

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte JAMES P. MASON,  
JON M. NEWCOME,  
and  
JEFF M. TENNANT

Appeal No. 1998-2060  
Application No. 08/640,300

ON BRIEF

Before WARREN, WALTZ, and LIEBERMAN, Administrative Patent Judges.  
LIEBERMAN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner refusing to allow claims 1 through 12 and 14 through 25, which along with claims 13 and 26 are all the claims pending in this application.<sup>1</sup>

THE INVENTION

The invention is directed to a composition comprising a polycarbonate resin with a copolyester of phthalic acid and a mixture of cyclohexanedimethanol and ethylene glycol in a specific range. The polycarbonate has a melt flow index of at least 18.0 g/10 minutes. Other features of the claimed subject are set forth in the following illustrative claim.

THE CLAIM

Claim 1 is illustrative of appellants' invention and is reproduced below:

**1.** A thermoplastic molding composition comprising

- (i) about 60 to 99 percent by weight of a polycarbonate resin, and  
(ii) about 1 to 40 percent by weight of a copolyester of phthalic acid and a mixture of cyclohexanedimethanol and ethylene glycol,  
said cyclohexane dimethanol and said ethylene glycol being present in said polyester copolymer in a molar ratio of 1:1 to 4:1 therebetween,  
said polycarbonate having a melt flow index of at least 18.0 g/10 minutes as determined in accordance with ASTM D-1238 at 300°C/under 1.2 kg load, said percent in both occurrences being relative to the total weight of said (i) and (ii).

THE REFERENCES OF RECORD

As evidence of obviousness, the examiner relies upon the following references:

Kawakami et al. (Kawakami)	4,495,345	Jan. 22, 1985
Tokuwara et al. (Tokuwara)	4,764,331	Aug. 16, 1988
Allen et al. (Allen)	4,786,692	Nov. 22, 1988

<sup>1</sup>The examiner indicated that claims 13 and 26 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. See Answer, page 2.

THE REJECTIONS\*

Claims 1 through 12 and 14 through 25 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103 as being obvious over Allen.

Claims 1 through 12 and 14 through 25 stand rejected under 35 U.S.C. § 103 as being unpatentable over Allen in view of Tokuhara and Kawakami.

OPINION

We have carefully considered all of the arguments advanced by the appellants and the examiner, and agree with the appellants that the rejections of claims 1 through 12 and 14 through 25 on the grounds of anticipation and obviousness are not well founded. Accordingly, we reverse these rejections.

"To anticipate a claim a prior art reference must disclose every limitation of the claimed invention either explicitly or inherently." In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997).

We find that Allen discloses a thermoplastic molding composition comprising an aromatic polycarbonate polymer and a polyester derived from 1,4-cyclohexanedimethanol and ethylene glycol in a ratio of 4:1 to 1:4. See column 4, lines 19-50. The ratio disclosed by Allen overlaps that of the claimed subject matter, and the specific ratio of 4:1 is identical with that of the claimed subject matter. A particular preferred ratio of 80% polycarbonate/20% polyester copolymer is disclosed at column 4, lines 51-54 and Examples 2, 3, 7, and 8. We find that an especially preferred polyester copolymer has 65 molar 1,4-cyclohexanedimethanol and 35 molar ethylene glycol. These proportions fall within the requisite amounts recited by claim 1. See column 9, lines 1-3. We further find that the polycarbonate has a number average molecular weight of about 8,000 to more than 200,000 and preferably about 10,000 to about 80,000. See column 6, lines 50-53.

There is however, no disclosure in the Allen reference of a melt flow index of at least 18.0g/10 min. as required by the claimed subject matter. Nor has the examiner established a rationale for the proposition that the melt flow index of 18.0 g/10min. in accordance with ASTM D-1238 is inherently present in the polycarbonate. Inherency requires in this instance that the molecular weight range disclosed by Allen necessarily results in the melt flow index of the claimed subject matter. There is however, no evidence of record to indicate that polycarbonate having a number average molecular weight of 8,000 to 200,000 or preferably from 10,000 to 80,000 would inherently meet the requirement of a melt flow index of 18.0g/10 min. as required by the claimed subject matter. Indeed, Allen does not even discuss the characteristic of melt flow index. At most, the examiner can direct one to the specification, page 2, which teaches that, "[a]romatic polycarbonates suitable for the present invention are homopolycarbonates and copolycarbonates and mixtures thereof. These polycarbonates generally have a weight average molecular weight of about 16,000 to 21,000, most preferably 18,000 to 19,000 and their high melt flow index (determined in accordance with the procedure of ASTM D-1238, 1.2 Kg load) is at least about 18, preferably 50 to 80, most preferably 65 to 75 g/10 minutes." Accordingly, in the absence of a disclosure of the requisite melt flow index or a suggestion that the melt flow index occurs over the range of molecular weights disclosed by Allen, it has not been shown that the melt flow index required by the claimed subject matter is inherently present, and the rejection on the grounds of anticipation cannot be sustained. Inherency may not be established by probabilities or possibilities. The mere fact that a certain physical characteristic may result from a given set of circumstances is insufficient to establish inherency.

Mehl/Biophile International Corp. v. Milgraum, 192 F.3d 1362, 1365, 52 USPQ2d 1303, 1305 (Fed. Cir. 1999).

Similarly, the rejection on the grounds of obviousness over Allen alone cannot be sustained. The rejection under § 103 over Allen alone necessarily rests on the same basis of inherency as does the rejection on the grounds of anticipation. Accordingly, for the reasons stated above the rejection is not sustainable.

In addition, each of the secondary references to Tokuhara and Kawakami focuses on polycarbonates having narrow molecular weight ranges or melt flow rate respectively, in order to obtain a polycarbonate particularly useful in the preparation of optical elements. We find that Tokuhara discloses optical substrates prepared by injection molding polycarbonate having an average molecular weight of 14,000 to 22,000. See column 3, lines 58-60, and column 5, lines 14-17. We find that polycarbonates with a molecular weight less than 14,000 have poor mechanical properties such as impact strength. See column 5, lines 17-23. Utilization of a polycarbonate having an average molecular weight of more than 22,000 decreases optical disk substrate properties such as transferability and the like due to excessive high melt viscosity. See column 5, lines 19-23. Although, Tokuhara is directly concerned with the moldability of polycarbonate and the relationship between molecular weight and excessive melt viscosity, column 5, lines 14-23, we find on the record before us no direct correlation between polycarbonate molecular weight and the characteristic of melt flow index of the claimed subject matter, 18g/10 min. in accordance with ASTM D-1238.

Similarly, we find that Kawakami discloses an optical plastic element prepared by molding a main component which is a polycarbonate having a melt flow rate of more than or equal to 5.0 g/10 min. as measured based on ISO R-1133 Standard under the conditions of 230°C and 5Kgf. See column 1, lines 1-11. Kawakami further discloses that the double refraction of the resin molding product correlates quantitatively to the melt flow rate of the resin. See column 4, lines 13-16. A preferred melt flow rate 10 g/10 min. and 20 g/10min. are disclosed at column 12, lines 56-60. Kawakami however, measures melt flow rates by ISO R-1133 Standard. The claimed subject matter measures the melt flow index by ASTM D-1238. On the record before us, the examiner has not established a positive correlation between the melt flow rate of Kawakami and the melt flow index of the claimed subject matter. Nor has the examiner established a correlation between the molecular weight of Kawakami and the melt flow index of the claimed subject matter.

Based upon the above findings and analysis, it is clear that neither secondary reference established a direct correlation between either molecular weight or melt viscosity, and melt flow index as required by the claimed subject matter. Accordingly, on the record before us the secondary references fail to disclose or suggest the requisite melt flow index required by the claimed subject matter and therefore fail to establish a prima facie case of obviousness.

DECISION

The rejection of claims 1 through 12 and 14 through 25 under 35 U.S.C. §102(b) as anticipated by Allen is reversed.

The rejection of claims 1 through 12 and 14 through 25 under 35 U.S.C. § 103 as being unpatentable over Allen is reversed.

The rejection of claims 1 through 12 and 14 through 25 under 35 U.S.C. § 103 as being unpatentable over Allen in view of Tokuhara and Kawakami is reversed.

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\*Two rejections under 35 U.S.C. § 103 over Mason alone or in view of Tokuhara and Kawakami have been withdrawn by the examiner. See Answer, page 2.

The decision of the examiner is reversed.

REVERSED

CHARLES F. WARREN  
Administrative Patent Judge

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) BOARD OF PATENT

THOMAS A. WALTZ

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Administrative Patent Judge

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PAUL LIEBERMAN  
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