



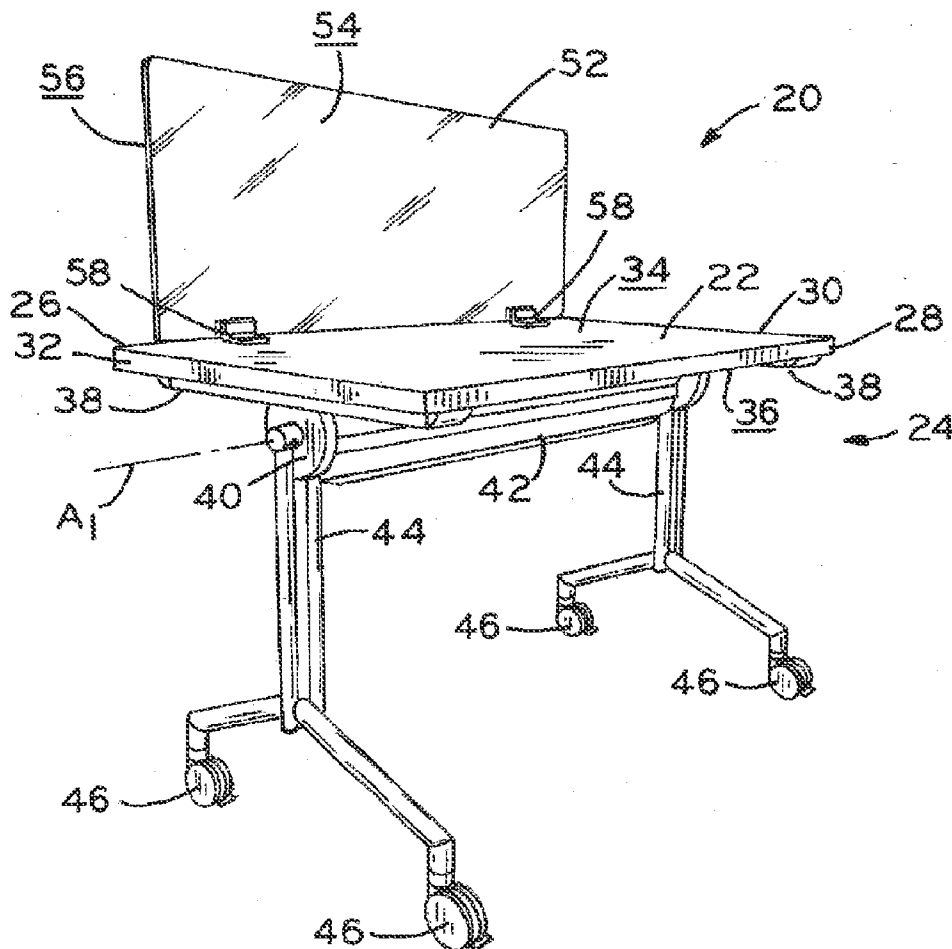
US 20140158024A1

(19) **United States**(12) **Patent Application Publication**
Henriott(10) **Pub. No.: US 2014/0158024 A1**(43) **Pub. Date: Jun. 12, 2014**(54) **TABLE WITH PRIVACY SCREEN**(71) Applicant: **KIMBALL INTERNATIONAL, INC.**,
Jasper, IN (US)(72) Inventor: **Jay M. Henriott**, Jasper, IN (US)(73) Assignee: **KIMBALL INTERNATIONAL, INC.**,
Jasper, IN (US)(21) Appl. No.: **13/707,666**(22) Filed: **Dec. 7, 2012****Publication Classification**(51) **Int. Cl.**
A47B 17/06 (2006.01)
A47B 13/00 (2006.01)
A47B 3/00 (2006.01)(52) **U.S. Cl.**CPC . **A47B 17/06** (2013.01); **A47B 3/00** (2013.01);
A47B 13/00 (2013.01)USPC **108/27**

(57)

ABSTRACT

A table has a support structure and a work surface that may pivot between a substantially horizontal use position and a substantially vertical storage position. A privacy screen is pivotally attached to the work surface such that the privacy screen is pivotally movable relative to the work surface between a first, storage position in which the screen is substantially parallel to the work surface and a second, deployed or use position in which the screen is substantially perpendicular to the work surface. The screen may be pivotally attached to the work surface via a resistance hinge such that movement of the screen between the first and second positions requires overcoming a resistance force. A stop element may be attached to either the work surface or the screen to prevent movement of the screen beyond the second, deployed position.



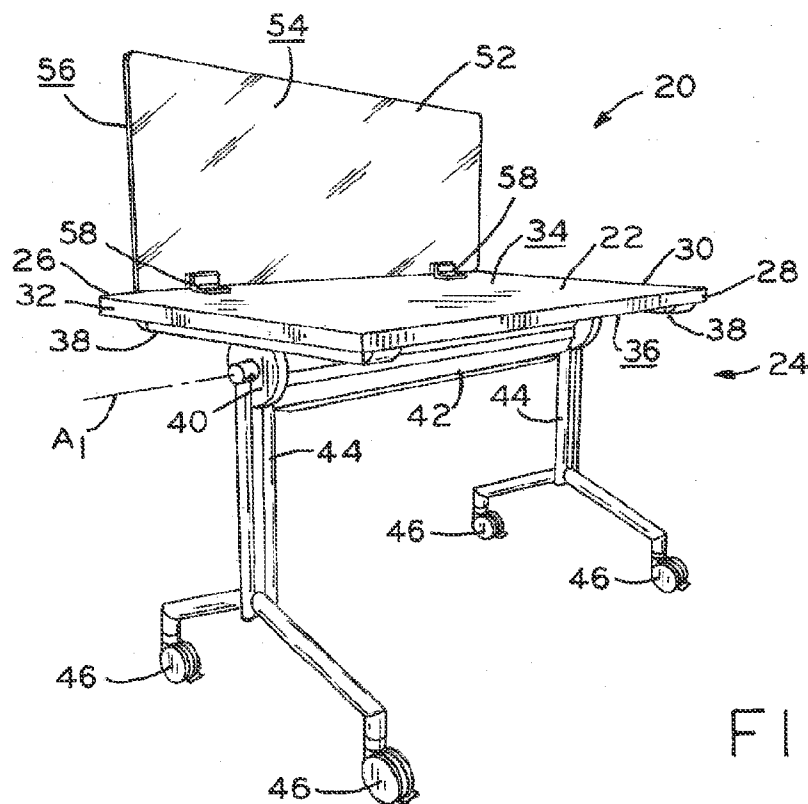


FIG. 1

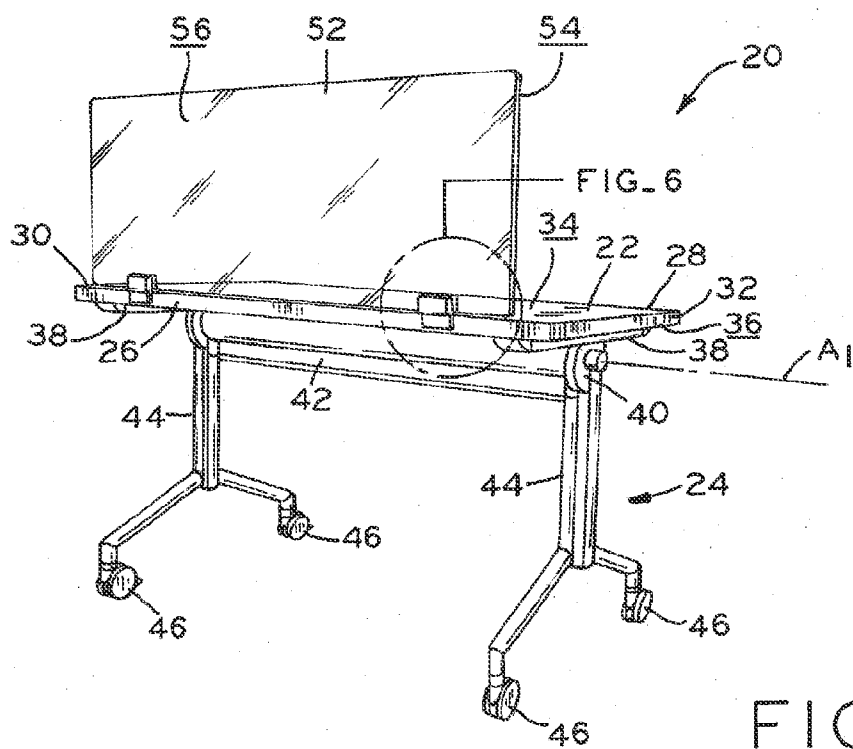


FIG. 2

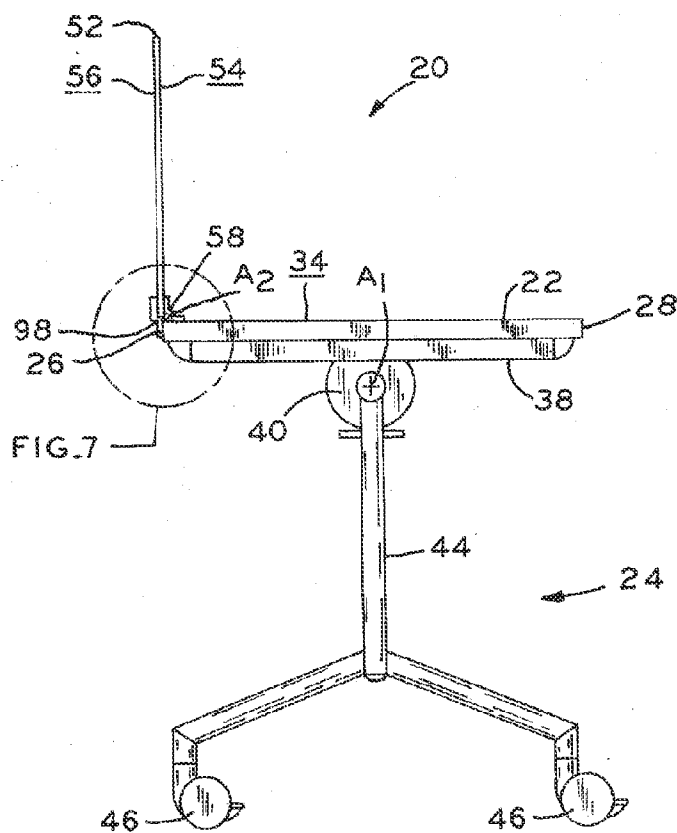


FIG. 3

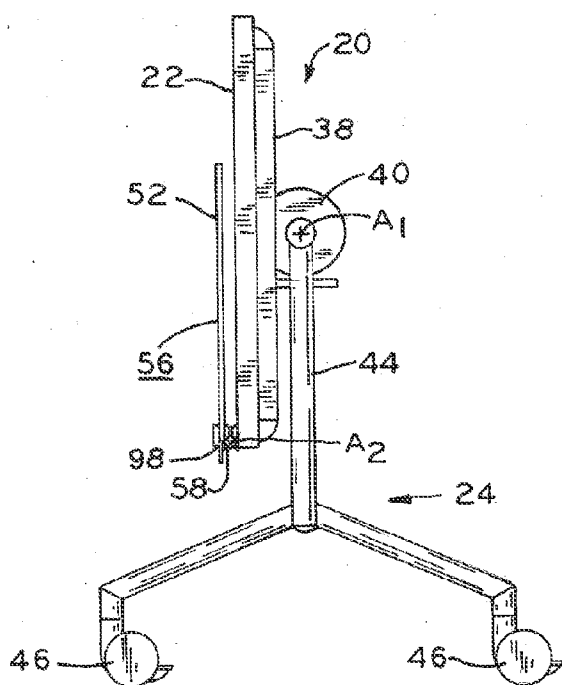


FIG. 4

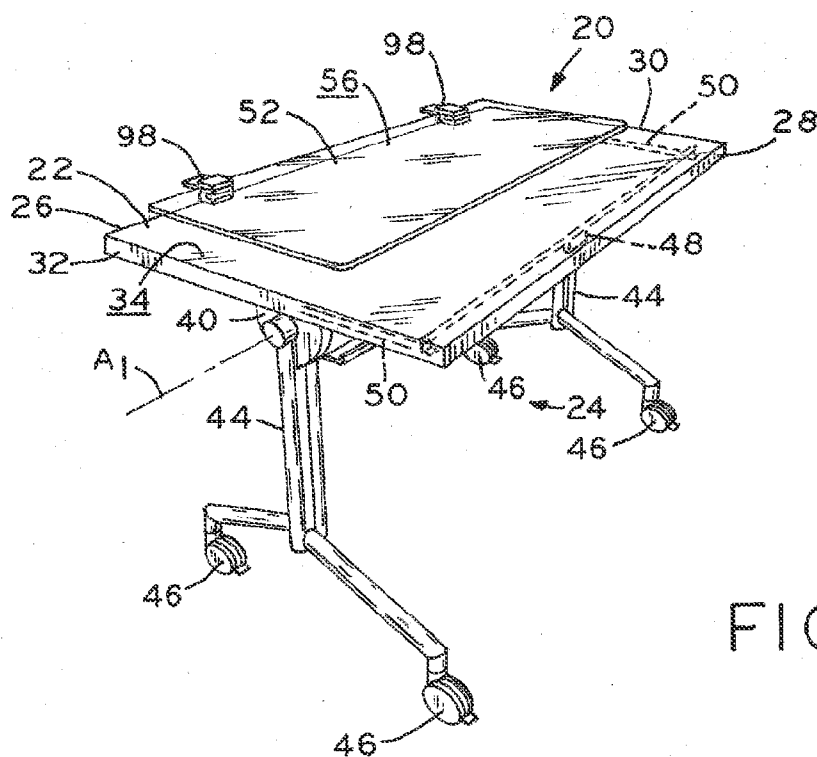


FIG. 5

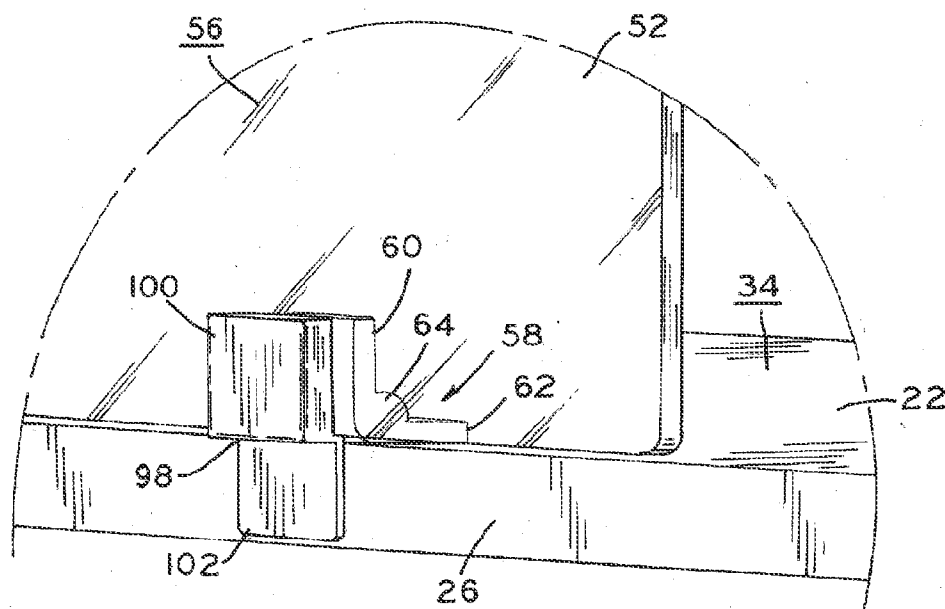
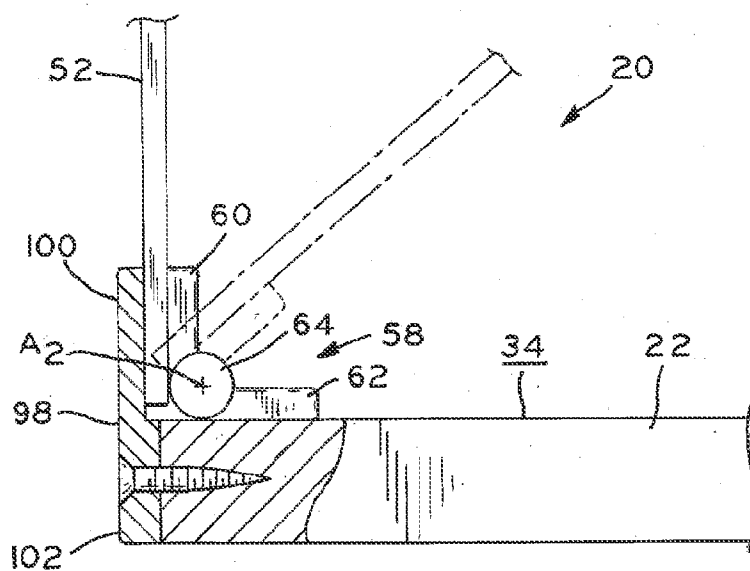
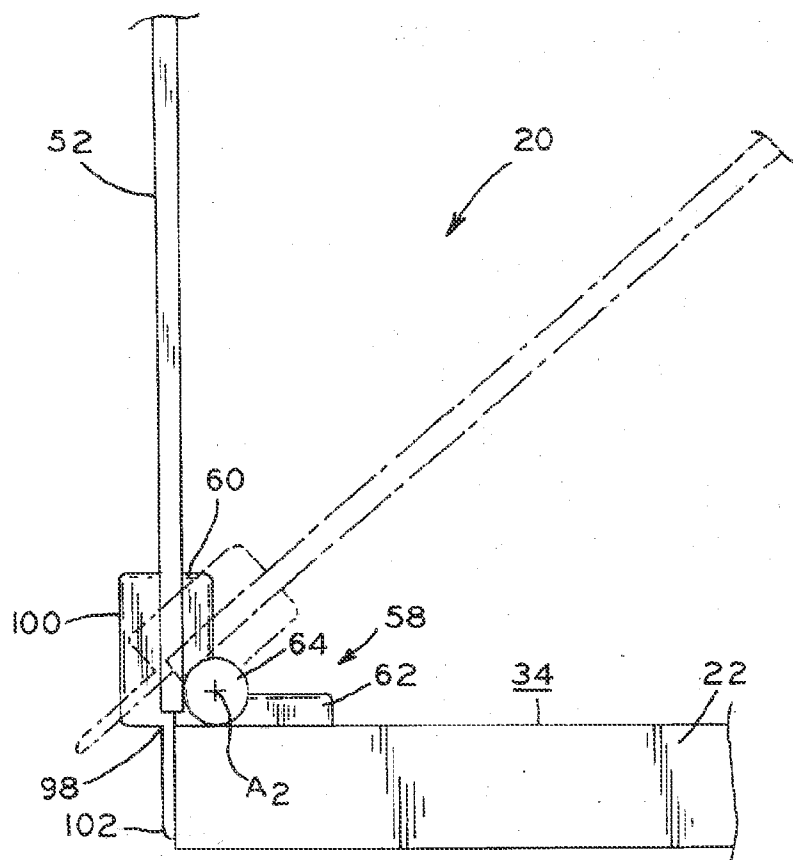


FIG. 6



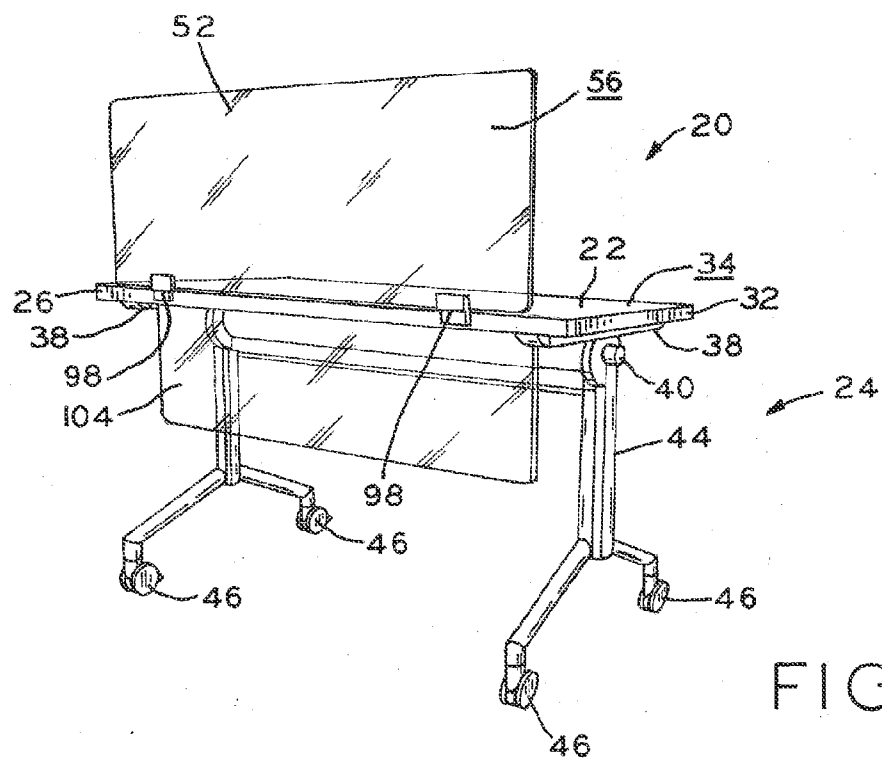


FIG. 8

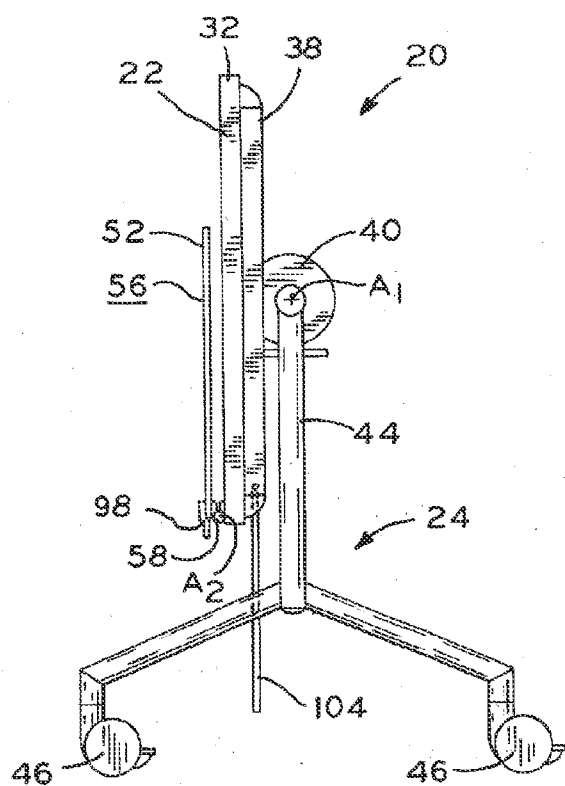


FIG. 9

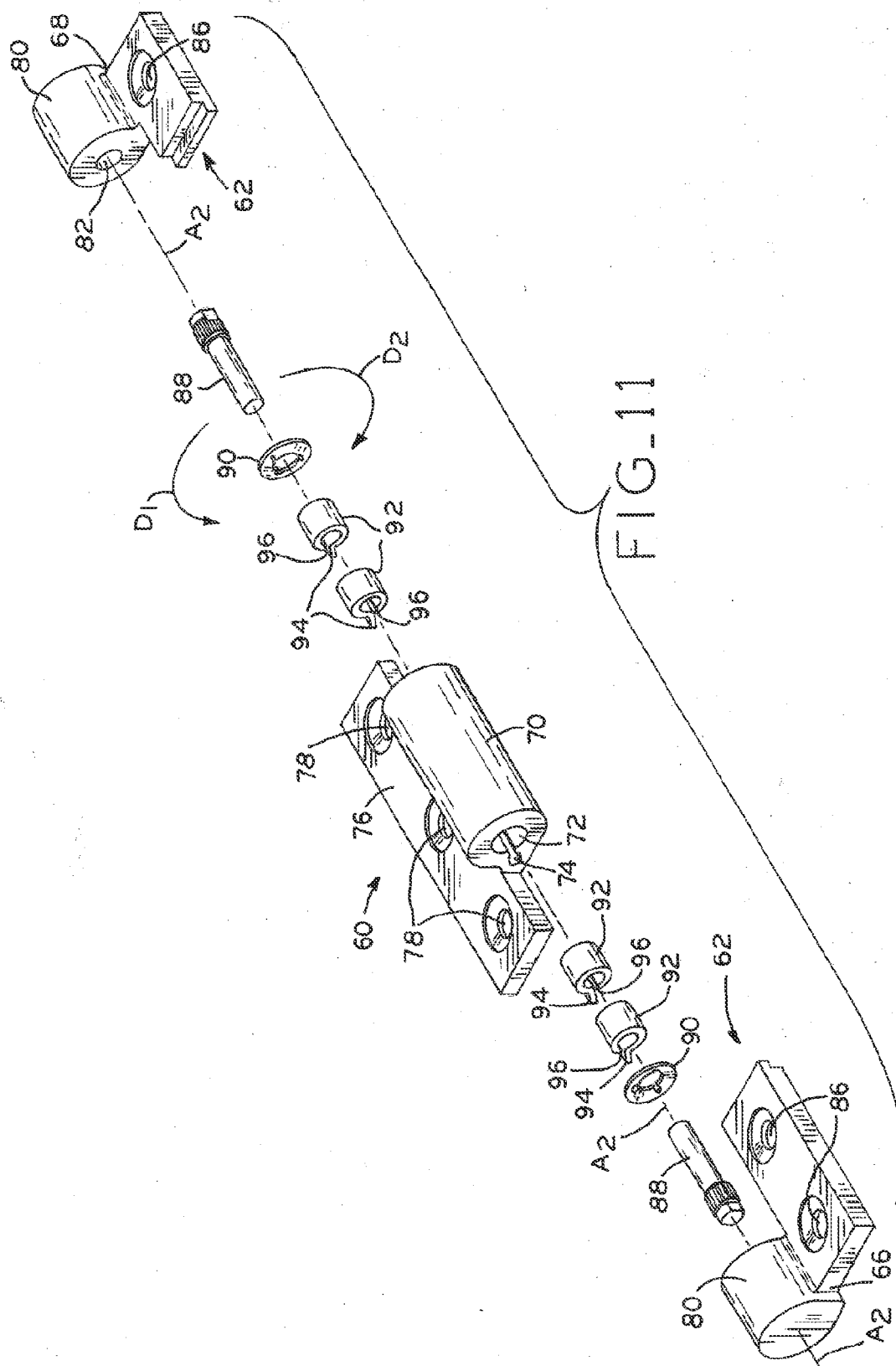


TABLE WITH PRIVACY SCREEN

BACKGROUND OF THE DISCLOSURE

[0001] 1. Field of the Disclosure

[0002] The present disclosure relates to office furniture components and, in particular, relates to an article of office furniture such as a table, for example, which includes a pivotal work surface and a privacy screen.

[0003] 2. Description of the Related Art

[0004] Articles of office furniture such as tables, for example, may include caster wheels to allow the articles of office furniture to be readily moved and relocated within an office space or educational space. Such tables may also include work surfaces which pivot between a generally horizontal use position and a generally vertical storage position. In addition, a plurality of such tables may be nested within one another when their work surfaces are disposed in the vertical storage position in order to minimize floor space during storage.

[0005] During use, a limited extent of privacy may be desired for those working at the tables, and privacy screens may be used with the tables for this purpose. Disadvantageously, however, privacy screens which are provided as components separate from the tables must be removed from the tables when the work surfaces are pivoted to a vertical position, with the privacy screens stored separately from the tables. Additionally, it may be time consuming to remove such privacy screens from the tables for storage, followed by reattaching the privacy screens to the tables during use. Privacy screens which are permanently mounted to the tables typically inhibit the ability of the tables to nest within one another during storage when the work surfaces are disposed in their vertical positions.

[0006] What is needed is improvement over the foregoing.

SUMMARY OF THE DISCLOSURE

[0007] The present disclosure provides a table with a support structure, and a work surface that may pivot between a substantially horizontal use position and a substantially vertical storage position. A privacy screen is pivotally attached to the work surface such that the privacy screen is pivotally movable relative to the work surface between a first, storage position in which the screen is substantially parallel to the work surface and a second, deployed or use position in which the screen is substantially perpendicular to the work surface. The screen may be pivotally attached to the work surface via a resistance hinge such that movement of the screen between the first and second positions requires overcoming a resistance force. A stop element may be attached to either the work surface or the screen to prevent movement of the screen beyond the second, deployed position.

[0008] In one form, the present disclosure provides a table, including a support structure; a work surface pivotally mounted to the support structure, the work surface pivotable between a first, use position and a second, storage position; a screen pivotally connected to the work surface, the screen pivotable between a first position in which the screen is disposed substantially parallel to the work surface and a second position in which the screen is disposed substantially perpendicular to the work surface; and at least one stop element affixed to at least one of the work surface and the screen, the

at least one stop element operable to prevent pivotal movement of the screen beyond the second position from the first position.

[0009] In another form, the present disclosure provides a table, including a support structure; a work surface pivotally connected to the support structure, the work surface pivotable between a first, use position and a second, storage position; a screen pivotally connected to the work surface via at least one resistance hinge, the screen pivotable between a first position in which the screen is disposed substantially parallel to the work surface and a second position in which the screen is disposed substantially perpendicular to the work surface, the resistance hinge providing a resistance to movement of the screen between the first and second positions.

[0010] In yet another form, the present disclosure provides a table, including a support structure; a work surface pivotally connected to the support structure, the work surface pivotable between a first, use position and a second, storage position; a screen pivotally connected to the work surface via at least one resistance hinge, the screen pivotable between a first position in which the screen is disposed substantially parallel to the work surface and a second position in which the screen is disposed substantially perpendicular to the work surface, the resistance hinge providing a resistance to movement of the screen between the first and second positions; and at least one stop element affixed to at least one of the work surface and the screen, the at least one stop element operable to prevent pivotal movement of the screen beyond the second position from the first position.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The above-mentioned and other features and advantages of this disclosure, and the manner of attaining them, will become more apparent and the disclosure itself will be better understood by reference to the following description of embodiments of the disclosure taken in conjunction with the accompanying drawings, wherein:

[0012] FIG. 1 is a front perspective view of a table according to one embodiment of the present disclosure;

[0013] FIG. 2 is a rear perspective view of the table shown in FIG. 1;

[0014] FIG. 3 is an end view of the table with the work surface in a use position and the privacy screen in a deployed position;

[0015] FIG. 4 is an end view of the table with the work surface in storage position and the screen in a storage position;

[0016] FIG. 5 is a front perspective view of the table with the work surface in a use position, the screen in a storage position, and the work surface release handle shown beneath the work surface;

[0017] FIG. 6 is a fragmentary view of a portion of FIG. 8;

[0018] FIG. 7 is a fragmentary end view of the table, showing the deployed position of the screen in solid lines and an intermediate position of the screen in dashed lines;

[0019] FIG. 8 is a perspective view of a table according to another embodiment of the present disclosure, including a modesty panel below the work surface;

[0020] FIG. 9 is an end view of the table shown in FIG. 8 with the work surface in a storage position, the screen in a storage position, and the modesty panel parallel with both the work surface and the screen;

[0021] FIG. 10 is a partial sectional view of a table according to another embodiment of the present disclosure, including a stop element affixed to the work surface; and

[0022] FIG. 11 is an exploded view of an exemplary resistance hinge.

[0023] Corresponding reference characters indicate corresponding parts throughout the several views. The exemplary embodiments of the disclosure illustrated herein are not to be construed as limiting the scope of the disclosure in any manner.

DETAILED DESCRIPTION

[0024] Referring to FIGS. 1-3, table 20 is shown and generally includes work surface 22 and support structure 24. Work surface 22 includes rear edge 26, front edge 28, and right and left side edges 30 and 32. Additionally, work surface 22 includes top surface 34 and an opposite bottom surface 36. As described below, although an article of office furniture is generally shown herein as a table and, in particular, a mobile table, the privacy screen arrangement of the present disclosure may be used with other articles of office furniture, such as desks, credenzas, work surfaces associated with panel or partition systems, and other articles of office furniture.

[0025] Work surface 22 includes a pair of work surface support beams 38 attached to bottom surface 36 thereof, which in turn are pivotally or rotatably connected to support structure 24 via a pair of rotation mechanisms 40, as described below. Support structure 24 generally includes horizontal member 42, legs 44, and four caster wheels 46 for facilitating movement of table 20. Rotation mechanisms 40 are connected to opposite ends of horizontal member 42 and include internal rotation structures (not shown) which facilitate rotational movement of work surface 22, and may also operate to retain or lock work surface in substantially horizontal and vertical positions, as described below. Rotation mechanisms 40 may be of the type available from OMT-Vehyl USA of Holland, Mich. Rotation mechanisms 40 are vertically supported by legs 44 and connected to one another by horizontal member 42.

[0026] Referring to FIGS. 1 and 2, horizontal member 42 defines a horizontal axis A_1 about which work surface 22 rotates. Work surface 22 is rotatable about axis A_1 , between a horizontal, use position, shown in FIGS. 1 and 2, and a vertical, storage position, shown in FIG. 4. Work surface 22 rotates approximately 90 degrees between its use position of FIGS. 1 and 2 and its storage position of FIG. 4. Although not shown in the drawings, support structure 24 may be configured such that, when work surface 20 is disposed in its vertical, storage position, a number of tables 20 may be nested within one another for storage.

[0027] Rotation mechanisms 40 may operate to lock work surface 22 in each of its use and storage positions. For movement of work surface 22 between such positions, the locking mechanisms (not shown) of rotation mechanisms 40 must be unlocked or disengaged in order to allow work surface 22 to rotate about axis A_1 . Referring to FIG. 5, release handle 48 is shown in dashed lines, and may be disposed beneath work surface 22. Release handle 48 is operable to actuate the locking mechanisms of rotation mechanisms 40 via a pair of cables 50 such that, in either of the use and storage positions of work surface 22, actuation of release handle 48 unlocks work surface 22 so that a user of table 20 can rotate work surface 22 from the horizontal, use position to the vertical,

storage position. Once work surface 22 is unlocked, work surface 22 is rotatable about axis A_1 .

[0028] Referring once again to FIGS. 1 and 2, privacy screen 52 is pivotably connected to work surface 22. Screen 52 includes front side 54 and rear side 56. Screen 52 is designed to provide a visual buffer or barrier between users of table 20 and people in the surrounding room in order to provide users of table 20 with a limited degree of privacy. Screen 52 may be constructed of various materials (e.g., metal, wood, plastic, and other composites and may have various tints (e.g., clear or translucent, semi-translucent, and opaque).

[0029] Screen 52 is pivotable relative to work surface 22 between positions in which screen is disposed perpendicular to work surface 22 and parallel to work surface 22. Accordingly, referring to FIG. 5, screen 52 is shown in a first, storage position in which screen is disposed parallel to work surface 22 and is spaced slightly away from work surface 22. Referring to FIGS. 1 and 2, screen 52 is shown in a second, use position, in which screen 52 is disposed perpendicular to work surface 22. FIGS. 7 and 10 additionally show, in dashed lines, an intermediate position of screen 52 between its use and storage positions.

[0030] Screen 52 is pivotally connected to work surface 22 by at least one resistance or torque hinge 58 and typically, by two or more of such hinges. Specifically, referring to FIGS. 1, 3 and 6, resistance hinges 58 are shown pivotally connecting screen 52 with work surface 22. Each resistance hinge 58 includes a first or top wing 60 connected to screen 52 via suitable fasteners, a second or bottom wing 62 connected to work surface 22 via suitable fasteners, and a hinge connection 64 pivotally connecting first and second wings 60 and 62. Screen 52 pivots about a pivot axis A_2 formed by the hinge connection(s) of the hinges 58.

[0031] As described in further detail below, hinges 58 are of the resistance, friction, or torque hinge type, and are constructed to provide resistance to movement of the hinge wings 60 and 62 thereof relative to one another in one or both rotational directions. In one embodiment, resistance hinges 58 provide resistance to movement of wings 60 and 62 thereof in both rotational directions with respect to one another and, in this manner, resistance hinges 58 provide resistance to movement of screen 52 relative to work surface 22 between the use and storage positions of screen 22. Resistance hinges 58 may be of various types, and may include cooperating friction members, flexible torsion elements, or coil springs, for example.

[0032] Referring to FIG. 11, an exemplary resistance hinge 58 is shown, which includes a frictional resistance assembly. Hinge 58 generally includes first and second wings 60 and 62 rotationally connected to one another along axis A_2 , with second wing 62 formed of two sections 66 and 68. First wing 60 includes barrel portion 70 with a through bore 72 and a slot 74 extending along bore 72. First wing 60 also includes a wing portion 76 with three apertures 78 through which fasteners (not shown) may be inserted in order to fix first wing 60 to either work surface 22 or screen 52. Sections 66 and 68 of second wing 62 each include a barrel portion 80 with a blind bore 82 and respective wing portions 84 with apertures 86 through which fasteners (not shown) may be inserted in order to fix first wing 60 to either work surface 22 or screen 52.

[0033] Pivot shafts 88 are received within blind bores 82 of sections 66 and 68 of second wing 62, and are splined to rotationally fix pivot shafts 88 with respect to sections 66 and

68. A washer 90 and a pair of clamping rings 92 are received on each pivot shaft 88. Each clamping ring 92 is generally C-shaped and includes an extending tab 94 and a slot 96 adjacent tab 94. The outer surfaces of pivot shafts 88 and the inner surfaces of each clamping ring 92 may be roughened to provide increase the frictional resistance to relative rotation therebetween. A pair of clamping rings 92 are received on each pivot shaft 88 with the respective clamping rings 92 disposed in opposite relative orientations wherein, with tabs 94 thereof aligned for receipt within slot 96 of barrel portion 70 of first wing 60 as shown in FIG. 11, the slot 96 of one clamping ring is disposed on one side of the aligned tabs 94 and the slot 96 of the other clamping ring 92 is disposed on an opposite side of the aligned tabs 94. Upon assembly of hinge 58, pivot shafts 88 and their respective clamping rings 92 are received within opposite ends of bore 72 of barrel portion 70 of first wing 60, with tabs 94 of clamping rings 92 received within slot 96.

[0034] In use, when first and second wings 60 and 62 are rotated relative to one another in a first direction D_1 about axis A_2 , the pair of clamping rings 92 associated with each pivot shaft 88 will both rotate about pivot shaft 88 in the same direction. However, due to the opposite orientation of the clamping rings 92 with respect to one another on each pivot shaft 88 as described above, one clamping ring 92 will clamp, or close onto, pivot shaft 88 by diameter reduction at its slot 96 while the other clamping ring 92 will to release, or open from, pivot shaft 88 by diameter increase at its slot 96. In this manner, one of the clamping rings 92 will provide a resistance to rotational movement of the first and second wings 90 and 92 relative to one another about axis A_2 , while the other clamping ring 92 will not provide such resistance. When wings 60 and 62 are moved relative to one another in an opposite, second direction D_2 about axis A_2 , the opposite of the foregoing will occur, whereby hinge 58 provides a resistance to rotational movement of first and second wings 60 and 62 relative to each other in each direction of movement.

[0035] Advantageously, for the reasons discussed below, resistance hinges 58 provide a resistance to unintentional movement of screen 52 between its storage and use positions, such as movement initiated by gravity or by incidental contact, for example, while allowing intentional movement of screen 52 by a user in overcoming the resistance force of resistance hinges 58. For example, referring to FIGS. 1, 2, 7, and 10, for example, resistance hinges 58 maintain screen 52 in its use position and overcome the force of gravity by which screen 52 would tend to pivot to its storage position. In this manner, screen 52 may be contacted by an object or subjected to a force which, in the absence of the use of resistance hinges 58, may cause screen 52 to pivot from its use position. Additionally, as may be seen from FIGS. 5, 4, and 9, for example, resistance hinges 58 aid in maintaining screen 52 in its storage position in which screen 52 is disposed substantially parallel to work surface 22 and is spaced slightly from work surface 22.

[0036] If, by contrast, screen 52 were connected to work surface 22 via conventional, non-resistance or non-torque type hinges, screen 52 would tend to easily pivot or fall over from its use position toward its storage position or otherwise may require a separate locking mechanism to retain screen 52 in its use position substantially perpendicular to work surface 22.

[0037] Referring now to FIGS. 6, 7, and 10, stop elements 98 restrict the pivoting of screen 52 relative to work surface 22

beyond the use position of screen 52 by which screen 52 is disposed perpendicular to work surface 22. Stop elements 98 generally include top plate 100 and bottom plate 102, and may be provided in different configurations.

[0038] In a first configuration, shown in FIG. 7, top plate 100 is fixed to the lower portion of rear side 56 of screen 52 via suitable fasteners, with bottom plate extending downwardly in a vertical cantilevered manner from top plate 100 and engageable with the rear edge 26 of work surface 22. In this manner, when screen 52 is disposed in its use position perpendicular to work surface 22, bottom plate 102 engages rear edge 26 of work surface to restrict further movement of screen 52 beyond its use position in which screen would be disposed at an obtuse angle with respect to work surface.

[0039] In a second configuration, shown in FIG. 10, bottom plate 102 is fixed to the rear edge 56 of work surface 22 via suitable fasteners, with top plate 100 extending upwardly in a vertical cantilevered manner from bottom plate 102 and engageable with the lower portion of rear face 56 of work surface 22. In this manner, when screen 52 is disposed in its use position perpendicular to work surface 22, top plate 100 engages rear side 56 of screen to restrict further movement of screen 52 beyond its use position in which screen 52 would be disposed at an obtuse angle with respect to work surface 22.

[0040] Referring to FIGS. 8 and 9, table 20 may further include modesty panel 104. Modesty panel 104 can be constructed of various materials (e.g., metal, wood, plastic, and other composites) and may have various tints (e.g., clear or translucent, semi-translucent, and opaque). Modesty panel 104 is pivotably connected between work surface support beams 38 and, in one embodiment, modesty panel 104 may be freely pivotably connected between work surface support beams 38 such that, as shown in FIG. 8, when work surface 22 is in its horizontal use position, modesty panel 104 hangs freely by the force of gravity from work surface support beams 38 in a vertical position perpendicular to work surface 22 and, as shown in FIG. 9, when work surface 22 is in its vertical storage position, modesty panel 104 hangs freely by the force of gravity from work surface support beams 38 in a vertical position parallel to work surface 22.

[0041] In sum, as described below, various configurations of table 20 exhibit the different interactions between the various components described above.

[0042] Referring to FIGS. 1-3 and 8, table 20 is shown with work surface 22 in its horizontal, use position. Screen 52 is disposed in its vertical, use position perpendicular to work surface 22 and, as shown in FIG. 8, modesty panel 104 hangs freely from work surface 22 perpendicular to work surface 22. Screen 52 is held in its vertical, use position by resistance hinges 58, which advantageously hold screen 52 in such position and resist unintentional pivotal movement of screen 52 towards its storage position. Additionally, stop elements 98 restrict movement of screen 52 beyond its vertical use position.

[0043] Referring to FIG. 5, work surface 22 is shown in its horizontal, use position with screen 52 in its storage position parallel to work surface 22. Advantageously, in the storage position of screen 52, resistance hinges 58 hold screen parallel to work surface 22 in a manner in which screen is spaced from work surface 22 with a slight gap between screen 52 and work surface 22 such that table 20, or a number of tables 20, may be moved and reconfigured within an office space without screens 52 scraping or bumping against their corresponding work surfaces 22.

[0044] Referring to FIGS. 4 and 9, work surface 22 is disposed in its vertical, storage position and screen 52 is shown in its storage position parallel to work surface 22. Although screen 52 is shown attached to the rear (or lower) edge of work surface 22 with the end of screen positioned above hinge 58, the rotation mechanisms 40 and work surface 22 of table 20 may be alternatively configured such that screen 52 is attached to an opposite edge with the end of screen 52 positioned below hinge 58 when work surface is disposed in the position shown in FIGS. 4 and 10. Advantageously, similar to the position of screen 52 shown in FIG. 5, in the position of screen 52 shown in FIGS. 4 and 9, resistance hinges 58 hold screen 52 parallel to work surface 22 in a manner in which screen 52 is spaced from work surface 22 with a slight gap between screen 52 and work surface 22, with pivoting of screen 52 from such position by the force of gravity prevented. Also, as shown in FIG. 9, modesty panel 104 freely hangs from work surface 22 in a vertical position parallel to both work surface 22 and screen 52 such that work surface 22, screen 52, and modesty panel 104 are all disposed vertically parallel to one another to together provide a compact, overall profile that is slim in horizontal dimension to facilitate nesting of a number of tables 20 for storage.

[0045] Lastly, FIGS. 7 and 10 illustrate how screen 52, shown in dashed lines in an intermediate position between its use and storage positions, may be held by resistance hinges 58 at any intermediate position between its use and storage positions relative to work surface 22 that may be desired by a user.

[0046] While this disclosure has been described as having exemplary embodiments and scenarios, the present disclosure can be further modified within the spirit and scope of this disclosure. This application is therefore intended to cover any variations, uses, or adaptations of the disclosure using its general principles. Further, this application is intended to cover such departures from the present disclosure as come within known or customary practice in the art to which this disclosure pertains and which fall within the limits of the appended claims.

1. A table, comprising:
a support structure;
a work surface pivotally mounted to said support structure, said work surface pivotable between a first, use position and a second, storage position;
a screen pivotally connected to said work surface, said screen pivotable between a first position in which said screen is disposed substantially parallel to, and is spaced from, said work surface and a second position in which said screen is disposed substantially perpendicular to said work surface; and
at least one stop element affixed to at least one of said work surface and said screen, said at least one stop element operable to prevent pivotal movement of said screen beyond said second position from said first position.
2. The table of claim 1, wherein said at least one stop element is affixed to said screen.
3. The table of claim 2, wherein said at least one stop element abuts an edge of said work surface when said screen is in said second position.
4. The table of claim 1, wherein said at least one stop element is affixed to said work surface.
5. The table of claim 4, wherein said at least one stop element abuts said screen when said screen is in said second position.

6. The table of claim 1, further comprising a hinge which provides a resistance to movement of said screen between said first and second positions.

7. The table of claim 1, wherein said work surface comprises a rear edge and a front edge, said rear edge disposed below said front edge when said work surface is in said storage position, said screen attached to said work surface along said rear edge.

8. The table of claim 1, further comprising a freely pivotable modesty panel pivotally connected to said work surface.

9. A table, comprising:

a support structure;

a work surface pivotally connected to said support structure, said work surface pivotable between a first, use position and a second, storage position;

a screen pivotally connected to said work surface via at least one resistance hinge, said screen pivotable between a first position in which said screen is disposed substantially parallel to said work surface and a second position in which said screen is disposed substantially perpendicular to said work surface, said resistance hinge providing a resistance to movement of said screen between said first and second positions; and

wherein said work surface comprises a rear edge and a front edge, said rear edge disposed below said front edge when said work surface is in a storage position, said screen attached to said work surface along said rear edge.

10. The table of claim 9, wherein said resistance hinge includes at least a pair of components in frictional engagement with one another.

11. The table of claim 9, further comprising at least one stop element affixed to at least one of said work surface and said screen, said at least one stop element operable to prevent pivotal movement of said screen beyond said second position from said first position.

12. The table of claim 11, wherein said at least one stop element is affixed to said work surface.

13. The table of claim 11, wherein said at least one stop element is affixed to said screen.

14. (canceled)

15. The table of claim 9, wherein said screen in said first position forms substantially a right angle with said work surface and said screen in said second position is disposed substantially parallel to said work surface.

16. The table of claim 9, further comprising a freely pivotable modesty panel pivotally connected to said work surface.

17. A table, comprising

a support structure;

a work surface pivotally connected to said support structure, said work surface pivotable between a first, use position and a second, storage position;

a screen pivotally connected to said work surface via at least one resistance hinge including at least a pair of components in frictional engagement with one another, said screen pivotable between a first position in which said screen is disposed substantially parallel to said work surface and a second position in which said screen is disposed substantially perpendicular to said work surface, said resistance hinge providing a resistance to movement of said screen between said first and second positions; and

at least one stop element affixed to at least one of said work surface and said screen, said at least one stop element operable to prevent pivotal movement of said screen beyond said second position from said first position.

18. The table of claim **9**, wherein in said first position, said screen is spaced from said work surface.

19. The table of claim **17**, wherein said at least one stop element is affixed to said work surface.

20. The table of claim **17**, wherein said at least one stop element is affixed to said screen.

21. The table of claim **17**, wherein said work surface comprises a rear edge and a front edge, said rear edge disposed below said front edge when said work surface is in said storage position, said screen attached to said work surface along said rear edge.

22. The table of claim **17**, wherein in said first position, said screen is spaced from said work surface.

* * * * *