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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JAMES E. INGRAM JR.

Appeal 2011-012357
Application 11/001,072
Technology Center 1700

Before BRADLEY R. GARRIS, MARK NAGUMO, and
DEBORAH KATZ, *Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 1, 15, 22-37, and 39. We have jurisdiction under 35 U.S.C. § 6.

We AFFIRM.

Appellant claims an elongated structural member comprising a filler composite material including ground rubber particles and a binder of resin or concrete, and a sleeve surrounding the filler composite material, wherein steel components are absent from the ground rubber particles (claims 1, 15, and 22).

Further details regarding the claimed subject matter are set forth in representative claims 1, 15, and 22 which are the only independent claims on appeal and which read as follows:

1. An elongated structural member comprising:

a filler composite material, said filler composite material including ground rubber particles and a binder; and

a plastic sleeve surrounding said filler composite material,

wherein the granular particle size for said ground rubber particles ranges from 0.125 inches to 0.5 inches,

wherein said binder is a resin binder, ten percent by volume of said filler composite material being said resin binder and ninety percent by volume of said filler composite material being said ground rubber particles, and

wherein steel components are absent from within said ground rubber particles.

15. An elongated structural member comprising:

a filler composite material, said filler composite material including ground rubber particles and a binder; and

a plastic sleeve surrounding said filler composite material,

wherein the granular particle size for said ground rubber particles ranges from 0.125 inches to 0.5 inches,

wherein said binder is a concrete binder, ten to twenty percent by volume of said filler composite material being said concrete binder and eighty to ninety percent by volume of said filler composite material being said ground rubber particles, and

wherein steel components are absent from within said ground rubber particles.

22. An elongated structural member comprising:

a filler composite material including ground rubber particles and a binder, said binder being from the group consisting of a resin binder and a concrete binder; and

a sleeve surrounding said filler composite material,

wherein steel components are absent from within said ground rubber particles.

Under 35 U.S.C. § 103(a), the Examiner rejects:

claims 1, 22-24, and 39 as unpatentable over Nevin (US 5,675,956, issued Oct. 14, 1997) in view of Kvesic (US 6,821,623 B2, issued Nov. 23, 2004);

claims 15, 22, 25-29, 31-37, and 39 as unpatentable over Nevin in view of Khais (US 5,634,599, issued Jun. 3, 1997); and

claim 30 as unpatentable over Nevin, Khais, and Shaneour (US 5,557,900, issued Sep. 24, 1996).

We will sustain each of these rejections for the reasons expressed in the Answer and below.

As a preliminary matter, we observe that the applied references evince that the art under review would have been reasonably predictable to those with ordinary skill at the time Appellant's invention was made. This observation is consistent with the fact that Appellant does not present evidence that the claimed invention yields unexpected results.

The Rejection based on Nevin and Kvesic

It is undisputed that independent claim 22 distinguishes from Nevin solely by the requirement that "steel components are absent from within said ground rubber particles." In Nevin, the rubber particles, which are obtained by shredding used tires, contain steel components if the tires contain steel components (col. 3, ll. 9-28). The Examiner concludes that it would have been prima facie obvious to make the elongated structural member of Nevin with rubber particles which do not contain steel components in view of the Kvesic evidence that it was known in the prior art to make recycled rubber products from recycled steel-free rubber particles (e.g., from tires) (Ans. 4).

Appellant argues that Nevin teaches away from steel components being absent from within the ground rubber particles because Nevin discloses that the tire components are believed to aid in bonding the cement to the rubber chips or particles (*see, e.g.*, App. Br. 22-23).

This argument is unpersuasive. As correctly explained by the Examiner, Nevin's disclosure, including the above noted belief, does not require the presence of steel components in the rubber particles and does not criticize, discredit or otherwise discourage the use of rubber particles which do not contain steel (Ans. para. bridging 12-13). Therefore, we share the

Examiner's determination that Nevin does not teach away from using steel-free rubber particles as urged by Appellant (*id.*, citing *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (a disclosure which does not criticize, discredit, or otherwise discourage the claimed solution does not teach away from the solution)).

On the other hand, prima facie obviousness is supported by the undisputed facts mentioned earlier and by established legal precedent. In this latter regard, we assess the obviousness of a claim to a combination of prior art elements by asking "whether the improvement is more than the predictable use of prior art elements according to their established functions." *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007). Here, Nevin shows that the prior art included the claim 22 elements of an elongated structural member (e.g., a pole) comprising a plastic sleeve containing rubber particles and cement binder whereas Kvesic shows the prior art included the claim 22 elements of a product comprising bound rubber particles which do not contain steel components. Based on the record before us, the claimed combination of these prior art elements yields no more than the predictable use of such elements according to their established functions.

Therefore, it is our determination that the Examiner has established a prima facie case of obviousness for the subject matter defined by claim 22.

It is likewise undisputed that independent claim 1 also distinguishes from Nevin by use of steel-free rubber particles and further by requiring rubber particle sizes ranging from 0.125 inches to 0.5 inches (as distinguished from Nevin's particle sizes ranging from $\frac{3}{4}$ inch minus), by requiring a resin binder (as distinguished from Nevin's cement binder), and

by requiring 10:90 volume % binder:rubber particles (as distinguished from Nevin's preferred 25:75 volume % binder:rubber particles). With respect to this claim, the Examiner additionally concludes that it would have been prima facie obvious to replace Nevin's cement binder with the resin binder taught by Kvesic and to provide Nevin with optimized rubber particle sizes and volume percentages of resin binder:rubber particles (Ans. 4-5).

Appellant argues that the applied references teach away from using Kvesic's resin for binding rubber particles in the plastic (e.g., PVC) container (i.e., cylinder) of Nevin because no evidence has been presented that the plastic such as PVC used by Nevin would have been able to withstand the about 200°F to about 400°F molding temperatures used by Kvesic (*see, e.g.,* App. Br. 11-12).

Appellant's argument is unpersuasive for multiple reasons. As correctly explained by the Examiner, the PVC referred to by Appellant is not required by Nevin, and the molding temperatures referred to by Appellant are not required by Kvesic (Ans. 10-11). Moreover, Appellant has not supported this argument with any evidence that PVC would be incapable of withstanding such molding temperatures. Finally, the argument is contrary to the established principle that "[a] person of ordinary skill is also a person of ordinary creativity, not an automaton." *KSR* at 420-21. In combining Nevin with Kvesic in the manner proposed by the Examiner, such a person would have utilized a plastic for Nevin's sleeve which would be compatible with the processing temperatures required for Kvesic's resin binder.

In addition, Appellant argues that it would not have been obvious to provide Nevin with the rubber particle sizes and percentages of resin binder:rubber particles required by claim 1 because neither Nevin nor Kvesic

recognizes such variables as being result effective (*see, e.g.*, App. Br. 12-20).

However, as acknowledged by Appellant, each of Nevin and Kvesic expressly discloses a range of effective values for rubber particle sizes as well as amounts of resin binder and rubber particles (*id.* at 13-14, 16-19). These disclosures support a finding that both Nevin and Kvesic recognize that a property of their respective products is affected by particle sizes and binder:particle amounts, otherwise these references would not have disclosed effective values for such variables. Contrary to Appellant's argument, "[a] recognition in the prior art that a property is affected by the variable [in question] is sufficient to find the variable result-effective." *In re Applied Materials, Inc.*, 692 F.3d 1289, 1297 (Fed. Cir. 2012).

Appellant's argument is further undermined by the legal principle that the discovery of optimum values for recognized result effective variables is ordinarily within the skill of the art. *See Applied Materials* at 1295. This argument is yet further undermined by the fact that the claimed particle size range overlaps Nevin's particle size range and concomitantly by the legal principle that a prima facie case of obviousness typically exists when the claimed range overlaps the prior art range. *Id.*

It follows that the Examiner also has established a prima facie case of obviousness for the subject matter defined by independent claim 1 as well as the corresponding subject matter defined by separately argued dependent claims 23 and 39.

For the reasons stated above and in the Answer, we sustain the Examiner's § 103 rejection of claims 1, 22-24, and 39 as unpatentable over Nevin in view of Kvesic.

The Rejection based on Nevin and Khais

Once again, it is undisputed that independent claim 15 distinguishes from Nevin by requiring steel-free rubber particles, rubber particle sizes ranging from 0.125 inches to 0.5 inches, and rubber particles:concrete binder amounts of 10-20:80-90 volume %.

In contesting the Examiner's conclusion that it would have been prima facie obvious to make the elongated structural member of Nevin using steel-free rubber particles in view of Khais (Ans. 6), Appellant reiterates the argument that Nevin teaches away from the proposed combination (*see, e.g.*, App. Br. 35-36). This argument remains unpersuasive for the reasons discussed above. Appellant also argues that Khais fails to teach or suggest steel components being absent from within the ground rubber particles and in particular fails to explain how stainless steel, if present, would have been separated from the ground rubber particles since Khais refers to stainless steel as a non-magnetic material (*id.* at 34). Appellant's argument lacks convincing merit because it is directly contradicted by Khais' express teaching that "fiber material and steel particles are removed from the pulverized tire or polymeric material" (col. 2, ll. 37-39).

In contesting the Examiner's prima facie obviousness conclusion regarding the claim 15 rubber particle sizes and rubber particles:concrete binder amounts, Appellant again argues that the applied prior art fails to recognize such variables as being result effective (*see, e.g.*, App. Br. 25-30). This argument conflicts with Appellant's acknowledgment that Nevin and/or Khais disclose a range of effective values for these variables (*id.* at 25-26,

28-29). For the reasons previously explained, such disclosures support a finding that the variables in question are recognized by Nevin and/or Khais as being result effective and concomitantly support a conclusion that it would have been prima facie obvious to optimize these variables.

In light of the foregoing, we determine that the Examiner has established a prima facie case of obviousness for the subject matter defined by independent claim 15 as well as the corresponding subject matter defined by separately argued independent claim 22 and dependent claim 39.

Appellant separately argues that Nevin is silent regarding the solid-core steel bar of dependent claim 27, the uniform outer dimension sleeve of dependent claim 31, and the variable outer dimension sleeve of dependent claim 32 (*see, e.g.*, App. Br. 38-40). These arguments are unpersuasive. For the reasons expressed in the Answer, we share the Examiner's conclusion that it would have been prima facie obvious to provide Nevin with these claim features (Ans. 7, 16-17). Moreover, it is appropriate to emphasize that a prima facie case of obviousness for claims 27, 31, and 32 respectively is supported by Nevin's disclosures of a metal rod (col. 4, ll. 2-6, Fig. 4), a uniform outer dimension sleeve (as shown in Fig. 5), and a variable outer dimension sleeve (as shown in Figs. 6-7).

The Rejection based on Nevin, Khais, and Shaneour

The Examiner concludes that it would have been prima facie obvious to make the plastic sleeve of Nevin from high-density polyethylene as required by claim 30 in view of Shaneour (Ans. 9).

Appellant argues that the Examiner's obviousness conclusion is not supported by articulated reasoning with some rationale underpinning (*see, e.g.,* App. Br. 45-46).

Appellant's argument is not persuasive for the reasons detailed in the Answer (Ans. 17). An artisan would have made Nevin's plastic sleeve from Shaneour's high-density polyethylene in view of the undisputed disclosure in Shaneour that such material is suitable for use in the outdoor pole environment of Nevin. Based on the record before us, the improvement resulting from the Examiner's proposed combination is no more than the predictable use of prior art elements according to their established functions. *See KSR* at 417.

Conclusion

The decision of the Examiner 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).

AFFIRMED

kmm