PORTABLE FOLDING DESK

A portable folding desk includes a support member, which has an upper end, and a connector, which is attached to the support member and sized and shaped so as to be removably coupled to a rail mounted to a substantially vertical wall for supporting the desk therefrom. A cover panel extends substantially horizontally from the upper end of the support member in a first direction, while a desk panel is movably attached to the support member. The desk panel is movable between a first position, in which it is oriented substantially vertically, and a second position, in which it extends substantially horizontally from the upper end of the support member in a second direction substantially opposite to the first direction. The cover panel and the desk panel cooperate to form a substantially continuous horizontal work surface when the desk panel is in its second position.
PORTABLE FOLDING DESK

FIELD OF THE INVENTION

[0001] The present invention relates to desks and, more particularly, to a portable folding desk.

BACKGROUND OF THE INVENTION

[0002] Collapsible desks or tables have been developed in the past. Such desks or tables include panels that are foldable or collapsible when not in use.

SUMMARY OF THE INVENTION

[0003] A portable folding desk includes a support member, which has an upper end, and a connector, which is attached to the support member and sized and shaped so as to be removably coupled to a rail mounted to a substantially vertical wall for supporting the desk therefrom. A cover panel extends substantially horizontally from the upper end of the support member in a first direction, while a desk panel is movably attached to the support member. The desk panel is movable between a first position, in which it is oriented substantially vertically, and a second position, in which it extends substantially horizontally from the upper end of the support member in a second direction substantially opposite to the first direction. The cover panel and the desk panel cooperate to form a substantially continuous horizontal work surface when the desk panel is in its second position.

[0004] In accordance with the present invention, a desk system includes a rail attached to a substantially vertical wall. The desk system also includes a desk removably mounted to the rail. More particularly, the desk has a support member and a connector, which is removably coupled to the rail for supporting the support member in a substantially vertical orientation, and a desk panel, which is movably attached to the support member. The desk panel is movable between a first position, in which it is oriented substantially vertically, and a second position, in which it extends substantially horizontally from the support member so as to provide a substantially horizontal work surface.

[0005] In accordance with the present invention, a method is provided for forming a substantially horizontal work surface by mounting a desk to a rail attached to a substantially vertical wall. The desk includes a support member, a connector, which is sized and shaped so as to be removably coupled to the rail, and a desk panel, which is movably attached to the support member. The desk panel is movable between a first position, in which it is oriented substantially vertically, and a second position, in which it is oriented substantially horizontally. The method includes the steps of removably connecting the connector of the desk to the rail such that the support member is oriented substantially vertically and positioning the desk panel in the second position so as to form the work surface.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] For a more complete understanding of the present invention, reference is made to the following detailed description of an exemplary embodiment considered in conjunction with the accompanying drawings, in which:

[0007] FIG. 1 is a front perspective view of a foldable, portable desk constructed in accordance with one exemplary embodiment of the present invention, the desk having a foldable desk panel illustrated in its extended position;

[0008] FIG. 2 is a top plan view of the desk shown in FIG. 1, the foldable panel being shown in its folded or retraced position;

[0009] FIG. 3 is a front elevational view of the desk shown in FIG. 2;

[0010] FIG. 4 is a cross-sectional view, taken along section line 4-4 and looking in the direction of the arrows, of the desk shown in FIG. 3;

[0011] FIG. 5 is a view similar to FIG. 4, except that the foldable panel is shown in its extended position;

[0012] FIG. 6 is a partially exploded, rear perspective view of the desk shown in FIG. 1;

[0013] FIG. 7 is a perspective view of a foldable bracket utilized in the desk shown in FIGS. 1-6, the bracket being shown in its locked position; and

[0014] FIG. 8 is a view similar to FIG. 7, except that the bracket is shown in its unlocked position.

DETAILED DESCRIPTION OF THE INVENTION

[0015] FIG. 1 shows a portable and foldable desk 10 constructed in accordance with an exemplary embodiment of the present invention. The desk 10, which is adapted to be removably mounted from a rail 12 attached to a wall 14 (see also FIGS. 4 and 5), includes a support panel or member 16 having an upper end 18 and a lower end 20, as well as front and rear planar surfaces 22, 24 (see also FIGS. 2-4 and 6). The support panel 16 extends continuously from one side 26 of the desk 10 to an opposite side 28 of the desk 10. A cover panel 30 is fixedly attached, either directly or indirectly, to the support panel 16 and is oriented substantially perpendicular with respect to the same. More particularly, the cover panel 30 extends rearwardly from the upper end 18 of the support panel 16 and includes substantially planar upper and lower surfaces 32, 34 and a handle 36 mounted to the upper surface 32 to permit a user to grip same and carry the desk 10 to a desired destination.

[0016] Now referring primarily to FIGS. 4 and 6, the desk 10 includes a bracket or connector 38 having an inverted J-shape. The bracket 38 includes a leg member 40, which is attached to the rear surface 24 of the support panel 16 along the upper end 18 thereof, and a leg member 42, which is attached to the lower surface 34 of the cover panel 30 and includes a tongue 44. The leg members 40, 42 cooperate to form a channel 45 for receiving the rail 12 such that the desk 10 can be securely mounted to the rail 12. The bracket 38 extends from a location adjacent the side 26 of the desk 10 to a location adjacent the side 28 of same. The bracket 38 also has a one-piece construction and is made from a substantially rigid material (e.g., metal). As a result, the bracket 38 (i.e., rigidly) attaches the cover panel 30 to the support panel 16.

[0017] With reference to FIGS. 1, 3, 4, and 5, the desk 10 is provided with a foldable desk panel 46 having substantially planar upper and lower surfaces 48, 50, as well as a pair of ends 52, 54 and a pair of sides 56, 58. The foldable panel 46 is pivotally attached to the support panel 16 by a pair of foldable brackets 60 (see also FIG. 2), which will be discussed in greater detail below. As a result, the foldable panel 46 is pivotable (as indicated by arrow A in FIG. 6) between an extended position, in which it extends substantially horizontally and outwardly from the support panel 16 (see FIGS. 1 and 5), and a retracted (i.e., folded) position, in which it is oriented substantially vertically and hence parallel or flat with respect to the support panel 16 (i.e., it does not extend horizontally).
outwardly from the support panel 16 as shown in FIGS. 2 and 4). When the foldable panel 46 is in its extended position, the upper surface 48 of the foldable panel 46 is leveled, and is in an abutting relationship, with the upper surface 32 of the cover panel 30 (see FIGS. 5 and 6). As a result, the upper surface 48 of the foldable panel 46 and the upper surface 32 of the cover panel 30 form a substantially continuous, planar horizontal desk surface 62 (see FIG. 6). The foldable panel 46 also has a length (i.e., a dimension measured between the ends 52, 54) such that when the foldable panel 46 is positioned in its retracted position, the end 54 is located at the substantially same vertical level as the end 20 of the support panel 16 (i.e., the end 20 of the support panel 16 and the end 54 of the foldable panel 46 are substantially coplanar as shown in FIG. 4). In this manner, when the desk 10 is removed from the rail 12 and is placed on a flat supporting surface (e.g., a floor), the end 20 of the support panel 16 and the end 54 of the foldable panel 46 cooperate to support the desk 10 in an upright manner, thereby making the desk 10 self-supporting. The foldable panel 46 also has a width (i.e., a dimension measured between the sides 56, 58) which is substantially identical to those of the supporting panel 16 and the cover panel 30.

As shown in FIG. 2, the foldable brackets 60 are spaced from one another such that one of them is positioned adjacent the side 26 of the desk 10 (i.e., the side 56 of the foldable panel 46) and the other one is positioned adjacent the side 28 of the desk 10 (i.e., the side 58 of the foldable panel 46). Each of the foldable brackets 60 can be in the form of any conventional foldable bracket (e.g., a bracket sold by Hafele as Model No. 28741600) adapted to releasably support the foldable panel 46 in its extended position and allow it to be folded into its retracted position. To facilitate consideration and discussion, the foldable brackets 60 will be referred to in a singular sense in the following discussion.

With reference to FIGS. 5, 7 and 8, the bracket 60 includes a leg 64 and a leg 66. More particularly, the leg 64 is attached to the front surface 22 of the support panel 16, and the leg 66 is attached to the lower surface 50 of the foldable panel 46 and is provided with a slot 68. A pivot pin 70 pivotally connects the legs 64, 66 to each other, while a latch 72 is pivotally connected to the leg 64 and is adapted to releasably engage the slot 68 of the leg 66. In this manner, the leg 64 and the leg 66 can be supported in a substantially perpendicular fashion so as to releasably lock the foldable panel 46 in its extended position. A spring 74 (see FIG. 8) maintains the latch 72 in its locked engagement with the leg 66. The bracket 60 also includes a release bar 76 and a release button 78, both of which are movable attached to the leg 66. When the release button 78 is depressed upwardly toward the foldable panel 46 (as indicated by arrow B in FIG. 8), it causes the release bar 76 to disengage the latch 72 from the slot 68 and hence from the leg 66 (see FIG. 8), thereby allowing the foldable panel 46 to return from its extended position to its retracted position. When the foldable panel 46 is positioned in its retracted position, the bracket 60 is in its folded orientation (i.e., the leg 64 and the latch 72 are folded over the leg 66 as shown in FIG. 4).

Referring now to FIGS. 1, 4 and 6, a support strip 80 is attached to the rear surface 24 of the support panel 16 proximate the lower end 20. The support strip 80, which has a pair of sides 82, 84, is provided with a width (i.e., a dimension measured between the sides 82, 84) which is similar or identical to the depth of the rail 12 (i.e., the extent of the projection of the rail 12 from the wall 14). In this manner, when the desk 10 is mounted from the rail 12, the side 82 of the support strip 80 engages the wall 14 so as to orient the support panel 16 in a substantially vertical position (i.e., substantially parallel to the wall 14). In a result, when the foldable panel 46 is positioned in its extended position, it is oriented substantially horizontally so as to provide a comfortable working surface.

The support panel 16, the cover panel 30, the foldable panel 46 and the support strip 80 can be fabricated from wood or other suitable material such as metal, plastic, or fiberglass. When wood is utilized in the fabrication of the desk 10, screws/glue (not shown) or other suitable fasteners may be employed in joining the cover panel 30 and the support strip 80 to the support panel 16. For example, the cover panel 30 and the support panel 16 can be joined to one another in any conventional joining way utilized in the furniture field (e.g., mortise-and-tenon, dadoed, or dowelled joint). In use, the desk 10 may be carried in its folded or retracted position to a desired destination. In order to mount the desk to the rail 12, the handle 36 is held and then lifted by a user so as to elevate the bracket 38 above the rail 12. Then, the desk 10 is lowered in order to mount or clip the bracket 38 onto the rail 12. More particularly, an upper portion 86 (see FIG. 4) of the rail 12 is removable received in the channel 45 of the bracket 38. When the desk 10 is supported from the rail 12 in this manner, the side 82 of the support strip 80 bears against the wall 14 to prevent the support panel 16 from rotating toward the wall 14, thereby stabilizing the desk 10.

Once the desk 10 is securely mounted to the rail 12, the foldable panel 46 is pivoted substantially 90° from its retracted position to its extended position. The latch 72 of each of the foldable brackets 60 is then positioned into the slot 68 of its corresponding leg 66, thereby locking the foldable panel 46 in its extended position. The continuous desk surface 62 (see FIG. 6) formed by the upper surfaces 32, 48 of the cover panel 30 and the foldable panel 46, respectively, may be utilized for writing and/or other purposes. In this regard, it is noted that the cover panel 30 supports as well as conceals the bracket 38, provides a base for the handle 36, and extends the working (e.g., writing) area provided by the foldable panel 46 when it is positioned in its extended position.

In order to position the foldable panel 46 to its retracted position from its extended position, the foldable panel 46 is pivoted slightly upwardly so as to release the latches 72 from the corresponding slots 68 of the foldable brackets 60. With the release buttons 78 depressed to prevent the latches 72 from engaging the slots 68, the foldable panel 46 is pivoted downwardly to its retracted position. The desk 10 in its retracted or folded position can remain on the rail 12 or be removed from same for storage at a different location.

Because the desk 10 in its folded position has a low profile (see FIG. 4), it is suitable for use in a place where space is limited. For example, safety regulations may require that hospital hallways be kept clear of obstructions and objects. Since hospital hallways typically have guard rails mounted to walls thereof, the bracket 38 can be made for engagement with such guard rails such that the desk 10 can be mounted in hospital hallways to provide hospital workers with a working space, which can be folded away when not in use.

It should be noted that the present invention can have numerous modifications and variations. For instance, the support panel 16 can be replaced with different types of support member (e.g., a support member having a tubular or
Moreover, metal, plastic or another suitable material may be used in the fabrication of an integral (i.e., one-piece) structure corresponding to the support panel 16, the cover panel 30 and the support strip 80, thereby eliminating fasteners and/or joints and potentially reducing the overall weight of the desk 10. Similarly, the bracket 38 can be formed integrally with the support panel 16 and/or the cover panel 30. Further, the foldable brackets 60 can be any type of conventional foldable or retractable brackets.

[0027] It will be understood that the embodiment described herein is merely exemplary and that a person skilled in the art may make many variations and modifications without departing from the spirit and scope of the invention. All such variations and modifications, including those discussed above, are intended to be included within the scope of the invention as defined in the appended claims.

We claim:

1. A portable desk, comprising a support member having an upper end; a connector attached to said support member and sized and shaped so as to be removably coupled to a rail mounted to a wall for supporting said desk therefrom; a cover panel extending substantially horizontally from said upper end of said support member in a first direction; and a desk panel movably attached to said support member such that it is movable between a first position, in which it is oriented substantially vertically, and a second position, in which it extends substantially horizontally from said upper end of said support member in a second direction substantially opposite to said first direction, said cover panel and said desk panel cooperating to form a substantially continuous horizontal work surface when said desk panel is in its said second position.

2. The desk of claim 1, wherein said cover panel includes a substantially planar upper surface; and wherein said desk panel includes a substantially planar surface, said surface of said desk panel being in a substantially abutting relationship relative to said surface of said cover panel when said desk panel is in its said second position such that said surface of said desk panel and said surface of said cover panel form said continuous horizontal work surface.

3. The desk of claim 2, wherein said support member includes a support panel which does not extend beyond said cover panel.

4. The desk of claim 3, wherein support panel has first and second substantially planar surfaces, said connector being attached to said first surface, said cover panel extending in said first direction above said connector such that said connector is hidden below said cover panel and behind said support panel.

5. The desk of claim 4, wherein said cover panel includes a substantially planar lower surface, said connector attached to said lower surface of said cover panel and being made from a substantially rigid material so as to fixedly attach said cover panel to said support panel.

6. The desk of claim 5, wherein said desk panel is pivotally attached to said support panel adjacent said upper end, said desk panel being oriented substantially parallel to said support panel when said desk panel is positioned in its said first position, said desk panel being oriented substantially perpendicularly with respect to said support panel when said desk panel is positioned in its said second position.

7. The desk of claim 6, wherein said support panel has a lower end; and wherein said desk panel has a free end, said end of said desk panel being substantially coplanar with said lower end of said support panel when said desk panel is in its said first position.

8. The desk of claim 7, further comprising at least one bracket for supporting said desk panel in its said second position.

9. The desk of claim 8, wherein said at least one bracket includes a pair of foldable brackets, each of which includes a first leg, which is attached to said desk panel, and a second leg, which is attached to said support panel, and a latch for releasably maintaining said first leg substantially perpendicularly relative to said second leg for supporting so as to support said desk panel in its said second position.

10. The desk of claim 3, further comprising a support strip attached to said first surface of said support panel and projecting from said support panel in said first direction.

11. The desk of claim 10, wherein said support strip is engageable with the wall so as to maintain said support panel substantially vertical.

12. The desk of claim 3, wherein said connector extends from a first location adjacent one side of said support panel to a second location adjacent an opposite side of said support panel, said connector including a channel for removably receiving the rail.

13. The desk of claim 2, further comprising a handle attached to said cover panel.

14. A desk system, comprising a rail attached to a substantially vertical wall; and a desk removably mounted to said rail, said desk including a support member, a connector, which is removably coupled to said rail for supporting said support member in a substantially vertical orientation, and a desk panel, which is movably attached to said support member, said desk panel being movable between a first position, in which it is oriented substantially vertically, and a second position, in which it extends substantially horizontally from said support member so as to provide a substantially horizontal work surface.

15. The desk system of claim 14, wherein said desk includes a cover panel extending substantially horizontally from an upper end of said support member in a first direction, said desk panel extending substantially horizontally from said upper end of said support member in a second direction opposite to said first direction when said desk panel is positioned in its said second position.

16. The desk system of claim 15, wherein said cover panel includes a substantially planar upper surface; and wherein said desk panel includes a substantially planar surface, said surface of said desk panel being in a substantially abutting relationship relative to said surface of said cover panel when said desk panel is in its said second position such that said surface of said desk panel and said surface of said cover panel form said continuous horizontal work surface.

17. The desk of claim 16, wherein said support member includes a support panel which does not extend beyond said cover panel.

18. The desk system of claim 17, wherein said support panel includes first and second substantially planar surfaces, said connector being attached to said first surface, said cover panel extending in said first direction above said connector such that said connector is hidden below said cover panel and behind said support panel.
19. The desk of claim 18, wherein said support panel has a lower end; and wherein said desk panel has a free end, said end of said desk panel being substantially coplanar with said lower end of said support panel when said desk panel is in its said first position.

20. A method for forming a substantially horizontal work surface by mounting a desk to a rail attached to a substantially vertical wall, the desk including a support member, a connector, which is sized and shaped so as to be removably coupled to the rail, and a desk panel, which is movably attached to the support member, the desk panel being movable between a first position, in which it is oriented substantially vertically, and a second position, in which it is oriented substantially horizontally, said method comprising the steps of removably connecting the connector of the desk to the rail such that the support member is oriented substantially vertically; and positioning the desk panel in the second position so as to form the work surface.

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