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United States Court of Appeals for the Federal Circuit

05-1201

MINEBEA CO., LTD.,

Plaintiff-Appellant,

v.

THINK OUTSIDE, INC.,

Defendant-Appellee,

and

PERIPHERAL TECHNOLOGY, INC.,

Defendant-Appellee.

DECIDED: January 25, 2006

Before NEWMAN, LOURIE, and SCHALL, Circuit Judges.

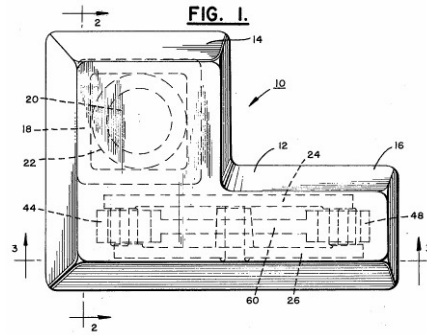
LOURIE, Circuit Judge.

Minebea Co., Ltd. appeals from the decision of the United States District Court for the Southern District of California granting summary judgment of noninfringement of U.S. Patent 4,433,225 in favor of Think Outside, Inc. and Peripheral Technology, Inc. Minebea Co., Ltd. v. Think Outside, Inc., No. 01-CV-771 (S.D. Cal. Sept. 29, 2003) ("Decision"). Because the district court properly construed the claim term "pivot" and

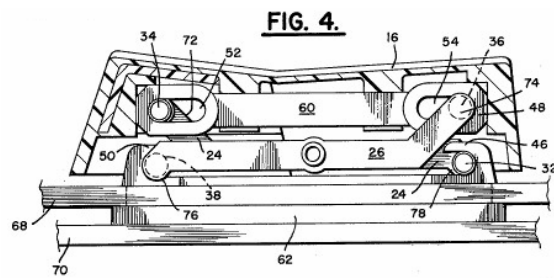
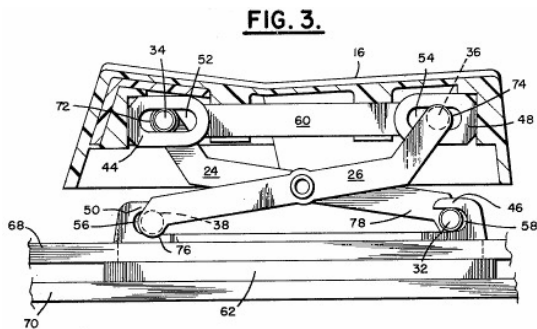
properly determined that the accused product did not meet that limitation, either literally or under the doctrine of equivalents, we affirm.

BACKGROUND

The '225 patent, assigned to Minebea, discloses a mechanism for preventing an “oddly-shaped” keytop, such as an L-shaped keytop, on a computer keyboard or an electric typewriter from tilting and binding when it is pressed down on an area of the keytop surface that is not directly above the keyswitch. The keytop is the exterior part of the keyboard that a typist presses down on in order to input information into a computer or to type on a typewriter. A keyswitch lies above a circuit board and translates the mechanical force imparted on the keytop into an electrical signal. Keytops are commonly square or rectangular in shape, but can also be “oddly-shaped,” such as the L-shaped keytop shown below in figure 1. '225 patent, col. 1, ll. 23-25. The L-shaped keytop consists of a main portion (14) that is directly above the keyswitch (18), and a stem portion (16), which is cantilevered from the main portion. According to the specification, “oddly-shaped” keytops may be advantageous over square and rectangular keytops for certain machine functions because they increase “the useable keytop area . . . without upsetting the esthetics of the keyboard.” Id., col. 1, ll. 27-31. A shortcoming of “oddly-shaped” keytops, however, is that they are prone to tilting and binding when the typist presses down on the stem portion instead of the main portion. The patented invention addresses this shortcoming by placing a leveling mechanism underneath the stem portion of the “oddly-shaped” keytop. Id., col. 1, l. 64 to col. 2, l. 5.



The leveling mechanism disclosed in the patent specification consists of a pair of lever arms (24, 26) that are joined by a central pivot. The central pivot is formed by a shaft that extends from the middle of one of the two lever arms (24) and locks into a collar in the other lever arm (26). At the ends of both lever arms are studs (34, 36, 38, 32) that protrude into a slot or a U-shaped opening (52, 54, 56, 58, respectively). As shown in figure 3, when the keytop is in its non-actuated position, the studs are in an intermediate position in their slots. As shown in figure 4, when the keytop is pressed down, the central pivot rotates and the studs at the ends of the lever arms rotate and slide outwardly towards the ends of their slots. According to the patent specification: "Pressing on any side of the keytop will cause one side of the scissors-like linkage formed from lever arms 24 and 26 to close. Closing one side will naturally close the other, pulling the keytop down parallel to circuit board 70." *Id.*, col. 4, ll. 19-25.



On May 3, 2001, Minebea filed suit against Think Outside and Peripheral Technology in the United States District Court for the Southern District of California for infringement of the '225 patent. The product accused of infringement is the Stowaway Portable Keyboard ("SPK"), which is sold by Think Outside and manufactured by Peripheral Technology. The SPK's leveling mechanism consists of a rectangular outer linking frame that fits over the perimeter of a rectangular inner linking frame. The SPK's outer and inner linking frames are comparable to the lever arms disclosed in the '225 patent's leveling mechanism. The outer and inner linking frames are connected to each other by a central pin in an intermediate portion of the inner frame that fits into a slot in an intermediate portion of the outer frame. The SPK's pin and slot structure is comparable to the central pivot disclosed in the '225 patent. According to Think Outside and Peripheral Technology (hereinafter, collectively "Think Outside"), the SPK's central slot is elongated and allows the aforementioned pin to rotate and slide when the keytop is pressed down. The linking frames also have studs at their ends. The two upper studs fit into clamps molded on the underside of the keytop. The two lower studs fit into protrusions extending upward from a base plate. The SPK's studs are comparable to joints at the ends of the lever arms disclosed in the patent. According to Think Outside, the studs rotate when the keytop is pressed down, but they are prevented from sliding due to their attachment to the keytop or base plate.

On January 7, 2003, Think Outside filed a motion for summary judgment of noninfringement with respect to the SPK. Decision, slip op. at 1. On September 29, 2003, the court granted the motion. Id. The only independent claim asserted by Minebea is claim 1. Claim 1, in pertinent part, reads as follows:

A keytop levelling [sic] mechanism for use in conjunction with:

* * *

said levelling [sic] mechanism comprising:
a pair of lever arms joined at intermediate portions thereof by a pivot to form a scissors-like linkage having first, second, third, and fourth ends;
means for pivotally mounting said first and second ends to longitudinally opposed ends of said cantilevered portion;
means for pivotally mounting said third and fourth ends to separate joints adjacent said circuit board under said cantilevered portion; and
means for enabling at least two of said first, second, third, and fourth ends to slide in addition to pivot.

'225 Patent, col. 4, l. 61 to col. 5, l. 11.

Prior to granting Think Outside's motion for summary judgment of noninfringement, the district court issued an order construing various limitations of claim 1, including "a pair of lever arms joined at intermediate portions thereof by a pivot to form a scissors-like linkage." Minebea Co. LTD. v. Think Outside, Inc., No. 01-CV-771 (S.D. Cal. Aug. 19, 2002) ("Claim Construction"). The term "pivot" in claim 1 was construed to mean "a structure about which something turns or rotates that is fixed relative to the two arms." Decision, slip op. at 7. To arrive at its construction of the term "pivot," the court consulted various dictionaries, none of which, according to the court, expressly defined "pivot" as allowing for sliding motion. Claim Construction, slip op. at 12. Upon reviewing the specification, the court also noted that when both pivoting and sliding motion were envisioned for a particular structure of the leveling mechanism, viz., the articulating joints at the ends of the lever arms, the claims and the written description expressly provided for such motion. Id.

Relying on its earlier claim constructions, the district court granted Think Outside's motion for summary judgment of noninfringement with respect to the SPK. In

doing so, the court concluded that the SPK did not meet either the “pivot” limitation or the two “means for pivotally mounting” limitations. With respect to the “pivot” limitation, the court determined that the SPK did not literally meet that limitation because its pin and slot structure allowed for sliding motion, and thus was not a fixed pivot as the court’s construction of that term required. According to the court, “if the tops of the scissor arms of the SPK are fixed to the keytop, there must be sliding motion at least at the center connection of the arms in order for the mechanism to move up or down.” Decision, slip op. at 8. The court also concluded that the SPK did not meet the “pivot” limitation for purposes of the doctrine of equivalents. According to the court, “it is clear that the ‘way’ the SPK functions is fundamentally different from the ‘225 patent,” viz., if the SPK contained a fixed central pivot instead of a pin and slot structure, it could not function. Id., slip op. at 9.

The district court entered final judgment on November 24, 2004. Minebea timely appealed, and we have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

DISCUSSION

We review a district court’s grant of summary judgment de novo, reapplying the same standard used by the district court. Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp., 149 F.3d 1309, 1315 (Fed. Cir. 1998). Summary judgment is appropriate if there is no genuine issue as to any material fact and the moving party is entitled to a judgment as a matter of law. Fed. R. Civ. P. 56(c). “The evidence of the non-movant is to be believed, and all justifiable inferences are to be drawn in his favor.” Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 255 (1986). Claim construction is an issue of law, Markman v. Westview Instruments, Inc., 52 F.3d 967, 970-71 (Fed. Cir. 1995) (en

banc), that we also review de novo, Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc).

I.

On appeal, Minebea argues that the district court's decision of noninfringement was based on an erroneous construction of the claim term "pivot."¹ According to Minebea, by construing the term "pivot" to exclude sliding motion, the court did not give the term its ordinary meaning. Minebea contends that the ordinary meaning of "pivot" does not preclude sliding motion. Minebea also asserts that the patentee did not disclaim sliding motion in its central pivot in either the patent specification or the prosecution history. Although the specification expressly provides that other articulating joints in the claimed invention can have both pivoting and sliding motion, Minebea argues that the specification does not suggest that those two types of motion are otherwise mutually exclusive.

Think Outside contests Minebea's argument that the district court improperly construed the claim term "pivot." According to Think Outside, claim 1 differentiates between the motion allowed at the central pivot and the motion allowed at the articulating joints at the ends of the lever arms in its description of each. Specifically, Think Outside cites the portion of claim 1 that requires the central pivot to form a "scissors-like linkage," whereas the joints at the ends of the lever arms must "slide in addition to pivot." Think Outside also points to portions of the patent specification to

¹ Minebea also appeals from the district court's holding that the SPK does not meet either the "means for pivotally mounting said first and second ends" or the "means for pivotally mounting said third and fourth ends" claim limitations. Given our affirmance of the district court's judgment of noninfringement based on the "pivot" limitation, it is not necessary for us to decide whether the SPK meets the two "means for pivotally mounting" limitations.

support its position. Think Outside asserts that the only type of central pivot disclosed in the specification is a structure that is fixed in position relative to the lever arms. Think Outside further notes that the written description, like claim 1, expressly states that the joints at the ends of the lever arms both rotate and slide, but conspicuously fails to mention that there is any sliding motion at the central pivot.

We agree with Think Outside that the district court did not err in its construction of the claim term “pivot.” As an initial matter, we note that the parties do not dispute the portion of the district court’s construction of “pivot” defining it as “a structure about which something turns or rotates.” The parties, however, do disagree as to whether the “pivot” of claim 1 must be “fixed relative to the two arms.”

In Phillips v. AWH Corp., 415 F.3d 1303, 1317 (Fed. Cir. 2005), we noted that it is “entirely appropriate for a court, when conducting claim construction, to rely heavily on the written description for guidance as to the meaning of the claims.” Although the dictionary definition of the term “pivot” does not appear to exclude sliding motion, the district court properly determined that the written description limits the scope of the claim term “pivot” to a structure that is fixed in position relative to the lever arms, and thus excludes sliding motion. As the written description provides, “the levelling [sic] mechanism of the present invention utilizes a scissors-like linkage” fixed at an intermediate position relative to the lever arms. See ’225 Patent, col. 4, ll. 8-11. Because the linkage in a pair of scissors is fixed in position relative to the scissors, it necessarily follows that the central pivot of the written description must also be in a fixed position, as the district court’s claim construction requires. Moreover, a sliding central pivot would be inconsistent with the engineering principles behind the leveling

mechanism disclosed by the specification. Applying basic mechanics, because the joints at the ends of the lever arms in the specification's disclosed embodiment are capable of sliding in their respective slots, the leveling mechanism would not also need a sliding central pivot in order to allow the keytop to travel downward when it is pressed down.

In Phillips, we also stated that “[q]uite apart from the written description and the prosecution history, the claims themselves provide substantial guidance as to the meaning of particular claim terms.” 415 F.3d at 1314. There is no question in this patent that sliding and pivoting are different motions. Indeed, claim 1 provides that certain structures will “slide in addition to pivot.” Such language would be superfluous if sliding motion were subsumed in pivoting motion. See id. at 1317 (explaining that the term “steel baffles” strongly implies that the term “baffles” does not inherently mean objects made of steel). Moreover, claim 1, like the written description, requires the “pivot” to “form a scissors-like linkage.” Inherent in this language is the requirement that the “pivot” of claim 1 must have structural characteristics that allow it to “form a scissors-like linkage.” As explained above, a structural characteristic of a pivot with “a scissors-like linkage” is to be fixed in position relative to the lever arms. Lastly, we find unavailing Minebea’s argument that because the district court did not construe the term “scissors-like,” we too should not consider that term in our review of the court’s construction of “pivot.” Such a request is tantamount to construing claim limitations in a vacuum, and is plainly inconsistent with Phillips, which compels us to construe claim limitations in the context of the claim in which they appear. Id. at 1314.

II.

Even if we were to affirm the district court's construction of "pivot," Minebea contends that the court erred in concluding, as a matter of law, that the SPK does not literally meet the limitation. According to Minebea, it submitted sufficient evidence demonstrating that a person of ordinary skill in the art may consider the pin in SPK's pin and slot structure to be fixed in position relative to the lever arms, as required by the district court's construction. Specifically, Minebea relies on testimony from Think Outside's expert that, although the SPK's pin and slot structure contains some clearance between the pin and the slot, which allows for some non-rotational movement, there is a question whether this clearance is great enough to allow for sliding motion. Minebea contends that this question raises an issue of material fact that would preclude summary judgment, contrary to the district court's correct determination that there was no genuine issue of material fact.

Minebea also assigns error to the district court's determination that the SPK does not meet the "pivot" limitation under the doctrine of equivalents. To support its position, Minebea argues that the doctrine of equivalents inquiry is highly fact-intensive, and that the court did not properly consider its expert's declaration, which concluded that the SPK's pin and slot structure is equivalent to the "pivot" of claim 1. According to Minebea, its expert opined that the decision whether to have a sliding connection at the joints at the ends of the lever arms, as shown in the patent, or to have a sliding central pivot, as in the SPK, is nothing more than an insubstantial design choice. Minebea also points to testimony from Think Outside's expert that the sliding central pivot of the SPK performed the identical function of the fixed pivot of the patent. At a minimum, Minebea

contends that its expert's declaration and Think Outside's expert testimony sufficiently create a genuine issue of material fact that precludes the grant of summary judgment.

Think Outside responds by arguing that, as a matter of basic mechanics, because the studs at the SPK's lever ends are clamped so that they only rotate, the pin and slot structure must necessarily allow for sliding motion in order for the SPK to operate. Think Outside also cites measurements by Minebea's expert, who purportedly measured a clearance at the SPK's central pin and slot structure that was two and a half times greater than the clearance at the studs at the ends of the SPK's lever arms. Think Outside contends that there would not have been a need for such a vast difference in clearance between the two structures if the sole purpose for the clearance in the pin and slot structure was to facilitate rotating motion only, and not to allow for sliding motion.

Think Outside also asserts that the district court did not err in concluding that the SPK's pin and slot structure does not meet claim 1's "pivot" limitation under the doctrine of equivalents. Think Outside reiterates the district court's determination that no reasonable jury could find that the sliding central pivot of the SPK functions in an insubstantially different way than the fixed "pivot" of claim 1. Think Outside also contends that the meaning of the term "pivot" should not be extended to cover sliding pivots under the doctrine of equivalents because the inventor had the opportunity to expressly claim a central pivot with sliding motion, but chose not to do so. According to Think Outside, the patent is replete with claim language requiring both rotating and sliding motion at the joints at the ends of the lever arms, i.e., claims 1-3 and 5. Thus, Think Outside argues that if the patentee intended to include a central pivot with both

rotating and sliding motion within the scope of the claims, he would have expressly provided for such coverage. Because he has not, the patentee has effectively disclaimed coverage for such types of linkages.

We agree with the district court that the SPK does not meet the “pivot” limitation, either literally or under the doctrine of equivalents. With respect to whether the SPK’s central pin and slot structure literally meets the “pivot” limitation, we first note that Minebea has not disputed the district court’s characterization that the studs at the ends of the SPK’s lever arms are fixed so that they do not slide. This undisputed characterization of the SPK is critical because it follows from principles of basic mechanics that the only mechanism by which the SPK keytop can travel downwardly when pressed down upon is through a sliding central pivot.² Because sliding motion at the central pivot is precluded by the district court’s construction of “pivot,” with which we agree, we conclude that the SPK cannot literally meet that limitation. Furthermore, we are not persuaded by Minebea’s attempt to manufacture an issue of material fact by simply questioning whether the clearance in the SPK’s pin and slot structure is sufficient to allow for sliding. It is clear to us from the pictures of the SPK relied upon by Minebea’s expert and the difference in the amount of clearance measured in the SPK’s pin and slot structure compared to the studs at the ends of the lever ends that the SPK’s pin and slot structure functions by sliding motion.

Finally, we turn to the question whether the SPK’s pin and slot structure meets the “pivot” limitation under the doctrine of equivalents. As explained above, the ’225

² This reasoning supposes that the SPK’s lever arms are rigid, a structural characteristic of the SPK’s lever arms that the district court observed, and which Minebea does not challenge on appeal. Decision, slip op. at 9.

patent's written description discloses a leveling mechanism that operates by having the central pivot rotate only, but allows the studs at the ends of the lever arms to rotate and slide in their slots. '225 Patent, Col. 4, ll. 25-31. The SPK, on the other hand, has fixed joints at its lever ends and a sliding central pin and slot structure. The SPK's leveling mechanism operates by allowing the ends of the lever arms rotate only, but allows the central pin to rotate and slide in the central slot. For the SPK to utilize a fixed central pivot, as required by claim 1, other structures of the SPK's leveling mechanism, e.g., the ends of the lever arms, would have to be modified or replaced. That is the epitome of a substantial difference. Moreover, as the district court aptly recognized, the SPK's pin and slot structure and the '225 patent's fixed central pivot are not interchangeable; i.e., if one were to only replace the central pin and slot structure with a fixed central pivot, the SPK would not function.³ Thus, we agree with the district court that no reasonable trier of fact could find that that the SPK infringes claim 1 under the doctrine of equivalents.

We have considered Minebea's remaining arguments on appeal, including those supporting its appeal of the district court's denial of Minebea's motion for discovery under Federal Rule of Civil Procedure 56(f), and we find them to be unpersuasive.

³ We discern no error in the district court's conclusion that the results of the experiment by Minebea's expert purportedly demonstrating that the SPK could function with a fixed central pivot were unreliable.