

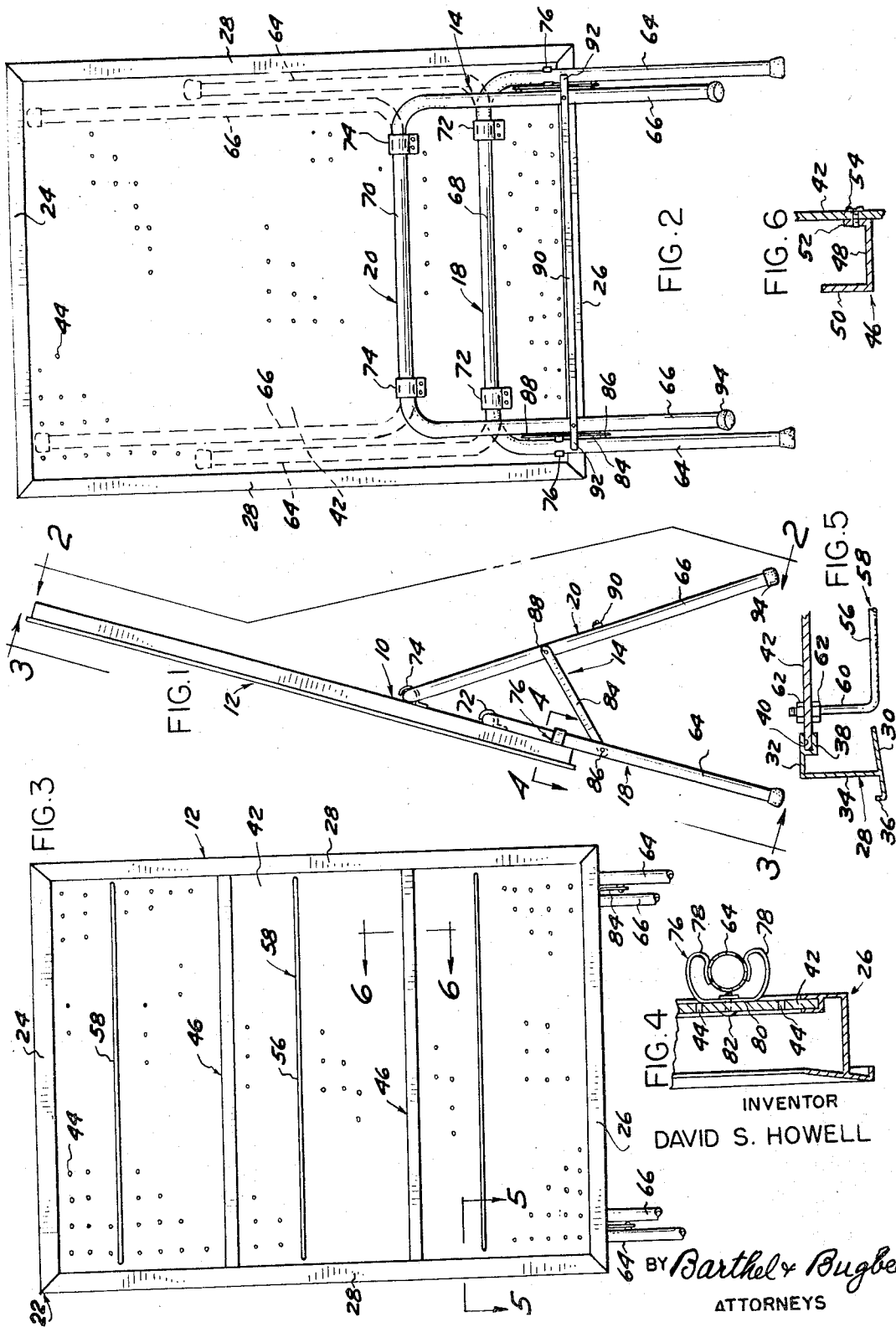
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D. S. HOWELL

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FOLDING DISPLAY RACK

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INVENTOR
DAVID S. HOWELL

BY *Barthel & Bugbee*
ATTORNEYS

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FOLDING DISPLAY RACK

David S. Howell, Royal Oak, Mich., assignor to Arlington Aluminum Company, Detroit, Mich., a corporation of Michigan

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This invention relates to racks and, in particular, to display racks.

Hitherto, there has been a considerable demand for article display racks upon which articles, such as pamphlets or other literature can be displayed and easily dispensed, for use in public buildings, stores, churches, at convention exhibits, theaters, railway and bus stations, air transport terminals, schools and the like. Such article display racks that have heretofore been available, however, have been bulky, have lacked rigidity, and have been inflexible as regards various sizes of articles displayed in the rack. The present invention overcomes these difficulties by providing a rigid rack which folds into compact space and is adjustable to various sizes of articles to be displayed.

Accordingly, one object of this invention is to provide a folding display rack which is unusually rigid when erected and which is especially suitable for the display of articles capable of standing upright against a board such as, for example, pamphlets or other literature, wherein the display board is provided with forward and rearward supporting leg units which in one position swing downward below the lower edge of the display board into engagement with the floor and in another position fold upward against the back of the board and thereby cause the rack to occupy the minimum of space for storage or transportation.

Another object is to provide a folding display rack of the foregoing character wherein the forward and rearward supports in the open or erected position of the rack are disposed in planes at acute angles to one another and in the folded position of the rack lie substantially in the same plane parallel to the plane of the back surface of the display board of the rack.

Another object is to provide a folding display rack of the foregoing character wherein the legs of each of the forward and rearward leg units are disposed in spaced parallel pairs with a bridge or cross portion interconnecting the upper ends of the legs of each pair and serving as a pivot shaft around which each paired leg unit swings between its open or erected and closed or folded positions.

Another object is to provide a folding display rack as set forth in the object immediately preceding, wherein the leg units are operatively interconnected by pivoted links so that when the operator swings one leg unit between its erected and folded positions, the other leg unit is caused to swing automatically into its intended position.

Another object is to provide a folding display rack of the foregoing character wherein the display board is provided with article-supporting shelves and also with article retaining members spaced above their respective shelves and adjustable toward and away from such shelves in order to adapt them to the retention of different heights of articles.

Other objects and advantages of the invention will become apparent during the course of the following description of the accompanying drawing, wherein:

FIGURE 1 is a side elevation of the folding display rack in its erected position;

FIGURE 2 is a slightly-inclined rear elevation of the rack shown in FIGURE 1, looking upward in the direction of the line 2-2 in FIGURE 1;

FIGURE 3 is a slightly-inclined front elevation of the rack shown in FIGURES 1 and 2, looking downward in

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the direction of the line 3-3 in FIGURE 1, but with the lower portions of the legs omitted to conserve space;

FIGURE 4 is an enlarged approximately horizontal fragmentary section taken along the line 4-4 in FIGURE 1;

FIGURE 5 is an enlarged approximately horizontal fragmentary section taken along the line 5-5 in FIGURE 3; and

FIGURE 6 is an enlarged approximately vertical fragmentary section through one of the shelves, taken along the line 6-6 in FIGURE 3.

Referring to the drawing in detail, FIGURES 1, 2 and 3 show in its erected position, a folding article display rack, generally designated 10, as consisting generally of an article display board structure 12 and a folding supporting leg structure 14 which in turn includes U-shaped forward and rearward folding leg units 18 and 20 respectively. The display board structure 12 (FIGURE 3) consists of a channel border frame 22 which in turn consists of top and bottom channel members 24 and 26 and side channel members 28. Each of these channel border frame members 24, 26, 28 (FIGURES 4 and 5) consists of forward and rearward flanges 30 and 32 respectively interconnected by a web 34. The forward flange 30 is connected at approximately its midportion to the forward edge of the web 34 and is provided with a peripheral rib 36 extending therealong. The rearward flange 32 is provided with an enlargement 38 in which is formed a groove 40 receiving the peripheral edge of a display board 42 in the form of a plate or sheet provided with vertically-spaced horizontal rows of perforations 44 (FIGURES 1 and 3).

The bottom channel member 26 serves as a bottom channel shelf for displayed articles. Mounted at vertically-spaced intervals on the display board 42 are additional channel shelves 46 upon which other articles are placed (FIGURES 3 and 6). The lower portions of the articles, such as pamphlets, stand upon and are supported by the horizontal web portions 48 and are prevented from sliding off by vertical front flanges 50. The channel shelves 46 have narrow rear flanges 52 by which they are secured to the display board 42, as by self-threading metal screws 54. The pamphlets or other articles are prevented from falling outward from the display board 42 by the intermediate portions 56 of retaining members 58, the perpendicular opposite end portions 60 (FIGURE 5) of which are threaded to receive retaining nuts 62 by which they are secured in the holes 44 at the desired locations, depending upon the heights of the articles.

The U-shaped forward and rearward folding leg units 18 and 20 respectively are provided with forward and rearward leg portions 64 and 66 respectively interconnected by horizontal bridge or pivot portions 68 and 70 respectively mounted on vertically-spaced pairs of arcuate pivot bearing brackets 72 and 74 respectively. The pivot brackets 74 for the rearward leg units 20 are mounted on a level above the forward bridge or pivot portion 68 and are closer together (FIGURE 2), and the rearward bridge portion 70 is shorter in length than the forward bridge portion 68. This construction enables the forward leg portions 64 to be located outside and parallel to the rearward leg portions 66 in the folded position of the leg structure 20, as shown by their dotted line positions in FIGURE 2. The pivot brackets 72 and 74 are bolted or otherwise secured to the back of the display board 42.

The folding leg units 18 and 20 are releasably held in their unfolded or erected positions by approximately W-shaped spring detent clips 76 (FIGURE 4), the opposite reversely-bent spring arms 78 of which yieldingly engage the forward leg portions 64 while the midportion or bridge portion 80 connecting the arms 78 is riveted or otherwise secured at 82 to the back of the display board 42 immedi-

ately above the bottom channel border frame member 26 (FIGURE 2). The leg portions 64 and 66 are pivotally interconnected near their midportions by links 84 pivoted thereto at their forward and rearward ends as at 86 and 88 respectively (FIGURE 1), so that when the forward leg unit 18 is swung rearwardly by the operator to fold the leg structure 14, the rearward leg unit 20 is automatically swung rearwardly in synchronism therewith. The rearward leg unit 20 approximately midway between the opposite ends of its leg portions 66 is provided with a horizontal stop bar 90 riveted thereto with its opposite end portions 92 projecting laterally into engageability with the leg portions 64 of the forward leg unit 18 in the folded positions of the leg units 18 and 20. The leg portions 64 and 66 terminate in cu-shaped feet 94 of elastic deformable material, such as rubber.

In the operation of the invention, let it be assumed that the folding display rack 10 is in its unfolded or erected position shown in FIGURES 1, 2 and 3, and that it is desired to fill it with articles to be displayed. If the articles are of lesser height than the positions of the retaining members 58, the operator readjusts the latter by removing them from the holes 44 in which they are at that time seated and securing them at a lower level by unfastening the outermost nuts 62 (FIGURE 5) and reapplying the latter at the new location.

To fold the display rack 10, the operator preferably lays it on its face with the front of the display board 42 facing downward on the floor. He then pulls upward on the lower ends of the leg portions 64 of the forward leg units 18 while holding the display board structure 12 down by means of his foot, then swings the leg portions 64 upward around the bearing brackets 72 as pivots, while the opposite reversely bent spring arms 78 of the spring detent clips 76 yield laterally to permit release of the leg portions 64. While this is occurring, the links 84 automatically swing the leg portions 66 of the rearward leg unit 20 upwardly and rearwardly around their pivot bearing brackets 74 as an axis. The operator swings the forward leg unit 18 in this manner through an angle of approximately 180 degrees until the positions of the forward and rearward leg units 18 and 20 are reversed from their erected positions shown in FIGURE 6 and lie flatly against the back of the display board 42 in the dotted line positions shown in FIGURE 2. The folded article display rack 10 is then conveniently inserted in a suitable carton or flexible sheet plastic or fabric envelope (not shown), preferably closed by a slide fastener. To reerect the display rack 10, the operator repeats the foregoing operations in a reverse manner which is believed self-evident from the above description of the operation of folding it.

What I claim is:

1. A folding display rack, comprising
 - a generally upright display board structure, and forward and rearward leg units of approximately U-shaped form having cross portions pivoted to said display board structure on parallel pivot axes disposed at spaced levels,
 - each of said leg units having laterally-spaced leg portions secured to and projecting downwardly from the opposite ends of its respective cross portion, the lower level cross portion being of greater length than the upper level cross portion.
2. A folding display rack, according to claim 1, wherein the leg portions of each leg unit are disposed parallel to one another.
3. A folding display rack, according to claim 1, wherein a stop member is secured to the rearward leg unit and is

engageable with the forward leg unit in the folded positions of said leg units against said board structure.

4. A folding display rack, comprising
 - a generally upright display board structure,
 - forward and rearward leg units of approximately U-shaped form having cross portions pivoted to said display board structure on parallel pivot axes disposed at spaced levels,
 - each of said leg units having laterally-spaced leg portions secured to and projecting downwardly from the opposite ends of its respective cross portion, and

means operatively interconnecting said leg units for automatically swinging one leg unit around its respective pivot axis in response to the swinging of the other leg unit around its respective pivot axis.

5. A folding display rack, according to claim 4, wherein said means comprises links pivotally interconnecting said leg portions of said forward and rearward leg units at pivot locations spaced apart from their respective pivot axes.

6. A folding display rack, according to claim 5, wherein said links are pivotally connected to the inner sides of the leg portions of the leg unit having the longer cross portion and are pivotally connected to the outer sides of the leg portions of the leg unit having the shorter cross portion.

7. A folding display rack, comprising
 - a generally upright display board structure,
 - and forward and rearward leg units of approximately U-shaped form having cross portions pivoted to said display board structure on parallel pivot axes disposed at spaced levels,
 - each of said leg units having laterally-spaced leg portions secured to and projecting downwardly from the opposite ends of its respective cross portion,

said display board structure having an open-centered frame with a top frame member, a bottom frame member, opposite side frame members interconnecting said top and bottom frame members, a display board member secured to and extending between said frame members, and shelf members secured to said structure intermediate said top and bottom frame members in spaced parallel relationship therewith, and extending horizontally between said opposite side frame members.

8. A folding display rack, according to claim 7, wherein said shelf members have forward edges spaced away from said display board member and also have displayed-article-retaining flanges projecting upwardly from said forward edges.

9. A folding display rack, according to claim 7, wherein there are additionally provided elongated horizontal displayed-article-retaining members having opposite end portions fixedly secured to said display board structure above said shelf members and having intermediate portions extending between said end portions in forwardly-spaced parallel relationship with said display board member.

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CLAUDE A. LE ROY, *Primary Examiner*,

J. F. FOSS, *Assistant Examiner*,