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(54) **BATTERY BOX IN A BOX PACKAGING**

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(57) **ABSTRACT**

A battery supply system comprising a display tray, an outer box and at least one inner box. The display tray includes a receiving area and a plurality of slots on sides of the receiving area. The outer box has a receptacle area and a pair of side flanges extending outwardly from the receptacle area. The at least one inner box is in the receptacle area of the outer box. The at least one inner box has at least one battery therein. The outer box is positioned in the tray by inserting the side flanges of the outer box in a pair of the slots, thereby maintaining the outer box in an upright displayed position within the tray.

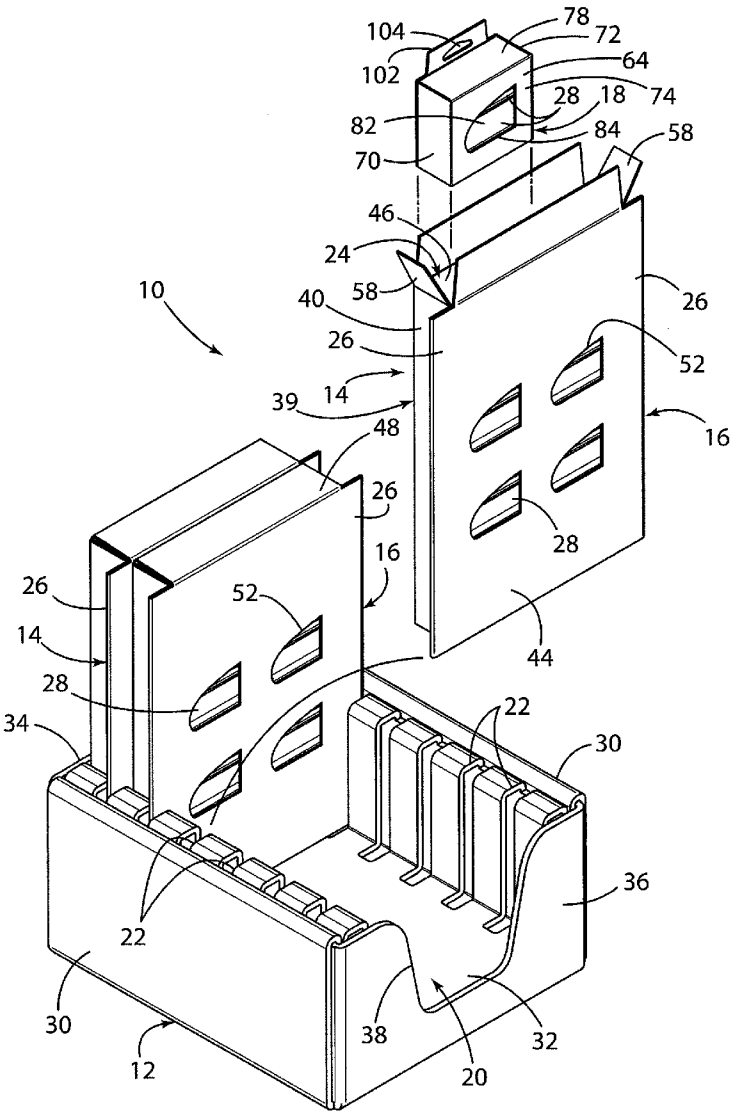
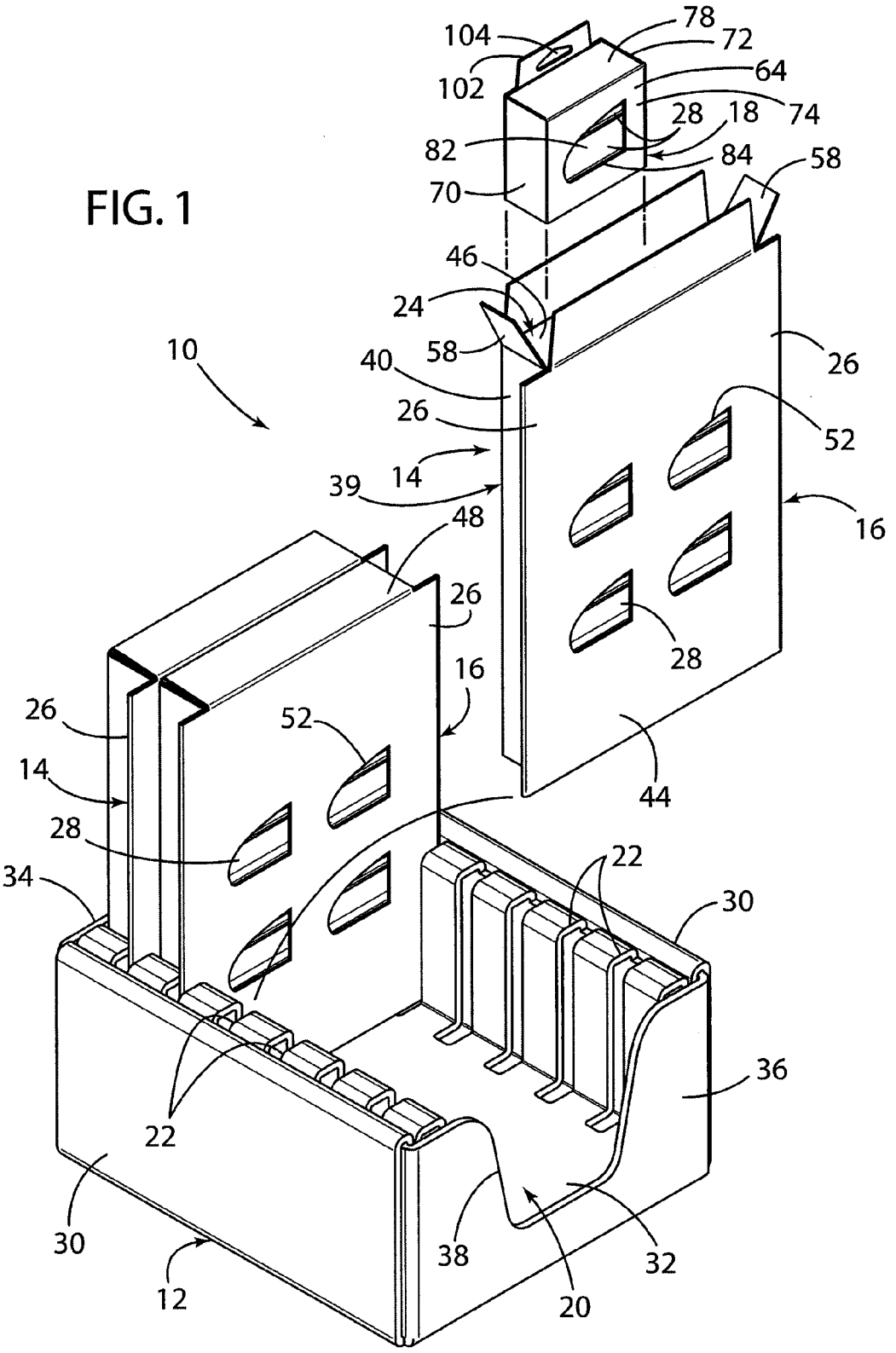


FIG. 1


104
78
72
102
64
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84
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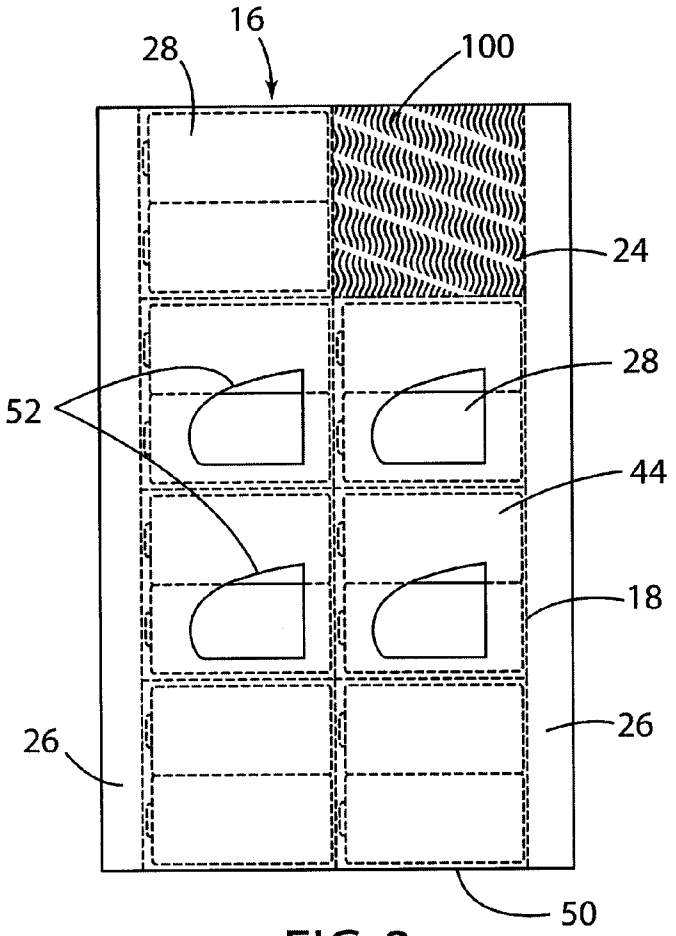


FIG. 2

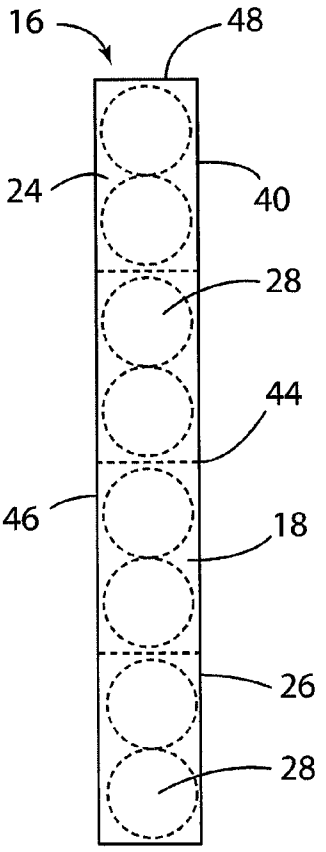


FIG. 3

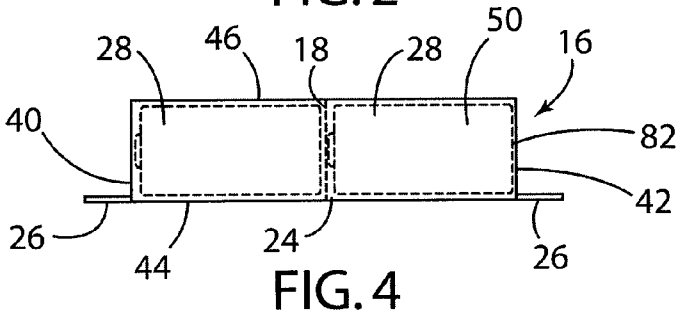


FIG. 4

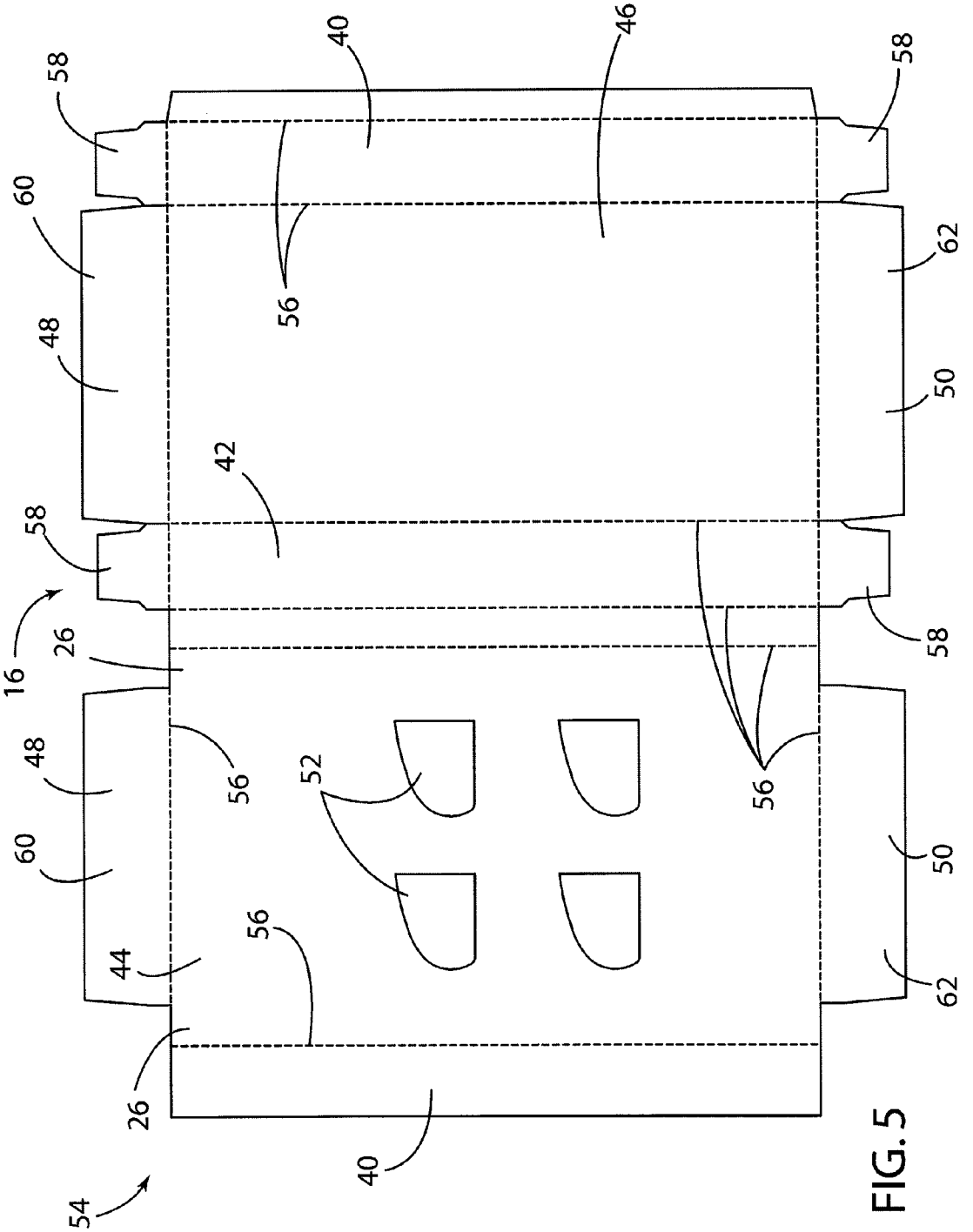

58
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56
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44
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26
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54

FIG. 5

BATTERY BOX IN A BOX PACKAGING

FIELD OF THE INVENTION

[0001] The present invention relates to packaging, and in particular to packaging for batteries.

SUMMARY OF THE INVENTION

[0002] One aspect of the present invention is to provide a battery packaging comprising an outer box and at least one inner box. The outer box has a receptacle area and a pair of side flanges extending outwardly from the receptacle area. The at least one inner box is in the receptacle area of the outer box. The at least one inner box has at least one battery therein. The outer box is configured to be positioned in a tray having a plurality of slots, with the side flanges of the outer box being located in a pair of opposite slots for maintaining the outer box in an upright displayed position within the tray.

[0003] Another aspect of the present invention is to provide a battery supply system comprising a display tray, an outer box and at least one inner box. The display tray includes a receiving area and a plurality of slots on sides of the receiving area. The outer box has a receptacle area and a pair of side flanges extending outwardly from the receptacle area. The at least one inner box is in the receptacle area of the outer box. The at least one inner box has at least one battery therein. The outer box is positioned in the tray by inserting the side flanges of the outer box in a pair of the slots, thereby maintaining the outer box in an upright displayed position within the tray.

[0004] These and other features, advantages, and objects of the present invention will be further understood and appreciated by those skilled in the art by reference to the following specification, claims and appended drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] FIG. **1** is an exploded perspective view of battery packaging of the present invention in a battery packaging holder.

[0006] FIG. **2** is a front view of the battery packaging package of the present invention.

[0007] FIG. **3** is a left side view of the battery packaging package of the present invention.

[0008] FIG. **4** is a bottom view of the battery packaging package of the present invention.

[0009] FIG. **5** is a template of an outer box of the battery packaging of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0010] For purposes of description herein, the terms "upper," "lower," "right," "left," "rear," "front," "vertical," "horizontal," and derivatives thereof shall relate to the invention as orientated in FIG. **1**. However, it is to be understood that the invention may assume various alternative orientations, except where expressly specified to the contrary. It is also to be understood that the specific devices and processes illustrated in the attached drawings, and described in the following specification are simply exemplary embodiments of the inventive concepts defined in the appended claims. Hence, specific dimensions and other physical characteristics relating to the embodiments disclosed herein are not to be considered as limiting, unless the claims expressly state otherwise.

[0011] The reference number **10** (FIGS. **1-7**) generally designates a battery supply system of the present invention. The battery supply system **10** includes a display tray **12** having at least one battery packaging **14** therein. Each battery packaging **14** in the illustrated embodiment comprises an outer box **16** having a plurality of inner boxes **18** therein. The display tray **12** includes a receiving area **20** and a plurality of slots **22** on sides of the receiving area **20**. The outer box **16** has a receptacle area **24** and a pair of side flanges **26** extending outwardly from the receptacle area **24**. At least one inner box **18** is positioned in the receptacle area **24** of the outer box **16**. The at least one inner box **18** has at least one battery **28** therein. The outer box **16** is positioned in the tray **12** by inserting the side flanges **26** of the outer box **16** in a pair of the slots **22**, thereby maintaining the outer box **16** in an upright displayed position within the tray **12**.

[0012] In the illustrated embodiment, the display tray **12** is for holding a plurality of the outer boxes **16**. The display tray **12** comprises a pair of side walls **30** and a bottom wall **32**. The display tray **12** can also include a rear wall **34** and a front wall **36** having a recessed area **38** in a top thereof. The side walls **30** include the plurality of slots **22**. The receiving area **20** of the display tray **12** is located between the side walls **30** and between the slots **22**. In an alternative embodiment, the slots **22** can be formed by another element positioned adjacent the side walls **30**, with the element having a plurality of dividers forming the slots **22**. In the illustrated embodiment, the slots **22** are parallel and each side of the display tray **12** includes the same number of slots **22**. It is contemplated that the display tray **12** could be part of a larger display having a number of at least one receiving area **20**, with a plurality walls or dividers in the larger display having the slots **22**. As used herein, the term display tray **12** includes any element having at least one receiving area **20** and a plurality of the slots **22** on sides of the receiving area **20** for receiving the outer boxes **16**. In the illustrated embodiment, the slots **22** are parallel, vertical and aligned. However, it is contemplated that the slots **22** could be offset relative to each other and/or slanted relative to a vertical line. The display tray **12** could be made from any material (e.g., cardboard, plastic, etc.). The display tray **12** is configured to receive the outer box **16** by inserting the side flanges **26** of the outer box **16** within a pair of the slots **22**.

[0013] The illustrated outer box **16** is configured to be positioned within the display tray **12** and holds at least one of the inner boxes **18** therein. The outer box **16** includes the receptacle area **24** and the pair of side flanges **26** extending outwardly from the receptacle area **24**. The receptacle area **24** is configured to receive the inner boxes **18** therein. The illustrated outer box **16** comprises an outer hollow box **39** having a left side wall **40**, a right side wall **42**, a front wall **44**, a rear wall **46**, a top wall **48** and a bottom wall **50**, with the left side wall **40**, the right side wall **42**, the front wall **44**, the rear wall **46**, the top wall **48** and the bottom wall **50** defining the receptacle area **24**. At least one of the left side wall **40**, the right side wall **42**, the front wall **44**, the rear wall **46**, the top wall **48** and the bottom wall **50** is configured to be connected to the remainder of the outer hollow box **39** after the inner boxes **18** are placed within the receptacle area **24**. The receptacle area **24** can include any number of dividers or other elements therein to assist in locating the inner boxes **18** within the outer box **16**. The outer box **16** could be made from any material (e.g., cardboard, plastic, etc.). While the outer hollow box **39** is illustrated as having a rectangular periphery, it is contemplated that the outer box **16** and any wall thereof

could have any peripheral shape. Furthermore, it is contemplated that any wall of the outer hollow box **39** could have openings **52** therein to allow viewing of the items in the outer box **16**.

[0014] In the illustrated embodiment, the outer box **16** includes the side flanges **26** for assisting in positioning the outer box **16** in the display tray **12**. The side flanges **26** are parallel and extend from sides of the outer hollow box **39**. In the illustrated example, the side flanges **26** are co-planar and comprise extensions of the front wall **44** of the outer hollow box **39**. However, it is contemplated that the side flanges **26** could extend anywhere from the left side wall **40** and the right side wall **42** of the outer hollow box **39** or could comprise extensions of the rear wall **46** of the outer hollow box **39**. It is also contemplated that the side flanges **26** could be parallel, but not co-planar. Furthermore, while the side flanges **26** are illustrated as extending from the top to the bottom of the outer box **16**, it is contemplated that the side flanges **26** could only extend for a portion of the height of the outer box **16**.

[0015] FIG. **5** illustrates a template **54** of an embodiment of the outer box **16** before assembly. The template **54** includes a plurality of fold lines **56** where the template **54** is folded to form the outer box **16**. The template **54** also includes side flaps **58** on tops and bottom of the left side wall **40** and the right side wall **42** to cover tops and bottom of the receptacle area **24**. Furthermore, the top wall **48** and the bottom wall **50** of the outer box **16** when the template of FIG. **5** is used are formed by a pair of top flaps **60** and a pair of bottom flaps **62**. While FIG. **5** illustrates one template **54** for the outer box **16**, any template could be used to form the outer box **16**. For example, the outer box **16** could just include all of the walls connected to their adjacent walls, with the side flanges **26** being formed from an extension of the front wall **44**.

[0016] The illustrated inner boxes **18** are configured to be placed into the outer box **16**. Each inner box **18** comprises an inner hollow box **64** having a left side wall **70**, a right side wall **72**, a front wall **74**, a rear wall (not shown), a top wall **78** and a bottom wall (not shown), with the left side wall **70**, the right side wall **72**, the front wall **74**, the rear wall, the top wall **78** and the bottom wall defining a battery storage area **82**. At least one of the left side wall **70**, the right side wall **72**, the front wall **74**, the rear wall, the top wall **78** and the bottom wall is configured to be connected to the remainder of the inner hollow box **64** after the batteries **28** are placed within the battery storage area **82**. The battery storage area **82** can include any number of dividers or other elements therein to assist in locating the batteries **28** within the inner box **18**. The inner box **18** could be made from any material (e.g., cardboard, plastic, etc.). While the inner hollow box **64** is illustrated as having a rectangular periphery, it is contemplated that the inner hollow box **64** and any wall thereof could have any peripheral shape. Furthermore, it is contemplated that any wall of the inner hollow box **64** could have openings **84** therein to allow viewing of the items in the inner box **18**. The inner boxes **18** are configured to hold the batteries **28** therein.

[0017] The illustrated batteries **28** can comprise electrochemical cells for supplying voltage to battery powered devices. The at least one battery **28** can comprise any of the popular alkaline or lithium cells of the generally cylindrical shape that are commercially available in industry-recognized, standard sizes, including D-, C-, AA-, AAA-, and AAAA-size cells, as well as other sizes and configurations (e.g., 9 volt batteries). Alternatively, disc-shaped batteries commercially available for small electrically operated devices, such as hearing aids, could be used. In the illustrated embodiment, each inner box **18** includes two cylindrical batteries **28** therein. However, it is contemplated that the inner boxes **18** could include any number of batteries **28** therein and that the inner boxes **18** could include different size batteries **28** within one of the inner boxes **18**. Furthermore, it is contemplated that the inner boxes **18** could include different batteries **28** and/or size batteries **28** than all of the other inner boxes **18** in the outer box **16**.

[0018] In the illustrated embodiment, the battery supply system **10** is formed by first placing at least one of the inner boxes **18** into one of the outer boxes **16**. In the illustrated example, seven inner boxes **18** are placed into the outer boxes **16**, thereby taking up ⅞ of the receptacle area **24**. The remaining ⅛ of the receptacle area **24** of the outer box **16** can be filled with corrugated paper **100** or other filler. However, it is contemplated that any number of inner boxes **18** could be placed in the receptacle area **24** of the outer box **16**, with the remaining area being empty or filled with the corrugated paper **100** or other filler. Furthermore, while the inner boxes **18** are illustrated as comprising two columns within the outer box **16** with one column having four inner boxes **18** and one column having three inner boxes **18**, it is contemplated that any number of inner boxes **18** could be placed within the outer box **16** in any number of rows and columns and including any depth of inner boxes **18** (e.g., the bottom row of inner boxes **18** could include six inner boxes **18** in a 2 by 3 format). In the illustrated embodiment, the openings **84** in at least one of the inner boxes **18** can be aligned with the openings **52** in the outer box **16** to allow viewing of the batteries **28** within the inner box **18** through both the inner box **18** and the outer box **16**.

[0019] After the illustrated outer boxes **16** are filled with the inner boxes **18**, the outer boxes **16** are placed into the display tray **12** by sliding the side flanges **26** of the outer boxes **16** into sets of the slots **22** in the display tray **12**. The outer boxes **16** are then ready to be purchased. Furthermore, since the outer boxes **16** can include a flat bottom wall **50**, the outer boxes **16** are configured to stand on their own when the side flanges **26** are not located in the slots **22** of the display tray **12**. As outer boxes **16** are purchased, the battery supply system **10** can be refilled by placing more outer boxes **16** in the display tray **12**. Furthermore, the outer boxes **16**, once removed from the display tray **12** (e.g., by being purchased), can be opened to allow access to the inner boxes **18**. The inner boxes **18** can also individually be displayed for purchase. Therefore, it is contemplated that the outer boxes **16** can be sold by a wholesaler and the inner boxes **18** can be sold by a retailer. For example, a retailer can buy the outer boxes **16** with the inner boxes **18** therein and then remove the inner boxes **18** from the outer box **16** to sell to the general public. The inner boxes **18** can include features for allowing the retailer to display the inner boxes **18** once removed from the outer boxes **16**. For example, the inner boxes **18** can include a top flap **102** having an opening **104** therein for allowing the inner boxes **18** to be hung from a rod (not shown) at a display of the retailer.

[0020] In the forgoing description, it will be readily appreciated by those skilled in the art that modifications may be made to the invention without departing from the concepts disclosed herein. Such modifications are to be considered as included in the following claims, unless these claims by their language expressly state otherwise.

We claim:

1. A battery packaging comprising:

an outer box having a receptacle area and a pair of side flanges extending outwardly from the receptacle area; and

at least one inner box in the receptacle area of the outer box, the at least one inner box having at least one battery therein;

wherein the outer box is configured to be positioned in a tray having a plurality of slots, with the side flanges of the outer box being located in a pair of opposite slots for maintaining the outer box in an upright displayed position within the tray.

2. The battery packaging of claim **1**, wherein:

the side flanges are substantially parallel and co-planar.

3. The battery packaging of claim **1**, wherein:

the outer box is a parallelepiped having rectangular walls; and

the at least one inner box is a parallelepiped having rectangular walls.

4. The battery packaging of claim **3**, wherein:

the at least one battery is cylindrical.

5. The battery packaging of claim **4**, wherein:

the at least one battery comprises a plurality of batteries.

6. The battery packaging of claim **1**, wherein:

the at least one battery is cylindrical.

7. The battery packaging of claim **1**, wherein:

the at least one battery comprises a plurality of batteries.

8. The battery packaging of claim **1**, wherein:

the side flanges extend from a front wall of the outer box.

9. The battery packaging of claim **1**, wherein:

the outer box includes at least one outer window; and

the at least one inner box includes an inner window, the inner window of at least one inner box being configured to align with one of the at least outer window when the at least one inner box is in the outer box.

10. A battery supply system comprising:

a display tray including a receiving area and a plurality of slots on sides of the receiving area;

an outer box having a receptacle area and a pair of side flanges extending outwardly from the receptacle area; and

at least one inner box in the receptacle area of the outer box, the at least one inner box having at least one battery therein;

wherein the outer box is positioned in the tray by inserting the side flanges of the outer box in a pair of the slots, thereby maintaining the outer box in an upright displayed position within the tray.

11. The battery supply system of claim **10**, wherein:

the side flanges are substantially parallel and co-planar.

12. The battery supply system of claim **10**, wherein:

the outer box is a parallelepiped having rectangular walls; and

the at least one inner box is a parallelepiped having rectangular walls.

13. The battery supply system of claim **12**, wherein:

the at least one battery is cylindrical.

14. The battery supply system of claim **13**, wherein:

the at least one battery comprises a plurality of batteries.

15. The battery supply system of claim **10**, wherein:

the at least one battery is cylindrical.

16. The battery supply system of claim **10**, wherein:

the at least one battery comprises a plurality of batteries.

17. The battery supply system of claim **10**, wherein:

the side flanges extend from a front wall of the outer box.

18. The battery supply system of claim **10**, wherein:

the outer box includes at least one outer window; and

the at least one inner box includes an inner window, the inner window of at least one inner box being configured to align with one of the at least outer window when the at least one inner box is in the outer box.

19. The battery supply system of claim **10**, wherein:

the display tray includes a pair of side walls and a bottom wall defining the receiving area, with the slots being located adjacent the side walls.

20. A battery packaging comprising:

an outer box comprising a parallelepiped having rectangular walls, the outer box having a receptacle area and a pair of side flanges extending outwardly from the receptacle area; and

a plurality of inner boxes in the receptacle area of the outer box, each inner box being a parallelepiped having rectangular walls, each inner box having cylindrical batteries therein;

wherein the outer box is configured to be positioned in a tray having a plurality of slots, with the side flanges of the outer box being located in a pair of opposite slots for maintaining the outer box in an upright displayed position within the tray.

21. The battery packaging of claim **20**, wherein:

the outer box includes at least one outer window; and

the at least one inner box includes an inner window, the inner window of at least one inner box being configured to align with one of the at least outer window when the at least one inner box is in the outer box.

* * * * *