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. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BRUNO BELANGER, GARY RIGGS,
ROBERT ZILLIOUX and KAMAL KASSOUF

Appeal No. 2002-1954
Application No. 09/458,926

ON BRIEF

Before STAAB, McQUADE and NASE, Administrative Patent Judges.

McQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Bruno Belanger et al. appeal from the final rejection of claims 1 through 36, all of the claims pending in the application.

THE INVENTION

The invention relates to "a composite baseball bat suitable for replacing aluminum bats" (specification, page 1). Representative claims 1 and 30 read as follows:

1. A baseball bat comprising:

a core having a barrel portion, handle portion and a longitudinal axis extending through said core barrel and handle portions, said handle portion being narrower than said barrel portion;

continuous first fibers wound around said core barrel portion at an angle of about 0° to 90° relative to a first plane normal to the longitudinal axis to provide at least one layer of first fibers around said core barrel portion;

continuous second fibers wound around said core handle portion at an angle of about 35° to 55° relative to the first plane normal to the longitudinal axis to provide at least one layer of second fibers around said core handle portion; and

a resin impregnated on said first and second fibers.

30. A baseball bat comprising a core continuous fibers wound around said core to provide at least one layer of said fibers and a two-part epoxy resin impregnated on said fibers, said epoxy resin having a Component A comprising a glycidyl ether of polyhydroxy hydrocarbons and a poly(oxyalkylene) epoxide and a Component B comprising a poly(oxyalkylene)amine and a penol having 5 to 15 carbons.

THE PRIOR ART

The references relied on by the examiner to support the final rejection are:

Bohannan et al. (Bohannan)	4,848,745	July 18, 1989
Baum	5,458,330	Oct. 17, 1995

THE REJECTIONS

Claims 1 and 2 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Bohannan.

Claims 3 through 5, 7 through 16, 18 through 26, 28 through 34 and 36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bohannan.

Claims 6, 17, 27 and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bohannan in view of Baum.

Attention is directed to the appellants' brief (Paper No. 10) and to the final rejection and examiner's answer (Paper Nos. 8 and 11) for the respective positions of the appellants and the examiner regarding the merits of these rejections.[1]

DISCUSSION

I. The 35 U.S.C. § 102(b) rejection

Anticipation is established only when a single prior art reference discloses, expressly or under principles of inherency, each and every element of a claimed invention. RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984).

Bohannan discloses a baseball bat 2 having a neck portion 9, a body portion 11, a knob 40 and a longitudinal axis 10. Structurally, the bat consists of a filling or core of closed

[1] As recognized by the appellants (see pages 3 and 8 in the brief), the examiner's statements of the third rejection (see page 3 in both the final rejection and answer) should have referred to claim 35 instead of claim 25.

cell foam material 42 and a laminated outer shell 6 of fiber reinforcement impregnated in a continuous resin matrix. The fibers are long "continuous" fibers made of material selected from the group consisting of glass, boron, carbon and aramid (see column 2, lines 37 through 51), and the matrix is preferably a thermoplastic resin, and mere preferably a poly(arylene sulfide) resin (see column 2, lines 24 through 33). As shown in Figure 3, the outer shell 6 includes at least three layers of fiber reinforcement extending the length of the bat: at least one layer of generally circumferentially extending fiber rovings 20 forming an angle of near 0° with respect to a plane normal to the longitudinal axis 10, at least one layer of generally longitudinally extending fiber rovings 24, 32 lying generally in planes which include the longitudinal axis 10, and at least one layer of generally helically extending rovings 28 forming an angle of near 0° to near 90°, and usually between about 20° and 70°, with respect to a plane normal to the longitudinal axis 10 (see column 2, line 59, through column 4, line 2). The bat may optionally include at least one additional layer of generally circumferentially extending fiber rovings 36 in the body portion 11 and at least one additional layer of generally longitudinally

extending fiber rovings 38 in the neck portion 9 (see column 4, lines 3 through 26).

Tracking the language employed in claim 1, Bohannan's baseball bat comprises a core (filling 42) having a barrel portion, a handle portion narrower than the barrel portion and a longitudinal axis extending through the barrel and handle portions, continuous first fibers (any one of fiber rovings 20, 24, 28 and 32) wound around the core barrel portion at an angle of about 0° to 90° relative to a first plane normal to the longitudinal axis to provide at least one layer of first fibers around the core barrel portion, continuous second fibers (any different one of fiber rovings 20, 24, 28 and 32) wound around the core handle portion to provide at least one layer of second fibers around the core handle portion, and a resin (the thermoplastic resin) impregnated on the first and second fibers.

The appellants' contention (see pages 3 through 6 in the brief) that these limitations are not met because Bohannan's fiber layers are sandwiched (laminated) together and extend the length of the core is unconvincing. Claim 1 does not contain any limitation requiring the first and second fibers to be in direct

contact with the core or the first fibers to the sole fibers wound around the core barrel portion and the second fibers to the sole fibers wound around core handle portion.[2]

On the other hand, the appellants' related contention (see pages 3 through 6 in the brief) that Bohannan's baseball bat does not meet the limitation in claim 1 requiring the second fibers to be wound at an angle of about 35° to 55° relative to a plane normal to the longitudinal axis is persuasive. The most pertinent of Bohannan's fibers in this regard are those in the generally helically extending rovings 28 which form an angle of near 0° to near 90°, and usually between about 20° and 70°, with respect to a plane normal to the longitudinal axis. While both of these ranges fully encompass the significantly narrower 35° to 55° range set forth in the claim, they do not describe it with the specificity necessary to establish anticipation. At most, Bohannan presents a rebuttable prima facie case of obviousness here. See, e.g., In re Malagari, 499 F.2d 1297, 182 USPQ 549 (CCPA 1974) which notes, with implicit approval, "several cases wherein the prior art taught a broad range and the inventor was held entitled to claims limited to a narrow range within the

[2] Similar arguments advanced by the appellants with respect to independent claims 12, 23 and 29 (see pages 6 through 8 in the brief) are likewise unconvincing.

broad range by showing criticality of and the existence of unexpected properties within the claimed range" (499 F.2d at , 182 USPQ at 553).

Thus, Bohannan does not disclose each and every element of the baseball bat recited in independent claim 1. Accordingly, we shall not sustain the standing 35 U.S.C. § 102(b) rejection of claim 1, and dependent claim 2, as being anticipated by Bohannan.

II. The 35 U.S.C. § 103(a) rejections

Claims 3 through 11 depend from independent claim 1 and thereby include its recitation of the 35° to 55° fiber angle range. Like claim 1, independent claim 12, from which claims 13 through 22 depend, independent claim 23, from which claims 24 through 28 depend, and independent claim 29 all recite at least one fiber angle range significantly narrower than the helical fiber angle ranges disclosed by Bohannan. The examiner's conclusions of obviousness with respect to claims 3 through 29 rest on a finding that the relatively narrow ranges required thereby are met by Bohannan. For the reasons discussed above in conjunction with claim 1, this finding is unsound and thus fatally taints the conclusions of obviousness founded thereon.

Consequently, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of claims 3 through 5, 7 through 16, 18 through 26, 28 and 29 as being unpatentable over Bohannan or the standing 35 U.S.C. § 103(a) rejection of claims 6, 17 and 27 as being unpatentable over Bohannan in view of Baum.

As indicated above, independent claim 30 does not recite any fiber angle ranges, but does require a specific two-part epoxy resin. Conceding that Bohannan does not teach this specific epoxy resin, the examiner nonetheless submits (see pages 2 and 3 in the final rejection) that "resins such as those claimed by the applicant[s] are commonly known and would have been suitable for Bohannan's purpose. Absent some showing of unexpected results the claimed resins are not considered to further distinguish the claimed bat" (final rejection, pages 2 and 3). To the extent that this amounts to a conclusion that it would have been obvious to substitute the two-part epoxy resin specified in claim 30 for the resin disclosed by Bohannan, it is completely lacking in evidentiary support as argued by the appellants (see page 8 in the brief).

Therefore, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of independent claim 30, and dependent claims 31 through 34 and 36, as being unpatentable over Bohannan.

As Baum does not cure this evidentiary deficiency in Bohannan, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of claim 35, which depends from claim 30, as being unpatentable over Bohannan in view of Baum.

III. Remand to the examiner

The application is remanded to the examiner to consider whether Bohannan, which as explained above does not meet the relatively narrow fiber angle ranges set forth in independent claims 1, 12, 23 and 29, nevertheless would have rendered such ranges *prima facie* obvious within the context of the claimed subject matter, and, if so, whether Bohannan constitutes an appropriate starting point for 35 U.S.C. § 103(a) rejections of claims 1, 12, 23 and 29, and any of their dependent claims. In making these determinations, the examiner may wish to refer to MPEP § 2144.05 for a discussion of the obviousness of ranges.

SUMMARY

The decision of the examiner to reject claims 1 through 36 is reversed and the application is remanded to the examiner for further consideration.

REVERSED AND REMANDED

LAWRENCE J. STAAB Administrative Patent Judge	)	
JOHN P. McQUADE Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
JEFFREY V. NASE Administrative Patent Judge	)	

JPM/gjh

Appeal No. 2002-1954
Application No. 09/458,926

MYERS, BIGEL, SIBLEY & SAJOVEC
P.O. BOX 37428
RALEIGH, NC 27627