

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 39

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BRIAN G. BAGLEY

Appeal No. 2000-1804
Application 08/668,598

ON BRIEF

Before KRATZ, PAWLIKOWSKI, and MOORE, Administrative Patent Judges.

MOORE, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 1-3, 5-7, 20-30, 34, 35, and 37. Claims 4, 8-19, 31-33, 36, 38, and 39 have been canceled.

CLAIMS

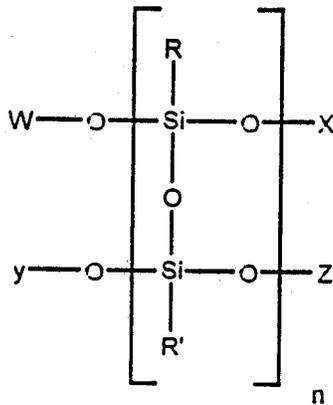
Claim 1 is representative of the claims on appeal and read as follows:

1. A method of treating wood composition boards to reduce the penetration of water therethrough comprising the steps of:

providing a wood composition board;

providing an organic solvent soluble, further curable resin consisting essentially of:

a ladder organosilsesquioxane polymer of the formula:



wherein R and R' may be the same or different and are selected from the group consisting of:

- a) aliphatic hydrocarbons of 1-4 carbon atoms;
- b) a phenyl radical;
- c) a phenyl radical substituted with hydroxy or halogen groups: and

d) halogen groups, provided that R and R' are not both halogens; w, x, y, and z are functional groups selected from the group consisting of alkoxy groups of 1-4 carbon atoms, halogen atoms, hydroxyl groups and silanol groups, and n is an integer ranging from 10-200, and

optionally including a curing catalyst, inert elements, dyes, coloring agents or fillers;

coating or impregnating said wood composition board with said organic solvent soluble, further curable resin; and

curing said organic solvent soluble, further curable resin to reduce the penetration of water therethrough.

THE REFERENCES

The Examiner relies on the following references:

Burzynski et al (Burzynski)	3,389,121	Jun. 18, 1968
Bagley et al. (Bagley)	4,835,057	May 30, 1989
Cuthbert et al. (Cuthbert)	5,073,195	Dec. 17, 1991
Stark-Kasley et al. (Stark-Kasley)	5,300,327	Apr. 5, 1994

Kirk-Othmer, Encyclopedia of Chemical Technology, 3d Ed. (c) 1981, Volume 14
“Laminated Wood-Based Composites”, pp. 1-41.¹

THE REJECTIONS

Claims 1, 2, 7, 21-28, 34, 35 and 37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bagley in view of either Cuthbert or Stark-Kasley, or vice-versa.

Claims 3, 5, 6, 21, 24, 27-29, 34, 35, and 37 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bagley in view of either Cuthbert or Stark-Kasley or vice versa further in view of Burzynski.

Claims 20 and 30 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bagley in view of either Cuthbert or Stark-Kasley or vice versa further in view of Encyclopedia of Chemical Technology, “Laminated Wood-Based Composites to Mass Transfer.”

¹ Although not listed by the Examiner, this cited reference is of record and utilized in the third rejection. Accordingly, we list it here for completeness of the record.

DISCUSSION

The Invention

The Appellant's invention relates to a method for treating wood composition boards to reduce water penetration. The wood composition board is coated or impregnated with an organic solvent soluble further curable resin consisting essentially of a ladder organosilsesquioxane polymer of the claimed structure, and then cured.

The Rejection of Claims 1, 2, 7, 21-28, 34, 35, and 37 Under 35 U.S.C. § 103(a)

Claims 1, 2, 7, 21-28, 34, 35, and 37 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bagley in view of either Cuthbert or Stark-Kasley or vice versa. The Examiner has found that Bagley teaches the claimed organosilsequioxane polymer as a water barrier film on a silica fiber which is coated and cured from a solution at a desired viscosity prepared by an organic solvent. Bagley, it is said, does not teach coating a wooden article. (Examiner's Answer, page 3, line 7 - page 4, line 4). Cuthbert is said to teach a water-repellent aqueous silane composition which can include polyorganosilanes and is said to be suitable for wood or masonry. (Examiner's Answer, page 4, lines 7 - 15). Stark-Kasley is additionally said to teach a water repellent organosilicon composition for cellulose or masonry surfaces. (Examiner's Answer, page 4, line 16 - page 5, line 3).

The Examiner thus concludes that it would have been obvious for one skilled in the art at the time the invention was made to have treated either Cuthbert or Stark-Kasley's wood article with Bagley's polymer because of the expectation of achieving similar success in creating a water repellent article. (Examiner's Answer, page 5, lines 4-8).

The Rejection of Claims 3, 5, 6, 21, 24, 27-29, 34, 35, and 37 Under 35 USC §103(a)

Claims 3, 5, 6, 21, 24, 27-29, 34, 35, and 37 stand rejected under 35 USC §103(a) as being unpatentable over Bagley in view of either Cuthberty or Stark-Kasley or vice versa, further in view of Burzynski.

The Examiner states that Bagley in view of Cuthbert or Stark-Kasley does not teach a mixture of organopolysiloxane resins. (Examiner's Answer, page 5, lines 17-18). Burzynski is said to teach organopolysiloxane resins which can be utilized as a coating or film (Examiner's Answer, page 6, lines 4-8).

The Rejection of Claims 20 and 30 Under 35 U.S.C. §103(a)

Claims 20 and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bagley in view of Cuthbert or Stark-Kasley or vice versa further in view of Encyclopedia of Chemical Technology, "Laminated Wood-Based Composites to Mass Transfer."

The prior art is said by the Examiner to fail to teach the specific type of woodboard, density, or thickness. However, the Examiner states that the prior art teaches the application of organopolysiloxane resins to wood to achieve a water repellent article. The Examiner's position is that one of skill in the art is presented with the suggestion that the organopolysiloxane resins are applicable to any porous surface, in the absence of any showing of criticality (Examiner's Answer, page 7, line 18 - page 8, line 6).

The Appellant's Challenge to the Existence of a Prima Facie Case

The Appellant has provided a Declaration which contests whether a prima facie case of obviousness exists, and have argued (1) the organosilsesquioxane polymer disclosed in Bagley is utilized for the coating of glass fibers, not wood and no reasonable expectation of success would have existed; (2) the organosilsesquioxane polymer of Bagley is different from the alkyltrialkoxysilane of Cuthbert and Stark-Kasley and consequently no reasonable expectation of success would have existed; (3) the coatings of Bagley are very different from the coatings of Cuthbert and Stark-Kasley and one of ordinary skill in the art would not have had a reasonable expectation that the coating composition described in the Bagley patent would have been effective for the same use; (4) there is no suggestion or motivation in the references to combine their teachings, and there is an express teaching away from the use of an organic solvent.

Initially, we note that the burden is upon the Examiner to set forth a prima facie case of obviousness. See In re Alton, 76 F.3d 1168, 1175, 37 USPQ2d 1578, 1583 (Fed. Cir. 1996). More specifically, it is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the reasonable teachings or suggestions found in the prior art, or by a reasonable inference to the artisan contained in such teachings or suggestions. In re Sernaker, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). In addition, the Federal Circuit states that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." In re Fritch, 972 F.2d 1260, 1266 n.14, 23 USPQ2d

1780, 1783-84 n.14 (Fed. Cir. 1992), citing In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

It is not in dispute that the organosilsesquioxane polymer as claimed in the method claims is disclosed in Bagley (column 2, lines 18-41) as suitable for use as a coating/cladding for an optical fiber which is silica or silica-based, a chalcogenide, or a light or heavy metal halides (column 2, lines 56-61). The coating is effective as a water barrier at high temperatures and humidity (column 1, lines 25-27 and 65-67).

Nor is it in dispute that the secondary references teach that aqueous solutions including alkylalkoxysilanes impart water repellent properties when applied to wood, concrete, mortar and stone. (See, e.g. Cuthbert, column 4, lines 46-49; Stark-Kasley, column 1, lines 45-51).

However, the Examiner and the Appellant disagree on whether the art can be combined; and, if combined, whether one of skill in the art would have a reasonable expectation of success.

The Examiner is of the opinion that the water repellent coatings of the prior art are:

...from the same "family" of polymers and one skilled in the art would have been suggested to look elsewhere in this "family" for other polymers which would also be applicable to wooden surfaces. In addition, the primary reference teaches the claimed coating composition on a glass surface, one skilled in the art would have an expected success for coating a wooden surface since the wooden surface is porous and rough compared to that of a glass fiber. Furthermore, the prior art and Appellant's own disclosure teach that the claimed polymer coating can be derived from alkyltriethoxysilanes which are similar to those described in the secondary references. (Examiner's Answer, page 9, line 14 - page 10, line 2).

The Appellant, on the other hand, states in the Rule 132 Declaration of record that:

The organosilsesquioxane polymer described in the Bagley patent is a true polymer: it consists of large molecules of recurring long chain structural units, each molecule having a molecular weight of about 10,000. It is prepared by reacting an alkyltrialkoxysilane precursor at elevated temperatures for many hours. The organosilsesquioxane polymer is a solid at room temperature. It is soluble in organic solvents, and insoluble in water. In contrast, the alkyltrialkoxysilane described in the Cuthbert and Stark-Kasley patents consists of molecules having low molecular weights. The alkyltrialkoxysilane is a liquid at room temperature. It is soluble in water. (Declaration of Crosby, page 3, paragraph 4, lines 7 - 15).

We are of the opinion that, on balance, the Examiner has not carried his burden of showing a prima facie case of obviousness. While it is indeed true that the polymers are related, it appears to us that the relationship is more of a precursor-final product relationship than an analogous structure relationship. In Bagley, it appears that the claimed organosilsesquioxane polymer is prepared by the hydrolysis and condensation of methyltriethoxysilane (column 3, lines 37-39), and we note that the claims of the instant application require n to be between 10 and 200, which indicates a significant number of repeating units must be present.

The Stark-Kasley reference discloses an aqueous solution of water, an alkyltrialkoxysilane or blend of alkyltrialkoxysilanes each with C1 to C10 alkyl groups on silicon, a silane coupling agent having a reactive organofunctional group which is an amino or quaternary ammonium functional group, and a blend of petroleum and synthetic waxes. (Stark-Kasley, column 1, line 65 - column 2, line 7). The Cuthbert reference discloses an aqueous solution of a water soluble coupling agent and an alkyltrialkoxysilane. (Cuthbert, column 3, lines 43-50).

The Examiner has not provided us with any evidentiary or factual support to undergird his conclusion that the inclusion of the compounds from the references within

this “family” renders the claimed subject matter obvious. Furthermore, we agree with the Appellant that the ingredients in the coating compositions of the references are substantially different from the claimed composition.

The Examiner bears the burden of proof in the first instance, and for the reasons noted above, on balance we conclude that this burden has not been shown. We are not convinced that one of ordinary skill in the art would be sufficiently motivated or taught that the higher molecular-weight polymer of Bagley could be incorporated into a coating composition such as that disclosed in Cuthbert or Stark-Kasley with a reasonable expectation of success.

Accordingly, we reverse the rejection of claims 1, 2, 7, 21-28, 34, 35, and 37 under 35 U.S.C. §103(a). As the remaining two rejections under 35 U.S.C. §103(a) are founded upon this rejection, we reverse them for the same reasons as stated above.

Summary of Decision

The rejection of claims 1, 2, 7, 21-28, 34, 35 and 37 under 35 U.S.C. § 103(a) as being unpatentable over Bagley in view of either Cuthbert or Stark-Kasley, or vice-versa, is reversed.

The rejection of claims 3, 5, 6, 21, 24, 27-29, 34, 35, and 37 under 35 U.S.C. §103(a) as being unpatentable over Bagley in view of either Cuthbert or Stark-Kasley or vice versa further in view of Burzynski is reversed.

The rejection of claims 20 and 30 under 35 U.S.C. §103(a) as being unpatentable over Bagley in view of either Cuthbert or Stark-Kasley or vice versa further in view of Encyclopedia of Chemical Technology, “Laminated Wood-Based Composites to Mass Transfer” is reversed.

REVERSED

PETER F. KRATZ
Administrative Patent Judge

BEVERLY A. PAWLIKOWSKI
Administrative Patent Judge

JAMES T. MOORE
Administrative Patent Judge

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