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(54) **COLLAPSIBLE DESK**

(57) **ABSTRACT**

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A collapsible desk includes two pedestals, multiple pedestal drawers and a top board. Each pedestal includes a front frame, an outer panel, an inner panel and a rear frame. The front and rear frames are hinged to the outer panel. The inner panel is hung on the front and rear frames. Each pedestal drawer includes a front board, a rear board, two side boards, a bottom board and multiple pins. The front, rear and side boards are connected to each other by the pins. The top board has two ridges and multiple pins. The ridges correspond respectively to the pedestals and are connected to the pedestal by the pins. Accordingly, all components of the collapsible desk are mounted detachably to each other without using tools and assembling the collapsible desk is easy and convenient.

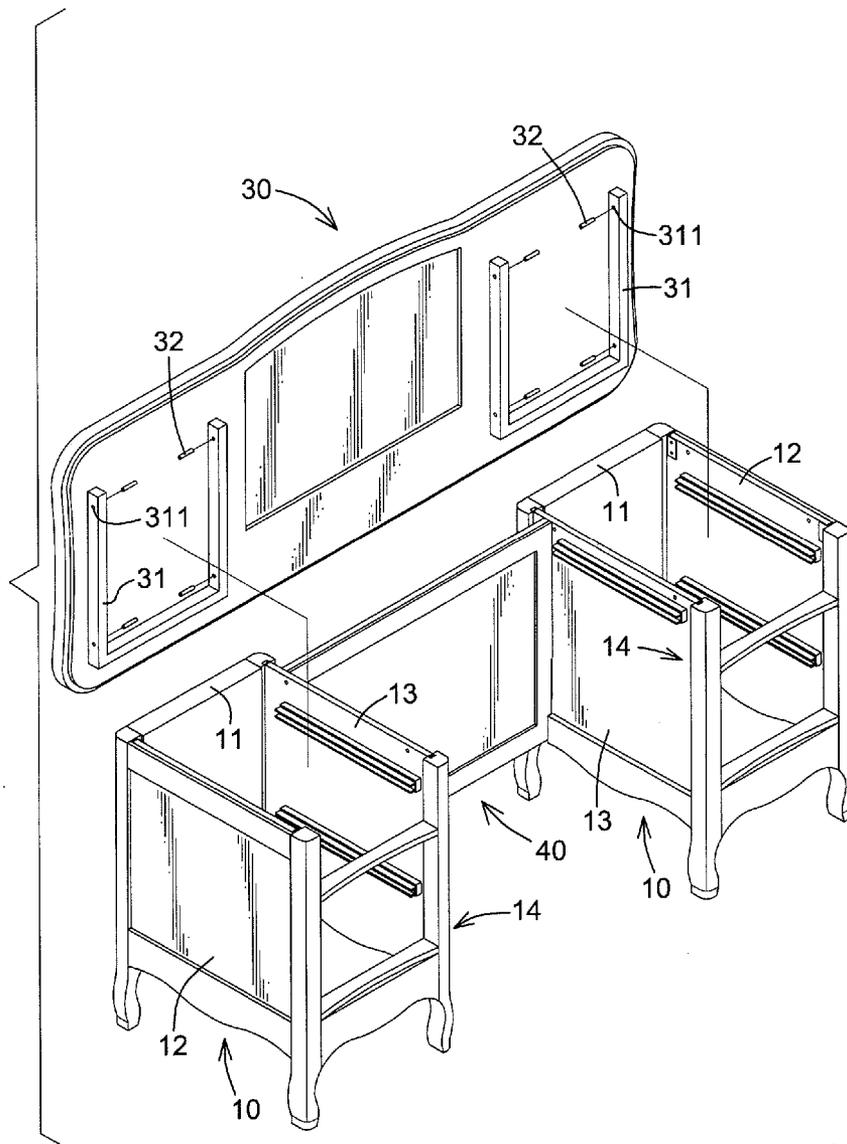
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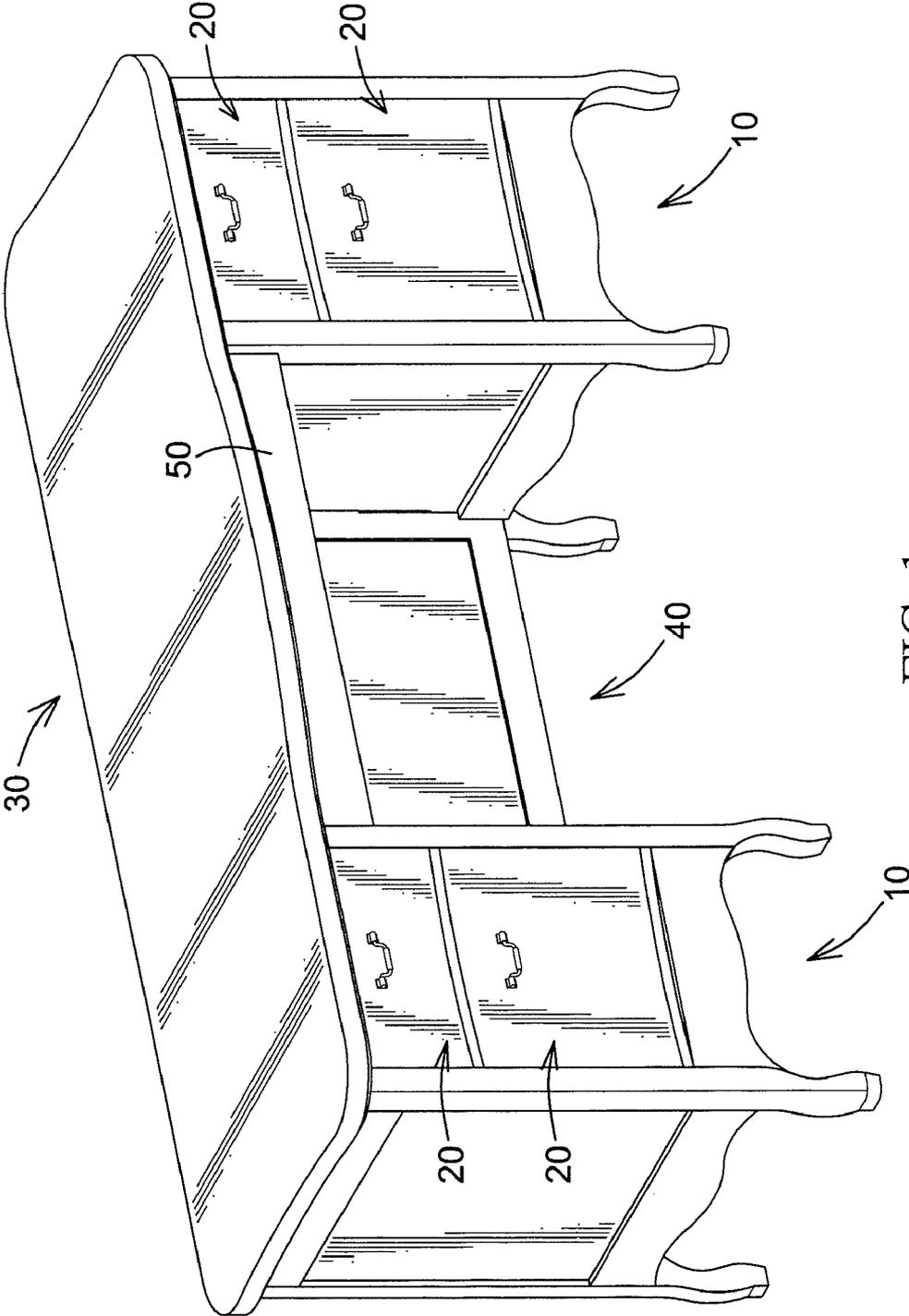


FIG. 1

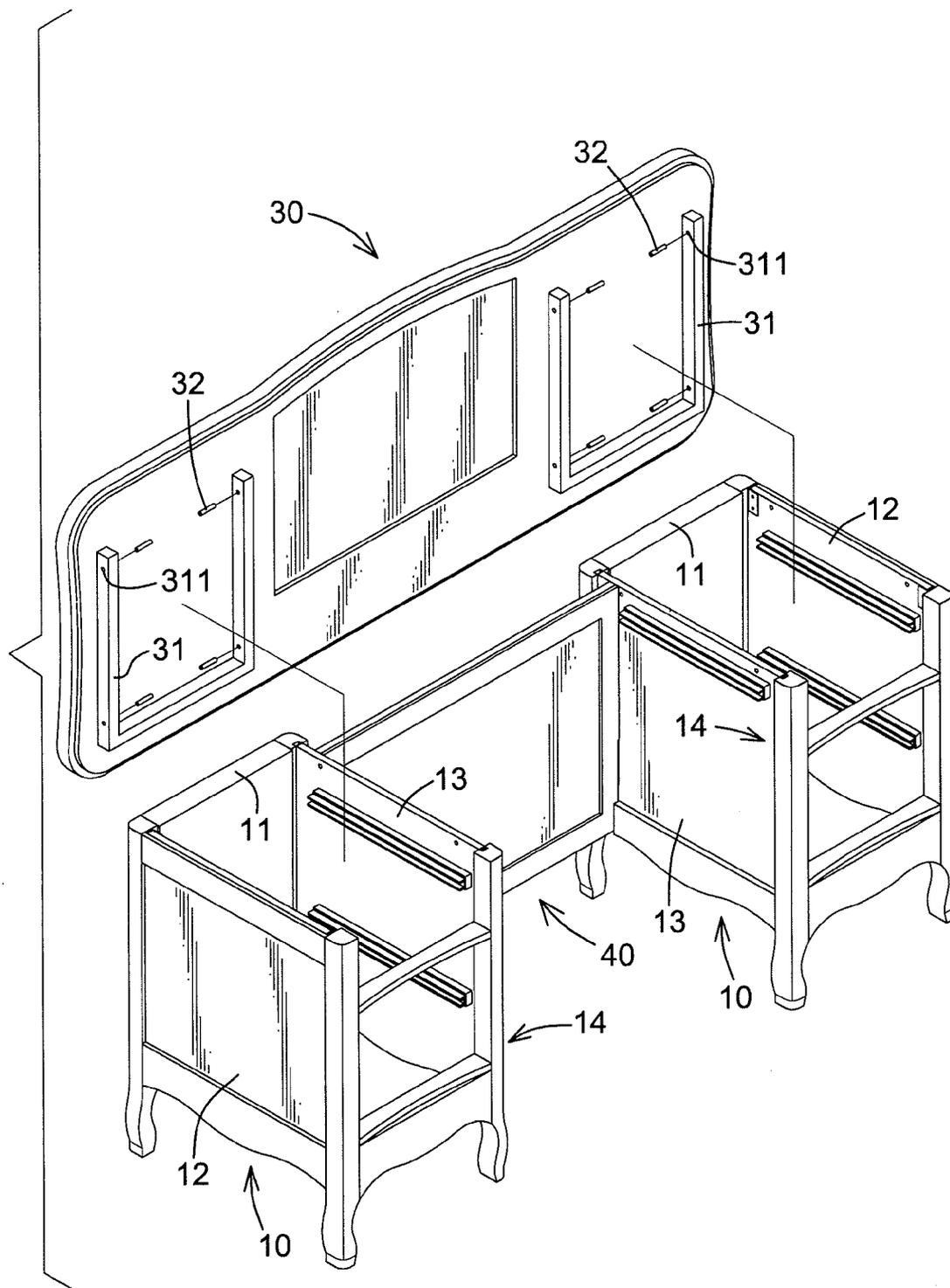


FIG. 2



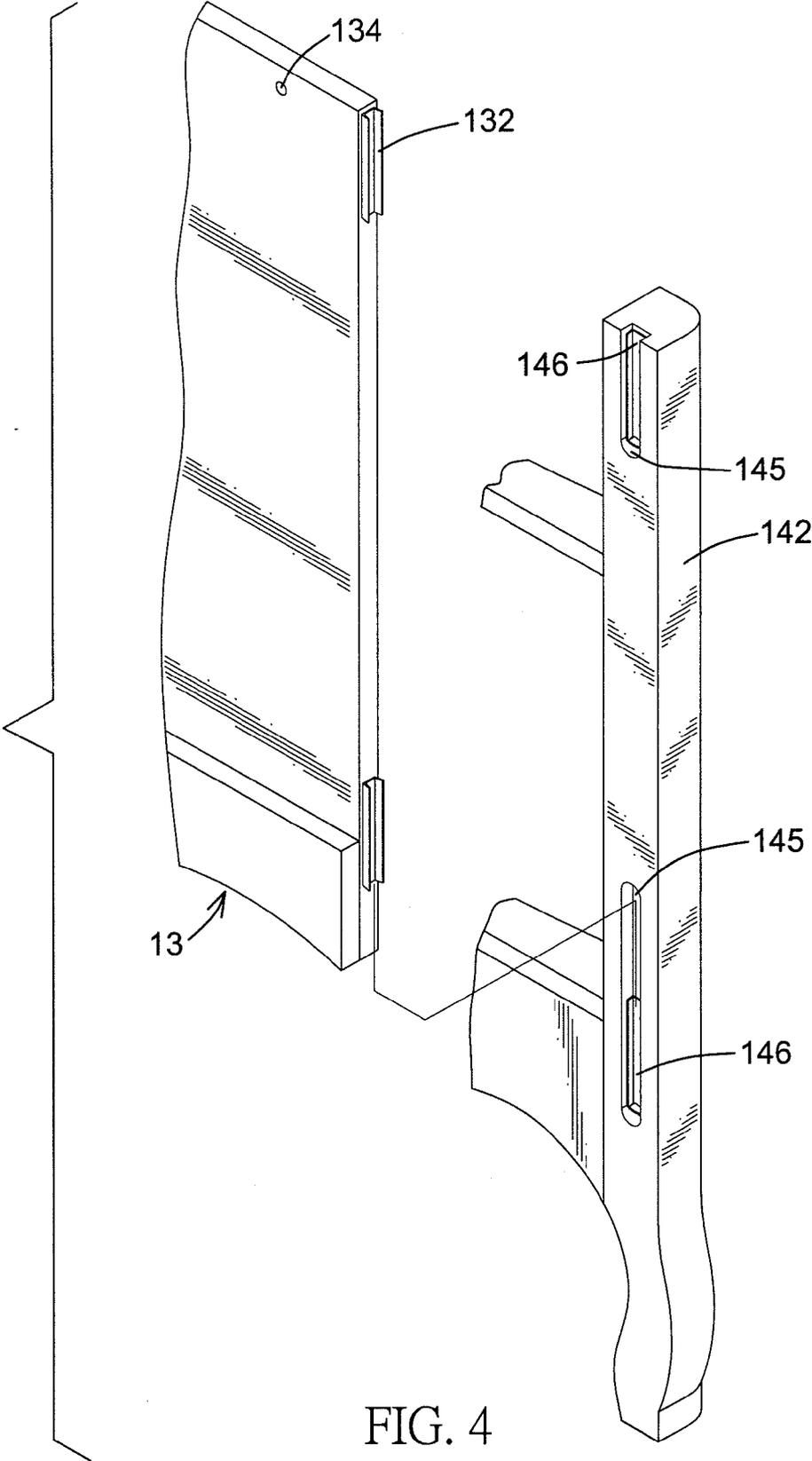


FIG. 4



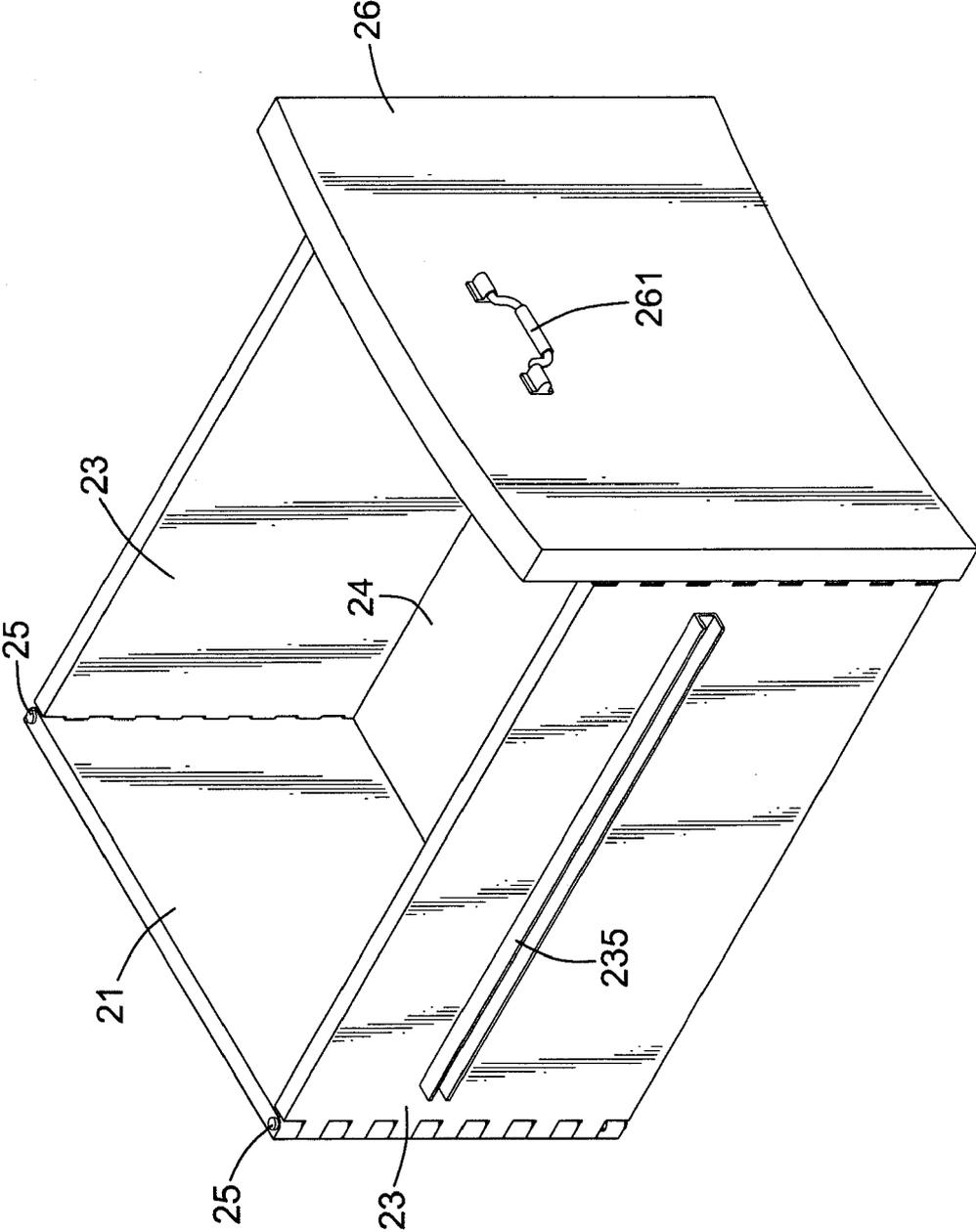


FIG. 6

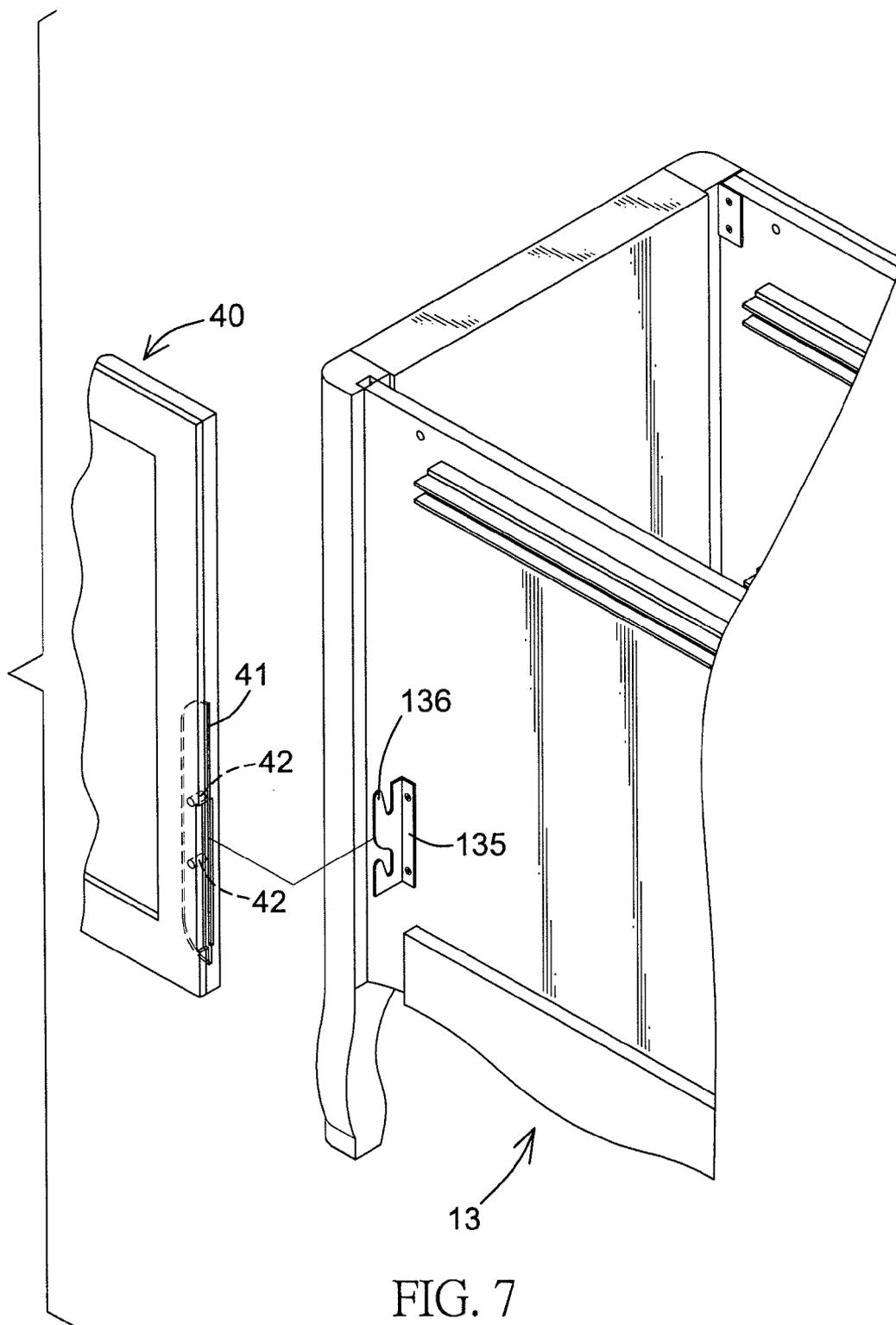


FIG. 7

**COLLAPSIBLE DESK**

**BACKGROUND OF THE INVENTION**

[0001] 1. Field of Invention

[0002] The present invention relates to a desk, and more particularly to a collapsible desk that is easy to transport and store and can be assembled quickly without using tools.

[0003] 2. Description of the Related Art

[0004] Traditional furniture items such as tables and desks are often expensive due to high labor cost required for assembling tables and desks. In addition, space and charge for transporting and storing are also required.

[0005] Thus, a collapsible furniture is provided to reduce cost and space for manufacturing the furniture. However, to assemble a conventional collapsible furniture needs different tools such as wrenches or screwdrivers and spends much time for a user.

[0006] To overcome the shortcomings, the present invention provides a collapsible desk to mitigate or obviate the aforementioned problems.

**SUMMARY OF THE INVENTION**

[0007] The primary objective of the present invention is to provide a collapsible desk that can be assembled easily without using tools.

[0008] The collapsible desk in accordance with the present invention comprises two pedestals, multiple pedestal drawers and a top board. Each pedestal comprises a front frame, a rear frame, an outer panel and an inner panel. The front frame comprises an outer leg, an inner leg and a connecting bar. The outer leg has a rear side. The inner leg has a rear side, at least one hanging groove defined in the rear side of the inner leg and at least one hanging holder. The at least one hanging holder corresponds to and is mounted in the at least one hanging groove of the inner leg. The connecting bar is mounted between the outer and inner legs.

[0009] The outer panel is hinged to the front frame and has a front side, a rear side, a top, an inner surface, at least one drawer holder and multiple pin holes. The front side of the outer panel is mounted on the rear side of the front frame. The at least one drawer holder is mounted on the inner surface of the outer panel. The pin holes are defined through the outer panel near the top.

[0010] The inner panel is connected detachably to the front frame and has a front side, a rear side, a top, an inner surface, an outer surface, at least one front hanging holder, at least one rear hanging holder, at least one drawer holder and multiple pin holes. The at least one front hanging holder is mounted on the front side of the inner panel. The at least one front hanging holder corresponds to and is hanged on the hanging holder on the inner leg of the front frame. The at least one rear hanging holder is mounted on the rear side of the inner panel. The at least one drawer holder corresponds to the at least one drawer holder of the outer panel and is mounted on the outer surface of the inner panel. The pin holes are defined through the inner panel near the top.

[0011] The rear frame is hinged to the outer panel and comprises an outer leg, an inner leg and a connecting bar. The outer leg has a front side. The front side of the outer leg is hinged to the rear side of the outer panel. The inner leg has a front side, at least one hanging groove defined in the front side of the inner leg and at least one hanging holder. The at least one hanging holder is mounted in the at least one

hanging groove and corresponds to and is engaged with the at least one rear hanging holder on the rear side of the inner panel. The connecting bar is mounted between the outer and inner legs of the rear frame.

[0012] The pedestal drawers are mounted slidably in the pedestals and comprise a front board, a rear board, two side boards, a bottom board and multiple pins. The front board has two sides, a top, a bottom, multiple lugs, multiple recesses, multiple through holes and a groove. The lugs are formed at intervals on both sides of the front board. The recesses are defined between the lugs. The through holes is defined through the lugs near the top and the bottom of the front board and aligned with each other. The groove is defined near the bottom of the front board.

[0013] The rear board has two sides, a top, a bottom, multiple lugs, multiple recesses and multiple through holes. The lugs are formed at intervals on both sides of the rear board. The recesses are defined between the lugs. The through holes is defined through the lugs near the top and the bottom of the rear board and aligned with each other.

[0014] The side boards are mounted detachably and respectively on the sides of the front and rear boards and each has two sides, a top, a bottom, an outer surface, multiple lugs, multiple recesses, multiple through holes and a groove. The lugs are formed at intervals on both sides of the side board, correspond to and are inserted into the recesses of in corresponding sides of the front and rear boards. The recesses are defined between the lugs and are engaged with the lugs on the corresponding sides of the front and rear boards. The through holes are defined through the lugs near the top and the bottom of the side board and are aligned with the through holes in the corresponding sides of the front and rear boards. The groove is defined near the bottom of the side board and is aligned with the groove of the front board.

[0015] The bottom board is mounted in the grooves of the front board and the side boards and abuts with the rear board.

[0016] The pivots are inserted into the through holes in the lugs of the front, rear and side boards.

[0017] The top board is mounted detachably on the pedestals and has a bottom surface, two ridges and multiple pins. The ridges are formed on the bottom surface of the top board, correspond respectively to the pedestals and each has multiple pin holes. The pin holes are defined through the ridge and are aligned respectively with the pin holes in the outer and inner panels of one of the pedestals. The pins are mounted in the pin holes of the ridges and the outer and inner panels of the pedestals.

[0018] Other objectives, advantages and novel features of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

**BRIEF DESCRIPTION OF THE DRAWINGS**

[0019] FIG. 1 is a perspective view of a collapsible desk in accordance with the present invention;

[0020] FIG. 2 is an exploded perspective view of the collapsible desk in FIG. 1 without drawers;

[0021] FIG. 3 is an exploded perspective view of the pedestal of the collapsible desk in FIG. 1;

[0022] FIG. 4 is an exploded perspective view of the inner panel and the inner leg of the rear frame of the collapsible desk in FIG. 1;

[0023] FIG. 5 is an exploded perspective view of the drawer of the collapsible desk in FIG. 1;

[0024] FIG. 6 is a perspective view of the drawer of the collapsible desk in FIG. 1; and

[0025] FIG. 7 is an exploded perspective view of the central panel and the inner panel of the collapsible desk in FIG. 1.

#### DETAILED DESCRIPTION OF THE INVENTION

[0026] With reference to FIGS. 1, 2 and 3, a collapsible desk in accordance with the present invention comprises two pedestals (10), multiple pedestal drawers (20), a top board (30) and may have a central panel (40) and at least one central drawer (50). Each pedestal (10) comprises a front frame (11), an outer panel (12), an inner panel (13) and a rear frame (14). The front frame (11) comprises an outer leg (111), an inner leg (112) and a connecting bar (113) and may have a connecting panel (114). The outer leg (111) has a rear side. The inner leg (112) has a rear side, at least one hanging groove (115) and at least one hanging holder (116). The at least one hanging groove (115) is defined in the rear side of the inner leg (112). The at least one hanging holder (116) corresponds to and is mounted in the at least one hanging groove (115) respectively. The connecting bar (113) is mounted between the outer and inner legs (111, 112). The connecting panel (114) is mounted between the outer and inner legs (111, 112) to enhance the structural strength and appearance of the front frame (11).

[0027] The outer panel (12) is hinged to the front frame (11) and has a front side, a rear side, a top, an inner surface, at least one drawer holder (121) and multiple pin holes (122). The front side of the outer panel is hinged to the rear side of the outer leg (111) of the front frame (11). The at least one drawer holder (121) is mounted on the inner surface of the outer panel (12). The pin holes (122) are defined through the outer panel (12) near the top.

[0028] With further reference to FIG. 4, the inner panel (13) is connected detachably to the front frame (11) and has a front side, a rear side, a top, an inner surface, an outer surface, at least one front hanging holder (131), at least one rear hanging holder (132), at least one drawer holder (133) and multiple pin holes (134) and may have a hanger (135) and at least one central drawer holder (137). The inner surface of the inner panel (13) faces and corresponds to the inner surface of the outer panel (12). The at least one front hanging holder (131) is mounted on the front side of the inner panel (13) and corresponds to and is hung on the at least one hanging holder (116) on the inner leg (112) of the front frame (11) respectively. The at least one rear hanging holder (132) is mounted on the rear side of the inner panel (13). The at least one drawer holder (133) corresponds to the at least one drawer holder (121) of the outer panel (12) and is mounted on the inner surface of the inner panel (13). The pin holes (134) are defined through the inner panel (13) near the top. The hanger (135) is mounted on the outer surface of the inner panel (13) near the front end and has at least one hook (136). The at least one central drawer holder (137) is mounted on the outer surface of the inner panel (13).

[0029] The rear frame (14) is hinged to the outer panel (12) and comprises an outer leg (141), an inner leg (142), a connecting bar (143) and may have at least one drawer bar (144). The outer leg (141) has a front side hinged to the rear side of the outer panel (12). The inner leg (142) has a front

side, at least one hanging groove (145) and at least one hanging holder (146). The at least one hanging groove (145) is defined in the front side of the inner leg (14). The at least one hanging holder (146) is mounted in the at least one hanging groove (145) respectively, corresponds to and is engaged with the at least one rear hanging holder (132) of the inner panel (13). The connecting bar (143) is mounted between the outer and inner legs (141, 142) of the rear frame (14). The at least one drawer bar (144) is mounted between the outer and inner legs (141, 142) of the rear frame.

[0030] To assemble the inner panel (13) to the front and rear frames (11, 14), the front and rear frames (11, 14) can be pivoted relative to the outer panel (12) to adjust the distance between the inner legs (112, 142) of the front and rear frames (11, 14) for conveniently hanging the inner panel (13) onto the frames (11, 14).

[0031] With further reference to FIGS. 5 and 6, the pedestal drawers (20) are mounted slidably in the pedestals (10) and comprises a front board (21), a rear board (22), two side boards (23), a bottom board (24) and multiple pivots (25) and may have a face board (26). The front board (21) has two sides, a top, a bottom, multiple lugs (211), multiple recesses (212), multiple through holes (213) and a groove (214). The lugs (211) are formed at intervals on both sides of the front board (21). The recesses (212) are defined between the lugs (211). The multiple through holes (213) are defined through the lugs (211) near the top and the bottom of the front board (21). The groove (214) is defined near the bottom of the front board (21).

[0032] The rear board (22) is curved and has two sides, a top, a bottom, multiple lugs (221), multiple recesses (222) and multiple through holes (223). The lugs (221) are formed at intervals on both sides of the rear board (22). The recesses (222) are defined between the lugs (221). The multiple through holes (222) are defined through the lugs (221) near the top and the bottom of the rear board (22).

[0033] The side boards (23) are mounted detachably and respectively on the sides of the front and rear boards (21, 22) and each has two sides, an outer surface, a top, a bottom, multiple lugs (231), multiple recesses (232), multiple through holes (233), a groove (234) and a drawer holder (235). The lugs (231) are formed at intervals on both sides of the side board (23) and correspond to and are inserted into the recesses (212, 222) on corresponding sides of the front and rear boards (21, 22). The recesses (232) are defined between the lugs (231) and engaged with the lugs (211, 221) on the corresponding sides of the front and rear boards (21, 22). The multiple through holes (233) are defined through the lugs (231) near the top and the bottom and aligned with the through holes (233) in the corresponding sides of the front and rear boards (21, 22). The groove (234) is defined near the bottom of the side board (23) and is aligned with the groove (214) of the front board (21). The drawer holder (235) corresponds to one of the drawer holders (121, 133) of the pedestal (10) and is mounted on the outer surface of the side board (23).

[0034] The bottom board (24) is mounted in the grooves (214, 234) of the front board (21) and the side boards (23) and abuts with the rear board (22).

[0035] The pivots (25) are inserted into the through holes (213, 223, 233) of the front, side and rear boards (21, 22, 23) to combine the front, side and rear boards (21, 22, 23) together. The face board (26) is attached on the rear board (22) and has a handle (261).

[0036] The top board (30) is mounted detachably on the pedestals (10) and has a bottom surface, two ridges (31) and multiple pins (32). The ridges (31) are formed on the bottom surface of the top board (30), correspond respectively to the pedestals (10) and each has multiple pin holes (311). The pin holes (311) in the ridge (31) are aligned with the pin holes (122, 134) in the outer and inner panels (12, 13) of a corresponding one of the pedestals (10). The pins (32) are mounted in the pin holes (311, 12, 13) in the ridges and the outer and inner panels (12, 13) of the pedestals (10).

[0037] With further reference to FIG. 7, the central panel (40) is mounted detachably between the inner panels (13) of the pedestals (10) and has two sides. Each side of the central panel is hung on the hanger (135) on the inner panel (13) of one of the pedestals (10) and has a hanging groove (41) and at least one post (42). The at least one post (42) is formed in the hanging groove (41) of the central panel (40) and corresponds to and is engaged with the at least one hook (136) of the hanger (135).

[0038] The at least one central drawer (50) is thin relative to the pedestal drawers (20) and is mounted between the central drawer holders (137) on the inner panels (13) of the pedestals (10).

[0039] When the collapsible desk is assembled, all components of the collapsible desk can be combined together without using tools. Thus, assembling the collapsible desk in accordance with the present invention is easy and convenient. In addition, all components of the collapsible desk are flat and can be packed into a small space. Accordingly, when the collapsible desk is disassembled, the collapsible desk can be transported and stored easily and cost therefor can be reduced.

[0040] Even though numerous characteristics and advantages of the present invention have been set forth in the foregoing description, together with details of the structure and function of the invention, the disclosure is illustrative only. Changes may be made in detail, especially in matters of shape, size and arrangement of parts within the principles of the invention to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.

What is claimed is:

- 1. A collapsible desk comprising
  - two pedestals each comprising
    - a front frame comprising
      - an outer leg having a rear side;
      - an inner leg having
        - a rear side;
        - at least one hanging groove being defined in the rear side of the inner leg; and
        - at least one hanging holder being corresponding to and mounted in the at least one hanging groove of the inner leg; and
      - a connecting bar being mounted between the outer and inner legs;
    - an outer panel being hinged to the front frame and having
      - a front side being hinged to the rear side of the outer leg of the front frame;
      - a rear side;
      - a top;
      - an inner surface;
      - at least one drawer holder being mounted on the inner surface of the outer panel; and

- multiple pin holes being defined through the outer panel near the top;
- an inner panel being connected detachably to the front frame and having
  - a front side;
  - a rear side;
  - a top;
  - an inner surface being facing and corresponding to the inner surface of the outer panel;
  - an outer surface;
  - at least one front hanging holder being mounted on the front side of the inner panel and corresponding to and hung on the at least one hanging holder on the inner leg of the front frame;
  - at least one rear hanging holder being mounted on the rear side of the inner panel;
  - at least one drawer holder being mounted on the inner surface of the inner panel and corresponding to the at least one drawer holder of the outer panel; and
- multiple pin holes being defined through the inner panel near the top; and
- a rear frame being hinged to the outer panel and comprising
  - an outer leg having a front side being hinged to the rear side of the outer panel;
  - an inner leg having
    - a front side;
    - at least one hanging groove being defined in the front side of the inner leg; and
    - at least one hanging holder being mounted in the at least one hanging groove of the rear frame and corresponding to and engaged with the at least one rear hanging holder on the rear side of the inner panel; and
  - a connecting bar being mounted between the outer and inner legs of the rear frame;
- multiple pedestal drawers being mounted slidably in the pedestals and each comprising
  - a front board having
    - two sides;
    - a top;
    - a bottom;
    - multiple lugs being formed at intervals on both sides of the front board;
    - multiple recesses being defined between the lugs;
    - multiple through holes being defined through the lugs near the top and the bottom of the front board and aligned with each other; and
    - a groove being defined near the bottom of the front board;
  - a rear board having
    - two sides;
    - a top;
    - a bottom;
    - multiple lugs being formed at intervals on both sides of the rear board;
    - multiple recesses being defined between the lugs of the rear board; and
    - multiple through holes being defined through the lugs near the top and the bottom of the rear board and aligned with each other;

two side boards being mounted detachably and respectively on the sides of the front and rear boards and each having

- two sides;
- a top;
- a bottom;
- an outer surface;
- multiple lugs being formed at intervals on both sides of the side board and corresponding to and inserted into the recesses in corresponding sides of the front and rear boards;
- multiple recesses being defined between the lugs of the side board and engaged with the lugs on the corresponding sides of the front and rear boards;
- multiple through holes being defined through the lugs near the top and the bottom of the side board and aligned with the through holes in the corresponding sides of the front and rear boards; and
- a groove being defined near the bottom of the side board and aligned with the groove of the front board;

a bottom board being mounted in the grooves of the front board and the side boards and abutting with the rear board; and

multiple pivots being inserted into the aligned through holes in the lugs of the front, rear and side boards; and

a top board being mounted detachably on the pedestals and having

- a bottom surface;
- two ridges being formed on the bottom surface of the top board, corresponding respectively to the pedestals and each having
- multiple pin holes being defined through the ridge and aligned respectively with the pin holes in the outer and inner panels of one of the pedestals; and
- multiple pins being mounted in the aligned pin holes of the ridges and the outer and inner panels of the pedestals.

**2.** The collapsible desk as claimed in claim **1**, wherein the inner panel of each pedestal further has a hanger having at least one hook;

the collapsible desk further comprises a central panel mounted detachably between the inner panels of the pedestals and having two sides; and

each side of the central panel is hung on the hanger on the inner panel of one of the pedestals and has

- a hanging groove; and
- at least one post being formed in the hanging groove, corresponding to and engaged with the at least one hook of a corresponding hanger.

**3.** The collapsible desk as claimed in claim **2**, wherein the inner panel of each pedestal further has at least one central drawer holder mounted on the outer surface of the inner panel; and

at least one central drawer is mounted between the central drawer holders on the outer surfaces of the inner panels of the pedestals.

**4.** The collapsible desk as claimed in claim **3**, wherein the front frame of each pedestal further as a connecting panel mounted between the outer and inner legs of the front frame.

**5.** The collapsible desk as claimed in claim **4**, wherein the rear frame of each pedestal further has at least one drawer bar mounted between the outer and inner legs of the rear frame.

**6.** The collapsible desk as claimed in claim **5**, wherein each pedestal drawer further has a face board attached on the rear board of the pedestal drawer and having a handle.

**7.** The collapsible desk as claimed in claim **6**, wherein the rear board of each pedestal drawer is curved.

**8.** The collapsible desk as claimed in claim **1**, wherein the inner panel of each pedestal further has at least one central drawer holder mounted on the outer surface of the inner panel; and

at least one central drawer is mounted between the central drawer holders on the outer surfaces of the inner panels of the pedestals.

**9.** The collapsible desk as claimed in claim **1**, wherein the front frame of each pedestal further has a connecting panel mounted between the outer and inner legs of the front frame.

**10.** The collapsible desk as claimed in claim **1**, wherein the rear frame of each pedestal further has at least one drawer bar mounted between the outer and inner legs of the rear frame.

**11.** The collapsible desk as claimed in claim **1**, wherein each pedestal drawer further has a face board attached on the rear board of the pedestal drawer and having a handle.

**12.** The collapsible desk as claimed in claim **1**, wherein the rear board of each pedestal drawer is curved.

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