

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KENNETH L. SMITH, TZU-LI J. HUANG and JAMES C. CODERRE

Appeal No. 2006-1850
Application No. 10/039,103

ON BRIEF

Before THOMAS, KRASS, and BLANKENSHIP, Administrative Patent Judges.

THOMAS, Administrative Patent Judge.

DECISION ON APPEAL

Appellants have appealed to the Board from the examiner's final rejection of claims 41, 42, 45 through 47 and 49 through 59. The only other pending claim in the application is claim 48 which the examiner has allowed.

Representative independent claim 45 is reproduced below:

45. A retroreflective sheeting, comprising:

- (a) a first layer comprising a first polymeric material having an elastic modulus less than 7×10^8 pascals, the first layer having a first and second major surface and allowing light that enters the first layer through either the first or the second major surface to pass through the first layer to exit the first layer through the other major surface; and
- (b) a second layer comprising a second polymeric material having an elastic modulus greater than 20×10^8 pascals, the second layer having a third major surface and having a surface opposite the third major surface in which cube corner elements are formed, wherein the cube corner elements are exposed to air; and
- (c) a seal film applied to the cube corner elements to maintain an air interface at the cube corner elements;

wherein the third major surface of the second layer attaches directly or through only a thin coating to the second major surface of the first layer.

The following references are relied on by the examiner:

McGrath	4,025,159	May 24, 1977
Phillips ['586]	5,491,586	Feb. 13, 1996
		(Effective filing date Jul. 19, 1993)
Phillips ['222]	5,462,222	Jun. 24, 1997
		(Effective filing date Jul. 19, 1993)

Reflexite Corporation, "Reflexite's Response to 3M Letter Asserting Infringement of U.S. Patents 5,450,235 and 5,988,820", Feb. 4, 2002 [Response]

Claims 41, 42, 45 through 47 and 49 through 59 stand rejected under 35 U.S.C.

§ 103. As evidence of obviousness, the examiner relies upon Phillips '222 or Phillips '586 in view of Response, further in view of McGrath.

Rather than repeat the positions of the appellants and the examiner, reference is made to the brief and reply brief for appellants' positions, and to the answer for the examiner's positions.

OPINION

For the reasons generally set forth by the examiner in the answer, as expanded upon here, we sustain the rejection of all claims on appeal under 35 U.S.C. § 103. The brief and reply brief collectively argue the common feature of independent claims 45 and 52 and no other claim on appeal is argued before us.

Both the examiner and appellants argue the two Phillips references as one reference. This is understandable since both Phillips patents are derived from the same initially filed patent application of July 19, 1993 and appear to have common disclosures. Therefore, we will treat them in the same manner as the parties before us.

The focus of the arguments between the examiner and appellants is upon two corresponding clauses in independent claims 45 and 52 respectively. As to claim 45, the feature "a seal film applied to the cube corner elements to maintain an air interface at the cube corner elements" is argued in the same manner as the corresponding limitation in claim 52 of "a seal film applied to the retroreflective sheeting to maintain an air interface at the cube corner elements."

Appellants' specification page 6, lines 4 and 5 describes disclosed figure 2 as "a view of the backside of the cube-corner retroreflective sheeting **10** FIG. 1." Specification page 7, line 18 also states that figure 2 "illustrates the back side of the cube-corner elements **12**." Consistent with this discussion, we reproduce here the initial full paragraph of specification page 8, lines 3 through 13 on which appellants' Summary of the Invention at page 2 of the principal brief on appeal relies for the quoted features recited in each independent claim on appeal:

A specular reflective coating such as a metallic coating (not shown) can be placed on the backside of the cube-corner elements **12** to promote retroreflection. The metallic coating can be applied by known techniques such as vapor depositing or chemically depositing a metal such as aluminum, silver or nickel. A primer layer may be applied to the backside of the cube-corner elements to promote the adherence of the metallic coating. In addition to or in lieu of a metallic coating, a seal film can be applied to the backside of the cube-corner elements; *see, for example*, U.S. Patents 4,025,159 and 5,117,304. The sealing film maintains an air interface at the backside of the cubes to enhance retroreflectivity. A backing or an adhesive layer also can be disposed behind the cube-corner elements to enable the cube-corner retroreflective sheeting **10** to be secured to a substrate.

This reproduced paragraph indicates that a reflective coating may be applied to the backside of the cube corner elements to promote retroreflection in addition to a primer layer that also may be applied to the backside to promote adherence of this metallic coating. As reproduced in the previous paragraph, the specification goes on to indicate that in addition to or in lieu of this metallic coating a seal film can be applied to the backside of the cube-corner element. This sealing film is said to maintain an air interface "at the backside" of the cubes to enhance retroreflectivity.

Significantly as well, the McGrath patent relied upon by the examiner as evidence of obviousness of the claimed feature which is in dispute is mentioned as the basis for appellants own use of this seal film; the above quoted paragraph specifically refers to McGrath by patent number, USP 4,025,159.

Page 4 of the answer characterizes Phillips as not disclosing the first layer having a specific elastic modulus, the second layer having a different elastic modulus layer and the claimed seal film that maintains an air interface “at the cube corner elements.” The examiner’s subsequent reliance upon the Response at pages 4 and 5 of the answer is only briefly mentioned in the entire discussion in the brief and reply brief at the bottom of page 7 of the principal brief alleging that this Response does not remedy the shortcomings of the Phillips/McGrath combination. Appellants have not argued before us that the Response is not properly combinable with Phillips within 35 U.S.C. § 103. Moreover, in like manner, appellants have not argued that the Response is not properly combinable with McGrath within 35 U.S.C. § 103. The only argument presented before us is the combinability of McGrath to Phillips in the brief and reply brief.

We note that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of a primary reference. It is also not that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. In re Keller, 642 F.2d 414, 425, 208 USPQ 871, 881 (CCPA 1981); In re Young, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991).

What the appellants do not argue, and the examiner as well does not set forth as part of the bases of the rejection, is that figures 2A-2C and 3A-3C of Phillips already teach the existence of an elastomeric film 44. It appears to us that the artisan would conclude that this film 44 is a seal film of the type recited and argued in representative independent claims 45 and 52 on appeal. It is recognized, however, that this film 44 does not have any air interface shown “at the cube corner elements” as recited in claim 45 as well as the corresponding clause in independent claim 52 on appeal. Additionally, the showing in Response’s exhibit E (dated GJG 7/11/91) shows an Acrylic PSA which is discussed in the response at pages 3 and 4 as apparently providing a corresponding seal film applied to the metalized cube corner elements to maintain what appears to be an air interface at the cube corner elements as claimed.

The rejection before us is based upon 35 U.S.C. §103 on a plurality of references, whereas the focus of appellants’ arguments is directed at Phillips and to a lesser extent McGrath. Appellants have recognized even in the characterization of the issue on appeal at the bottom of page 3 of the principal brief on appeal that “it had been known for years to use a seal film to maintain an air interface for cube corner elements.” On the basis of this apparent admission or recognition of the state of the art as well as the applied prior art, we are not persuaded that the examiner has exercised any impermissible hindsight or that Phillips actually teaches away from the claimed invention to the extent argued at least at page 5 of the principal brief on appeal.

As the examiner has structured the rejection, we agree with the examiner's conclusion that it would have been obvious for the artisan to have utilized the particular type of seal film in the McGrath in the Phillips-Response combination as argued at pages 5 and 6 of the answer. The examiner buttresses the reasons of combinability beginning in the responsive arguments at page 7 of the answer where the examiner responds to all the arguments raised beginning at page 6 of the principal brief on appeal.

Appellants' arguments in the principal brief and reply brief generally focus upon structural combinability issues rather than combining teachings as the above noted case law requires. The Bernard patent mentioned at page 7 of the principal brief on appeal and the paragraph bridging pages 5 and 6 of the reply brief is misplaced. All the arguments in the brief and reply brief relating to any flexibility issues are inapplicable to the claimed invention since they relate to a property not recited in these claims. The Bernard patent is not part of the rejection as formulated by the examiner.

As to McGrath, this reference teaches two principal embodiments for "cellular retroreflective sheeting" as set forth in the title of this patent. The initial paragraphs at column 1 of McGrath relates to an embodiment based upon transparent micro-spheres to which figures 1 through 4 of this reference are directed to improving the prior approaches to manufacturing such sheeting. On the other hand, the discussion beginning at column 1, line 44 through line 58 relates to prior approaches to cube-corner sheeting to which figures 5 through 8 are directed to improve upon prior manufacturing approaching. We reproduce here this entire paragraph (on which the examiner relies in part) from column 1 of McGrath:

Another hermetically sealed cellular reflective sheeting that could benefit from improved bond strength between a cover film and base sheet is so-called “cube-corner” sheeting. Some varieties of cube-corner sheeting include a clear, transparent base sheet having a flat front surface, which serves as the front face of the sheeting, and a rear surface configured with cube-corner elements. A cover film is desired at the rear of the sheeting to maintain an air-interface for the cube-corner elements and also to provide a flat rear surface for bonding the sheeting to a substrate. A network of bonds as described above is potentially useful to hold the cover film to the base sheet, but again these bonds should provide a more lasting hermetic seal than has been available in the past.

McGrath actually teaches the reasons, better expressed here than by the examiner, for modifying the prior art approaches to forming cube-corner sheeting in addition to the discussion in the Summary of the Invention at column 2, particularly the discussion in the latter paragraphs of this column. The punch line of the Summary of the Invention at column 3, lines 2 through 4 states that “the improved adherence between the cover sheet and base sheet provides a significant advance in cellular retroreflective sheeting.” The cube corner sheeting approach depicted in figure 6 through 8 actually shows respectively separate cover sheets 29 and 37 which have respective bonds 34 and 35. These portions of McGrath show the advantages which are further discussed beginning at column 5, line 66 through column 6, line 26.

The reply brief takes issue with the examiner’s responsive arguments in the answer. A part of the examiner’s reasoning is explained at page 2 of the reply brief that applying the seal film of McGrath to the metalized sheeting of Phillips would provide an air interface at the cube corner elements to reduce the material use of the film as set forth at page 8 of the answer. Appellants characterize the examiner’s positions as indicating that the claimed air interface would be at the metal coating which is on top of the cube corner elements. Indeed, the embodiments in the various portions of figures 2 and 3 of

McGrath teach the use of a metalized surface on the cube corner elements in the same manner as appellants optionally teach the use of such a metalized surface in the portion of page 8 of the specification as filed that we have quoted earlier in this opinion. This approach does not detract from the obviousness of the claimed invention since each of the claims on appeal is open ended because the preamble ends with the terms “comprising” as well. As the examiner’s reasoning appears to include, the metal layer of McGrath is part of the cube corner elements. Therefore, the examiner’s approach is consistent with appellants’ own disclosed invention. Thus, there is no requirement for the removal of the reflective coating in Phillips as argued in the middle of page 4 of the reply brief.

Correspondingly, appellants’ arguments at page 3 of the reply brief are misplaced because there is no required boundary of the cube corner elements recited in the claims on appeal. The examiner has consistently argued and the claims only broadly require that this air interface be “at the cube corner elements.”

In view of the foregoing, the decision of the examiner rejecting all claims on appeal under 35 U.S.C. § 103 is affirmed.

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