

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte EDWARD M. GOSTLING

Appeal 2007-2352
Application 10/406,758
Technology Center 2800

Decided: November 16, 2007

Before LANCE LEONARD BARRY, ROBERT E. NAPPI,
and SCOTT R. BOALICK, *Administrative Patent Judges*.

NAPPI, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 6(b) (2002) of the Examiner's rejection of claims 1 through 6, 8 through 13, 18 through 20, 24 through 31, 33 through 38, 44 through 46, 48 through 51, 53 through 57, 59 through 66, 68 through 74, and 76 through 78. Claims 7, 14, 32, 47, 58, 67, and 75 have been identified as reciting allowable subject matter.

We affirm-in-part.

INVENTION

The invention is directed to a hard disk drive electrical interface with a plurality of electrical contact pins and a restriction member which restricts electrical contact with one of the pins. See page 7 of Appellant's Specification. Claim 50 is representative of the invention and reproduced below:

50. An electrical interface for an electronic component, comprising:

a plurality of contacts, including a first contact and one or more other contacts adjacent to said first contact, at least some of said plurality of contacts including said first contact adapted to electrically engage with a first connector and at least a second connector; and

a non-conductive restricting member associated with said first contact and adapted to electrically insulate at least a substantial portion of said first contact;

wherein an electrical connection between said first contact and the first connector is allowed while avoiding an electrical connection between said first contact and said at least second connector.

REFERENCES

Brummans	US 3,441,661	Apr. 29, 1969
McCleerey	US 5,281,165	Jan. 25, 1994

REJECTIONS AT ISSUE

Claims 1 through 5, and 8 through 12, stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over McCleerey in view of Brummans. The Examiner's rejection is set forth on pages 3 through 5 of the Answer.

Claims 6, 13, 18 through 20, 24 through 31, 33 through 38, 44 through 46, 48 through 51, 53 through 57, 59 through 66, 68 through 74, and 76 through 78 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over McCleerey in view of Brummans and Appellant's admitted prior art. The Examiner's rejection is set forth on pages 5 and 6 of the Answer.

Throughout the opinion, we make reference to the Brief (received February 15, 2006), the Reply Brief (received June 7, 2006) and the Answer (mailed September 8, 2006) for the respective details thereof.

ISSUES

First issue:

Appellant argues, on pages 5 through 7 of the Brief, that the Examiner's proposed motivation to combine the references teaches away from Appellant's claims. Appellant reasons that placing a separate housing on each of McCleerey's pins, the result of the Examiner's modification of McCleerey, is not insulating only a first or single contact as recited in each of independent claims 1, 11, 18, 27, 35, 44, 55, 63, 71, and 78. (App. Br. 7.) Further, on pages 9 and 10 of the Brief, Appellant asserts that the combination of the references is unsatisfactory for the purpose proposed by the Examiner. Appellant reasons that if Brummans' housing were added to

the male pins of McCleerey, it would surround the pin and prevent the complementary or mating contact from engaging the pin. (App. Br. 9.)

In response the Examiner states:

McCleerey does not disclose the restricting member for a single pin. Brummans discloses a simple female electrical connector, including an insulating housing 1 and a conductive terminal 3. When the Brummans female connector (including the housing, terminal, and wire) is placed on one of the McCleerey contacts 5, all of the claimed limitations are met (for claims 1-5 and 8-12, as illustrative claims). The Brummans non-conductive restricting member (the insulative housing 1) is associated with the first contact and different from the first connector (the Brummans terminal 3). The Brummans non-conductive restricting member, i.e. the Brummans housing 1, is different from the first connector, i.e. the Brummans terminal 3 (claim 1, lines 4-5). As soon as the Brummans connector is mated with a McCleerey pin 5, the restricting member (Brummans housing 1) insulates at least a substantial portion of the first contact (McCleerey pin 5) such that an electrical connection between said first contact and the first connector (Brummans terminal 3) is allowed while avoiding an electrical connection between said first contact and a second connector and permitting an electrical connection between the remaining plurality of contacts and one or more other connectors (e.g., additional shorting bars 25)(claim 1, lines 6-10). As soon as the Brummans device is mated with a McCleerey pin 5, no other connector may attach to the same McCleerey pin 5.

(Answer 7-8.)

Further, the Examiner states that the combination of the references does not result in modifying the McCleerey connector, but rather using (i.e., plugging in) the Brummans connector to the McCleerey connector.

Thus, the first issue for us to consider is whether the Examiner erred in determining that one would have been motivated to use Brummans' plug to connect to a pin of McCleerey's connector.

Second Issue:

Appellant argues, on pages 7 and 8 of the Brief, that independent claims 27, 35, 44, 59, and 78 recite that the non-conductive restricting member does not contact the electrical contact. Appellant points out that Brummans' flap, item 8, engages the edge of the conductor.

In response the Examiner states:

When the Brummans device, including the non-conducting restricting member 1 and conductive connector 3 is placed on a McCleerey contact 5, the non-conductive restricting member (Brummans element 1) would not come into contact with the McCleerey contact 5. Only the Brummans conductive connector 3 would contact the McCleerey contact 5.

(Answer 10.)

Thus, the second issue for us to consider is whether the Examiner erred in determining that when using the Brummans plug to connect to a pin of the McCleerey connector, the non-conductive insulating housing does not contact the pin of McCleerey's connector.

Third issue:

On pages 2 and 3 of the Reply Brief, Appellant argues that the combination of the references does not teach "restricting access to a first contact in the absence of an electrical connector" as recited in claim 11.

Thus, the third issue before us is whether the combination of the references teaches that access to the first contact is restricted when there is no connector present.

Fourth issue:

Appellant argues that with Brummans' plug on McCleerey's connector, there will be an electrical connection whereas claims 35 and 50 require that the restricting member restrict electrical access to the contact. (Reply Br. 3 and 4).

Thus, the fourth issue for us to consider is whether the combination of references teaches restricting electrical contact as recited in the representative claim.

Fifth issue:

Appellant asserts that claims 10, 25, 34, 38, 49, 59, 70, and 72 require the restricting member to be integral with the interface of the disk drive. Appellant argues that there is no suggestion or motivation to integrate the Brummans connector and McCleerey into an integral unit. (Reply Br. 4-8).

Thus, the fifth issue for us to consider is whether the combination of references teaches that the restricting member is integral to the interface of the disk drive as recited in the representative claim.

Sixth issue:

Appellant asserts, on page 8 of the Reply Brief that claim 27 recites a nonconductive restricting means which must be interpreted in light of the Specification. Appellant states "The specification of the present application only discloses a restricting member that is integral with and not separate or removable from the electrical interface of the hard disk drive."

Thus, the sixth issue for us to consider is whether the scope of independent claim 27 is limited to a restricting member that is integral to the interface of the disk drive and whether the combination of the references teaches such a feature.

Seventh issue:

Appellant asserts that claim 71 recites a nonconductive restricting member extending from a base in a direction parallel to the pins. Appellant argues that the housing of Brummans does not extend from the base of an electrical interface, but rather is a separate removable component. (Reply Br. 8)

Thus, the seventh issue for us to consider is whether the combination of the references teaches the restricting member extending from the base as recited in the representative claim.

FINDINGS OF FACT

1. McCleerey teaches a connector assembly, item 1, with a plurality of contacts (item 5.) See figures 1, 6, and 12, col. 2, ll. 1-6.
2. McCleerey teaches two types of plugs (both female) which may be used to contact the pins of the connector assembly. One type makes an electrical connection with each of the contacts (pins) of the connector (item 19) the other type contacts two adjacent pins and electrically connects the two contacts (shorting bar item 25.) (Figures 1, 12, col. 2, ll. 52-61, col. 3, ll. 7-12.)

3. One skilled in the art viewing the figures would recognize that only one of these two types of plugs can be used at a time, i.e., plug 19 can not be plugged in when a shorting bar item 25 is in place and vice versa.
4. One skilled in the art will also recognize that more than one shorting bar can be used with the connector, but that only one shorting bar can be attached to a contact. See McCKeerey figure 12.
5. Brummans teaches an insulating housing for a single female electrical connector. See figs.1 col. 2, ll. 4-20.
6. The insulating housing of Brummans surrounds (co-axially) and contacts the female electrical connector. It contains an opening (item 6) to allow the mating male connector to enter the housing and does not disclose or suggest that the housing contacts the male connector. (Col. 2, ll. 4-20.)
7. The female connector in Brummans is connected to a wire (item 9). Thus the plug of Brummans provides an electrical connection between the wire and mating male connector. (Fig. 2.)

PRINCIPLES OF LAW

On the issue of obviousness, the Supreme Court has recently stated that “[t]he obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation.” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007). Further, the Court stated

“[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”

KSR Int’l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1739 (2007).

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. . . . [A] court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

Id. at 1740. “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 the invention a known problem for which there was an obvious solution encompassed by the patent’s claims.” *Id.* at 1742.

ANALYSIS

Initially we note that in the Brief, Appellant’s arguments group the rejected claims into two groups. In the Reply Brief, Appellant’s arguments, subdivided these groups into five groups of claims. 35 C.F.R. § 41.41, which sets forth the requirements of the Reply Brief, does not provide for changing the grouping of the claims. Nonetheless, as these arguments were considered by the Examiner (see communication from the Examiner dated June 12, 2006) we will consider these arguments. Accordingly, Appellant’s arguments group the claims into six groups, in accordance with 35 C.F.R.

§ 41.37(c)(1)(vii) we select the representative claims of the groups. The groups, representative claims and issues related to the groups are as follows:

- Group 1 is directed to the rejection of independent claims 1 and 11, and dependent claim 2 through 5, 8, 9, 10 and 12, under 35 U.S.C. § 103 (a) as being unpatentable over McCleerey in view of Brummans. Claim 11 is representative of the claims in this group and the first and third issues apply to this claim.
- Group 2 is directed to the rejection of claims 6, 13 and 54 under 35 U.S.C. § 103 (a) as being unpatentable over McCleerey in view of Brummans and Appellant's admitted prior art.
- Group 3 is directed to the rejection of independent claims 35 and 50, and dependent claims 36 through 38, 51, and 53 under 35 U.S.C. § 103 (a) as being unpatentable over McCleerey in view of Brummans and Appellant's admitted prior art. Claim 50 is representative of the claims in this group and the first, second and fourth issues apply to this claim.
- Group 4 is directed to the rejection of independent claim 59 and dependent claim 25, 34, 37, 49, 60 through 62, 70, and 72 under 35 U.S.C. § 103 (a) as being unpatentable over McCleerey in view of Brummans and Appellant's admitted prior art. Claim 59 is representative of this group and the first and fifth issues apply to this claim.
- Group 5 is directed to the rejection of independent claim 27, and dependent claims 28 through 31, and 33 under 35 U.S.C. § 103 (a) as being unpatentable over McCleerey in view of Brummans and

Appellant's admitted prior art. Claim 27 is representative of this group and the first, second and sixth issues apply to this claim.

- Group 6 is directed to the rejection of independent claims 18, 44, 55, 63, 71, and 78, and dependent claims 19 through 20, 24, 26, 45, 46, 48, 56, 57, 64 through 66, 68, 69, 73, 74, 76 and 77 under 35 U.S.C. § 103 (a) as being unpatentable over McCleerey in view of Brummans and Appellant's admitted prior art. Claim 71 is representative of this group and the first, second and seventh issues apply.

As the first issue involves all of the groups of claims we will address it first and address the other issues as they pertain to the grouped claims.

First issue:

Appellant's arguments have not persuaded us that the Examiner erred in determining that one would be motivated to use the Brummans plug to connect to a contact (pin) of the McCleerey connector. McCleerey teaches that the male contacts (pins) in the connector can be engaged by different types of electrical female contact plugs. (Fact 2.) Installation of one of the plugs precludes the other type of plug from being inserted. (Fact 3.) Brummans teaches a female plug which only contacts a single male contact. (Fact 5.) Using Brummans' plug in the connector of McCleery would allow a user to electrically connect to one of the contacts in McCleerey's connector assembly. We do not consider this to be defeating the purpose of either McCleerey's connector assembly or Brummans' plug, rather we consider it to be using Brummans' plug for its intended purpose to provide an electrical connection. Hence we are in agreement with the Examiner, that

the use of the Brummans' plug with McCleerey's connector is an obvious combination of old elements. Once installed on one pin, the Brummans plug with its insulating housing will also provide a layer of electrical insulation between the electrically contacted pin and the adjacent pins. Also the installation of the plug will preclude other plugs from contacting the contact (pin). Thus, Appellant's arguments directed to the first issue have not persuaded us of error in the Examiner's rejection.

As the first issue is not dispositive of the appeal, we further consider the issues directed to the individual groups of claims.

Group 1, representative claim 11, third issue.

The next issue before us is the third issue and it applies to the claims grouped in group 1, in which claim 11 is the representative claim. Appellant's arguments have persuaded us that the Examiner erred in determining that the combination of the references teaches that access to the first contact is restricted when there is no connector present. As discussed above with respect to the first issue, we concur with the Examiner's determination that using Brummans' plug with McCleerey's connector is an obvious combination of old elements. However, claim 11 recites, "in the absence of an electrical connector [,] restricting an electrical connection only to said first contact..." Thus, the scope of claim 11 includes that access to one pin is restricted when there is no connector present.

Independent claim 1 is of different scope, claim 1 recites a first connector that contacts a plurality of contacts including the contact that is electrically insulated by the restricting member. Claim 1 further recites that

the restricting members is different than the restricting member. Thus, the scope of independent claim 1 includes that the restricting member is different than the contact that connects to the insulated contact.

As discussed above with respect to the first issue, installation of Brummans' plug restricts further contact with the pin, however we find no teaching or suggestion in either Brummans or McCleerey that restricts access to the connector or pin when a plug is not present or that is separate from the plug which connects to the insulated contact. Accordingly, we will not sustain the Examiner's rejection of the claims in group 1, claims 1 through 9, 11 and 12.

Groups 2, claims 6, 13 and 54

Claim 6 is dependent upon claim 1 and claim 13 and 54 are dependent upon claim 11. These claims are rejected under being unpatentable over McCleerey in view of Brummans and Appellant's admitted prior art. The Examiner has not found that Appellant's admitted prior art makes up for noted deficiencies of the rejection of claim 1, accordingly we will not sustain the Examiner's rejection of claim 10 for the reasons discussed with respect to claim 1.

Group 3 representative claim 50, second and forth issue.

The next issues before us are the second and forth issues and they apply to the claims grouped in group 3, in which claim 50 is the representative claim. Appellant's arguments directed to the second issue have not persuaded us that the Examiner erred in determining that when

using the Brummans' plug to connect to a pin of the McCleerey connector; the non-conductive insulating housing does not contact the pin of McCleerey's connector. Initially, we note that representative claim 50 does not recite that the non-conductive insulating housing does not contact the connector. However, as the other claims grouped with claim 50 do recite such a limitation we will address Appellant's contentions.

As discussed above with respect to the first issue, we concur with the Examiner's determination that using Brummans' plug with McCleerey's connector is an obvious combination of old elements. Further, we find that Brummans teaches that the insulating housing contacts the female contact, but does not teach that it contacts the male pin which the female contact is connected. (Fact 6.) Thus, in combination we do not find that the insulating housing of Brummans' plug, which acts as a restricting member, physically contacts the male contact (pin) of McCleerey's connector. Accordingly, Appellant's arguments directed to the second issue have not persuaded us of error in the Examiner's rejection of the claims in group 3.

Similarly, Appellant's arguments directed to the fourth issue have not persuaded us of error in the Examiner's rejection of claims in group 3. We are not persuaded that the Examiner erred in determining that the combination of references teaches restricting electrical contact as recited in claim 50. Claim 50 recites "a non-conductive restricting member associated with said first contact and adapted to electrically insulate at least a substantial portion of said first contact." Thus, claim 50 recites that the restricting member electrically insulates a "substantial portion" of the electrical contact. We do not interpret this limitation as "restricting

electrical access” as argued by Appellant, on page 3 of the Reply Brief. Rather, we consider the scope of this limitation to be that most of the electrical contact is insulated. We find Brummans teaches that the insulating housing surrounds and provides electrical insulation to the female, and the female/male connection. (Fact 6.) Based upon these findings we further find that when Brummans’ plug is installed on the electrical connector assemble of McCleerey, it insulates a substantial portion of the electrical contact. Thus, Appellant’s arguments have not persuaded us that the Examiner erred determining that the combination of references teaches restricting electrical contact as recited in representative claim 50.

As Appellant’s arguments, directed to the two issues involving the claims in group 3, have not persuaded us of error in the Examiner’s rejection of the claims in group 3, we affirm the Examiner’s rejection of claims in group 3 (claims 35 through 38, 50, 51, and 53).

Group 4, representative claim 59, first and fifth issue.

The issue before us with respect to this group is the fifth issue. Appellant’s argument directed to the fifth issue have persuaded us that the Examiner erred in determining that the combination of references teach that the restricting member is integral to the interface of the disk drive. Claim 59 recites “said connector plate comprising an integral non-conductive restriction member operable to restrict electrical access...” Claims 25, 34, 38, 49, 70, and 72 each recite a similar limitation. Thus, the scope of these claims includes that the restricting member is a part of the electrical interface. As discussed above with respect to the first issue, we concur with

the Examiner's determination that using Brummans' plug with McCleerey's connector is an obvious combination of old elements. It is McCleerey's connector assembly that the Examiner relies upon to meet the electrical interface. As discussed above with respect to the first issue it is the insulating plug of Brummans' which meets the insulating restricting means. The purpose of Brummans' plug is to insulate the female connector. (Fact 6.) We do not find that one would remove the insulator of Brummans and make it integral to McCleerey's connector assembly as it would no longer serve the purpose of electrically insulating the female contact member, similarly it would defeat the ability of inserting McCleerey's plug 19. Accordingly, Appellant's arguments have persuaded us of error in the Examiner's rejection of the claims in group 4 (claims 25, 34, 38, 49, 59, 70, and 72.)

Group 5, representative claim 27, second and sixth issue.

The issues before us directed to this group of claims are the second and sixth issues. Claim 27 is the representative claim of this group. As discussed above Appellant's arguments directed to the second issue have not persuaded us that the Examiner erred in determining that when using the Brummans' plug to connect to a pin of the McCleerey connector; the non-conductive insulating housing does not contact the pin of McCleerey's connector.

Additionally, Appellant has not persuaded us that the scope of claim 27 is limited to a restricting member that is integral to the interface of the disk drive. (Sixth issue).

Claim 27 recites “non-conductive restriction means for preventing electrical access to a single contact within said electrical contact means by an external connection means without said restricting means engaging said single contact.”¹ Appellant’s Specification contains several embodiments for the non-conductive restriction members (the structure corresponding to the restriction means) many of the restriction members are integral to the interface, see for example item 168 in figures 4 and 5, and item 172 in figures 6 and 7. However, in the embodiment of figure 10, cap item 180 is described as being placed over the contact. (Specification 12, ll. 12-21.) Thus, not all of the embodiments involve restricting members which are integral to the connector, and as such we do not find the claimed “restrictive means” is limited to only integral restricting members. Rather, we find that the scope of claim 27 includes a non-conductive restricting member which prevents electrical access and where the restricting member does not engage the contact.

As discussed above with respect the first issue, once installed on one pin, the Brummans plug with insulating housing will also provide a layer of electrical insulation between the electrically contacted pin and the adjacent pins. Also the installation of the plug will preclude other plugs from contacting the contact (pin). Further, as discussed above with respect to group 3 (claim 50), we do not find that the insulating housing of Brummans’

¹ We note that this limitation is awkward, based upon Appellant’s arguments it appears that Appellant intended the limitation to recite “... an external connecting means, [wherein] said restriction means [does not engage] said single contact.” Appellant is encouraged to clarify the language of the claim should there be further prosecution of the application.

plug, which acts as a restricting member, physically contacts the male contact (pin) of McCleerey's connector. Thus, Appellant's arguments have not persuaded us of error in the Examiner's rejection of the claims in group 5 (independent claims 27 through 31 and 33.)

Group 6, representative claim 71, second and seventh issue.

The issues before us directed to this group of claims are the second and seventh issues. Claim 71 is the representative claim of this group of claims. As discussed above Appellant's arguments directed to the second issue have not persuaded us that the Examiner erred in determining that when using the Brummans plug to connect to a pin of the McCleerey connector; the non-conductive insulating housing does not contact the pin of McCleerey's connector.

Further, Appellant's arguments directed to the seventh issue have not persuaded us that the Examiner erred in determining that the combination of the references teaches the restricting member extending from the base as recited in representative claim 71. Claim 71 recites "a non-conductive restricting member extending from said base in a direction parallel to said plurality of pins and adapted to restrict electrical access only to a single pin of said plurality of pins such that a shorting jumper can not engage said single pin and to allow access to said single pin by said first connector." We do not find that the scope of claim 71 requires the non-conductive restricting member to be integral with the base, rather claim 71 only recites the restricting member extend from the base in a direction parallel to the pins.

As discussed above with respect to the first issue, we concur with the Examiner's determination that using Brummans' plug with McCleerey's connector is an obvious combination of old elements. When installed, Brummans' plug prevents other connectors from being connected to the pin. From the figures and installation of the housing on Brummans connector, one skilled in the art would have recognized that the male connector, female connector and insulating housing are all co-axial, i.e., all share a parallel axis. See Brummans figure 2. Thus, we find that when installed on the connector assembly of McCleerey, the insulating housing of McCleerey's plug will act as a restricting member and extend from the base in a direction parallel to the male connector pins. Accordingly, Appellant's arguments have not persuaded us of error in the Examiner's rejection of claim 71 and we affirm the Examiner's rejection of the claims of group 6 (independent claims 18, 44, 55, 63, 71, 78, and dependent claims 19 through 20, 24, 26, 45, 46, 48, 56, 57, 64 through 66, 68, 69, 73, 74, 76 and 77).

CONCLUSION

Appellant's arguments have not persuaded us of error in the Examiner's rejection of claims 18 through 20, 24, 26 through 31, 33, 35 through 37, 44 through 46, 48, 50, 51, 53, 55 through 57, 60 through 66, 68 through 69, 71, 73, 74, and 76 through 78. Accordingly we affirm the Examiner's rejections of these claims under 35 U.S.C. § 103 (a).

However, Appellant's arguments have persuaded us of error in the Examiner's rejection of claims 1 through 6 and 8 through 13, 25, 34, 38, 49,

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54, 59, 70, and 72. Accordingly, we reverse the Examiner's rejection of these claims under 35 U.S.C. §103(a).

ORDER

The decision of the Examiner is affirmed-in-part.

Regarding the affirmed rejection(s), 37 CFR § 41.52(a)(1) provides "Appellant may file a single request for rehearing within two months from the date of the original decision of the Board."

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

AFFIRMED-IN-PART

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