

NOTE: This disposition is nonprecedential.

**United States Court of Appeals
for the Federal Circuit**

LUFTHANSA TECHNIK AG,
Plaintiff-Appellant

v.

**ASTRONICS ADVANCED ELECTRONIC SYSTEMS
CORP.,**
Defendant-Appellee

KID-SYSTEME GMBH,
Defendant

2016-2535

Appeal from the United States District Court for the
Western District of Washington in No. 2:14-cv-01821-
RSM, Judge Ricardo S. Martinez.

Decided: October 19, 2017

LAWRENCE D. ROSENBERG, Jones Day, Washington,
DC, argued for plaintiff-appellant. Also represented by
ISRAEL SASHA MAYERGOYZ, Chicago, IL.

JONATHAN FREIMAN, Wiggin and Dana LLP, New
Haven, CT, argued for defendant-appellee. Also repre-

mented by BENJAMIN M. DANIELS; JAMES BICKS, Stamford, CT.

Before PROST, *Chief Judge*, REYNA and HUGHES, *Circuit Judges*.

HUGHES, *Circuit Judge*.

Lufthansa Technik AG appeals from the district court's grant of summary judgment of invalidity with respect to all claims of U.S. Patent 6,016,016. Because we conclude that the claim term "control means" is indefinite, we affirm on that alternative ground.

I

Lufthansa asserted the '016 patent against Astronics Advanced Electronic Systems Corp. and Kid-Systeme GmbH (collectively, AES) in the District Court for the Western District of Washington. The '016 patent relates to a voltage supply apparatus for airplane seats. Power outlets on airplane seats allow passengers to charge their electronic devices, such as laptops or tablets, mid-flight. Power outlets on airplanes, however, present certain safety concerns. For instance, passengers, especially small children, might insert foreign objects like needles or paper clips into the outlet and cause an electric shock.

The '016 patent discloses a device that reduces the risk of electric shocks by only supplying voltage when passengers insert an electrical plug with two contact pins. The device includes a circuit that detects when both pins of an electrical plug are inserted within a short time of one another. That way, the outlet supplies voltage when a two-prong electrical plug is inserted, but not when a passenger inserts an object such as a needle or paperclip into one opening of the outlet.

Claim 1, in relevant part, states:

A voltage supply apparatus for providing a supply voltage for an electric device comprising . . . *control means* responsive to plug presence detection by said plug detector means for rendering the voltage supplying means operative to supply the supply voltage to the socket only if the time between the detection of a first contact pin and the *subsequent detection* of a second contact pin of the plug does not exceed a predetermined maximum time value.

'016 patent at col. 8, ll. 21–40 (emphasis added).

AES filed a motion for summary judgment arguing that both “control means” and “subsequent detection” are indefinite. “Control means” is a means-plus-function limitation, which the district court construed to have the function of “rendering the voltage supplying means operative to supply voltage to the socket,” and its associated structure as “logic elements to receive and transmit internal and external signals and configured to activate switches based upon those signals.” J.A. 14–15. The court held that “control means” was not indefinite because “disclosure of circuitry is not required for a person skilled in the art to understand this term.” J.A. 14.

The district court also construed “subsequent detection” to exclude simultaneous detection. Relying on the prosecution history, the court found that Lufthansa made a “clear and unmistakable disavowal” of simultaneous detection to avoid a prior art that disclosed a device to detect the presence of an electrical plug in a power outlet. And because the '016 patent does not adequately define “simultaneous detection” or “subsequent detection,” the court concluded that “the claim is left trying to cover an ambiguous range of time.” J.A. 18–19. Accordingly, the district court held that “subsequent detection” was indefinite, and granted AES’s motion for summary judgment of invalidity.

We have jurisdiction under 28 U.S.C. § 1295(a)(1).

II

We begin with the district court’s construction of “control means.” The district court’s ultimate claim construction is a legal question that we review de novo, and any subsidiary factual determinations are reviewed for clear error. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 836 (2015). We construe patent terms according to their plain and ordinary meaning as understood by a person of ordinary skill in the art. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). We also review the district court’s indefiniteness determination de novo. *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370 (Fed. Cir. 2014).

Under 35 U.S.C. § 112 paragraph 6,¹ “[a]n element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof.” Such means-plus-function limitations, however, only cover the “corresponding structure, material, or acts described in the specification and equivalents thereof.” *Id.* Accordingly, “the applicant must indicate in the specification what structure constitutes the means.” *Biomedino, LLC v. Waters Techs. Corp.*, 490 F.3d 946, 948 (Fed. Cir. 2007). “Failure to specify the corresponding structure in the specification amounts to impermissible pure functional claiming.” *Ergo Licensing, LLC v. Care-Fusion 303, Inc.*, 673 F.3d 1361, 1363 (Fed. Cir. 2012).

In some circumstances, the specification can provide adequate structure to support a means-plus-function limitation by calling out standard electronic components,

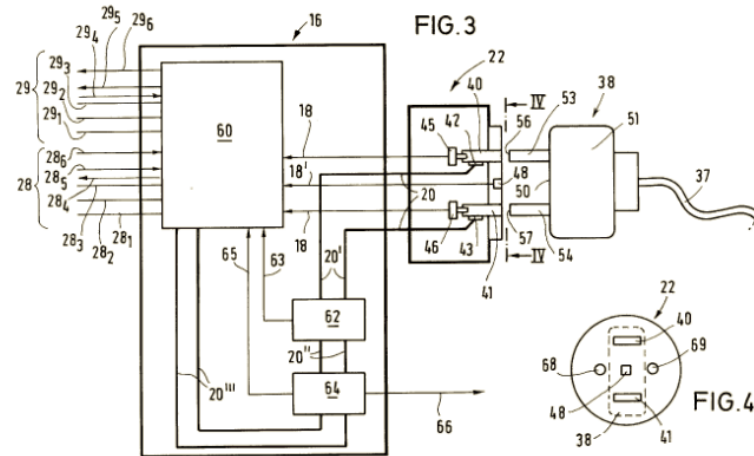
¹ The patents are governed by the pre-Leahy-Smith America Invents Act version of § 112. Paragraph 6 is now codified at § 112(f).

even without detailing the component's internal circuitry or operation. *S3 Inc. v. NVIDIA Corp.*, 259 F.3d 1364, 1370 (Fed. Cir. 2001). In *S3*, the claims recited a “means . . . for selectively receiving.” *Id.* The specification disclosed a “selector” as the corresponding structure without providing any information about the selector's circuitry or operation. *Id.* The patentee, however, “presented evidence that a selector is a standard electronic component whose structure is well known in this art, and that such standard components are usually represented in the manner shown.” *Id.* Accordingly, we found that the selector provided adequate structure for the “means for selectively receiving.” *Id.* at 1371.

By contrast, reciting a generic term for an electronic component is insufficient if an ordinary artisan would not associate the claimed component with a specific, well-known structure. *Ergo Licensing*, 673 F.3d at 1365. In *Ergo Licensing*, the patent claimed a “programmable control means having data fields describing metering properties of individual fluid flows.” *Id.* at 1363. The patent disclosed a “control device” as the corresponding structure, without any additional details about its design or circuitry. *Id.* Importantly, the control device in *Ergo Licensing* could have been one of “at least three different types of control devices commonly available and used at the time to control adjusting means.” *Id.* at 1364. We held that “[t]he recitation of ‘control device’ provides no more structure than the term ‘control means’ itself, rather it merely replaces the word ‘means’ with the generic term ‘device.’” *Id.* at 1363–64. Thus, an ordinary artisan would not associate the “control device” with a specific electronic component. *Id.*

Here, every claim of the '016 patent requires a “control means” that is responsive to plug detection and renders the voltage supply means operative when two contact pins are detected within a predetermined time

value. Figure 3 of the '016 patent depicts a circuit with control and supervision unit 60.



The specification describes the function of the control and supervision unit 60 as follows:

The control and supervision unit 60 further comprises a voltage switch by means of which the supply voltage of 110 V, 60 Hz can be applied to the internal supply lines 20. The supply lines 20 connect the control and supervision unit 60 to the line supervision detector 64 connected to the short circuit detector 62 via two extension supply voltage lines 20. The output side of the short circuit detector 62 is connected to the contact elements 42, 43 of the socket 22 via two supply voltage lines 20 and via the subsequent supply lines 20.

'016 patent at col. 5, ll. 5–14.

The district court found that the corresponding structure for the “control means” is “logic elements to receive and transmit internal and external signals and configured to activate switches based upon those signals.” J.A.14–15. The problem, however, is that neither the text nor the

figures disclose any components to perform logic functions. Indeed, the '016 patent specification never uses the term “logic elements.” Although the '016 patent provides a black-box “control and supervision unit 60,” that unit also performs other functions such as turning off the current supply based on “the difference of the current flowing in the two current supply lines.” '016 patent at col. 5, ll. 25–33. Thus, the '016 patent does not call out a specific, well-known component to perform the claimed function. Instead, the “control means” refers to a nebulous set of logic functions within a black box that also performs other functions. Like in *Ergo Licensing*, the specification “provides no more structure than the term ‘control means’ itself.” *Ergo Licensing*, 673 F.3d at 1363–64.

On appeal, Lufthansa identifies a different structure for the control means. Rather than relying on “logic elements,” Lufthansa asserts the corresponding structure for “control means” is a voltage switch. This newly proposed construction is inconsistent with the claim language and specification, and contradicts Lufthansa’s own position before the district court.² Claim 1 recites a control means that supplies voltage to the socket only if both contact pins are detected within a predetermined time. The voltage switch, however, does not determine whether the contact pins are detected within a predetermined time. Instead, the switch merely responds to signals from the control and supervision unit. Lufthansa’s own expert testified that the control means “*makes decisions* based upon the internal and external signals transmitted to it,”

² Lufthansa’s shifting approach to claim construction underscores how, without a specific corresponding structure, the “control means” limitation becomes whatever structure the patentee conveniently identifies during litigation.

and that “a skilled artisan would understand that the control means are *logic elements . . . configured to activate switches*.” J.A. 1001–02 (emphasis added). In short, the control means decides whether to activate the voltage switch—it is not the switch itself.

Finally, Lufthansa argues that a person of ordinary skill in the art could implement the control means using known devices such as “microprocessors, program logic arrays, analog circuitry, [or] digital circuitry.” Reply Br. at 30. But the standard for means-plus-function claims is not whether an ordinary artisan could design a device to perform the claimed function. “That ordinarily skilled artisans could carry out the recited function in a variety of ways is precisely why claims written in ‘means-plus-function’ form must disclose the particular structure that is used to perform the recited function.” *Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1385 (Fed. Cir. 2009). It may be that a variety of devices can act as the “control means,” but the specification does not explain which devices are claimed and which are not. Thus, an ordinary artisan could not ascertain the scope of the claim with reasonable certainty.

Because we find that “control means” lacks sufficient corresponding structure in the specification, we hold that claims 1–10 are invalid as indefinite. We do not reach the proper construction for “subsequent detection.” Instead, we affirm the court’s judgment of invalidity on alternate grounds.

AFFIRMED