

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NORMAN INTERNATIONAL, INC,
Petitioner,

v.

ANDREW J. TESTAMENTARY TRUST, RUSSELL L. HINKLEY, SR.
(CO-TRUSTEE), and ROBERT F. MILLER (CO-TRUSTEE),
Patent Owner.

Case IPR2014-00283
Patent 6,283,192 B1

Before TONI R. SCHEINER, LINDA M. GAUDETTE, and
JACQUELINE WRIGHT BONILLA, *Administrative Patent Judges*.

SCHEINER, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

A. Background

Norman International, Inc. (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 17, 18, 26, 31, 35, 36, 38, 42, and 43 of U.S. Patent No. 6,283,192 B1 (Ex. 1001, “the ’192 patent”) pursuant to 35 U.S.C. § 311. Paper 2 (“Pet.”). Andrew J. Toti Testamentary Trust, Russell L. Hinkley, Sr. (Co-Trustee), and Robert F. Miller (Co-Trustee) (collectively, “Patent Owner”) filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). On the basis of the information presented in the Petition and the Preliminary Response, we determined that Petitioner had demonstrated a reasonable likelihood of prevailing with respect to at least one of the challenged claims, and on June 20, 2014, an *inter partes* review was instituted on the following asserted grounds: claim 17 under 35 U.S.C. § 102(b) as anticipated by Tachikawa;¹ and claim 26 under 35 U.S.C. § 103(a) as obvious over Tachikawa and Todd.² Paper 9 (“Dec.”).

After trial was instituted, Patent Owner filed a Patent Owner Response (Paper 23, “PO Resp.”), to which Petitioner filed a Reply (Paper 32, “Pet. Reply”).

Patent Owner relies on the Declaration of John A. Corey, P.E. (Ex. 2006, “Corey Decl.”) in support of its contentions. Petitioner relies on the Declarations of Lawrence E. Carlson (Ex. 1017, “Carlson Decl.”)³ and

¹ Japanese Unexamined Patent Application S54-38648 (published Mar. 23, 1979) (Ex. 1002).

² U.S. Patent No. 6,056,036 (issued May 2, 2000) (Ex. 1003).

³ An earlier Declaration of Lawrence E. Carlson (Ex. 1008), submitted with the Petition, was not considered because Petitioner failed to state its

Patrick E. Foley (Ex. 1018, “Foley Decl.”), both submitted with its Reply, in support of its contentions.

Both Patent Owner and Petitioner filed Motions to Exclude certain evidence. Paper 34 (“PO Mot. to Exclude”); Paper 37 (“Pet. Mot. to Exclude”).

Oral argument was requested by both parties, and was held on February 26, 2015. A transcript of the oral argument is included in the record. Paper 51 (“Tr.”).

The Board has jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision, issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73, addresses issues and arguments raised during trial.

For the reasons discussed below, we determine that Petitioner has proved, by a preponderance of the evidence, that claim 17 of the ’192 patent is unpatentable as anticipated by Tachikawa, but has not proved that claim 26 would have been obvious over Tachikawa and Todd.

Patent Owner’s Motion to Exclude Evidence is denied-in-part and dismissed-in-part. Petitioner’s Motion to Exclude Evidence is denied-in-part and dismissed-in-part.

B. Related Matters

Patent Owner, together with Hunter Douglas, Inc.,⁴ filed suit against Petitioner, alleging infringement of the ’192 patent in *Hunter Douglas, Inc. v. Nien Made Enterprise Co.*, 1:13-cv-01412-MSK-MJW (D. Col. May 31, 2013). Pet. 2; Paper 7.

relevance or identify specific portions of the declaration that supported its challenge. Pet. 11.

⁴ Patent Owner identifies Hunter Douglas, Inc. as the exclusive licensee of the ’192 patent. Paper 7, 1.

C. The '192 Patent

The '192 patent, titled "Flat Spring Drive System and Window Cover," relates to "flat spring drives or motors, which are useful in numerous applications and, in particular, relates to the application of such flat spring drives in window cover systems." Ex. 1001, 1:16–19. The word "cover," as used in the '192 patent, "refers to expandable or extendible structures . . . includ[ing] slat structures such as so-called venetian or slat blinds." *Id.* at 1:21–23. For convenience, the invention is described below in connection with its application to venetian blinds. A venetian blind window cover system is depicted in Figure 1, below.

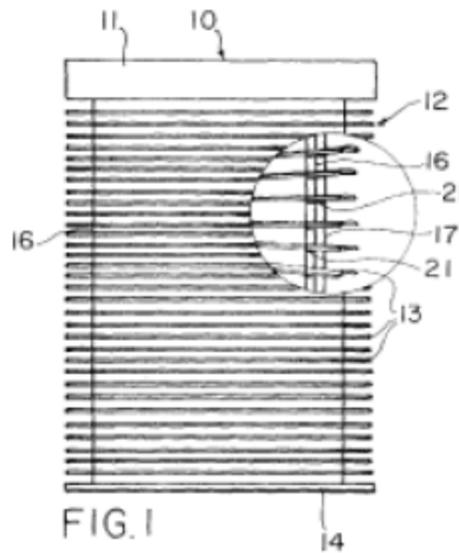


Figure 1, above, is a front elevational view of venetian blind window cover system 10 in the closed (fully lowered) position. Ex. 1001, 5:59–61. Window cover system 10 comprises top housing 11 having a spring drive unit (not shown) mounted therein. *Id.* at 5:61–64. Blind 12 comprises horizontal slats 13 and bottom rail 14. *Id.* at 5:64–65. Spaced cord ladders 17 are suspended from top housing 11 and rungs 21 of ladders 17 are routed along and/or attached to the underside of individual horizontal slats 13 so

that when ladders 17 are fully extended (lowered) and blind 12 is thus fully lowered, the weight of each slat 13 is supported by ladders 17, with little weight on lift cords 16, used to raise and lower blind 12. *Id.* at 6:17–22. In other words, the weight supported by lift cords 16 is at a maximum when blind 12 is opened (raised), and at a minimum when blind 12 is closed (lowered) (*id.* at 6:23–25), thereby necessitating the use of differing amounts of force to raise or lower blind 12 depending on its position (*id.* at 2:3–6).

The background section of the '192 patent describes the known use of conventional flat spring drives to assist in the opening and closing operations of window covers, such as venetian blinds. *Id.* at 2:7–25. A conventional flat spring drive (e.g., spring drive 26 illustrated in Fig. 13, below) comprises a pair of spools 27, 28, having flat metal spring 29 wound thereon. *Id.* at 7:21–23. In conventional flat spring drive 26, flat metal spring 29 provides nearly constant torque regardless of its wound position on spools 27, 28. *Id.* at 7:23–25. A drawback of conventional flat spring drive 26 is that the torque force may overcome the decreasing weight supported by lift cords 16 as blind 12 is lowered, resulting in instability and an uncontrolled raising operation when blind 12 is partially or fully extended (closed). *Id.* at 2:16–25.

The '192 patent describes the use of varied torque flat spring drives that are not as susceptible to the above-described drawbacks in the operating characteristics of conventional flat spring drives. *See generally id.* at 7:26–9:20. In varied torque flat spring drive 31, 41 (*see id.* at Figs. 7, 8), as spring 34, 44 “unwinds or winds as the blind is lowered or raised, the spring torque or force decreases or increases in direct proportion to, and remains closely matched to, the supported weight or compressive force of the blind.” *Id.* at

9:8–14. In varied torque flat spring drive 31, the torque or force of spring 34 is directly proportional to the degree of curve, or transverse curvature. *Id.* at 7:30–32. In varied torque flat spring drive 41, spring 44 is perforated, and the torque or force is directly proportional to the amount of spring material at a given point or region. *Id.* at 8:46–51.

The '192 patent also describes the use of a spring drive unit, illustrated in Figure 13 below, to improve the raising and lowering of window covers. *See id.* at 3:39–42.

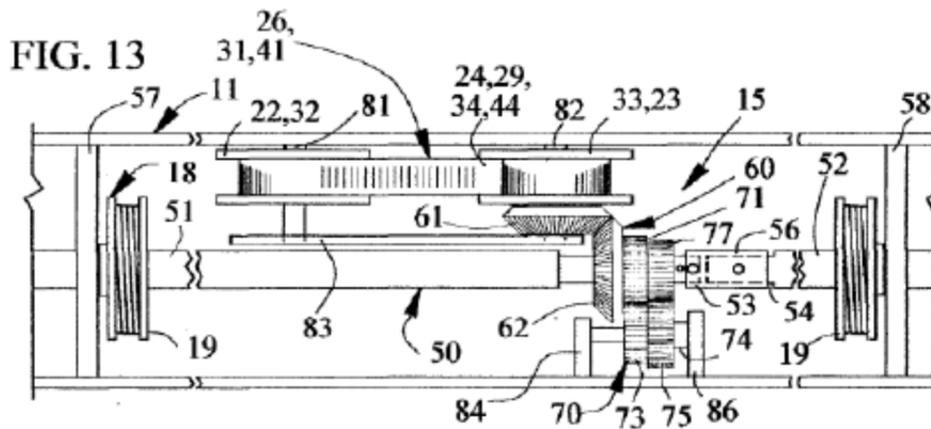


Figure 13, above, is a top plan view of an exemplary embodiment of spring drive unit 15 mounted inside housing 11 of venetian blind window cover system 10. Ex. 1001, 10:33–35. As illustrated in Figure 13, spring drive unit 15 includes shaft 50, conventional flat spring drive 26, or varied torque flat spring drive 31, 41, gear transmission 70, and bevel gear set 60 operatively connecting spring drive 26, 31, 41 to shaft 50 and gear transmission 70. *Id.* at 9:22–23, 10:34–35. However, spring drive unit 15 need not include gear transmission 70. *Id.* at 11:47–48.

Lift cords 16 of venetian blind 12 are wound around lift pulleys 19, mounted on rotatable shaft 50. *Id.* at 10:44–46. Gear transmission 70 comprises power gear 77 intermeshed with idler gear 75 and intermeshed

idler gears 71 and 73. *Id.* at 9:34–37. As a result of this arrangement, pulleys 19 and lift cords 16 rotate at one rate, the same rate as gear 77 and shaft 50, and spring 29, 34, 44 rotates at another rate, the same rate as right side output drum 33, idler gear 71, and bevel gears 60. *Id.* at 9:53–58. Typically, the gear ratio transmission 70 is selected so that lift cord pulleys 19 rotate faster than the spring drive 26, 31, 41, thereby diminishing, proportionately, the torque exerted by spring 29, 34, 44 as blind 12 is lowered. *Id.* at 9:59–61, 10:1–4. This permits the use of a more powerful spring to hold a large, heavy blind in position at the uppermost position, where the cord-supported weight is the greatest, and proportionately diminishes the force exerted by the spring at the lowermost, closed condition when the supported weight is at a minimum, so that the powerful spring does not overpower the weight of the blind and does not raise the blind uncontrollably. *Id.* at 10:4–12.

Both transmission 70 and bevel gear set 60 have inherent friction, and may individually, and collectively, act as a brake to retain the blind at any selected position between, and including, fully open and fully closed. *Id.* at 11:31–34, 60–62.

To provide increased torque, more than one spring drive can be utilized. *Id.* at 12:14–17. Figure 39, reproduced below, illustrates a window cover system that includes plural spring drive units. *Id.* at 16:63–64.

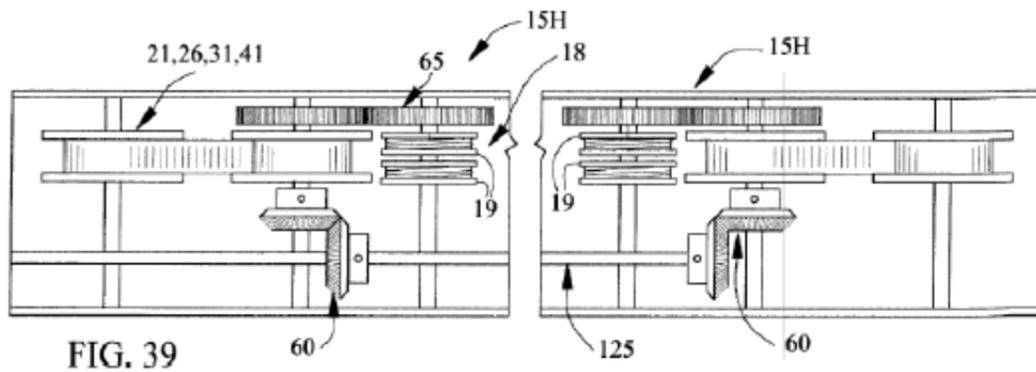


Figure 39, above, illustrates a window cover system for use with heavy or wide window covers. Ex. 1001, 16:52–54. Plural (two or more) spring drive units 26, 31, 41 are connected to each other connection to power transfer bar unit 125 via bevel gear sets 60. *Id.* at 16:66–17:2.

D. The Challenged Claims

Claims 17 and 26, both independent claims, are reproduced below.

17. A window cover system comprising:

an extendible window cover; a housing; lift cords attached to the cover and wrapped around pulleys mounted to the housing for raising and lowering the extendible cover; and

a spring drive system connected to the lift cords for assisting the raising and lowering of the cover; the spring drive system comprising:

a shaft mounted to the housing, a spring drive comprising at least one substantially flat spring; the spring drive being mounted to the housing and having a storage end and a rotatable end, the spring drive having a torque or force which decreases as the cover is extended and increases as the cover is retracted, and a bevel gear set having one gear connected to the rotatable spring end and a second gear operatively connected to the shaft for rotating the lift cord pulleys, the spring drive thereby applying the varying torque or force to the cover and having inherent inertia maintaining the position of the cover.

Ex. 1001, 24:47–67.

26. A window cover system comprising: an extendible window cover; a housing; at least one lift cord attached to the cover and wrapped around a pulley mounted to the housing for extending and retracting the extendible cover; a plurality of spring drives, connected to the pulley for assisting the extending and retracting of the cover; the individual ones of the spring drives comprising a first, storage spool, a second, output spool operatively connected to the pulley, and a flat spring wound on and between the first and second spools; and a first shaft on which the output spool is mounted and a second shaft on which the pulley is mounted, the two shafts being oriented transverse to one another; and a pair of meshed bevel gears mounted one on each shaft and connecting the shafts for rotation together.

Id. at 27:59–28:5.

E. Grounds of Unpatentability Instituted for Trial

An *inter partes* review was instituted based on the following grounds of unpatentability:

Claim 17 under 35 U.S.C. § 102(b) as anticipated by Tachikawa; and
Claim 26 under 35 U.S.C. § 103(a) as unpatentable over Tachikawa and Todd.

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, “[a] claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears.” 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Techs., LLC*, 778 F.3d 1271, 1280 (Fed. Cir. 2015) (“Congress implicitly adopted the broadest reasonable interpretation standard in enacting the AIA,” and “the standard was properly adopted by PTO regulation.”). Under the broadest reasonable construction standard, claim

terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

“inherent inertia”

Claim 17 recites “a spring drive . . . having a torque or force which decreases as the cover is extended and increases as the cover is retracted, and a bevel gear set having one gear connected to the rotatable spring end and a second gear operatively connected to the shaft for rotating the lift cord pulleys, the spring drive thereby applying the varying torque or force to the cover and having *inherent inertia* maintaining the position of the cover.” Ex. 1001, 24:55–67.

Petitioner notes that the term “inherent inertia” appears only in the claims of the ’192 patent. Relying on a dictionary definition, Petitioner contends that the broadest reasonable construction of the term is the ordinary meaning of “inertia” (Pet. 15), “which is ‘a property of matter whereby it remains at rest or continues in uniform motion unless acted upon by some outside force.’”⁵ *Id.*

Patent Owner contends that Petitioner’s construction “ignores the predicate word ‘inherent’” (PO Resp. 17), that “[t]here are numerous references to ‘inertia’ disclosed in the ’192 specification” (*id.* at 18), and that “one of ordinary skill in the art would understand the term ‘inherent inertia,’ when read in light of the specification, without the need for formal construction” (*id.*). Patent Owner argues that “Petitioner makes no attempt

⁵ See *inertia*, THE NEW MERRIAM-WEBSTER DICTIONARY 380 (1989) (Ex. 1009).

to correlate its generic extrinsic evidence—a dictionary definition of just ‘inertia’—with any part or portion of the claims and specification of the ’192 Patent . . . [and] adds no clarity to the understanding of one of ordinary skill in the art and should be disregarded by the Board.” *Id.* Nevertheless, Patent Owner does not propose an alternative construction of “inertia,” or “inherent inertia,” except to argue that “the claimed ‘inherent inertia’ is a constituent element of the window covering system arranged so as to function with a specific capability” (PO Resp. 28). Patent Owner’s witness, Mr. Corey, testifies that he “disagree[s] with Petitioner’s construction of the claim term ‘inherent inertia’” (Ex. 2006 ¶ 72), but likewise offers no alternative construction or further basis for his disagreement.

Turning to the specification of the ’192 patent, we see that the word “inertia” appears in the following passages:

In addition to controlling the applied force of the spring, the transmissions alter the length of the cover and provide *inertia* and friction for maintaining the blind at selected positions between and including open and closed positions.

Ex. 1001, 3: 47–51 (emphasis added).

[A] spring drive unit . . . includes a recoil roll or wheel or simply recoiler . . . for facilitating recoil of the spring when needed, preventing “explosion” of the spring, and providing braking action for supplementing the *inertia* of the unit to maintain the spring and associated window cover in the desired position.

Id. at 12:54–61 (emphasis added).

The recoiler 154 . . . facilitat[es] recoil of the spring when needed . . . and provid[es] braking action for supplementing the *inertia* of the spring drive unit to maintain the spring and associated window cover in desired positions.

Id. at 16:32–37 (emphasis added).

The coil spring recoiler 161 opposes the unwinding of the spring and facilitates recoiling of the spring when needed . . . and provides braking action for supplementing the torque and *inertia* of the spring drive unit to maintain the spring and associated window cover in desired positions.

Id. at 16:43–49 (emphasis added).

The recoilers 154-154 facilitate recoiling of the associated spring when needed . . . and provide braking action for supplementing the *inertia* of the spring drive units to maintain the springs and associated window cover in desired positions.

Id. at 17:43–49 (emphasis added).

In each instance, the specification of the '192 patent uses the term “inertia” in the context of a window cover system that maintains the window cover at a desired position. We determine that the construction of “inertia” offered by Petitioner is consistent with the use of the word in the specification, and would be understood by one of ordinary skill in the art to mean: “a property of matter whereby it remains at rest or continues in uniform motion unless acted upon by some outside force.” Pet. 15. Moreover, as inertia is itself an attribute, or property, of matter, we determine that the word “inherent” does not contribute any additional meaning to the term, or change the way it would be understood by one of ordinary skill in the art.

B. Motions to Exclude Evidence

Both Patent Owner and Petitioner filed Motions to Exclude certain evidence. Paper 34 (“PO Mot. to Exclude”); Paper 37 (Pet. Mot. to Exclude).

1. Patent Owner’s Motion to Exclude

Patent Owner seeks to exclude Exhibit 1002, “which consists of a Japanese patent application by inventor Tachikawa and a purported English translation of the same.” PO Mot. to Exclude 1. Patent Owner does not dispute the accuracy of the translation, but contends that Exhibit 1002 is not admissible under 37 C.F.R. § 42.61 because Petitioner failed to file “an affidavit attesting to the accuracy of the translation . . . with the document” (PO Mot. to Exclude 2), in violation of 37 C.F.R. § 42.63(b).

It is undisputed that Petitioner did not file the required affidavit with Exhibit 1002. However, Petitioner, in its Opposition to Patent Owner’s Motion to Exclude, contends that “Exhibit 1002 is a translation document that Patent Owner *itself* filed . . . in an application related to the ’192 patent” (Paper 42, 1), and, therefore, Exhibit 1002 “is admissible because ‘[c]ertification is not necessary as a condition to admissibility when the evidence to be submitted is a record of the Office to which all parties have access’ under 37 C.F.R. § 42.61(b)” (*id.*).

There is no dispute that Exhibit 1002 is a true copy of the document Patent Owner submitted during prosecution of a related application. Tr. 7:4–17, 24:6–11. Nevertheless, we agree with Patent Owner that § 42.61(b) “does not obviate the requirement of an affidavit attesting to the accuracy of a foreign document under § 42.63(b).” Paper 45 (Reply to Petitioner’s Opposition to the Motion to Exclude Evidence), 2.

Considering the totality of the circumstances, we concluded, as discussed during the oral hearing, that it would be appropriate, in this instance, to waive our rules to the extent we would allow Petitioner, within five days from the date of the oral argument, “to submit an affidavit attesting to the accuracy of the translation that was previously submitted” (Tr. 8:2–3), with the proviso that the affidavit “meet the requirement[s] of our rules,” specifically “[42 C.F.R. §§] 42.63, 42.2, and also 1.68” (*id.* at 8:2–5).

Petitioner complied in a timely manner (Paper 50; Ex. 1021). Accordingly, Patent Owner’s Motion to Exclude is denied with respect to Exhibit 1002, and we shall admit and rely on the exhibit.

Patent Owner further seeks to exclude Exhibits 1004, 1005, 1006, and 1007 because “[t]he Board determined that trial should not be instituted on *all* grounds . . . that involved those exhibits,” thus, the exhibits “have no bearing on any issue to be decided by the Board . . . [and] should be excluded pursuant to FRE 402 and 403.” PO Mot. to Exclude 6.

Because we did not rely on any of those exhibits in rendering our decision, we dismiss Patent Owner’s Motion with respect to Exhibits 1004, 1005, 1006, and 1007 as moot. We decline to strike those exhibits from the record, as Patent Owner has not established that such action is necessary.

2. Petitioner’s Motion to Exclude

Petitioner seeks to exclude Exhibit 2006 (Corey Decl.) as inadmissible for various reasons. Pet. Mot. to Exclude 2. Alternatively, Petitioner urges that we “should give no or diminished weight to Exhibit 2006.” *Id.*

We considered Mr. Corey’s Declaration, but only to the extent of his testimony that he “disagree[s] with Petitioner’s construction of the claim term ‘inherent inertia’” (Ex. 2006 ¶ 72). We accorded this testimony no

weight, as Mr. Corey did not elaborate on it—nor did he offer an alternative construction of the term. Accordingly, Petitioner’s Motion to Exclude Exhibit 2006 is denied.

Petitioner also seeks to exclude Exhibits 2007, 2008, 2009, and 2010. Because we did not rely on any of these exhibits in rendering our decision, Petitioner’s Motion to Exclude Exhibits 2007, 2007, 2009, and 2010 is dismissed as moot.

C. Principles of Law

To prevail in its challenge to the patentability of the claims, Petitioner must prove unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

To establish anticipation, each and every element in a claim, arranged as recited in the claim, must be found in a single prior art reference. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008); *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001). While the elements must be arranged or combined in the same way as in the claim, “the reference need not satisfy an *ipsissimis verbis* test,” i.e., identity of terminology is not required. *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009); *In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990).

A single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation. Thus, a prior art reference without express reference to a claim limitation may nonetheless anticipate by inherency. “Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claims limitations, it anticipates.”

Perricone v. Medicis Pharm. Corp., 432 F.3d 1368, 1375–76 (Fed. Cir.

2005) (citations omitted). “In general, a limitation or the entire invention is inherent and in the public domain if it is the ‘natural result flowing from’ the explicit disclosure of the prior art.” *Schering Corp. v. Geneva Pharms., Inc.*, 339 F.3d 1373, 1379 (Fed. Cir. 2003).

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

An invention “composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418. Moreover, a ground of obviousness must include “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). “[T]his analysis should be made explicit” and it “can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *KSR*, 550 U.S. at 418.

We analyze the instituted grounds of unpatentability in accordance with those principles.

D. Grounds of Unpatentability

1. Claim 17—Anticipation by Tachikawa (Ex. 1002)

Petitioner contends Tachikawa “discloses a window cover system with a Venetian blinds roll-up device powered by a spring motor” (Pet. 25), which includes “every element of claim 17, and therefore anticipates this claim” (*id.*). Patent Owner argues Tachikawa fails to disclose a spring drive “having inherent inertia maintaining the position of the cover.” PO Resp. 27.

a. Overview of Tachikawa (Ex. 1002)

Tachikawa describes a device for raising and lowering venetian blinds. Ex. 1002, 209. Figure 2 of Tachikawa, reproduced below, depicts a vertical front, cross-sectional view of the device. *Id.* at 210.

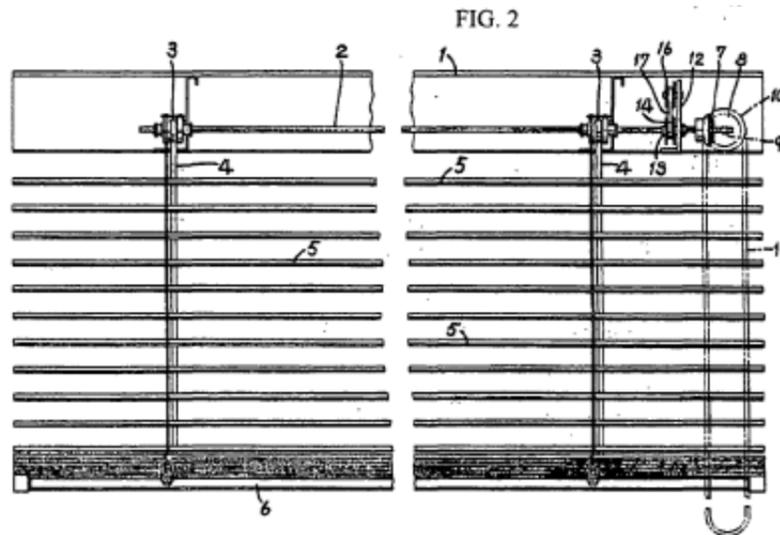


Figure 2 of Tachikawa, above, shows a device for raising and lowering venetian blinds comprising upper case 1 having rotatable operating shaft 2 mounted thereon. *Id.* at 209. Drums 3 are attached to multiple locations on operating shaft 2. *Id.* Tapes 4 are wound onto drums 3, passed through throughholes in blind slats 5, and coupled to lower case 6. *Id.* Bevel gear 7

is attached to one end of operating shaft 2 and engages bevel gear 8. *Id.* Chain pulley 10 is fixed to drive shaft 9 of bevel gear 8. *Id.* Endless chain 11 is hung on chain pulley 10 and is suspended downward. *Id.*

The blinds are raised or lowered by pulling chain 11 to turn chain pulley 10, thereby turning operating shaft 2 through engagement and interlocking of bevel gears 7, 8. *Id.* at 210. When the blinds are raised, tapes 4 wrap around drums 3 that turn in the same direction as operating shaft 2, pulling lower case 6 and sequentially stacking slats 5 on lower case 6. *Id.* In the closed, or lower-most position of the blinds, the load is only that of lower case 6. *Id.* As the blinds are raised, the torque required to turn operating shaft 2 increases as the load of slats 5 is applied. *Id.* Conversely, when the blinds are lowered, the load becomes smaller, decreasing the force necessary to turn operating shaft 2. *Id.* at 209.

To eliminate the problem of torque variance during operation of the blinds, Tachikawa employs spring 17. *Id.* at 210. Spring 17 is wound between spool 16 and spool 14. *Id.* Spool 16 is rotatably, axially fitted onto center shaft 15 on support plate 12, mounted inside upper case 1. *Id.* Spool 14 is fixed to shaft tube 13 (through which operating shaft 2 passes), also mounted on support plate 12. *Id.* Alternatively, spool 14 is fixed to drive shaft 9. *Id.*

As Tachikawa explains,

in response to the torque of turning the operating shaft 2 based on the load P as the blinds are rolled up to the uppermost end, . . . spring 17 produces a torque T in the opposite direction and identical to the torque due to the load P based on reduction of the curvature radius R of the starting end wound onto spool 14.

Id.

[A]s the blinds are rolled down, the load P decreases gradually, changing gradually to load p when rolled down to the lowermost end, in response to which the curvature radius of . . . spring 17 is gradually increased from the curvature radius R of the starting end to the curvature radius r of the terminal end . . . so that a spring torque t in the opposite direction and identical to the torque on the operating shaft 2 due to load p is generated at the terminal end.

Id.

As Tachikawa further explains,

When . . . spring 17 of this sort is installed, it suffices to apply a small constant force in order to manipulate the endless chain 11 via bevel gears 7, 8 in order to turn the operating shaft 2, and if the manipulation of the endless chain 11 is stopped mid-way during roll-up or roll-down of the blinds, the torque of the blinds descending under their own weight will be balanced out by an identical spring torque in the opposite direction due to the . . . spring, so the blinds will stop at the mid-way position.

Id.

b. Analysis

Petitioner identifies the following elements of Tachikawa's device as corresponding to the limitations of challenged claim 17:

Challenged Claim 17	Disclosure in Tachikawa	Pet.
A window cover system comprising	A venetian blinds roll-up device (Ex. 1002, Title, Figs. 3, 4)	25
an extendable window cover	slats 5 (Ex. 1002, Fig. 4)	25
a housing	upper case 1 (Ex. 1002, Figs. 3, 4)	25

Challenged Claim 17	Disclosure in Tachikawa	Pet.
lift cords attached to the cover and wrapped around pulleys mounted to the housing for raising and lowering the extendable cover	tapes 4 passed through holes in slats 5 and wound onto drums 3 (Ex. 1002, 209, Fig. 4)	26
a spring drive system connected to the lift cords for assisting the raising and lowering of the cover	shaft 2, spring 17, bevel gears 7, 8 (Ex. 1002, Figs. 3, 4)	26–27
the spring drive system comprising: a shaft mounted to the housing	shaft 2 is mounted on upper case 1 (Ex. 1002, 209)	27
a spring drive comprising at least one substantially flat spring	spring 17 has a curved radius R or r which corresponds to a transversely coved or curved spring (Ex. 1002, 210, Figs. 7, 8)	27–28
the spring drive being mounted to the housing and having a storage end and a rotatable end	spring 17 is mounted to upper case 1 via support plate 12, and is wound diagonally between fixed drum 14 and rotatable drum 16 (Ex. 1002, 210, Figs. 3, 4)	28–29
the spring drive having a torque or force which decreases as the cover is extended and increases as the cover is retracted	spring 17 constantly generates a torque in the opposite direction and identical to the torque on operating shaft 2 due to the load of the blinds acting upon the operating shaft “which has the effect that the force for manipulating the operating shaft in order to perform roll-up and roll-down of the blinds can be a small constant force regardless of the position of the blinds” (Ex. 1002, 209)	29–30

Challenged Claim 17	Disclosure in Tachikawa	Pet.
and a bevel gear set having one gear connected to the rotatable spring end and a second gear operatively connected to the shaft for rotating the lift cord pulleys	bevel gear 7 is connected to shaft 2, bevel gear 8 is connected to the rotatable end of spring 17	30–31
the spring drive thereby applying the varying torque or force to the cover and having inherent inertia maintaining the position of the cover	the spring drive has inherent inertia by virtue of its mass	31

Patent Owner argues that Tachikawa fails to disclose a spring drive applying “varying torque or force to the cover and having inherent inertia maintaining the position of the cover.” PO Resp. 27. As discussed above, we construed the term “inherent inertia” as “a property of matter whereby it remains at rest or continues in uniform motion unless acted upon by some outside force” (*see supra* section II.A.).

To the extent Patent Owner argues that “the claimed ‘inherent inertia’ is a constituent element of the window covering system arranged so as to function with a specific capability” (PO Resp. 28), we agree. This argument does not, however, persuade us that the claimed window cover system is patentable over Tachikawa. Nor are we persuaded by Patent Owner’s argument that Tachikawa “expressly relies on ‘manipulation of the endless chain 11’ (*i.e.*, an external operating cord) in order to maintain the position of the cover ‘during roll-up or roll-down of the blinds’” (*id.*), in contrast to claim 17, “wherein the inherent inertia of the spring drive itself must ‘maintain[] the position of the cover’ without the benefit of any external

operating cord separately manipulated by the operator” (*id.* at 28–29 (brackets original)).

Petitioner contends that “inherent inertia is part of the overall design of Tachikawa’s spring drive for maintaining the position of the cover at different roll-up or roll-down positions.” Pet. Reply 3. In other words, Tachikawa’s spring drive, operating as a constituent element of the window covering system, functions to maintain the window cover at a desired position unless the system is acted on by some outside force. This finding is supported by substantial evidence. Specifically, as noted in the Petition, Tachikawa’s spring 17 constantly generates a torque in the opposite direction and identical to the torque on an operating shaft due to the load of the blinds acting upon the operating shaft, “which has the effect that the force for manipulating the operating shaft in order to perform roll-up and roll-down of the blinds can be a small constant force regardless of the position of the blinds” (Pet. 29; Ex. 1002, 209). Tachikawa teaches that this also has the effect that “the blinds do not fall spontaneously due to the weight of the blinds if roll-up is stopped mid-way, but are rather stopped at that position by the spring torque.” Ex. 1002, 209. We credit the testimony of Petitioner’s witness, Mr. Carlson, that “there are three factors that cause the blinds to ‘stop at the midway position’ (i.e. maintain the position of the cover): 1) the spring torque described above, 2) the inherent inertia necessarily present in all mechanical systems, and 3) the friction that is also inherently present in mechanical systems.” Ex. 1017 ¶ 35.

With respect to “endless chain 11,” we note that claim 17 does not preclude an “external operating cord separately manipulatable] by the

operator.” PO Resp. 29. Moreover, Mr. Carlson notes that Tachikawa discloses

if the manipulation of the endless chain 11 is stopped mid-way during roll-up or roll-down of the blinds, the torque of the blinds descending under their own weight will be balanced out by an identical spring torque in the opposite direction due to the . . . spring, so the blinds will stop at the mid-way position.

Ex. 1017 ¶ 34 (quoting Ex. 1002, 210). We credit Mr. Carlson’s testimony that it is not “the manipulation of the endless chain in Tachikawa that maintains the position of the cover” (Ex. 1002 ¶ 34), rather, manipulation of endless chain 11 “*actuates* Tachikawa’s blinds up or down” (*id.* ¶ 35). As Tachikawa explains, “[w]hen . . . spring 17 . . . is installed, it suffices to apply a small constant force in order to manipulate the endless chain 11 via bevel gears 7, 8 in order to turn the operating shaft 2” (Ex. 1002, 210). In other words, endless chain 11 merely is used to exert an outside force to overcome the inherent inertia of Tachikawa’s venetian blind roll-up device.

We are persuaded, by a preponderance of the evidence, that Tachikawa’s spring drive, operating as a constituent element of its window covering system, functions to apply varying torque or force to the window cover, maintaining the window cover at a desired position unless the system is acted on by some outside force. Therefore, we are persuaded by a preponderance of the evidence, that Tachikawa satisfies the disputed claim limitation of a spring drive “having inherent inertia maintaining the position of the cover.” PO Resp. 27. Moreover, having reviewed Petitioner’s identification of the remaining limitations of claim 17 (Pet. 25–31), we are persuaded, by a preponderance of the evidence, that Tachikawa discloses those limitations as well.

Having considered Petitioner's and Patent Owner's positions, as well as the supporting evidence, we conclude that Petitioner has proved, by a preponderance of the evidence, that claim 17 is unpatentable under 35 U.S.C. § 102 as anticipated by Tachikawa.

2. Claim 26—Obviousness over Tachikawa and Todd

Petitioner contends that

Tachikawa discloses a window cover system with [venetian] blinds roll-up device using a spring drive. Window cover systems using two or more spring [drives] were well known before the earliest filing date of the 192 Patent. For example, Todd demonstrates that it was well known to a person of ordinary skill in the art at the time of the invention to use multiple spring drives for assisting the extending and retracting of a window cover. Thus, it would have been obvious to modify Tachikawa with a plurality of spring drives depending on the weight and size of a window cover as demonstrated by Todd.

Pet. 31–32.

Having considered the information provided in the Petition, we conclude that Petitioner has failed to prove by a preponderance of the evidence that the window cover system of claim 26 would have been obvious over Tachikawa and Todd. Petitioner points to elements of both references, maps them to elements of claim 26, and argues that it would have been obvious to modify Tachikawa's window cover system with a plurality of spring drives "depending on the weight and size of a window cover." Pet. 31–36. Even if we consider this latter argument to be an adequate reason for combining the elements of the references, Petitioner does not explain how one of ordinary skill in the art would go about combining the elements, or what modifications one of ordinary skill in the art necessarily

would have made in order to combine the elements. Nor does Petitioner—in the Petition—point to evidence establishing that modifying Tachikawa to have a plurality of spring drives would have been routine for one of ordinary skill in the art. What is missing from the Petition is explicit, “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d at 988; *KSR*, 550 U.S. at 418.

To the extent Petitioner attempts to bolster its initial obviousness challenge with the Declarations of Mr. Carlson and Mr. Foley (Exs. 1017, 1018)—submitted with its Reply—we are not persuaded, as there is no apparent reason this information could not have been developed in the Petition. *See* 37 C.F.R. § 42.22(a)(2).

We conclude that Petitioner has failed to prove that claim 26 is unpatentable under 35 U.S.C. § 103 over the combined teachings of Tachikawa and Todd.

III. CONCLUSION

Petitioner has demonstrated, by a preponderance of the evidence, that claim 17 of the '192 patent is unpatentable under 35 U.S.C. § 102(b) as anticipated by Tachikawa. Petitioner has not, however, demonstrated, by a preponderance of the evidence, that claim 26 is unpatentable under 35 U.S.C. § 103 as obvious over Tachikawa and Todd.

IV. ORDER

Accordingly, it is

ORDERED that claim 17 of U.S. Patent No. 6,283,192 B1 is unpatentable;

FURTHER ORDERED that Patent Owner's Motion to Exclude is denied-in-part and dismissed-in-part;

FURTHER ORDERED that Petitioner's Motion to Exclude is denied-in-part and dismissed-in-part; and

FURTHER ORDERED that, because this is a final written decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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Patent 6,283,192 B1

For PETITIONER:

Bing Ai
Kourtney Mueller Merrill
Douglas L. Sawyer
PERKINS COIE LLP
norman-hd-ipr@perkinscoie.com
KMerrill@perkinscoie.com
DSawyer@perkinscoie.com

For PATENT OWNER:

Kristopher L. Reed
Darin Gibby
KILPATRICK TOWNSEND & STOCKTON LLP
kreed@kilpatricktownsend.com
dgibby@kilpatricktownsend.com