

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte JOHANN DABOUINEAU

Appeal 2008-1524
Application 10/887,853
Technology Center 1600

Decided: May 28, 2008

Before, DONALD E. ADAMS, DEMETRA J. MILLS, and
LORA M. GREEN, *Administrative Patent Judges*.

MILLS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134. The Examiner has rejected the claims for anticipation and obviousness. We have jurisdiction under 35 U.S.C. § 6(b).

The following claims are representative.

1. A multilayer pipe, comprising an inner layer comprising a cyclo-olefin, and an outer layer comprising a polyphenylene sulfide (PPS).
2. A multilayer pipe according to claim 1, wherein the cyclo-olefin is a dicyclopentadiene.

3. A multilayer pipe, comprising an inner layer comprising a cycloolefin, an outer layer comprising a polyphenylene sulfide (PPS) and at least one intermediate layer of thermoplastic material.

4. A multilayer pipe according to claim 3, comprising a single intermediate layer in contact with the inner and outer layers, the thermoplastic material of the intermediate layer presenting properties of adhesion with the materials of the inner and outer layers.

5. A multilayer pipe according to claim 4, the intermediate layer comprising a polyolefin.

6. A multilayer pipe comprising an inner layer comprising a cycloolefin, an outer layer comprising a polyphenylene sulfide (PPS), a first intermediate layer comprising a polyolefin and at least one additional intermediate layer of thermoplastic material.

Cited References

Kresge	US 3,271,477	Sept. 6, 1966
Maillard	US 3,561,493	Feb. 9, 1971
Stefano et al.	US 4,096,888	June 27, 1978
Ishikawa et al.	US 5,521,009	May 28, 1996

Grounds of Rejection

1. Claims 1-5 stand rejected under 35 U.S.C. § 102(b) for anticipation over Ishikawa.

2. Claims 1-5 stand rejected under 35 U.S.C. § 103(a) for obviousness over Stefano in view of Ishikawa.

3. Claims 6-9 stand rejected under 35 U.S.C. § 103(a) for obviousness over Ishikawa in view of Maillard and Kresge.

4. Claims 6-9 stand rejected under 35 U.S.C. 103(a) for obviousness over Stefano in view of Ishikawa, Maillard, and the teachings of Kresge.

DISCUSSION

Background

The present invention relates to a multilayer pipe, usable in particular in a cooling circuit of a motor vehicle engine. (Spec. 1.) “There exist numerous single-layer or multilayer pipe structures for use in circuits that convey fluids on board motor vehicles. The materials selected for making them are the result of a compromise in satisfying numerous constraints. Thus, the pipes used in such circuits must, in particular, present chemical resistance to the fluid conveyed, and must do so at relatively high temperatures, must present barrier properties to the fluid conveyed, must present resistance to bursting and lengthening at relatively high temperatures (greater than 150°C) and at relatively high pressures, and resistance to the oxygen dissolved in the fluid.” (Spec. 1.)

In one embodiment the invention provides a multilayer pipe comprising an inner layer comprising a cyclo-olefin, and an outer layer comprising a polyphenylene sulfide (PPS). (Spec. 2.)

Claim interpretation

Our mandate is to give claims their broadest reasonable interpretation. *In re American Academy of Science Tech Center*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Claim 1 uses the transitional phrase “comprising”. The transitional term “comprising,” which is synonymous with “including,” “containing,” or “characterized by,” is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *Invitrogen Corp. v. Biocrest Mfg.*, L.P., 327 F.3d 1364, 1368 (Fed. Cir.

2003). Thus, we find that claim 1 does not exclude the presence of an additional element such as a wire within the center of a multilayer pipe.

1. Claims 1-5 stand rejected under 35 U.S.C. § 102(b) for anticipation over Ishikawa. We select claim 1 as representative of the rejection before us since Appellants have not separately argued the claims. 37 C.F.R. § 41.37(c)(1)(vii).

The Examiner contends that

Ishikawa discloses a multilayer tubular structure which is a pipe comprising an inner layer 2 which can be formed of a cyclo olefin such as dicyclopentadiene, the intermediate layer 3A can be formed of a polyolefin which then connects the inner layer to an outer layer 3B which can be formed from polyphenylene sulfide (PPS).

(Ans. 3.)

Appellant contends that

Ishikawa et al. do not disclose or suggest all of the limitations recited in independent claims 1 and 3, namely, a *pipe*. A “pipe” is defined as “a tube through which a liquid or gas flows” in the Longman Dictionary of Contemporary English. Ishikawa et al. at most disclose an *electric insulated wire* comprising a metallic wire covered by insulating layers. The insulated wire of Ishikawa et al. is not tubular and is not used to convey fluids. The insulating layers of Ishikawa et al. constitute a sheath melt-shaped directly on the metallic wire, such that no fluid can flow through the sheath. Accordingly, Ishikawa et al. does not disclose a “pipe” as positively recited, since the insulating layers of Ishikawa et al. are not tubular, nor arranged to conduct

a fluid.

(Br. 4-5.)

The standard under § 102 is one of strict identity. “Under 35 U.S.C. § 102, every limitation of a claim must identically appear in a single prior art reference for it to anticipate the claim.” *Gechter v. Davidson*, 116 F.3d 1454, 1457 (Fed. Cir. 1997). “Every element of the claimed invention must be literally present, arranged as in the claim.” *Richardson v. Suzuki Motor Co., Ltd.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989). During examination, ‘claims . . . are to be given their broadest reasonable interpretation.’” *In re American Academy of Science Tech Center*, 367 F.3d 1359, 1364, (Fed. Cir. 2004).

Appellant provides a definition of “pipe” from *Merriam Webster Online Dictionary* as meaning “(3) a tubular or cylindrical object, part, or passage.” (Br. 5.) The Examiner finds that there is no specific definition of a “pipe” set forth in the specification and that Ishikawa discloses such a structure meeting the Dictionary definition put forth by Appellant. (Ans. 7.) We agree with the Examiner and thus give the term “pipe” its broadest reasonable interpretation, namely (3) a tubular or cylindrical object, part, or passage. Furthermore, claim 1 does not exclude the presence of a wire in the center of the multilayer pipe, due to the transitional phrase comprising, as discussed herein, and as taught by Ishikawa.

Thus, we find that the wire jacketing of Ishikawa falls within the interpretation of the term “pipe” herein.¹ We find the Examiner has presented sufficient evidence to support a prima facie case of anticipation which is un rebutted by Appellant. The anticipation rejection is affirmed.

2. Claims 1-5 stand rejected under 35 U.S.C. § 103(a) for obviousness over Stefano in view of Ishikawa. We select claim 1 as representative of the rejection before us since Appellants have not separately argued the claims. 37 C.F.R. § 41.37(c)(1)(vii).

As discussed herein we have found that claim 1 is anticipated by Ishikawa alone. Anticipation being the epitome of obviousness, we also affirm the rejection of the claims under 35 U.S.C. § 103 as being obvious in view of Ishikawa and Stefano. *See In re Fracalossi*, 681 F.2d 792, 794 (CCPA 1982).

Appellant argues that “there is no suggestion or motivation to combine the teachings of Stefano et al. and Ishikawa et al. to achieve the structure of the present invention.” (Br. 7.) In particular, “Appellant submits that there is no suggestion or motivation to replace the elastomer outer layer of Stefano et al. with PPS.” (Br. 10.)

Appellant argues that

[a]lthough the Examiner asserts that PPS is a known material to use on outer layers of tubular objects to resist environmental

¹ Referencing Kresge, the Examiner finds that it is known in the art that multilayer tubes can be utilized for conducting fluids but can also be used to form jacketing material for wires. (Ans. 7-8; Kresge, col. 6, ll. 1-8.)

attacks, a stated objective of Stefano et al. is to provide a “**composite elastomeric hose**” including “a first heat setting **elastomeric** annular member having appreciable permeability to the conveyed fluids and composed of a co-polymer of mixed mono-olefins and polyolefins” and “a second heat setting **elastomeric** annular member of a material dissimilar from the copolymer and not readily bondable therewith, one of the annular members serving as an outer cover and the other as inner tube for the hose composite” (See Col. 1, lines 47-48). . . . PPS is not an elastomer and cannot satisfy the stated objective of Stefano et al. “If [a] proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” In this case, modification of the outer layer to PPS, which is not an elastomer, would render the prior art reference unsuitable for its intended purpose.

(Br. 10.)

We have found claim 1 anticipated by Ishikawa alone. To address Appellant’s arguments as to the combination of references, the Examiner contends that

merely because Stefano sets forth a specific term such as “elastomeric” does not require the outermost layer to be elastomeric which is the layer being modified by the teachings of Ishikawa. Such would also not preclude the hose in Stefano from being able to be used for its intended use when its use is for fluid flow and changing the outer characteristics of the material used would not destroy or prevent one from using such still as a fluid flow containing hose. Therefore, the . . . modification of the outer layer would in no way prevent such from being used as for the hoses intended purpose, that of a fluid flow hose.

(Ans. 10.)

Moreover, we find that Ishikawa, claim 12, further contemplates that the sheath 4, covering the core can alternatively be made of a compound such as an ethylene acryl elastomer. (Ishikawa, col. 9, ll. 45-55.) Thus, Ishikawa does not teach away from the use of an elastomeric outer layer.

We agree with the Examiner and find that the Appellants have not established with appropriate evidence that modification of the outer layer to PPS, which is not an elastomer, would render the prior art reference unsuitable for its intended purpose.

In view of the above, the obviousness rejection is affirmed.

3. Claims 6-9 stand rejected under 35 U.S.C. § 103(a) for obviousness over Ishikawa in view of Maillard and Kresge. We select claim 6 as representative of the rejection before us since Appellant has not separately argued the claims. 37 C.F.R. 41.37(c)(1)(vii).

The Examiner acknowledges that “Ishikawa discloses all of the recited structure with the exception of providing two additional intermediate layers between the intermediate layer and the inner and outer layers respectively.” (Ans. 4.)

Thus, the Examiner relies on Maillard for disclosing that it is

old and well known in the tube art to form a tube of a plurality of layers including one embodiment where a single intermediate layer lies between an inner and outer layer, and an embodiment where additional layers can be provided between the inner layer and intermediate layer, and the outer layer and the intermediate layer where these additional layers are formed of plastics which make the layers compatible with one another.

(*Id.*)

The Examiner concludes that

[i]t would have been obvious to one skilled in the art to modify the article to Ishikawa by providing additional layers between the inner layer, intermediate layer and outer layers to provide layers that increase the compatibility of the three layers and adhere them better as suggested by Maillard where such is taught as an equivalent embodiment to form the either a three layer or five layer structure, where such would insure the layers remained adhered to one another thereby avoiding premature failure and replacement costs thereby saving money. Kresge teaches that multilayer tubes, including those utilizing dicyclopentadiene inner layers, can be used to form jacketing materials of wires as well as tubing and hoses, thereby supporting the combination of the teachings of a wire jacket and a hose.

(Ans. 4-5.)

On the other hand, Appellant contends that

Ishikawa et al. does not disclose a “pipe” as positively recited, since the insulating layers of Ishikawa et al. are not tubular, nor arranged to conduct a fluid.

Appellant also submits there is no suggestion or motivation to combine the cited references. ... Ishikawa et al. comprises non-analogous art directed to insulated electrical wires, and there is simply no suggestion or motivation to combine the teachings of Ishikawa et al. with Maillard or any other reference that might be said to disclose a fluid conveying pipe.

(Br. 12.)

We are not persuaded by Appellant’s argument. The Examiner has provided evidence of record, Kresge, showing that wire jacketing and piping

are related and analogous art. (Kresge, col. 6, ll. 1-8.) We have also determined that Ishikawa discloses a “pipe” within the scope of the claims. Nor do we find error in the Examiner’s indicated motivation to combine the cited references. The Supreme Court in *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1739 (2007), rejected a rigid application of the teaching-suggestion-motivation test. The Court recognized that it is often necessary to look at the interrelated teachings of multiple references; the effects of demands of the marketplace; and the background knowledge possessed by a person of ordinary skill, “all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed.” *Id.* at 1740-41. “In determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls. . . . [A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741-42 (2007).

Ishikawa teaches three layered tubing as claimed. Maillard teaches the acceptable alternatives of three layer tubing and five layer tubing with additional layers between the inner layer and intermediate layer. (Maillard, Figs. 1 and 2; Ans. 4.) Maillard teaches that five layer films, including plastic films, are firmly joined together. (Maillard, col. 1, ll. 30-35.) Thus, we find that one of ordinary skill in the art would have understood from the cited prior art that three and five layer tubing are acceptable alternatives and that Maillard provides a reason that the tubing of Ishikawa could be modified to include five layers.

In view of the above, the obviousness rejection is affirmed.

4. Claims 6-9 stand rejected under 35 U.S.C. 103(a) for obviousness over Stefano in view of Ishikawa, Maillard, and the teachings of Kresge. We select claim 6 as representative of the rejection before us since Appellant has not separately argued the claims. 37 C.F.R. 41.37(c)(1)(vii).

Each of the cited references is discussed herein. The Examiner finds that

[i]t would have been obvious to one skilled in the art to modify the intermediate layer of Stefano to be a polyolefin as such is a known equivalent material used to connect a dicyclopentadiene to another type of layer, and to modify the article to Stefano by providing additional layers between the inner layer, intermediate layer and outer layers to provide layers that increase the compatibility of the three layers and adhere them better as suggested by Maillard where such is taught as an equivalent embodiment to form the either a three layer or five layer structure, where such would insure the layers remained adhered to one another thereby avoiding premature failure and replacement costs thereby saving money.

(Ans. 6.)

Appellant contends that Ishikawa comprises non-analogous art, and there is simply no suggestion or motivation to combine the teachings of Ishikawa with Maillard or any other reference that might be said to disclose a “pipe.” (Br. 13.) As discussed herein we have found that Ishikawa discloses a “pipe” within the scope of the pending claims.

Appellant further argues Kresge does not support the argument that multilayer pipes can be used for both pipes for conducting fluids and for

forming jacketing materials for wire since Kresge discloses use of a material for both lining a pipe and for jacketing material, rather than for forming a pipe itself and for jacketing material. (Br. 13.)

Appellant argues “there is no suggestion or motivation to replace the elastomer outer layer of Stefano et al. with PPS because a stated objective of Stefano et al. is to provide a composite elastomeric hose and replacing the elastomeric outer layer of Stefano et al. with PPS (not an elastomer) would defeat a stated objective of Stefano et al. and render Stefano et al. unsatisfactory for its stated purpose.” As discussed herein, we are not persuaded by this argument.

For the above reasons, we affirm the obviousness rejection.

SUMMARY

The anticipation and obviousness rejections are 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

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