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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte BRIAN C. DEBUSK,
JOE L. SMITH, and MARY E. KAYLOR

Appeal 2020-002780
Application 15/041,484
Technology Center 3600

Before JAMES P. CALVE, KENNETH G. SCHOPFER, and
ROBERT J. SILVERMAN, *Administrative Patent Judges*.

CALVE, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the decision of the Examiner to reject claims 1–4, 6–9 and 17–19.² Appeal Br. 2. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

¹ “Appellant” refers to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies DeRoyal Industries, Inc. as the real party in interest. Appeal Br. 2.
² Claims 10–16 are canceled. Final Act. 2; Appeal Br. 5 (Corrected Claims Appendix), filed September 12, 2019. Claims 5 and 20 are objected to because they depend from a rejected claim. Final Act. 1 (Office Action Summary), 8 (Allowable Subject Matter).

CLAIMED SUBJECT MATTER

Claims 1, 8, and 17 are independent. Claim 1 is reproduced below.

1. A method for maintaining a digital chain of custody of a medical item to which an RFID tag and an optical code are attached, both of which encode a unique identifier that uniquely identifies the medical item, wherein the digital chain of custody comprises a digital record of transfers of custody of medical items from user to user that is stored in a medical item inventory database, the method comprising:

- (a1) providing a shielded enclosure having an interior space and a lockable door, wherein the shielded enclosure is configured to attenuate radio frequency signals emanated from RFID tags disposed outside the shielded enclosure to levels that are substantially undetectable within the interior space, wherein access to the interior space is made via the lockable door that is controlled by an inventory computer;
- (a2) disposing an RFID antenna within the interior space of the shielded enclosure;
- (a3) disposing the medical item within the interior space of the shielded enclosure;
- (b) performing a first scan of the interior space of the shielded enclosure using an RFID reader connected to the RFID antenna and detecting the RFID tag attached to the medical item;
- (c) decoding the unique identifier encoded in the RFID tag attached to the medical item using the RFID reader;
- (d) storing the unique identifier in the medical item inventory database in association with information identifying the shielded enclosure;
- (e) receiving first user identification information at the inventory computer and verifying that the first user identification information is associated with a first user who is authorized to access the interior space of the shielded enclosure;

- (f) upon verification of the first user identification information, the inventory computer unlocking the door of the shielded enclosure to provide access thereto;
- (g) the first user removing the medical item from the shielded enclosure;
- (h) after step (g), performing a scan of the interior space of the shielded enclosure using the RFID reader and determining that the medical item is no longer within the shielded enclosure based on the RFID tag attached to the medical item that was detected during the first scan being not detected during the subsequent scan;
- (i) based on a determination that the medical item is no longer within the shielded enclosure, updating the digital chain of custody of the medical item by associating the unique identifier of the medical item with the first user identification information in the medical item inventory database;
- (j) after step (i), scanning the optical code attached to the medical item using a mobile computing device associated with a second user;
- (k) decoding the unique identifier encoded in the optical code attached to the medical item; and
- (l) an inventory management server computer updating the digital chain of custody of the medical item by associating the unique identifier of the medical item in the medical item inventory database with second user identification information that identifies the second user, thereby indicating that custody of the first medical item has passed from the first user to the second user.

Appeal Br. 1–2 (Claims App.).³

³ Citations to the Claims Appendix refer to the Corrected Claims Appendix that was filed September 12, 2019. Citations to the Appeal Brief refer to the Appeal Brief that was filed August 13, 2019.

REJECTION

Claims 1–4, 6–9, and 17–19 are rejected under 35 U.S.C. § 103 as unpatentable over Andreasson (US 2004/0046020 A1, pub. Mar. 11, 2004), Hoganson (US 2014/0048593 A1, pub. Feb. 20, 2014), and Austin (US 2008/0030345 A1, pub. Feb. 7, 2008).

ANALYSIS

*Claims 1–4, 6–9, and 17–19
Rejected Over Andreasson, Hoganson, and Austin*

Regarding independent claims 1, 8, and 17, the Examiner finds that Andreasson discloses a method of disposing a medical item in an interior space of a shielded enclosure (storage compartment) of a dispensing unit for medications, and the closed drawer can be considered a shielded enclosure. Final Act. 2–3, 7. The Examiner finds that Andreasson scans products in an interior space of the shielded enclosure using an RFID reader to obtain and decode a unique identifier from an RFID tag, unlocks the door so a first user can remove the medical item from the shielded enclosure, scans the optical code attached to the medical item, decodes the unique identifier, and updates a digital chain of custody as claimed. Final Act. 3–4; Ans. 3–4.

The Examiner finds that Hoganson updates a digital chain of custody by associating a unique identifier of the medical item with a first user, and Austin provides a shielded enclosure configured to attenuate radio frequency signals emanating from RFID tags disposed in an enclosure made of steel, aluminum, titanium or other metal. Final Act. 4–5; Ans. 3–4. The Examiner determines it would have been obvious to modify Andreasson with a chain of custody of Hoganson to use differing identification modes and attenuation of Austin to identify, locate, and manage inventory of sterilized devices. *See* Final Act. 4–5.

Appellant argues that Andreasson's teaching of a closed drawer or other compartment does not describe a shielded enclosure constructed of metal or other material that would cause the drawer/compartment to be RF shielded, and the Examiner's finding that a closed drawer "would be seen as a shielded enclosure" is not supported by any evidence or reasoning. Appeal Br. 9. Appellant argues that Austin's case allows radio frequency signals to enter and leave the case so RFID tags on items inside the case can be read by an RFID reader disposed outside the case. *Id.* at 11–12. Appellant argues there is no motivation to modify Andreasson's non-shielding drawer with a metal shielding of Austin when the antenna is outside the drawer and could not read RFID tags on items inside the drawer. Reply Br. 4; Appeal Br. 11–12. Appellant further asserts that Andreasson does not scan an optical code attached to a medical item that is removed from the shielded enclosure but instead scans only an RFID tag on each item without describing the use or scanning of optical codes such as bar codes. Appeal Br. 10; Reply Br. 2.

The Specification describes the term "shielded" as follows:

As the term is used herein, "shielded" means that the cabinet 12 is designed to prevent the antenna 16 from receiving RFID signals from RFID tags located outside the cabinet 12 at a signal-to-noise ratio high enough to trigger detection of those outside RFID tags. For purposes of this disclosure, "shielded" does not mean that absolutely all RF energy is blocked from entering the cabinet, as this would require unnecessary levels of shielding.

Spec. ¶ 18. Claim 1 also recites "the shielded enclosure is configured to attenuate radio frequency signals emanating from RFID tags disposed outside the shielded enclosure to levels that are substantially undetectable within the interior space." Appeal Br. 1 (Claims App.).

Andreasson's drawer 440 does not attenuate radio frequency signals or block RFID antennas 464 outside of drawer 440 from receiving signals from RFID tags inside drawer 440. Drawer 440 contains sections 442 for medical products with RFID tags that communicate with RFID antennas 464 located outside drawer 440. Andreasson ¶¶ 58–62. Radio frequency signals pass through drawer 440 so RFID antennas 464 can receive RFID signals from RFID tags in the drawer. *Id.* ¶ 62. The Examiner has not explained why drawer 440 is a shielded enclosure that attenuates RFID signals. Ans. 3; Reply Br. 3. If drawer 440 is a shielded enclosure, it is not clear how RFID antennas 464 outside drawer 440 read RFID tags inside drawer 440.

Andreasson's Figure 4A is reproduced below to illustrate drawer 440.

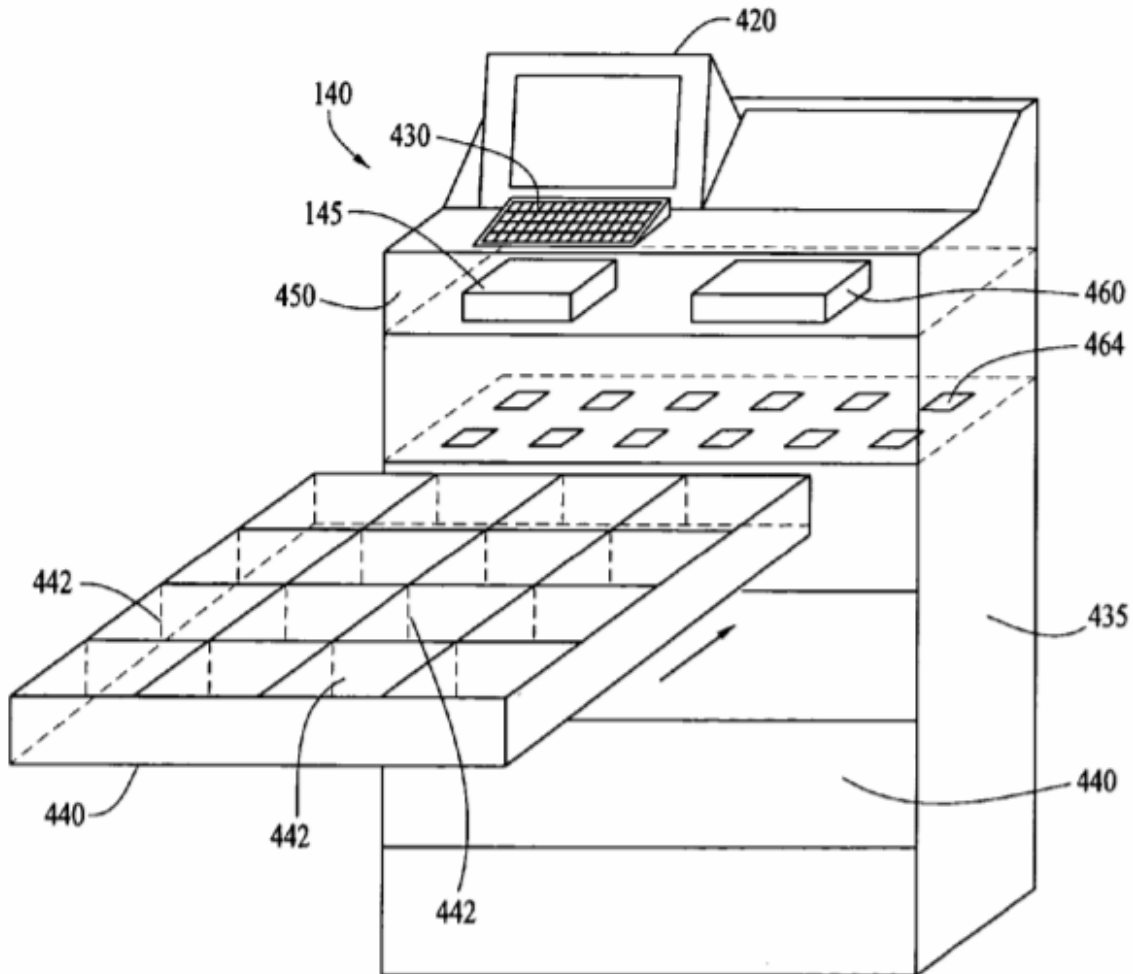


Figure 4A of Andreasson above illustrates dispensing unit 410 and casing 435 with drawer compartment 440 comprising individual sections 442 that store medical items. Andreasson ¶¶ 58–61. RFID antennas 464 are positioned outside of, and directly beneath, drawer 440 when it is closed so the antennas can read RFID tagged products held in sections 442 of drawer 440 above them. *Id.* ¶ 62. RFID antennas 464 are not placed in an interior space of drawer 440, as claimed, even if the drawer is a shielded enclosure as the Examiner asserts. *See* Ans. 3. There is no indication in Andreasson that drawer 440 shields RFID tagged items in the drawer from transmitting to RFID antennas 464 outside of the drawer. Instead, RFID antennas 464 located outside of drawer 440 communicate with RFID tags on items located within drawer 440. Andreasson ¶ 62. In the Answer, the Examiner appears to concede that Andreasson does not disclose an RF-shielded enclosure and asserts that “Austin is relied on to teach this disclosure.” Ans. 3–4.

Austin teaches that metal casings are used to shield or attenuate RFID communications, as the Examiner finds. Ans. 3–4; Austin ¶ 207. However, Austin adds openings to the metal case so RFID signals can enter and leave the case to provide communication between an RFID reader *outside* the case and an RFID tagged product *inside* the case. Austin ¶ 207. Part of the case may be a material that allows RFID communication with RFID tagged items inside the case. *Id.* Austin teaches such *non-shielded* cases are preferable to known metallic sterilization cases that prevent RFID signals from passing through a case because a non-shielded case permits an RFID reader outside the non-shielded case to communicate with RFID tags on items inside the case without removing the items from the case during an inventory. *Id.* ¶ 20. Austin thus teaches *non-shielded* enclosures as a way to improve inventories of RFID tagged items.

As a result, the Examiner’s reason for modifying Andreasson’s non-shielded drawer 440 to be shielded for “identifying, locating, and managing inventory of sterilized medical devices” lacks a rational underpinning. Final Act. 5. First, Austin teaches that metal cases shield RFID tags inside a case from signaling RFID readers outside the case, requiring surgical personnel to break a sterilization seal on a case and remove instruments to inventory them with an RFID reader. Austin ¶ 20. Austin teaches that *non-shielded* cases improve inventory management of sterilized medical devices by allowing medical instruments located inside a case to be interrogated and identified by an RFID reader located outside of the case without removing the medical instruments from the case. Austin ¶¶ 201–207. We find no basis to modify Andreasson’s non-shielded drawer 440 to be a shielded enclosure based on the teachings of Austin. Second, if Andreasson’s drawer 440 was modified to be a shielded enclosure, RF reader 145 and/or RFID antennas 464 could not read RFID tags 20 on items in storage compartments 440 as Andreasson intends. *See* Andreasson ¶¶ 60, 62. Andreasson would not function for its intended purpose if drawer 440 was a shielded enclosure. *See* Reply Br. 3. Thus, we do not sustain the rejection of claims 1–4, 6–9, and 17–19.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/ Basis	Affirmed	Reversed
1–4, 6–9, 17–19	103	Andreasson, Hoganson, Austin		1–4, 6–9, 17–19

REVERSED