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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 12/840,099	Applicant(s) VOLKMANN ET AL.	
	Examiner STEPHANIE DELICH	Art Unit 3623	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *5 April 2013*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-12,14-19 and 21-24* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-12,14-19 and 21-24* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some * c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *31 Jan 2013, 9 Jul 2013*.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

1. In view of the Appeal Brief filed on April 5, 2013 PROSECUTION IS HEREBY REOPENED. A new grounds of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Peter Choi/

Supervisory Patent Examiner, Art Unit 3683

Status of Claims

1. This action is a second Non-Final Office Action reopening prosecution in reply to the appeal brief filed on 5 April 2013.

2. Claims 1-12, 14-19, and 21-24 are currently pending and have been examined.

Information Disclosure Statement

3. The information disclosure statements (IDS) submitted on 31 January 2013 and 9 July 2013 were filed after the mailing date of the initial disclosure. The submissions are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements have been considered by the examiner.

Claim Rejections - 35 USC § 112

4. The following is a quotation of 35 U.S.C. 112(a):

> (a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.
>
> The following is a quotation of 35 U.S.C. 112 (pre-AIA), first paragraph:
> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-12, 14-19, and 21-24 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for pre-AIA the inventor(s), at the time the application was filed, had possession of the claimed invention. The planogram generator as presented in the specification appears to be a "black box" that performs all of these functions and tasks yet no specific algorithms or heuristics are set forth in the disclosure. Therefore each of the generated

scenarios, factors and optimizations could be as simple as implementing a rule of thumb type of determination since it is not clear how the calculations are actually done, how the generator optimizes the scenario or what the deformation factor calculation is since there is no explicit definition describing how the calculators are making these types of determinations. Hence the manner in which the invention is described fails to provide full, clear, concise and exact terms that would enable any person skilled in the art to make or use the invention.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject

matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. **Claims 1-7, 11, 18-19 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potter et al. (US 2004/0133483 A1) in view of Riley et al. (US 7,440,903 B2) further in view of Armington et al. (US 2001/0017023 A1) further in view of Withers (US 2007/0108075 A1).**

10. As per **Claim 1** Potter teaches:

A computer implemented method for generating a product placement scenario, the method comprising:

- *retrieving, from a layout database, layout data including a shelving arrangement in a product display area* (Potter [0007, 0010] describes a storage shelving module for generating an inventory layout arrangement of items, [0054 and 0058] describe predefined shelf designs and components or assemblies from a database of different available shelving components to be used in the layout, Fig. 1 illustrates data in data storage, Fig. 2 illustrates areas of storage (i.e. layout data)) *of a retail environment, wherein the shelving arrangement includes both shelf locations and peg locations;*

- *retrieving, from an inventory database, inventory data indicating products to be displayed in the product display area; retrieving, from a product database, product data indicating for each of the products at least a product size, a product shape, and a corresponding fixture type* (Potter [0007-0008, 0010] describes an inventory storage space, the inventory comprising a plurality of items, [0034, 0036, 0038] describe inventory, items in inventory, characteristic information including size, dimensions, weight, shape, etc., Fig. 2 illustrates inventory information indicating products to be displayed, and product information indicating the dimensions, weight and other characteristics of the products in the inventory) *;*
- *generating, by a computer, a first product placement scenario in which each of the products is placed at a particular shelf location within the shelving arrangement* (Potter [0007-0008, 0010] describes generating an inventory layout (i.e. a first product placement scenario) for the master inventory list, the layout being an arrangement of items of the inventory on at least one shelf (i.e. each product is placed at a particular location) via the computer applications illustrated in at least Fig. 1, [0042] describes determining an arrangement with any combination of inventory item characteristics, [0096] describes generating initial shelf space calculations, see also Figs. 9A, 9C)*;*
- *generating, by a computer, a second product placement scenario for the products wherein at least one of the products is placed at different shelf locations within the shelving arrangement using a deformation factor of the at*

least one product that allows for a different spacing of products than in the first product placement scenario (Potter [0066] describes the ability to rearrange the orientation of inventory items via the computer applications illustrated in at least Fig. 1, [0082-0090] describes determining a second arrangement that has items in different locations than other arrangements via the computer applications, i.e. allows for a different spacing of products than in a first arrangement, illustrated in at least Fig. 1, see also Fig. 9D illustrating a different arrangement of items than the previous figures (9A and 9C), 10A and 10B, [0037] describes inventory related information used in the layout as including information as to whether a product is breakable, or if it has special packaging such as a box or bag (i.e. a factor describing if a product is breakable is interpreted as a deformation factor), [0039] describes a stability quantity which illustrates the number of boxes allowed to be stacked without causing damage, [0042] describes determining an arrangement with any combination of inventory item characteristics via the computer applications illustrated in at least Fig. 1)*;*

- *determining, by a computer, an optimized product placement scenario* (Potter [0087-0090] describes establishing other arrangements of inventory items and comparing the arrangements to establish more accurate or more efficient shelving assembly allocations via the computer applications illustrated in at least Fig. 1, the most efficient arrangement is generated, [0098] describes calculating an efficiency for each arrangement in order to compare the

different arrangements and recommend the best option)*; and*

- *transmitting the optimized product placement scenario for display* (Potter [0008] describes displaying the inventory layout on a display screen, [0034] describes exporting data corresponding to an arrangement for a planogram display, [0090] describes displaying only the most efficient arrangement (i.e. transmitting the optimized product placement scenario for display))) *or reproduction in a tangible medium*.

Potter teaches determining product display arrangements that allow for different spacing for items on shelf locations. Potter does not explicitly recite that the product display area is of or for a retail environment or that the shelving arrangement includes both shelf locations and peg locations. However, Riley teaches a system for implementing planograms associated with corresponding retail stores (Abstract). Riley further describes in at least Col. 1: 19-30 that a planogram is a layout that assigns specific display locations on specific display fixtures within a retail store, the locations and fixtures can be shelves, hooks, or pegs. See also Col. 3: 42-57.

Therefore, it would be obvious to one of ordinary skill in the art to modify Potter's abilities to generate a planogram, as set forth in at least Claim 13, for a restaurant environment where shelves are used for inventory storage to include the techniques for generating a planogram for a retail environment where shelves, hooks and pegs are used for inventory storage because each of the elements were known, but not necessarily combined as claimed. The technical

ability existed to combine or substitute the types of environments and storage fixtures as claimed, and the result of the combination is predictable because each of the elements performs the same function as it did independently. By applying the method and system for inventory arrangement to the retail environment, the combination enables a more efficient arrangement of retail items to be recommended to the user and by combining multiple different types of storage fixtures in the arrangement options, the combination enables more variations and arrangements to be created which will further increase the efficiency and versatility of the arrangement(s) available to a user.

Potter [0037] describes inventory related information used in the layout as including information as to whether a product is breakable, or if it has special packaging such as a box or bag (i.e. a factor describing if a product is breakable is interpreted as a deformation factor). Neither Potter nor Riley explicitly recite that the deformation factor includes an amount by which a retail item can be deformed to take up less space without damaging the retail item. However, Armington teaches a cushioning conversion system and method which utilizing different factors to determine the packaging necessary for a product (Abstract and Fig. 17). Armington further teaches:

- *a deformation factor of the at least one product, wherein when stored at the shelving arrangement the deformation factor includes an amount by which a retail item can be* deformed without damaging the retail item (Armington [0017-0018] describes evaluating characteristics of the part and determining

packaging requirements that are appropriate based on the characteristics, [0020 and 0024-0026] describes item characteristics as including size, shape, weight and fragility (i.e. factors related to an amount an item can be deformed without damaging it), the system then applies rules to determine the optimized packaging, [0030] describes determining the volume associated with the packaged item and analyzing the information to determine an optimized arrangement of the packaged parts, [0072] describes how the packaging process provides improved efficiency and consistency which results in reduced part damage and reduced packaging costs, Fig. 18 illustrates determining the fragility, shape and other characteristics of the part as well as the package destination, Fig. 19B shows characteristics classifying a product as extremely fragile, very delicate, delicate, moderately delicate, moderately rugged, or rugged, Fig. 21 illustrates combining fragility, package weight, and package dimensions information into a database for further analysis (e.g. factors including a deformation amount without damaging a product) as is further described in at least [0162-0165, 0168-0171, 0176-0180] which describe measuring dimensions of a part and utilizing that information along with the shape and fragility rating associated with a part to determine a rate of change in velocity a part can withstand without incurring damage, see also [0185-0187, 0195-0197, 0204-0211, 0227]).

Therefore, it would be obvious to one of ordinary skill in the art to modify the factors related to if a product is breakable for the characteristic factors related

to how much force a product can undergo without causing damage (i.e. a fragility rating) because by substituting the fragility rating, or a variable factor which describes how much deformation a product can undergo, for the either breakable or unbreakable factor, the combination enables a factor which determines the durability of a product and enables users to plan for the packaging and arrangement of a product within specific ranges which will reduce damage while also minimizing packaging costs (Armington [0184-0185]).

None of the previously cited references explicitly recite that the deformation is an amount of deformation which causes the retail item to take up less space. However, Withers teaches a packaging system which allows for the compression of items. Wither further teaches:

- *deformed to take up less space* (Withers Abstract describes compressing an item inside a package thereby reducing the size of the item and/or package so that it occupies a smaller space or volume vs. the unrestrained size of the item as is further described in at least [0005-0013, 0018, 0027-0028, 0054, 0058-0062, 0065-0066] where the item compression or reduction is determined based on the appropriate size, shape, style and configuration of the product).

Therefore, it would be obvious to one of ordinary skill in the art to modify the force deformation which is used to evaluate what a product can withstand without causing damage to the product to include the techniques for compressing an item based on the appropriate size, shape, style and configuration of an item

in order to deform it so that it takes up less space because by combining the appropriate compression capabilities with the determined allowance to prevent damage, the combination enables an appropriate compression of a product to be utilized when assessing what a product can withstand without causing damage which will enable the arrangement of the packaged products to be maximized by determining exactly how much a product package can be reduced in size so that the maximum number of products can be displayed (Withers [0002, 0005]).

11. As per **Claim 2** Potter teaches in at least [0066] the ability to rearrange the orientation of inventory items (i.e. generate a second arrangement), [0082-0090] describes determining a second arrangement that has items in different locations than other arrangements and [0042] describes determining an arrangement with any combination of inventory item characteristics. Potter further teaches:

- *wherein the second product placement scenario is based at least in part on a flex factor that accounts for impingement of one of the products into an adjacent shelf location or peg location* (Potter [0068-0069] describes using constraints for the arrangement that include an acceptable or unacceptable amount for which a product can exceed a dimensional constraint for an allocated space, for example, the left most space on a shelf may overhang (i.e. accounting for impingement into an adjacent location) the shelf if it is within a user defined overhang tolerance (i.e. accounting for impingement into an adjacent location)).

12. As per **Claim 3** Potter teaches in at least [0066] the ability to rearrange the

orientation of inventory items (i.e. generate a second arrangement), [0082-0090] describes determining a second arrangement that has items in different locations than other arrangements and [0042] describes determining an arrangement with any combination of inventory item characteristics. Potter further teaches:

- *wherein the second product placement scenario is based at least in part on a vertical adjacency of* shelf locations (Potter Fig. 5 illustrates the dimensions associated with the shelving locations including shelf post height, [0042] describes a characteristic such as vertical storability, [0056] describes a post height for a shelving system, and the number of shelves, i.e. a vertical adjacency is interpreted as the distance between two vertically aligned shelving locations as is further discussed in at least [0062-0063, 0092, 0098]).

Potter does not explicitly recite that the two vertically adjacent locations are a peg location to a shelf location. However, Riley teaches a system for implementing planograms associated with corresponding retail stores (Abstract). Riley further describes in at least Col. 1: 19-30 that a planogram is a layout that assigns specific display locations on specific display fixtures within a retail store, the locations and fixtures can be shelves, hooks, or pegs. See also Col. 3: 42-57. Riley is combined based on the reasons and rationale set forth in the rejection of Claim 1 above.

13. As per **Claim 4** Potter teaches in at least [0066] the ability to rearrange the orientation of inventory items (i.e. generate a second arrangement), [0082-0090] describes determining a second arrangement that has items in different locations

than other arrangements and [0042] describes determining an arrangement with any combination of inventory item characteristics. Potter further teaches:

- *wherein the second product placement scenario is based at least in part on a proximity to a boundary or seam between a first shelf location or a first peg location and a second shelf location or a second peg location* (Potter [0068-0069] describes using constraints for the arrangement that include an acceptable or unacceptable amount for which a product can exceed a dimensional constraint (i.e. a shelf edge or boundary) for an allocated space, for example, the left most space on a shelf may overhang the shelf if it is within a user defined overhang tolerance (i.e. a proximity to the boundary between two locations).

14. As per **Claim 5** Potter teaches in at least [0066] the ability to rearrange the orientation of inventory items (i.e. generate a second arrangement), [0082-0090] describes determining a second arrangement that has items in different locations than other arrangements and [0042] describes determining an arrangement with any combination of inventory item characteristics. Potter further teaches:

- *wherein the second product placement scenario includes, where a first product of a first type is placed above a predetermined height threshold at a location, a second product of the first type at a vertical position at or below the predetermined height threshold* (Potter [0062-0065] describe the ability to sort data based on different preferences and needs, for example heavy items, determined by an inventory weight constraint, must be placed at the bottom of

the shelving unit (i.e. a second product of the first type is placed at a vertical position below a predetermined height threshold, the threshold being the lowest shelf post height) while lighter inventory items, determined by an inventory weight constraint are placed at higher positions on the shelving units (i.e. placed above a predetermined height threshold)).

Potter recites that the higher or lower shelf positions are height thresholds. Potter does not explicitly recite that the constraints for positions relate to peg locations. However, Riley teaches a system for implementing planograms associated with corresponding retail stores (Abstract). Riley further describes in at least Col. 1: 19-30 that a planogram is a layout that assigns specific display locations on specific display fixtures within a retail store, the locations and fixtures can be shelves, hooks, or pegs. See also Col. 3: 42-57. Riley is combined with the primary reference based on the reasons and rationale set forth in the rejection of Claim 1 above.

15. As per **Claim 6** Potter further teaches:

wherein determining the optimized product placement scenario further comprises

- *generating a third product placement scenario and a fourth product placement scenario* (Potter [0087] describes how at least three different shelving scenarios are calculated, [0090] describes that any desired number of iterations can be executed for the shelving routine generating as many possible shelving arrangements as desired).

16. As per **Claim 7** Potter further teaches:

- *wherein the optimized product placement scenario is determined based on a packing efficiency metric for the product placement scenarios* (Potter Fig. 9 illustrates calculating a shelving efficiency rating for a particular arrangement, as do Figs. 9B and 10, [0064, 0087-0090] describe determining the shelving storage efficiency for each inventory arrangement and comparing the calculated efficiencies for each arrangement to determine the most efficient arrangement (i.e. the optimized placement scenario) as is further described in at least [0095-0098]).

17. As per **Claim 11** Potter in at least Claim 15 describes how an inventory layout includes labels corresponding to each of the plurality of items. Potter does not explicitly recite that the inventory data includes data specifying signage. However, Riley teaches a system for implementing planograms associated with corresponding retail stores (Abstract). Riley describes in at least Col. 1: 19-30 that a planogram is a layout that assigns specific display locations on specific display fixtures within a retail store, the locations and fixtures can be shelves, hooks, or pegs. Riley further teaches:

- *wherein the inventory data includes data specifying signage* (Riley Fig. 3 illustrates associating label types (i.e. specifying signage) with inventory information, Fig. 4 item 136 illustrates the ability to select labels and signs as is further described in at least Col. 4: 6-45 and Col. 7: 15-65).

Therefore, it would be obvious to one of ordinary skill in the art to modify the data associated with inventory items taught by Potter to include data

specifying signage for an inventory item because each of the types of data were known, but not necessarily combined as claimed. The result of the combination is predictable because each of the elements performs the same function as it did independently. By associating signage, or labels with the inventory items, the combination enables detailed information labels to be placed on items which will enable users to customize retail signage associated with a planogram for any determined arrangement.

18. As per **Claims 18-19 and 21-23** the limitations refer to substantially similar subject matter to that set forth in claims 1-5 and 11 and are therefore rejected based on the same reasons and rationale set forth in the rejections of claims 1-5 and 11 above. With regards to the databases and planogram generator described in the system, Potter teaches in at least Fig. 1 a data storage area which stores layout, inventory and product data which are used to generate a product arrangement or planogram as is described in the associated text. Potter further teaches in at least [0033] the ability to model and store the data and information in a computer readable media device.

19. **Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potter et al. (US 2004/0133483 A1) in view of Riley et al. (US 7,440,903 B2) further in view of Armington et al. (US 2001/0017023 A1) further in view of Withers (US 2007/0108075 A1) further in view of Jenkins (US 2003/0171979 A1).**

20. As per **Claim 8** Potter teaches in at least [0066] the ability to rearrange the

orientation of inventory items (i.e. generate a second arrangement), [0082-0090] describes determining a second arrangement that has items in different locations than other arrangements and [0042] describes determining an arrangement with any combination of inventory item characteristics. Riley teaches utilizing characteristics for product placement that include cost, pricing, availability of stock for sale, etc. as is illustrated in at least Fig. 1 item 42 and described in Col. 1: 55-61, Col. 3: 12-16, and Col. 5: 5-33. Armington teaches utilizing factors related to the size, shape, and fragility of an item while Withers describe compressing an item to reduce the size and maximize the number of items being displayed.

None of the cited references explicitly recite a sell-through index. However, Jenkins teaches a system and method for selecting and arranging products in a shelving system. Jenkins further teaches:

- *wherein the product placement scenario is based at least in part on a sell-through index* (Jenkins Fig. 2A illustrates calculating a % sales and % share from the sales data associated with different products being placed in the planogram, [0041] describes integrating financial information such as a percentage of sales (e.g. a sell-through index) as compared to the overall products sold or available into the dashboard panel which is displayed in the planogram, [0069] further describes using the % sales and % share columns to determine product quantities and financial information which is used when assessing the planogram with certain product assortments).

Therefore, it would be obvious to one of ordinary skill in the art to modify the ability to generate a second product arrangement based on any combination of characteristics to include the techniques for using inventory characteristics related to the sell-through index and product margins to generate planograms because each of the elements were known, but not necessarily combined as claimed. The technical ability existed to combine the elements as claimed and the result of the combination is predictable because each of the elements perform the same function as they did independently. By utilizing a characteristic that incorporates % of sales into the arrangement determination, the combination enables a more efficient arrangement to be generated which will improve overall profits associated with the sale of the items being arranged (Jenkins [0070]).

21. As per **Claim 9** Potter teaches in at least [0066] the ability to rearrange the orientation of inventory items (i.e. generate a second arrangement), [0082-0090] describes determining a second arrangement that has items in different locations than other arrangements and [0042] describes determining an arrangement with any combination of inventory item characteristics. Riley teaches utilizing characteristics for product placement that include cost, pricing, availability of stock for sale, etc. as is illustrated in at least Fig. 1 item 42 and described in Col. 1: 55-61, Col. 3: 12-16, and Col. 5: 5-33. Armington teaches utilizing factors related to the size, shape, and fragility of an item while Withers describes compressing an item to reduce the size and maximize the number of items being displayed.

None of the cited references explicitly recite a sell-through index and product margins used to location determination. However, Jenkins teaches a system and method for selecting and arranging products in a shelving system. Jenkins further teaches:

- *wherein the products are placed at certain locations based on associated sell-through indices and product margins* (Jenkins Fig. 2A illustrates calculating a % sales and % share (e.g. product margins) from the sales data associated with different products being placed in the planogram, [0041] describes integrating financial information such as a percentage share, as compared to the overall products sold or available into the dashboard panel which is displayed in the planogram (i.e. certain locations where products are placed based on the associated data), [0069] further describes using the % sales and % share columns to determine product quantities and financial information which is used when assessing the planogram with certain product assortments).

Jenkins is combined based on the reasons and rationale set forth in the rejection of Claim 8 above.

22. As per **Claim 10** Potter teaches in at least [0066] the ability to rearrange the orientation of inventory items (i.e. generate a second arrangement), [0082-0090] describes determining a second arrangement that has items in different locations than other arrangements and [0042] describes determining an arrangement with any combination of inventory item characteristics. Potter [0087-0090] describes

establishing other arrangements of inventory items and comparing the arrangements to establish more accurate or more efficient shelving assembly allocations, the most efficient arrangement is generated, [0098] describes calculating an efficiency for each arrangement in order to compare the different arrangements and recommend the best option. Riley teaches utilizing characteristics for product placement that include cost, pricing, availability of stock for sale, etc. as is illustrated in at least Fig. 1 item 42 and described in Col. 1: 55-61, Col. 3: 12-16, and Col. 5: 5-33. Armington teaches utilizing factors related to the size, shape, and fragility of an item while Withers describes compressing an item to reduce the size and maximize the number of items being displayed.

None of the cited references explicitly recite determining an overall profitability for an optimized product arrangement from a sell-through index and product margins. However, Jenkins teaches a system and method for selecting and arranging products in a shelving system. Jenkins further teaches:

- *wherein the determination of the optimized placement scenario is based on an overall scenario profitability that is a function of margins and location-specific sell-through indices of the products* (Jenkins (Jenkins Fig. 2A illustrates calculating a % sales and % share (e.g. product margins) from the sales data associated with different products being placed in the planogram, [0034] describes determining the product arrangement in order to maximize dollar sales, [0041] describes integrating financial information such as a

percentage share, as compared to the overall products sold or available into the dashboard panel which is displayed in the planogram, [0069-0070] further describes using the % sales and % share columns to determine product quantities and financial information which is used when assessing the planogram with certain product assortments in order to obtain the assortment with the maximum dollar sales (i.e. highest overall profitability)).

Therefore, it would be obvious to one of ordinary skill in the art to modify the ability to determine an optimized arrangement based on different characteristics to include the techniques for utilizing margins and % indices to determine an optimized shelf set because each of the elements were known, but not necessarily combined as claimed. The technical ability existed to combine the elements as claimed and the result of the combination is predictable because each of the elements performs the same function as it did independently. By merging the techniques for utilizing sales and profit calculations with a product placement optimization scenario determination, the combination enables the determination of an optimized product arrangement which will increase sales and profit for the associated retail environment and its specifically placed products (Jenkins [0070]).

23. **Claims 12, 14-17, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potter et al. (US 2004/0133483 A1) in view of Riley et al. (US 7,440,903 B2) further in view of Armington et al. (US 2001/0017023 A1) further in view of Withers (US 2007/0108075 A1) further in view of Fotteler**

et al. (US 2005/0216371 A1).

24. As per **Claims 12** the limitations refer to substantially similar subject matter to that set forth in claims 1 and is therefore rejected based on the same reasons and rationale set forth in the rejection of claim 1 above.

With regards to the databases and computer configured to generate a planogram described in the system, Potter teaches in at least Fig. 1 a data storage area which stores layout, inventory and product data which are used to generate a product arrangement or planogram as is described in the associated text. Potter further teaches in at least [0033] the ability to model and store the data and information in a computer readable media device. Riley teaches utilizing characteristics for product placement that include cost, pricing, availability of stock for sale, etc. as is illustrated in at least Fig. 1 item 42 and described in Col. 1: 55-61, Col. 3: 12-16, and Col. 5: 5-33. Armington teaches utilizing factors related to the size, shape, and fragility of an item while Withers describes compressing an item to reduce the size and maximize the number of items being displayed.

None of the cited references explicitly recite a retail planning module or a sales management module. However, Fotteler teaches a system and method for planning the assortment and arrangement of an assortment for a large retail change [0034]. Fotteler further teaches:

- *a retail planning module for determining financial and logistical activities of a plurality of stores in a retail chain* (Fotteler [0004-0007] describes strategic

activities involved in planning that relate to financial planning obligations as well as logistics for handling the merchandise for a large retail chain as is described in at least [0034-0035] via the modules illustrated in the site structure represented in at least Fig. 1, [0054] describes a retail planning cycle to be executed by the different planning structures and hierarchies)*;*

- *a sales management module for managing the sale of merchandise in a retail chain using a sales management module wherein the sales management module uses information provided by said retail planning module to create sales projections for a plurality of stores in the retail chain and compiles a merchandise database having a merchandise list including details of all merchandise on the merchandise list* (Fotteler [0034] describes sales channel notes within a sales structure which are configured for a large retail chain, [0073-0075] describes the ability to forecast and project sales transactions data for any data assortment in the system based on stored information, classification algorithms that receive inputs and other data related to a plurality of stores)*;*

Therefore, it would be obvious to one of ordinary skill in the art to modify the modules used to generating planograms that incorporates data related to the items to include the modules related to retail chain planning and sales management because each of the items were known, but not necessarily combined as claimed. The technical ability existed to combine the different modules as claimed and the result of the combination is predictable because

each of the elements perform the same functions as they did independently. By incorporating overall retail planning and sales management data into the layout or planogram determinations, the combination enables an optimized layout plan which takes into account the specific characteristics of a product as well as the financial and logistical considerations of the retail chain which produces store chain assortment assignments and layouts that accomplish the company's strategy for individual stores as well as the overall chain (Fotteler [0005-0009]).

25. As per **Claims 14-17** the limitations refer to substantially similar subject matter to that set forth in claims 1-5 and 11 and are therefore rejected based on the same reasons and rationale set forth in the rejections of claims 1-5 and 11 above. With regards to the databases and planogram generator described in the system, Potter teaches in at least Fig. 1 a data storage area which stores layout, inventory and product data which are used to generate a product arrangement or planogram as is described in the associated text. Potter further teaches in at least [0033] the ability to model and store the data and information in a computer readable media device.

26. As per **Claim 24** Potter teaches in at least Fig. 1 a data storage area which stores layout, inventory and product data which are used to generate a product arrangement or planogram as is described in the associated text. Potter further teaches in at least [0033] the ability to model and store the data and information in a computer readable media device. Riley teaches utilizing characteristics for product placement that include cost, pricing, availability of stock for sale, etc. as

is illustrated in at least Fig. 1 item 42 and described in Col. 1: 55-61, Col. 3: 12-16, and Col. 5: 5-33. Armington teaches utilizing factors related to the size, shape, and fragility of an item while Withers describes compressing an item to reduce the size and maximize the number of items being displayed.

None of the cited references explicitly recite a retail planning module or a sales management module. However, Fotteler teaches a system and method for planning the assortment and arrangement of an assortment for a large retail change [0034]. Fotteler further teaches:

- *determining financial and logistical activities of a retail chain using a retail planning module* (Fotteler [0004-0007] describes strategic activities involved in planning that relate to financial planning obligations as well as logistics for handling the merchandise for a large retail chain as is described in at least [0034-0035] via the modules illustrated in the site structure represented in at least Fig. 1, [0054] describes a retail planning cycle to be executed by the different planning structures and hierarchies)*;*
- *managing the sale of merchandise in a retail chain using a sales management module wherein the sales management module uses information provided by said retail planning module to create sales projections for a plurality of stores in the retail chain* (Fotteler [0034] describes sales channel notes within a sales structure which are configured for a large retail chain, [0073-0075] describes the ability to forecast and project sales transactions data for any data assortment in the system based on stored

information, classification algorithms that receive inputs and other data related to a plurality of stores) *; and,*

- *generating planograms for use in displaying merchandise in a plurality of stores of said retail chain using data provided by said sales management module* (Fotteler [0041] describes the ability to arrange products for display in the stores and shops, [0046] describes a merchandise presentation layout, [0064-0070] describe how assortments can be links to different shelves or racks which can be used for product display and the physical layout or placement of the products and display scan be determined for different assortment versions by the layout module which gathers information from the planning and sales data modules).

Therefore, it would be obvious to one of ordinary skill in the art to modify the modules used to generating planograms that incorporates data related to the items to include the modules related to retail chain planning and sales management because each of the items were known, but not necessarily combined as claimed. The technical ability existed to combine the different modules as claimed and the result of the combination is predictable because each of the elements perform the same functions as they did independently. By incorporating overall retail planning and sales management data into the layout or planogram determinations, the combination enables an optimized layout plan which takes into account the specific characteristics of a product as well as the financial and logistical considerations of the retail chain which produces store

chain assortment assignments and layouts that accomplish the company's strategy for individual stores as well as the overall chain (Fotteler [0005-0009]).

Response to Arguments

27. Applicant's arguments filed 5 April 2013 have been fully considered but they are not persuasive.

28. In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007).

In this case, Applicant argues that the cited references fail to teach using a deformation factor that allows for a different spacing of products than the first scenario where the factor includes an amount by which a retail item can be deformed to take up less space without damaging the retail item. Further Applicant argues that the factor allows the second planogram to compensate for increased display space when displayed items can be deformed to allow for an increase in the amount of displayed retail items in a display.

Potter is relied upon to teach generating an inventory layout that is an arrangement of items in a product inventory on shelves. The arrangement is determined based on a number of inventory characteristics and utilizes initial shelf space calculations then describes the ability to rearrange the orientation of inventory items where items are in different locations based on information relating to breakability or other packaging characteristic factors of the inventory product. This reference alone is not relied upon to teach the defined deformation factor set forth in the claims but is merely utilized to suggest that breakability or packaging are factors related to the formation of a product is to be considered when generating a layout.

Armington is combined with Potter and Riley to teach evaluating characteristics of the part and determining packaging requirements that are appropriate based on these characteristics. The characteristics described include size, shape, weight and fragility and all describe factors that relate to how a product can be handled or deformed without causing damage. The system utilizes rules to determine the optimized packaging to prevent damage and describes analyzing the volume associated with the packaged item to determine an optimal arrangement of the packaged parts. Characteristics are used to classify a product and to analyze and measure dimensions of a part to determine a rate of change in velocity that a part can withstand without incurring damage. The ability to withstand a rate of change describes the physical limits that will cause damage or deform a product

The deformation factor as claimed is a factor used when generating a second arrangement which includes an amount by with a retail item can be deformed, or its physical limits, to take up less space allowing for a different spacing of products in a placement scenario. The claim does not require that the deformation is of the carton or box of a retail item only that a factor describing deformation is used. How it is used or what exactly is calculated is not set forth in the claim nor is it supposed in the specification beyond describing that the item takes up less space. Armington utilizes a factor that includes an amount by which an item can be deformed or its physical limit without causing damage while Withers describes calculating a deformation that determines a reduction in size of an item so that it occupies less space. The claim does not require that the product be only a carton or box, therefore any product, packaging or item in a retail environment, including the cushioning inside of product packaging could allow for different spacing of products. The cushioning itself could be considered a product in a retail environment since lexicography has not been invoked and therefore the broadest reasonable interpretation of a product could be an item in the planned environment. The product and its packaging combined are retail items whose arrangements are considered. Whether they are displayed or arranged further describes a field of use for an arrangement but does not functionally or structurally distinguish the reference from the claimed material.

29. Applicant argues that Armington does not relate to generating planograms let alone generating a second planogram using a deformation factor. The

references are analogous because they all relate to the packaging of items, the fact that one reference relates to using the factors to generate planograms while another relates to packaging products for arrangement in packaging does not make them non-analogous it merely describes different fields in which package size, shape and configuration are considered. The argument that because all of the references do not relate to maximizing the use of retail space does not mean that the references are non-analogous. The factor calculations can be utilized to solve other problems and are still considered analogous art. The rejection is based on the combination of the references and does not require that each reference teach a retail environment where maximization of shelf space is determined since this is merely an intended use of the factor and it can be applied in any field and would still be used and would function in the same manner. The area of use does not impact the ability to determine the deformation factor.

30. Applicant argues that Withers teaches away from the claimed invention because it provides a display where the packaging is specifically designed to compress the product and thus there would be no reason to generate a second planogram. Again the rejection is based on a combination of the references. Withers is combined with the other references and relied upon only to teach the ability to deform a product to take up less space in an arrangement, the limitations with regards to generating multiple product arrangements based on different factors is addressed by the previously cited references. In order to teach away the

combination would have to be rendered inoperable if the compressed package was utilized. Just because Withers pre-compresses the packages does not render the ability to generate multiple arrangements inoperable based on multiple sizes of packages.

31. Applicant further argues that Withers is non-analogous because it doesn't recite the term planogram. The references are analogous because they all relate to the packaging of items and the arrangement of items, the fact that one reference relates to using the factors to generate planograms while another relates to packaging products for arrangement in packaging does not make them non-analogous it merely describes different fields in which package size, shape and configuration are considered. The argument that because all of the references do not relate to maximizing the use of retail space does not mean that the references are non-analogous. The factor calculations can be utilized to solve other problems and are still considered analogous art. The rejection is based on the combination of the references and does not require that each reference teach a retail environment where maximization of shelf space is determined since this is merely an intended use of the factor and it can be applied in any field and would still be used and would function in the same manner. The area of use does not impact the ability to determine the deformation factor.

32. Applicant further argues that the Jenkins reference fails to teach a sell through index because it doesn't explicitly recite the term index. An index given its broadest reasonable interpretation, when lexicography has not been invoked, is

merely something used or serving to point something out, hence a percentage of sales is used to point out a sell through rate by comparing it to other values, as is done by Jenkins. No exact calculation or formulation of the index is set forth in the claims or specification that would limit the index to any explicit definition beyond relating to sell-through values. How the products are placed based on different factors such as profits or sell through indices is further based on the combination of generating an arrangement based on different factors. The additional references which are combined to describe the types of factors establishes the obvious basis for rejection because how the arrangement and locations are determined from the different factors is not set forth, nor are any specific calculations of functions related to determining factors which are used for the basis.

33. Applicant's further arguments not explicitly addressed are considered as amounting to general allegations that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Conclusion

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephanie Delich whose telephone number is (571)270-1288. The examiner can normally be reached on Mon-Fri 7 to 4 EST.

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Beth Boswell can be reached on 571-272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephanie Delich/
Examiner, Art Unit 3623