

The opinion in support of the decision being entered today
is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DOUGLAS R. DOMEL and WINSTON G. WALKER

Appeal No. 2006-0742¹
Reexamination Control No. 90/006,013²

ON BRIEF

Before: SPIEGEL, DELMENDO and TIERNEY, Administrative Patent Judges.
SPIEGEL, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 17, 18, 21, 27, 28, 30 and 48. The patentability of claims 1, 2, 5-16, 19, 20, 22-26, 29, 31 and 33-47 has been confirmed. Claims 3, 4 and 32 have been cancelled.

We affirm-in-part.

¹ The application on appeal was received at the Board on 01 September 2005.

² Application for patent filed 18 May 2001 as an ex parte re-exam of U.S. Patent No. 5,883,480 issued from application 09/014,514, filed 28 January 1998, which is a continuation of application 08/923,812, now U.S. Patent No. 6,060,852, which is a continuation-in-part of application 08/559,467, filed 15 November 1995, now U.S. Patent No. 5,698,958. The real party-in-interest is Harmonic Design, Inc.

I. Introduction

The subject matter on appeal generally relates to an actuator for a window covering, i.e., a device causing the slats of a mini-blind to be opened or closed by moving an operator, such as a tilt wand, and comprising an electric motor, at least one battery and a control signal generator. Claims 17, 21, 30 and 48 are illustrative and read as follows (emphasis added):

17. A device for moving an operator of a window covering having slat elements, the window covering being selected from the group of window coverings including vertical-blinds, horizontal-blinds, cellular shades, pleated shades, and lift and tilt shades, the device comprising:

an actuator including at least one electric motor in a head rail of the window covering and a coupling operably engaged with the motor, wherein the coupling contacts the operator in the head rail to prevent rotational relative motion between the coupling and the operator, a rotor of the motor being connected to the coupling for rotating the operator in either direction, the slat elements hanging from the head rail and not being contained therein;

at least one direct current alkaline or lithium battery; and

a control signal generator for generating a control signal in response to a wirelessly transmitted user command signal to cause the at least one battery to energize the motor to move the operator and thereby cause the slat elements to move.

21. The device of Claim 17, **wherein the control signal generator generates** a first control signal to energize the motor to turn in a first direction, **a second control signal to stop the motor**, and a third control signal to cause the motor to turn in a second direction.

30. The device of claim 27,

[27. A device for moving an operator in a head rail of a window covering having slat elements to move the elements, comprising:

an actuator including at least one electric motor and a coupling operably engaged with the motor, wherein the coupling contacts the operator to prevent rotational relative motion between the coupling and the operator, a rotor of the motor being connected to the coupling for rotating the operator in either direction, wherein the slat elements hang from the head rail and are not contained therein;

at least one alkaline or lithium battery; and

a control signal generator for receiving a wirelessly transmitted command signal and in response generating a control signal to cause the battery to energize the motor to move the operator and thereby cause the slat elements to move]

wherein the at least one battery is the sole source of power for the motor.

48. A window covering assembly with actuator, comprising

a head rail, a rod rotatably disposed therein, and a window covering engaged with the rod for moving the window covering when the rod is rotated, the window covering hanging down from the head rail;

at least one electric motor in the head rail;

a coupling operably engaged with the motor to engage the motor with the rod for rotating the rod;

at least one dc battery;

at least one control signal generator for generating a control signal;

an electronic circuit electrically connected to the control signal generator and the battery for processing the control signal to cause the battery to energize the motor to move the rod; and

a switch receiving the control signal and activating the electronic circuit in response thereto to permit the electronic circuit to cause the battery to energize the motor to rotate the rod,

whereby the electronic circuit is at least periodically deactivated in the absence of the control signal.

We make reference to appellants' Appeal Brief ("Brief," filed 24 September 2004) and Reply Brief³ ("Reply," filed 20 July 2005) and to the Examiner's Answer ("Answer," mailed 15 July 2005).

The examiner relies on the following references in his rejection.

Iwasaki	4,618,804	21 October 1986
Corazzini	5,413,161	09 May 1995

II. Issues

Claims 17, 18, 21, 27, 28 and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Corazzini in view of Iwasaki.

Claim 48 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Corazzini.⁴

III. Grouping of claims

Appellants have argued claims 21, 30 and 48 separately from rejected claims 17, 18, 27 and 28, which have been argued as a single group (Brief, pp. 7-10). Therefore, this appeal is decided on the basis of claims 17, 21, 30 and 48. 37 CFR § 41.37(c)(1)(vii) (2005).

³ Noted by the examiner without comment on 31 August 2005.

⁴ Appellants' brief incorrectly states that claim 48 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Corazzini in view of Iwasaki (see e.g., Brief, p. 4, the Final Office Action (mailed 14 September 2004), p. 7 and Answer, p. 8). The examiner's answer did not correct the error (Answer, p. 2, § (6)).

IV. Discussion

A. The legal standard

Obviousness is a legal conclusion based on the totality of the evidence. *Richardson-Vicks, Inc. v. Upjohn Co.*, 122 F.3d 1476, 1483, 44 USPQ2d 1181, 1187 (Fed. Cir. 1997), including underlying factual inquiries such as (1) the scope and content of the prior art, (2) the level of ordinary skill in the art, (3) the differences between the claimed invention and the prior art, and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966). An obviousness analysis under § 103 also requires consideration of whether there is some suggestion or motivation in the prior art to modify the reference or to combine reference teachings, whether there is a reasonable expectation of success, and whether the prior art reference(s) teaches or suggests all of the claim limitations. *In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991). A determination of obviousness cannot be based on a hindsight combination of components selectively culled from the prior art to fit the limitations of the claimed invention. However, "evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved." *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Regardless of the source of the suggestion, teaching or motivation, the evidentiary showing must be clear and particular, i.e., broad conclusory statements, standing alone, are not sufficient.

B. The prior art

1. Corazzini

Corazzini discloses a solar powered window shade **10** comprising a venetian blind **12** containing a head channel **26** mounted inside a window frame **14**. An apparatus **22** for converting solar energy from sunlight into electrical energy which includes a solar panel **36** with multiple solar cells **38** is mounted on the head channel **26**. An electrical energy utilizing mechanism **24** containing a reversible electric motor **40** is mounted inside the head channel **26** and is electrically connected to the solar cells **38** so as to be operated by electrical energy. A structure **44** for opening and closing the venetian blind **12** is mechanically connected to the motor **40** and includes an elongated tilt rod **46**. A control unit **54** is electrically connected to the motor **40** via an electric cord **56** so that the motor **40** can be operated both manually and automatically. A housing **58** attached to the distal end of the electric cord **56** includes a first switch **60** which, when manually pressed, causes the motor **40** to rotate tilt rod **46** clockwise so as to open the venetian blind **12** and a second switch **62** which, when manually pressed, causes the motor **40** to rotate tilt rod **46** counterclockwise to close the venetian blind **12**. Alternatively, housing **58** also includes an automatic timed set switch **64** for opening and closing the venetian blind **12** at predetermined time intervals. Finally, a battery **68** is contained in the head channel **26** and electrically connected to the motor **40** to supply auxiliary electrical energy to the motor **40**, as a backup power source, on an inclement sunless day. [Column 1, line 65 - column 2, line 67.]

2. Iwasaki

Iwasaki discloses a wireless control system for opening and closing a motor-driven window blind (c. 1, ll. 61-66; Fig. 1). The system includes a hand-held transmitter **12** which transmits an infrared signal comprising a command signal for controlling rotation of a motor **10**, which may be operably coupled for rotating the slats of a window blind **15** (c. 2, ll. 48-60). An infrared responsive receiver and drive unit **14** is operatively coupled with the motor **10** (c. 2, ll. 60-64). The receiver and drive unit **14** contains a discriminator circuit **44** which produces a forward or reverse rotation control signal in response to command signals received from the transmitter **12** whereby the control signal is fed to a drive circuit **46** coupled with the motor **10** (c. 3, l. 52 - c. 2, l. 8), which is battery powered (Fig. 5). A protection circuit **48** is preferably interposed between the discriminator circuit **44** and drive circuit **46** to prevent a rotation command signal from continuing to rotate the motor **10** after the blind reaches a given limit of rotation (c. 4, ll. 17-22).

C. The examiner's position

According to the examiner, Corazzini fails to disclose a control signal generator for generating a control signal "in response to a wireless transmitted user command signal" as required by claims 17 and 27, and therefore by their respective dependent claims 21 and 30 (Answer, pp. 4, 6 and 7, original emphasis). However, the examiner argues that "a wireless control unit is a well-known art" as shown by Iwasaki's teaching of "a remote control of a blind using a wireless hand-held transmitter 12" in Iwasaki Fig. 1, for example (Answer, p. 7).

The examiner concludes that modifying Corazzini to use a wireless transmitter would provide not only (1) enhanced mobility and (2) enhanced portability of the control system, but also (3) increased communication distance (Answer, p. 8).

As to claim 21, the examiner states "the tilt mechanism 52 tilts to one direction if the motor turns in one direction; the tilt mechanism 52 tilts to the other direction if the motor turns in the other direction; and the tilt mechanism stops if the motor stops" (Answer, p. 5).

As to claim 30 (Answer, p. 8), the examiner contends that "the number of power sources does not affect the operation of the device. Therefore, a single power source (claim 30) or a plurality of power sources (Corazzini) is considered an obvious design choice."

"With respect to claim 48, Corazzini does not show the detailed structure of claim 48. However, all elements claimed in claim 48 should be inside the Corazzini's circuit." [Answer, p. 9.] Specifically, according to the examiner (Answer, pp. 10-11, right-hand side of comparison chart),

at least there is a circuit (not shown) for actuating the motor operation, such a circuit may includes [sic] a preamplifier, a [sic] H-bridge switch, etc [sic] (all not shown) based on the time set by the time-set switch 64;

* * * * *

at least there is a comparator switch (an operational amplifier functioned [sic] as a switch, not shown) for comparing the time from the clock and the time set by the time-set switch 64;

* * * * *

once the time from the clock equals to the time set by the time-set switch 64, the operational amplifier changes its status to activate the preamplifier and the H-bridge switch to operate and energize the motor 40 to rotate the structure 44;

* * * * *

the motor is periodically activated during the setting time and non-activated all other times.

D. Appellants' position

Appellants agree that "Iwasaki's remote control unit in general might be a nice thing to have," but argue that combining Iwasaki's remote control unit with Corrazini [sic] would interfere "with a main purpose of Corrazini [sic], namely, its daytime-nighttime programming" and, therefore, a skilled artisan would not have been motivated to combine Iwasaki and Corazzini (Brief, p. 5). Appellants further argue "that it is unclear just how the wireless receiver of Iwasaki, which nowhere considers a solar energy source, could be grafted onto the solar-powered blind of Corrazini [sic], particularly since Corrazini [sic] does not show any circuit at all" (Brief, p. 6). In particular, appellants maintain that "the examiner's personal, unsupported observations about the advantages of using wireless commands" fails to consider the particular structure of the primary reference (*id.*).

With respect to claim 21, appellants argue that "it is the **absence** of a signal in Iwasaki that causes the motor to stop" and "the absence of something (e.g., a control signal) does not equate to an explicitly recited something (the stopping control signal of Claim 21)" (Brief, p. 7, original emphasis).

With respect to claim 30, appellants further argue that a system using at least one battery as the sole source of power is structurally different from the multi-source system of Corazzini wherein the battery 68 is just a back-up source of power (Brief, p. 8).

With respect to claim 48, appellants still further argue that the examiner deems the elements recited, but not shown, in claim 48 to be "design expedients." (Brief, p. 9). According to appellants, the examiner's personal

knowledge of what is in the prior art, e.g., unshown preamplifiers, H-bridge circuits and switches, is insufficient to support an obviousness rejection (*id.*). Moreover, claim 48 requires the electronic circuit to be at least periodically deactivated in the absence of the control signal and, although the examiner opines that the motor of Corazzini is deactivated when it is not running, the motor is not even part of the examiner's imaginary Corazzini circuit (Brief, p. 10).

E. Analysis

In order to establish a *prima facie* case of obviousness, the examiner must provide evidence, not broad conclusory statements, that (1) all of the elements of appellants' claims on appeal were in the prior art, (2) there was a motivation in the prior art to combine those elements and (3) one of ordinary skill in the art would have had a reasonable expectation of success in so doing.

First, the examiner has failed to establish that all of the elements of claims 21 and 48 were in the prior art. As to claim 21, the examiner broadly concludes that "[t]he absence of a signal, in a logic term, is a signal goes [sic] from 'high' to 'low'. This 'high' to 'low' conversion is a control signal that causes the motor to stop". [Answer, p. 15.] The examiner also argues that when a user stops pressing a button to generate a command signal the command signal is terminated and, therefore, stopping generation of a signal equates to generation of a stop control signal in a logic circuit (Answer, p. 16). The problem is that claim 21 requires the control signal generator to "generate" a second control signal to stop the motor. The examiner has not provided evidence sufficient to establish that the absence of a signal equates to *generation* of an actual signal

as positively recited in claim 21. Neither has the examiner provided any prior art reference describing a "high" to "low" conversion signal programmable logic controller (or any motivation to modify the window shade assembly of Corazzini by adding such a programmable logic controller) in support of his obviousness argument. The examiner simply concludes that the "'high' and 'low' signals are indirectly disclosed by Corazzini column 2, lines 34-36" (Answer, p. 16), i.e., where Corazzini states that "[a] structure **44** is mechanically connected to the motor **40**, for opening and closing the slats **32** in the venetian blind **12**". The test for an implicit showing is what the reference disclosure, the knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art. *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). The examiner has not shown that Corazzini implicitly discloses "a second control signal to stop the motor" as required by claim 21.⁵ For example, the examiner might have provided evidence showing that it was both well known and within ordinary skill in the relevant art to use a "high" to "low" signal conversion programmable logic controller to operate a motor-drive rod operably attached to a venetian blind to open and close the venetian blind, thereby providing the three control signals recited in claim 21.

⁵ We note that immediately following the citation relied upon by the examiner, Corazzini states (c. 2, ll. 37-42):

[t]he opening and closing structure **44** includes an elongate tilt rod shaft **46** extending from the motor **40**. at least one cradle **48** in the head channel **26**, for rotatively carrying the tilt rod shaft **46**. A tilt gear **50** is on a distal end of the tilt rod shaft **46**, to operate a tilt mechanism **52** for the slats **32**.

Since neither the examiner nor the appellants have commented on what one of ordinary skill in the art would have understood from this explanation of the mechanical structure relied upon by the examiner as an "indirect" showing of the claim limitation under consideration, we will not raise the issue *sua sponte*.

Therefore, the examiner has failed to establish that claim 21 is *prima facie* obvious over Corazzini in view of Iwasaki.

As to claim 48, the examiner appears to backpedal from his original position that Corazzini does not show all the elements of claim 48, including "an electronic circuit" and a "switch" (Answer, p. 10). In response to appellants' brief, the examiner now asserts that "the recited elements 'at least one control signal generator', 'an electronic circuit' and 'manually manipulable operating switch' are common elements to either Corazzini or Iwasaki control circuit" (Answer, p. 17). More specifically, the examiner asserts that "Corazzini column 2, lines 44-45 states that the motor 40 can be operated both manually and automatically. Thus, the H-bridge circuit must be controllable by a manual switch." [Answer, p. 18.] The examiner has failed to establish that Corazzini implicitly shows the elements of claim 48. While the examiner has asserted what Corazzini discloses (i.e., at c. 2, ll. 44-45), albeit in a disjointed fashion, and has alleged "design expedient," the examiner has not discussed the knowledge of ordinary skill in the art or what the asserted disclosure in Corazzini would have suggested to the skilled artisan in terms of the nature of the problem to be solved, e.g., operating a motor both manually and automatically. Moreover, even assuming *arguendo* that the examiner had established that either Corazzini or Iwasaki alone described each element of claim 48, the examiner would still need to establish not only the presence of each claim element, but also the structural relationship between each element set forth in claim 48. Therefore, the examiner has failed to

establish that claim 48 is *prima facie* obvious over Corazzini (alone or in combination with Iwasaki).

Next, claim 30 requires that at least one battery be the sole source of power for the motor. As long as some motivation or suggestion to combine the references is provided by the prior art taken as a whole, the law requires nothing more. Here there is no doubt that if the back-up battery was the only power source, Corazzini's solar powered window shade would still function. Indeed, it is the very purpose of the back-up battery to provide power when there is no other power source, e.g., when there is no or insufficient sunlight to generate power to power the motor. Moreover, Iwasaki's motor is also battery powered. Therefore, we agree with the examiner that the subject matter of claim 30 is *prima facie* obvious over Corazzini in view of Iwasaki.

Finally, as to claim 17, the examiner maintains that "one would modify the Corazzini's wired remote control with Iwasaki's wireless remote control simply because the nature of the problems is solved with the Iwasaki's wireless remote control", namely, "(1) the wire (or cable) may be damaged, (2) the difficulty of wiring a remote control unit, and (3) the remote control unit with a wire is very inconvenient in using" (Answer, p. 12). Moreover, Iwasaki is expressly directed to solving problems inherent in the use of wired controls, e.g., locating controls for a variable number of users in variable locations and the increased manufacturing and installations costs and the increasingly complex switch and motor wiring associated therewith (see e.g., c. 1, ll. 34-60). Therefore, we agree with the

examiner that the prior art as a taken as a whole provides the requisite motivation to combine.

Appellants also argue that the examiner has not explained "how the wireless receiver of Iwasaki, which nowhere considers a solar energy source, could be grafted onto the solar-powered blind of Corrazini [sic], especially since Corrazini [sic] does not show any circuit at all" (Brief, p. 6, emphasis added). However, both Iwasaki and Corazzini disclose use of a battery-powered motor and Iwasaki describes how to add a wireless remote control system for opening and closing a battery-powered motor-driven window blind. Prior art references are presumed to be enabling. *In re Sasse*, 629 F.2d 675, 681, 207 USPQ 107, 111 (CCPA 1980). Appellants have not shown that Iwasaki would not have enabled one of ordinary skill in the art to add a wireless remote control system for opening and closing motor-driven window blinds to the motor-driven window blinds of Corazzini. Therefore, appellants' arguments are insufficient to rebut the examiner's *prima facie* case of obviousness over the combined disclosures of Corazzini and Iwasaki.

Based on the foregoing, the decision of the examiner (i) to reject claims 17, 18, 27, 28 and 30 as obvious over Corazzini in view of Iwasaki is **affirmed**, (ii) to reject claim 21 over Corazzini in view of Iwasaki is **reversed** and (ii) to reject claim 48 as obvious over Corazzini is **reversed**.

V. Miscellaneous

In the event of further prosecution, the examiner should take a step back and review the patentability of at least claim 17 in view of Iwasaki's discussion of

Figs. 1 and 5 and of receiver and drive unit **14** alone or together with other prior art that he may be aware of.

VI. Conclusion

To summarize, the decision of the examiner (i) to reject claims 17, 18, 27, 28 and 30 as obvious over Corazzini in view of Iwasaki is **affirmed**, (ii) to reject claim 21 over Corazzini in view of Iwasaki is **reversed** and (ii) to reject claim 48 as obvious over Corazzini is **reversed**.

AFFIRMED-IN-PART

_____)
CAROL A. SPIEGEL)
Administrative Patent Judge)
)
)
)
)
_____) BOARD OF PATENT
ROMULO H. DELMENDO) APPEALS
Administrative Patent Judge) AND
) INTERFERENCES
)
)
_____)
MICHAEL P. TIERNEY)
Administrative Patent Judge)

cc (via first class mail):

John L. Rogitz
750 B Street Suite 3120
San Diego, CA 92101