

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* GERHARD MERSCH and JURGEN MOSER

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Appeal 2008-1826  
Application 10/374,760  
Technology Center 3600

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Decided: August 29, 2008

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Before JENNIFER D. BAHR, LINDA E. HORNER, and  
MICHAEL W. O'NEILL, *Administrative Patent Judges*.

HORNER, *Administrative Patent Judge*.

DECISION ON APPEAL  
STATEMENT OF THE CASE

Gerhard Mersch and Jurgen Moser (Appellants) seek our review under 35 U.S.C. § 134 of the final rejection of claims 1, 3, 5-9, and 11-23, which are all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

## SUMMARY OF DECISION

We AFFIRM-IN-PART.

### THE INVENTION

The Appellants' claimed invention is to a vehicle door module assembled in a vehicle door including an adapter received in an opening in a partition wall that separates a wet area from a dry area. The adapter allows for assembly and disassembly of the door control module and the cable harness from the adapter (Spec. 1:¶2). Claim 1, reproduced below, is representative of the subject matter on appeal.

1. A vehicle door comprising:
  - a partition wall including an opening, wherein said partition wall separates a wet area of the vehicle door and a dry area of the vehicle door;
  - an adapter including a module plug mount, a cable plug mount, and an abutment face, wherein said abutment face of said adapter seals at said partition wall when said adapter is received in said opening;
  - a cable harness having a cable plug, wherein said cable plug is removably received in said cable plug mount; and
  - a door control module having a module plug, wherein said module plug is removably received in said module plug mount, and said module plug is removable from said module plug mount when said cable plug is received in said cable plug mount.

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### THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Ueda	US 5,092,647	Mar. 3, 1992
Wirkus	US 5,037,325	Aug. 6, 1991
Becker	US 5,245,258	Sep. 14, 1993
Velthaus	US 6,574,922 B2	Jun. 10, 2003

The following rejections are before us for review:

1. Claims 1, 5-9, 11, 13, 15-19, 22, and 23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ueda and Wirkus.
2. Claims 3, 14, and 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ueda, Wirkus, and Becker.
3. Claims 12 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ueda, Wirkus, and Velthaus.

### ISSUES

The issues before us are whether the Appellants have shown that the Examiner erred in rejecting as unpatentable claims 1, 5-9, 11, 13, 15-19, 22, and 23 over Ueda and Wirkus, claims 3, 14, and 21 over Ueda, Wirkus, and Becker, and claims 12 and 20 over Ueda, Wirkus, and Velthaus. These issues turn on whether: (1) Wirkus discloses an adapter including a module plug mount as recited in claim 1, (2) Wirkus discloses an adapter including a skirt having an exterior surface and defining an interior space such that one of the module plug mount and the cable plug mount is formed by the interior space and the other is formed by the exterior surface as recited in claim 7,

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and (3) a rational reason exists to modify Ueda, as modified by Wirkus, with the assembly unit of Becker, as found in claim 3.

### FINDINGS OF FACT

We find that the following enumerated findings are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. The customary meaning of “module” in the electronics arts is a self-contained assembly of electronic components and circuitry, such as a stage in a computer, that is installed as a unit. *The American Heritage Dictionary of the English Language* (4th ed. 2000).
2. The customary meaning of “plug” in the electronics arts is a fitting, commonly with two metal prongs for insertion in a fixed socket, used to connect an appliance to a power supply. *The American Heritage Dictionary of the English Language* (4th ed. 2000).
3. Wirkus discloses a plug connector housing 22 having a plurality of troughs 28 for receiving a plurality of male terminals 30, which are crimped and terminated to respective electrical wires 32 (Wirkus, col. 3, ll. 4-8; Fig. 1).
4. Wirkus describes that “the male terminals are inserted into troughs 28 so that they extend into forward portion 22a of the housing” (Wirkus, col. 3, ll. 8-10).

5. Wirkus also discloses a receptacle connector 12 having female terminals 54 (Wirkus, col. 3, ll. 26-29).
6. Wirkus further describes:

When plug connector 10 is latched within opening 14 in panel 16, receptacle connector 12 can be inserted into connector 10 with cylinders 52, 52a being inserted into the forward portion 22a of housing 22 of connector 10, whereby male terminals 30 enter cylinders 52, 52a for mating with female terminals 54 (Wirkus, col. 3, ll. 37-43).
7. Figure 1 of Wirkus shows male terminal 30 as a banana-type plug or connector having wires 32 that terminate in one end of the plug 30 and the other end of the plug formed to be inserted into the socket 28 of housing 22 (Wirkus, col. 3, ll. 6-8; Fig. 1).
8. The insertable end of plug 30 is shown with two projections on either side which presumably press against the sides of socket 28 to secure the plug in place in the socket once inserted (Wirkus, Fig. 1).
9. Such banana type connectors were common in the art and were formed so as to be removable from the corresponding socket.
10. As such, the module plugs 30 of Wirkus are disposed in the adapter 10 and in the cylinders 52 and 52a such that they are capable of being pulled free from the cylinders 52 and 52a.

11. We see no reason why the receptacle connector 12 must be removed from adapter 10 when the module plugs 30 are removed from sockets 28.
12. The interior space formed in the forward portion 22a of housing 22 of Wirkus forms a cable plug mount (*i.e.*, forms the portion into which the cylinders 52, 52a of cable plug 12 are inserted).
13. The interior space formed in the rearward portion of housing 22 of Wirkus forms the module plug mount (*i.e.*, forms the troughs 28 into which the module plugs 30 are inserted).
14. Thus, the skirt of Wirkus does not have an exterior surface and an interior space that each defines one of the module plug mount and the cable plug mount.
15. Becker discloses locating all parts of an electrically-powered power window unit in a common, moisture-tight housing to guarantee low component and installation costs such that no additional wiring is needed between the drive unit and the electronic control and regulating system (Becker, col. 3, ll. 1-10).

#### PRINCIPLES OF LAW

“Section 103 forbids issuance of a patent when ‘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.*, 127 S. Ct. 1727,

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1734 (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 skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR*, 127 S. Ct. at 1734 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”)

#### ANALYSIS

*Rejection of claims 1, 5-9, 11, 13, 15-19, 22, and 23 under 35 U.S.C.*

*§ 103(a) as unpatentable over Ueda and Wirkus*

*Group 1: Claims 1, 5, 6, 11, 13, 19, and 22*

The Appellants argue claims 1, 5, 6, 11, 13, 19, and 22<sup>1</sup> as a first group (App. Br. 4-6). We select claim 1 as the representative claim, and the remaining claims stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(vii) (2007).

The Appellants contend that the Examiner erred in rejecting claim 1, because “Wirkus does not disclose an adapter including a module plug mount” (App. Br. 5). In particular, the Appellants contend that the male terminals 30 of Wirkus are not module plugs because the male terminals 30

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<sup>1</sup> The Appellants’ grouping in the Brief omitted claim 6 from either group. Because no separate arguments were presented for claim 6, we group it with claim 1. Claim 23 is treated *infra* in the analysis of the claims of Group 2 because claim 23 depends from claim 7.

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are crimped ends of wires 32, and thus the trough 28 that receives the male terminals 30 is not a module plug mount (*id.*; Reply Br. 1). Thus, the Appellants conclude that “neither reference discloses, suggests or teaches an adapter that allows a module plug to be removable from a module plug mount of an adapter when a cable plug is received [in] a cable plug mount of the adapter as claimed” (*id.*).

This argument requires us to construe the claimed “module plug.” We determine the scope of the claims in patent applications not solely on the basis of the claim language, but upon giving claims “their broadest reasonable interpretation consistent with the specification” and “in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Claim 1 requires that the “module plug is removably received in said module plug mount, and said module plug is removable from said module plug mount when said cable plug is received in said cable plug mount.” The Appellants’ Specification does not provide a definition of module plug, but it does provide the following discussion:

A module plug 12, shown schematically, is fitted to the door control module 10. In one example, the module plug 12 is integral with the door control module 10. However, it is to be understood that other types of attachment of the module plug 12 to the door control module 10 are possible, and the structure of the module plug 12 is not essential for understanding the invention. The module plug 12 connects the door control module 10 to a cable plug 16 of a cable harness 14 which provides

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power to the assembly unit 34 (Spec. 3-4:¶22).

The customary meaning of “module” in the electronics arts is a self-contained assembly of electronic components and circuitry, such as a stage in a computer, that is installed as a unit (Fact 1). The customary meaning of “plug” in the electronics arts is a fitting, commonly with two metal prongs for insertion in a fixed socket, used to connect an appliance to a power supply (Fact 2).

We construe module plug within the context of claim 1 and in view of the Specification and the customary meaning of the terms to mean a self-contained fitting that is removably received within a socket of a module plug mount and is removable from the module plug mount when a cable plug is received in the cable plug mount.

The Appellants argue that a male terminal 30 is not a module plug because:

If the male terminals 30 were to be removed from the troughs 28, the plug connector 10 would need to be removed from the forward portion 22a of the receptacle connector 12. Therefore, it is not possible to remove the male terminals 30 from the troughs 28 when the receptacle connector 12 is received in the forward portion 22a as claimed (Appeal Br. 5; see also Reply Br. 2).

The question before us is whether the male terminals 30 are removably received in the troughs 28 such that the male terminals 30 can be removed from the troughs 28 when the receptacle connector 12 is received in the forward portion 22a.

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Wirkus discloses a plug connector housing 22 having a plurality of troughs 28 for receiving a plurality of male terminals 30, which are inserted into troughs 28 so that they extend into forward portion 22a of the housing (Facts 3 & 4). Wirkus also discloses a receptacle connector 12 having female terminals 54 (Fact 5). Wirkus further describes:

When plug connector 10 is latched within opening 14 in panel 16, receptacle connector 12 can be inserted into connector 10 with cylinders 52, 52a being inserted into the forward portion 22a of housing 22 of connector 10, whereby male terminals 30 enter cylinders 52, 52a for mating with female terminals 54 (Fact 6).

Figure 1 of Wirkus shows male terminal 30 as a banana-type plug or connector having wires that terminate in one end of the plug 30 and the other end of the plug formed to be inserted into the socket 28 of housing 22 (Fact 7). The insertable end of plug 30 is shown with two projections on either side which presumably press against the sides of socket 28 to secure the plug in place in the socket once inserted (Fact 8). Such banana-type connectors were common in the art and were formed so as to be removable from the corresponding socket (Fact 9). As such, we agree with the Examiner that the module plugs 30 of Wirkus are disposed in the adapter 10 and in the cylinders 52 and 52a such that they are capable of being pulled free from the cylinders 52 and 52a (Ans. 10) (Fact 10). We see no reason why, as argued by the Appellants, the receptacle connector 12 must be removed from adapter 10 when the module plugs 30 are removed from sockets 28 (Fact 11), and the Appellants have provided no explanation for

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this assertion. Thus, the Appellants have failed to clearly explain why the Examiner erred in finding that the male terminal 30 of Wirkus satisfies the claimed module plug. As such, they have not persuaded us of error in the Examiner's findings as to the scope and content of the prior art.

The Appellants also rebut the Examiner's stated motivation to combine the teachings of Ueda and Wirkus. We find that the Examiner articulated a rational reason why one having ordinary skill in the art would have used the adapter of Wirkus in the door panel construction of Ueda. In particular, the Examiner found that Ueda clearly discloses connectors C4 and C4', which are connected through a partition wall that separates a dry side of a vehicle door frame from a wet side, and that one of ordinary skill in the art would have been concerned with ensuring a proper sealing engagement between the connectors and the partition wall (Ans. 11). The Examiner noted that Wirkus was concerned with the same problem of providing a connector that ensures a proper seal between the connectors 30 and 12 and the partition wall 16 (Ans. 11). The Examiner correctly concluded that one having ordinary skill in the art would have considered the teachings of Wirkus to ensure that the connectors of Ueda are properly engaged with one another and provide a seal between themselves and the partition wall (Ans. 11). *See KSR*, 127 S. Ct. at 1741 ("One of the ways in which a patent's subject matter can be proved obvious is by noting that there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent's claims.")

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The Appellants contend that there is no motivation to provide an adapter in Ueda for the purpose of creating an improved seal, because “[n]othing in Ueda et al. states that the door is in need of an improved seal between a wet side and a dry side or that any seal employed in Ueda et al. is deficient” (App. Br. 6). This argument misses the mark, because the Examiner’s proposed combination is merely a substitution of the sealing arrangement of Wirkus for any seal employed in Ueda. *See KSR*, 127 S. Ct. at 1740 (“when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.”) The Appellants have failed to show why the use of the adapter of Wirkus in the door panel assembly of Ueda, would have resulted in anything more than the predictable result of a door panel assembly with a sealing arrangement between the connectors and the partition wall. As such, the Appellants have not persuaded us of error in the Examiner’s rejection of claim 1 or claims 5, 6, 11, 13, 19, and 22, which stand or fall with claim 1.

*Group 2: Claims 7-9, 15-18, and 23*

The Appellants contend the Examiner erred in finding that Wirkus discloses an adapter including a skirt having an exterior surface that defines one of the module plug mount and the cable plug mount and an interior space that defines the other of the module plug mount and the cable plug mount, as recited in claims 7 and 15 (App. Br. 6). We agree.

Wirkus discloses a plug connector 10 having a housing 22 with a forward portion 22a, and a receptacle connector 12 with cylinders 52, 52a

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that are inserted into the forward portion 22a of housing 22 of connector 10 (Facts 3-6). Wirkus also discloses that housing 22 has a plurality of troughs 28 for receiving a plurality of male terminals 30 (Fact 3). The Examiner found that the housing 22 of Wirkus is the same as the skirt of claim 7 (Ans. 4). Using this reading of Wirkus, we find that the interior space formed in the forward portion 22a of housing 22 forms the cable plug mount (*i.e.*, forms the portion into which the cylinders 52, 52a of cable plug 12 are inserted) and the interior space formed in the rearward portion of housing 22 forms the module plug mount (*i.e.*, forms the troughs 28 into which the module plugs 30 are inserted) (Facts 12 & 13). Thus, we find that the skirt of Wirkus does not have an exterior surface that defines one of the module plug mount and the cable plug mount and an interior space that defines the other of the module plug mount and the cable plug mount, as recited in claims 7 and 15 (Fact 14). As such, we do not sustain the rejection of claims 7 and 15 or claims 8, 9, 16-18, and 23<sup>2</sup>, which depend therefrom.

*Rejection of claims 3, 14, and 21 under 35 U.S.C. § 103(a) as unpatentable over Ueda, Wirkus, and Becker*

The Examiner found that Becker discloses an assembly unit 1 as claimed and that it would have been obvious to one having ordinary skill in the art to provide Ueda, as modified by Wirkus, with an assembly unit of

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<sup>2</sup> Although the Appellants grouped dependent claim 23 with claim 1, because claim 23 depends from claim 7, the rejection of claim 23 is not sustained for the same reasons provided for claim 7.

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Becker “to control the motor while reducing [the] length of wiring between the motor and its controller” (Ans. 5).

The Appellants contend that the Examiner erred in rejecting claims 3, 14, and 21, because “[t]he unit 4 and the connector 10 [of Becker] are not arranged near a partition wall that separates a wet area from a dry area of a vehicle door” (App. Br. 7; Reply Br. 3). The Appellants conclude that “there is no motivation to provide the unit 4 and connector 10 of Becker near the partition wall of Ueda et al. and Wirkus” (*id.*).

Becker discloses locating all parts of an electrically-powered power window unit in a common, moisture-tight housing to guarantee low component and installation costs such that no additional wiring is needed between the drive unit and the electronic control and regulating system (Fact 15). The Appellants have failed to explain why the stated advantages of the improved construction of Becker would not have led one having ordinary skill in the art to apply this improved construction in Ueda. Rather, the Appellant chose to attack Becker for failing to disclose arranging the assembly unit near a partition wall. The Examiner, however, is not relying on Becker for the teaching of a partition wall, as this is already taught in Ueda and Wirkus. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *See In re Keller*, 642 F.2d 413 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091 (Fed. Cir. 1986). As such, the Appellants have not persuaded us of error in the Examiner’s rejection of claims 3, 14, and 21.

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*Rejection of claims 12 and 20 under 35 U.S.C. § 103(a) as unpatentable over Ueda, Wirkus, and Velthaus*

The Appellants do not provide any further arguments for patentability of claims 12 and 20, but rely instead on the arguments made for independent claims 1 and 13, from which claims 12 and 20 depend (App. Br. 8). For the reasons provided *supra* in our analysis of claim 1, we find these arguments unpersuasive of error in the Examiner's rejection of claims 12 and 20.

#### CONCLUSIONS

We conclude the Appellants have shown the Examiner erred in rejecting claims 7-9, 15-18, and 23 under 35 U.S.C. § 103(a) as unpatentable over Ueda and Wirkus. We conclude the Appellants have failed to show error in the rejection under 35 U.S.C. § 103(a) of claims 1, 5, 6, 11, 13, 19, and 22 as unpatentable over Ueda and Wirkus, claims 3, 14, and 21 as unpatentable over Ueda, Wirkus, and Becker, and claims 12 and 20 as unpatentable over Ueda, Wirkus, and Velthaus.

#### DECISION

The decision of the Examiner to reject claims 1, 3, 5, 6, 11-14, and 19-22 is affirmed. The decision of the Examiner to reject claims 7-9, 15-18, and 23 is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

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AFFIRMED-IN-PART

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