United States Patent

Bellinder

[15] **3,684,103**

[45] **Aug. 15, 1972**

[54] **PORTABLE AND COLLAPSIBLE DISPLAY OR EXHIBIT**

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[21] Appl. No.: **12,572**

[52] **U.S. Cl.**.....**211/177,** 312/257

[51] **Int. Cl.**.....**A47f 5/10**

[58] **Field of Search** .....211/177, 178 R, 148 R; 312/257, 111, 107; 52/593–595, 584, 582; 40/125, 1; 35/65, 63; 108/90, 115, 124; 249/47, 192; 25/131 CP, 131 CF; 285/368; 248/361

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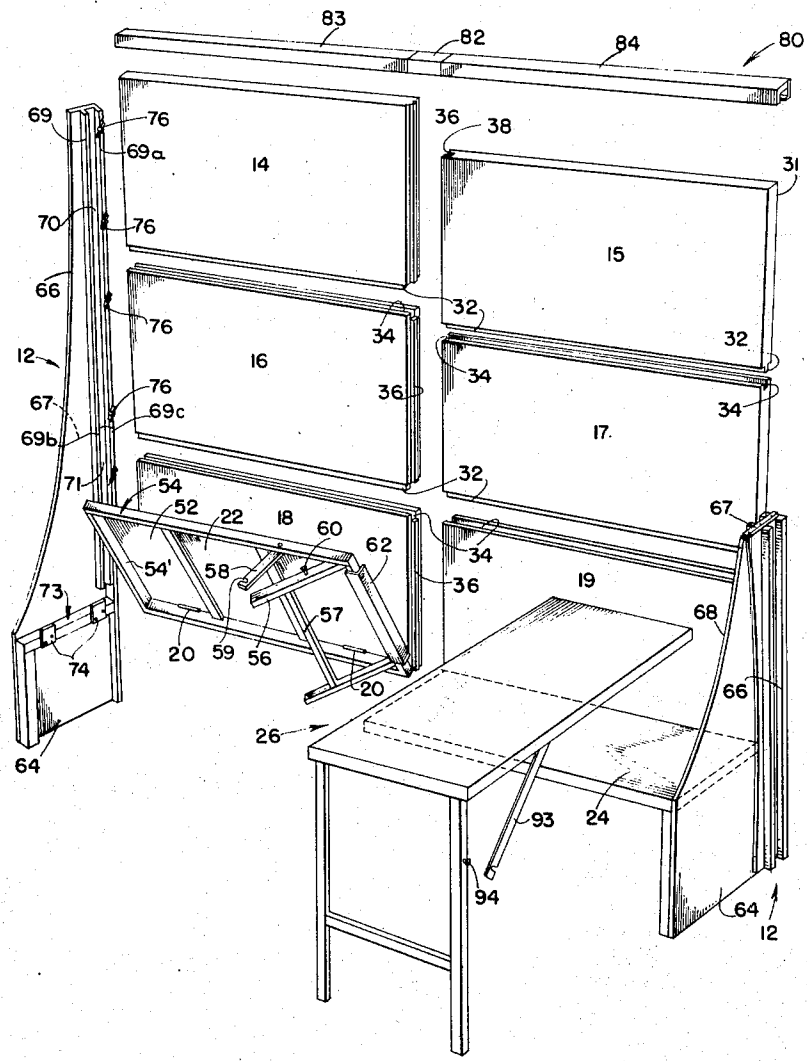
[57] **ABSTRACT**

A portable and collapsible display or exhibit comprising a plurality of disassembled parts which may be stored, shipped and transported in a knocked-down condition requiring a minimum of space and which may be readily set up and assembled to form a display or exhibit in a relatively short period of time, in a manner of approximately five minutes, and which may be repeatedly reused. It comprises a plurality of panel sections detachably secured together to form the display wall and includes side members which are readily attachable to the display wall panels and includes hinged shelves and a collapsible table or counter surface.

11 Claims, 9 Drawing Figures



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SHEET 1 OF 3

FIG. 1

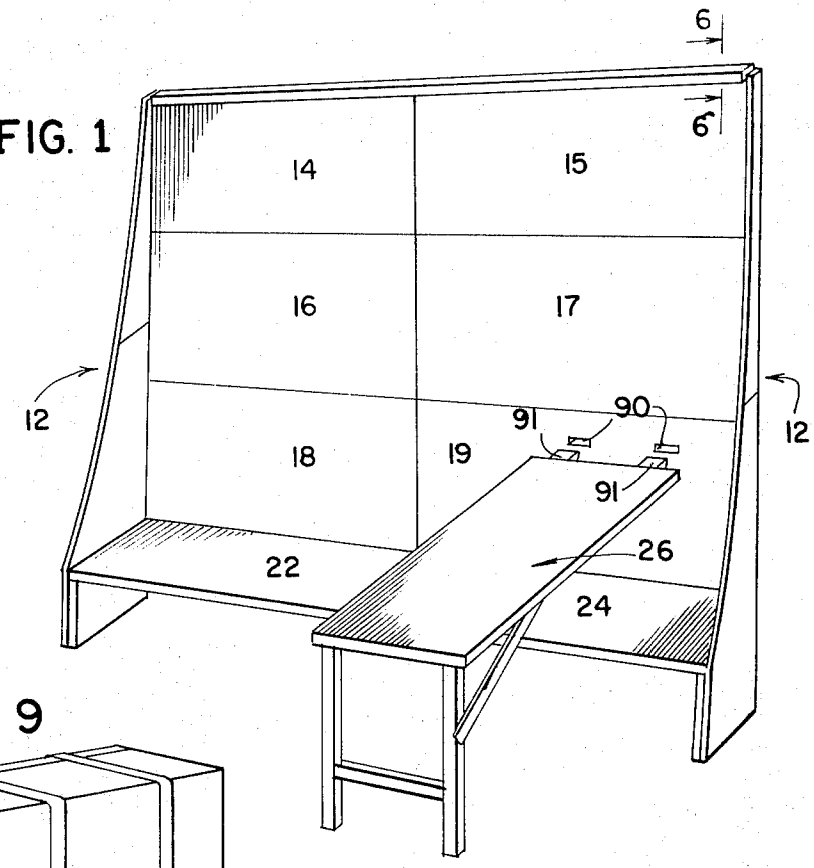

FIG. 9

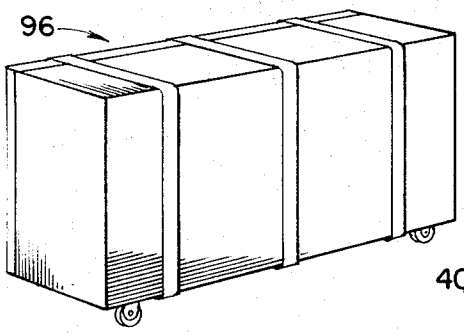

FIG. 4

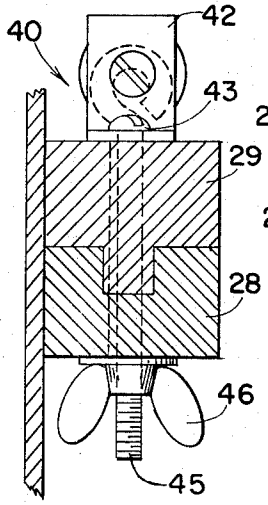

FIG. 5

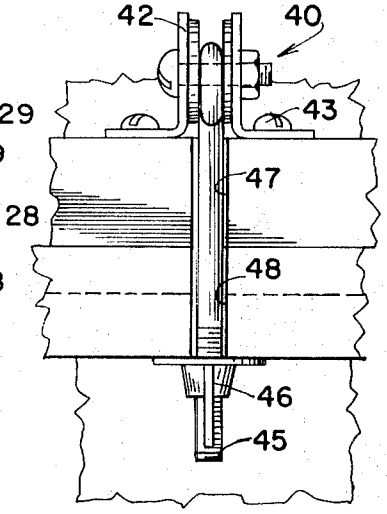

FIG. 6

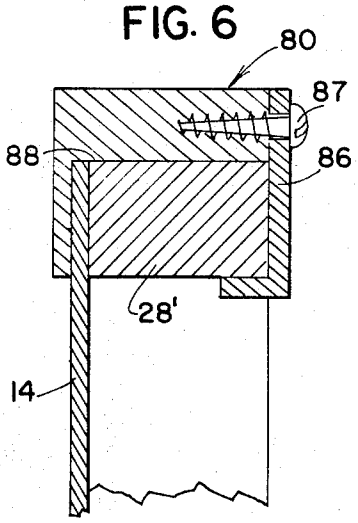

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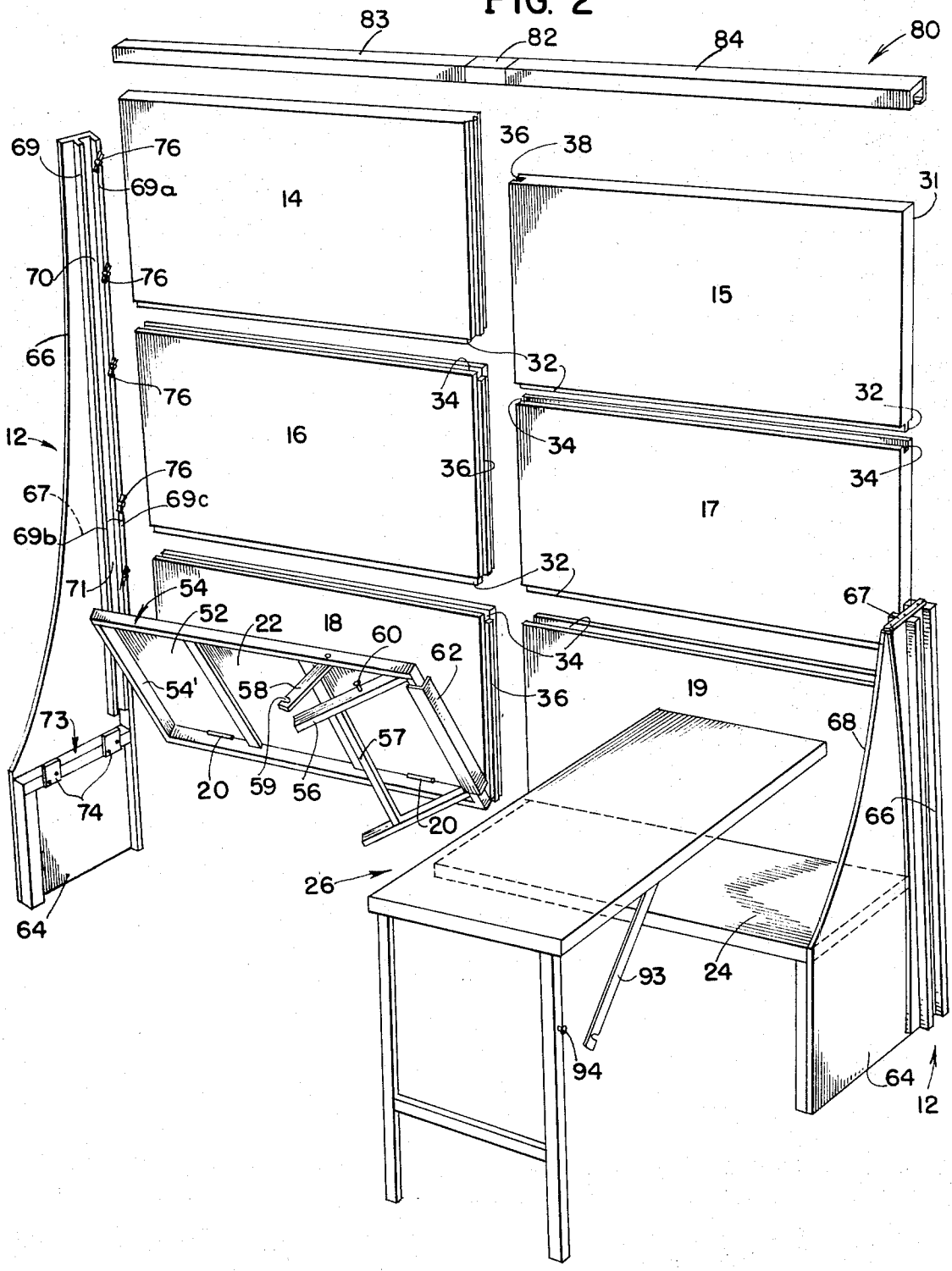
FIG. 2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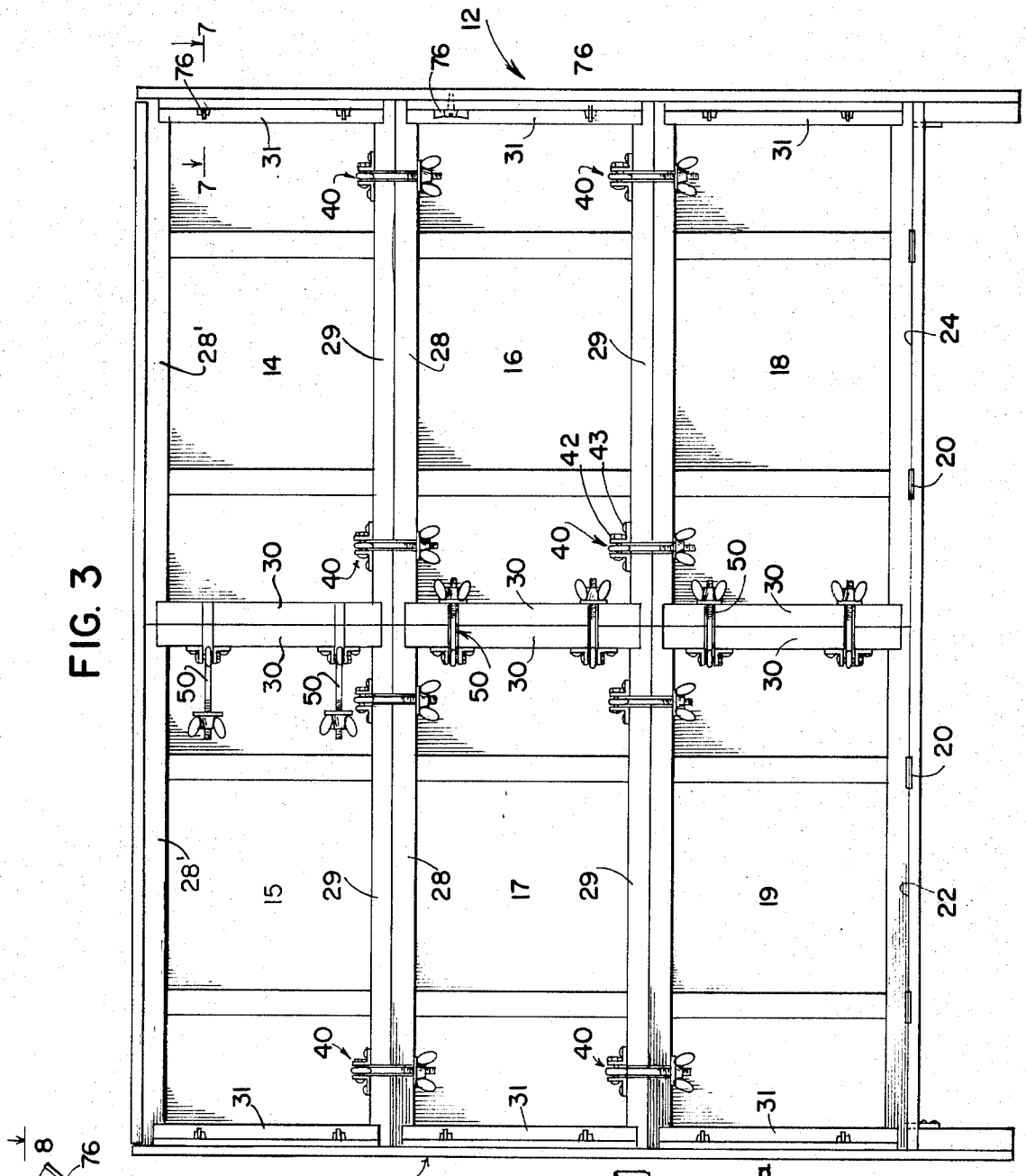

FIG. 3

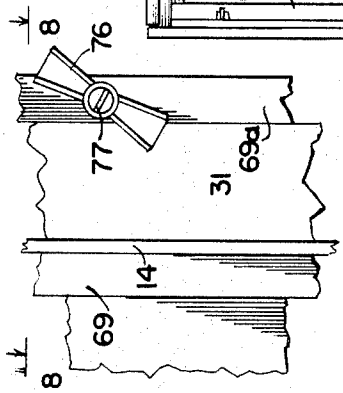

FIG. 7

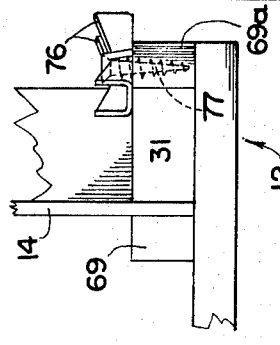

FIG. 8

PORTABLE AND COLLAPSIBLE DISPLAY OR EXHIBIT

SUMMARY OF THE INVENTION

One of the objects of this invention is to provide a knockdown portable display or exhibit formed of a plurality of components which when in disassembled condition take up very little space so that the disassembled parts can be packaged in a box or container of a relatively small size so that it can be transported in an automobile, and which may be readily assembled to form a display or exhibit in a short time of approximately five minutes or the like.

In exhibitions and the like it is customary to provide custom built displays or exhibits which in most instances have only a single use and must thereafter be discarded. Such displays or exhibits cannot be disassembled and repeatedly used but are rather built for a particular exhibition and then have to be shipped or stored in their fully built condition or else discarded. An object of this invention therefore is to provide a display or exhibit which is formed of a plurality of component parts which when disassembled occupies very little space and permits the components to be transported and/or shipped in a container requiring very little space, and which component parts are designed to be assembled in a relatively short time to form the complete display or exhibit, and after serving its purpose may be readily disassembled and repacked and stored for subsequent use.

Another object of this invention is to provide a display kit of the foregoing character which is relatively inexpensive to manufacture and which reduces to a minimum the cost of shipment, installation, storage and maintenance.

Other objects will become apparent as this description progresses.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. **1** is a perspective view of the display in a setup condition.

FIG. **2** is an exploded front view of the components forming the display unit.

FIG. **3** is a rear plan or elevational view with the components assembled.

FIG. **4** is an enlarged view, partly in section, taken on line **4—4** of FIG. **3**.

FIG. **5** is a rear elevational view of the clamping member shown in FIG. **4**.

FIG. **6** is a sectional view taken on line **6—6** of FIG. **1**.

FIG. **7** is an enlarged rear elevational view taken on line **7—7** of FIG. **3**.

FIG. **8** is an elevational view taken on line **8—8** of FIG. **7**, and

FIG. **9** is a view showing a container for carrying the dismantled display unit.

The portable and collapsible put-together display or exhibit is formed of a plurality of components and generally comprises a pair of side members **12** of identical construction, a plurality of panel sections which are secured together and which are secured to the side members **12** and which form the vertical display wall of the unit. Four of said panel sections are indicated by the respective numerals **14**, **15**, **16** and **17**.

There are two additional panel sections which form the lowermost portion of the display wall, said panel sections being identified by the numerals **18** and **19**. Hingedly secured to the panel section **18**, as at **20**, is a shelf **22** which is adapted to be supported in a horizontal position. Another shelf **24** is similarly hinged to panel section **19** to be positioned horizontally, as shown in FIG. **2**. In a collapsed position the shelf **22** is positioned flat against the panel section **18**, with the shelf **24** flat against panel section **19** to occupy a minimum of space. A collapsible table or counter generally designated by the numeral **26** is adapted to be secured to the panel section **19** and is adapted to form a table extending forwardly of the vertical display wall. The aforementioned is a general description of the important components, the details of which will now be described.

The four panel sections **14**, **15**, **16** and **17** are each of generally rectangular shape and each is formed of a front panel P made preferably of wood, plywood, or the like, provided with a rear frame to which it is suitably secured. The rear frame has spaced top and bottom horizontally extending strips **28** and **29**, respectively, connected at their ends by spaced vertically extending inner and outer strips **30** and **31**. The frame members may be made of wood.

As can best be seen in FIGS. **2** and **4**, the bottom horizontal strips **29** of panel sections **14**, **15**, **16** and **17** are shaped to form tongues **32** which nest in grooves **34** formed in the top horizontal strips **29** of panel sections **16**, **17**, **18** and **19**. The top strip **28'** of panel sections **14** and **15**, best seen in FIG. **6**, is planar and has no tongue or groove. The vertically extending inner strips **30** on panel sections **14**, **16** and **18** have a tongue **36** which rests in the grooves **38** formed in the inner strips **30'** of panel sections **15**, **17** and **19**. The outer strips **31** of all of the panel sections are planar. When the panel sections **14**, **15**, **16**, **17**, **18** and **19** are nested together by the tongues and grooves they are held and locked together by pivotal bolts generally indicated at **40**, best shown in FIGS. **3**, **4** and **5**, which will now be described.

The pivotal bolts **40** are secured on the bottom horizontal strips **29** of panel sections **14**, **15**, **16** and **17**. A pair of spaced right-angled brackets **42** are secured to the strips by screws **43**. A cross support pin **44** secured to said brackets pivotally supports a threaded bolt **45** on which is mounted a thumb nut **46**. Two of such pivotal bolts are mounted on each panel section.

The frame strip **29** and frame strip **28** are grooved or channeled as at **47** and **48** to accommodate the bolt **45**, as best seen in FIGS. **3** and **5**, to lock the panel sections together. Similar pivotal bolts **50** are mounted on the inner vertical strips **30** of panel sections **15**, **17** and **19** to engage and lock with the adjacent vertical frame strips **30** of the adjacent panel sections **14**, **16** and **18**, as best seen in FIG. **3**. With the pivotal bolts thus secured the panel sections are locked together against vertical and horizontal separation. The panel sections may be readily secured and locked together and may be separated and disassembled from each other by unlocking the bolts. The two uppermost pivotal bolts **50** are shown unlocked in FIG. **3** for the purpose of illustration.

The shelf **22** is of rectangular shape and has a panel **52** suitably secured to a rectangular frame **54**. The hinges **20** are secured to the frame of the shelf and to

the frame of panel section 18. The shelf 22 is adapted to be positioned at right angles to the panel section 18 when the display is set up and forms the bottom horizontal portion of the display. The shelf 22 has a pair of legs 56 connected by a cross-member 57. The legs are pivotally or hingedly secured to the frame 54 along the inner edge thereof and the said shelf is provided with a pivoted locking member 58 having a recess 59 which engages a pin 60 on the leg to lock the legs in a vertical position when the shelf is horizontally extended. The shelf is readily collapsible to occupy a minimum amount of space by moving it against the panel section 18 and collapsing the legs by unlatching the locking member 58. The outer end of the shelf is supported on the side member 12, as will be described. The inner end of the frame 54 of the shelf 22 supports an L-shaped strip 62 which engages the other shelf 24.

The shelf 24 is hingedly secured to panel section 19 in the same manner as is shelf 22, to permit it to be positioned at right angles when set up with respect to the display wall. When the shelf 24 is positioned in a horizontal position the inner end of the frame of the shelf will rest on an L-shaped strip 62. The outer end of the shelf will rest on the side member 12, presently to be described.

The pair of spaced side members 12 are of identical construction and hence only one will be described. The side member 12 comprises a lower section 64 and an upper section 66, the said sections being hingedly joined as at 67. Each of the sections is of substantially the same height so that when the upper section is hinged down with respect to the lower section it will be approximately midway of the height of the two sections when in upright position. The lower section 64 at its lower end has a width substantially that of the width of the shelves and then tapers inwardly along the front as at 68 as it rises to provide a reduced and tapering width. The upper section 66 has a gradually upwardly reducing width so that when the two sections 64 and 66 forming the sides of the display are in setup position, as best shown in FIG. 1, symmetrical sides will be formed.

Extending vertically in the upper section 66 of the side member and secured to the side member are spaced strips 69 and 69*a* forming a channel 70 therebetween. The lower section 64 likewise has spaced strips 69*b* and 69*c* forming a channel 71 which is alined with the upper channel and said channels are adapted to receive the outer ends of the panel sections 14, 15, 16, 17, 18 and 19. The lower portion of the side member supports an inverted U-shaped frame 73 having spaced plates 74 secured thereto. The outer side 54' of the frame of the shelf is adapted to rest on the horizontal ledge of the frame 73 and the plates 74 engage the outer side 54'. The other shelf 24 is similarly supported on the opposite side member 12.

The side members 12 are further secured to the connected panel sections forming the display wall, as best shown in FIGS. 7 and 8. The upper channel strip 69*a* and lower channel strip 69*c* each support a plurality of spaced turn-buttons 76 which are rotatably mounted on a fastening screw 77 to permit the turn-buttons to be rotated. When the outer ends of panel sections are nested within the channels 70 and 71, the turn-buttons 76 are rotated to engage the sides of the frame of the panel sections 14 through 19 to lock the side members 12 to the panel sections.

An ornamental top strip generally indicated at 80 and best shown in FIGS. 2 and 6 is secured to the top panel sections 14 and 15 to complete the display wall. The ornamental top strip 80 is formed in three sections hingedly secured together. The center section 82 with the two opposite end sections 83 and 84 are hingedly secured to the center section and the strip 80 may be collapsed by hinging the end sections inwardly with relation to the central section to occupy a minimum of space. Each strip of the sections is of inverted L-shape in cross-section and has an L-shaped metal strip 86 secured to it by means of a fastening screw 87 to provide a channel 88 to accommodate the top horizontal frame 28' of the panel sections 14 and 15 and permits the ornamental top strip 80 to be secured thereto.

The collapsible table or counter 26 is adapted to be secured to the lower panel section 19. The lower panel section 19 has a pair of spaced slots 90 into which are inserted the inverted L-shaped brackets 91 on the inner edge of the table to detachably lock the table to said rear panel section 19. The front of the table is provided with hinged legs 92 which may be collapsed adjacent to the table top and which when extended, as shown in FIGS. 1 and 2, are secured in extended position by means of a locking link 93 having a recess engaging a pin 94 on the legs. When the stand is in collapsed position the table may be readily removed and collapsed and likewise may be readily set up in extended position when desired. Lights may be mounted on the ornamental strip 80 to extend forwardly of the display wall to illuminate same.

The entire display unit may be readily disassembled and packed in a case, designated by the numeral 96, which is mounted on rollers, as shown in FIG. 9. The case is approximately forty-nine inches in length, twenty-five inches in height and sixteen inches in width. It may be housed and shipped in the case and when needed may be readily set up.

In setting up the display, the two opposite side members 12 are stood up vertically and spaced from each other. The bottom panel sections 18 and 19 are secured to the side members and their respective shelves 22 and 24 are secured to the side members 12 and to each other so that the shelves are supported in a horizontal position. The collapsible legs 56 are extended and locked by the locking means. The upper sections 66 of both side members extend above the lower sections 64. The panel sections 14, 15, 16, and 17 are joined together and interlocked and are secured in the channels of the side members.

What is claimed is:

1. A knock-down display or exhibit comprising, a plurality of panel sections forming a plurality of rows of panels with each row having a plurality of panels, each panel section formed of a rigid non-foldable material having a top horizontal edge and a bottom horizontal edge and a pair of side vertical edges, said panel sections arranged in edge to edge planar relationship to form a display wall with the bottom horizontal edge of one panel in one row positioned on the top horizontal edge of the adjacent panel in the same row, and with said horizontal panel edges having male and female portions cooperating to interfit said portions of adjacent panels one within the other to aline said panels in the same plane in said row whereby said adjacent panels may be readily interfitted when assembled and

readily separated from each other when disassembled, and the side vertical edge of one panel of one row positioned adjacent the side vertical edge of an adjacent panel of another row, and with said side vertical edges having male and female portions cooperating to interfit said portions of adjacent panels one within the other to aline said panels in the same plane in adjacent rows whereby said adjacent panels may be readily interfitted when assembled and readily separated from each other when disassembled, a pivotal bolt permanently secured to the rear of one horizontal edge of one panel and adapted to be pivoted to engage the adjacent horizontal edge of the adjacent panel of the same row to lock the two adjacent panels together in one row, another pivotal bolt permanently secured to the rear of one vertical edge of one panel and adapted to be pivoted to engage the adjacent vertical edge of the adjacent panel in the adjacent row to lock the two adjacent panels together in side by side relationship, each of said pivotal bolts when pivoted out of engagement with the adjacent panel unlocking the panels for disassembly.

2. A structure as set forth in claim 1 in which at least one of said panel sections for forming the display wall has another panel connected thereto to form a horizontal shelf when in setup position.

3. A structure as set forth in claim 1 in which said panel section comprises a front panel attached to a frame which extends rearwardly of the panel.

4. A structure as set forth in claim 1 in which one of said panel sections forming the display wall has means to detachably support a table which when set up extends forwardly of said panel sections.

5. A structure as set forth in claim 1 in which the cooperating male and female portions of the sections are interfitting tongues and grooves for joining said panel sections.

6. A structure as set forth in claim 1 in which a pair of spaced side members are detachably secured to the opposite sides of the display wall.

7. A structure as set forth in claim 6 in which the side members have a lower and upper section, with the upper section hingedly connected to the lower section to permit collapsing of said sections.

8. A structure as set forth in claim 7 in which the side members have channels cooperating with the side edges of the panel sections to nest the side edges within said channels, and means for locking said panel sections to said side members.

9. A structure as set forth in claim 1 in which a strip is detachably secured to the uppermost panel sections.

10. A structure as set forth in claim 1 in which the lowermost panel sections have hinged shelves which cooperate with the side members to support the shelves in a horizontal position.

11. A structure as set forth in claim 1 in which there is a recess formed in the rear of the panel in alinement with the pivotal bolt to receive the bolt within the recess when the bolt is positioned in locking position and in which the bolt is threaded and receives a nut.

* * * * *