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(54) **TABLE FOR AIRCRAFT INTERIORS**

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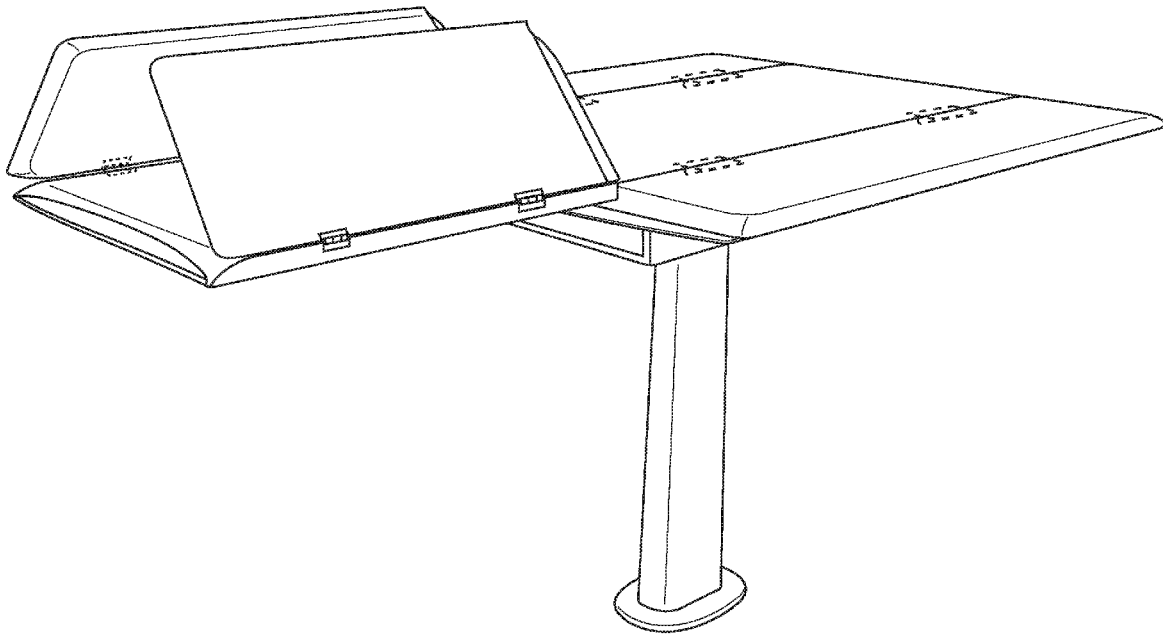
(57) **ABSTRACT**

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Related U.S. Application Data

(60) Provisional application No. 62/415,128, filed on Oct.
31, 2016.

A system and method for providing a table in aircraft is disclosed. The table is able to be deployed out such that it extends across an aisle towards an inwardly-facing seat on the other side. The extension enables passengers sitting in the side facing seat to support articles and otherwise use the extended surface area.



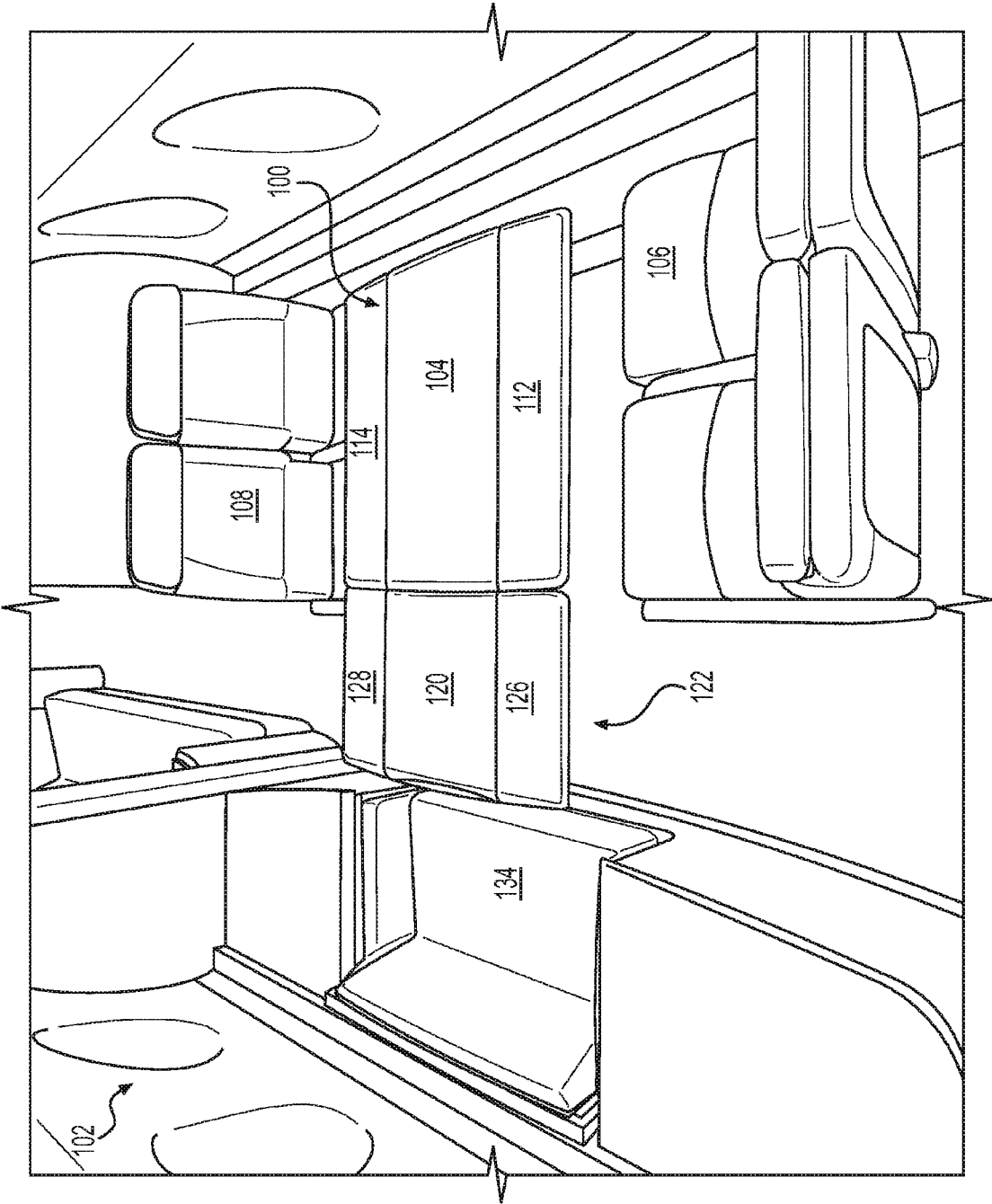


FIG. 1

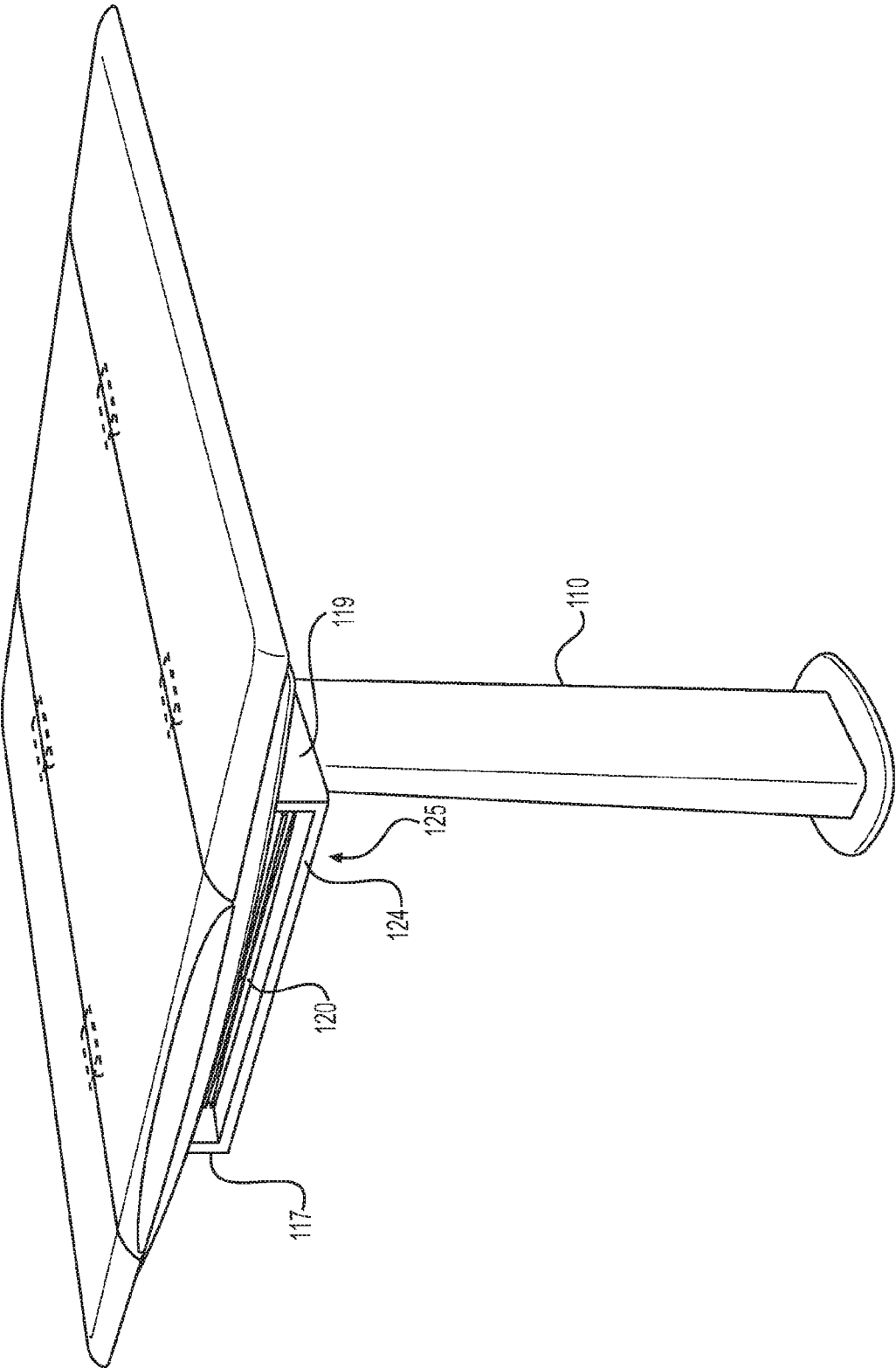


FIG. 2

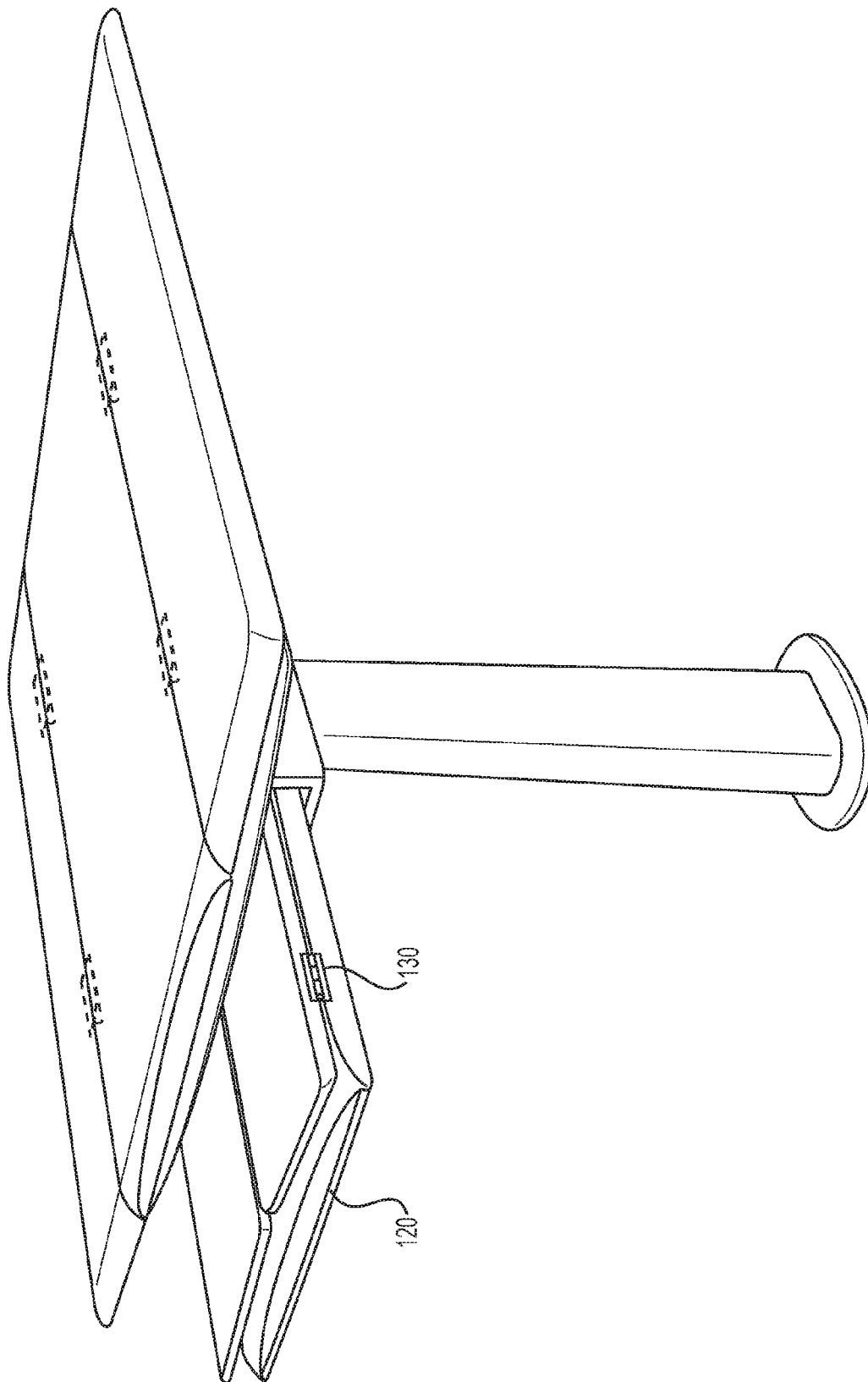


FIG. 3

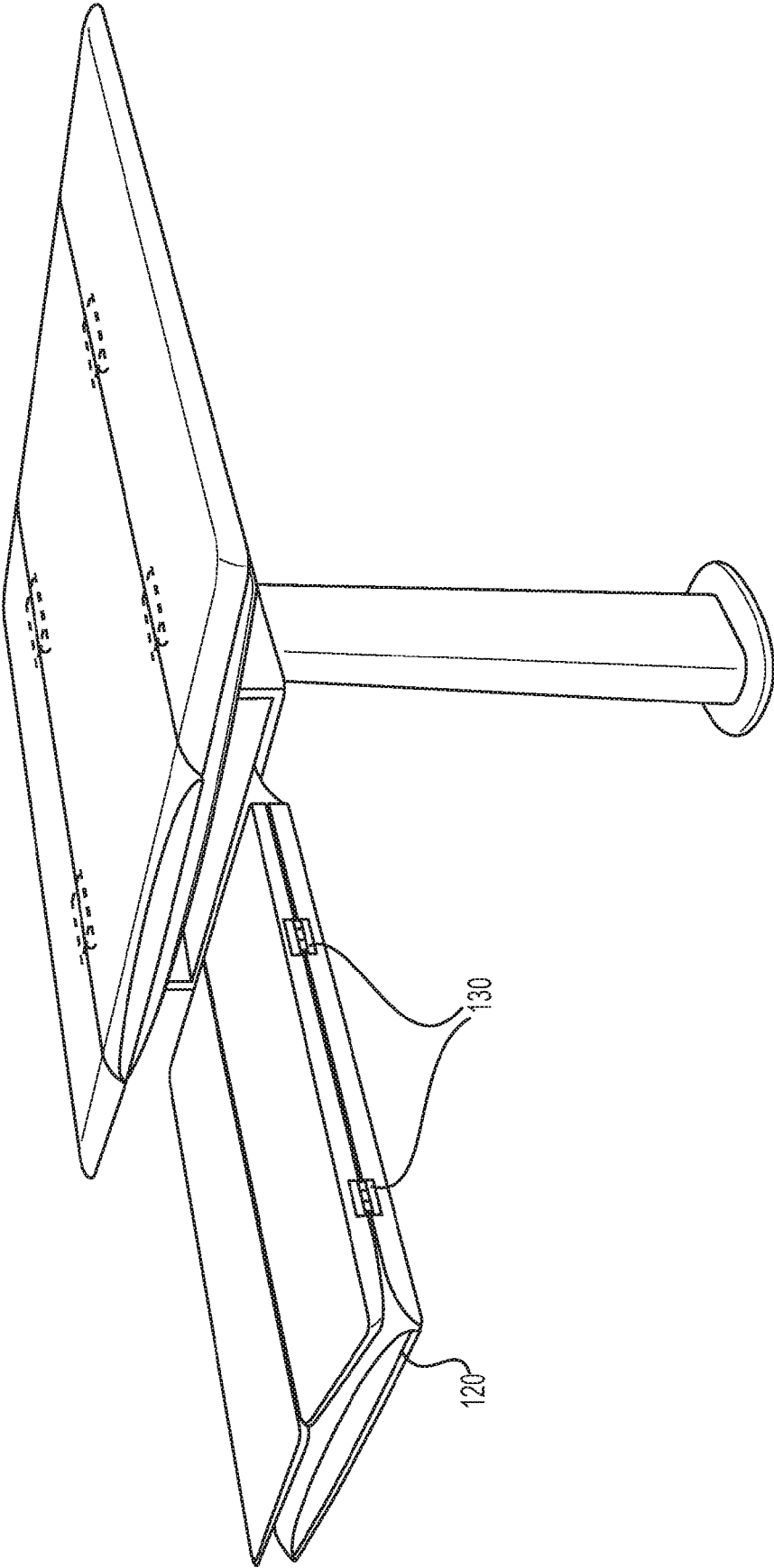


FIG. 4

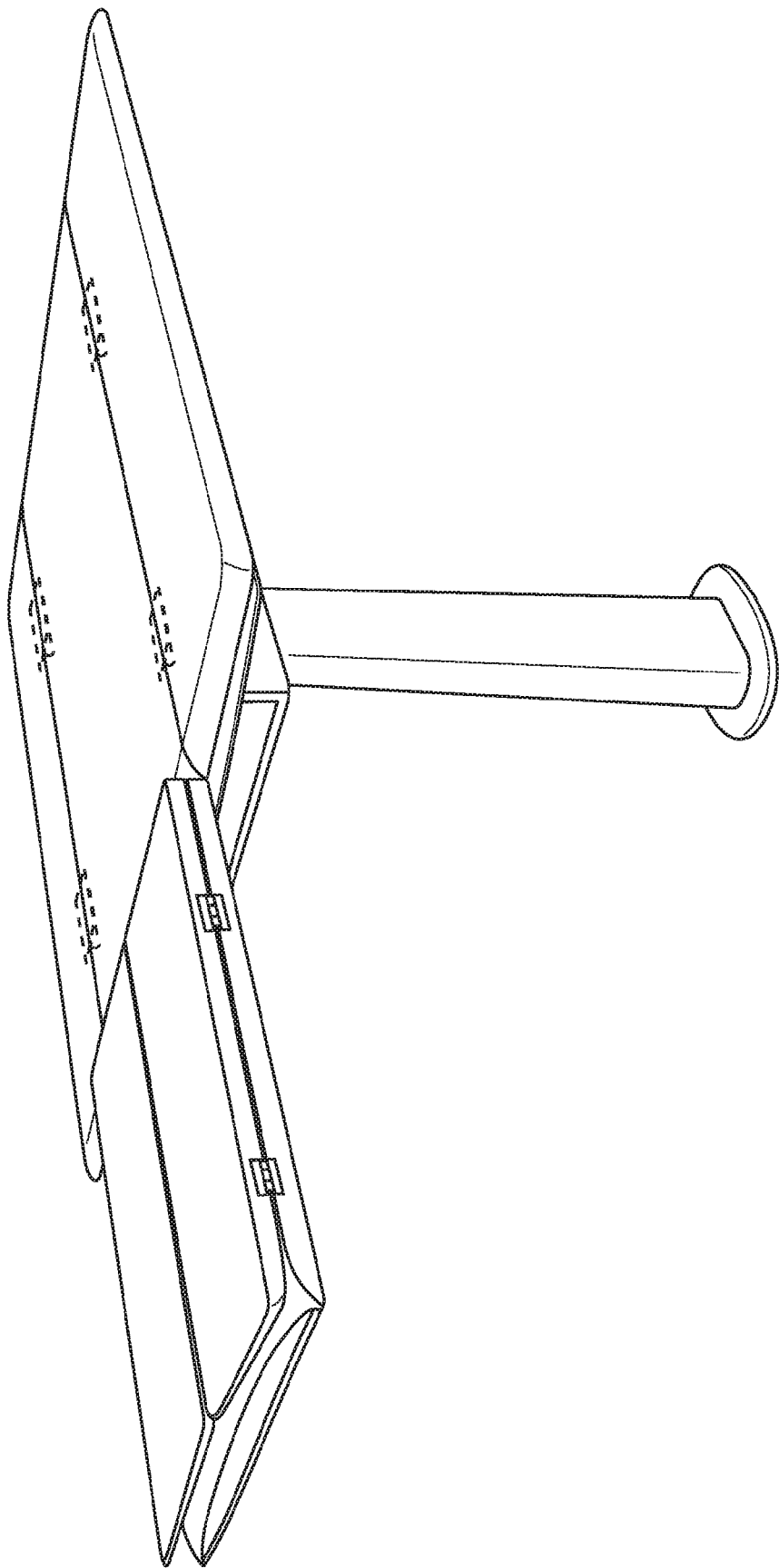


FIG. 5

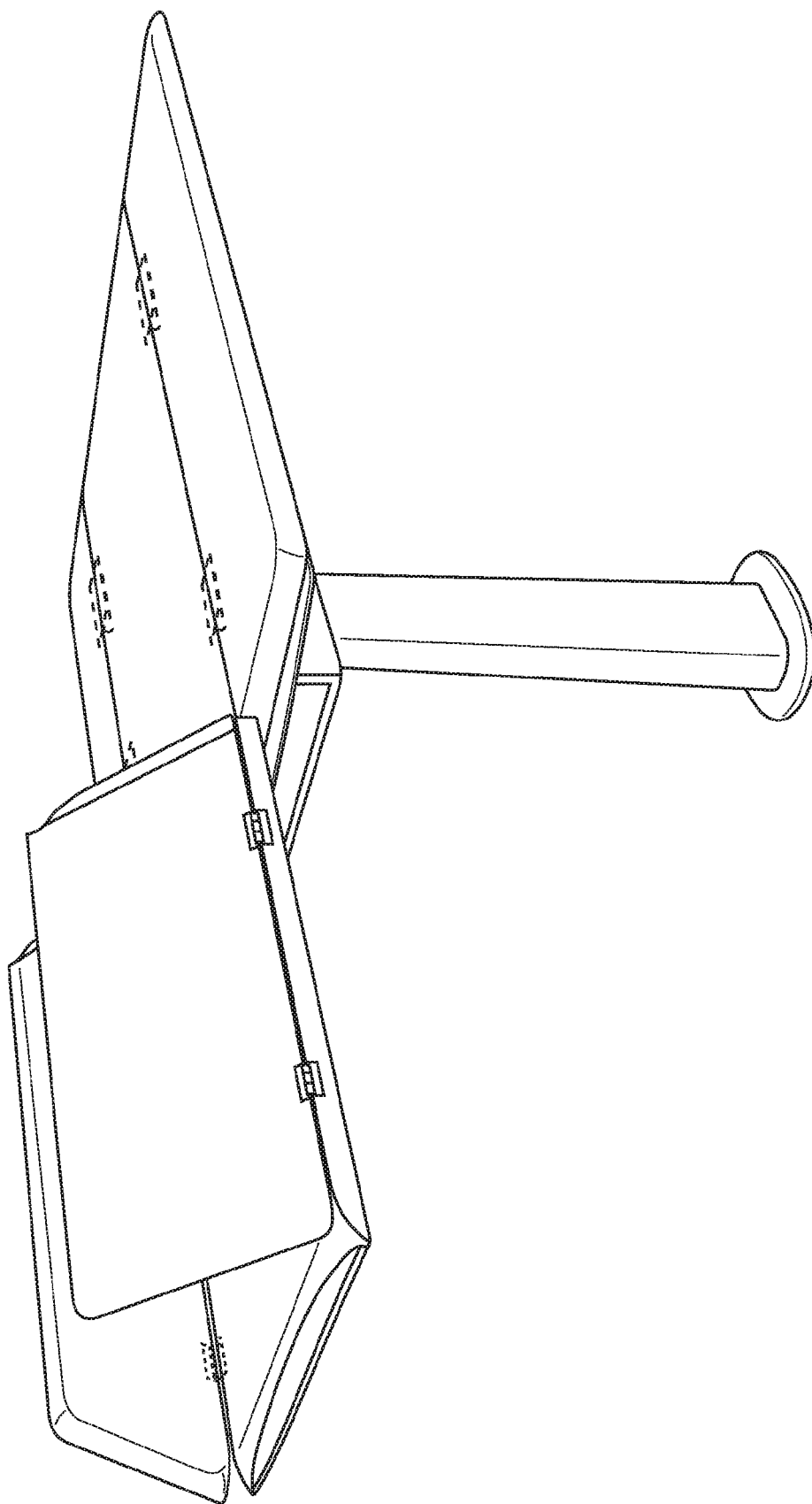


FIG. 6

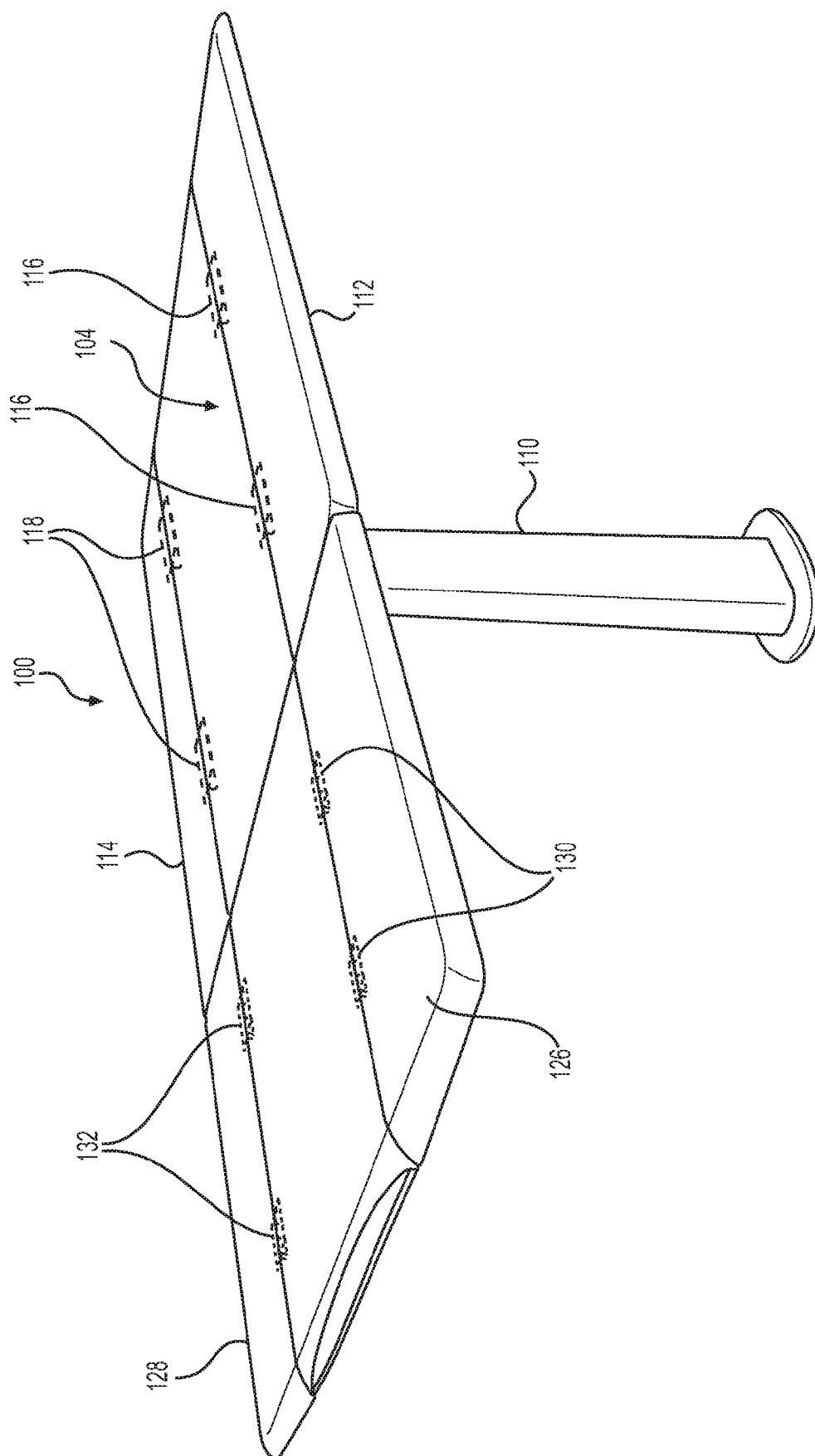
**FIG. 7**

TABLE FOR AIRCRAFT INTERIORS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Patent Application No. 62/415,128, filed Oct. 31, 2016, the entire contents thereof are herein incorporated by reference.

BACKGROUND OF THE INVENTION

1. Field

[0002] The disclosed embodiments relate generally to the field of aircraft interiors. More specifically, the field of providing table arrangements in the passenger areas of aircraft.

2. Description of the Related Art

[0003] Tables have been used in the cabin areas of aircraft. For example, table arrangements have been provided for aircraft cabins immediately in front of forward-facing seats. Such arrangements can exist in a manner in which they are deployed from various locations (e.g., the back of a seat immediately in front, or from an enclosed position in an armrest).

[0004] In cabin arrangements where two seats face each other, arrangements have been used where a table is located between the two seats.

SUMMARY

[0005] Disclosed in embodiments is a system for use in an aircraft, where the aircraft has a cabin area including a floor area defining an aisle, a forward-facing seat and an aft-facing seat on opposite sides of a table. The forward and aft facing seats are located across the aisle from a side-facing seat. The table system disclosed, in one embodiment, includes a table extension member, the extension member being positionable from a retracted mode where the extension member is at least partially concealed beneath the table, and into a deployed mode where the extension member is extended at least partially out into the aisle to an extent that the extension member is able to support articles for the benefit of a passenger sitting in the side-facing seat.

[0006] In embodiments, the system includes a pedestal mounted at a lower end to the floor and at an upper location to a pocket, the pocket being located underneath the table, the pocket at least partially concealing the extension member when the extension member is in the retracted position. In some embodiments, the table has a table-top, and hingeably-attached tabletop flaps, the tabletop flaps being rotatable up, and lockable so that they are level with the tabletop to increase an overall tabletop size. In some embodiments, the extension member includes oppositely-mounted and hingeably-attached extension flaps, the extension flaps being deployable and lockable so that they are level with the tabletop to increase an overall extension size. The extension flaps, when the extension is in the retracted position, are foldable on top of the extension member, and when the extension member is in the deployed mode, the extension flaps are rotatable out and down to create an enlarged extension surface.

[0007] In embodiments, the table arrangement is mounted on top of a pedestal. In embodiments, the pedestal is

mounted at a lower end on the floor and at an upper location to a pocket, the pocket being located underneath the table, the pocket at least partially concealing the extension member when the extension member is in the retracted position. In embodiments, the extension member is raiseable and lockable such that an upper surface of the extension member is substantially level with a table-top surface. In embodiments, the extension member upon entering into deployment mode is configured to spring up into the upper surface of the extension member is substantially level with the table-top surface.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0008] Illustrative embodiments are described in detail below with reference to the attached drawing figures, which are incorporated by reference herein and wherein:

[0009] FIG. 1 is a perspective view of an embodiment of the table in an environment;

[0010] FIG. 2 is a perspective view of the FIG. 1 embodiment in a retracted mode where the table extension is completely concealed;

[0011] FIG. 3 is a perspective view of the FIG. 1 embodiment in an intermediate mode where the extension is partially deployed;

[0012] FIG. 4 is a perspective view of the FIG. 1 embodiment of a mode where the extension is completely removed from the pocket;

[0013] FIG. 5 is a perspective view of the FIG. 1 embodiment of a mode where the table extension is raised to be level with the main table;

[0014] FIG. 6 is a perspective view of the FIG. 1 embodiment where extension flaps have been lowered to create a level working surface for a passenger sitting in a side-facing seat; and

[0015] FIG. 7 is a perspective view of the FIG. 1 embodiment in a fully deployed mode.

DETAILED DESCRIPTION

[0016] Embodiments provide systems and a method for providing an extendable table in an aircraft cabin.

[0017] FIG. 1 shows the extendable table system in an environment in one embodiment. As can be seen in the figure, a table system 100 is located in a cabin area 102. A main table portion 104 is substantially located between an aft-facing pair of seats 106 and a forward-facing pair of opposing seats 108. The main table portion 104 is supported on top of a pedestal 110 (see FIG. 2). Opposing flaps 112 and 114 include hinge sets 116 and 118 (see FIG. 7) which enable flap 112 to extend upward and be locked into place towards the aft-facing seats 106 and flap 114 to rotate up and be locked into place towards the forward-facing seats 108 as shown in FIG. 1. Although not shown, the hinges in sets 116 and 118 are bottom mounted such that rotation is created at the bottom edges of main table 104 and each of flaps 112 and 114. Thus, the flaps 112 and 114 are rotatable downward, to hang down, or to be raised and locked into the position shown in FIG. 1. Additionally, these hinges are preconfigured to be locked in place when raised, and then released upon lifting up

[0018] The top of the pedestal 110 is mounted at a lower end to the floor. It then extends up to support a lower surface of a pocket 124. In the embodiment shown in FIGS. 1-7, the

pocket **124** is formed inside a retaining housing, e.g., a rectangular box **125** with an opening (see FIG. 6) at the front. The upper surface of the box **125** supports, from below, the main portion **104** of the table. The pocket **124** at least partially conceals an extension member **120** when the extension member **120** is in the retracted position. Lateral sides **117** and **119** of the box **125**, in the disclosed embodiment, extend out only far enough so the main table flaps **112** and **114** are able to come down to a true vertical position (not shown) to avoid interference with flap function.

[0019] The system also enables the deployment of an extension member **120** which is extendable into an aisle area **122** of the aircraft cabin **102**. The table extension member **120** can be positioned in a retracted mode (see FIG. 2) where the extension member **120** is concealed underneath the table in a pocket **124**. The extension member **120** can be transformed into a fully-deployed mode (see FIG. 7) where opposing extension member flaps **126** and **128** are extended out in forward and aft directions, respectively. Top-mounted hinge sets **130** and **132** are arranged such that rotation occurs at the top of the edges at the interfaces between each flap (of extension flaps **126** and **128**) and the extension member **120**. The hinge set **130** shows this best in FIG. 4. It should be understood that the same symmetrical arrangement exists for the other hinges **132**.

[0020] The transition steps from retracted mode (see FIG. 2) into full deployment can be seen in FIGS. 2-7.

[0021] FIG. 2 shows a fully-retracted mode where the box **125** located underneath main table portion **104** completely conceals the extension member. While in this mode the extension flaps **126** and **128** are folded on top of the extension member **120**, and when the extension member **120** is later placed in a deployed mode, the extension flaps are rotatable out and down to create an enlarged extension surface (as will be discussed later).

[0022] In FIG. 3, a user has pulled the table out partially, and in FIG. 4 the extension member **120** has been pulled out completely, but the upper surface of extension member **120** is, at least initially, below the level of the upper surface of main table **104**.

[0023] FIG. 5 shows that the extension **120**, in embodiments, includes raise-up and locking features. Those skilled in the art will recognize that numerous hardware arrangements exist in non-analogous fields which enable the pulling out of a member, and then enabling lifting and locking into place of that member. One example of an arrangement installable inside pocket **124** and usable for the lifting and locking purposes described is the Productivity Solutions™ Lift-N-Lock system (Model No. KSM03) available from The Global Furniture Group, a company located at 17 West Stow Road in Marlton, N.J. Another example of a mechanical system installable inside of pocket **124** to accomplish the described lift and lock functionality is the Heavy-duty Spring Lifting Table Slide (Table-Extension Mechanism) Model No. LC-010 manufactured and made available by Langcheng Metal Products located in Guangdong, China. The Langcheng product provides a spring lift that causes the table to pop up and be locked in place. Either of these products are capable of supporting a table in the stages shown in FIGS. 2-7, and both arrangements are releasable after locking. Thus, the stages shown in the figures are reversible from full extension and deployment of the flaps in FIG. 7, all the way back to the stowed position shown in FIG. 2. In embodiments, the extent of rise of the extension

member **120** is such that the upper surface of the extension member is substantially level the top surface of main table **104**. Also, where a spring-up embodiment of the mechanical system is used, the extension member, upon entering into deployment mode is configured to spring up to a level where an upper surface of the extension member is substantially level with the top surface of main table **104**.

[0024] While in full-deployment mode shown in FIGS. 1 and 7, the extension member is able to support articles for the benefit of a passenger sitting in the side-facing seat **134**, as can be seen best in FIG. 1. Also, the main table flaps **112** and **114**, since they are hinge-ably attached, and lockable, can be rotatable up, secured in place so that they are level with the tabletop to increase an overall tabletop size. Similarly, since extension member **120** also includes oppositely-mounted and hingably-attached flip-down extension flaps **126** and **128**, the lowering makes the upper surfaces of member **120** as well as flaps **126** and **128** level with the main tabletop **104** to add to overall table size.

[0025] Many different arrangements of the various components depicted, as well as components not shown, are possible without departing from the spirit and scope of what is claimed herein. Embodiments have been described with the intent to be illustrative rather than restrictive. Alternative embodiments will become apparent to those skilled in the art that do not depart from what is disclosed. A skilled artisan may develop alternative means of implementing the aforementioned improvements without departing from what is claimed.

[0026] It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations and are contemplated within the scope of the claims. Not all steps listed in the various figures need be carried out in the specific order described.

The invention claimed is:

1. A system for use in an aircraft, the aircraft having a cabin area including a floor area defining an aisle, a forward-facing seat and an aft-facing seat on opposite sides of a table, the forward and aft facing seats being located across the aisle from a side-facing seat, the system comprising:

a table extension member, the extension member being positionable from a retracted mode where the extension member is at least partially concealed beneath the table, and into a deployed mode where the extension member is extended at least partially out into the aisle to an extent that the extension member is able to support articles for the benefit of a passenger sitting in the side-facing seat.

2. The system of claim 1 comprising:

a pedestal mounted at a lower end to the floor and at an upper location to a pocket, the pocket being located underneath the table, the pocket at least partially concealing the extension member when the extension member is in the retracted position.

3. The system of claim 1 wherein the table has a table-top, and hingably-attached tabletop flaps, the tabletop flaps being rotatable up, and lockable so that they are level with the tabletop to increase an overall tabletop size.

4. The system of claim 1 wherein the extension member includes oppositely-mounted and hingably-attached extension flaps, the extension flaps being deployable and lockable so that they are level with the tabletop to increase an overall extension size.

5. The system of claim 4 wherein the extension flaps, when in the extension is in the retracted position, are foldable on top of the extension member, and when the extension member is in the deployed mode, the extension flaps are rotatable out and down to create an enlarged extension surface.

6. The system of claim 1, comprising:

a pedestal mounted at a lower end to the floor and at an upper location to a pocket, the pocket being located underneath the table, the pocket at least partially concealing the extension member when the extension member is in the retracted position.

7. The system of claim 1 wherein the extension member is raisable and lockable such that an upper surface of the extension member is substantially level with a table-top surface.

8. The system of claim 7, wherein the extension member upon entering into deployment mode is configured to spring up into the upper surface of the extension member is substantially level with the table-top surface.

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