

United States Court of Appeals
for the Federal Circuit

PASS & SEYMOUR, INC.,
Appellant,

v.

INTERNATIONAL TRADE COMMISSION,
Appellee,

AND

GENERAL PROTECHT GROUP, INC.,
Intervenor,

AND

WENZHOU TRIMONE SCIENCE & TECHNOLOGY
ELECTRIC CO., LTD.,
Intervenor,

AND

SHANGHAI ELE MANUFACTURING
CORPORATION,
Intervenor.

2009-1338, -1369

On appeal from the United States International Trade
Commission in Investigation No. 337-TA-615.

DECIDED: August 27, 2010

MARK J. ABATE, Goodwin Procter LLP, of New York, New York, argued for appellant. Of counsel were ANKUR P. PAREKH, ANDREW N. STEIN, CALVIN E. WINGFIELD, JR.; JENNIFER A. ALBERT of Washington, DC; and CHARLES H. SANDERS, of Boston, Massachusetts. Of counsel on the brief were GEORGE R. MCGUIRE and DAVID L. NOCILLY, Bond, Schoenbeck & King, PLLC, of Syracuse, New York.

PAUL M. BARTKOWSKI, Attorney, Office of the General Counsel, United States International Trade Commission, of Washington, DC, argued for appellee. With him on the brief were JAMES M. LYONS, General Counsel, and WAYNE W. HERRINGTON, Assistant General Counsel.

WILLIAM F. LONG, Sutherland Asbill & Brennan LLP, of Atlanta, Georgia, argued for intervenor General Pro-tech Group, Inc. With him on the brief were ANN G. FORT and JOSHUA D. CURRY.

REECE W. NIENSTADT, Mei & Mark LLP, of Washington, DC, argued for intervenor Wenzhou Trimone Science & Technology Electric Co., Ltd. With him on the brief was LEI MEI.

TONY D. CHEN, Caywin Law Group, of Los Angeles, California, argued for intervenor Shanghai Ele Manufacturing Corporation.

Before NEWMAN, DYK, and PROST, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge PROST*.

Opinion concurring in the judgment filed by *Circuit Judge NEWMAN*.

PROST, *Circuit Judge*.

This appeal challenges a holding by the International Trade Commission (“Commission”) that certain accused products produced by General Protecht Group, Inc. (“General Protecht” or “GPG”), Wenzhou Trimone Science and Technology Electric Co., Ltd. (“Trimone”), and Shanghai ELE Manufacturing Corporation (“ELE” and collectively “defendants”) do not infringe certain asserted patents held by Pass and Seymour, Inc. (“P&S”). The Commission found that the asserted patents at issue here were not infringed, and accordingly it found no violation of section 337 of the Tariff Act of 1930, as amended. *See* 19 U.S.C. § 1337. We agree with the claim construction and infringement analysis of the Commission pertinent here, and thus affirm the judgment.

BACKGROUND

The asserted patents and accused products at issue here relate to circuit interrupters for use with household electrical appliances. Such circuit interrupters are typically recognized by the characteristic “test” and “reset” buttons on household electrical outlets. The asserted patents, U.S. Patents Nos. 5,594,398 (“398 patent”) and 7,212,386 (“386 patent”), are directed to improved safety features for circuit interrupters to protect users from electrical shock and protect appliances from electrical damage. As relevant here, the products accused of infringing the ’398 patent are General Protecht’s 2003 devices and Trimone’s 2006 devices. The products at

issue here accused of infringing the '386 patent are ELE's 2003 and 2006 devices, General Protecht's 2003 and 2006 devices, and Trimone's 2006 devices.

The '398 patent relates to improved ground fault circuit interrupters ("GFCIs"). GFCIs are common devices that protect users from electrical shocks when they are operating appliances plugged into household electrical outlets. Such electrical shocks are caused by ground faults, in which current from the electrical outlet escapes the appliance and travels through the body of the user to the ground. GFCIs operate by detecting a difference in electrical current flowing into and out of the connected appliance, then opening the circuit to disrupt the flow of electrical current from the service panel to the appliance.

The asserted independent claim of the '398 patent reads, in relevant part:

1. A ground fault interrupter (gfi) wiring device for connection in an electrical circuit, said device comprising:
 - a) housing means defining the enclosed space;
 - b) at least one pair of electrical terminals fixedly supported in spaced relation with said enclosed space;
 - c) *a unitary, electrically conducting member carrying a pair of spaced electrical contacts;*
 - d) *mounting means for said conducting member to permit movement thereof between a first position, wherein said pair of contacts are in respective, circuit making engagement with said pair of terminals, and a second position, wherein both of said*

pair of contacts are in spaced, circuit-breaking relation to said pair of terminals;

e) biasing means urging said conducting member toward movement to said second position;

f) latching means releasably retaining said conducting member in said first position; and

g) actuating means for releasing said latching means to permit said biasing means to move said conducting member to said second position in response to a predetermined fault condition in said electrical circuit.

'398 patent col.13 ll.24-46 (emphases added).

The other asserted patent, the '386 patent, relates to a device that protects users and appliances from damage caused by miswiring. The device generates different types of signals in response to different operating conditions. For example, the device generates a "wiring state detection signal" signal when at least one line is connected to a source of AC power. The device generates a "fault detection signal" in response to electrical current escaping the appliance.

The asserted claim of the '386 patent, reads in relevant part:

1. An electrical wiring protection device comprising:

a housing assembly including at least one line terminal and at least one load terminal partially disposed therein;

a first conductive path electrically coupled to the at least one load terminal, the second conductive path being connected to the first conductive path in a reset state.

a fault detection circuit coupled to the first conductive path; the fault detection circuit being configured to generate a fault detection signal in response to detecting at least one fault condition;

[e] *a wiring state detection circuit coupled to the first conductive path, the wiring state detection circuit selectively providing a wiring state detection signal when the at least one line terminal is coupled to a source of AC power;*

[f] *an actuator assembly configured to provide an actuator signal in response to the fault detection signal or the wiring state detection signal; and*

[g] *a circuit interrupter coupled to the actuator assembly, the circuit interrupter being configured to disconnect the first conductive path from the second conductive path in response to the actuator signal in the reset state.*

'386 patent col.14 ll.43-67 (emphases added).

The asserted claims were initially construed and compared to the accused devices at issue here by an administrative law judge. The administrative law judge adopted P&S's proposed claim constructions of the disputed claim terms, and found that the defendant's products at issue here infringed the claims as construed. On review, the Commission modified the administrative law judge's constructions of certain terms and found that the accused devices did not infringe the construed claims as modified.

See In re Certain Ground Fault Circuit Interrupters and Products Containing Same (“Commission Op.”), Inv. No. 337-TA-615 (Int’l Trade Comm’n Mar. 9, 2009). P&S timely appealed to this court, challenging the Commission’s claim constructions and resultant findings of noninfringement for the asserted claims of both the ’398 and ’386 patents.¹ We have jurisdiction under 19 U.S.C. § 1337.

DISCUSSION

We review the Commission’s final determination of a violation of § 337 under the standards of the Administrative Procedure Act. *See* 19 U.S.C. § 1337(c). This court reviews the Commission’s legal determinations de novo and its factual findings for substantial evidence. 5 U.S.C. § 706(2)(A), (E); *see also Honeywell Int’l, Inc. v. Int’l Trade Comm’n*, 341 F.3d 1332, 1338 (Fed. Cir. 2003). The Commission’s claim construction is reviewed de novo. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (1995) (en banc). Our review of the Commission’s findings of fact with respect to the structure and functionality of the accused products is deferential. *See Bose Corp. v. Consumers Union of United States*, 466 U.S. 485, 498, 501 (1984).

The ’398 Patent

In its initial decision, the administrative law judge adopted P&S’s proposed claim construction for the disputed term, “mounting means for said conducting member to permit movement thereof between a first position,

¹ GPG, Trimone, and ELE also appealed. In a separate opinion released today, *General Protecht Group, Inc. v. Int’l Trade Comm’n*, Nos. 2009-1378, -1387, -1434, we address that appeal.

wherein said pair of contacts are in respective, circuit making engagement with said pair of terminals, and a second position, wherein both of said pair of contacts are in spaced, circuit-breaking relation to said pair of terminals.” The administrative law judge found that the claim was satisfied if either of the two contacts was moved into a spaced, circuit-breaking second position, because collectively, “both” contacts would be in a position that resulted in the circuit breaking.

The administrative law judge also adopted P&S’s proposed construction of the disputed term, “a unitary, electrically conducting member carrying a pair of spaced electrical contacts.” The term was construed to mean “a member that provides an electrical current carrying path between two or more spaced contacts.” The administrative law judge found that this construction was consistent with the specification and rejected defendants’ argument that the structure be limited to a “buss bar.” A buss bar is an I-shaped component known in the electrical engineering field and depicted in the patent as an embodiment of the claimed member.

On review, the Commission found that the administrative law judge’s constructions did not give meaning to the claim limitations that “both” contacts be in a spaced, circuit-breaking second position and that the electrically conducting member be “unitary” and “carry” the pair of spaced contacts. The Commission found that the plain language of the claim required a construction of “both” that was not satisfied by the movement of only one contact. *See Commission Op.* at 9. It also found that the specification required construing “unitary” to mean that the member was a single, continuous piece and that both contacts are disposed on the same member. *See id.* at 5-6.

Based on its modifications to the administrative law judge's claim constructions, the Commission reversed the administrative law judge's initial decision and held that the products did not infringe the '398 patent. The Commission noted that only one of the contacts in the accused devices moves into a spaced, circuit breaking second position, and that the electrical contacts for some of the accused products are carried on separate metal plates connected by a braided wire.

We agree with the Commission that the proper construction of the term "mounting means for said conducting member to permit movement thereof between a first position, wherein said pair of contacts are in respective, circuit making engagement with said pair of terminals, and a second position, wherein both of said pair of contacts are in spaced, circuit-breaking relation to said pair of terminals" requires that each of the contacts moves from its first position into a spaced, circuit breaking relation with respect to each of its respective terminals.

P&S argues that the claim should be interpreted to simply require that the contacts in the second position be spaced such that the circuit is broken. According to P&S, this limitation would be satisfied as long as either one of the contacts was moved into spaced, circuit-breaking position, since "both" contacts collectively would be in a "second position" that results in the circuit breaking.

We reject this argument. The plain language of the claim requires that both of the pair of contacts move into spaced, circuit-breaking relation to the terminals. If P&S wanted its claim to read on devices where only one contact moved into spaced, circuit-breaking relation to the terminals, then it could have written its claim to read,

“wherein *at least one* of said pair of contacts is in spaced, circuit-breaking relation to said pair of terminals.”

The Commission found that the corresponding contacts in the defendants products at issue here do not both move into a spaced second position. *Id.* at 10. It therefore concluded that the accused products did not meet the literal claim requirements or perform the stated function of the “mounting means” limitation. *See* 35 U.S.C. § 112, ¶ 6. We see no error in this factual finding.

We also agree with the Commission that the proper construction of the limitation “a unitary, electrically conducting member carrying a pair of spaced electrical contacts” must give meaning to “unitary.” The plain meaning of the term “unitary,” which modifies “electrically conducting member,” denotes a single, continuous structure. The specification and prosecution history confirm that this plain meaning is appropriate in the context of this claim limitation. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc).

For example, the specification teaches that “unitary” refers to the nature of the member’s physical structure, not just its electrical relationship with the two contacts. Similarly, the Summary of the Invention describes the member as being “rigid” and “in the nature of [a] buss bar.” ’398 patent col.1 ll.56-61. Both descriptions refer to the member’s physical characteristics; both imply a single structural unit. Additional description in the summary, which explains how the member moves and interacts with other parts of the device, also reveals that the inventor only contemplated a single structural unit. *See e.g., id.* col.1 l.62-col.2 l.13.

Contrary to P&S's arguments, this requirement of a unitary structure does not improperly confine the claim scope to a buss bar, or a member cast from a single die or molded from a single piece of metal. A unitary structure may contain layers or be formed by an additive process, so long as the resulting product has the physical character of a single unit. Since the claim language requires that a unitary member carries the pair of electrical contacts, the Commission correctly construed the term to require that both electrical contacts are disposed on the same unitary member.

We also agree with the Commission that General Pro-tech's 2003 devices do not meet the properly construed claim limitation of "a unitary, electrically conducting member." The electrical contacts on these devices are supported on separate plates of metal, connected only by a braided wire. It is not enough that the wire is permanently welded to each of the two plates, such that the configuration of units creates a conductive path between the two contacts that carries current *as though it were* a single conducting unit. The claim language requires that the conducting member carrying the pair of contacts *actually be* a single conducting unit.

Because the accused products at issue here do not meet the "mounting means" limitation as properly construed, and thus do not meet every limitation of the asserted claims, there can be no infringement. See *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 15, 29 (1997). That some of the accused products also fail to meet the "a unitary, electrically conducting member" limitation as properly construed provides additional reason why those accused products do not infringe. See *id.*

The '386 Patent

The administrative law judge held that the claim term, “circuit interrupter coupled to the actuator assembly, the circuit interrupter being configured to disconnect the first conductive path from the second conductive path in response to the actuator signal in the reset state” did not require construction and could be analyzed according to its plain meaning. The administrative law judge noted, however, that the circuit interrupter need only trip in response to an actuator signal generated by a fault in the reset state; it need not trip in response to a wiring state detection signal in the reset state.

On review, the Commission mostly agreed with the administrative law judge, though it noted that the claimed circuit interrupter had to be configured to trip in response to the actuator signal in the reset state. Since the asserted claim requires the actuator assembly to generate an actuator signal in response to the wiring state detection signal, it follows that generation of a wiring state detection signal ultimately causes the circuit interrupter to trip when in the reset state. *Commission Op.* at 18. The specification teaches that a wiring state detection signal is generated when the device is properly wired. Accordingly, under the Commission’s interpretation of the claim the patented device must be configured to trip in response to a signal that the device is properly wired. *Id.* In so holding, the Commission acknowledged that such a claim requirement was not perfectly logical, and may have been the result of a claim drafting error. *Id.* Under the Commission’s construction, the devices at issue were found not to infringe.

On appeal, P&S challenges the Commission’s interpretation by arguing that the claim does not require the

device be configured to provide a wiring state detection signal in both the tripped and reset states. According to P&S, the relevant claim limitations are satisfied by a device configured to provide a fault detection signal in the reset state, even if it is not configured to provide a wiring state detection signal in the reset state. As P&S admits, a device configured in this way would never trip in response to a wiring state detection signal in the reset state, because no such triggering signal would be generated in that state. Rather, it would only trip in response to a fault detection signal in the reset state. P&S argues that the claim as drafted is perfectly logical, and that the Commission's reinterpretation and characterization to the contrary merely betray a misunderstanding of the claim language.

We disagree. The plain language of claim 1 of the '386 patent requires that the circuit interrupter be configured to trip in response to an *actuator signal* in the *reset state*. The wiring state detection circuit and the actuator assembly claim elements do not contain limitations as to the circuit state. These components of the device must therefore generate their respective signals at least once, without regard to the state of the device (i.e., reset or tripped). Construing this limitation to require generation of an actuator signal without respect to the state of the device does not conflict with any other limitations of the claim. For instance, if a wiring state detection signal is generated in the reset state, then it will trigger an actuator signal, which will then trip the device. If such a signal is generated in the tripped state, it will again trigger the actuator signal. The actuator signal will not engage the circuit interrupter, of course, because the device is already tripped.

P&S's objection to the Commission's construction primarily relies on a statement in the specification that the wiring state detection circuit operates when the line terminal is powered and the appliance is properly wired, and not when it is improperly wired. *See* '386 patent col.12 ll.27-30. P&S argues that it makes no sense to require a miswiring protection device be configured to trip a properly wired appliance and not an improperly wired appliance. The plain language of the claims, however, does not allow for an exception to this consequence, and the intrinsic evidence of record supports the Commission's construction. The specification contemplates embodiments in which the wiring state detection signal trips the device in the reset state only once, until a fuse or resistor is burned out. *See id.* col.7 l.59-col.8 l.15.

P&S's claim differentiation argument, which relies on a comparison to claim 9, is also unavailing. Claim 9 requires that the device generate a wiring state detection signal during the transition between the tripped state and the reset state, in response to the user pressing the reset button. *Id.* col.15 ll.29-62. Under the plain language of claim 9, this signal may be generated while the device is completing the transition between states, and thus before it has entered the reset state. This limitation in claim 9 is not present in the claim asserted here, claim 1. Claim 1 is broader. It reads on a device configured to generate a wiring state detection signal in both the tripped and reset states. Moreover, just like asserted claim 1, claim 9 requires the device to trip in response to a wiring state detection signal in the reset state. *See id.* col.15 ll.45-60. The problem of the device tripping when properly wired therefore affects claim 9 and claim 1 alike.

The argument that the transition term of the claim is open-ended likewise does P&S no good. Even though the

device may include additional wiring state detection circuits that generate signals only in the tripped state, it must still contain at least one wiring state protection circuit that generates a signal at least once when power is applied, without respect to the state of the device. If the accused products do not contain such a circuit, as the Commission found, then they do not infringe. *See Warner-Jenkinson Co.*, 520 U.S. at 29. We see no error in the Commission's findings on this point.

Accordingly, the claim construction and noninfringement findings of the Commission are affirmed, as is the Commission's resultant determination that the importation and sale of the defendant's products into the United States do not violate § 337 of the Tariff Act.

AFFIRMED

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2009-1338,-1369

Appeal from the United States International Trade
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NEWMAN, *Circuit Judge*, concurring in the judgment.

I agree that infringement has not been shown as to the '386 and the '398 patents. For the '398 patent, the Commission's constructions of the "unitary member" and the "mounting means" terms are correct; and since the accused devices do not embody these limitations as construed in light of the specification, I agree that infringement was properly not found.

For the '386 patent, the court has strayed from the Commission's correct rulings, although reaching the same result of non-infringement. The court errs in construction and application of the clause "circuit interrupter" in interaction with the "actuator assembly," for, as patentee P&S points out, it makes no sense to interpret the claims as requiring a miswiring protection device to trip a properly wired device but not an improperly wired device. However, I agree that the accused devices do not embody these limitations as correctly construed by the Commission, and on this basis I concur in the conclusion of non-infringement.

Claim construction requires conformity with the description of the invention in the specification. See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc) ("[C]laims must be read in view of the specification, of which they are a part." (internal quotation omitted)); *Multi-form Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1478 (Fed. Cir. 1998) ("The best source for understanding a technical term is the specification from which it arose, informed, as needed, by the prosecution history."). The claim clauses at issue are:

an actuator assembly configured to provide
an actuator signal in response to the fault

detection signal or the wiring state detection signal; and

a circuit interrupter coupled to the actuator assembly, the circuit interrupter being configured to disconnect the first conductive path from the second conductive path in response to the actuator signal in the reset state.

'386 patent claim 1, col.14 ll.61–67. The court holds that these clauses require the circuit interrupter to trip in response to a signal provided only when the device is properly wired. *See Maj. Op.* at 13 (“As P&S admits, a device configured in this way would never trip in response to a wiring state detection signal in the reset state, because no such triggering signal would be generated in that state.”); *id.* at 14 (“Moreover, just like asserted claim 1, claim 9 requires the device to trip in response to a wiring state detection signal in the reset state.”). The court’s understanding of the claims as requiring tripping of the circuit whenever the device is wired properly, is contrary to the purpose, function, and operation of the claimed device.¹ It is not the claim that is not “logical,” *Maj. Op.* at 13; it is the claim construction that defies the specification.

The Commission correctly concluded that “a device ‘configured to disconnect’ in response to an actuator signal

¹ In one embodiment described in the patent, the device will initially trip on installation whether it is properly wired or miswired. *See* '386 patent col.7 l.43–col.8 l.15. It is not the “wiring state detection signal” – indicating proper wiring – that causes the device to trip. Rather the wiring state detection signal clears a resistor or fuse that disables that part of the circuit, thus allowing the device to be reset if properly wired.

received in response to a wiring state detection signal in the reset state need not actually generate a wiring state detection signal in the reset state, and therefore need not actually trip when properly wired (although it must be configured to do so).” *In re Certain Ground Fault Circuit Interrupters and Prods. Containing Same*, Inv. No. 337-TA-615, slip op. at 18 (Int’l Trade Comm’n Mar. 9, 2009). The majority’s construction is in conflict with this conclusion. The specification describes embodiments in which, consistent with the Commission’s construction, the wiring state detection signal is not generated when the device is in the reset state. See ’386 patent Figures 8–11 & col.13 l.50–col.14 l.23. However, if the wiring state detection signal were provided when the device is in the reset state, the device would trip.² Claim 1 includes these embodiments.

I would adhere to the Commission’s construction, and affirm the finding of non-infringement based on the substantial evidence relied upon by the Commission.

² This is because, as seen for example in Figures 4 and 8 of the patent, there is only one solenoid to both move the reset lockout mechanism (if the device is in the tripped state) and trip the device (if it is in the reset state).