

1 UNITED STATES PATENT AND TRADEMARK OFFICE

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3  
4 BEFORE THE BOARD OF PATENT APPEALS  
5 AND INTERFERENCES  
6

7 *Ex parte* JON R. STIEBER, THOMAS P. ADAMS, ROBERT L. ZWIEG, and  
8 WILLIAM R. KIRKMAN

9  
10 Appeal 2006-2607  
11 Application 10/004,738  
12 Technology Center 3600  
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15 Decided: November 21, 2007  
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18 Before MURRIEL E. CRAWFORD, HUBERT C. LORIN, and  
19 ANTON W. FETTING, *Administrative Patent Judges*.  
20 FETTING, *Administrative Patent Judge*

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23 DECISION ON REQUEST FOR REHEARING  
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1 Jon R. Stieber, Thomas P. Adams, Robert L. Zwieg, and William R. Kirkman  
2 (Appellants) filed a REQUEST FOR REHEARING on April 26, 2007. The  
3 Appellants requested that we (1) grant the request for rehearing and (2) reverse the  
4 Examiner's rejection of claims 2-9 and 15-20 under 35 U.S.C. § 103(a) as being  
5 unpatentable over Amos, Watanabe, and Richardson.

6 The Examiner rejected claims 2-9 and 15-21 under 35 U.S.C. § 112 (second  
7 paragraph) as being indefinite. The Examiner also rejected claims 2-9 and 15-21  
8 under 35 U.S.C. § 103(a) as being unpatentable over Amos, Watanabe, and  
9 Richardson.

10 We affirmed the Examiner's rejection of claims 2-9 and 15-20, but reversed the  
11 rejection of claim 21 in our February 27, 2007 decision. In that decision we held  
12 that

- 13 ■ The rejection of claims 2-9 and 15-21 under 35 U.S.C. § 112 (second  
14 paragraph) was not sustained.
- 15 ■ The rejection of claims 2-9 and 15-20 under 35 U.S.C. § 103(a) as being  
16 unpatentable over Amos, Watanabe, and Richardson was sustained.
- 17 ■ The rejection of claim 21 under 35 U.S.C. § 103(a) as being  
18 unpatentable over Amos, Watanabe, and Richardson was not sustained.

19  
20 We have considered the Appellants' arguments, but we DENY the REQUEST  
21 FOR REVERSAL in the REQUEST FOR REHEARING as to the rejection of  
22 claims 2-9 and 15-20 under 35 U.S.C. § 103(a) as being unpatentable over Amos,  
23 Watanabe, and Richardson.

1 ISSUES

2 The issue pertinent to this request is whether the Appellants have sustained  
3 their burden of showing that we misapprehended or overlooked the Appellants'  
4 points (37 C.F.R. § 41.52(a)(1)) and erred in sustaining the rejections of claims 2-9  
5 and 15-20 under 35 U.S.C. § 103(a) as being unpatentable over Amos, Watanabe,  
6 and Richardson.

7 The pertinent issue turns on whether it would have been obvious to connect  
8 note processing and coin processing devices by a wireless network operating over  
9 a relatively short distance without a server.

10 ANALYSIS

11 *Claims 2-9 and 15-20 under 35 U.S.C. § 103(a) as being unpatentable over Amos,*  
12 *Watanabe, and Richardson.*

13 Claim 15, the sole independent claim, reads as follows

14 15. A cash management system comprising:

15 a first cash handling device for processing notes  
16 including sorting of notes, totaling of notes received, and  
17 communicating note totals to at least one of: a second cash  
18 handling device, a visual display and communication through a  
19 network,

20 wherein said first cash handling device does not [sic,  
21 have] the capability to receive or dispense coins;

22 a second cash handling device for processing coins  
23 including sorting of coins, totaling of coins received, and  
24 communicating coin totals to at least one of: the first cash  
25 handling machine, a visual display and a network,

26 wherein said second cash handling device does not have  
27 the capability to receive or dispense notes; and

1                    wherein said first cash handling device and said second  
2 cash handling device have respective circuits for  
3 communicating through a first wireless communication network  
4 operating according to a network standard for locally  
5 distributed wireless networks operating without servers; and

6                    wherein the first cash handling device and the second  
7 cash handling device provide a cooperative cash management  
8 system in which the totals for notes and coins, respectively, are  
9 brought together through wireless communication from these  
10 respective devices within a range of no more than 100 meters  
11 from each other and are displayed on at least one of the first  
12 cash handling device, the second cash handling device or a third  
13 device operating as a visual display no more than 100 meters  
14 from one of the first the first cash handling device and the  
15 second cash handling device.

16            We found that Amos describes the limitations of claim 15 except for a locally  
17 distributed wireless networks operating without servers. Amos does show that any  
18 network system may be used. We found that a network standard for locally  
19 distributed wireless networks operating without servers is a species that would be  
20 immediately envisaged within the taught genus of all network systems, because of  
21 its simplicity. We further found that Watanabe serves to provide further evidence  
22 that an ATM such as that in Amos would sort its contents and safeguard physical  
23 entry of coins and notes to ensure each went to the proper device and that  
24 Richardson shows that such a simple network, coupled with wireless  
25 communication, was notoriously well known at the time of the invention and could  
26 operate within a range of no more than 100 meters from one of the first cash  
27 handling device and the second cash handling device.

28            We further found that the actual limitation of separation of less than 100 meters  
29 does not affect the operation of the invention, but only serves to indicate the field  
30 in which the applicants envision practicing the invention. Whether the Appellants

1 were the first to recognize a market for placing cash machines within such a range  
2 is not a basis for a persuasive argument because this range is a species of the genus  
3 of all ranges that wireless communications encompass, and Richardson suggests  
4 the advantages of such proximity in the choices of implementation modes available  
5 at the claimed ranges.

6 We concluded that it would have been obvious to a person of ordinary skill in  
7 the art to have applied Watanabe's ATM construction techniques to Amos because  
8 Watanabe shows implementation details of ATM's such as Amos. It would have  
9 been obvious to a person of ordinary skill in the art to have applied any of the  
10 wireless communication techniques of Richardson to Amos because Richardson  
11 demonstrates the notoriety of the wireless transmission taught by Amos, and also  
12 teaches several implementation details for such wireless transmission. Therefore  
13 we sustained the rejection of claim 15. (Decision 9-10).

14 As a preliminary matter, we review the breadth of claim 15. It requires only a  
15 note handling device and coin handling device within 100 meters of one another  
16 connected by a wireless peer to peer network, that each device be capable of  
17 providing totals, and the totals be presented on a display. Each of these elements  
18 provides the function for which it is designed. There is no contention that the  
19 combination produces functions beyond those provided by the individual  
20 components, other than the aggregation function. The functions of note and coin  
21 handling devices are self evident, and the function, costs and benefits of wireless  
22 networks contrasted with wired communication links were notoriously well known  
23 to those of ordinary skill.

1 The Appellants contend that

2 Although Amos asserts an ability to recycle cash in col. 1, lines 57-61  
3 (Finding 2), there are no machine parts disclosed in Amos for  
4 performing this function. Amos discloses in its claim 1 that the  
5 currency accepting means is separate from the currency dispensing  
6 means, and that the coin accepting means is separate from the coin  
7 dispensing means to provide "a plural of said money transfer devices."  
8 (Amos, col. 3, lines 42-50.)

9 To the extent that the Board finds that Amos describes an ATM  
10 subassembly for both accepting and dispensing notes and an ATM  
11 subassembly for both accepting and dispensing coins, this is not  
12 disclosed in Amos (Request 5:¶'s numbered as 6 & 7).

13 We found that Amos describes subassemblies to receive, sort, and dispense  
14 notes, and subassemblies to receive, sort, and dispense coins (Amos 1:57-61 and  
15 2:29-37). The Appellants raise the issue of whether the note subassemblies form a  
16 composite subassembly and whether the coin subassemblies form a composite  
17 subassembly.

18 One of ordinary skill would immediately recognize that they must be so  
19 composed to fulfill the functions disclosed by Amos. Watanabe demonstrates such  
20 a separation of mechanism. But in an abundance of caution for the sake of a  
21 complete evidentiary record, we explicitly set out what we implicitly found in our  
22 Decision. Anyone of ordinary skill in the art of currency and coinage mechanisms,  
23 and indeed almost anyone with common sense would know the following  
24 regarding notes and coins.

25 To accept and to disburse notes, the sorting mechanism, which must store notes  
26 for distribution, must be in electrical communication with the note receptor and  
27 dispensing subassemblies to guide the notes to and from the sorting mechanism.  
28 Because the notes are paper, they are lightweight and have a textured surface.

1 Thus gravity feed is ineffective and they must be mechanically fed via some  
2 electrically powered friction mechanism. Similarly the coin sorter must be in  
3 electrical communication with the coin receptor and dispenser to ascertain what  
4 coins are being received and to determine which coins to dispense. Coins, in  
5 contrast with notes, are relatively dense, circular, and readily roll or drop unswayed  
6 by air currents under gravity. Thus, gravity feed is more effective than friction  
7 feed. The stark differences between the nature of notes and coins and the  
8 mechanisms employed to transport them make it essentially obligatory that the  
9 coin subassembly be distinguished from the note subassembly, and only integrated  
10 at their next higher level of logic. This distinction describes the separation of  
11 mechanism in Watanabe. Thus, there is substantial evidence from Watanabe and  
12 from the nature of the matter operated upon that the note subassemblies form a  
13 composite subassembly and the coin subassemblies form a composite  
14 subassembly, and each is separate from the other.

15 The Appellants next argue that Amos must communicate over large distances  
16 and would not suggest short range wireless network communication (Request 6-  
17 7:¶’s number 9 and 10).

18 Amos describes ATM’s. ATM’s dispense money. The number of ATM’s in  
19 any location is thus dependent upon consumer demand. This demand may be  
20 seasonal or otherwise subject to heavy fluctuation. “Often, it will be necessary for  
21 a court to look to interrelated teachings of multiple patents; the effects of demands  
22 known to the design community or present in the marketplace; and the background  
23 knowledge possessed by a person having ordinary skill in the art, all in order to  
24 determine whether there was an apparent reason to combine the known elements in  
25 the fashion claimed by the patent at issue.” *KSR, id.* at 1740-41.

1 Amos's note and coin subassemblies communicate with each other for  
2 accounting purposes. One of ordinary skill would infer that when multiple ATM's  
3 were in a single location, it would be predictable that they would be in  
4 communication with each other for the same reason. Amos explicitly shows that  
5 ATM's communicate with one another even when not in a common location  
6 (Amos, Figs. 2 and 3) and Amos shows that more than one communication link is  
7 used since the link between the note and coin mechanism with an ATM is separate  
8 from the link between ATM's of some distance.

9 Clearly if multiple ATM's were located in a contained area, they would not  
10 communicate with each other over a large distance, but rather over a short distance.  
11 Just as the link between the note and coin mechanisms require no network server,  
12 neither would a network of ATM's within a common location. Whether the  
13 technology for such a link existed is not in dispute, and its existence and  
14 desirability is evidenced by the Richardson reference. The only issue is the  
15 desirability in the context of Amos' ATM's. Such fluctuations in consumer  
16 demand were well within the knowledge of those of ordinary skill in ATM  
17 placement at the time of the invention.

18 The Appellants also argue that because there are over a hundred thousand  
19 network patents, it would not have been obvious to select a peer to peer wireless  
20 network (Request 6-7:¶ numbered 10). One of ordinary skill knew that at its most  
21 primitive level, the physical layer of a network is either wired or wireless. How  
22 many variations of each there might be did not diminish that stark reality.  
23 Ultimately, the physical connection is either by hard wire or by electromagnetic  
24 radiation. To make such a choice between alternatives of the most basic aspect of

1 a communication link was well within the knowledge and capability of one of  
2 ordinary skill.

3 The Appellants next argue that neither Amos nor Watanabe suggest that each  
4 coin apparatus and each note apparatus each has its own wireless communication  
5 (Request 7:¶’s numbered 11-16).

6 This argument is not commensurate with the scope of the claim. Claim 15  
7 recites that the “first cash handling device and said second cash handling device  
8 have respective circuits for communicating through a first wireless communication  
9 network.” This does not require that each have the capacity to generate their own  
10 wireless communication, but only that they each have a circuit that communicates  
11 through a wireless network. Since each is able to tally and communicate its data to  
12 a separate accounting system, the circuits that provide such communication to the  
13 accounting system also would communicate through whatever wireless system  
14 were present during such a tally among multiple ATM’s.

15 The Appellants next argue that Richardson does not show that Bluetooth was  
16 old, but contemporaneous with the Appellants’ invention, and that Richardson does  
17 not show wireless communication between two computerized pieces of equipment  
18 (Request 8:¶’s numbered 17-19; also 10-11:¶’s numbered 22 and 23).

19 The Bluetooth Special Interest Group was formed in 1998 and the first  
20 specification for Bluetooth was created in 1999, at least a year prior to the  
21 December 4, 2000 provisional application filed by the Appellants.<sup>1</sup> More to the  
22 point, Richardson also describes more conventional radio links might be used  
23 (Richardson 3:58-59). Richardson Figs. 7-9 shows that a controller or adaptor is

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<sup>1</sup> [http://www.bluetooth.com/Bluetooth/SIG/History\\_of\\_the\\_SIG.htm](http://www.bluetooth.com/Bluetooth/SIG/History_of_the_SIG.htm)

1 needed for both parts of the communicating equipment. Since these controllers  
2 control the passage of digital signals, they must employ memory and logic circuits  
3 and are thus computerized equipment. But more to the point, Richardson  
4 demonstrates that one of ordinary skill knew that cooperating pieces of equipment  
5 could communicate over a short range network that would not require a server for  
6 the purpose of mobility. Again, ATM's were known to be subject to variable  
7 demand and therefore one of ordinary skill would have known of their utility for  
8 meeting transient increases in demand if they were moveable.

9 The Appellants next argue that the art does not show two devices operating  
10 sufficiently far apart that wireless communication is necessary or two separate cash  
11 machines that operate wirelessly and show their combined totals on one display  
12 (Request 11:¶ numbered 24).

13 Whether the art shows the precise combination claimed explicitly is not as  
14 critical as what one of ordinary skill would have known. “[T]he analysis need not  
15 seek out precise teachings directed to the specific subject matter of the challenged  
16 claim, for a court can take account of the inferences and creative steps that a  
17 person of ordinary skill in the art would employ.” *KSR, id.* at 1741. Richardson  
18 shows the desirability and capability of running cooperating pieces of equipment  
19 wirelessly over a short distance. Whether wireless communication is necessary is  
20 irrelevant – what is relevant is whether it is desirable and within the knowledge of  
21 a person of ordinary skill. Clearly this is the case as we discussed, *supra*. As to  
22 showing combined totals, any accounting system such as that described by Amos  
23 would present such combined totals on an output device.

24 The Appellants next argue that ATM's do not total quantities of notes and  
25 coins as such and there is no evidence that they do (Request 11:¶ numbered 25).

1 Claim 15 requires that “the totals for notes and coins, respectively, are brought  
2 together” which says nothing regarding quantities of notes and coins, in the sense  
3 of quantities of pieces of paper and of round metallic disks per se. This argument  
4 is not commensurate with the scope of the claim. A total monetary value such as  
5 any accounting system such as that described by Amos (FF **Error! Reference**  
6 **source not found.**) would present such totals.

7 The Appellants next argue with respect to claim 19 that Watanabe’s sorting  
8 does not suggest acceptance of unsorted notes and coins by separate note and coin  
9 machines because Watanabe has a common input for notes and coins (Request 11:¶  
10 numbered 26).

11 Watanabe describes a note and coin separator to convey notes and coins to  
12 their respective devices (FF **Error! Reference source not found.**). Thus the  
13 common input is irrelevant since it is immediately followed by a separating device.  
14 Clearly an operator may insert coins and notes in any sequence and Watanabe will  
15 direct the notes and coins to their respective sorters and sort.

16 The Appellants next argue that Richardson does not suggest the second display  
17 recited in claim 2 and 16 (Request 12:¶’s numbered 27-29).

18 We found that the I/O in the central server of Amos provided the I/O of claim 2  
19 (Decision 9-10), not the screen in Richardson.

20 The Appellants next argue that the art does not suggest the second network  
21 recited in claim 3 and 18 (Request 12:¶ numbered 30).

22 Since the wireless network would be applied to Amos for communication  
23 among plural ATM’s in a single location, the network shown by Amos Fig. 2  
24 communicating back to the central server would be the second network of claim 3.



1 DECISION

2 To summarize, our decision is as follows:

- 3 • We have reconsidered the Decision in light of the Appellant's arguments  
4 presented in the Request for Rehearing.
- 5 • The rejection of claims 2-9 and 15-20 under 35 U.S.C. § 103(a) as being  
6 unpatentable over Amos, Watanabe, and Richardson remains sustained.

7 No time period for taking any subsequent action in connection with this appeal  
8 may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv)  
9 (2007).

10 DENIED

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