, and col. 8, ll. 31-42). Kaiser's exemplified wire composition further contains a minor portion of nitrogen (N) and oxygen (O), as tested (col. 8, ll.31-42). Kaiser discloses that the amount of O and N in coatings that can be formed using the wires described therein can be as low as zero percent (col. 5, ll. 27-33). Thus, a reasonable factual inference that can be drawn from the disclosure of Kaiser

is that Kaiser suggests wires having only a few elements present therein, such as the exemplified wire including five desired elements (Fe, Cr, C, B, and Si) and with little or no N and/or O present therein.

Accordingly, it would have been well within the level of skill of an ordinarily skilled artisan to form a core/sheath wire including less than 11 elements as part of the total composition and including Fe in an amount that corresponds with the claim 1 requirement therefor by simply following the teachings of Kaiser. Thus, we agree with the Examiner that Kaiser renders the subject matter of claim 1 at least prima facie obvious.

Appellant argues that Kaiser represents non-analogous art because Kaiser teaches that the cored wire disclosed therein is used to form a coating via an electric arc spraying process. Moreover, Appellant contends that the disclosure of Kaiser is too broad with respect to the wire composition to be suggestive of or provide motivation toward the here-claimed wire coupled with a reasonable expectation of success in achieving the claimed wire. Also, Appellant asserts that the N and O present in the exemplified wire of Kaiser lends credence to Appellant's arguments with respect to a lack of suggestion in Kaiser of a wire composition like that claimed by Appellant because claim 1 allegedly exclude any N and/or O from being present therein.

The issue raised by Appellant's arguments is: Has Appellant established reversible error in the Examiner's obviousness determination based on the aforementioned contentions as to claim 1? We answer this question in the negative and affirm the Examiner's obviousness rejection.

As for the non-analogous art contention, we observe that the two separate tests for determining whether a prior art reference is analogous are

as follows: (1) whether the art is from the same field of endeavor, regardless of the problem addressed; and (2) if the reference is not within the inventor's endeavor, whether the reference is reasonably pertinent to the particular problem with which the inventor is involved. *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004).

As Appellant notes, Kaiser teaches how the sheath/core wire, as described therein, can be used for making a coating via an electric arc spraying process. Unlike Appellant, however, we do not agree that this teaching establishes that Kaiser is from a different field of endeavor or that Kaiser is not reasonably pertinent to the problems that the would confront an one of ordinary skill in the art with regard to the subject matter with which the claimed invention is involved. Indeed, Appellant discloses a use for the subject claimed wire that includes forming a coating via an arc spraying technique (Specification ¶¶ 0024, 0056, and 0057), a similar use to that disclosed by Kaiser for the wire disclosed and suggested therein. Thus, Kaiser is clearly directed to analogous art in that Kaiser discloses or suggests a wire having a composition like the wire as claimed here, which wire is disclosed as being useful in a manner that is similar to a disclosed use for Appellant's claimed wire.

Appellant's assertion that the disclosure of Kaiser is too broad to be suggestive of the claimed wire composition is unpersuasive because Kaiser clearly teaches or suggests Fe-containing sheath/core wires that encompass an amount of iron as claimed and which wire compositions include only a few additional elements, as the exemplified embodiment of Kaiser clearly indicates. Hence, we are satisfied that an ordinarily skilled artisan following the direction and teachings of Kaiser would readily arrive at a wire within

the scope of appealed claim 1 upon routine experimentation to determination the workable alternatives within the guidance provided by Kaiser.

As for the argued nitrogen and oxygen found in the exemplified embodiment of Kaiser, Appellant employs open-ended "comprising" language in addition to closed "consisting of" language in the enumerated elements clause in claim 1 and Appellant's Specification explicitly excludes impurities from the enumerated elements of the total composition of the wire (¶ 0010). Thus, giving claim 1 its broadest reasonable construction consistent with the Specification as it would be understood by one of ordinary skill in the art, we determine that claim 1 does not exclude the presence of minor amounts of O and N in the wire total composition, as found in the exemplified embodiment of Kaiser. When the claim does not recite allegedly distinguishable features, Appellant cannot rely on them to establish patentability. *See In re Self*, 671 F.2d 1344, 1350-1351 (CCPA 1982).

Moreover, even if claim 1 were construed to exclude nitrogen and oxygen, a claim construction with which we disagree, Kaiser suggests wire compositions that are free of these elements, as we noted above (Kaiser, col. 5, ll. 10-36).

On this record, we affirm the Examiner's obviousness rejection of claim 1 and dependent claims 3 and 4, which latter dependent claims are not separately argued (Br. 9).

Claims 5 through 9

Concerning independent claim 5, we observe that Appellant makes substantially the same arguments for asserting error in the Examiner's rejection of this claim as were made against the Examiner's rejection of

claim 1, which arguments we found unpersuasive as discussed above. Appellant does not address any specific features of claim 5 that are not found in claim 1 in arguing for the separate patentability of claim 5. In this regard, we note that Kaiser discloses that other metals can be present in the wire, and Kaiser specifically mentions tungsten carbide as an acceptable wire component. The use of tungsten carbide as taught by Kaiser would contribute both tungsten (W) and carbon (C) as compositional elements of the wire. Dependent claims 6-9 are not separately argued (Br. 10).

On this record, we affirm the Examiner's obviousness rejection as to claims 5-9.

Claims 10 through 13

Concerning separately argued independent claim 10, we begin by noting that dependent claims 11-14 are argued on the basis of independent claim 10 (Br. 11). Thus, claims 11-14 stand or fall together with claim 10, which we select as the representative claim for this grouping of claims.

Appellants present an additional argument with respect to the Fe/Cr ratio requirement of representative claim 10. In this regard, claim 10 requires that the Fe:Cr ratio is 4 to 1 whereas the exemplified embodiment of Kaiser reports about a 2 to 1 Fe:Cr ratio for the overall wire composition. However, the teachings of Kaiser are not limited to the exemplified or preferred embodiments. Here, we determine that one of ordinary skill in the art would have ascertained, upon routine experimentation, the workable ranges of the chromium and iron components of the wire for arc spray coating and arrived at the claimed component ratio of iron to chromium in so doing. "[I]t is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456 (CCPA 1955).

As a final point, we note that Appellant has not demonstrated that anything but expected results accrue from employment of a wire with a Fe/Cr ratio as called for in representative claim 10.

On this record, we affirm the Examiner's obviousness rejection as to claims 10-14.

CONCLUSION

The decision of the Examiner to reject claims 1 and 3-14 under 35 U.S.C. § 103(a) as being unpatentable over Kaiser is affirmed.

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

AFFIRMED

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