



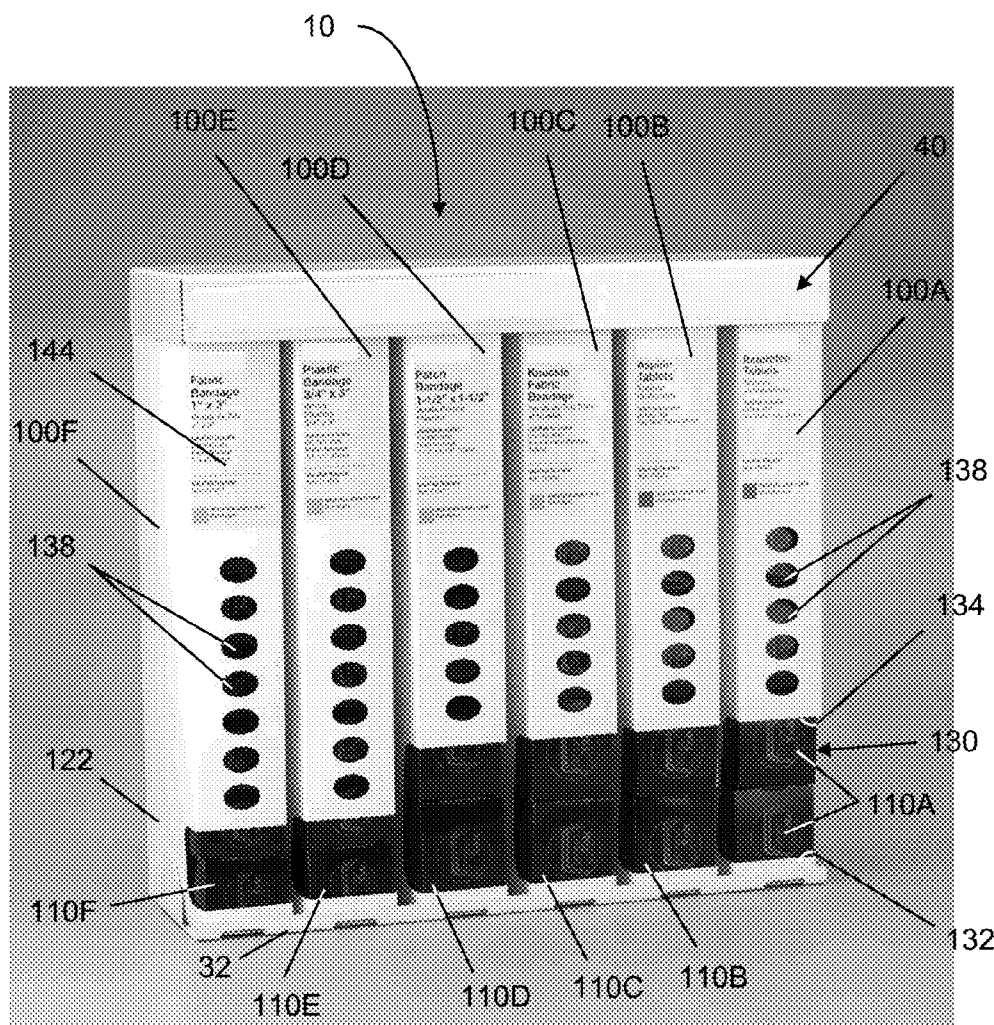
US 20160185509A1

(19) **United States**(12) **Patent Application Publication**
Bittinger(10) **Pub. No.: US 2016/0185509 A1**(43) **Pub. Date: Jun. 30, 2016**(54) **VAN PACKAGING RESUPPLY SYSTEM****Publication Classification**(71) Applicant: **Acme United Corporation**, Fairfield,
CT (US)(72) Inventor: **Dan Bittinger**, Oregon City, OR (US)(21) Appl. No.: **14/980,020**(22) Filed: **Dec. 28, 2015**(51) **Int. Cl.****B65D 83/08** (2006.01)**B65D 71/50** (2006.01)**A47F 1/08** (2006.01)**B65D 85/62** (2006.01)(52) **U.S. Cl.**CPC **B65D 83/0805** (2013.01); **B65D 85/62**
(2013.01); **B65D 71/50** (2013.01); **A47F 1/08**
(2013.01)**Related U.S. Application Data**(60) Provisional application No. 62/097,834, filed on Dec.
30, 2014.

(57)

ABSTRACT

A van packaging resupply system comprises a rack adapted to mount to the interior wall of a delivery van. Multiple cartons are loaded onto the rack. Each of the cartons contains a stack of packages of first aid products. The cartons include a lower discharge opening to facilitate removal of a package from the carton.



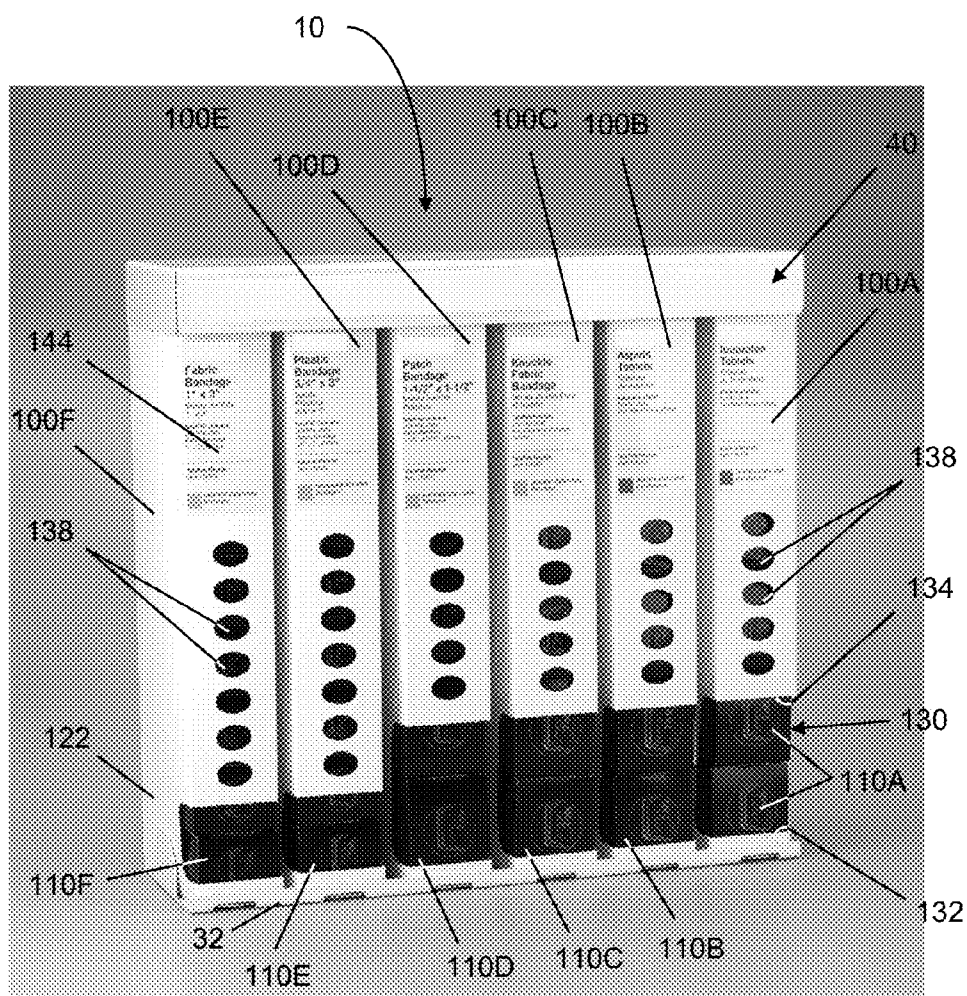


Fig. 1

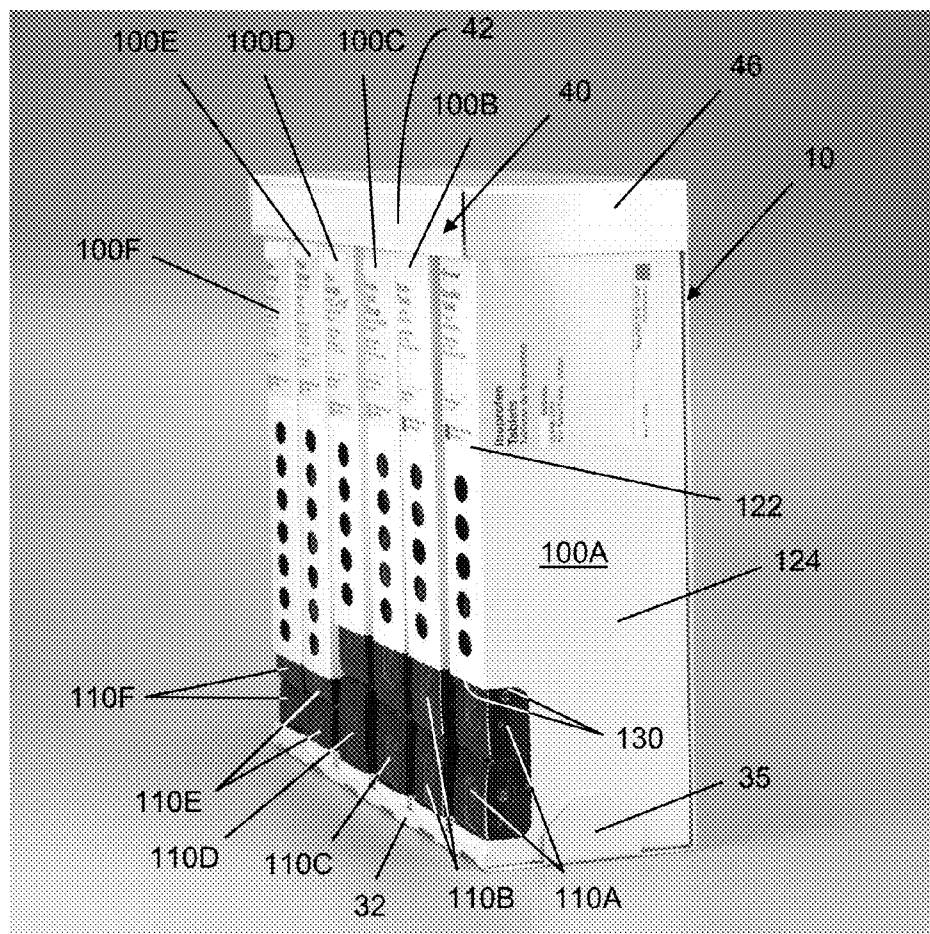


Fig. 2

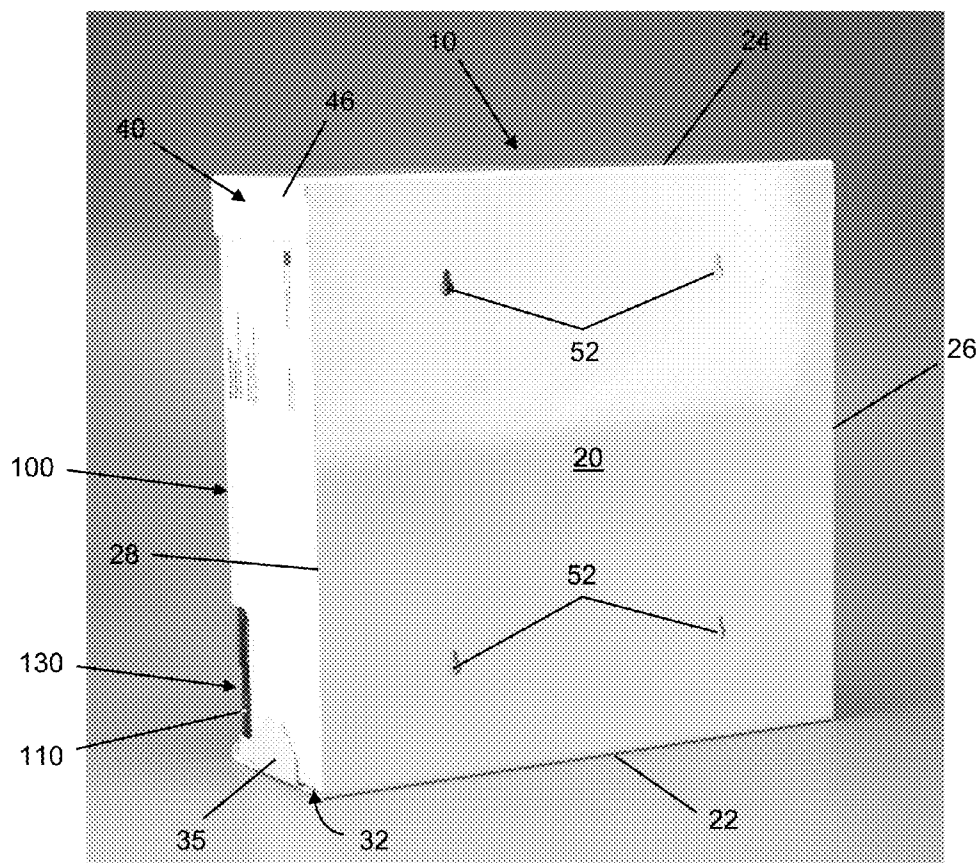


Fig. 3

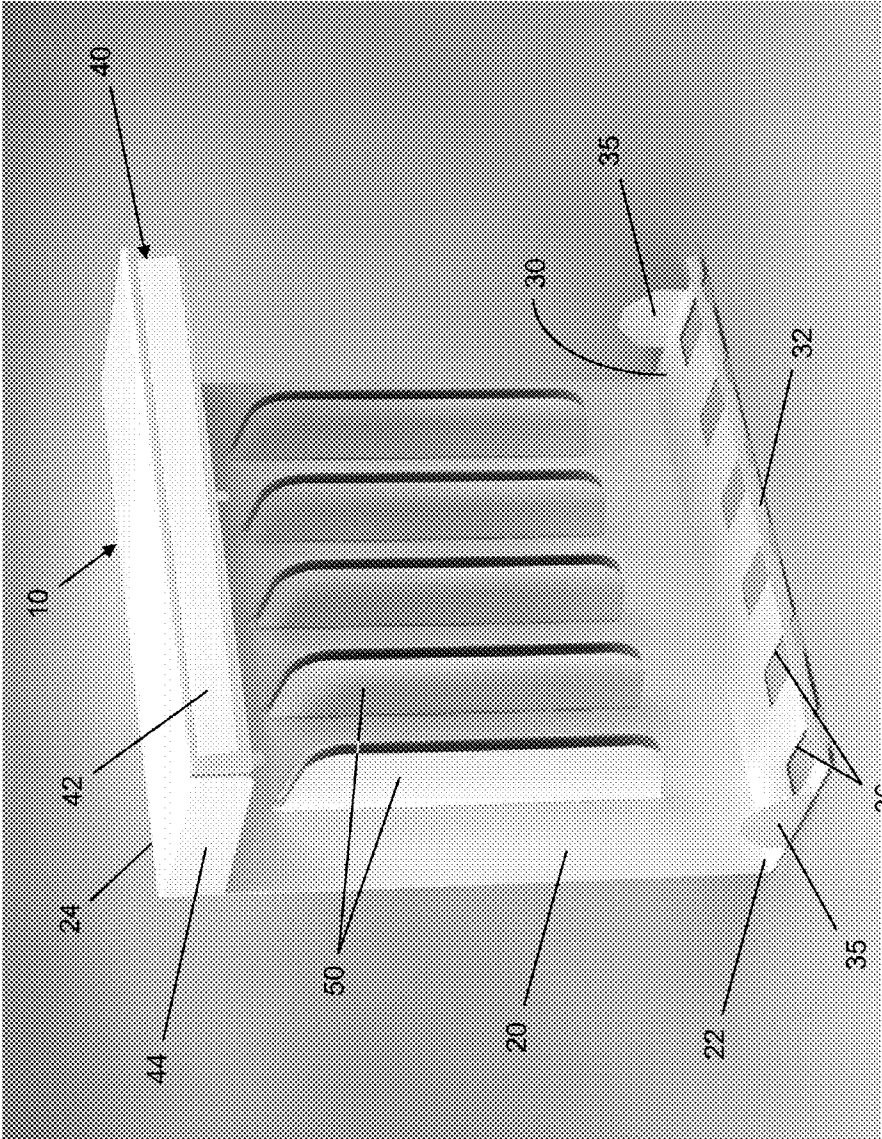


Fig. 4

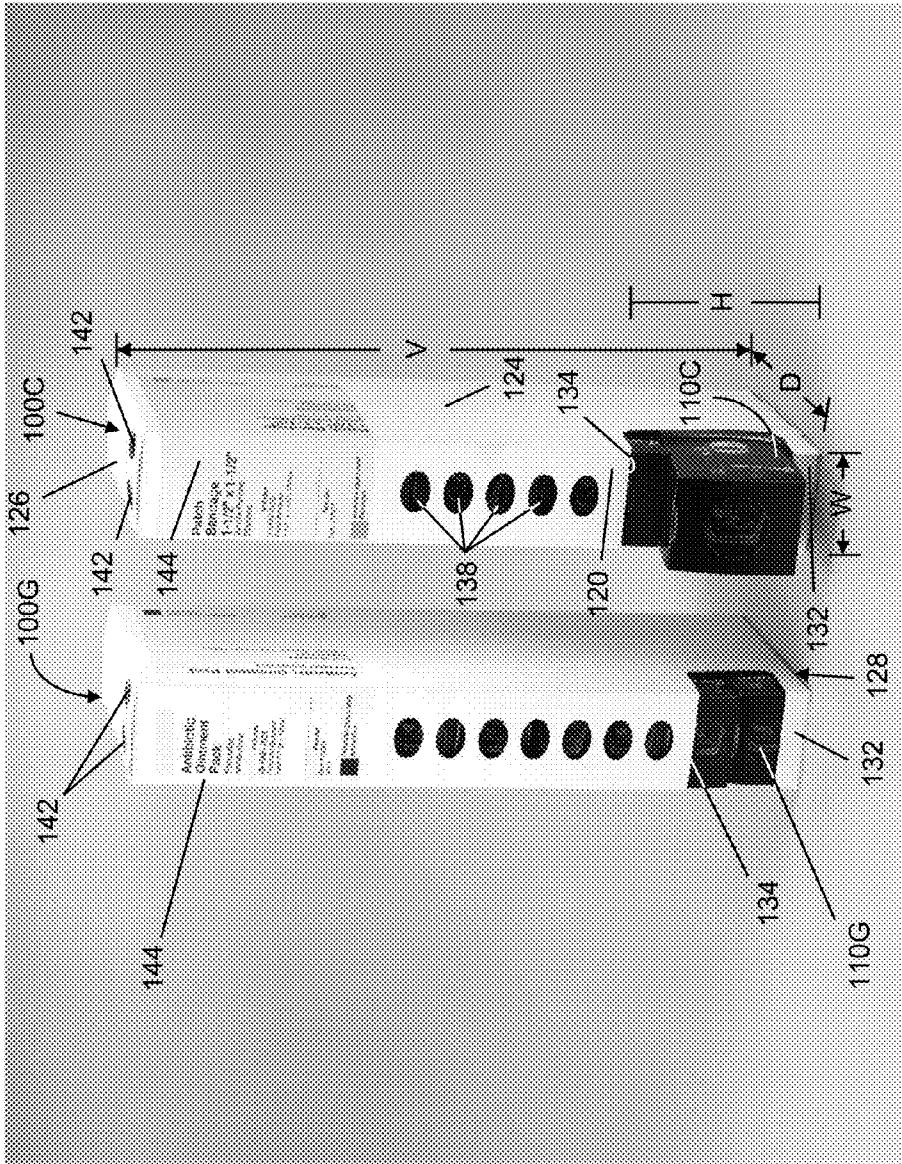


Fig. 5

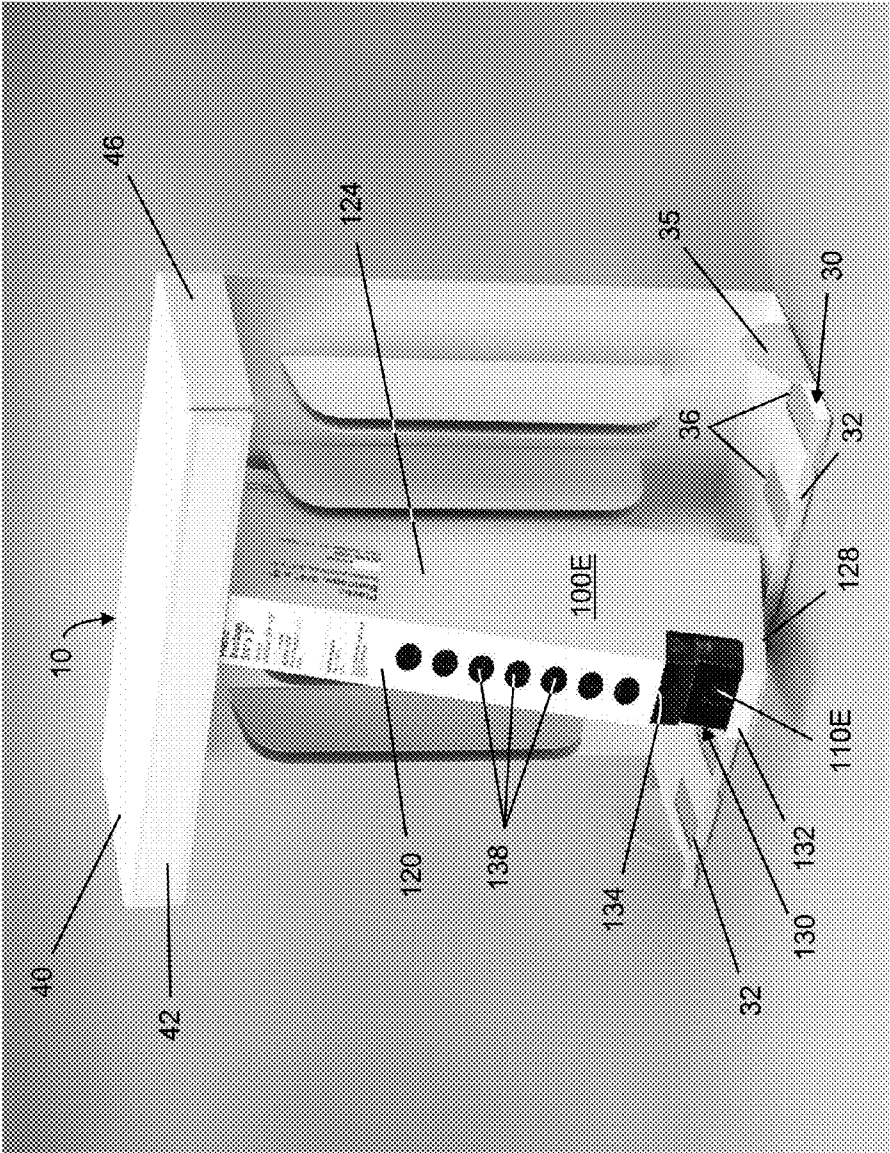


Fig. 6

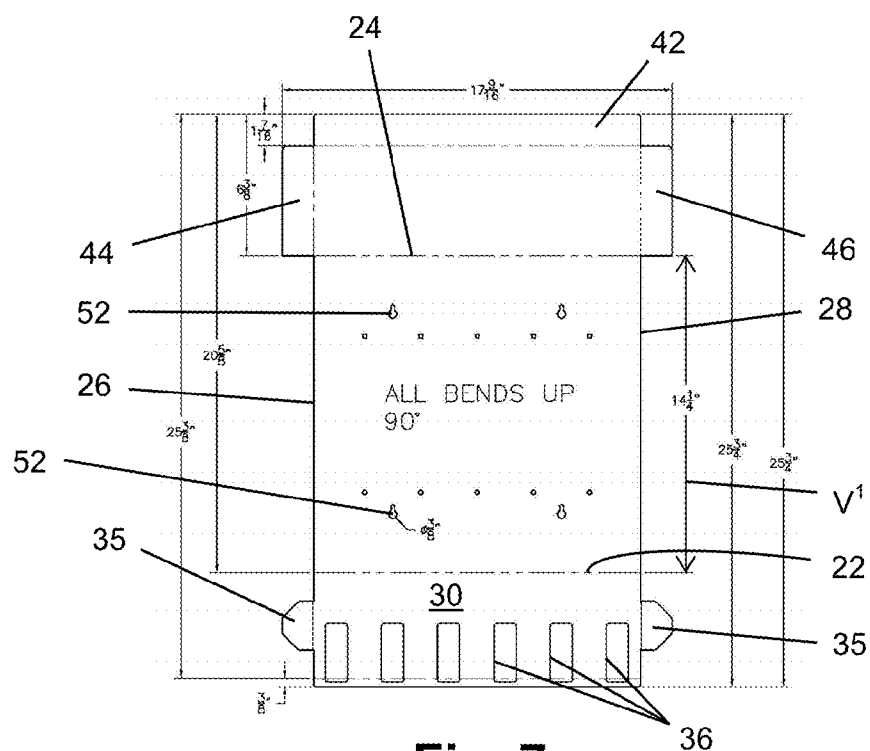


Fig. 7

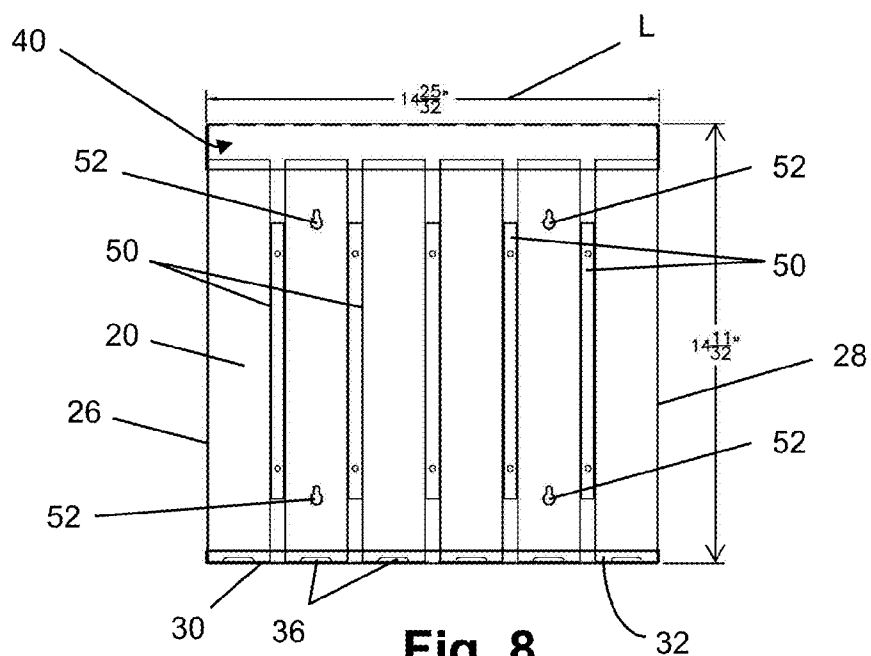


Fig. 8

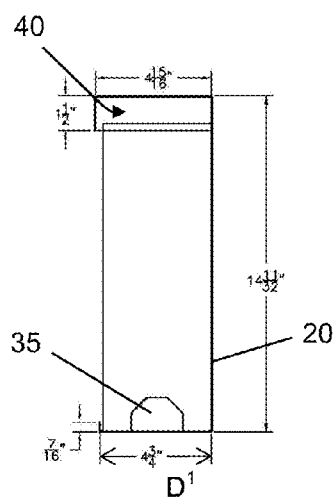


Fig. 9

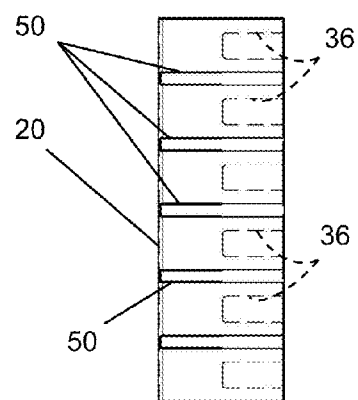


Fig. 11

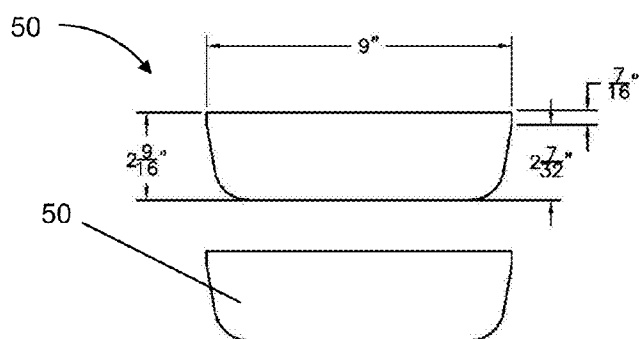


Fig. 10

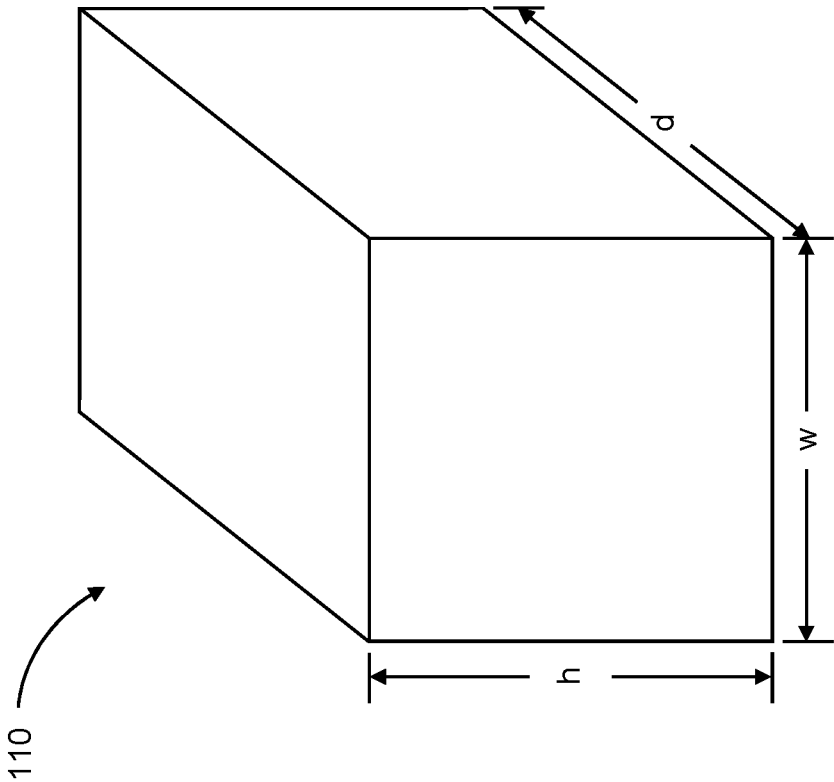


Fig. 12

VAN PACKAGING RESUPPLY SYSTEM

BACKGROUND

[0001] This disclosure relates generally to systems for refilling kits. More particularly, this disclosure relates to systems for replacing items in first aid kits.

[0002] The replacement of products for first aid kits is crucial to the effectiveness of the first aid kits. It is highly desirable that spent first aid products be promptly replaced with the identical or equivalent products on a recurring basis. Service vans, which have a wide variety of products for supplying businesses and facilities on a recurring basis are an ideal mechanism for resupplying first aid kits. The present disclosure is directed to implementing a first aid replacement program through the use of service or delivery vans.

SUMMARY

[0003] Briefly stated, a van packaging resupply system employs a rack. The rack comprises a panel defining at least one opening and having a top and a bottom and opposed side edges extending between the top and bottom. A shelf projects forwardly at the bottom and has a frontal lip and opposed side retainers. A canopy projects forwardly from the top and has a frontal lip generally parallel to the shelf frontal lip and opposed side retainers generally parallel to the shelf side retainers.

[0004] One or more cartons may be loaded onto the rack. Each carton takes the form of a rectangular chute having a top cover, a bottom panel, a frontal panel and opposed side panels. A discharge opening is defined in the frontal panel and the side panels adjacently spaced from the bottom panel so to define a shallow retainer lip. Apertures are defined in the frontal panel between the discharge opening and the top cover. Each carton is receivable on the rack so that the carton is positioned on the shelf and forwardly retained by the canopy and shelf retainer lip.

[0005] Each carton has a plurality of substantially identical packages. The packages are preferably first aid packages containing first aid products selected from the group consisting of plastic bandages, cloth bandages, aspirin tablets and ibuprofen tablets. Each carton has a vertical stack of substantially identical first aid packages. The discharge opening has an upper edge which is spaced a vertical distance H above the bottom panel and the carton has a stack of substantially identical product packages having a frontal height h wherein the vertical distance H is greater than the frontal height h , but less than the height of $2h$.

[0006] The top cover of a carton preferably has at least one aperture. Each carton also has a vertical height V and each said package has a height h , and the vertical height V is at least slightly greater than the height h of a package times the number of packages in the carton.

[0007] The rack is preferably a metal member. The shelf retainers are preferably a pair of retainer tabs. The shelf defines a rectangular opening spaced from the rack panel. Substantially U-shaped spacers extend from the panel and are disposed in a substantially vertical orientation. The spacers are equidistantly spaced and define a receptacle for a carton. Each rack panel opening has a keyhole shape.

[0008] In one embodiment, a van packaging resupply system comprises a rack and at least one carton. The rack comprises a panel having a top and a bottom and opposed side edges extending between the top and the bottom. A shelf

projects forwardly at the bottom and has a frontal lip and opposed side retainers. A canopy projects forwardly from the top and has a frontal lip generally parallel to the shelf frontal lip and an opposed side retainer generally parallel to each shelf side retainer. Each carton comprises a rectangular chute having a top cover, a bottom panel, a frontal panel and opposed side panels. A discharge opening is defined in the frontal panel and the side panels adjacent and spaced from the bottom panel so as to define a shallow retainer lip. A stack of substantially identical packages are received in the chute wherein a lowermost package is removable from the discharge opening. Each carton is receivable on the rack so that the carton is positioned on the shelf and forwardly retained by the canopy and shelf retainer lip.

[0009] In another embodiment, a van packaging resupply system employs a rack comprising a panel defining at least one opening and having a top and a bottom and opposed side edges extending between the top and the bottom. A shelf projects forwardly at the bottom and has a frontal lip and opposed side retainers. A canopy projects forwardly from the top and has a frontal lip and an opposed side retainer generally parallel to the shelf side retainers. A plurality of spacers projects forwardly from the panel to define a plurality of receptacles. A carton is received in each receptacle. Each carton comprises a generally rectangular chute having a top cover, a bottom panel, a frontal panel and opposed side panels. A discharge opening is defined in the frontal panel and the side panel and is adjacent to and spaced from said bottom panel so as to define a shallow retainer lip. A stack of a plurality of substantially identical packages is received in the chute wherein a lowermost package is removable from the discharge opening. Each carton is receivable on the rack and each carton is positioned on the shelf and forwardly retained by the canopy and the shelf retainer lip.

[0010] The spacers are generally U-shaped members and are generally equidistantly spaced to provide a plurality of receptacles having a substantially equal width.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 is a generally frontal photograph of a rack filled with cartons of first aid packages employed in the van packaging system;

[0012] FIG. 2 is a photograph of the rack, cartons and packages of FIG. 1 taken from a different perspective;

[0013] FIG. 3 is a photograph of the rack, cartons and packages of FIG. 1 taken from generally the rear thereof;

[0014] FIG. 4 is a generally frontal photograph of the rack;

[0015] FIG. 5 is a generally frontal photograph of a pair of representative cartons and packages with a representative carton shown partly in diagrammatic form;

[0016] FIG. 6 is a photograph illustrating how a carton may be inserted into the rack of FIG. 1;

[0017] FIG. 7 is a pre-assembly layout view, partly diagrammatic, to show representative dimensions of the principal rack component for the rack of FIG. 1;

[0018] FIG. 8 is a frontal view, partly diagrammatic, to show representative dimensions of the rack of FIG. 1;

[0019] FIG. 9 is a side elevational view, partly diagrammatic, to show representative dimensions of the rack of FIG. 1;

[0020] FIG. 10 is an interior plan view, partly in phantom and partly diagrammatic, to show compartments of the rack of FIG. 1;

[0021] FIG. 11 is a side view, partly diagrammatic, to show representative dimensions of a spacer component for the rack of FIG. 1; and

[0022] FIG. 12 is an enlarged perspective view, partly diagrammatic, to show dimensional relationships of a representative package.

DETAILED DESCRIPTION

[0023] With reference to the drawings wherein like numerals represent like parts throughout the several figures, a van packaging resupply system employs a rack 10 which is adapted for mounting to the interior wall of a service or delivery van (not illustrated). Multiple cartons designated by the numeral 100 followed by a letter are loaded onto the rack. Each of the cartons 100 preferably contains a stack of packages of first aid products 110 followed by a letter, respectively. Different first aid products, including their packages, are loaded into the cartons 100. The cartons 100 function as dispensers. The packaging resupply system is adapted to provide a readily available source of replacement first aid products which can be easily identified and removed for ultimate replacement in a first aid kit.

[0024] The dimensions of the shelf 10, the cartons 100A, 100B, 100C . . . and the first aid product packages 110A, 110B, 110C . . . are inter-related, and thus will be initially described with relation to the most fundamental component, namely, the first aid package 110. The first aid packages preferably contain various first aid products, such as, for example, fabric bandages, plastic bandages, patch bandages, knuckle fabric bandages, aspirin tablets, ibuprofen tablets and other first aid products. In the preferred system, the first aid packages have a uniform frontal width w and a frontal height h , which may vary, and a depth d which is preferably uniform, but in theory, may vary with various depths of less than d , the latter of which is considered to be the effective maximum depth.

[0025] With additional reference to FIGS. 5 and 6, each dispensing carton 100 is dimensioned to receive a vertical column or stack of identical first aid packages 110. In the disclosed embodiment, carton 100 contains six packages, although various numbers of packages can be provided. The carton is shaped and dimensioned to have a vertically elongated rectangular form and is configured to function as a dispensing chute. The carton is preferably dimensioned to receive at least six packages in quasi-snug relationship and preferably has a light cardboard corrugated form with a relatively narrow face having a width W which is slightly larger than the frontal face width w of the product package.

[0026] The carton has a frontal panel 120, side panels 122 and 124, a top panel 126 and a bottom panel 128. The depth D of the side panels 122, 124 is slightly larger than the depth d of the packages. A discharge opening 130 is formed in the frontal panel and extends rearwardly into the side panels 122 and 124. The lower edge of the discharge opening is spaced a slight distance above the bottom panel 128 so as to form a retaining lip 132. The vertical distance H of the upper edge 134 of the discharge opening 130 is greater than the frontal height h of one first aid product package, but less than the height of two carton packages ($2h$) when the lower package is positioned to rest on the bottom panel 128. The described discharge opening 130 relationships allow for all packages to be frontally retained in the carton and the lowermost package to be easily grasped and removed from the carton. The remaining packages then descend so that a new lowermost

package is positioned adjacent the discharge opening, but slightly vertically offset therefrom.

[0027] The frontal panel 120 also has a plurality of vertically spaced apertures 138. The apertures 138 are spaced and configured to allow for ready visibility into the inside of a carton to determine how many packages are left in the carton. In some embodiments, the top panel 126 of the carton includes a pair of apertures 142 (FIG. 5) which allow for visibility into the interior of the carton. The frontal panel of the carton preferably includes various information 144 concerning the contents of the packaging, such as the name of the product, the product numbers, the number of items in each container, etc. The side panels 122 and 124 are preferably planar except for the cutout portions which form the discharge opening. The vertical height V of the carton is at least slightly greater than the height h of a package times the number of packages in the carton.

[0028] It should be appreciated that for some cartons, such as 100E, 100F, 100G which are adapted to contain first aid containers having a smaller vertical height, the vertical height of the discharge opening will be configured to maintain the relationship that the upper edge 134 will be less than the height of two packages, but greater than the height of one package so that all packages will be frontally retained and the lowermost package may be gripped through the sides and easily pulled from the package. It will be appreciated that the other packages within the carton will essentially descend to assume a lower position. The lowermost package will be readily accessible for removal when desired.

[0029] The rack 10 is preferably a metal member. With additional reference to FIGS. 3, 4 and 7-11, the principal rack component is cut from a sheet of metal and folded along the multiple lines to form the finished product. The rack comprises a rear mounting panel 20. In a preferred usage, the mounting panel extends from the bottom folded edge 22 to a top folded edge 24 and extends between vertical side edges 26 and 28. A shelf 30 extends forwardly from the bottom edge 22 from the panel 20 a distance D' (FIG. 9) which is slightly larger than the depth dimension D of a carton 100. The front of the shelf has a shallow retainer lip 32 which traverses the distance between the panel edges 26 and 28. A pair of retainer tabs 35, which are preferably identical, integrally extend vertically from the opposite sides of the shelf. The shelf defines spaced rectangular openings 36 which are preferably of identical shape and may also extend frontally at the bottom of the lip. Each opening 36 corresponds to a received carton and facilitates the removal of the carton from the rack.

[0030] The dimension L (FIG. 8) between the side edges is selected to be slightly larger than the dimension W times the number of cartons to be mounted to the rack which, in the disclosed embodiment, is six. Naturally, the width W and number of packages to be accommodated may vary. Accordingly, for a six-carton rack, the frontal length L of the shelf between the side edges of the mounting panel would be greater than six times the width W of a carton.

[0031] A canopy 40 is formed at the top of the rack by forwardly bending over a metal extension along the top folded edge 24 to extend forwardly approximately the distance D' of the forward extension of the shelf 30. Integral front 42 and side tabs 44 and 46 are folded over to provide a front and opposed side retaining structure, respectively. The inside vertical distance V' (FIG. 7) of the mounting panel from the bottom folded edge to the top folded edge is greater than the vertical height V of the carton.

[0032] Equidistantly spaced spacers 50, which may be a substantially U-shaped structure, are fastened or welded to the panel 20 and disposed in a substantially vertical orientation. The spacers function to define a receptacle for each carton and to provide a small spacing between the received cartons and preferably lightly engage against the received cartons. The slight carton separation provided by the spacers 50 facilitates the removal and insertion of the cartons onto the rack and gripping of the lowermost packages for removal from the carton/rack.

[0033] The panel 20 has openings 52 which may be of keyhole form to facilitate mounting the panel to the interior wall of a van. Fasteners (not illustrated) may be secured through the openings 52. Alternatively, the fasteners may be essentially mounted in place and the mounting rack essentially aligns with the enlarged portion of the keyhole openings and is forced downwardly to secure the panel to the van.

[0034] As best illustrated in FIG. 6, a carton 100 may be loaded onto the rack 10 by sliding the upper portion of the carton under the canopy and moving the lower rear corner of the package toward the rear of the shelf and the panel 20. The bottom of the package will move over the retaining lip 32 and ultimately clear the lip and be retained by the lip. When all the packages of a given carton 100 have been removed, the empty carton can be easily removed from the rack 10 by reversing the process.

[0035] It will be appreciated that when a product is required, the lowermost package 110 can be easily removed by grasping the frontal sides of the package and pulling same from the carton. A slight lift is required to clear the retaining edge. The extreme end packages of course, are retained by the tabs. The other packages in the carton then automatically descend to assume the lowermost position and be ready for removal from the rack.

[0036] The foregoing van packaging resupply system, which employs the rack and the various packages of first aid products, thus provides an efficient means of readily identifying a first aid product and removing same for resupplying a first aid kit as required.

[0037] While preferred embodiments of the foregoing have been set forth for purposes of illustration, the foregoing description should not be deemed a limitation of the invention herein. Accordingly, various modifications, adaptations and alternatives may occur to one skilled in the art without departing from the spirit and the scope of the present invention.

1. A van packaging resupply system comprising:

a rack comprising:

- a panel defining at least one opening and having a top and a bottom and opposed side edges extending between said top and said bottom;
- a shelf projecting forwardly at said bottom and having a frontal lip and opposed side retainers;
- a canopy projecting forwardly from said top and having a frontal lip generally parallel to said shelf frontal lip and opposed side retainers generally parallel to said shelf side retainers;

at least one carton, each carton comprising:

- a generally rectangular chute having a top cover, a bottom panel, a frontal panel and opposed side panels;
- a discharge opening defined in said frontal panel and by said side panels adjacent and spaced from said bottom panel so as to define a shallow retainer lip;
- a plurality of apertures defined in said frontal panel between said discharge opening and said top cover;

wherein said carton is receivable on said rack so that said carton is positioned on said shelf and forwardly retained by said canopy and shelf frontal lip.

2. The van packaging resupply system of claim 1 wherein each said carton has a plurality of substantially identical packages.

3. The van packaging resupply system of claim 2 wherein said packages are first aid packages containing first aid products selected from the group consisting of plastic bandages, fabric bandages, aspirin tablets and ibuprofen tablets.

4. The van packaging resupply system of claim 1 wherein each carton has a vertical stack of substantially identical first aid packages.

5. The van packaging resupply system of claim 1 wherein the discharge opening has an upper edge which is spaced a vertical distance H above the bottom panel and said carton has a stack of substantially identical product packages having a frontal height h wherein the vertical distance H is greater than the frontal height h, but less than the height of 2h.

6. The van packaging resupply system of claim 1 wherein each said carton top cover has at least one aperture.

7. The van packaging resupply system of claim 1 wherein each said carton has a vertical height V and each said package has a height h and the vertical height V is at least slightly greater than the height h of a package times the number of packages in the carton.

8. The van packaging resupply system of claim 1 wherein said rack is a metal member.

9. The van packaging resupply system of claim 1 wherein said shelf side retainers are a pair of retainer tabs.

10. The van packaging resupply system of claim 1 wherein said shelf defines spaced rectangular openings.

11. The van packaging resupply system of claim 1 wherein a plurality of substantially U-shaped spacers extend from the rack panel and are disposed in a substantially vertical orientation.

12. The van packaging resupply system of claim 11 wherein said spacers are equidistantly spaced and define a receptacle for a carton.

13. The van packaging resupply system of claim 1 wherein each said panel opening has a keyhole shape.

14. A van packaging resupply system comprising:

a rack comprising:

- a back having a top and a bottom and opposed side edges extending between said top and bottom;
- a shelf projecting forwardly at said bottom and having a frontal lip and opposed side retainers;
- a canopy projecting forwardly from said top and having a frontal lip generally parallel to said shelf frontal lip and an opposed side retainer generally parallel to said shelf side retainers;

at least one carton, each carton comprising:

- a chute having a top cover, a bottom panel, a frontal panel and opposed side panels;
- a discharge opening spaced from said bottom panel so as to define a shallow retainer lip; and
- a stack of a plurality of substantially identical packages received in said chute wherein a lowermost package is positioned adjacent said discharge opening and is removable through said discharge opening;

wherein each said carton is receivable on said rack so that said carton is positioned on said shelf and forwardly retained by said canopy and shelf frontal lip.

15. The van packaging resupply system of claim **14** wherein there are a plurality of cartons and each shelf defines a plurality of openings.

16. A van packaging resupply system comprising:

a rack comprising:

a panel defining at least one opening and having a top and a bottom and opposed side edges extending between said top and bottom;

a shelf projecting forwardly at said bottom and having a frontal lip and opposed side retainers;

a canopy projecting forwardly from said top and having a frontal lip and opposed side retainers generally parallel to said shelf side retainers;

a plurality of spacers projecting forwardly from said panel to define a plurality of receptacles;

a carton received in each said receptacle, each carton comprising:

a generally rectangular chute having a top cover, a bottom panel, a frontal panel and opposed side panels;

a discharge opening at least partially defined by said frontal panel and spaced from said bottom panel so as to define a shallow retainer lip; and

a stack of a plurality of substantially identical packages received in said chute wherein a lowermost package is positioned adjacent said discharge opening and is removable through said discharge opening so that another package descends to a position adjacent said discharge opening;

wherein each said carton is receivable on said rack and each said carton is positioned on said shelf and forwardly retained by said canopy and shelf frontal lip.

17. The van packaging resupply system of claim **16** wherein said spacers are substantially U-shaped members.

18. The van packaging resupply system of claim **17** wherein said spacers are substantially equidistantly spaced to form a plurality of receptacles having a substantially equal width.

19. The van packaging resupply system of claim **16** wherein said shelf is metal and said packages are formed from cardboard.

20. The van packaging resupply system of claim **16** wherein each said carton has a plurality of vertical spaced apertures which generally correspond to a received package.

* * * * *