No. 677,790. Patented July 2, 1901.

W. NORTHGRAVES.

DISPLAY RACK.

(Application filed Aug. 24, 1900.) 2 Sheets—Sheet 1.

(No Model.)

FIG. 1.

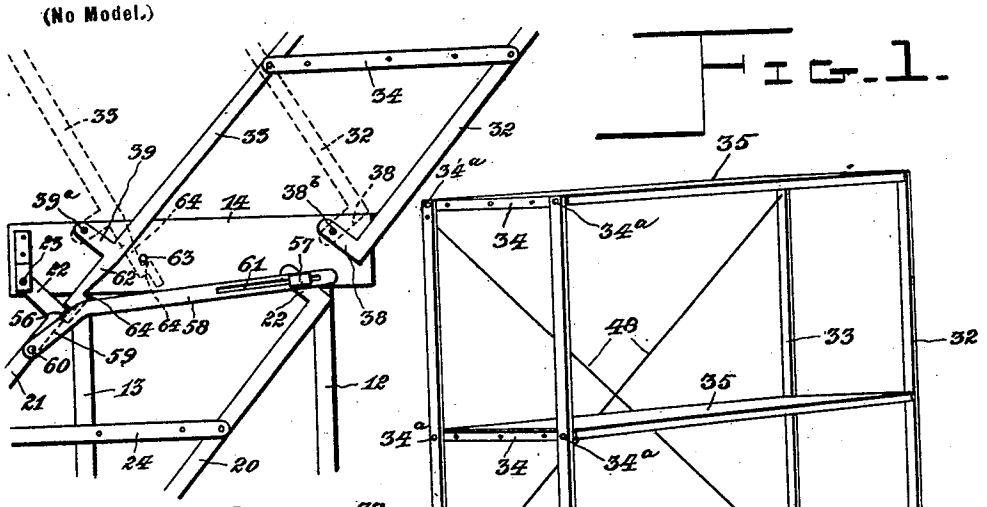


FIG. 8.

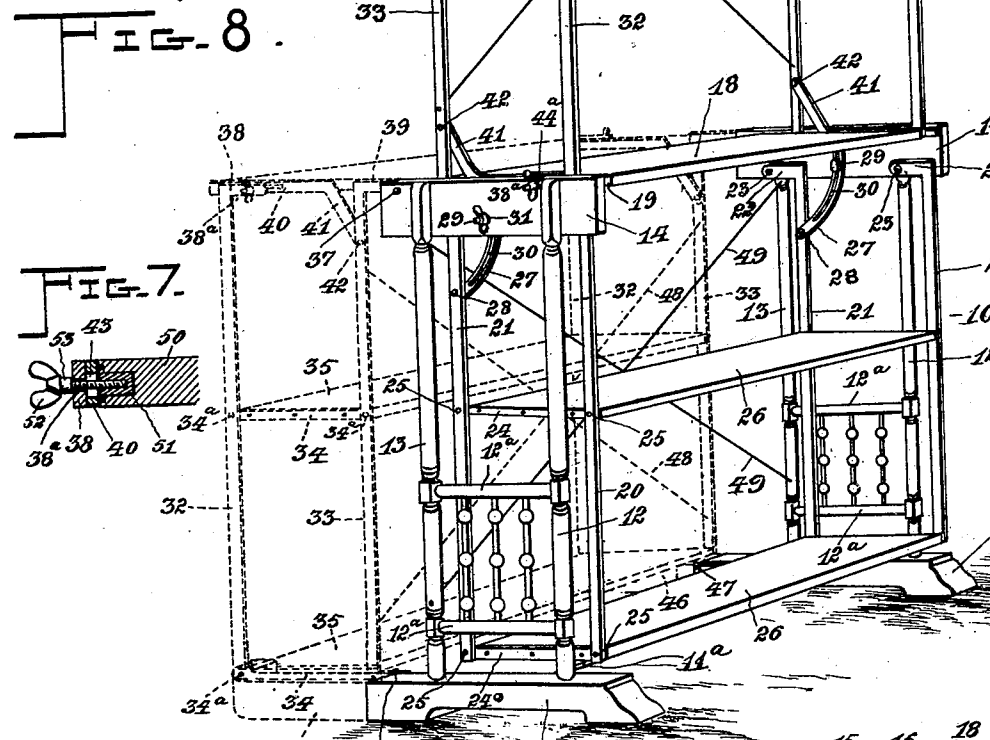
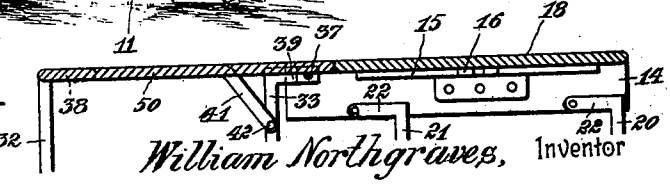


FIG. 7.

FIG. 5.



Witnesses:

John T. Deufenwiel

H. J. Benchard

William Northgraves, Inventor

By Marion Marion

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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W. NORTHGRAVES.

DISPLAY RACK.

(Application filed Aug. 24, 1900.)

(No Model.) 2 Sheets—Sheet 2.

FIG. 2.

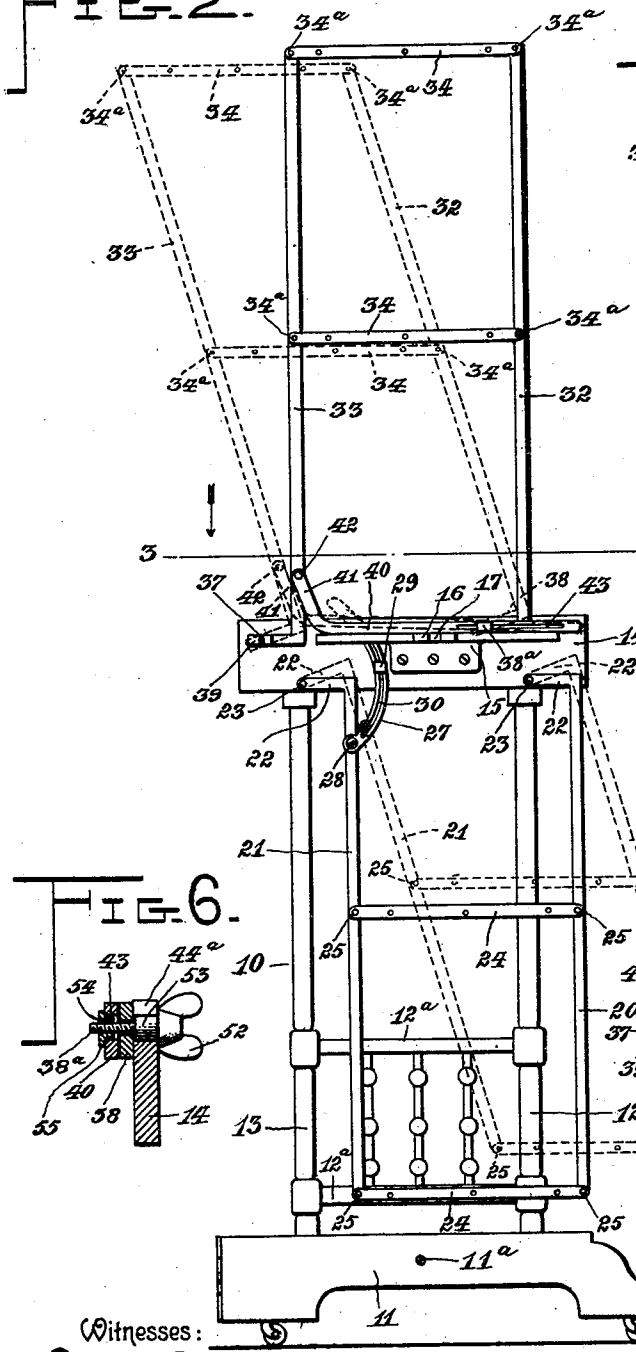


FIG. 3.

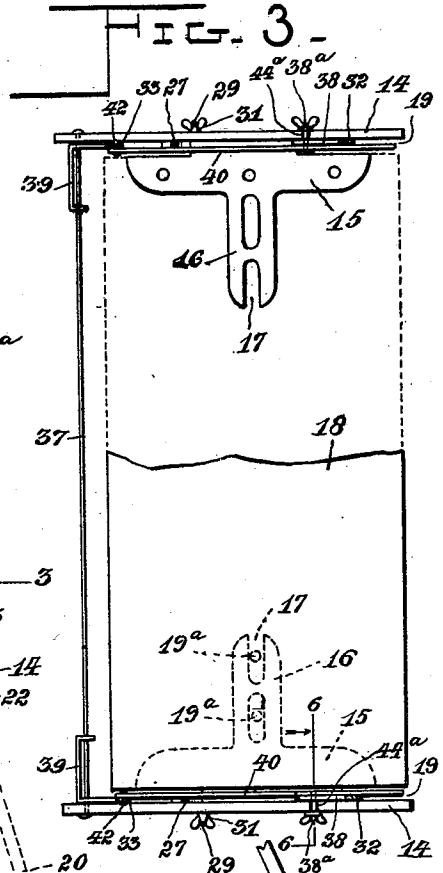
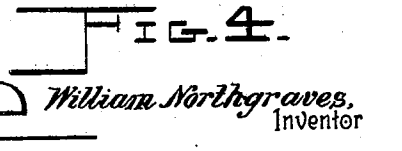


FIG. 6.

FIG. 4.



Witnesses:

John T. Dewhirst

H. J. Berukard

William Northgraves,
Inventor

By Marion Marion

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM NORTHGRAVES, OF PERTH, CANADA, ASSIGNOR OF ONE-HALF TO JOHN S. FEEHAN, OF DEKALB, ILLINOIS.

DISPLAY-RACK.

SPECIFICATION forming part of Letters Patent No. 677,790, dated July 2, 1901.

Application filed August 24, 1900. Serial No. 27,879. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM NORTHGRAVES, a subject of Her Majesty the Queen of Great Britain, residing at Perth, county of Lanark, Province of Ontario, Canada, have invented certain new and useful Improvements in Display-Racks; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in display-racks, and one object that I have in view is the provision of a simple structure which may be adjusted to a variety of positions and secure the most advantageous display of the merchandise that it may be desired to place on the rack.

A further object of the invention is to provide an improved display-rack in which either of two rack-sections may be adjusted independently of each other to different positions, as may be desired, and, furthermore, to provide simple and efficient locking devices each especially adapted to one rack-section, and which locking device is operable to firmly hold its respective rack-section in an inclined or vertical position to which said rack-section may be adjusted.

Further objects and advantages of the invention will appear in the course of the subjoined description, and the novelty in the combination of devices and in the construction and arrangement of parts will be hereinafter fully described and claimed.

In the drawings hereto annexed, forming a part of this specification, Figure 1 is a perspective view of a display-rack constructed in accordance with my invention and showing by full lines two shelved rack-sections adjusted in the same vertical plane, representing by dotted lines the upper rack-section folded downwardly to a position at one side of the lower rack-section and in substantially the same horizontal plane therewith. Fig. 2 is a vertical sectional elevation taken transversely through the table-stand and showing the parts by full lines in the same position as in Fig. 1, the shelves being omitted. Fig. 3 is a sectional plan view taken in the plane of the dotted line 3 3 on Fig. 2. Fig. 4 is a detail view in elevation of a part of the stand, the adjacent portions of the upper and lower rack-sections, and the locking devices for such rack-sections. Fig. 5 is a detail vertical section through the upper part of the two rack-sections, one of which has been inverted, representing the position of the permanent table-top and the flush relation of the supplemental removable table-top. Fig. 6 is a vertical cross-section on the line 6 6 of Fig. 3 and on an enlarged scale. Fig. 7 is a detail cross-sectional view illustrating one embodiment of means for holding the supplemental top on the upper rack-section when the latter is inverted. Fig. 8 is a detail view of a modified form of the rack-sections, which may be inclined forward or backward with respect to the horizontal plane of the stand.

The same numerals of reference are used to indicate corresponding parts in each figure of the drawings.

The leading feature of my invention consists in the combination, with a base or stand, of two shelved rack-sections connected with said base or stand for adjustment thereon independently of each other and independent fastening or locking devices for said rack-sections. One rack-section, which I will hereinafter refer to as the "lower" rack-section, is connected with the base or stand in such a way as to be capable of adjustment to inclined and vertical positions, and the locking device for this rack-section is adapted to hold it in either of the described positions. The other rack-section, which I will hereinafter refer to as the "upper" rack-section, is capable of adjustment to either of three several positions. First, it may be moved to a vertical position immediately over or in the vertical plane of the lower rack-section; secondly, it may be moved to an inclined position while it is disposed above the lower rack-section, and, thirdly, it may be turned down to occupy a position alongside of the lower rack-section and in substantially the same horizontal plane therewith, the last-named position being indicated by dotted lines in Fig. 1.

The base or stand 10 which I employ some-

what resembles a table, and it consists of the foot-pieces 11, the front and back posts 12 13, and the head bars or rails 14. The foot-pieces are united together by a tie-rod 11ª, and to these foot-pieces are secured in any suitable way the posts 12 13, which are braced by the cross-rails 12ª. The head bars or rails 14 are preferably made of metal, and the upper ends of the corner-posts are secured firmly thereto. These bars or rails are parallel with each other at the upper part of the stand, and to the inner opposing sides or faces of said rails 14 are firmly secured the metallic brackets 15. The brackets have inwardly-extending arms 16, provided with the slots 17, and on these arms of the brackets rests the horizontal table 18, the latter being secured firmly by the bolts or screws 19ª, which pass through the slots in the bracket-arms. The ends of this horizontal table terminate within the head-bars 14 of the stand, so as to leave the narrow spaces 19 between the table and head-bars 14, as shown more clearly by Fig. 3, which spaces 19 accommodate the corner-bars of the rack-sections and certain of the locking devices therefor.

The lower shelved rack-section has the vertical bars 20 21 arranged in pairs near opposite ends of the stand and at the front and rear portions thereof, each vertical corner-bar being provided at its upper end with an elbow 22, which is pivoted at 23 to the head-rail 14 of the stand 10. It will be understood that the front bars 20 and the rear bars 21 have their elbows pivoted to the head-rails 14 at the proper distances apart, and these front and rear bars are connected by the cross metallic bars 24, two of which are preferably employed for each pair of vertical bars, each cross-bar having its end portions pivoted at 25 to the front and rear vertical bars 20 and 21, respectively. (See Fig. 2.) The cross-bars which lie in the same horizontal plane support or carry the shelves 26, the latter spanning the spaces between the cross-bars at opposite ends of the rack and being firmly secured to said cross-bars in any approved way—as, for example, by screws which pass through suitable openings in the bars 24 and are embedded in the shelves.

The lower rack-section is represented by the drawings as having two shelves; but it is understood that the number of the shelves employed may be varied as desired.

The lower rack-section is pivoted or suspended at its upper portion by elbow-joints on the head-rails 14 of the base, whereby said rack-section may be disposed in the vertical position shown by full lines in Figs. 1 and 2, or said rack-section may have its vertical bars moved to the inclined positions partly represented by Fig. 4. The adjustment of the lower rack-section to the inclined position causes its lower portion to project in front of the stand 10; but as the cross-bars 24 are pivoted to the vertical corner-bars 20 21 the shelves 26 of the lower rack-section will remain in the proper horizontal positions for the reception of the merchandise displayed.

The locking device which I prefer to employ for the lower rack-section consists of the quadrants 27, disposed at opposite ends of the section and each pivoted at 28 to one of the rear vertical bars 21. These quadrants may be clamped adjustably to the head-rails 14 of the stand 10 by any suitable means; but in the drawings I have shown the bolt 29 passing through the slot 30 in each quadrant, said bolt also passing through an aperture in one head-rail 14 and receiving the winged thumb-nut 31 on its exposed protruding end. (See Figs. 1 and 3, inclusive.) The thumb-nuts of the bolts may be loosened for the quadrants to change their positions in harmony with the adjustment of the lower rack-section; but the nuts may be tightened to clamp such quadrants firmly against the head-rails 14, thus maintaining the lower rack-section firmly in the position to which it may be adjusted.

I will now proceed to describe the upper rack-section and the means for locking the same in its adjusted positions. This upper section consists of the front and rear vertical bars 32 33, the metallic cross-bars 34, and the shelves 25. (See Figs. 1 and 2.) The bars 32 at the front of this upper rack-section are provided at their lower ends with the elbows 38, the latter being fitted in the spaces 19 between the table 18 and the head-rails 14 of the stand, whereby said front bars 32 may be fitted to said head-bars 14 by the removable bolts 38ª. The rear vertical bars are bent flatwise at two points to form the elbow 39 in the peculiar shape represented more clearly by Figs. 2 and 3 of the drawings, and these elbows 39 of said rear bars are loosely mounted on the hinge-rod 37, which passes through said elbows and the two head-rails 14. It will be understood that each rear vertical bar has an elbow 39, formed to bear on the hinge-rod 37 at two points, thus contributing to the strength of the hinge-joint between the stand and the upper rack-section.

Each cross-bar 34 spans the space between two of the vertical bars 32 33, the end portions of said cross-bar 34 being pivoted, as at 34ª, to said bars 32 33. Each shelf 35 of the upper rack-section is fastened at its ends to two of the bars 34, which lie in the same horizontal plane, whereby the shelf is affixed to bars which are pivoted to vertical bars forming a part of the upper rack-section. The bolts 38ª, which fasten the elbows 38 at the foot ends of the front bars 32, are removably secured to the head-rails 14; but the elbows 39 of the rear posts are hinged permanently by the rod 37 to said head-bars 14. As shown by Figs. 2 and 4, the hinge-rod 37 for the upper rack-section is located at a point well to the rear of the pivots 23, that connect the elbows 22 of the rear vertical bars 21 of the lower rack-section to the head-rails 14, and

thus the upper rack-section is adapted to be turned from the vertical position shown by Fig. 2 into the inverted position shown by dotted lines in Fig. 1 without hindrance from the lower rack-section, said upper rack-section in its inverted position lying well to the rear of the lower rack-section and in substantially the same horizontal plane therewith.

As the means for locking the upper rack-section in its vertical or inclined position, I employ the adjusting and locking bars 40, one being disposed at each side of the display-stand, so as to occupy the space 19 between the table and one head-bar 14. Each bar 40 has an angular arm 41, which is pivoted at 42 to one of the rear bars 33 of the upper rack-section. This locking and adjusting bar may be adjustably clamped by any appropriate means to the head-rail 14, and as one means for this adjustable clamping of the bar 40 I have shown it provided with a longitudinal slot 43. The bolt 38^a is formed with a head 52, and it is also provided with a smooth sleeve or collar 53, the latter being disposed between the head and the threaded shank of the bolt, as shown more clearly by Figs. 6 and 7. The sleeve or collar 53 of the bolt is adapted to fit in a notch 44^a of the head-rail 14 on the stand, and the threaded shank of said bolt passes through an opening in the front elbow 38 of one vertical bar 32 and also through a slot 43 of one adjusting-bar 40, as more clearly shown by Fig. 6. Said shank of the bolt is screwed in a nut 54, which is flanged at 55 to bear against the bar 40, while the nut itself is received in the slot 43 of said bar, whereby the nut is held against rotation by its engagement with the bar at the time when the screw is turned in the notch of the opening and the parts 38 and 40, thus permitting the head of the bolt and the nut to clamp the bar 40 firmly in position to which it may be adjusted. The details of construction may, however, be varied as desired.

It will be understood that the two bolts 38^a may be withdrawn from the notches in the head-rails of the stand, said bolts remaining attached to the elbows 38 and the bars 40. The upper rack-section can be turned upside down to the inverted position shown by dotted lines in Fig. 1 and partly by full lines in Fig. 5, and during such inversion of the upper rack-section the elbows 39 of the vertical bars 33 turn on the hinge-rod 37, the latter being fastened to the base or stand. In its inverted position the upper rack-section rests upon and is supported by the auxiliary foot-pieces 46, and to complete the table-top of the improved display-stand an auxiliary top-section 50 (shown by Fig. 5) is arranged in flush relation with the permanent top-section 18. The foot-pieces 46 are hinged at 47 to the foot-pieces 11 of the stand, and these hinges 47 are so located that the auxiliary foot-pieces may be folded within the foot-pieces 11, thus disposing the auxiliary foot-pieces out of sight when the upper rack-section is adjusted to one of its elevated positions.

The supplemental top-section 50 may be supported by any suitable means over the inverted upper rack-section, and, as shown by Fig. 5, one edge of said supplemental top-section 50 may rest upon the hinge-rod 37, while the outer portion of said top-section may be supported by the screw-head or nut clamping the key-plate secured on the edge of the cover 50 with the thumb-screw nut 38^a, one of the latter being shown by Fig. 7 as passing through an elbow 38^a and the slot in the bar 40, so as to be received in a bearing 51. Of course any other means may be adopted for removably securing the top-section 50 to the stand.

The upper rack-section is provided with the crossed stay-rods 48, which extend from the upper corners thereof nearly to the lower hinge-corners. In like manner the rear corner-posts 13 of the stud 10 may be braced by similar crossed stay-rods 49, as clearly shown by Fig. 1.

From the foregoing description it will be seen that the upper and lower rack members or sections are independently supported on a single stand which is common to both members, whereby either member may be adjusted to different positions independently of the other member and a simple and efficient angle show-stand is produced.

In the embodiment of the invention shown by Fig. 8 the upper and lower rack-sections are capable of adjustment to occupy reversed inclined positions with respect to the stand 10 and of the two rack-sections one to the other, and the means for locking said sections are also modified. The lower rack-section has the elbows 22 turned to the front vertical bars, which are formed with notches, one of which is indicated at 56, and each elbow 22 is pivoted to the rail 14 of the stand 10 at 23. The front elbow 22 of the front bar is connected to the stand by a bolt 57 through a hole in the rail 14, and this bolt passes through a longitudinal slot 61, which is provided in the adjusting-bar 58, the latter having an angular end 59, to which it is pivoted at 60 to one of the front bars 21. It is evident that the bar 58 may be adjusted on the bolt 57 by sliding its slotted portion on said bolt, and the bolt may then be tightened to hold the lower rack-section in the adjusted position. It is understood that the pivoted rod is dispensed with in Fig. 8, and the front vertical bars 22 of the upper rack-section have the elbows 39 pivoted at 39^a to the rail 14 of the stand, and these elbows have the extending T-elbow arms 62, each arm adapted to engage with the notch 56 in the front elbow 22 or abut against the back of the bar 21, and said elbow 62 being also provided with a shoulder 64, the latter adapted to engage with a stop 63 on the head-rail 14 of the stand.

When the upper rack-section is adjusted

to the inclined position shown by full lines in Fig. 8, which shows the extreme incline of both racks, the lower rack-section may be adjusted to several angles by abutting against the bar 21, and the two rack-sections have interlocking engagement by arms 62 in the notches 56, said lower rack-section being held firmly in place by the bars 58 and the bolts 57, so as to maintain the upper rack-section firmly in place. Said upper rack-section may, however, be adjusted to the reversed inclined position, as indicated by dotted lines in Fig. 8, and the stop 63 engages with the shoulder 64 of the arm 62, so as to hold said rack-section in position.

The advantage of the elbow and T-elbow joints between the rack-sections and the stand arises from the fact that the joints secure a wide lever-surface for clamping the rack-sections, and said elbow-joints, in connection with the adjusting and clamping bars 40, secure a trestle-like support to the upper rack-section, said parts also forming a lengthened or widened surface on the top of the stand when the upper rack-section is inverted for the reception of the supplemental table-top 50. By separating the rack into upper and lower sections the improved stand possesses many advantageous features, because a variety of changes in the adjustment of the stand is obtained, which changes are well adapted to the needs of the storekeeper in dressing the stand with goods to be displayed. The goods may be placed on the table of the stand or on either of the shelves thereof, and the several adjustments afforded by the sections of the improved rack enable the goods to be displayed to good advantage from either side of the stand—that is to say, goods can be shown from the rear of the stand as well as from the front side thereof.

It is evident that the pivotal rod 37 may be omitted from the stand and that a portion of the elbow-hinge may be dispensed with by cutting off that portion of said hinge which bears on the rod.

A bracket-bearing to support the elbow-bars 33 is pivoted to the rail 14, as shown by Fig. 4.

Changes within the scope of the appended claims may be made in the form and proportion of some of the parts while their essential features are retained and the spirit of the invention is embodied. Hence I do not desire to be limited to the precise form of all the parts as shown, reserving the right to vary therefrom.

Having thus described my invention, what I claim as new is—

1. A display-rack consisting of a stand, a lower rack-section, an upper rack-section having the front and back standards supporting the shelves and hingedly connected or pivoted at the back standards only to the stand and capable of adjustment to position in vertical alinement with, or of inversion in rear of, the lower rack-section, and means for supporting said upper rack-section in its adjusted positions, substantially as described.

2. A display-rack comprising a stand, a lower rack-section supported thereon, an upper rack-section having a pivotal connection at its lower rear corner only to said stand and capable of adjustment to positions either in vertical alinement with said stand, at an angle thereto, or of inversion in rear of said stand, and locking means for said upper rack-section to sustain it in its elevated or inclined positions, substantially as described.

3. A display-rack comprising a stand, a lower rack-section pivoted to said stand, an upper rack-section hinged at its lower rear corner only to the stand, and independent locking devices each connected with one rack-section and clamped adjustably to the stand, the locking device for the upper rack-section having an element connected to said rack-section at one side of its pivotal attachment to said stand, whereby said locking device is adapted to sustain the upper rack-section in either an elevated position over the lower section, or at an angle thereto and to the stand, substantially as set forth.

4. A display-rack comprising a stand, a lower rack-section having the upright bars and the elbow-jointed connection with said stand and adjustable thereon to vertical or inclined positions, shelves pivoted to the bars of said lower rack-section, the quadrants pivoted to the lower rack-section, and means for clamping the quadrants to the stand, an upper rack-section having at its rear corner only a hinged connection to the stand and adjustable to vertical, inclined or inverted positions, and an independent locking device for holding said upper rack-section in either of its adjusted positions, substantially as described.

5. A display-rack comprising a stand, an upper rack-section having the elbow-hinged connection at its rear corner only with said stand and capable of adjustment to either a vertical, inclined or inverted position, locking-rails connected to the upper rack-section, and clamps for confining the locking-rails to the stand, whereby the rails may be adjusted or removed, substantially as described.

6. A display-rack comprising a stand, an upper rack-section hinged at its lower rear corner only to said stand and capable of adjustment to the elevated or inverted positions as described, the locking-bars pivoted to said upper rack-section at points adjacent to the hinged connection of the rack to the stand, and means for clamping said bars detachably and individually to the stand, substantially as described.

7. In a display-rack, the combination of a stand provided with the brackets and a table-top secured to the brackets, a lower shelved rack-section having pivotal connection with said stand below the table-top, an upper

shelved rack-section having a permanent hinge connection at its rear corner only with the stand, and independent locking devices each connected to one rack-section and adapted to be clamped to the stand, substantially as described.

8. A display-rack comprising a stand having parallel side bars, a table-top secured permanently to said stand and having its end portions terminating within the sides thereof and forming therewith intervening spaces, an upper rack-section having a hinged connection at its rear corner only with said stand, the locking-rails pivoted to said upper rack-section and fitting loosely in the spaces between the table-top and the sides of the stand, means for clamping said locking-rails to the stand, and a lower rack-section supported by the stand, substantially as described.

9. A display-rack comprising a stand having the hinged foot-pieces foldably connected thereto, a lower rack-section, an upper rack-section hinged to the stand and arranged to be lowered and to rest upon said foot-pieces, and independent clamping devices each connected to one rack-section and clamped to the stand, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

WILLIAM NORTHGRAVES.

Witnesses:
J. M. MEYHEW,
J. M. HALL.