Aug. 11, 1953 F. L. LOWMASTER 2,648,442

DISPLAY STAND

Filed March 4, 1949 2 Sheets-Sheet 1

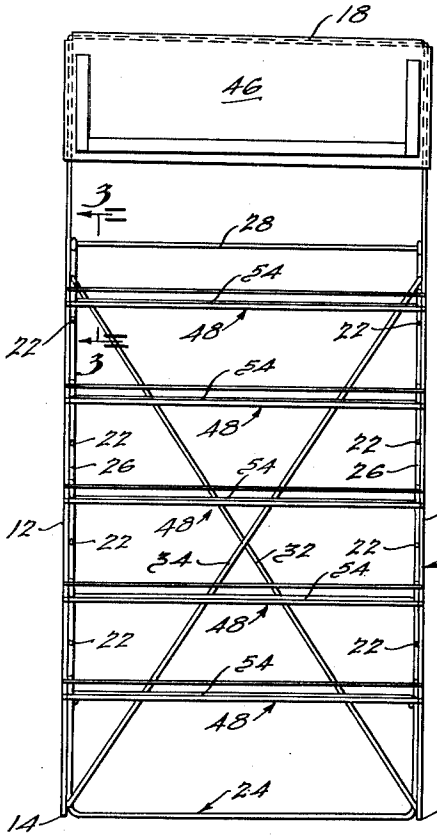


Fig. 1.

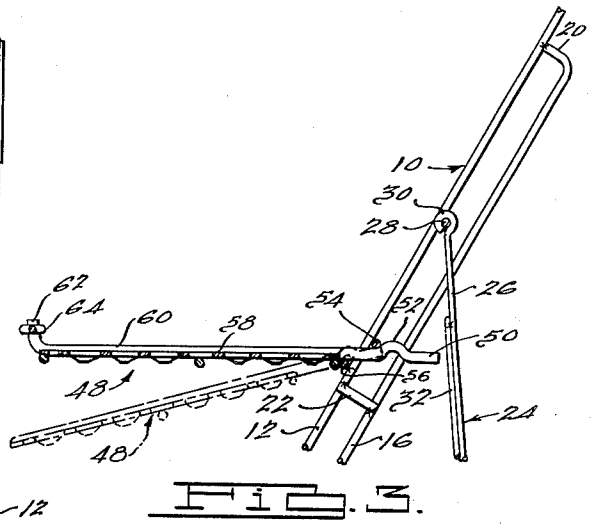


Fig. 3.

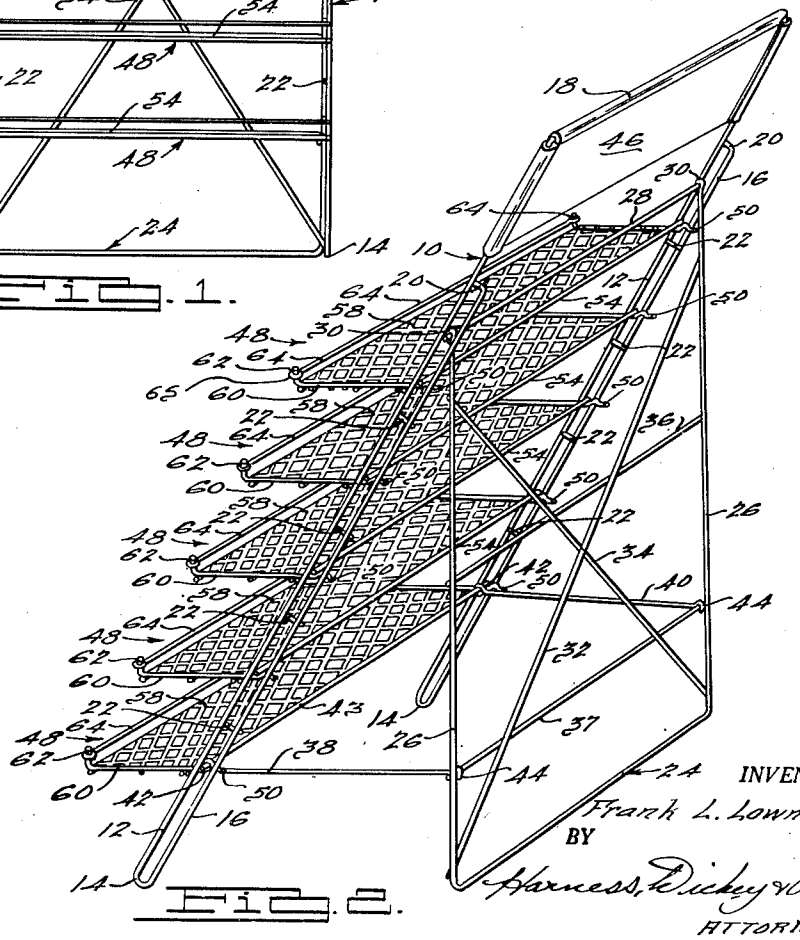


Fig. 2.

INVENTOR.
Frank L. Lowmaster.
BY
Harness, Dickey & Pierce.
ATTORNEYS.

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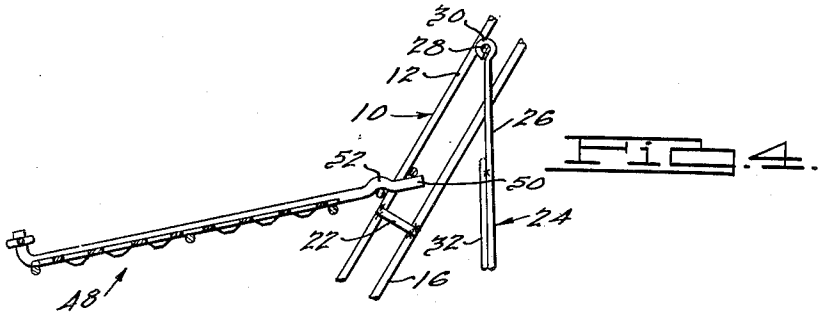


Fig. 4.

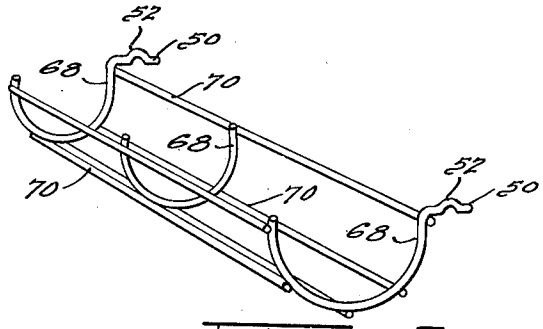


Fig. 5.

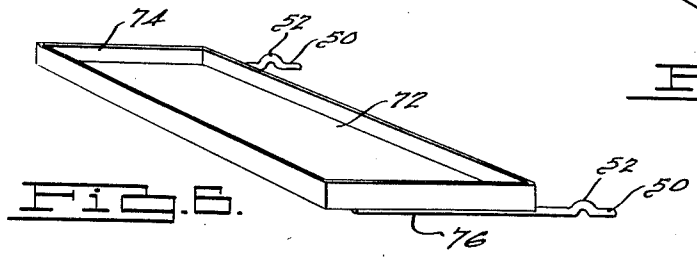


Fig. 6.

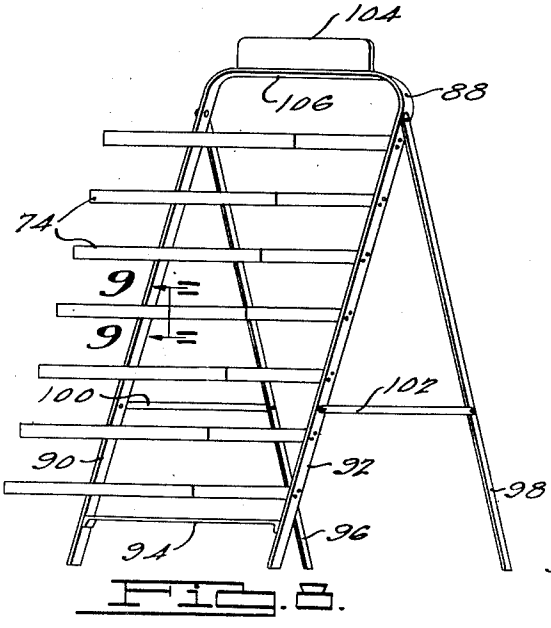


Fig. 8.

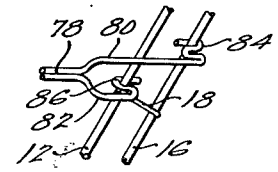


Fig. 7.

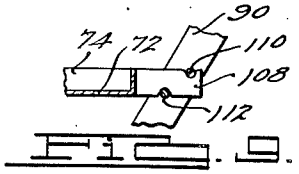


Fig. 9.

INVENTOR.
Frank L. Lowmaster.
BY
Harness, Dickey & Pierce.
ATTORNEYS.

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UNITED STATES PATENT OFFICE

2,648,442

DISPLAY STAND

Frank L. Lowmaster, Detroit, Mich., assignor to The Mathews Company, Detroit, Mich., a corporation of Michigan

Application March 4, 1949, Serial No. 79,695

2 Claims. (Cl. 211—142)

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This invention relates to new and useful improvements in collapsible and demountable display stands.

An important object of the present invention is to provide a display stand that is light in weight and at the same time is strong and rigid in construction.

Another object of the invention is to provide a display stand having a plurality of individually demountable shelves.

Still another object of the invention is to provide a display stand in which the individual shelves can be adjusted to several different positions so as to display the merchandise disposed thereon to best advantage.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the drawings forming a part of this specification, wherein like numerals are employed to designate like parts throughout the same,

Fig. 1 is a front elevational view of a display stand embodying the invention;

Fig. 2 is a perspective view thereof;

Fig. 3 is an enlarged, fragmentary, transverse, vertical sectional view taken on the line 3—3 of Fig. 1 showing a shelf in one adjusted position in full lines and in a second adjusted position in dash lines;

Fig. 4 is a view similar to Fig. 3 but showing the shelf in the second adjusted position;

Fig. 5 is a perspective view showing a modified shelf construction;

Fig. 6 is a perspective view showing still another modified shelf construction embodying the invention;

Fig. 7 is a fragmentary side elevational view showing a modified means for attaching the shelves to the supporting frame of the stand;

Fig. 8 is a perspective view showing a modified display stand embodying this invention; and

Fig. 9 is an enlarged, fragmentary, transverse, vertical sectional view taken on the line 9—9 of Fig. 8.

Considered in certain of its broader aspects, the display stand embodying the present invention comprises an upright supporting frame having a plurality of vertically spaced, demountable shelves. According to the present invention, each shelf has a pair of rearward extensions which fit between and interengage with, but are readily disengagable from vertically and horizontally spaced holding members on the frame. Specifically, each shelf extension seats downwardly on one holding member and upwardly on another

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holding member so as to hold the shelf rigid on the frame. Also, the shelf extensions are provided with means which interlock with the holding members to prevent inadvertent disengagement of the shelves, and the interlocking means are uniquely cooperable with the holding members to hold the shelves in different adjusted positions.

For a more detailed description of the invention, reference is had to the accompanying drawings and particularly to Figs. 1–4, which show a preferred construction.

In this form of the invention, the supporting frame of the stand is made substantially entirely from bar stock suitably formed and welded together. Aluminum or other lightweight metal stock preferably is used in order to maintain the weight of the stand at a minimum. Specifically, the frame comprises a U-shaped supporting member 10 having spaced arm portions 12. The ends of the arm portions 12 are bent back upon themselves, as at 14 and the reversely bent portions 16 thereof extend upwardly behind and in spaced parallel relation with the arm 12. The portions 16 terminate adjacent the bight portion 18 of the member 10 and the terminals 20 thereof are bent inwardly and welded or otherwise fastened solidly to the arms 12. Transverse braces 22 hold the reversely bent portions 16 rigidly parallel to the arms 12.

In order to hold the main frame member 10 in the angularly upright position shown in the drawings, I provide a U-shaped standard 24 having arms 26 pivoted to a transverse brace 28 adjacent the upper end of the frame member. In the form of the invention here shown by way of illustration, the terminals of arms 26 are fashioned into loops 30 which surround the brace 28 to form the pivotal connection between the standard 24 and the member 10. The standard 24 is suitably reinforced by cross braces 32 and 34 and transverse braces 36 and 37.

Frame member 10 and standard 24 are held in proper angular relation with respect to each other by latch bars 38 and 40. In the form of the invention here shown, each latch bar 38 and 40 is formed with a loop 42 at one end thereof and both loop portions 42 extend around a transverse brace 43 on the frame member 10. At the other end of latch members 38 and 40 are hook portions 44 which engage downwardly over the transverse brace 37 as shown.

When latch bars 38 and 40 are disengaged from brace 37, the standard 24 can be folded compactly against the main frame member 10. On

the other hand, when the hook portions **44** are engaged with brace **37**, latch bars **38** and **40** hold the main frame **10** and the standard **24** rigidly in fixed angular relation.

If desired, a sheet metal panel **46** may be attached to the upper bight portion of the frame member **10**, which panel provides a convenient background for advertising or for instructions or information regarding the objects displayed on the stand.

A plurality of vertically spaced, demountable shelves **48** are carried by and project forwardly of the main frame **10**. These shelves **48** may assume a variety of shapes. All of the shelves may be identical, as shown in the drawings, or they may be different, depending on the exigencies of the particular situation. These shelves are adapted to support articles for display and the particular shape of the shelf obviously may vary considerably depending upon the shape, size and weight of the article or articles to be displayed. Regardless of the size or shape of the shelves, however, they are provided at the ends thereof with rearward extensions **50** and the extensions are formed substantially midway between the distal ends thereof and the rearward edge of the shelf with means **52** for interlocking with parts of the stand which supports the shelf.

In the form of the invention shown in Figs. 1–4, the means **52** comprises U-shaped bends which may be produced in the shelf extensions **50** by conventional forming operations. The frame parts that cooperate with the extensions **50** and fasten the shelves in place are here shown in the form of vertically and horizontally spaced rods **54** and **56**. A pair of rods **54** and **56** is provided for each shelf **48** and the rods are disposed transversely between and welded to the arms **12** of main frame member **10**. As shown in Fig. 3, the shelf extensions **50** fit between rods **54** and **56** so that they seat downwardly against rods **56** and upwardly against rods **54**. The binding action thus produced between the extensions **50** and the rods **54** and **56** hold the shelves rigidly but detachably associated with the supporting frame **10**. Further, this arrangement permits the shelves to be positioned with the U-shaped bends **52** disposed either behind the rearmost rod **54**, as shown in Fig. 3, or over the rod **54**, as shown in Fig. 4. In the former position of bends **52** the shelves **48** are disposed and securely held exactly horizontally, or in the latter position of the bends **52**, the shelves **48** are disposed and securely held in downwardly and forwardly inclined relation with the frame.

If desired, separate holding rods **54** and **56** may be provided for each shelf extension; however, the rods preferably extend entirely across the supporting frame, as shown in the drawings, so that only two holding rods are required for each shelf and so that the holding rods serve a double function in the combination of supporting the shelves **48** and of transversely strengthening and reinforcing the supporting frame.

One type of shelf which I have found to be pre-eminently satisfactory for general display purposes is shown in Figs. 1–4. This shelf has a generally rectangular mesh bottom **58** and transverse supporting and reinforcing rods **60** at opposite ends of the bottom. In the form of the invention shown, the transverse supporting rods are formed integrally with the extensions **50**, and the forward ends of the rods are bent upwardly

to provide upright posts **62** at the front corners of the shelf. A guard rail **64** is provided for holding articles on the shelf and the guard rail has a looped end portion **65** which fits over the post **62**, as shown. The loops **65** frictionally engage the posts **62** so as to hold the guard rail **64** selectively positioned with respect to the shelf. Manifestly, a guard rail thus formed and associated with the shelf is removable. This is desirable as a practical matter since it may be necessary or desirable to use different guard rails with different merchandise or, in some instances, to eliminate the guard rail entirely. For example, it may be desirable to form the guard rail so that it complements the merchandise and thus enhances the esthetic effect of the display. In other cases it may be necessary to fashion the guard rail to a particular shape so that it will accommodate projecting or irregular portions of the merchandise on display. In still other instances where the guard rail is not necessary to retain merchandise on the shelf and where the size or form of the merchandise is such that a guard rail would interfere with the proper display of the merchandise, the guard rail may be omitted entirely as suggested above.

In Fig. 5 I have shown another type of shelf which is particularly suited for displaying long or bulky articles. It will be observed that the shelf is generally trough-shaped and that it is open at the ends so that, if necessary, the object being displayed can project beyond the ends of the shelf. The particular shelf here shown has a plurality of longitudinally spaced, transversely disposed, semicircular braces **68**, and a plurality of longitudinal rods or bars **70** disposed in spaced relation around the periphery of the transverse braces. Longitudinal rods **70** can be welded, soldered or fastened in any suitable way to the transverse braces **68**. The end braces **68** are formed integrally with rearward extensions **50**.

In Fig. 6 I have shown still another shelf which is particularly suited for displaying small articles. Specifically, the shelf has an imperforate, essentially rectangular bottom **72**, and the bottom is formed with an upstanding surrounding rim **74**. Transverse supporting braces **76** are disposed at opposite ends of the shelf and these braces are formed integrally with the rearward extensions **50**, as shown.

In any of the shelf forms hereinabove described, the extensions **50** can be replaced by an extension **78** of the type shown in Fig. 7. The modified extension **78** is bifurcated and the arm portions **80** and **82** thereof are formed with terminal hook portions **84** and **86**, respectively, which engage opposite sides of the frame members **12** and **16**, as shown. Hook portion **86** is disposed substantially below hook portion **84** so that the two hook portions cooperate to hold the shelf rigidly in position on, but are readily demountable from the supporting frame. When extensions **78** are used, the braces **18** preferably are arranged to engage the lower hook portion **86** and limit movement of the extensions downwardly on the frame side members.

While the modified extension shown in Fig. 7 is satisfactory for most purposes, it cannot be considered the full equivalent of the extension first described since it is not capable of supporting the shelf in either of the two positions shown in Figs. 3 and 4. Also, the construction of the extension is more intricate and difficult to form

and, for this reason, more expensive to manufacture.

Reference is now had to Figs. 8 and 9 which show a modified display stand construction embodying the invention. This stand conveniently can be made of strap metal and comprises a main supporting frame 88 of inverted U-shape. The arm portions 90 and 92 of the frame 88 are reinforced adjacent the ends thereof by a transverse brace 94, and the frame is supported in generally upright position by pivoted legs 96 and 98. Legs 96 and 98 are held in proper angular relation with respect to frame 88 by transverse braces 100 and 102. Braces 100 and 102 may be permanently attached to the connecting members, or if the frame is to be collapsible, they may be pivoted at one end and detachably connected at the other according to conventional practice. If desired, an upstanding panel 104 for advertising or other purposes may be provided on the bight portion 106 of the main frame member 88.

Any type of display shelf or rack can be used on the supporting frame, and a shelf of the type shown in Fig. 6 is here shown for purpose of illustration. In this form of the invention, however, the shelf is formed with rearward extensions 108 (Fig. 9) which interlock with fastening members or pegs 110 and 112 on the arms 90 and 92. Fastening members 110 and 112 are arranged in the same relative position on the supporting frame and serve the same purpose as the transverse members 54 and 56 first described. Preferably, the extensions 108 are notched as shown in Fig. 9 to interlock with the fastening members 110 and 112.

It will thus be seen that I have achieved the objects of my invention. I have provided a stand that can be used to display a wide variety of merchandise and wherein the shelves are individually adjustable to display the merchandise to best advantage. Also, I have provided a display stand wherein the individual shelves are replaceable so that, if necessary or desirable, a number of different types of shelves may be used on a single supporting frame. This factor substantially increases the versatility and usefulness of the stand. When knocked down, the display stand can be folded into an exceedingly compact package for storage or shipment and, when erected, it provides an exceedingly strong and rigid structure.

What is claimed is:

1. In apparatus of the character discribed, a shelf having rearward extensions at opposite sides thereof, each extension having an upwardly arched portion intermediate the ends thereof and a terminal portion behind said arched portion, and a stand provided with a pair of holding members for each shelf extension, one holding member in each pair being a front holding member and the other being a rear holding member, the two holding members in each pair being spaced

vertically a distance substantially equal to the thickness of the shelf extension with which they coact, said shelf adapted to be positioned horizontally with said shelf extensions bearing downwardly on said front holding members and upwardly on said rear holding members and said arched portions behind the rear holding members, said arched portions when so positioned engaging the rear holding members to prevent direct forward withdrawal of the shelf, said shelf also adapted to be positioned so as to incline forwardly and downwardly from the stand with the arched portions over and bearing downwardly on said forward holding members and said terminal portions bearing upwardly against said rear holding members, in the latter position of the shelf said arched portions being interlocked with the front holding members to prevent direct forward withdrawal of the shelf.

2. Apparatus of the character described comprising a stand having front and rear shelf-holding members, and a shelf provided with rearward extensions having upwardly arched portions spaced inwardly substantially from the ends of said extensions and terminal portions projecting beyond said arched portions, said arched portions being selectively engageable with both of said holding members in either of two positions, in one of said positions said arched portions being disposed behind said rear shelf-holding member to hold the shelf substantially horizontal, in the other of said positions said arched portions receiving and seating downwardly on said front shelf-holding member and said terminal portions engaging upwardly against said rear shelf-holding members to hold the shelf in downwardly and forwardly inclined relation with respect to the horizontal.

FRANK L. LOWMASTER.

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