United States District Court,
E.D. Michigan, Southern Division.

SUNDANCE, INC. et al,
Plaintiffs.
v.
DeMONTE FABRICATING, LTD. et al,
Defendants.

Nov. 18, 2003.

John A. Monocello, III, Thomas E. Wettach, Cohen & Grigsby, Pittsburgh, PA, Kevin J. Heinl, Robert C. Brandenburg, Brooks & Kushman, Southfield, MI, for Plaintiffs.

Donald C. Darnell, Nik Lulgjuraj, Darnell & Lulgjuraj, Chelsea, MI, Irving M. Weiner, Joseph P. Carrier, Carrier, Blackman, Novi, MI, Roderick R. McKelvie, Covington & Burling, Washington, DC, Robert C. Brandenburg, Brooks & Kushman, Southfield, MI, for Defendants.

DECISION ON CLAIM CONSTRUCTION

AVERN COHN**, District Judge.**

I. Introduction

This is a patent case. Plaintiffs Sundance, Inc. and Merlot Tarpaulin and Sidekit Manufacturing Company, Inc. (collectively, Sundance), holder of U.S. Patent No. 5,026,109 (the '109 patent) covering a Segmented Cover System, is suing DeMonte Fabricating, Ltd. and Quick Draw Tarpaulin Systems Inc. (collectively, DeMonte) for infringement of the '109 patent. Before the Court are the parties' papers relating to interpretation of the ambiguous terms in the '109 patent. The Court held a *Markman* hearing on November 14, 2003.

The ABSTRACT describes the invention:

The present invention provides a segmented cover system utilizing a series of cover sections, which can be of any size and shape, and a series of curved or straight supporting bows to form a cover assembly which allows for the easy replacement of a cover section or a bow without disassembling the entire cover system. The present cover assembly preferably utilizes a series of standard cover sections which are detachably secured to the two adjacent supporting bows. Preferably, the supporting bows are curved and consist of a bow center section and two easily removable bow end sections. The unique design, construction and interaction of the cover sections, the bow center sections and the bow ends enable damaged cover sections and bows to easily be removed and replaced without disassembling or removing the cover system from its location. A drive assembly can be used to extend and retract the segmented cover system of the present invention.

Figures 2 and 8 illustrate the invention:

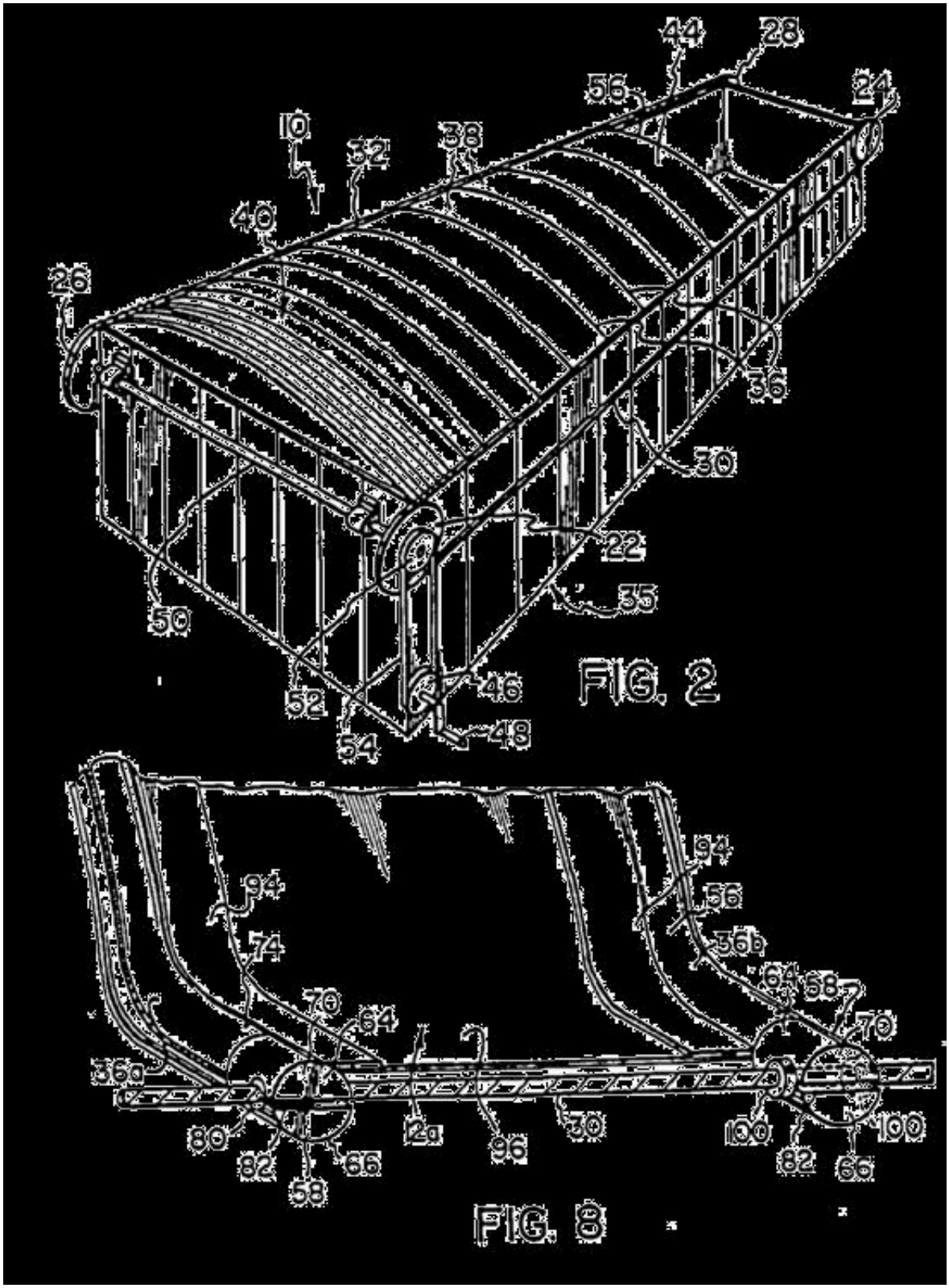

FIG. 2

FIG. 8

The BACKGROUND OF THE INVENTION describes the advance in the art as follows:

The need for a reliable covering system and particularly a retractable covering system for truck and trailer bodies has long been recognized where the cargo being carried is perishable, a hazardous material, or which could be dangerous to passing motorists such as stones, gravel, asphalt, shale, or any other material which can become a projectile. Moreover, many states are passing laws which mandate the use of covering systems on trucks and trailers. Retractable covering systems have the advantage that they can be operated easily and safely from the ground by one person. They also can be extended and retracted in very little time thereby improving overall efficiency and reducing driver fatigue.

U.S. Pat. Nos. 4,801,171, 4,725,090 and 4,189,178 describe several different truck tarpaulin covering systems which allow a tarpaulin cover to be mechanically extended or retracted from the top portion of a truck trailer. While these retractable cover systems can accomplish their intended purpose once they are installed, they typically require a significant amount of time and effort to install, especially since they are not easily installed by one person. Thus, they are not interchangeable.

Moreover, these systems have a serious drawback if the tarpaulin or its supports become damaged, either during normal operation or during covering and uncovering of the trailer body. It is very difficult to repair or replace these systems if they become damaged and therefore the entire truck! can be out of operation for a long period of time until the cover system is completely repaired or replaced. This is because, to replace the cover or the supporting rods, the cables which enable the cover system to be retractable have to be disconnected from all of the supporting bows and these in turn must be disconnected individually from the entire tarp. If a spare tarp is not immediately available, the entire tarp must be sent out for repair even if the damaged area comprises only a small portion of the tarp. Additional delays can occur in repairing the tarp, itself. Even after the tarp is repaired, the whole cover system must be reassembled and reinstalled on the truck trailer, again requiring a significant amount of time and manual labor.

....

Due to the frequency with which these tarpaulin covering systems become damaged it would be desirable to have a retractable cover system wherein only the damaged portion could easily be removed and replaced without replacing or disassembling the entire cover system. Similarly, such a cover system would be desirable in certain application, even if it were not retractable.

Claim 1 of the '109 patent is the paradigm claim and (broken down into appropriate clauses) reads:

1. A retractable segmented cover system *used with a truck trailer* comprising

a plurality of flexible cover sections with a plurality of substantially parallel supporting *bows* spaced there between and a *drive assembly,*

wherein each cover section is detachably connected between substantially parallel supporting *bows,*

the *bows* are *slideably supported on the truck trailer* and at least one *bow* is *fixedly connected to the drive assembly* such that the cover system can be extended or retracted by the drive assembly

and wherein a cover section can be removed from the cover system *independent* of the other cover sections.

The underlined terms require interpretation by the Court as being ambiguous. The six terms in claim 1 to be construed are:

(1) used with a truck trailer FN1

FN1. DeMonte did not identify the term "used with a truck trailer" in its original papers identifying ambiguous terms filed on July 14, 2003. However, as both parties have addressed the term in their papers and provided suggested constructions, the Court will construe this term as well.

(2) bows
(3) drive assembly

(4) slideably supported on the truck trailer

(5) fixedly connected to the drive assembly

(6) independent

II. Procedural Background

Sundance previously sued Aero Industries, Inc. for infringement of the '109 patent in the United States District Court for the Western District of Pennsylvania. *Sundance, Inc. v. Aero Indus., Inc.,* No. 97-0627 (W.D.Pa.). A Special Master issued a report construing three terms in the '109 patent: "drive assembly," "bow," and "bow end." FN2 The previous litigation ended in a consent judgment declaring the ' 109 patent enforceable and not invalid. FN3

FN2. The Court is not bound by the Special Master's report in the prior litigation. In determining the effect of prior litigation on issues of claim construction, the same requirements apply as with other judicial determinations. *See* Del Mar Avionics, Inc. v. Quinton Instrument Co., 836 F.2d 1320, 1323 (Fed.Cir.1987). Case law of the Sixth Circuit governs. *See* Epic Metals Corp. v. H.H. Robertson Co., 870 F.2d 1574, 1576 (Fed.Cir.1989). There are four elements that must be satisfied for a party to be collaterally estopped from raising an issue:
(1) the precise issue raised in the present case must have been raised and actually litigated in the prior proceeding; (2) determination of the issue must have been necessary to the outcome of the prior proceeding; (3) the prior proceeding must have resulted in a final judgment on the merit s; and (4) the party against whom estoppel is sought must have had a full and fair opportunity to litigate the issue in the prior proceeding.

Smith v. SEC, 129 F.3d 356, 362 (6th Cir.1997) (citation and quotation marks omitted). There is no indication that the court in the prior litigation adopted the Special Master's report because it never issued a final decision on the issue of infringement. Further, because DeMonte was not involved in Sundance's lawsuit against Aero Industries, Inc., it did not have a full and fair opportunity to litigate the issue of claim construction. Hence, Sundance cannot assert collateral estoppel against DeMonte now.

FN3. Sundance previously sued DeMonte in the United States District Court for the Western District of Pennsylvania. *Sundance, Inc. v. DeMonte Fabricating, Ltd.,* No. 01-2173 (W.D.Pa.). The case was dismissed for lack of personal jurisdiction. Sundance then filed its complaint in this Court.

On December 9, 2002, a third party Request for Reexamination of the '109 patent was filed with the United States Patent and Trademark Office (PTO). The Court denied DeMonte's motion to stay proceedings pending reexamination. The PTO subsequently granted reexamination to consider U.S. Patent No. 3,415,260 to Hall and Canadian Patent No. 867,009 to Folkes in light of U.S. Patent No. 4,189,178 to Cramaro. As of July 30, 2003, both parties have filed statements and are awaiting a final decision from the examiner.

III. Legal Standard

A. Claim Construction

Claim construction is a matter of law for the Court. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed.Cir.1995) (en banc), *aff'd,* 517 U.S. 370 (1996). The Federal Circuit has clearly explained the steps of the claim construction process:

First, we look to the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention. Although words in a claim are generally given their ordinary and customary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history.

Thus, second, it is always necessary to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning. The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication.... The specification contains a written description of the invention which must be clear and complete enough to enable those of ordinary skill in the art to make and use it. Thus, the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.

Third, the court may also consider the prosecution history of the patent, if in evidence. This history contains the complete record of all the proceedings before the Patent and Trademark Office, including any express representations made by the applicant regarding the scope of the claims. As such, the record before the Patent and Trademark Office is often of critical significance in determining the meaning of the claims. Included within an analysis of the file history may be an examination of the prior art cited therein.

Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed . Cir.1996) (citations omitted). There is a " 'heavy presumption' that claim terms carry their ordinary meaning as viewed by one of ordinary skill in the art." Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1369 (Fed.Cir.2003). "[D]ictionary definitions may be consulted in establishing a claim term's ordinary meaning." *Id.*

"Courts may also review extrinsic evidence, always to assist them in comprehending the technology in accordance with the understanding of skilled artisans and as necessary for actual claim construction. Extrinsic evidence may never be relied upon, however, to vary or contradict the clear meaning of terms in the claims." *Id.* (citations omitted).

B. Claim Differentiation

The doctrine of claim differentiation states that "two claims of a patent are presumptively of different scope." Kraft Foods, Inc. v. International Trading Co., 203 F.3d 1362, 1366 (Fed.Cir.2000).

There is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant. Where some claims are broad and others narrow, the narrow claim limitations cannot be read into the broad whether to avoid invalidity or to escape infringement.

United States v. Telectronics, Inc., 857 F.2d 778, 783-84 (Fed . Cir.1988) (citations and quotation marks omitted). Claim differentiation merely creates a presumption; it is not a rigid rule of construction. Kraft Foods, 203 F.3d at 1368; Autogiro Co. of Am. v. United States, 384 F.2d 391, 404 (Ct.Cl.1967). "Claim differentiation can not broaden claims beyond their correct scope." Multiform Desiccants Inc. v. Medzam, Ltd., 133 F.3d 1473, 1480 (Fed.Cir.1998).

IV. Analysis

The respective positions of the parties on the ambiguous terms in claim 1 are displayed in Exhibit A.

A. Prosecution History

Crucial to a proper interpretation of the claim terms at issue is a review of the prosecution history of the '109 patent.

Claim 1 as filed read:

A retractable segmented cover system used with a frame comprising a plurality of cover sections with a plurality of parallel supporting bows spaced there between and a drive assembly, wherein each cover section is detachably connected between successive supporting bows, the bows are slideably supported on the frame and at least one bow is fixedly connected to the drive assembly such that the cover system can be extended or retracted by the drive assembly and wherein a cover section can be removed from the cover system independent of the other cover sections.

Claim 2 as filed read:

The segmented cover system as described in claim 1 wherein the frame comprises a truck trailer.

In an Office Action dated May 22, 1990, claim 1 was rejected under 35 U.S.C. s. 102(b) as being anticipated by U.S. Patent No. 4,328,853 to Gall et al. The examiner stated: "Gall et al. discloses a cover system having a plurality of cover sections 63, and a plurality of supporting bows 76. The bows have circular cross sectional portions."

The applicant responded on September 21, 1990 by amending claim 1 to read (additions underlined, deleted elements in brackets):

A retractable segmented cover system used with a frame comprising a plurality of *flexible* cover sections

with a plurality of *substantially* parallel supporting bows spaced there between and a drive assembly, wherein each cover section is detachably connected between [successive] *substantially parallel* supporting bows, the bows are slideably supported on the frame and at least one bow is fixedly connected to the drive assembly such that the cover system can be extended or retracted by the drive assembly and wherein a cover section can be removed from the cover system independent of the other cover sections.

The applicant argued that Gall et al. "merely shows a retractable folding screen which can be used for light permeable skylights and the like. Unlike applicant's claimed invention, Gall et al. teaches and requires the use of 'rigid' rather than flexible panels."

In a Final Office Action dated November 27, 1990, the examiner again rejected claim 1 as being anticipated by Gall et al. The examiner stated:

Gall et al. discloses a cover system having a plurality of cover sections 63, and a plurality of supporting bows 76. The bows have circular cross sectional portions. Also, the cover sections which are made out of thin PVC (polyvinyl chloride) panels are considered to be flexible or "capable of deforming or bending" as recited.

Claims 2 and 4-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim.

A Rule 116 amendment FN4 was then filed on December 17, 1990 which amended claim 1 to read (additions underlined, deleted elements in brackets):

FN4. A Rule 116 amendment is an amendment after final action. 37 C.F.R. s. 1.116 (2002).

A retractable segmented cover system used with a [frame] *truck trailer* comprising a plurality of flexible cover sections with a plurality of substantially parallel supporting bows spaced there between and a drive assembly, wherein each cover section is detachably connected between substantially parallel supporting bows, the bows are slideably supported on the [frame] *truck trailer* and at least one bow is fixedly connected to the drive assembly such that the cover system can be extended or retracted by the drive assembly and wherein a cover section can be removed from the cover system independent of the other cover sections.
The applicant stated: "Applicant has cancelled Claim 2 and incorporated it into Claims 1 and 19. Accordingly, Claims 1 and 3-19, as amended, are allowable over the cited art."
A Notice of Allowability followed on January 15, 1991.

B. Construction of Individual Terms

1. Used with a Truck Trailer

The preamble of claim 1 reads: "A retractable segmented cover system used with a truck trailer comprising."

Sundance says that the term "used with a truck trailer" is an important limitation of claim 1 even though it appears in the preamble because it defines the claim over the prior art. DeMonte, by contrast, says that it is merely a statement of intended use and, to the extent that it has any legal significance, it means that "the system is constructed and arranged to fit on top of a box-shaped truck trailer."

The Federal Circuit has explained the relevance of terms in the preamble of a patent as follows:

The preamble of a claim does not limit the scope of the claim when it merely states a purpose or intended use of the invention. However, terms appearing in a preamble may be deemed limitations of a claim when they "give meaning to the claim and properly define the invention." Although no "litmus test" exists as to what effect should be accorded to words contained in a preamble, review of a patent in its entirety should be made to determine whether the inventors intended such language to represent an additional structural limitation or mere introductory language.

In re Paulsen, 30 F.3d 1475, 1479 (Fed.Cir.1994) (citations omitted). "[C]lear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention." Catalina Mktg. Int'l v. Coolsavings.com, Inc., 289 F.3d 801, 808 (Fed.Cir.2002). However, "preambles describing the use of an invention generally do not limit the claims because the patentability of apparatus or composition claims depends on the claimed structure, not on the use or purpose of that structure." Id. at 809. The Court must analyze the patent as a whole to determine whether preamble language constitutes a limitation of the claim. Id. at 808.

The prosecution history of the '109 patent clearly demonstrates that "used with a truck trailer" gives meaning to claim 1 and properly defines the invention. The preamble of claim 1 originally read: "A retractable segmented cover system used with a frame comprising." The examiner rejected the claim in light of Gall et al ., which discloses "a folding screen for light-permeable skylights and the like." Gall et al. does not disclose a cover system for use with a truck trailer. When the applicant changed "used with a frame" to "used with a truck trailer" to overcome this reference, claim 1 was allowed. Consequently, the limitation "used with a truck trailer" was essential to patentability.FN5 *See* Phillips Petroleum Co. v. Huntsman Polymers Corp., 157 F.3d 866, 872-73 (Fed.Cir.1998) (finding that "block copolymer(s)" in the preamble of the claim at issue was a meaningful limitation because the examiner refused to allow the applicant to delete the term on multiple occasions). The Request for Reexamination confirms that adding "used with a truck trailer" made claim 1 patentable over the prior art:

FN5. The specification states that "the cover assembly can be made retractable [with a drive assembly] thereby expanding its possible uses to almost any structure or container. For example, the present cover system could be used as an awning over a porch or patio, or as a cover for a swimming pool." '109 patent, col. 2, ll. 36-40. However, in light of the amendment adding "used with a truck trailer" to overcome the prior art, claim 1 is narrower than the specification suggests.

[I]t would appear that the Examiner believed Merlot claim 1 was anticipated by Gall, but that the change of reciting that the retractable segmented cover system was used with a truck trailer, rather than with a frame, and that the bows are slidably supported on the truck trailer, rather than supported on the frame, made claim 1 patentable.
DeMonte argues that there is no structure in claim 1 that relates the invention to a truck trailer. *See* Bell Communications Research v. Vitalink Communications Corp., 55 F.3d 615, 621 (Fed.Cir.1995) ("one cannot determine a preamble's effect except by reference to the specific claim of which it is a component"). However, the supporting bows are clearly tied to the truck trailer in the preamble because they are "slideably supported on the truck trailer." In addition, the system of claim 1 utilizes a "drive assembly," which can be

used to move the bows on a truck trailer.

Having established that "used with a truck trailer" is a limitation on the scope of claim 1, the limitation must be construed. Sundance says that it should be construed according to its plain meaning, while DeMonte says that it "means the system is constructed and arranged to fit on top of a box-shaped truck trailer ."

The specification states that in the preferred embodiment, "a rectangular frame 18 is used to support the ends 20 of the supporting rods 14 and the drive assembly 16, although **any size or shape of frame could be used** depending upon the size and shape of the area to be covered." '109 patent, col. 4, ll. 16-20. Because Gall et al. does not disclose the use of any type of truck trailer, it was unnecessary for the applicant to further specify the shape of the truck trailer to overcome the prior art. Merely adding "used with a truck trailer" sufficiently distinguished Gall et al.

DeMonte further says that the only use contemplated in the specification and drawings was a box-shaped truck trailer. However, there is no rule mandating that when there is only one embodiment disclosed in the specification, claim terms are limited to that single embodiment. Arlington Indus., Inc. v. Bridgeport Fittings, Inc., 345 F.3d 1318, 1327 (Fed.Cir.2003); Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1326-27 (Fed.Cir.2002); SRI Int'l, Inc. v. Matsushita Elec. Corp., 775 F.2d 1107, 1121 n. 14 (Fed Cir.1985) ("That a specification describes only one embodiment does not require that each claim be limited to that one embodiment."). Limiting the "truck trailer" limitation in the preamble to a "box-shaped truck trailer" would effectively read in a limitation that is not present in the claim. *See* Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed.Cir .1998).

Because there is no indication in the specification or prosecution history that the patentee meant to define or limit "truck trailer" to "box-shaped truck trailer," "used with a truck trailer" must be interpreted according to its plain meaning. The jury will be told that "used with a truck trailer" means:

The retractable segmented cover system is used with a trailer that is designed to be hauled by a truck.

2. Bows

Claim 1 requires "a plurality of substantially parallel supporting bows" spaced between the flexible cover sections.

Sundance says that the patentee acted as his own lexicographer and defined the term "bows" in the specification to mean "members that are either curved or straight and have any cross-sectional shape." DeMonte says that the term must be limited to the structure disclosed in the specification so that each of the bows includes "a bow center section and bow ends attached to the outer portions of the center section."

The specification uses the terms "supporting bows" and "supporting rods" interchangeably.FN6 The ordinary meaning of "bow" is: "A thing bent or fashioned so as to form part of the circumference of a circle or other curve; a bend, a bent line." *See* Oxford English Dictionary (2d ed.1989), *available at OED Online* <http://dictionary.oed.com>; Altiris, 318 F.3d at 1369 ("dictionary definitions may be consulted in establishing a claim term's ordinary meaning"). The ordinary meaning of "rod" is: "A straight slender bar of metal; a connecting part or shaft which is slender in proportion to its length." *See* Oxford English Dictionary (2d ed.1989). In short, a "bow" is a curved member, while a "rod" is a straight member.

FN6. *See, e.g.,* '109 patent, col. 1, ll. 41-45 ("to replace the cover or the **supporting rods** [in the prior art systems], the cables which enable the cover system to be retractable have to be disconnected from all of the **supporting bows** and these in turn must be disconnected individually from the entire tarp"); id., col. 1, ll. 56-63 ("In most of these [prior art] systems, a sleeve is required to be made in the tarp ... into which each one of the **supporting rods** must be inserted.... [I]t is very tedious and time consuming to insert all of the **supporting bows** into the tarp pockets."); id., col. 2, ll. 44-49 ("One embodiment of the present invention provides a retractable segmented cover system comprising a drive assembly, a plurality of uniquely designed parallel **supporting rods** or bows and a plurality of cover sections or tarp segments, each one connected between two successive **supporting bows** to form a cover assembly.").

"[A] patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history." Vitronics, 90 F.3d at 1582. Here, the patentee intended that the "supporting bows" of claim 1 be either curved or straight. The specification states that "[e]ach supporting bow is comprised of a curved or straight bow center section and two mating bow end sections (bow ends)." '109 patent, col. 2, ll. 64-66. Figure 1 shows one embodiment with straight "supporting rods 14," while Figure 2 shows an alternative embodiment with "curved bows 36." Id., col. 4, ll. 11-58. "The supporting rods 14 [in Figure 1] are straight, although as shown in the other Figures, they may be curved or formed in any desired shape." Id., col. 4, ll. 22-24. There is nothing in the prosecution history to contradict the patentee's intended meaning of curved or straight "supporting bows."

Further, there is no indication in either the specification or the prosecution history that the "supporting bows" are limited to a particular cross-sectional shape. Figure 3 shows the preferred embodiment of a curved "supporting bow." Id., col. 5, ll. 17-18. "The preferred cross-sectional configuration of the bow center section 60 is ... [a] round shape, [which] provides for increased strength." Id., col. 5, ll. 24-27. Claim 1 does not mention any particular cross-sectional shape. Accordingly, the term "bows" in claim 1 means members that are either curved or straight with any cross-sectional shape.

DeMonte does not dispute this construction but seeks to add the limitation that "each 'of the bows includ[es] a bow center section and bow ends attached to the outer portions of the center section." DeMonte finds support in the specification, which states that "[e]ach supporting bow is comprised of a curved or straight bow center section and two mating bow end sections (bow ends)." Id. col. 2, ll. 64-66; *see also* id., col. 7, ll. 3-11 (stating that a damaged bow can be removed by disconnecting the bow ends and sliding a new bow center section into place "to form a complete bow"). DeMonte says that there is no variation suggested or permitted in the specification. *See* Modine Mfg. Co. v. ITC, 75 F.3d 1545, 1551 (Fed.Cir.1996) ("when the preferred embodiment is described in the specification as the invention itself, the claims are not necessarily entitled to a scope broader than that embodiment").

DeMonte's construction is in error for two reasons. First, the specification expressly states that the disclosed structure is a preferred embodiment: *See* ' 109 patent, col. 2, ll. 44-47 ("One embodiment of the present invention provides ... a plurality of uniquely designed parallel supporting rods or bows."); id., col. 5, ll. 17-19 ("FIG. 3 shows a preferred embodiment of a curved supporting bow 36. Preferably, it is comprised of two bow ends 58 and a bow center section 60."). Again, simply because the specification discloses only one embodiment does not mean that the claim must be limited to that embodiment. Teleflex, 299 F.3d at 1326-27; Electro Med. Sys., S.A. v. Cooper Life Sciences, 34 F.3d 1048, 1054 (Fed.Cir.1994) ("although the specification[ ] may well indicate that certain embodiments are preferred, particular embodiments appearing

in a specification will not be read into the claims when the claim language is broader than such embodiments").

Second, DeMonte's construction violates the principal of claim differentiation. The limitation suggested by DeMonte is specifically described in claim 4:

The segmented cover system as described in claim 1 wherein at least one of the supporting bows comprises a bow center section, having a groove along each side substantially parallel to one another, and two bow ends each being detachably connected to an end of the bow center section by a fastening means.

Claim 4 depends from claim 1 and clearly represents the preferred embodiment disclosed in the specification where each bow is comprised of two detachable bow ends and a bow center section. This particular bow design is also claimed separately in claim 14:

A supporting bow for use in a segmented cover system comprising a bow center section having a groove along opposite sides, parallel to one another, which is capable of receiving an edge of a cover section, and a pair of bow ends each detachably connected to one end of the bow center section by a fastening means such that the bow ends hold the cover section in position.

Claim differentiation "is clearly applicable when there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between the two claims." Wenger Mfg., Inc. v. Coating Machinery Sys., Inc., 239 F.3d 1225, 1233 (Fed.Cir.2001). Here, the only difference between claim 1 and claim 4 is that the supporting bows of claim 4 are comprised of two bow ends and a bow center section. Because the two claims must define separate inventions, the limitation of claim 4 cannot be read into claim 1.

The jury will be told that "bows" means:

The bows are members that are either curved or straight and have any cross-sectional shape.FN7

FN7. This interpretation of "bows" is nearly identical to the Special Master's construction in the prior litigation between Sundance and Aero Industries, Inc.

3. Drive Assembly

Claim 1 requires a "drive assembly" where "at least one bow is fixedly connected to the drive assembly such that the cover system can be extended or retracted by the drive assembly."

Sundance offers the following construction:

The drive assembly is an assemblage of two or more parts that act together to impart motion to a drive from an unspecified source.

DeMonte suggests the following construction:

An assemblage of two or more parts that cooperate to impart motion to a driven component, including

multiple pulleys and two endless cables, and a motor or hand-operated crank which is operatively connected to one of the pulleys.

First, as evidence of ordinary meaning, Sundance cites a technical dictionary definition of "drive:" "a mechanism that imparts or transfers power to a machine or within a machine." Academic Press Dictionary of Science and Technology 684 (1992); *see* Inverness Med. Switzerland Gmbh v. Princeton Biomeditech Corp., 309 F.3d 1365, 1369 (Fed.Cir.2002) (ordinary meaning can be found in "dictionaries of the English language, which in most cases will provide the proper definitions and usages, and technical dictionaries, encyclopedias and treatises, which may be used for established specialized meanings in particular fields of art"). Sundance says that the "plurality of flexible cover sections with a plurality of substantially parallel supporting bows spaced there between" is a form of rudimentary machine. The drive assembly imparts power to this machine resulting in retracting or extending motion.

Next, the specification refers to a "drive assembly" numerous times. In the Summary of the Invention, the specification states:

A drive assembly can be used to extend and retract the segmented cover assembly consisting of the alternating cover sections and supporting bows. **Any number of known mechanical or electrical drive systems can be used.** Preferably, the drive assembly comprises an endless cable and two pulleys on each side of the cover assembly with a pulley on each side connected together by a rod.... **The drive assembly can be either manually operated or motor driven.**

'109 patent; col. 3, ll. 27-46. The specification describes the operation of a cable and pulley structure in the Description of the Preferred Embodiment:

FIG. 1 shows a retractable segmented cover system 10 of the present invention utilizing a plurality of cover sections 12 interspersed between [straight] supporting rods 14 and a drive assembly 16 connected to at least one supporting rod 14 for extending and retracting the cover sections 12.... **The drive assembly 16 is fairly straightforward and is similar to those described in the patents mentioned above. In one embodiment, the drive assembly 16 consists of two pairs of pulleys 22, 24 and 26, 28 with an endless cable 30 and 32, respectively connected between each pair of pulleys.** Pulleys 22 and 26 are drivingly connected by a rod. One of the pulleys 22 has a handle 34 connected to it by means of which it can be turned to extend or retract the segmented cover system 10.

....

The drive assembly shown in FIG. 2 comprises two pairs of pulleys 22, 24 and 26, 28 on each side of the truck trailer body 35 at the top and a third pulley 46 near the base of the trailer body 35 so that the cranking handle 48 can be located in a convenient position for the operator. Again, as in FIG. 1, each pair of pulleys one at the front end and one at the back end on a side of the truck are connected together by endless cables 30, 32, respectively. The pulleys at the front end of the truck trailer are connected together by a rod 50 which enables the pulleys at the front to rotate at the same speed and enables one cranking handle 48 to extend and retract the entire cover system 10. A fourth pulley 52 is mounted on pulley 22 of the first pair and is connected by a third cable 54 to the third pulley 46 to which the cranking handle 48 is connected. By turning the cranking handle 48, the cable 54 connecting the third 46 and fourth 52 pulleys moves, causing the fourth pulley 52 to rotate and since it is fixedly mounted to pulley 22 of the first pair of pulleys, it causes pulley 22 to turn which in turn causes the cable 30 along the top side of the truck trailer body 35 to move.

Since the last bow 56 is fixedly connected at each end to each cable 30 and 32, movement of the cables in one direction extends the cover assembly 40 and movement of the cables in the opposite direction retracts the cover assembly 40.

Id., col. 4, l. 11-col. 5, l. 16. The specification expressly states that the preferred embodiment of the drive assembly "comprises an endless cable and two pulleys on each side of the cover assembly." Id., col. 3, ll. 31-33.

DeMonte is precluded from incorporating the cable and pulley structure as a limitation of claim 1 by the doctrine of claim differentiation because claim 3, which depends from claim 1, claims the same structure:

The segmented cover system as described in claim 1 wherein the drive assembly comprises at least one endless cable and two pairs of pulleys, one pair located on each of two opposite sides of the cover system such that one pulley is mounted adjacent each corner of the frame and the pulleys at a front end of the frame being connected together by a rod; each endless cable being fixedly connected to at least one supporting bow and slideably passing through the other supporting bows.

Claim 1 and claim 3 must define separate inventions. Hence, the meaning of "drive assembly" in claim 1 must at least be broader than the specific cable and pulley structure disclosed in claim 3.

Alternatively, DeMonte points to language in the specification stating that "the drive assembly 16 is fairly straight forward and is similar to those described in the [prior art] patents mentioned above.FN8 In one embodiment, the drive assembly 16 consists of two pairs of pulleys 22, 24 and 26, 28 with an endless cable 30 and 32." Id., col. 4, ll. 30-34. DeMonte says that because the statement that the drive assembly is "similar to those described in the patents mentioned above" appears before "In one embodiment," the invention is limited to the drive assemblies described in the referenced patents. Again DeMonte ignores the fact that the cited language appears in the Description of the Preferred Embodiment and numerous dependent claims describe the features of the preferred embodiment. DeMonte cannot overcome the presumption of claim differentiation.

FN8. The "patents mentioned above" are U.S. Patent No. 4,801,171 to Weaver, U.S. Patent No. 4,725,090 to Weaver, and U.S. Patent No. 4,189,178 to Cramaro. '109 patent, col. 1, ll. 24-28.

Even if this were not the case, though, "the patents mentioned above" disclose more than the preferred cable and pulley structure of the '109 patent. For instance, Cramaro states that "one might consider the replacement of the endless cables ... with two cables with reeling and unreeling arrangement at both ends of the truck box.... Another obvious modification would reside in automatic operation of the drive by providing an electric motor which might be operatively connected to the axle." Cramaro, col. 4, ll. 39-50. Weaver states that "an electric motor 82 may be substituted for hand crank device 64." Weaver, col. 4, ll. 64-65. Clearly, one of ordinary skill in the art would know that drive assemblies other than a cable and pulley structure could be used to move the bows and can be either manually operated or motor driven. *See* Nat'l Recovery Techs., Inc. v. Magnetic Separation Sys., Inc., 166 F.3d 1190, 1196 (Fed.Cir.1999) ("The scope of enablement ... is that which is disclosed in the specification plus the scope of what would be known to one of ordinary skill in the art without undue experimentation."); *see also* U.S. Patent No. 3,534,511 to Cappella, col. 2, ll. 36-39 (showing an extendable cover system for outdoor areas where the supports are manually "pulled lengthwise").

Finally, DeMonte says that at minimum, "drive assembly" means "an assemblage of parts that interact and cooperate to drive or move an object in some way, indirectly linking a separately disposed source of driving power to the object." Again, the ordinary meaning of "drive" and the specification do not support limiting claim 1 to a separately disposed power source. *See,* ' 109 patent, col. 3, ll. 45-46 ("The drive assembly can be either manually operated or motor driven."). The drive assembly imparts power to a machine such that "the cover system can be extended or retracted." Hence, the drive assembly imparts motion to the parts of the cover system.

DeMonte's constructions are overly limiting and not supported by the intrinsic evidence. The jury will be told that "drive assembly" means:

The drive assembly is an assemblage of two or more parts that act together to impart motion to the flexible cover sections and substantially parallel supporting bows from an unspecified source.FN9

FN9. This interpretation of "drive assembly" is nearly identical to the Special Master's construction in the prior litigation between Sundance and Aero Industries, Inc.

4. Slideably Supported on the Truck Trailer

Claim 1 recites that "the bows are slideably supported on the truck trailer."

Sundance says that the term "slideably supported on the truck trailer" means that the "bows are adapted for movement along a surface on the truck trailer, which carries the bows." DeMonte says that the term should be interpreted to mean that the "bows are supported on the trailer for sliding frictional engagement therewith, so that the bows slide, rather than roll along the trailer surface when moved."

Again, the claim term takes on its ordinary meaning "unless the patentee demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Teleflex, 299 F.3d at 1324. The verb "slide" means: "To pass from one place or point to another with a smooth and continuous movement, esp. through the air or water or along a surface." *See* Oxford English Dictionary (2d ed.1989). Therefore, when used as the adverb "slideably," the term means that the bows move along the truck trailer surface with a smooth and continuous movement.

DeMonte says that "slideably supported" means that the bows slide, rather than roll, in "frictional engagement" with the truck trailer surface. As support, DeMonte cites language in the specification describing the preferred embodiment:

The bow end 58 can be easily inserted into the bow center section 60, as shown in FIG. 4, The end of the bow center section 60 has a curved wear guard 90 attached to its underside and held in place by several screws 92. This wear guard prevents destruction of the ends of the bow center section 60 from the **sliding friction** with the frame as the end of the bow center section 60 **slides along the frame** when it is extended or retracted. Preferably, the wear guard 90 is made of a material such as nylon or teflon to reduce and minimize **friction** and forms an are of approximately 120 (deg.) to match the curve of the bow center section 90.

'109 patent, col. 6, ll. 13-24. DeMonte says that the sliding movement of the bows produces friction between the bows and the truck trailer surface. Hence, the term "slideably supported" does not include the concept of wheels rolling "non-frictionally" along a track.

The specification language cited by DeMonte, however, does not prove that the patentee redefined the term "slideably" to specifically exclude rolling movement. The language merely refers to the use of a wear guard, which prevents damage from sliding friction in the preferred embodiment and is described in claim 13:

The segmented cover system as described in claim 1 further comprising a wear guard attached to the bow near the bow end to reduce friction between the bow and the frame.

In the preferred embodiment, the bow ends themselves are in direct contact with and slide along the surface of the truck trailer. Different levels of frictional force will be applied to the bow ends depending on the type of materials used. *See* id., col. 5, ll. 47-50 ("The bow ends 58 are preferably made from a high strength durable material such as polyurethane, although plastics, elastomers or other suitable materials can be used.").

Contrary to DeMonte's argument, there is static friction between a rolling wheel and the surface that it rolls upon, assuming that the surface is not frictionless (such as ice). Specifically, when horizontal force is applied to move the wheels in one direction, friction between the wheel and the surface pushes in the opposite direction causing the wheel to eventually stop moving. In the preferred embodiment where the bow ends move in direct contact with a surface, kinetic friction exists between the bow ends and the surface. Consequently, the bows move in "frictional engagement" with the truck trailer surface regardless of whether the '109 patent's preferred embodiment is used or the wheel and track arrangement is used. DeMonte's suggested exclusion of rolling bows is therefore erroneous.

DeMonte further says that the common sense intrinsic meaning of "slide" does not include the rolling motion of wheels FN10 and the specification and prior art do not disclose a rolling arrangement. However, the use of wheels for moving supports was known in the prior art, *see* Cappella, col. 1, ll. 54-59, and, although the preferred embodiment utilizes direct contact between the bows and the surface of the truck trailer with a wear guard, claim 1 does not require direct contact. "Slideabiy supported" was not explicitly defined contrary to its ordinary meaning in the specification. Hence, the direct contact arrangement "suggest[s] a preferred aspect of the invention subject to variability rather than a precise definition." *see* E-Pass Techs., Inc. v. 3COM Corp., 343 F.3d 1364, 1369 (Fed.Cir.2003), and the ordinary meaning of "slideabiy supported" applies.

FN10. At the *Markman* hearing, DeMonte suggested the examples of a skateboard, which it says "rolls" along a surface on wheels, and a snowboard, which it says "slides" along a surface.

The jury will be told that "slideably supported on the truck trailer" means:

The bows are adapted for smooth and continuous movement along a surface on the truck trailer, which supports the bows.

5. Fixedly Connected to the Drive Assembly

Claim 1 requires that "at least one bow is fixedly connected to the drive assembly such that the cover system can be extended or retracted by the drive assembly."

Sundance says that the term "fixedly connected" should be afforded its plain meaning and construed to mean "fastened securely ." DeMonte interprets the term to mean "rigidly and inflexibly connected."

The term "fixed" means: "Placed or attached firmly; fastened securely; made firm or stable in position." *See* Oxford English Dictionary (2d ed.1989). Applying the heavy presumption that claim terms must be given their ordinary meaning as viewed by one of ordinary skill in the art, Altiris, 318 F.3d at 1369, the term "fixedly connected" means "fastened securely" unless the specification or prosecution history show that the patentee intended to deviate from that meaning.

The specification never describes the connection between the bow and the drive assembly as "rigid" or "inflexible." Rather, it describes the connection in terms of the function that it performs: "Since the last bow 56 is fixedly connected at each end to each cable 30 and 32, movement of the cables in one direction extends the cover assembly 40 and movement of the cables in the opposite direction retracts the cover assembly 40." '109 patent, col. 5, ll. 12-16. The preferred embodiment utilizes a drive assembly of pulleys at the front and back end of the truck trailer connected by endless cables. Id., col. 4, ll. 59-67. When the operator uses a cranking handle to move the cable in, the last bow pushes the other bows back in and retracts the cover assembly. Id., col. 5, ll. 12-16. When the cranking handle is turned in the opposite direction, the last bow pulls the other bows out because it is connected to them via the individual cover sections. Id., col. 3, ll. 34-39. Hence, the last bow only needs to be connected enough to allow movement of the cover system when the drive assembly is operated.

Again, DeMonte is attempting to read in limitations from outside the claim. The plain meaning of "fixedly connected to the drive assembly" is appropriate when there is no intrinsic evidence to indicate otherwise. The jury will be told that "fixedly connected to the drive assembly" means:

Fastened securely to the drive assembly.

6. Independent

Claim 1 states that "a cover section can be removed from the cover system independent of the other cover sections." The parties have offered virtually identical interpretations of the term "independent."

Sundance construes the term "independent" as follows:

A cover section can be removed from the cover system without removing any other cover section.

DeMonte construes the term "independent" as follows:

One cover section can be removed from the system without removing other cover sections.

DeMonte adds to its construction, though, by arguing that in order for a cover section to be removed independently of other cover sections, the cover system must use the exact bow structure described in the specification. In other words, each bow must have a bow center section with two grooves for holding tarp segments on either side and two bow ends that can be detached so that one cover section can be slid out.

DeMonte says that in a March 20, 2003 statement to the PTO in the reexamination proceeding, Sundance took the position that claim 1 should be limited to this particular embodiment.FN11 According to DeMonte, the limitation is necessary to distinguish Hall. DeMonte, however, misconstrues Sundance's argument. Sundance merely stated that one cover section cannot be removed "independently" according to the specific Hall method, *see* Hall, col. 5, ll. 37-51, because when the covering plate, which "acts as a retaining means," is removed, the cover sections on either side of the plate pop out. By contrast, claim 1 recites that an individual cover section can be removed "independently"-the cover sections on both sides of a bow do not pop out like in the Hall method. Sundance did not, however, state that the preferred embodiment with grooved bow center sections and bow ends was the **only** method of removing cover sections "independently;" Sundance only stated that cover sections could not be removed "independently" in Hall. Indeed, claim 1 is not limited to one particular method of independent removal and claims 4, 5, 8, 9, and 10 relate to the grooved bow center section and bow end arrangement. For the reasons previously stated regarding the term "bows," limiting claim 1 to the preferred embodiment of bow center sections with detachable bow ends is not warranted by the intrinsic evidence.

FN11. Sundance's statement to the PTO in the reexamination proceeding is "of little consequence in the claim construction analysis" because the "analysis must be based primarily on the record established at the time the patent was granted." Arlington Indus., 345 F.3d at 1330.

The jury will be told that "independent" means:

Any one cover section can be removed from the cover system without removing any other cover section.FN12

FN12. DeMonte agreed to this construction of "independent" at the *Markman* hearing.

V. Conclusion

This is a tentative decision. Experience in patent cases shows that subsequent proceedings and particularly trial may reveal aspects of claim construction not apparent at this point of the case in the papers.

The disputed terms in claim 1 of the '109 patent are construed as follows:

Claim Term	Claim Construction
used with a truck trailer	The retractable segmented cover system is used with a trailer that is designed to be hauled by a truck.
bows	The bows are members that are either curved or straight and have any cross-sectional shape.
drive assembly	The drive assembly is an assemblage of two or more parts that act together to impart motion to the flexible cover sections and substantially parallel supporting bows from an unspecified source.
slideably supported on the truck trailer	The bows are adapted for smooth and continuous movement along a surface on the truck trailer, which supports the bows.
fixedly connected to	Fastened securely to the drive assembly.

the drive assembly	
independent	Any one cover section can be removed from the cover system without removing any other cover section.

SO ORDERED.

EXHIBIT A

CLAIM TERMS (ambiguous terms in bold type)	***Plaintiffs' Construction***	***Defendant's Construction***
A retractable segmented cover system	The cover system is divided into sections and is capable of being moved back and forth	A retractable cover system including multiple segments.
used with a truck trailer,	The cover system is used with a trailer that is designed to be hauled by a truck.	Statement of intended use of minimal importance since it is in the preamble, rather than a claim element. To the extent it has any legal significance, it means the system is constructed and arranged to fit on top of a box-shaped truck trailer.
Comprising		transitional term means including each of the following claim elements
a plurality of flexible cover sections	The cover sections are capable of being bent, flexed or collapsed.	A plurality of cover sections, each of which is flexible
with a plurality of substantially parallel supporting bows spaced there between	The bows are members that are either curved or straight and have any cross-sectional shape.	a plurality of substantially parallel support members which interconnect adjacent cover sections, each of the bows including a bow center section and bow ends attached to the outer portions of the center section.
and a drive assembly,	The drive assembly is an assemblage of two or more parts that act together to impart motion to a drive from an unspecified source.	An assemblage of two or more parts that cooperate to impart motion to a driven component, including multiple pulleys and two endless cables, and a motor or hand-operated crank which is operatively connected to one of the pulleys.
wherein each cover section is detachably connected between substantially parallel supporting bows,	Each cover section is between and linked to supporting bows. The cover sections are capable of being removed from the supporting bows.	Each cover section connects adjacent bows, and is detachable therefrom.
the bows are slidably supported on the truck trailer	The bows are adapted for movement along a surface on the truck trailer, which carries the bows.	The bows are supported on the trailer for sliding frictional engagement therewith, so that the bows slide, rather than roll along the trailer surface when moved.
and at least one bow is fixedly connected to the drive assembly	At least one bow is fastened securely to the drive assembly such that the cover system can be extended or retracted by the	At least one bow is rigidly and inflexibly connected to part of the drive assembly.

	drive assembly.	
such that the cover system can be extended or retracted by the drive assembly		the drive assembly is operable to retract or extend the cover system by way of the drive assembly's fixed connection to the bow.
and wherein a cover section can be removed from the cover system independent of the other cover sections.	A cover section can be removed from the cover system without removing any other cover section.	One cover section can be removed from the system without removing other cover sections.

E.D.Mich.,2003.
Sundance, Inc. v. DeMonte Fabricating, Ltd.