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### Work surface for a vehicle

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#### Abstract

A work surface for a vehicle includes a first section, a central section, and a first lock assembly. The first section includes a proximal edge and a distal edge. The first section defines a channel therein. The central section includes a first end and a second end. The first end of the central section is positioned adjacent to the proximal edge of the first section. The proximal edge of the first section is pivotably coupled to the first end of the central section. The first section is movable between a stowed position and a fully-deployed position relative to the central section. The first lock assembly is coupled to the central section. The first lock assembly includes a post that is operable between a retracted position and an extended position. The fully-deployed position of the first section arranges the channel defined by the first section to receive the post.

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## Background/Summary

### FIELD OF THE DISCLOSURE

(1) The present disclosure generally relates to a work surface. More specifically, the present

disclosure relates to a work surface for a vehicle.

## BACKGROUND OF THE DISCLOSURE

(2) Consumers often compare available features and functionality between vehicles when making a purchasing decision. Accordingly, additional solutions are needed that provide features and functionality that are desirable to consumers.

## SUMMARY OF THE DISCLOSURE

(3) According to a first aspect of the present disclosure, a work surface for a vehicle includes a first section, a central section, and a first lock assembly. The first section includes a proximal edge and a distal edge. The first section defines a channel therein. The central section includes a first end and a second end. The first end of the central section is positioned adjacent to the proximal edge of the first section. The proximal edge of the first section is pivotably coupled to the first end of the central section. The first section is movable between a stowed position and a full-deployed position relative to the central section. The first lock assembly is coupled to the central section. The first lock assembly includes a post that is operable between a retracted position and an extended position. The fully-deployed position of the first section arranges the channel defined by the first section to receive the post of the first lock assembly.

(4) Embodiments of the first aspect of the disclosure can include any one or a combination of the following features: a fully-deployed-and-locked position of the first section is defined as the post of the first lock assembly extending into the channel defined by the first section when the first section is in the fully-deployed position; a second section having a proximal edge and a distal edge, wherein the proximal edge of the second section is positioned adjacent to the second end of the central section; the central section is positioned between the first section and the second section; the second section is pivotably coupled to the second end of the central section; the second section is movable between a stowed position and a fully-deployed position relative to the central section; the second section defines a channel therein; a second lock assembly is coupled to the central section, wherein the second lock assembly includes a post that is operable between a retracted position and an extended position, and wherein the fully-deployed position of the second section arranges the channel defined by the second section to receive the post of the second lock assembly; a fully-deployed-and-locked position of the second section is defined as the post of the second lock assembly extending into the channel defined by the second section when the second section is in the fully-deployed position; the first section and the second section are capable of use as support legs for the central section when the first section and the second section are each in a partially-deployed position; a second lock assembly coupled to the central section, wherein the second lock assembly includes a post that is operable between a retracted position and an extended position, and wherein placing the post of the first lock assembly in the extended position when the first section is in the partially-deployed position and placing the post of the second lock assembly in the extended position when the second section is in the partially-deployed position aids in retaining the first section and the second section in the partially-deployed position; a recess defined in an underside of the work surface; a leg that is received by the recess, wherein the leg is configured to provide support to the work surface; the first locking assembly further includes a biasing member positioned between the post and the central section, wherein the biasing member biases the post to the extended position; the first lock assembly further includes a protrusion that extends from the post; and a first receptacle defined by the central section, wherein the protrusion is configured to engage with the first receptacle when the post is in the retracted position, and wherein the engagement between the protrusion and the first receptacle retains the post in the retracted position, and a second receptacle defined by the central section, wherein the protrusion is configured to engage with the second receptacle when the post is in the extended position, and wherein the engagement between the protrusion and the second receptacle retains the post in the extended position.

(5) According to a second aspect of the present disclosure, a work surface for a vehicle includes a

first section, a second section, a central section, a first lock assembly, and a second lock assembly. The first section includes a proximal edge and a distal edge. The first section defines a channel therein. The second section includes a proximal edge and a distal edge. The second section defines a channel therein. The central section includes a first end and a second end. The central section is positioned between the first section and the second section. The first end of the central section is positioned adjacent to the proximal edge of the first section. The proximal edge of the first section is pivotably coupled to the first end of the central section. The first section is movable between a stowed position and a fully-deployed position relative to the central section. The proximal edge of the second section is positioned adjacent to the second end of the central section. The second section is movable between a stowed position and a fully-deployed position relative to the central section. The first lock assembly is coupled to the central section. The first lock assembly includes a post that is operable between a retracted position and an extended position. The fully-deployed position of the first section arranges the channel defined by the first section to receive the post of the first lock assembly. The second lock assembly is coupled to the central section. The second lock assembly includes a post that is operable between a retracted position and an extended position. The fully-deployed position of the second section arranges the channel defined by the second section to receive the post of the second lock assembly.

(6) Embodiments of the second aspect of the present disclosure can include any one or a combination of the following features: a fully-deployed-and-locked position of the first section is defined as the post of the first lock assembly extending into the channel defined by the first section when the first section is in the fully-deployed position, and wherein a fully-deployed-and-locked position of the second section is defined as the post of the second lock assembly extending into the channel defined by the second section when the second section is in the fully-deployed position; a recess defined in an underside of the work surface, wherein a leg is received by the recess, and wherein the leg is configured to provide support to the work surface; and the first and second locking assemblies each further include, a biasing member positioned between the post and the central section, a protrusion that extends from the post, a first receptacle defined by the central section, and a second receptacle defined by the central section, wherein the biasing member biases the post to the extended position, wherein the protrusion is configured to engage with the first receptacle when the post is in the retracted position, wherein the engagement between the protrusion and the first receptacle retains the post in the retracted position, wherein the protrusion is configured to engage with the second receptacle when the post is in the extended position, and wherein the engagement between the protrusion and the second receptacle retains the post in the extended position.

(7) These and other aspects, objects, and features of the present disclosure will be understood and appreciated by those skilled in the art upon studying the following specification, claims, and appended drawings.

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## Description

### BRIEF DESCRIPTION OF THE DRAWINGS

- (1) In the drawings:
- (2) FIG. 1 is a front perspective view of a vehicle, illustrating an access panel in an open position to reveal a cargo area, according to one example;
- (3) FIG. 2 is a front perspective of the cargo area, illustrating a work surface stored therein, according to one example;
- (4) FIG. 3 is a rear perspective view of the cargo area, illustrating the work surface stored therein, according to another example;
- (5) FIG. 4 is bottom view of the work surface, illustrating first and second sections in fully-

- deployed positions relative to a central section, according to one example;
- (6) FIG. 5 is a front view of a leg that can be coupled to the work surface, illustrating various components thereof, according to one example;
- (7) FIG. 6 is a front view of the leg, illustrating a retention assembly thereof, according to one example;
- (8) FIG. 7A is a side perspective view of the work surface, illustrating the first section in a partially-deployed position and the second section in a fully-deployed position, according to one example;
- (9) FIG. 7B is a side perspective view of the work surface, illustrating the first section in a stowed position and the second section in the fully-deployed position, according to one example;
- (10) FIG. 7C is a side perspective view of the work surface, illustrating the first section in a fully-deployed position and the second section in a partially-deployed position, according to one example;
- (11) FIG. 7D is a side perspective view of the work surface, illustrating the first section in the fully-deployed position and the second section in a stowed position, according to one example;
- (12) FIG. 8 is a bottom perspective view of an underside of the work surface at a junction between the first section and the central section, illustrating a post in a retracted position, according to one example;
- (13) FIG. 9 is a side perspective view of the junction between the first section and the central section, illustrating the post in a partially-extended position, according to one example;
- (14) FIG. 10 is a side perspective view of a junction between the second section and the central section, illustrating a post in a partially-extended position, according to one example;
- (15) FIG. 11 is a bottom perspective view of the junction between the first section and the central section, illustrating the post in an extended position, according to one example; and
- (16) FIG. 12 is a side perspective view of the junction between the first section and the central section, illustrating the first section in the partially-deployed position and the post in the extended position, according to one example.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

- (17) For purposes of description herein, the terms “upper,” “lower,” “right,” “left,” “rear,” “front,” “vertical,” “horizontal,” and derivatives thereof shall relate to the concepts as oriented in FIG. 1. However, it is to be understood that the concepts 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.
- (18) The present illustrated embodiments reside primarily in combinations of method steps and apparatus components related to a work surface. Accordingly, the apparatus components and method steps have been represented, where appropriate, by conventional symbols in the drawings, showing only those specific details that are pertinent to understanding the embodiments of the present disclosure so as not to obscure the disclosure with details that will be readily apparent to those of ordinary skill in the art having the benefit of the description herein. Further, like numerals in the description and drawings represent like elements.
- (19) As used herein, the term “and/or,” when used in a list of two or more items, means that any one of the listed items can be employed by itself, or any combination of two or more of the listed items, can be employed. For example, if a composition is described as containing components A, B, and/or C, the composition can contain A alone; B alone; C alone; A and B in combination; A and C in combination; B and C in combination; or A, B, and C in combination.
- (20) In this document, relational terms, such as first and second, top and bottom, and the like, are used solely to distinguish one entity or action from another entity or action, without necessarily

requiring or implying any actual such relationship or order between such entities or actions. The terms “comprises,” “comprising,” or any other variation thereof, are intended to cover a non-exclusive inclusion, such that a process, method, article, or apparatus that comprises a list of elements does not include only those elements but may include other elements not expressly listed or inherent to such process, method, article, or apparatus. An element preceded by “comprises . . . a” does not, without more constraints, preclude the existence of additional identical elements in the process, method, article, or apparatus that comprises the element.

(21) As used herein, the term “about” means that amounts, sizes, formulations, parameters, and other quantities and characteristics are not and need not be exact, but may be approximate and/or larger or smaller, as desired, reflecting tolerances, conversion factors, rounding off, measurement error and the like, and other factors known to those of skill in the art. When the term “about” is used in describing a value or an end-point of a range, the disclosure should be understood to include the specific value or end-point referred to. Whether or not a numerical value or end-point of a range in the specification recites “about,” the numerical value or end-point of a range is intended to include two embodiments: one modified by “about,” and one not modified by “about.” It will be further understood that the end-points of each of the ranges are significant both in relation to the other end-point, and independently of the other end-point.

(22) The terms “substantial,” “substantially,” and variations thereof as used herein are intended to note that a described feature is equal or approximately equal to a value or description. For example, a “substantially planar” surface is intended to denote a surface that is planar or approximately planar. Moreover, “substantially” is intended to denote that two values are equal or approximately equal. In some embodiments, “substantially” may denote values within about 10% of each other, such as within about 5% of each other, or within about 2% of each other.

(23) As used herein the terms “the,” “a,” or “an,” mean “at least one,” and should not be limited to “only one” unless explicitly indicated to the contrary. Thus, for example, reference to “a component” includes embodiments having two or more such components unless the context clearly indicates otherwise.

(24) Referring to FIGS. 1-12, reference numeral **20** generally designates a vehicle. The vehicle **20** is provided with a work surface **24**. The work surface **24** includes a first section **28** having a proximal edge **32** and a distal edge **36**. The first section **28** defines a channel **40** therein. A central section **44** of the work surface **24** includes a first end **48** and a second end **52**. The first end **48** of the central section **44** is positioned adjacent to the proximal edge **32** of the first section **28**. The proximal edge **32** of the first section **28** is pivotably coupled to the first end **48** of the central section **44**. The first section **28** is movable between a stowed position (e.g., see FIG. 7B) and a fully-deployed position (e.g., see FIG. 7C) relative to the central section **44**. A first lock assembly **56** is coupled to the central section **44**. The first lock assembly **56** includes a post **60** that is operable between a retracted position (e.g., see FIG. 8) and an extended position (e.g., see FIG. 10). The fully-deployed position of the first section **28** can arrange the channel **40** defined by the first section **28** to receive the post **60** of the first lock assembly **56**.

(25) Referring again to FIGS. 1-12, the vehicle **20** may be a motor vehicle. For example, the vehicle **20** may be a land-based vehicle (e.g., an automobile, a motorcycle, a train, etc.), an air-based vehicle (e.g., an airplane, a helicopter, etc.), and/or a water-based vehicle (e.g., a boat or other watercraft). While the vehicle **20** may be a motor vehicle, the present disclosure is not limited to internal combustion engines as a source of locomotive power for the vehicle **20**. Rather, alternative sources may be utilized in providing locomotive power to the vehicle **20**. For example, locomotive power may be provided to the vehicle **20** by electric motors, fuel cells, and/or petroleum-based fuel engines. According to various examples, the vehicle **20** may be driver-controlled, semi-autonomous, fully-autonomous, or any combination of user-controlled and automated. For example, the semi-autonomous example of the vehicle **20** may perform many, or all, commuting independent of user interaction while the user maintains override control of the

vehicle **20**.

(26) Referring now to FIGS. **1-3**, the vehicle **20** includes a body **64** that defines a cargo area **68**. The cargo area **68** may be selectively accessed by moving an access panel **72** from a closed position to an open position (see FIG. **1**). In the example depicted in FIG. **1**, the cargo area **68** may be referred to as a front trunk and the access panel **72** may be a hood of the vehicle **20**. However, the present disclosure is not so limited. Rather, the cargo area **68** may be positioned at any suitable location on the vehicle **20**. In various examples, the work surface **24** may be sized and/or configured to extend from a first side **76** of the cargo area **68** to a second side **80** of the cargo area **68**. For example, the first section **28** may engage with the first side **76** of the cargo area **68** and a second section **84** of the work surface **24** may engage with the second side **80** of the cargo area **68** such that the work surface **24** is capable of being suspended above the cargo area **68**. In such an example, at least a portion of the cargo area **68** may remain accessible to a user while the work surface **24** is suspended above the cargo area **68**. For example, a front **88** of the cargo area **68** may remain accessible to the user while the work surface **24** is suspended above the cargo area **68**. The second section **84** of the work surface **24** can be arranged and/or configured in a similar manner to the first section **28**. For example, the second section **84** may be a mirror image of the first section **28**.

(27) Referring to FIGS. **2-4**, the second section **84** of the work surface **24**, when provided, includes a proximal edge **92** and a distal edge **96**. In such examples, the proximal edge **92** of the second section **84** is positioned adjacent to the second end **52** of the central section **44**. In various examples, the second section **84** can be pivotably coupled to the second end **52** of the central section **44**. The central section **44** can be positioned between the first section **28** and the second section **84**. As with the first section **28**, the second section **84** is movable between a stowed position (e.g., see FIG. **7D**) and a fully-deployed position (e.g., see FIG. **7B**) relative to the central section **44**. In some examples, the second section **84** may be configured and/or arranged in the same manner as the first section **28**. Accordingly, the second section **84** can define a channel **100** and the central section **44** can be provided with a second lock assembly **104** coupled thereto, as will be discussed in further detail herein (see FIG. **10**).

(28) Referring again to FIGS. **2-4**, the work surface **24** can be folded up and stowed within the cargo area **68** of the vehicle **20**. Such stowage of the work surface **24** can be provided at a front wall **108** or a rear wall **112** of the cargo area **68**. In some examples, a mounting structure may be provided on one of the walls of the cargo area **68** (e.g., the front wall **108**, the rear wall **112**, or a sidewall). The mounting structure may retain the work surface **24** in the stowed position while the vehicle **20** is in motion and/or may retain the work surface **24** in the stowed position to increase a cargo volume of the cargo area **68** when compared to the work surface **24** being loose in the cargo area **68**. The moveable coupling between the first section **28** and the central section **44** can be accomplished by one or more hinges **116** positioned at a junction between the proximal edge **32** of the first section **28** and the first end **48** of the central section **44**. Similarly, when employed, the moveable coupling between the second section **84** and the central section **44** can be accomplished by one or more of the hinges **116** being positioned at a junction between the proximal edge **92** of the second section **84** and the second end **52** of the central section **44**. The hinge(s) **116** may be a living hinge that is defined by a decreased thickness of material of the work surface **24** or may be a multi-part hinge (e.g., including a first member and a second member rotatably coupled to one another by one or more pins). The hinge(s) **116** can be coupled to an underside **120** of the work surface **24**.

(29) Referring to FIGS. **4-7D**, the underside **120** of the work surface **24** can define a series of ridges **124** and a series of valleys **128**. In such an example, each adjacent ridge **124** is separated by one of the valleys **128**. In various examples, the series of ridges **124** and the series of valleys **128** may also be defined by a top side **132** of the work surface **24** (see FIGS. **2** and **3**). In some examples, the series of ridges **124** defined by the underside **120** of the work surface **24** and the top side **132** of the work surface **24** may correspond with one another such that an alternating pattern of

the ridges **124** and the valleys **128** is aligned between the underside **120** and the top side **132**. It is contemplated that the ridges **124** and the valleys **128**, when provided on the underside **120** and the top side **132**, may be arranged in a pattern that results in the ridges **124** of the underside **120** corresponding with the valleys **128** of the top side **132** and vice versa. Such an arrangement may be referred to as a corrugated arrangement. In some examples, the top side **132** of the work surface **24** may be provided with one or more planar areas **136**, as will be discussed further herein.

(30) With specific references to FIGS. **4-6**, one or more recesses **140** can be defined in the underside **120** of the work surface **24**. In the depicted example of FIG. **4**, the recesses **140** are defined in the underside **120** at the first and second sections **28**, **84**. However, it is contemplated that the one or more of the recesses **140** may additionally, or alternatively, be defined in the underside **120** at the central section **44**. Each of the recesses **140** is configured to receive a leg **144**. Each leg **144** is configured to provide support to the work surface **24**. For example, each of the recesses **140** may receive one of the legs **144** when the work surface **24** is in the fully-deployed position to enable use of the work surface **24** in environments outside of, or immediately adjacent to, the vehicle **20**. For example, the work surface **24** may be placed in the fully-deployed position and the legs **144** may be inserted into the recesses **140** such that the work surface **24** can be employed as a table in camping environments, at sporting events, at job sites, and so on. The cargo area **68** may be provided with a designated area for storing the leg(s) **144**. In some examples, the leg(s) **144** may be received and/or retained in the underside **120** of the central section **44**. In one specific, non-limiting, example, at least some of the valleys **128** may be configured to receive the leg(s) **144**.

(31) Referring again to FIGS. **4-6**, each of the legs **144** may be received within one of the recesses **140** in a snap fit manner or interference fit manner such that the leg **144** is retained within the recess **140** by a slight deformation of the recess **140** and/or by a weight of the work surface **24**. In some examples, the leg **144** may be provided with a threaded portion **148**. The threaded portion **148** may have an outer diameter that is less than an outer diameter of a portion of the leg **144** from which the threaded portion **148** extends. The outer diameter of the threaded portion **148** defines threads **152** therein. In examples where the outer diameter of the threaded portion **148** is less than the outer diameter of the portion of the leg **144** from which the threaded portion **148** extends, an insert **156** may be received within the recess **140**. In such an example, the insert **156** may define ribs **160** in an exterior surface thereof that aid in retention of the insert **156** within the recess **140**. When the insert **156** is employed, the insert **156** defines a chamber **164** that is provided with threads **168** that are complementary to the threads **152** on the threaded portion **148**. In various examples, the insert **156** may be omitted and the recesses **140** can be provided with the threads **168** that are complementary to the threads **152** of the threaded portion **148**. In such an example, the recess **140** can be sized to receive the threaded portion **148**. In some examples, the threaded portion **148** may be provided directly in the exterior surface of the leg **144** such that the threaded portion **148** does not have an outer diameter that is less than the outer diameter of the portion of the leg **144** from which the threaded portion **148** extends.

(32) Referring further to FIGS. **4-6**, the leg **144** may be provided with a plurality of segments **172**. Each of the plurality of segments **172** may be telescopically engaged, or extendably engaged, with immediately adjacent others of the plurality of segments **172** such that an overall length of the legs **144** may be adjustable. Adjacent ones of the plurality of segments **172** can be coupled by a retention assembly **176**. The retention assembly **176** includes a body **180** and an arm **184**. The arm **184** is movable relative to the body **180** between an open position (see FIG. **6**) and a closed position (see FIG. **5**), as indicated by arrow **188**. When the arm **184** is in the open position, a relative position of adjacent segments **172** of the leg **144** is capable of adjustment, as indicated by arrow **192**. For example, a lower segment **196** may be adjustable relative to an upper segment **200** when the arm **184** is in the open position (see FIG. **6**). In various examples, the leg **144** may be provided with a foot **204** that is positioned at an end of the leg **144** that is opposite from the portion



of the leg **144** that engages with the recess **140** (e.g., the threaded portion **148**).

(33) Referring now to FIGS. 7A-7D, the work surface **24** is shown in various arrangements with regard to the positioning of the first section **28** and the second section **84**. FIGS. 7A and 7D show the first section **28** and the second section **84** in a partially-deployed position relative to the central section **44**, respectively. FIG. 7B shows the first section **28** in the stowed position and the second section **84** in the fully-deployed position. FIG. 7D shows the first section **28** in the fully-deployed position and the second section **84** in the stowed position. The stowed position of the given section of the work surface **24** (e.g., the first section **28** and/or the second section **84**) can arrange the given section in a generally parallel relationship with the central section **44**. The generally parallel relationship between the given section and the central section **44** can arrange the underside **120** of the given section being in an abutting, or nearly-abutting, relationship with the underside **120** of the central section **44**.

(34) Referring again to FIGS. 7A-7D, in some examples, the first section **28** and the second section **84** may be capable of use as support legs for the central section **44** when the first section **28** and the second section **84** are each in the partially-deployed position. In such an arrangement, the distal edge **36** of the first section **28** and the distal edge **96** of the second section **84** can contact a surface below the work surface **24** such that the work surface **24** is suspended above the surface (e.g., the ground, the access panel **72** of the vehicle **20**, a floor, etc.). Similarly, the work surface **24** may be used as a desk by a user placing the first section **28** on a first side of their legs and the second section **84** on a second side of their legs while the first and second sections **28**, **84** are each in the partially-deployed position and the user is in a seated position. In such an arrangement, the post **60** of the first lock assembly **56** and/or a post **208** of the second lock assembly **104** may be placed in an extended-and-locked position (see FIG. **12**). In some examples, the top side **132** of the work surface **24** may define one or more depressions **212**. The one or more depressions **212** may aid in retaining items that are placed on the top side **132** while the work surface **24** is in use (e.g., writing utensils, electronic devices, beverage containers, and so on). In various examples, one or more of the one or more depression **212** may extend between the first section **28**, the central section **44**, and/or the second section **84** such that the given depression **212** includes a portion that is on the central section **44** and a portion that is on the given section (e.g., the first section **28** and/or the second section **84**).

(35) Referring to FIGS. 8-12, in various examples the hinge(s) **116** include a first portion **216** and a second portion **220**. In the depicted examples, the first and second portions **216**, **220** of the hinge(s) **116** each include a first leg **224** and a second leg **228**. The first leg **224** of the hinge(s) **116** engages with the underside **120** of the work surface **24** (e.g., at the first section **28**, the central section **44**, or the second section **84**). The second leg **228** of the hinge(s) **116** extend at an angle from the first leg **224** (e.g., a ninety degree angle) and engage with, for example, the proximal edge **32** of the first section **28**, the first end **48** of the central section **44**, the second end **52** of the central section **44**, or the proximal edge **92** of the second section **84**. When the first section **28** or the second section **84** are in the fully-deployed position, their corresponding second legs **228** of their hinges **116** may directly abut the immediately adjacent second leg **228** of the hinge **116** of the central section **44**. The first and second portions **216**, **220** of the hinge(s) **116** can be provided with radiused corners **232** that can enable smooth movement through the full range of motion of the first section **28** and/or the second section **84**.

(36) Referring again to FIGS. 8-12, the first lock assembly **56** includes a biasing member **236**. The biasing member **236** biases the post **60** to the extended position. In various examples, the biasing member **236** can be a spring (e.g., a coil spring). A protrusion **240** extends from the post **60** of the first lock assembly **56**. The protrusion **240** can be integrally formed or unitarily formed with the post **60**. A user interacts with the protrusion **240** to transition the post **60** between the extended position and the retracted position. The protrusion **240** can be provided with a surface that is modified to increase a coefficient of friction between the surface of the protrusion **240** and the user

(e.g., a finger of the user). For example, the surface modification to the protrusion **240** may be knurling or projections **244**. The protrusion **240** may be provided with a flange **248** that may aid a user in transitioning the post **60** between the extended position and the retracted position. The flange **248** may aid in rotating the post **60** into and/or out of one or more receptacles.

(37) Referring further to FIGS. **8-12**, the central section **44** can define a first receptacle **252** and a second receptacle **256**. The first receptacle **252** corresponds with the retracted position of the post **60** and the second receptacle **256** corresponds with the extended position of the post **60**. The protrusion **240** is configured to be received within, or engage with, the first receptacle **252** when the post **60** is in the retracted position. The engagement between the protrusion **240** and the first receptacle **252** retains the post **60** in the retracted position. Physical interference between the protrusion **240** and the first receptacle **252** can resist the biasing force provided by the biasing member **236** when the post **60** is in the retracted position. When the post **60** is in the retracted position and the protrusion **240** is positioned within the first receptacle **252**, the first lock assembly **56** may be referred to as being in a retracted-and-locked position. The protrusion **240** is configured to be received within, or engage with, the second receptacle **256** when the post is in the extended position. When the post **60** is in the extended position, the biasing member **236** may not be fully extended such that the biasing force remains present. Accordingly, as with the first receptacle **252**, physical interference between the protrusion **240** and the second receptacle **256** can resist the biasing force provided by the biasing member **236** when the post **60** is in the extended position. It is contemplated that, in some examples, the biasing force provided by the biasing member **236** may reverse when the post **60** is in the extended position. That is, when the biasing member **236** is in the retracted position, the biasing member **236** may provide a biasing force that pushes the post **60** toward the channel **40**. However, in some examples, when the biasing member **236** is in the extended position, the biasing member **236** may provide a biasing force that pulls the post **60** away from the channel **40**.

(38) Referring still further to FIGS. **8-12**, the central section **44** can include a first protuberance **260** that is positioned adjacent to the first receptacle **252** and a second protuberance **264** that is positioned adjacent to the second receptacle **256**. The first protuberance **260** can aid in “catching” the protrusion **240** as the post **60** is actuated to the extended position, thereby preventing over-extension of the post **60**. Similarly, the second protuberance **264** can aid in “catching” the protrusion **240** as the post is actuated to the retracted position. Accordingly, the first and second protuberances **260**, **264** can act as catches that are capable of guiding the protrusion **240** into the first and second receptacles **252**, **256**, respectively. In various examples, the first protuberance **260** is unitarily formed or integrally formed with a wall that at least partially defines the first receptacle **252**. Similarly, in various examples, the second protuberance **264** is unitarily formed or integrally formed with a wall that at least partially defines the second receptacle **256**. The post **60** is received within a passage **268** that is defined by the central section **44**. The post **60** travels within the passage **268** as the post **60** is moved between the retracted position and the extended position. A back wall **272** of the passage **268** may be provided with a tab **276** extending therefrom. The tab **276** may be configured to be received by the biasing member **236**. Accordingly, the tab **276** may provide a degree of retention to the biasing member **236** that can aid in maintaining an alignment of the biasing member **236** within the passage **268**. For example, when the biasing member **236** is a coil spring, the tab **276** may be received within an inner diameter of the coil spring. A fully-deployed-and-locked position of the first section **28** may be defined as the post **60** of the first lock assembly **56** extending into the channel **40** that is defined by the first section **28** when the first section **28** is in the fully-deployed position.

(39) Referring yet again to FIGS. **8-12**, the second lock assembly **104** is comparable to the first lock assembly **56**, with the second lock assembly **104** generally representing a mirror-image of the first lock assembly **56** due to the positioning of the second lock assembly **104** at the second end **52** of the central section **44**. Accordingly, the foregoing descriptions equally apply to the second lock

assembly **104**, the second end **52** of the central section **44**, and the second section **84**. For the sake of brevity, the foregoing descriptions will not be outlined for the second lock assembly **104** in their entirety, as one of skill in the art will recognize corresponding structures. Rather, the second lock assembly **104** will be discussed generally. As mentioned above, the second section **84** defines the channel **100** therein. The second lock assembly **104** is coupled to the central section **44** and includes the post **208** that is operable between the retracted position and the extended position. Descriptions of the post **60** above apply in whole, or in part, to the post **208**. The fully-deployed position of the second section **84** arranges the channel **100** defined by the second section **84** to receive the post **208** of the second lock assembly **104**. As with the first lock assembly **56**, a fully-deployed-and-locked position of the second section **84** can be defined as the post **208** of the second lock assembly **104** extending into the channel **100** defined by the second section **84** when the second section **84** is in the fully-deployed position. The biasing member **236** of the second lock assembly **104** can engage with the tab **276** within the passage **268**.

(40) Referring to FIG. **12**, the first and second lock assemblies **56**, **104** are each capable of being placed in the extended position while the first and second sections **28**, **84**, respectively, are in the partially-deployed position as depicted. Such an arrangement may be referred to as a partially-deployed-and-extended position. In so doing, the post **60** of the first lock assembly **56** can aid in retaining the first section **28** in the partially-deployed position. For example, the post **60** may prevent the first section **28** from being rotated from the partially-deployed position to the fully-deployed position. Similarly, the post **208** of the second lock assembly **104** can aid in retaining the second section **84** in the partially-deployed position. For example, the post **208** may prevent the second section **84** from being rotated from the partially-deployed position to the fully-deployed position. The posts **60**, **208** may not prevent the first section **28** and the second section **84**, respectively, from rotating from the partially-deployed position to the stowed position. The partially-deployed-and-extended positions for the first and second sections **28**, **84** can provide an additional use for the work surface **24** as a tray table, standalone table, mobile desk, and the like without employing the leg(s) **144**.

(41) Modifications of the disclosure will occur to those skilled in the art and to those who make or use the concepts disclosed herein. Therefore, it is understood that the embodiments shown in the drawings and described above are merely for illustrative purposes and not intended to limit the scope of the disclosure, which is defined by the following claims as interpreted according to the principles of patent law, including the doctrine of equivalents.

(42) It will be understood by one having ordinary skill in the art that construction of the described concepts, and other components, is not limited to any specific material. Other exemplary embodiments of the concepts disclosed herein may be formed from a wide variety of materials, unless described otherwise herein.

(43) For purposes of this disclosure, the term “coupled” (in all of its forms: couple, coupling, coupled, etc.) generally means the joining of two components (electrical or mechanical) directly or indirectly to one another. Such joining may be stationary in nature or movable in nature. Such joining may be achieved with the two components (electrical or mechanical) and any additional intermediate members being integrally formed as a single unitary body with one another or with the two components. Such joining may be permanent in nature, or may be removable or releasable in nature, unless otherwise stated.

(44) It is also important to note that the construction and arrangement of the elements of the disclosure, as shown in the exemplary embodiments, is illustrative only. Although only a few embodiments of the present innovations have been described in detail in this disclosure, those skilled in the art who review this disclosure will readily appreciate that many modifications are possible (e.g., variations in sizes, dimensions, structures, shapes and proportions of the various elements, values of parameters, mounting arrangements, use of materials, colors, orientations, etc.) without materially departing from the novel teachings and advantages of the subject matter recited.

For example, elements shown as integrally formed may be constructed of multiple parts, or elements shown as multiple parts may be integrally formed, the operation of the interfaces may be reversed or otherwise varied, the length or width of the structures and/or members or connector or other elements of the system may be varied, and the nature or numeral of adjustment positions provided between the elements may be varied. It should be noted that the elements and/or assemblies of the system may be constructed from any of a wide variety of materials that provide sufficient strength or durability, in any of a wide variety of colors, textures, and combinations. Accordingly, all such modifications are intended to be included within the scope of the present innovations. Other substitutions, modifications, changes, and omissions may be made in the design, operating conditions, and arrangement of the desired and other exemplary embodiments without departing from the spirit of the present innovations.

(45) It will be understood that any described processes, or steps within described processes, may be combined with other disclosed processes or steps to form structures within the scope of the present disclosure. The exemplary structures and processes disclosed herein are for illustrative purposes and are not to be construed as limiting.

(46) It is also to be understood that variations and modifications can be made on the aforementioned structures and methods without departing from the concepts of the present disclosure, and further, it is to be understood that such concepts are intended to be covered by the following claims, unless these claims, by their language, expressly state otherwise.

## Claims

1. A work surface for a vehicle, comprising: a first section having a proximal edge and a distal edge, wherein the first section defines a channel therein; a central section having a first end and a second end, wherein the first end of the central section is positioned adjacent to the proximal edge of the first section, wherein the proximal edge of the first section is pivotably coupled to the first end of the central section, wherein the first section is movable between a stowed position and a fully-deployed position relative to the central section; a first lock assembly coupled to the central section, wherein the first lock assembly comprises a post that is operable between a retracted position and an extended position, wherein the fully-deployed position of the first section arranges the channel defined by the first section to receive the post of the first lock assembly, wherein the first lock assembly further comprises a biasing member positioned between the post and the central section, wherein the biasing member biases the post to the extended position, and wherein the first lock assembly further comprises a protrusion that extends from the post; a first receptacle defined by the central section, wherein the protrusion is configured to engage with the first receptacle when the post is in the retracted position, and wherein the engagement between the protrusion and the first receptacle retains the post in the retracted position; and a second receptacle defined by the central section, wherein the protrusion is configured to engage with the second receptacle when the post is in the extended position, and wherein the engagement between the protrusion and the second receptacle retains the post in the extended position.
2. The work surface for a vehicle of claim 1, wherein a fully-deployed-and-locked position of the first section is defined as the post of the first lock assembly extending into the channel defined by the first section when the first section is in the fully-deployed position.
3. The work surface for a vehicle of claim 1, further comprising: a second section having a proximal edge and a distal edge, wherein the proximal edge of the second section is positioned adjacent to the second end of the central section.
4. The work surface for a vehicle of claim 3, wherein the central section is positioned between the first section and the second section.
5. The work surface for a vehicle of claim 3, wherein the second section is pivotably coupled to the second end of the central section.

6. The work surface for a vehicle of claim 5, wherein the second section is movable between a stowed position and a fully-deployed position relative to the central section.
7. The work surface for a vehicle of claim 6, wherein the second section defines a channel therein.
8. The work surface for a vehicle of claim 7, further comprising: a second lock assembly coupled to the central section, wherein the second lock assembly comprises a post that is operable between a retracted position and an extended position, wherein the fully-deployed position of the second section arranges the channel defined by the second section to receive the post of the second lock assembly.
9. The work surface for a vehicle of claim 8, wherein a fully-deployed-and-locked position of the second section is defined as the post of the second lock assembly extending into the channel defined by the second section when the second section is in the fully-deployed position.
10. The work surface for a vehicle of claim 3, wherein the first section and the second section are capable of use as support legs for the central section when the first section and the second section are each in a partially-deployed position.
11. The work surface for a vehicle of claim 10, further comprising: a second lock assembly coupled to the central section, wherein the second lock assembly comprises a post that is operable between a retracted position and an extended position, wherein placing the post of the first lock assembly in the extended position when the first section is in the partially-deployed position and placing the post of the second lock assembly in the extended position when the second section is in the partially-deployed position aids in retaining the first section and the second section in the partially-deployed position.
12. The work surface for a vehicle of claim 1, further comprising: a recess defined in an underside thereof.
13. The work surface for a vehicle of claim 12, further comprising: a leg that is received by the recess, wherein the leg is configured to provide support to the work surface.
14. A work surface for a vehicle, comprising: a first section having a proximal edge and a distal edge, wherein the first section defines a channel therein; a second section having a proximal edge and a distal edge, wherein the second section defines a channel therein; a central section having a first end and a second end, wherein the central section is positioned between the first section and the second section, wherein the first end of the central section is positioned adjacent to the proximal edge of the first section, wherein the proximal edge of the first section is pivotably coupled to the first end of the central section, wherein the first section is movable between a stowed position and a fully-deployed position relative to the central section, wherein the proximal edge of the second section is positioned adjacent to the second end of the central section, wherein the second section is pivotably coupled to the second end of the central section, wherein the second section is movable between a stowed position and a fully-deployed position relative to the central section; a first lock assembly coupled to the central section, wherein the first lock assembly comprises a post that is operable between a retracted position and an extended position, wherein the fully-deployed position of the first section arranges the channel defined by the first section to receive the post of the first lock assembly; and a second lock assembly coupled to the central section, wherein the second lock assembly comprises a post that is operable between a retracted position and an extended position, wherein the fully-deployed position of the second section arranges the channel defined by the second section to receive the post of the second lock assembly, wherein the first and second lock assemblies each further comprises: a biasing member positioned between the post and the central section, wherein the biasing member biases the post to the extended position; a protrusion that extends from the post; a first receptacle defined by the central section, wherein the protrusion is configured to engage with the first receptacle when the post is in the retracted position, and wherein the engagement between the protrusion and the first receptacle retains the post in the retracted position; and a second receptacle defined by the central section, wherein the protrusion is configured to engage with the second receptacle when the post is in the

extended position, and wherein the engagement between the protrusion and the second receptacle retains the post in the extended position.

15. The work surface for a vehicle of claim 14, wherein a fully-deployed-and-locked position of the first section is defined as the post of the first lock assembly extending into the channel defined by the first section when the first section is in the fully-deployed position, and wherein a fully-deployed-and-locked position of the second section is defined as the post of the second lock assembly extending into the channel defined by the second section when the second section is in the fully-deployed position.

16. The work surface for a vehicle of claim 14, further comprising: a recess defined in an underside thereof; and a leg that is received by the recess, wherein the leg is configured to provide support to the work surface.

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