UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHIU PING WONG, THOMAS P. HANSCHEN,
ANTHONY B. FERGUSON, WILLIAM W. MERRILL,
FRED J. ROSKA, and JEFFERY N. JACKSON

Appeal 2008-1549
Application 10/899,568
Technology Center 1700

Decided: February 29, 2008

Before CATHERINE Q. TIMM, LINDA M. GAUDETTE, and
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

COLAIANNI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 the final rejection of claims 1-21. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

We AFFIRM.

INTRODUCTION

Appellants disclose simultaneously biaxially stretched films having uniform properties and thicknesses (Spec. 1:10-13; 21:21-22).

Claim 1 is illustrative:

1. A simultaneously biaxially stretched polypropylene film having:

a. a first stretch direction and a second stretch direction;

b. a tensile elongation to break in the first stretch direction of at least 110%;

c. a tensile volumetric energy to break in the first stretch direction of at least 18,000 in-lb/in^3; and

d. a variability in film thickness along the first stretch direction, as measured by the standard deviation relative to the average, of less than 10%.

The Examiner relies on the following prior art references as evidence of unpatentability:

Schaffhausen	3,144,430	Aug. 11, 1964
Blum	4,070,523	Jan. 24, 1978

The rejections as presented by the Examiner are as follows:

1. Claims 1-20 are rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Schaffhausen.

2. Claim 21 is rejected under 35 U.S.C. § 103(a) as being obvious over Schaffhausen in view of Blum.

OPINION

35 U.S.C. § 102(b) REJECTION OVER SCHAFFHAUSEN

CLAIM 1

Appellants argue that Schaffhausen fails to anticipate the claimed tensile elongation to break and the tensile volumetric energy to break (Br. 3). Specifically, Appellants argue that Schaffhausen's Example I discloses a maximum tensile elongation to break of 82%, whereas Example III discloses a tensile elongation to break of 70%, both of which are substantially below the claimed "at least 110%" tensile elongation to break (Br. 3). Appellants further argue that Schaffhausen's Example II has an ideal tensile volumetric energy to break of 17,640 in-lb/in^3, which is below the claimed "at least 18,000 in-lb/in^3" (Br. 3).[1]

We cannot sustain the Examiner's § 102(b) rejection over Schaffhausen.

"[R]ejections under 35 U.S.C. § 102 are proper only when the claimed subject matter is identically disclosed or described 'in the prior art.'" *In re Arkley*, 455 F.2d 586, 587 (CCPA 1972).

The Examiner has not shown that the subject matter is identically disclosed or described in Schaffhausen. Rather, as Appellants argue, Examples I, II, and III, the only examples provided by Schaffhausen, demonstrate either the claimed tensile elongation to break value (i.e.,

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[1] Appellants calculated the tensile volumetric energy to break value on page 3 of Brief. The Examiner has not disputed the Appellants' calculation.

Example II at 140%), or the claimed tensile volumetric energy to break (Example I at 24,500 psi at 82% elongation), but not both of the claimed properties within a single example. Shaffhausen's Example III has neither the claimed tensile elongation to break nor the tensile volumetric energy to break.

From the foregoing, Schaffhausen fails to identically disclose the claimed simultaneously biaxially stretched polypropylene film so as to anticipate the claimed invention. We cannot sustain the Examiner's § 102(b) rejection of claims 1-20 over Schaffhausen.

35 U.S.C. § 103 REJECTION OVER SCHAFFHAUSEN

As with the § 102 rejection, Appellants argue that Schaffhausen does not disclose the claimed tensile elongation to break or the tensile volumetric energy to break values (Br. 4-5). Appellants additionally argue that there is no indication (i.e., suggestion or motivation) of how Schaffhausen's process can be used to either increase the tensile elongation to break value or the tensile volumetric energy to break value to those values claimed by Appellants (Br. 4).

We have considered all of Appellants' arguments and are unpersuaded for the reasons below.

Schaffhausen discloses that it is well known in the art to orient isotactic polypropylene to increase its tensile strength and improve other physical properties (Schaffhausen, col. 1, ll. 28-30). Schaffhausen discloses simultaneously biaxially stretching a polypropylene film (Schaffhausen, col.

3, ll. 15-24). Schaffhausen's Example I uses a stretch ratio of 4.5:1[2] and produces a product having high tensile strengths (i.e., 18,000 or 24,500 psi) but lower tensile elongation to break values (i.e., 60% or 82%), thus yielding a maximum tensile volumetric energy to break value of 20,090 in-lb/in^3 (Schaffhausen Example I).[3] Schaffhausen's Example II uses a stretch ratio of 4.45:1 with the result of a moderate tensile strength and higher elongation to break yielding a volumetric energy to break value of 17,640 in-lb/in^3 (Schaffhausen, Example II). Schaffhausen indicates that reducing the degree of orientation (i.e., controlling the amount of stretching) affects the tensile strength (Schaffhausen, col. 3, ll. 50-54).

Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456 (CCPA 1955). Only result effective variables may be optimized. *In re Antonie*, 559 F.2d 618, 620 (CCPA 1977).

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[2] As explained in Appellants' Specification, the stretch ratio is the ratio of a linear dimension of a given portion of the stretched film to the linear dimension of the same portion prior to stretching (Spec. 7-8). Accordingly, Schaffhausen's disclosure that a 2 inch by 2 inch film is stretched to a 9 inch by 9 inch film yields a stretch ratio of 9:2, which simplifies to 4.5:1.

[3] Appellants indicate that tensile volumetric strength is related to tensile strength as the area under the plot of tensile strength versus elongation (Br. 3). According to Appellants, the tensile volumetric energy for an ideal case is calculated by multiplying the fractional elongation by the tensile strength. For example, Appellants calculate that Schaffhausen's film in Example II has a tensile volumetric energy to break of 17,640 in-lb/in^3 or the tensile strength (i.e., 12,600 psi) multiplied by the fractional elongation (i.e., 1.4). Similarly, Schaffhausen's Example I has a maximum volumetric energy to break of 20,090 in-lb/in^3 (24,500 psi multiplied by .82).

In the present case, Schaffhausen's disclosures noted above clearly indicate that molecular orientation (i.e., biaxial stretching) is a result-effective variable (Schaffhausen, col. 1, ll. 30-35). Schaffhausen demonstrates that the stretch ratio (i.e., the amount of biaxial stretching) affects the tensile strength and the tensile elongation to break value of the material (Schaffhausen, Examples I and II and *See*, Footnote 3).

Therefore, contrary to Appellants' argument that Schaffhausen fails to disclose the claimed tensile elongation to break or tensile volumetric energy to break, we agree with the Examiner (Ans. 3 and 5) that it would have been obvious to optimize the degree of biaxial stretching to achieve "workable ranges" of the tensile elongation to break and tensile volumetric energy to break values as claimed by Appellants in view of Schaffhausen's recognition that the amount of biaxial stretching is result-effective variable. *Antonie*, 559 F.2d at 620.

Moreover, Appellants' argument that Schaffhausen does not indicate how to change the process to increase the tensile elongation to break or the tensile volumetric energy is without persuasive merit. Schaffhausen's recognition of the amount of biaxial stretching as a result-effective variable clearly indicates how to change the process to affect the tensile elongation properties of the material: either increase or decrease the amount of biaxial stretching. Furthermore, as admitted by Appellants, the tensile volumetric energy to break is a related to the tensile elongation to break and tensile strength of the film. *See*, *supra,* p. 5, fn.3. Accordingly, affecting the tensile elongation to break and tensile strength of the film by manipulating the amount of biaxial stretching (i.e., a result-effective variable) would inherently affect the tensile volumetric energy to break, such that one of ordinary skill in the art would have optimized both of the properties when optimizing the amount of biaxial stretching accordingly. *Antonie*, 559 F.2d at 620.

For the above reasons, we sustain the Examiner's § 103 rejection of claims 1-20 over Schaffhausen.

CLAIM 21

Appellants do not separately argue the § 103 rejection of dependent claim 21 over Schaffhausen in view of Blum. Rather, Appellants indicate that dependent claim 21 is patentable for the same reasons that claim 1 was argued to be patentable. However, we are unpersuaded by Appellants' arguments regarding claim 1. Accordingly, we sustain the Examiner's § 103 rejection of claim 21 over Schaffhausen in view of Blum.

DECISION

We do not sustain the Examiner's § 102(b) rejection of claims 1-20 Schaffhausen.

We sustain the Examiner's § 103 rejection of claims 1-20 over Schaffhausen.

We sustain the Examiner's § 103 rejection of claim 21 over Schaffhausen in view of Blum.

The Examiner's decision is 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)(1)(iv).

<u>AFFIRMED</u>

tf/cam

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