Aug. 30, 1966 C. W. TOWNSEND 3,269,552

MERCHANDISE DISPLAY AND DISPENSER RACK

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Fig. 2.

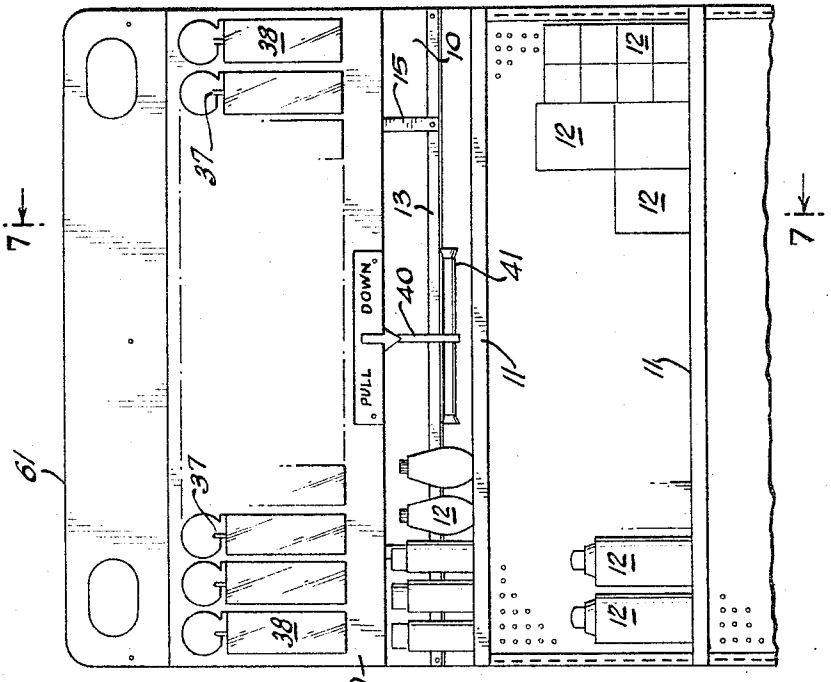
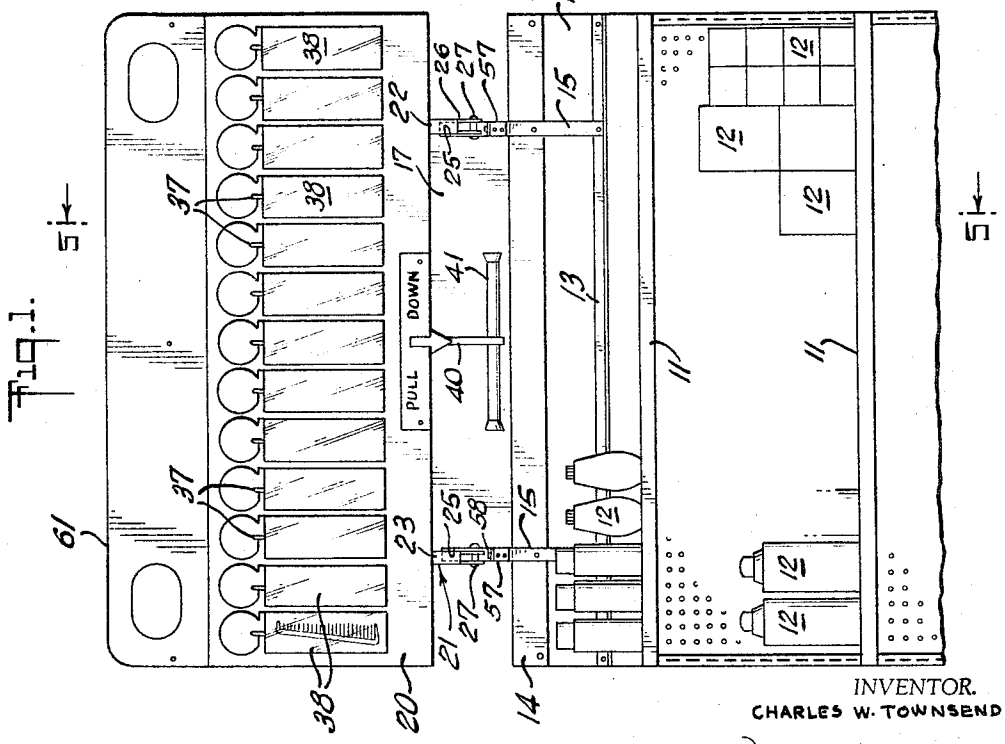


Fig. 1.



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FIG. 3.

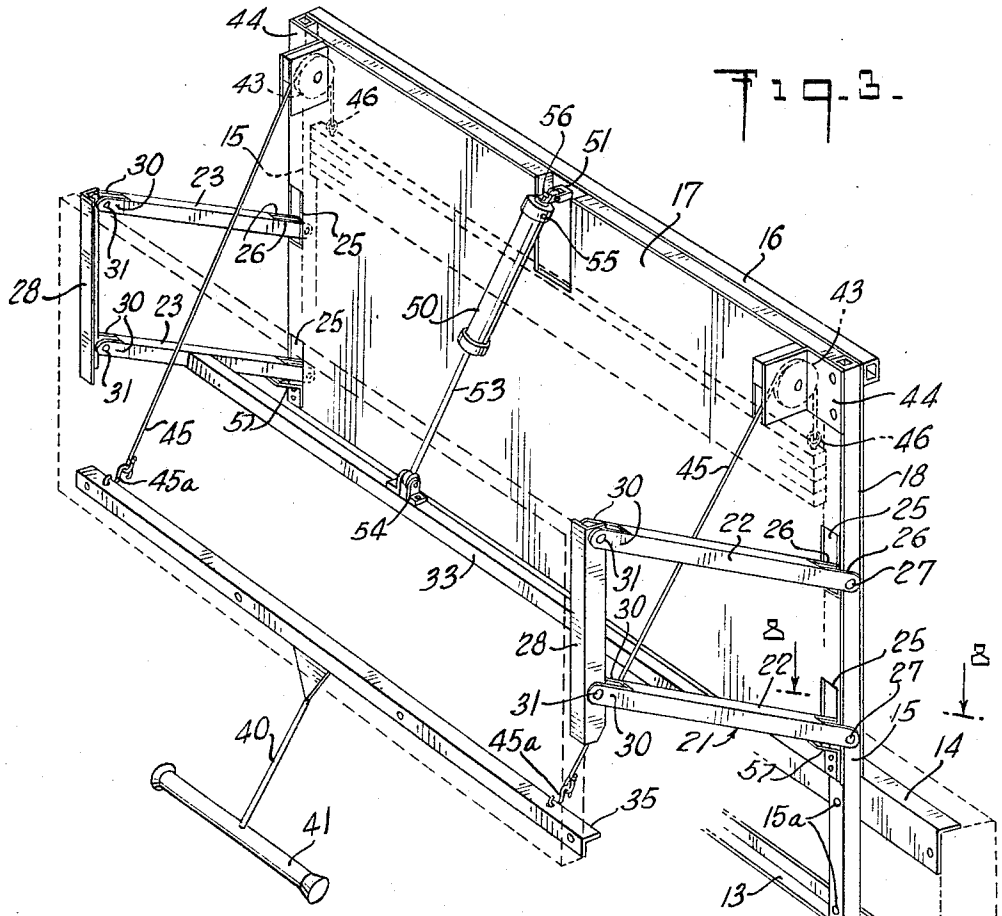
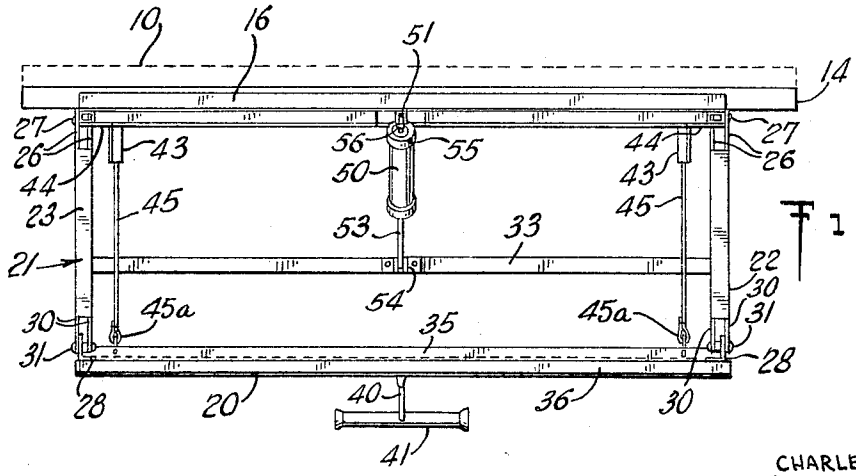


FIG. 4.



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MERCHANDISE DISPLAY AND DISPENSER RACK

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Fig. 5.

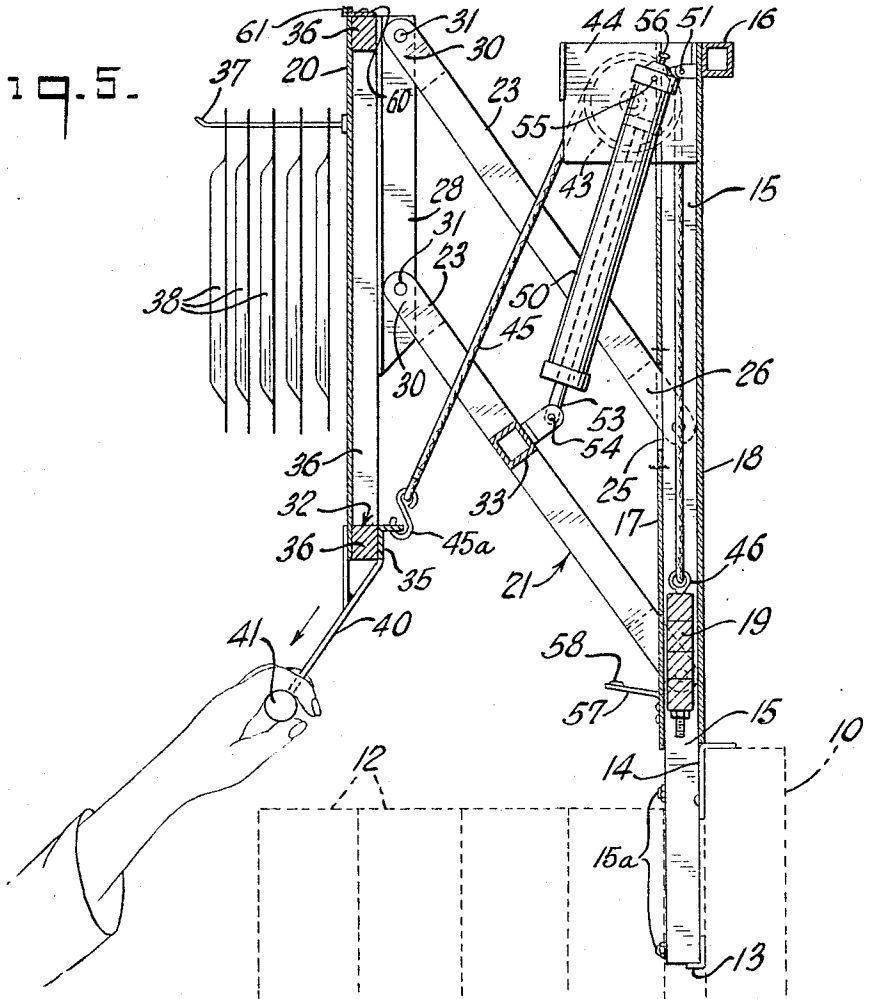
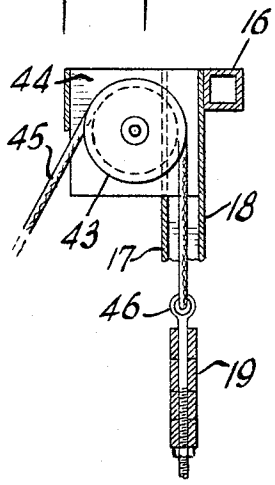


Fig. 6.



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MERCHANDISE DISPLAY AND DISPENSER RACK

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Fig. 7.

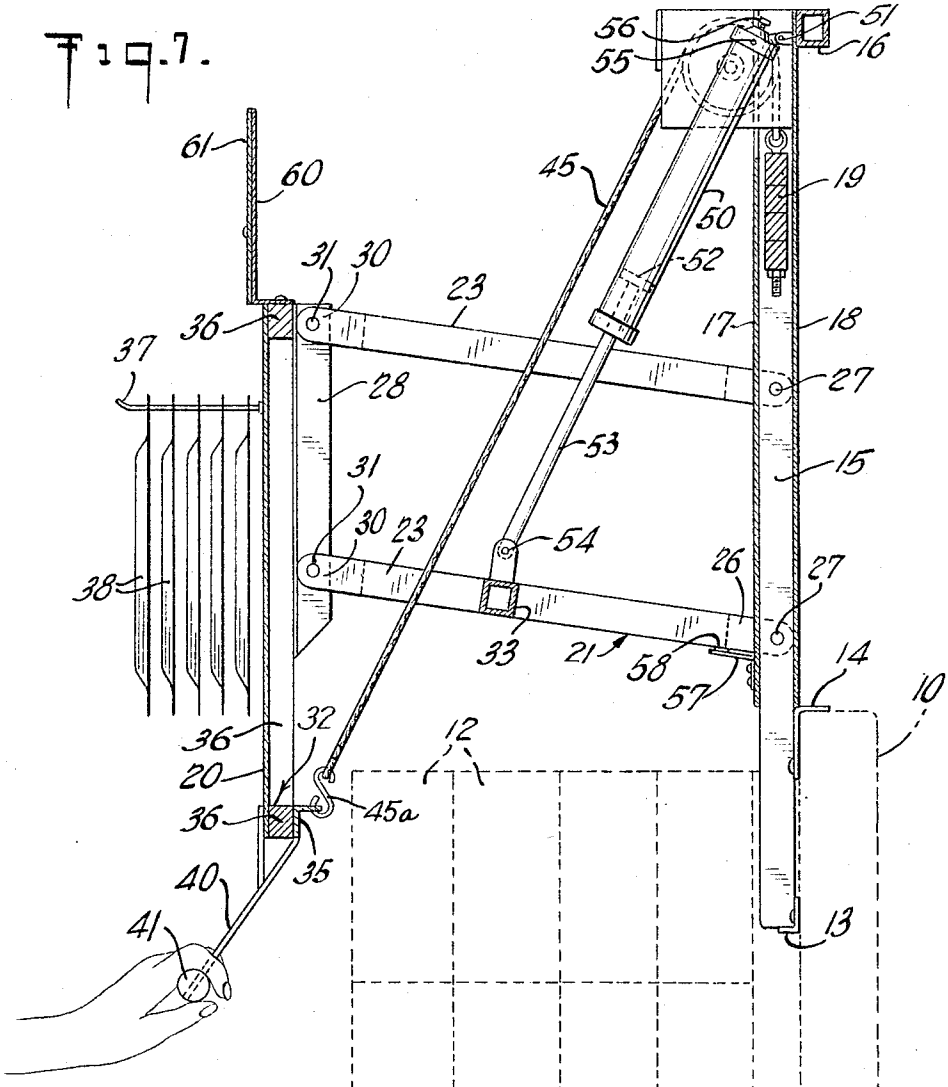
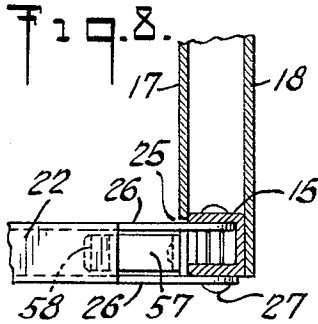
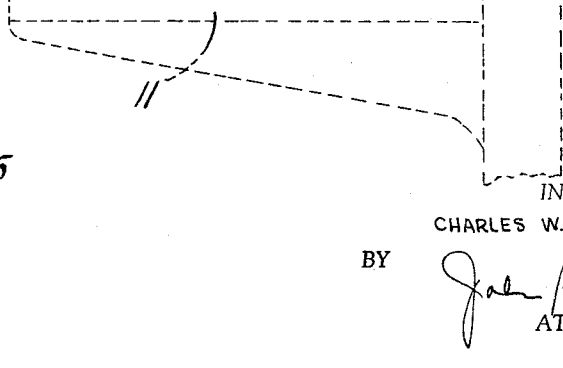


Fig. 8.





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United States Patent Office 3,269,552 Patented August 30, 1966

3,269,552

MERCHANDISE DISPLAY AND DISPENSER RACK

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Filed June 11, 1964, Ser. No. 374,357
4 Claims. (Cl. 211—103)

This invention relates to a new and improved merchandise display and dispenser rack.

In addition to using conventional shelving attached to walls for storing and displaying merchandise, self-service merchandising houses and stores, such as supermarkets, discount houses and similar establishments, also employ for such purposes display and merchandising counters commonly referred to as "gondolas." These gondolas are usually placed in aligned spaced relationship on the floor to form aisles which provide access to merchandise displayed on the gondola shelves. The heights of the gondolas are established by the height to which the average customer can reach to remove merchandise displayed thereon. Consequently, the space above gondolas is not used for such purposes. This invention provides a merchandise and display rack which permits more effective utilization of such space.

Among the objects of this invention is the provision of a new and improved merchandise display and dispenser rack which (1) can be easily attached to existing gondola structures to enhance the display and merchandising capacity of the establishment, (2) occupies the space above a gondola which is normally too high for the display of items of merchandise in the ordinary manner and too high to be reached conveniently for the removal of such items of merchandise, (3) occupies a minimum of space and at the same time affords a maximum of view and allows the support of a large number of saleable articles without interfering with the view or accessibility of the articles on the display shelves below, (4) can be made inexpensively of relatively few simple movable parts, (5) is operative between an overhead display position and a lower dispensing position simply and with a minimum of effort, and (6) maintains stability while in operation and while at rest. While especially useful in connection with gondolas, the merchandise display and dispenser rack of the invention can also be mounted on walls above conventional shelving to utilize the space above such shelving.

Various other objects of the invention will be apparent from the following description and from the accompanying drawings.

Referring to the drawings:

FIG. 1 is a front elevational view of a merchandise display and dispenser rack embodying the present invention and shown in elevated display position;

FIG. 2 is a front elevational view of the merchandise display and dispenser rack shown in lowered position to permit convenient removal of items of merchandise therefrom;

FIG. 3 is a perspective view of the supporting structure of the merchandise display and dispenser rack shown in a lowered position;

FIG. 4 is a top plan view of the merchandise display and dispenser rack shown in FIG. 3;

FIG. 5 is a vertical sectional view of the merchandise display and dispenser rack taken on lines 5—5 of FIG. 1 and showing the rack in elevated display position;

FIG. 6 is a detail vertical sectional view of part of the counterbalancing means of the merchandise display and dispenser rack of the present invention;

FIG. 7 is a vertical sectional view of the merchandise display and dispenser rack taken on lines 7—7 of FIG. 2 and showing the rack in lowered dispensing position; and

FIG. 8 is a detail sectional view of FIG. 3 taken on lines 8—8.

In accordance with the invention, there is provided a merchandise and display rack which is adapted to be secured to a gondola or a wall and which includes a vertical panel for removably supporting items of merchandise, a mechanism for yieldably urging the panel into an elevated rearward position, a mechanism for maintaining the panel in a vertical position throughout its movement from an elevated rearward position to a forward lowered position, and devices for controlling such movement.

Referring to the drawings, the merchandise display and dispenser rack of the present invention is shown attached to the support structure of a conventional gondola. This support structure comprises a vertical backboard **10** which is usually made of wood and which forms part of the gondola structure. A horizontal top shelf **11** is secured to the backboard for supporting items **12** of merchandise in the conventional manner. For securing the display rack of the present invention to this gondola support structure, there is provided a frame structure comprising a pair of horizontal metal angle irons **13** and **14** secured to the backboard **10** for reinforcement thereof, and a pair of horizontally spaced upright bracket bars **15** rigidly secured to said angle irons and shown in the form of structural tubes of rectangular cross-section for mounting a panel supporting linkage system to be described. The bracket bars **15** have a horizontal cross brace **16** of similar rectangular tubular construction secured to their upper ends. A fixed front cover panel **17** is rigidly secured to the front of the bracket bars **15** and a similar fixed back cover panel **18** is rigidly secured to the rear of the bracket bars to form with said front panel and said bracket bars a housing for a vertically movable counterweight **19**.

A vertical display and dispenser panel **20** adapted to removably support items of merchandise is mounted for translational movement to the frame structure by means of a parallel motion linkage **21** which is designed to maintain said panel vertical at all times through its range of movement. The linkage **21** comprises a pair of parallel vertically spaced arms **22** pivotally connected at their rear ends to one of the upright bracket bars **15** and a similar pair of parallel vertically spaced arms **23** at the same level as the arms **22** respectively and parallel thereto pivotally connected at their rear ends to the other of the upright bracket bars **15**. The linkage arms **22** and **23** are shown in the form of structural tubes of rectangular cross-section. To provide pivotal connections between the rear ends of the linkage arms **22** and **23** and the bracket bars **15**, the front walls of the bars are provided with openings **25** formed by cutting out a portion of the wall, and the rear end of each linkage arm is cut away at sections to form two tongue extensions **26** which straddle one of the webs of the corresponding bracket bar **15** adjacent to the opening. The linkage arms are pivotally secured to the bar by means of a hinge pin **27** which passes through the web and the extensions. The front ends of each pair of parallel arms **22** and **23** are also pivotally interconnected and are maintained in parallel, spaced relationship by means of a vertical link **28**, illustrated in the form of an angle iron. To provide pivotal connections between the link and the corresponding pair of parallel arms **22** and **23**, each of the front ends of the arms are cut away at sections to form two tongue extensions **30** which are like tongue extensions **26** and which straddle the side flange of the link **28**. The tongue extensions are pivotally secured to the corresponding link by pivot pins **31**. The display and dispenser panel **20** is secured to a mount-

ing frame structure **32** which in turn is secured to the front flanges of the two links **28**.

A cross brace **33** shown in the form of a tube of rectangular cross-section extends between the two lower arms **22** and **23** at the approximate midpoints of their lengths and is rigidly secured thereto desirably by welding.

The mounting frame structure **32** for the display and dispenser panel **20** comprises the two vertical links **28**, a horizontal bar **35** below said links shown in the form of an angle iron having a flange in the same vertical plane as the front flanges of the links, and four structural pieces **36** shown of wood arranged to form a rectangular frame which is secured to the coplanar webs. The display and dispenser panel **20** is secured to the wood frame formed by pieces **36**.

The display and dispenser panel **20** has a rectangular configuration like the frame and has secured thereto a series of hooks **37** from which items **38** of merchandise are removably suspended.

Secured to the horizontal bar **35** centrally thereof is one end of a handle bar **40**, the other end carrying a cross handle **41** by which the display and dispenser panel **20** can be pulled down from its elevated display position to a lowered forward position. As illustrated in FIG. 5, the handle is so located that when the display panel is in its elevated display position, the handle will be readily accessible to the customer.

The display and dispenser panel **20**, its support frame **32**, and linkage **21** are counterbalanced to normally urge these structures to an elevated rearward display position. For that purpose, two ball bearing sheaves **43** are mounted by means of angle brackets **44** secured to the cross brace **16** and upright bracket bars **15** through the front cover panel **17**. The counterweight **19** housed between the panels **17** and **18** is designed to overcome the weight of the linkage **21**, the weight of the loaded display and dispenser panel **20** and the weight of other structures movably associated therewith, and is connected to the support structure **32** of the panel **20** by means of cables **45** which, by way of example, may be made of nylon, passing over the sheaves **43** and secured at one end to two pins **46** projecting from the counterweight. The pins may be of the removable type to accommodate additional bars when it is necessary to increase the weight of the counterweight. The other ends of the cables **45** are secured to the horizontal bar **35** of the frame supporting structure of the display and dispenser panel **20** by hooks **45***a* engaged in holes in said bar.

In order to prevent the display and dispenser panel **20** and its associated movable structure from returning quickly, when released, to its elevated rearward display position with shock impact, there is provided a damping device which may be in the form of a dash pot. A suitable device includes an air cylinder **50**, the upper end of which is pivotally connected at **51** to the cross brace **16** and a piston **52** in the cylinder which is connected to a rod **53** pivotally connected at **54** to the midsection of the cross brace **33**. The upper end of the cylinder **50** has an opening **55** which permits air to escape slowly from the cylinder as the piston **52** moves upwardly therein in response to the action of the counterweight **19** when the handle on the display and dispenser panel **20** is released. The opening **55** has an adjusting valve **56** to permit adjustment in the increase or decrease of air allowed to escape on the upward return stroke of the piston **52**. The lower end of the cylinder **50** is opened to permit the unimpeded escape of air from the cylinder as the display and dispenser panel **20** is pulled down for dispensing purposes so that movement of the panel to this position is not unduly resisted.

Resilient stop means are provided for limiting the lowered dispensing position of the display and dispenser panel **20** and for cushioning the impact of the panel as it comes to rest in the position. For that purpose, there are provided a pair of limiting brackets **57** which may

be in the form of angle pieces secured to the upright bracket bars **15** and which are faced with cushioning pads **58** of resilient material, such as rubber. The rear ends of the lower link arms **22** and **23** strike the cushioning pads **58** as the display and dispensing panel **20** is pulled to its lowermost dispensing position.

There may be secured to the top horizontal wood frame piece **36** an upstanding bracket **60** to conceal the structure associated with the rear of the rack, such as the air cylinder **50** and the sheaves **43**, and which can also be used to hold an advertising poster **61**.

The display and dispenser panel **20** is vertical and is normally elevated and set back above the top loaded shelf **11** of the gondola in a position to display in full view the items **38** of merchandise suspended therefrom, as shown in FIG. 1. In this manner, the space above the gondola, which is usually not used, is rendered useful. In operation, when a customer desires to remove one of the items **38** of merchandise from the panel **20**, he pulls the panel outwardly and downwardly by pulling the handle **41**, as shown in FIG. 5. This causes the panel **20** to swing forwardly and downwardly through the parallel motion linkage **21** against the action of the counterweight **19**, until the panel reaches the lowered position shown in FIGS. 2 and 7. In this position of the panel, the items **38** of merchandise are readily accessible for removal.

Upon release of the handle **41**, the panel automatically returns slowly to the elevated position shown in FIG. 1 under the action of the counterweight **19** and under the impeding control of the dash pot, until the panel returns to its elevated rearward display position.

The rack may be securely fixed to the vertical backboard **10** of a gondola by removable bolts or screws **15***a* which extend through the bracket bars **15**, the angle irons **13** and **14** and the backboard **10**. Two such racks may, if desired, be mounted back to back on the same gondola. The rack may also be secured to a wall above wall shelving in the same manner. The rack is inexpensive, simple to operate, and provides for the effective use of space for display and merchandising purposes heretofore unobtainable.

While the invention has been described with particular reference to a specific embodiment, it is to be understood that various changes and modifications may be made while still remaining within its spirit.

What is claimed is:

1. A merchandise display and dispenser rack comprising a pair of spaced upright mounting bracket bars, a pair of parallel arms pivotally connected to each of said bracket bars, means connecting the two pairs of parallel arms to form parallel linkages, a substantially vertical panel for removably supporting items of merchandise supported on the outer ends of said arms, said parallel motion linkages and said panel being so located to cause said panel to move from an elevated rearward position to a lowered forward position upon a forward and downward pull of the panel while maintaining said panel substantially vertical, and means yieldably urging said panel into said elevated position and comprising a counterweight, a pair of sheaves supported on said upright bracket bars, and cables connected at one end to said counterweight, passing over said sheaves and connected at the other end to a brace rigid with said parallel motion linkages for movement with said linkages.

2. A merchandise display and dispenser rack comprising a pair of spaced upright mounting bracket bars, a pair of parallel arms pivotally connected to each of said bracket bars, means connecting the two pairs of parallel arms to form parallel linkages, a substantially vertical panel for removably supporting items of merchandise supported on the outer ends of said arms, said parallel motion linkages and said panel being so located to cause said panel to move from an elevated rearward position to a lowered forward position upon a forward and downward pull of the panel while maintaining said panel sub-

stantially vertical, and a frame structure which includes said upright bracket bars, an air cylinder between the two pairs of parallel arms pivotally secured at one end to said frame structure, a piston in said cylinder, a piston rod rigidly secured to said piston and pivotally secured to said parallel motion linkages, said cylinder having a restricted opening on the side of the piston near the end of the cylinder adjacent to its pivotal connection and having a free opening on the other side of the piston during the full range of movement of the piston, whereby said air cylinder and piston act as a dash pot to retard movement of said panel towards said elevated position while permitting free movement of said panel downwardly away from said elevated position.

3. A merchandise display and dispenser rack comprising a frame structure, a substantially vertical display and dispenser panel for removably supporting items of merchandise, parallel motion linkages connected to said frame structure and to said display panel for movably supporting said display panel, said linkages and said display panel being arranged in relation to said frame structure to cause said display panel to move from a rearward elevated position in front of said frame structure to a position in front of and below said elevated position upon operation of said linkage, and means yieldably urging said display panel into said elevated position and comprising a counterweight movable vertically up and down, a pair of sheaves supported on said frame structure, and cables connected at one end to said counterweight, passing over said sheaves and connected at the other end to points rigid with said parallel motion linkages.

4. A merchandise display and dispenser rack comprising a frame structure including a pair of fixed upright mounting bracket bars, a cross brace connected to said bracket bars, a pair of parallel arms pivotally connected to each of said bracket bars, means connecting the two pairs of parallel arms to form parallel motion linkages, a substantially vertical display panel for removably supporting items of merchandise supported on the outer

ends of said arms, said parallel motion linkages and said display panel being located to cause said display panel to move from an elevated rearward position to a forward lowered position upon a forward and downward pull of the display panel while maintaining said display panel substantially vertical, means yieldably urging said display panel in said elevated position and comprising a counterweight between said bracket bars and movable vertically up and down, a pair of sheaves supported on said frame structure, and cables connected to said counterweight and to points rigid with said parallel motion linkages and passing over said sheaves, an air cylinder between the two pairs of parallel arms pivotally secured at one end to said frame structure, a piston in said cylinder, and a piston rod rigidly secured to said piston and pivotally secured to said parallel motion linkages, said cylinder having a restricted opening on the side of the piston near the end of the cylinder adjacent to its pivotal connection and having a free opening on the other side of the piston during the full range movement of the piston, whereby said air cylinder and piston act as a dash pot to retard movement of said display panel towards said elevated position while permitting free movement of said display panel downwardly away from said elevated position.

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