

# United States Court of Appeals for the Federal Circuit

05-1373

CURTISS-WRIGHT FLOW CONTROL CORP.,

Plaintiff-Appellee,

v.

VELAN, INC.,

Defendant-Appellant.

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Appealed from: United States District Court for the Western District of Texas

Judge Orlando L. Garcia

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DECIDED: February 15, 2006

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Before RADER, Circuit Judge, FRIEDMAN, Senior Circuit Judge, and DYK, Circuit Judge.

RADER, Circuit Judge.

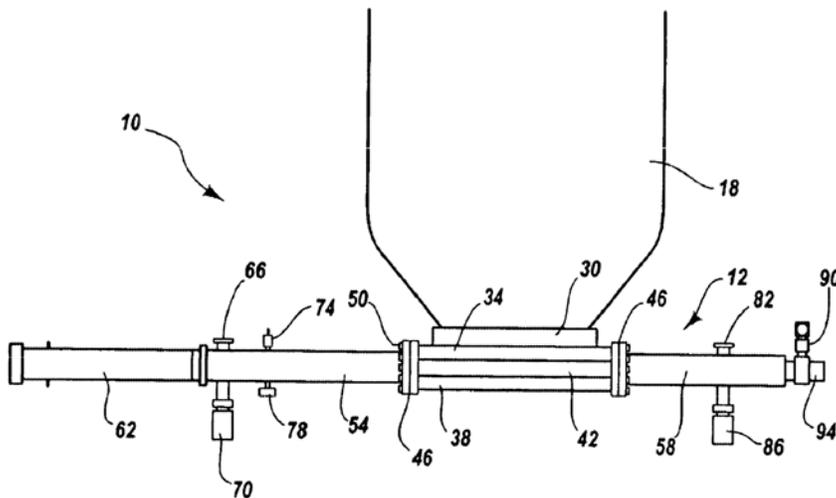
The United States District Court for the Western District of Texas issued a preliminary injunction in favor of Curtiss-Wright Flow Control Corporation (Curtiss-Wright). After construing claims of U.S. Patent No. 6,565,714 (the '714 patent), the trial court determined that Curtiss-Wright had shown a likelihood of success on the merits of its infringement action against Velan, Inc. Curtiss-Wright Flow Control Corp. v. Velan, Inc., Civil Action No. SA-04-CA-1157-OG, slip op. at 18 (W.D. Tex. 2005) (Preliminary Injunction Order). Because the district court erred in its construction of the term “adjustable,” this court vacates the preliminary injunction and remands.

I.

As described in the '714 patent, petroleum refineries recover valuable products from the heavy residual oil that is a byproduct of the refining process. '714 patent, col. 1, ll. 20-60. That recovery process is known as “delayed coking.” Id. Delayed coking heats the liquid petroleum residue to very high temperatures and then feeds the heated residue into a “coke drum.” In the drum, cracking and polymerization converts the liquid residue into valuable distillates and solid coke. Id. A typical coke drum might be 120 feet high and 30 feet in diameter with openings at the top and bottom. These openings have large, flanged metal plates known as “heads.” When the drum is full, the operators purge the byproducts and “de-head” the drum. During de-heading, the operators manually remove the top and bottom heads to remove the solid coke. Id. De-heading is both difficult and dangerous. Coke drums are very hot and the heads can weigh four tons. During removal, heated residues and coke can spill out and injure nearby workers. Id.

Curtiss-Wright's '714 patent claims a system and a method that de-heads the coke drum without manually removing the heads. '714 patent, col. 3, ll. 45-60. Instead, the de-heading system of the '714 patent includes a dual seated, linear motion, blind gate valve, i.e., a “de-header valve.” Id. The upper and lower seats have aligned circular openings that make a single hole at, for example, the bottom of the coke drum. The blind moves linearly, horizontally between the two seats to open and close the hole at the base of the coke drum.

Figure 2 of a related patent, U.S. Patent No. 6,660,131 (the '131 patent),<sup>1</sup> shows this type of de-header valve 12 attached to a coke drum 18. Figure 11 of the '131 patent, also reproduced below, shows the internal details of the de-header valve 12.<sup>2</sup> In these figures, the de-header valve 12 has a body 46 and upper and lower seats, 34 and 38. The upper and lower seats 34 and 38 are large metal rings whose openings line up to form a single hole. The upper seat 34 is a dynamic, live loaded seat, while the lower seat 38 is static. '714 patent, col. 8, ll. 51-62. Although not shown in figure 2, the blind, element 106 in figure 11, moves laterally within element 54. When the blind moves to the left, it opens the hole between seats 34 and 38. Thus, when the circular opening in the blind lines up with the openings in the seats, the blind is open.



**Fig. 2**

<sup>1</sup> Figure 2 of the '131 patent is the formal version of figure 2 of the '714 patent, which was issued with informal figures. The two figures do not differ in any material respect.

<sup>2</sup> Figure 11 of the '131 patent is the formal version of figure 8 of the '714 patent. The two figures do not differ in any material respect.

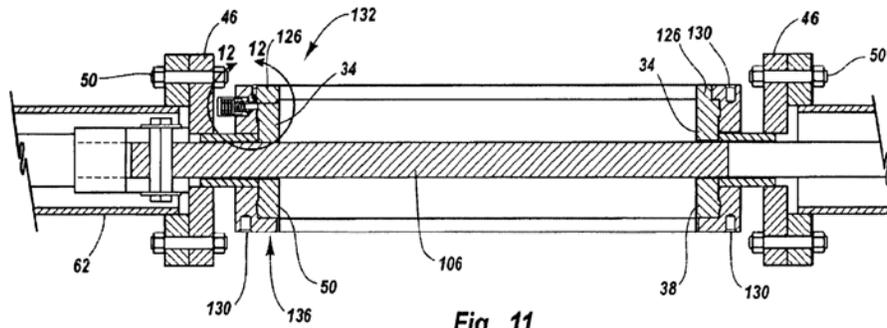


Fig. 11

The '714 patent describes the upper and lower seats, with reference to figure 2, as follows:

In the preferred embodiment, the static seat is a one piece seat that is securely fastened to de-header valve 12 and is preferably non-adjustable. . . . In contrast to the static seat, dynamic, live loaded seat is a moveable and adjustable seat that is energized from without the process stream via live seat adjustment mechanism. The function of the dynamic, live loaded seat is to provide point to point fine tuning of the system, and particularly the blind as it is sealed between upper and lower seats 34 and 38.

'714 patent, col. 9, ll. 9-19. Thus, as the blind moves between the top and bottom seats, the dynamic, live loaded seat (closest to the drum interior) exerts force downward on the blind. The invention adjusts that force to allow linear movement of the blind between the seats while keeping a tight seal on the drum. See id. at col. 4, ll. 17-67. In the preferred embodiment, the invention accomplishes this vital adjustment with an adjustment mechanism (the circled element in the upper-left-hand portion of figure 11). Id. at col. 13, ll. 43-50. The adjustment mechanism of the '714 patent functions to facilitate operation of the de-header system. See, e.g., id. at col. 14, ll. 50-55.

On December 16, 2004, Curtiss-Wright sued Velan, claiming that a Velan valve infringed the '714 patent. On March 1, 2005, Curtiss-Wright sought a preliminary injunction to prevent Velan from launching a new valve at an upcoming industry conference, alleging infringement of claims 14, 33 and 36 of the '714 patent. Velan's valves do not include adjustment mechanisms like those disclosed in the '714 patent. Instead, Velan's valves include upper dynamic, live loaded seats with internal biasing springs. These springs modulate the pressure on the seat to allow the blind to move. Velan designed its seats to allow replacement of these biasing springs. To change the biasing force in Velan's dynamic, live loaded seats, an operator must replace these internal biasing springs. Thus, Velan's system envisions removal of the valves from the coke drum. Preliminary Injunction Order, slip op. at 16-17.

Claim 14 of the '714 patent recites:

14. A coke drum bottom de-heading system comprising:

at least one coke drum containing manufactured coke therein, said at least one coke drum having a flanged bottom orifice;

a de-header valve removably coupled to said coke drum to facilitate the removal of said coke from said at least one coke drum by de-heading said at least one coke drum, said de-header valve comprising:

a main body having an [sic] flanged orifice therein for removably coupling said de-header valve to said flanged bottom orifice of said coke drum;

an upper and lower bonnet coupled to said main body;

an adjustable dynamic, live loaded seat coupled to said main body;

a static seat coupled to said main body in opposition to said dynamic, live loaded seat; and

a blind coupled to said main body and actuated by an actuator, said blind capable of moving in a bi-

directional manner within said de-header valve between said dynamic, live loaded and static seats to control the opening and closing of said de-header valve, said blind providing a seal between said dynamic, live loaded seat and said static seat, said coke drum is de-headed, thus preparing said coke drum for the removal of said coke, by actuating said blind from a closed, sealed position, to an open position thereby causing said coke that has accumulated on said blind and within said valve to be sheared from said blind.

'714 patent, claim 14 (emphasis added).

According to the trial court, the term “adjustable” in claim 14 means that the bias force on the live loaded seat can be changed in a manner that is “not limited by any time, place, manner, or means of adjustment.” Preliminary Injunction Order, slip op. at 16. Based on that construction, the trial court concluded that Curtiss-Wright had shown a reasonable likelihood of success on the merits of its infringement claim. Id., slip op. at 18. The trial court observed that Velan can “adjust” the bias force by replacing the springs in its de-header valve. Id. After further considering irreparable harm, the balance of hardships, and the public interest, the district court granted Curtiss-Wright’s motion for a preliminary injunction. Id., slip op. at 21. Velan appeals.

## II.

“The grant of a preliminary injunction under 35 U.S.C. § 283 is within the discretion of the district court. This court reviews a preliminary injunction decision for an abuse of discretion.” Gillette Co. v. Energizer Holdings, Inc., 405 F.3d 1367, 1370 (Fed. Cir. 2005) (citing Novo Nordisk of N. Am., Inc. v. Genentech, Inc., 77 F.3d 1364, 1367 (Fed. Cir. 1996)). “The court’s

determination can be overturned only on a showing that it abused its discretion, committed an error of law, or seriously misjudged the evidence.” We Care, Inc. v. Ultra Mark Int’l Corp., 930 F.2d 1567, 1570 (Fed. Cir. 1991) (citing H. H. Robertson, Co. v. United Steel Deck, Inc., 820 F.2d 384, 387 (Fed. Cir. 1987)). This court reviews claim construction without deference. Collegenet, Inc. v. Applyyourself, Inc., 418 F.3d 1225, 1230 (citing Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc)); Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995), aff’d, 517 U.S. 370 (1996).

The trial court’s claim construction followed a logical path. The court first set forth the ordinary meaning of “adjustable”: “capable of making a change to something or capable of being changed.” Preliminary Injunction Order, slip op. at 10. The court then determined that a narrower construction of “adjustable” would be inconsistent with other claims in the ’714 patent, which recite an adjustment mechanism that allows adjustment while the device is in use or operation. Id. at 11-13. In other words, the district court relied on claim differentiation during its claim construction. Finally, the district court explained that any construction of the term “adjustable” that requires the presence of the adjustment mechanism disclosed in the ’714 patent would be an impermissible narrowing of that claim term to the structure of the preferred embodiment.

While logical, this chain of reasoning errs because it places too much emphasis on the ordinary meaning of “adjustable” without adequate grounding of that term within the context of the specification of the ’714 patent. Moreover, to

the extent this reasoning relies on claim differentiation, it misapplies that limited tool of claim construction.

This court recently reiterated that the specification is the single best guide to the meaning of a claim term. Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc) (citing Vitronics Corp. v. Conceptronc, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)). In this case, the '714 patent's specification describes the deficiencies of the prior art, including the conventional requirement of removing the entire head unit from the coke drum during de-heading:

[The prior art] assemblies or devices require that the head unit be completely removed from the flange portion of the coke drum after each coking cycle and prior to the purging of the coke from the coke drum. This creates an extreme hazard to workers and provides an inefficient and time consuming procedure.

'714 patent, col. 2, ll. 49-54. The '714 patent specification further extols this invention for overcoming these deficiencies of the prior art:

Another critical aspect of the present invention is the ability to de-head the coke drum without having to remove the head unit, and to do so at a remote location with little or no manual requirements.

Id. at col. 4, ll. 13-17. The '714 patent then associates the adjustability of the live loaded seat with that critical aspect of the invention. In other words, the patent stresses that adjustment occurs during operation and without removal of the head unit:

In a normal coking process, extreme temperatures and pressures are present. Any variation in temperature between the upper and lower surfaces of the blind can cause the blind to bow. If the bowing is allowed to progress or continue, there is a danger in breaking the seal created between [the] upper and lower seats and [the] blind, which could cause

damage to the system and upset the manufacturing process. However, the ability of the present invention to adjust the load exerted on [the] blind, utilizing the dynamic, live loaded seat and its adjustment mechanism, provides a way to compensate for or modulate any existing bowing that might occur. By increasing the applied load of the dynamic, live loaded seat on [the] blind, the bowing is substantially eliminated . . . .

Id. at col. 11, ll. 7-20 (reference numbers omitted). With respect to an alternative embodiment with multiple live loaded seats at different points along the blind, the specification explains:

By allowing point to point adjustability, the system is capable of being fine tuned to decrease the chances of unwanted leaks within the system. For example, if the system were leaking at one location, any one of, or multiple, dynamic seats could be adjusted to compensate and seal the leak.

Id. at col. 15, ll. 33-37.

Thus, the specification of the '714 patent consistently, and without exception, describes adjustment that occurs during operation of the de-header system. The district court's construction of "adjustable," which includes a structure that requires dismantling of the valve to perform the adjustment, finds no support in the overall context of the '714 patent specification.

Moreover, the district court's construction of "adjustable" renders that limitation nearly meaningless. This court finds it difficult, if not impossible, to imagine any mechanical device that is not "adjustable," under the ordinary meaning of that term adopted by the district court. Almost any mechanical device undergoes change (for instance, when dismantled to replace worn parts) when no consideration is given to the "time, place, manner, or means of adjustment."

This court commends the district court's reluctance to narrow the claims to the preferred embodiment. In this instance, however, that care is admirable but misplaced. This case does not evince a situation where a party is attempting to import a limitation from the specification into the claims. Claim 14 already contains the "adjustable" limitation. Thus, the claim construction task requires this court to discern the meaning of that term in the context of this invention and field of art. The specification provides that context and substantial guidance on the meaning of "adjustable." In light of the specification, the term "adjustable" means that the dynamic, live loaded seat can be adjusted while the de-heading system of claim 14 is in use.

The district court buttressed its broad construction of "adjustable" with a comparison to other independent claims in the '714 patent, specifically claims 1 and 18. Those claims recite an adjustment mechanism. See Preliminary Injunction Order, slip op. at 11-13. As the district court explained:

[B]ecause Claims 1 and 18 specifically describe an embodiment possessing [an] external seat adjustment mechanism and Claim 14 does not, the only meaning to be derived from Claim 14 is that it encompasses all devices that are simply "adjustable," or capable of changing the bias force exerted on the sliding gate by the dynamic, live loaded seat, regardless whether these devices possess an adjustment mechanism or not and regardless of the means or time in which this adjustment is made.

Id. Thus, without using the formal label, the district court relied on claim differentiation to reach its broad meaning. The district court's misapplication of that claim construction tool is understandable given the variability of explanations of claim differentiation.

In the most specific sense, “claim differentiation” refers to the presumption that an independent claim should not be construed as requiring a limitation added by a dependent claim. See Nazomi Commc’ns, Inc. v. Arm Holdings, PLC., 403 F.3d 1364, 1370 (Fed. Cir. 2005) (“[C]laim differentiation ‘normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend.’” (quoting Karlin Techs., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999))); see also Phillips, 415 F.3d at 1314-15 (explaining the presumption without invoking the “claim differentiation” label). Thus, the claim differentiation tool works best in the relationship between independent and dependent claims. See Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004) (citing Sunrace Roots Enter. Co. v. SRAM Corp., 336 F.3d 1298, 1302-03 (Fed. Cir. 2003)). Indeed the statute stresses that a dependent claim must add a limitation to those recited in the independent claim. See 35 U.S.C. § 112, ¶ 4 (2000) (“[A] claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed.”) (emphasis added). Thus, reading an additional limitation from a dependent claim into an independent claim would not only make that additional limitation superfluous, it might render the dependent claim invalid.

Beyond the independent/dependent claim scenario, this court has characterized claim differentiation more generally, i.e., as the “presumption that each claim in a patent has a different scope.” Versa Corp. v. Ag-Bag Int’l Ltd., 392 F.3d 1325, 1330 (Fed. Cir. 2004) (quoting Comark Commc’ns, Inc. v. Harris

Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998)). Different claims with different words can, of course, define different subject matter within the ambit of the invention. On the other hand, claim drafters can also use different terms to define the exact same subject matter. Indeed this court has acknowledged that two claims with different terminology can define the exact same subject matter. Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987); Hormone Research Found. v. Genentech, Inc., 904 F.2d 1558, 1567 n.15 (Fed. Cir. 1990) (“It is not unusual that separate claims may define the invention using different terminology, especially where (as here) independent claims are involved.”). In this context, this court has cautioned that “[c]laim differentiation is a guide, not a rigid rule.” Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed. Cir. 1991).

With those precedents in mind, this court observes that two considerations generally govern this claim construction tool when applied to two independent claims: (1) claim differentiation takes on relevance in the context of a claim construction that would render additional, or different, language in another independent claim superfluous; and (2) claim differentiation “can not broaden claims beyond their correct scope.” Fantasy Sports Props. v. Sportsline.com, 287 F.3d 1108, 1115-16 (Fed. Cir. 2002) (quoting Kraft Foods, 203 F.3d at 1236). In this case, both of those considerations weigh against the district court’s construction of “adjustable.”

First, reading “adjustable” to mean adjustable “on the fly” during de-heading does not render the recitation of an adjustment mechanism in other

claims superfluous. Even if “adjustable” were synonymous with the presence of an adjustment mechanism, this court perceives no redundancy because the claims that recite the presence of such a mechanism do not include the “adjustable” limitation. Compare '714 patent, claims 1 and 18 with '714 patent, claim 14. As noted before, a patentee may define the same subject matter with claims having different terminology. Mycogen Plant Sci. v. Monsanto Co., 243 F.3d 1316, 1329 (Fed. Cir. 2001). Moreover, in-use adjustability does not necessarily mean the same thing as the presence of an adjustment mechanism. After all, an adjustment mechanism might be present but not useable during de-heading. To be clear, this court does not venture to construe the scope of the adjustment mechanism limitation in claims 1 and 18, but merely observes that the language of claim 14, as properly construed, does not appear to be commensurate with the language in claims 1 and 18. Thus, while the district court may have been correct that a device encompassed by claim 14 of the '714 patent need not have an adjustment mechanism, it went too far in completely eliminating any constraints on the “adjustable” limitation. Moreover, the district court’s construction actually creates a redundancy: if “adjustable” means adjustable at any time and in any way, it is hard to imagine any meaning for the term because without limitations on time or manner of adjustment, all structures are “adjustable.”

Second, relying on the claim differentiation presumption in this case contradicts the correct meaning of claim 14. As discussed above, the specification stresses that the invention is “adjustable” during de-heading. Any

construction to the contrary is not consistent with the overall context of this invention and this field of art as described in the specification.

Before the district court, the dispute over Curtiss-Wright's showing of a likelihood of infringement centered on the recognition that Velan's valves must be dismantled for adjustment. Velan argued that its de-heading system did not infringe because the only way to adjust their live loaded seat required removal of the seat to replace its internal biasing springs. The district court rejected that argument because its construction of "adjustable" placed no meaningful limits on that term. Because the district court erred in its claim construction, its subsequent infringement analysis in the context of Curtiss-Wright's motion for a preliminary injunction was flawed. Accordingly, the district court's grant of the preliminary injunction was an abuse of discretion.

#### CONCLUSION

Because the district court erred in its claim construction, this court vacates the district court's grant of Curtiss-Wright's motion for a preliminary injunction and remands for action consistent with the opinion.

#### COSTS

Each party shall bear its own costs.

VACATED and REMANDED