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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PETER HAMILTON WETSEL, JONATHAN GAITHER KNOX,
SUZANNE MARION BEAUMONT, RUSSELL SPEIGHT VANBLON, and
ROD D. WALTERMANN

Appeal 2019-006652
Application 14/097,954
Technology Center 2600

Before JAMESON LEE, SALLY C. MEDLEY, and
JONI Y. CHANG, *Administrative Patent Judges*.

LEE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to finally reject claims 1–6, 8–16, and 18–20, all of the claims now pending in this Application.² We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Lenovo (Singapore) PTE. LTD. Appeal Br. 3.

² Claims 7 and 17 have been cancelled. Appeal Br. 24, 27.

CLAIMED SUBJECT MATTER

The invention generally relates to a method involving receiving user voice input, identifying words in the user voice input, determining one of the identified words as rendering ambiguous a command in the user voice input, accessing context data, disambiguating the command based on context data, and committing an action according to the command. Spec. ¶2. Claims 1, 11, and 20 are independent. Each of claims 1, 11, and 20 recites that the command comprises “*one deictic word that renders the command ambiguous.*” Further, each claim requires the disambiguating to be done by “*disambiguating the one deictic word.*”

Claim 1 is illustrative and reproduced below:

1. A method, comprising:
 - receiving at an audio receiver of an information handling device, user voice input;
 - identifying, using a processor, a command included in the user voice input, wherein the command comprises at least one deictic word that renders the command ambiguous;
 - accessing, using the processor, context data comprising a list of recent actions on the information handling device;
 - disambiguating, using the processor, the command based on the context data, said disambiguating comprising using the list of recent actions on the information handling device to disambiguate the at least one deictic word; and
 - automatically committing, based on the disambiguating, a predetermined action according to the command.

Appeal Br. 23 (Claims App.).

Claim 11 is similar to claim 1 but is an apparatus claim reciting an information handling device including a processor which performs functions corresponding to the steps of claim 1. *Id.* at 25. Claim 11 also recites a memory device for storing instructions executable by the processor. *Id.* Claim 20 recites a

product comprising a storage device having code stored therein, and the code is operable to perform functions corresponding to the steps recited in claim 1. *Id.* at 27–28.

REFERENCES

Phillips	US 2011/0060587 A1	Mar. 10, 2011
Bangalore	US 8,103,502 B1	Jan. 24, 2012

REJECTION

Claims 1–6, 8–16, and 18–20 were finally rejected under 35 U.S.C. § 103 as obvious over Phillips and Bangalore. Final Act. 4.

OPINION

A. The Obviousness Rejection of Claims 1–6, 8–16,
and 18–20 over Phillips and Bangalore

1. Claim 1

Key is the limitation that “the command comprises at least one deictic word that renders the command ambiguous,” and the associated limitation of disambiguating that command by disambiguating the at least one deictic word. Appeal Br. 23 (Claims App.). At the outset, we note that what the Examiner regards as “the command” in Phillips is inconsistently expressed in the Final Office Action and in the Examiner’s Answer. In the Final Office Action, for Phillips’s phrase “Send SMS to joe cerra let’s meet at pete’s in harvard square at 7 am,” the Examiner refers to “Send SMS” as the command, and the remainder of the phrase as context. Final Office Act. 4–5 (emphasis omitted). Similarly, for Phillips’s phrase “call Joe Cerra,” the Examiner refers only to “call” as the command. *Id.* at 5 (emphasis omitted). In the Examiner’s Answer, however, what is regarded as the command is the entire sentence spoken by the user. Ans. 4, 6. For instance, the Examiner states “[i]n Phillips a user speaks *a full sentence*

command and the system disambiguates words that can refer to multiple items” (*id.* at 4) (emphasis added) and “[a] user speaks a *full sentence command* and the system disambiguates words that can refer to multiple items” (*id.* at 6) (emphasis added). Because the Examiner failed to identify anything in “call” or in “Send SMS” that is even arguably ambiguous, the reliance on “call” and “Send SMS” as the command in Phillips is deficient. Hereinafter, we treat and discuss the entire spoken sentence as the command.

Further, the Final Office Action and the Examiner’s Answer are inconsistent with regard to whether the command in Phillips is rendered ambiguous by a deictic word. In the Final Office Action, the Examiner states: “Phillips while expressly teaching ambiguity, context extraction, and user history for disambiguation, fails to teach the at least [one] deictic word [in the command].” Final Act. 7. Thus, in the Final Office Action, the Examiner relies on the teachings of Bangalore, in combination of Phillips, to account for the requirement of a deictic word in the command, which renders the command ambiguous. *Id.* at 7–9. In the Examiner’s Answer, however, and contrary to the determination in the Final Office Action, the Examiner finds a deictic word in the command of Phillips and explains as follows:

However, deictic is not only in reference to pronouns. In the context of Phillips we look to fig. 16 where there are two “Mike Jones” contacts, using the historical and frequent usage in Phillips the system would be able to disambiguate which Mike Jones to call e.g. the user calls MOBILE 123 90% of the time therefore disambiguation would take place so that Mike Jones in a call example of “Call Mike Jones” would refer to Mobile thereof.

Ans. 7. Indeed, in the Examiner’s Answer, it is determined that in Phillips, “disambiguation of a deictic word is inherently present.” *Id.* at 7–8. Hereinafter, we will address both positions of the Examiner, treating them as alternative positions.

We reject the Examiner’s position regarding “Mike Jones” in the command “Call Mike Jones” as a deictic word rendering the command ambiguous. Phillips does not describe that there are two people both named Mike Jones, as the Examiner suggests. Rather, Figure 16 of Phillips shows a home phone number for Mike Jones and a mobile number for Mike Jones in the contact list maintained by the system, as shown below:

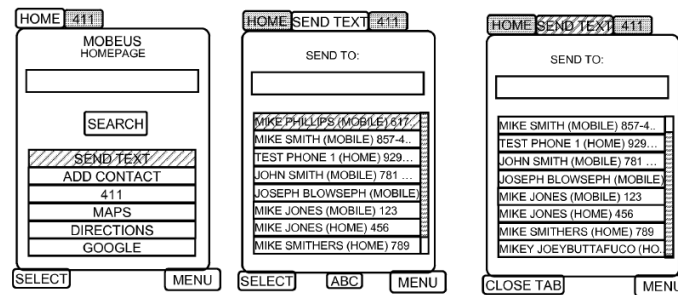


Fig. 16

Figure 16 illustrates a sample navigating browser screen for a user interface. Phillips ¶ 42. The command “Call Mike Jones” can correctly be executed by using either number. Breadth of command does not equal ambiguity. Treating “Mike Jones” as a deictic word rendering the command “Call Mike Jones” ambiguous is an unreasonably broad interpretation.

The Examiner determined that “deictic” is not limited to pronouns, e.g., “him,” “her,” etc., and that “deictic” words are “words which cannot be understood without further context analysis.” Ans. 5. Generally, we do not disagree. But the devil is in the detail and the line has to be drawn reasonably, or else almost every word can be deemed a deictic word on the basis that more detail possibly can be provided in the command. For instance, a hypothetical command “display a cartoon character image” is not ambiguous just because no specific cartoon character is specified; a hypothetical command “print screen” is not ambiguous simply because it does not specify how many copies or which printer to use; and a

hypothetical command “purchase a loaf of bread” is not ambiguous merely because it does not specify the brand or payment method. To the extent the Examiner regards a command ambiguous simply because there is more than one way the command may be executed and satisfied, we disagree.

None of the other full sentence commands identified by the Examiner, e.g., “call joe cerra,” “navigate to 17 dunster street, Cambridge Mass.,” and “send SMS to joe cerra let’s meet at pete’s in harvard square at 7 am” (Ans. 4) is ambiguous, much less rendered ambiguous by a deictic word in the command. The Examiner regards “call joe cerra” as ambiguous because the phone number is not provided in the command. Ans. 4. We disagree. The command is clear and unambiguous. Which number to use is an execution or implementation detail and Phillips does not describe the system contains information on two people both named Joe Cerra.

The Examiner regards “navigate to 17 dunster street, Cambridge Mass.” as ambiguous because the geographical address and step by step directions are not provided by the command. *Id.* We disagree. The command is clear and unambiguous. The geographical address and step by step navigation are what the system is supposed to find while executing the unambiguous command.

The Examiner regards “send SMS to joe cerra let’s meet at pete’s in harvard square at 7 am” as ambiguous because it does not provide the actual entry for the “To” field of the message but relies on the system to generate the “To” field. *Id.* We disagree. The command is clear and unambiguous. Providing the actual entry for the “To” field of the SMS message constitutes implementation detail and is a part of the execution of the command.

As further evidence of ambiguity in a command, the Examiner cites to Figure 7b of Phillips (Final Act. 6), reproduced below:

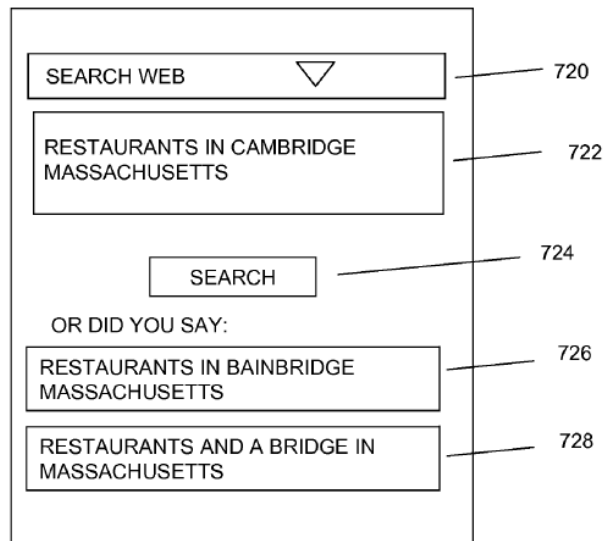


Fig. 7b

Figure 7b of Phillips depicts a search landing page. Phillips ¶ 32. The depiction shows how the system asks the user what was said, among several choices. We agree with Appellant (Appeal Br. 18–19) that that is not resolving an ambiguity of a properly identified command. Properly identifying the words in a command has little meaningful significance in meeting the claim.

For the foregoing reasons, what the Examiner first stated in the Final Office Action is correct, i.e., that Phillips fails to teach “wherein the command comprises at least one deictic word that renders the command ambiguous.” Final Act. 7–8. Further, because Phillips does not teach a deictic word in the command that renders the command ambiguous, it follows that Phillips does not teach disambiguating that command by disambiguating the deictic word.

Following that route, the Examiner combines the teachings of Phillips and Bangalore. Final Act. 7–9. In that regard, the Examiner explains that Phillips describes using context data and user history to assist in providing specifics for performing a user command, and that Bangalore teaches user commands which are ambiguous because of the presence of a deictic word such as “this” or “that” in the

command but which can be disambiguated by parallel modes of user input, such as gesture. *Id.* at 7–8 (citing Bangalore, 11:29–45, 12:44–55, 15:14–35, 16:16–40). The assertions are supported by the cited evidence, notwithstanding Appellant’s argument to the contrary. Based on such disclosures, the Examiner further explains that it would have been obvious to one with ordinary skill in the art to modify Phillips to support a command including a deictic word which renders the command ambiguous, by adapting Phillips’s existing disambiguation, usage history, and user models to resolve the ambiguity. *Id.* at 8. As an example, the Examiner indicates that Phillips’s system would be improved to support a command “Send SMS to ‘HIM’ lets meet at Harvard Square.” *Id.* at 8–9. The Examiner also explains that Phillips describes using the user’s frequent and recent actions, in context, to help with determining the intended user message. Ans. 4 (citing Phillips ¶¶ 48, 88, 99). The assertion is supported by the cited evidence. To the extent Appellant argues that Phillips does not disclose using a list of recent user actions to assist in determining user input, the argument is unpersuasive. Phillips specifically describes “keeping track of the most frequent usages of user speech” to inform the speech recognition facility. Phillips ¶ 48. Such tracking of usages ranked by frequency reasonably constitutes a list.

Appellant acknowledges that Bangalore is directed to a system that receives multi-modal input, e.g., user voice input and user gesture input. Appeal Br. 20. However, Appellant argues that Bangalore teaches only using simultaneously provided user voice input to disambiguate user gesture input, and not anything to disambiguate a user voice command. *Id.* According to Appellant, Bangalore discloses using a deictic word to disambiguate a deictic gesture command, whereas the claim requires a deictic word which causes ambiguity and which is

disambiguated by context data. *Id.* at 20–21. Appellant’s argument is unpersuasive, for reasons discussed below.

Bangalore discloses a multi-modal parallel user input system, wherein the recognition results of any one mode can be used to constrain the recognition process of a different mode of user input, and is not limited to only using user gesture input to limit or disambiguate user voice input. Bangalore, 3:20–24, 6:53–56. In particular, Bangalore discloses a specific embodiment in which the speech recognition system uses the output of the gesture recognition system to compensate for uncertainties in speech recognition. Bangalore, 6:29–38. Bangalore specifically states that “the output of the gesture recognition system 200 can be used to provide compensation to the automatic speech recognition system 100.” *Id.* at 6:49–51.

Bangalore explains that its system generates a new grammar or language model lattice for the utterance recognition subsystem 170 of the automatic speech recognition system 100 from the gesture recognition lattice 255. *Id.* at 7:11–17. This new grammar or language model lattice represents all the possible spoken strings that can successfully combine with the particular sequence of gestures input by the user through the gesture input portion 410. *Id.* at 7:22–25. Bangalore indicates that this approach improves speech recognition based on the user’s gestures. *Id.* at 7:25–30. Thus, Appellant is incorrect in its assertion that Bangalore describes using voice input to disambiguate user’s gesture, not using gesture input to disambiguate user voice input. Appeal Br. 20.

Finally, Appellant argues that Phillips does not teach the claimed “automatically committing” step, because “Phillips requires additional actions from the user to execute the provided command.” Appeal Br. 18–19 (emphasis omitted). Appellant asserts the following:

As further elaborated by Phillips, “the determined action 720 is shown in a box which allows the user to click on the down arrow or other icon to see other action choices . . . The search button 724 allows the user to carry out the search based on a portion of the text in the text box.” See Phillips at [0104]. More particularly, Phillips requires the user to press a search button to carry out the command.

Appeal Br. 19 (emphasis omitted).

The argument is misplaced, because it only refers to the one example in Phillips that relates to searching the web and where the system requires confirmation by the user through pressing of the search button. Phillips ¶ 104. Appellant identifies no evidence that similar user confirmation and intervention exists for these commands relied on by the Examiner: (1) “Send SMS to joe cerra let’s meet at pete’s in Harvard square at 7 am”; (2) “call joe cerra”; (3) “navigate to 17 dunster street Cambridge Mass.”; and (4) “Call Mike Jones.” Ans. 4–9. Also, the user confirmation and pressing of the search button constitutes manual disambiguating. Thus, it is not a part of the “automatically committing” relied on by the Examiner. Claim 1 recites “automatically committing, based on the disambiguating, a predetermined action according to the command.” Appeal Br. 23 (Claim App.). In that regard, the Examiner states:

An important aspect of Phillips is that the system will not automatically commit until disambiguation takes place including seamlessly disambiguation via at least contextual, most frequent, and recent usage (and manual disambiguating if necessitated).

In other words, the operation of properly opening and populating an application will not *automatically* proceed until disambiguation is performed in some capacity. Similarly the system disambiguates then automatically executes the user command to produce fig. 7c for example.

Ans. 4–5, 7, 9, 11–12. Appellant has articulated no persuasive reason why the above assessment by the Examiner is incorrect.

For the foregoing reasons, Appellant has not shown error in the Examiner's rejection of claim 1 as obvious over Phillips and Bangalore.

2. Claims 11 and 20

Appellant has not separately argued the merits of claims 11 and 20 from that of claim 1. Accordingly, claims 11 and 20 stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(iv). Appellant has not shown error in the Examiner's rejection of claims 11 and 20 as obvious over Phillips and Bangalore.

3. Claims 2–6, 8–10, 12–16, 18, and 19

Claims 2–6 and 8–10 each depend, directly or indirectly, from claim 1. Appellant has not separately argued the merits of claims 2–6 and 8–10 from that of claim 1. Accordingly, claims 2–6 and 8–10 stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

Claims 12–16, 18, and 19 each depend, directly or indirectly, from claim 11. Appellant has not separately argued the merits of claims 12–16, 18, and 19 from that of claim 11. Accordingly, claims 12–16, 18, and 19 stand or fall with claim 11. 37 C.F.R. § 41.37(c)(1)(iv).

Appellant has not shown error in the Examiner's rejection of claims 2–6, 8–10, 12–16, 18, and 19 as obvious over Phillips and Bangalore.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	References	Affirmed	Reversed
1–6, 8–16, 18–20	103	Phillips, Bangalore	1–6, 8–16, 18–20	

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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