

UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

Appeal No. 2007-0484

Ex parte DOW GLOBAL TECHNOLOGIES INC.
(10/037,942),
Appellant.

ENTERED: 9 April 2007

DECISION – Bd. R. 50(a)

Before LEE, TORCZON, and SPIEGEL, *Administrative Patent Judges*.
TORCZON, *Administrative Patent Judge*.

INTRODUCTION

The claimed invention broadly relates to building panels with domains having different compressive strengths. All but one of the pending claims are rejected as having been obvious in view of the prior art.¹ We AFFIRM.

Claims

The appellant (Dow) treats all of the rejected claims as standing or falling together except claim 22.² Claim 1 is representative of the claims on appeal (emphasis added):

1. A building panel comprising at least two panel domains, wherein each panel domain has an essentially homogeneous compressive strength and an average compressive strength; wherein said panel:

¹ The exception, claim 18, is the subject of an objection because it depends from rejected claim 16.

² Appeal Brief (AB) at 4. The claim language is taken from the claims appendix to the Appeal Brief.

- (a) has at least two panel domains having different average compressive strengths;
- (b) is essentially free of a combination of hollow and solid foam strands;
- (c) has an essentially uniform panel thickness;
- (d) fits fully within a cavity defined by cavity walls and, when in said cavity, the building panel has a compressive recovery that supplies sufficient pressure against the cavity walls to frictionally retain the building panel within the cavity, said pressure being 100 Newtons-per-square-meter or more and 200,000 Newton-per-square-meter or less;

and wherein, if said panel has at least two adjacent panel domains containing fibrous material with a fiber orientation, the fiber orientation of one panel domain is nonorthogonal to the fiber orientation of at least one adjacent panel domain and wherein the panel has an edge containing a panel domain extending from a primary face to an opposing face at that edge and wherein the panel has a primary face, a face opposing the primary face, a panel thickness, and *a slit penetrating to a depth less than the panel thickness that traverses and severs the primary face or the face opposing the primary face.*

Claim 22, which depends from claim 1, adds the further limitation that "the panel domains extend through the thickness of the panel."

Rejection

Claim 1 and claim 22 have both been finally rejected³ as having been obvious in view of:

Hans Walendy et al., "Filler body as molded part for sealing poorly accessible hollow spaces", U.S. Patent 5,529,824 (issued 25 June 1996); and

Edgar R. Ducharme, "Insulating insert for the cores of building blocks", U.S. Patent 5,062,244 (issued 5 November 1991).

³ Final Office Action (FOA) at 3.

Issues

Dow identifies the following issues for decision on appeal:⁴

1(a): Whether either Walendy or Ducharme teaches or suggests a slit that penetrates to a depth less than a panel thickness that traverses and severs a primary face of the panel.

1(b): Whether either Walendy or Ducharme teaches or suggests a slit that facilitates bending of a building panel into a non-planar configuration.

2: Whether either Walendy or Ducharme teaches or suggests a panel comprising at least two panel domains, wherein the panel domains extend through the thickness of the panel.

We are mindful of our obligation to consider both the prior art and each claim as a whole, but for the sake of clarity we focus our analysis on the appealed issues and corresponding contested claim limitations.

ANALYSIS

Obviousness is a rejection under 35 U.S.C. 103. The scope and content of the prior art must be determined, the differences between the prior art and the claims ascertained, and the ordinary level of skill in the art resolved. Objective evidence of the circumstances surrounding the origin of the claimed subject matter (so-called secondary considerations) may also be relevant. Such secondary considerations guard against the employment of impermissible hindsight.⁵

Scope and content of the prior art

Dow contests two limitations: the slit (claims 1 and 22) and the domain thickness (claim 22). The examiner relies on Ducharme for evidence of slits in the

⁴ AB at 3.

⁵ *Graham v. John Deere Co.*, 383 U.S. 1, 17, 36 (1966). The record on appeal does not contain objective evidence of secondary considerations.

prior art. Specifically, the examiner points to elements 28 and 29⁶ or elements 30 and 31⁷ in Ducharme Figure 1.⁸ The examiner relies on elements 3 and 4 of Walendy Figure 2 for panel domains extending through the thickness of the panel.⁹

Ducharme teaches insulating inserts for the cores of masonry building blocks.¹⁰ Elements 28 and 29 are elongated internal cavities.¹¹ Elements 30 and 31 are compression slots.¹² Both the cavities and the slots terminate within the insert, that is, they penetrate less than the full thickness of the insert.¹³ They cooperate to permit compression of the insert to conform to the core of the building block.¹⁴ While Ducharme's slots are shown traversing a face of the insert, the cavities, by their very nature, do not traverse a face of the insert.

Walendy teaches fillers for hollow spaces in vehicle bodies.¹⁵ Element 4 is the main body of the filler, while element 3 is an intermediate layer inserted within

⁶ FOA at 5.

⁷ Examiner's Answer (EA) at 5. Dow characterizes the examiner's reliance on elements 30 and 31 as an improper new ground of rejection, but does not seek a remedy. Reply at 4. Whatever the merits of Dow's characterization might be, Dow did not petition for a remedy so we will proceed to judgment on the record we have.

⁸ Elements 30 and 31 do not appear in Figure 1, but do appear in Figures 2, 3, and 5. The reader is referred to <http://www.uspto.gov/patft/index.html> to view the figures. Compliance costs associated with 29 U.S.C. 794d make it impractical to reproduce figures in opinions routinely.

⁹ FOA at 4; EA at 4.

¹⁰ Column 1, lines 6-8 (1:6-8).

¹¹ 2:66.

¹² 2:68.

¹³ 3:2-8; Fig. 2.

¹⁴ 3:8-12.

¹⁵ 1:9-15.

element 4.¹⁶ The main material layer 4 has a cut 2 the length of the filler, but not entirely through the width of the filler, to permit the insertion of intermediate layer 3.¹⁷ The filler is wrapped in a plastic foil 5 approximately 10-50 μm thick.¹⁸ The main layer 4 and intermediate layer 3 run the length of the filler, but only the main layer 4 runs the thickness of the filler in either of the two dimensions in which Walendy uses any variation of the term "thick".

Differences between the prior art and the claims

Slit

To ascertain the difference between the claimed slit and Ducharme's cavities and slots, we must first construe the entire contested claim limitation:

a slit penetrating to a depth less than the panel thickness that traverses and severs the primary face or the face opposing the primary face.

We accord a claim its broadest construction reasonably consistent with the specification. Dow's specification describes a "slit traversing a primary face or a face opposing a primary face and extending to a depth less than the panel thickness."¹⁹ "Primary face" is defined to have "a surface area equal to that of the highest surface area face on the panel."²⁰ "Panel thickness" is defined to be "a perpendicular distance between a primary face and its opposing face."²¹ The specification does not use the term "severs". The definition of "sever" that Dow offers²² is problematic since it is literally inconsistent with the claimed constraint

¹⁶ 2:54-65; Fig. 2.

¹⁷ 2:60-62.

¹⁸ 3:11-14.

¹⁹ Page 13:1-4.

²⁰ Page 4:20-22.

²¹ Page 4:33-34.

²² AB at 6: "separate into two parts".

that the slit not extend through to the opposing face. While this uncertainty arguably makes the claim indefinite, we do not have that rejection before us.

The claimed slit is a narrow opening in the largest face (or one of the set of largest faces) of the building panel that crosses the entirety of that face and extends below the face, but not through to the opposite face of the panel. We understand "sever" to simply reinforce the idea that the slit traverses the primary face.²³ We do not construe "slit" to require any particular geometry other than narrowness.

Dow further argues²⁴ that the slit must "facilitate bending a building panel into a non-planar configuration for insertion into a cavity." This functional language does not appear in the claim and is not required for the claim to make sense. Dow's argument makes sense only if this functional language can be read as defining "slit". Clarity, deliberateness, and precision are, however, the quid pro quo of specification lexicography so those of ordinary skill will have clear notice.²⁵

Dow controls the language of its specification and its claims. If Dow wishes either to be read a particular way, Dow has both the means and the responsibility to ensure they are clearly drafted to reflect Dow's intended meaning.²⁶ We note that an alternate reading of the cited portion of Dow's specification is that a traversing slit in a deformable panel will inherently facilitate bending of the panel.

²³ See *Ex parte Ionescu*, 222 USPQ 537, 540 (Bd. App. 1984) (a claim that can be construed can be examined for that construction).

²⁴ AB at 8, citing the specification, page 13:1-5.

²⁵ *In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994).

²⁶ The applicant has the responsibility for drafting the claim to provide notice of precisely what the applicant means. *In re Morris*, 127 F.3d 1048, 1056, 44 USPQ2d 1023, 1029 (Fed. Cir. 1997). This responsibility is particularly important before the Office when the claim may usually be amended to avoid uncertainty.

Ducharme's cavities 28, 29 differ from the claimed slit in that they do not traverse a primary face. They are openings in a smaller face and do not completely cross that face. Ducharme's slots 30, 31 differ from the claimed slit in that the face they traverse is not a primary face. We note that Walendy's cut 2 traverses a short face, but not entirely through the thickness, of the filler body to define a hinge to permit the insertion of intermediate layer 3.

Panel domain thickness

Again, we begin with the broadest construction reasonable in view of the specification. Claim 22 states that "the panel domains extend through the thickness of the panel." We understand "the thickness of the panel" to correspond to "panel thickness" as it is defined in the specification and discussed above. The specification defines a "panel domain" as "a section of a building panel that extends a building panel's length, width, thickness, or a combination thereof."²⁷ "Section" is not defined in the specification. Examples of domains in the specification are discrete elements,²⁸ but the specification does not require the domains to be discrete. We construe the further limitation of claim 22 to require at least two sections of the overall structure to extend from the primary face to an opposing face.

The examiner relies on layers 3 and 4 of Walendy for this limitation. Intermediate layer 3 plainly does not extend through any dimension. We find this to be true even discounting the de minimis addition of plastic film. Moreover, extension of intermediate layer 3 all of the way through the thickness of Walendy's filler body would appear to be at odds with the point of Walendy since it would

²⁷ Page 5:23-25.

²⁸ Page 5:29-31: bands, strips, and plugs.

limit compression along the axis denominated as thickness. The examiner's reading of "thickness" to include the longitudinal dimension of the filler body would strike a person having ordinary skill in the art as a stretch.

The main material layer 4 of Walendy's filler body, however, does extend through all three dimensions. Moreover, the cut 2 in main material layer 4 effectively defines two sections (the top and bottom sections in Figure 1; the left and right sections in Figure 2).

Ordinary level of skill in the art

We look to the evidence of record—the applicant's disclosure, the cited references, and any declaration testimony—in resolving the ordinary level of skill in the art.²⁹ In this appeal no testimony is cited. We focus on what a person having ordinary skill in the art would know and be able to do.

Dow's disclosure expressly describes the ordinary skill in the art several times. It explains that those of skill would know "any of a number of means suitable for joining together two panel domains including double sided tape, epoxy or polyurethane adhesives, latex adhesives, *hinges*, and wires inserted into and possibly through adjoining panel domains."³⁰ They would also be able to prepare strand foams of different compressive strengths.³¹ Finally, after consulting Dow's disclosure, they would be able to conceive many different configurations.³²

Walendy explains that selection of appropriate materials for, and installation of, the filler body is within the ordinary skill in the art, usually through trial and error, which in this art is "rapid", "simple", and "without effort worthy of

²⁹ *Ex parte Jud*, 2006 WL 4080053 at *2 (BPAI) (rehearing with expanded panel).

³⁰ Page 14:31-35 (emphasis added).

³¹ Page 17:3-5.

mention."³³ Ducharme reports that those of skill in the art are familiar with a variety of insulating inserts and that such inserts commonly include external slots to aid compression.³⁴ Ducharme also confirms that varying configurations as needed is within the ordinary skill in the art.³⁵

Taken together, the evidence suggests a predictable art, where simple trials are used to confirm the suitability of materials and configurations. A person having ordinary skill in the art would be familiar with suitable materials, including foams, for use in insulating enclosed structural spaces. The ordinary artisan would be able to determine the configuration, including dimension, that would work for a given context. The artisan would appreciate that slots and cavities of various configurations would aid in installation. The artisan would also appreciate that different sections may be connected by a hinge and that the hinge may be formed by cutting a layer less than all of the way through to define two sections connected by the uncut material.

Synthesis of the findings

Claim 1: a traversing slit

On appeal, Dow has not challenged the obviousness of the subject matter of claim 1 except with regard to the traversing slit limitation. The addition of a traversing slit across the primary face of the panel would have been obvious. The art is predictable and those in the art knew to add slots and cuts across faces to

³² Page 20:11-13.

³³ 3:58-65.

³⁴ 1:21-50. Intriguingly, Ducharme cites the patented and unpatented work of one Nickerson. Nickerson is reported to have inserts with slots running entirely across the primary face of the inserts.

³⁵ 3:64-66.

permit both compression and flexion. Those in the art were concerned with deforming resilient inserts to fit them snugly into tight structural openings and were willing to perform the simple tinkering needed to confirm their expectations. The addition of a known feature to produce an expected result is an obvious modification.

Claim 22: domains of panel thickness

Dow contests the obviousness for dependent claim 22 for the same reasons given for parent claim 1, which are not adopted, and because the added limitation regarding the thickness of the panel domains. Providing equally thick domains would have been obvious. Those skilled in the art knew to select a configuration that would work. Indeed, the simplest way to produce two hinged sections would be to partially split a panel (which would typically have a uniform thickness) or to connect two identical panels. Absent some other consideration, equal thickness would have been the default choice.

DECISION

The rejection of claims 1 and 22 as having been obvious in view of the Walendy and Ducharme patents is AFFIRMED. The rejections of the remaining pending claims other than claim 18, which stand or fall with the rejection of claim 1, are likewise AFFIRMED.

Steven W. Mork, DOW CHEMICAL COMPANY, Midland, Michigan, for appellant.

Jane Rhee, with Patrick Joseph Ryan, GROUP ART UNIT 1745.