W. TIETZ.

SHELF STRUCTURE.

APPLICATION FILED MAY 18, 1911.

1,025,032.

Patented Apr. 30, 1912.

3 SHEETS—SHEET 1.

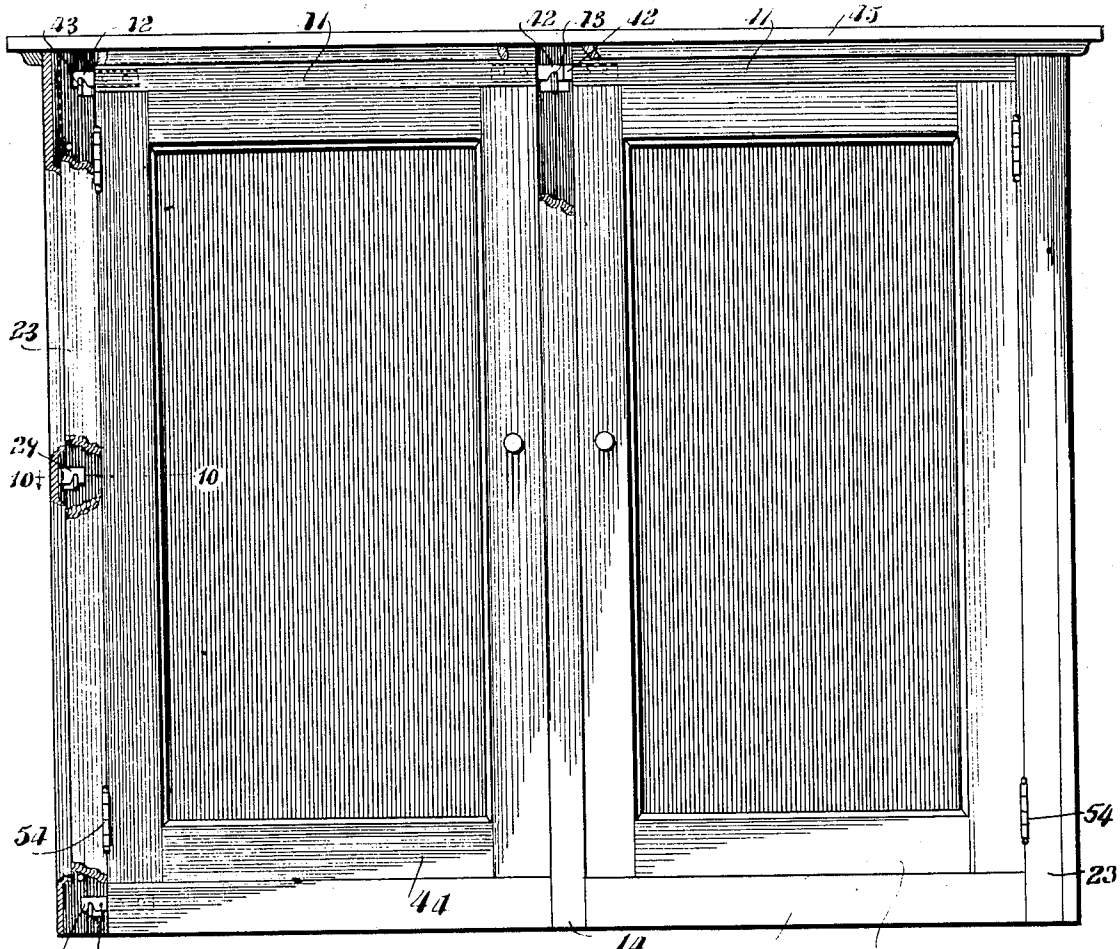


Fig. 1.

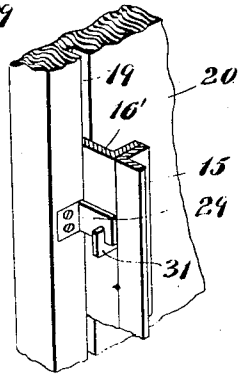
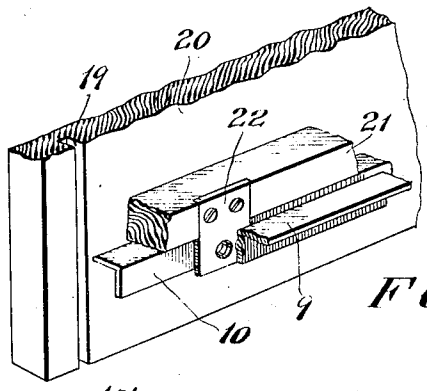


Fig. 7.



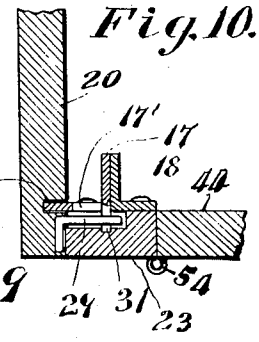


Fig. 9.

Fig. 10.

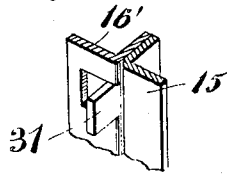


Fig. 8.

Witnesses

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3 SHEETS—SHEET 2.

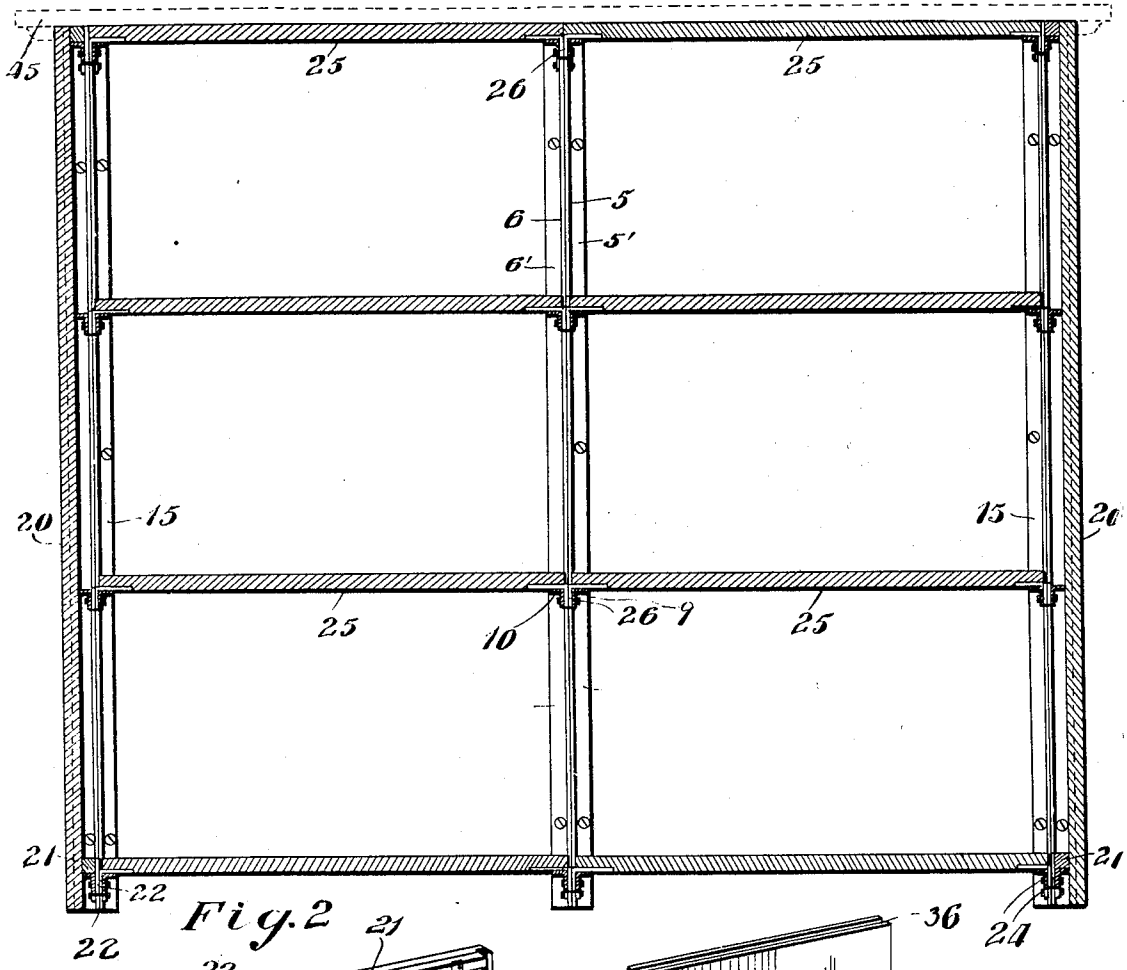

Fig. 2

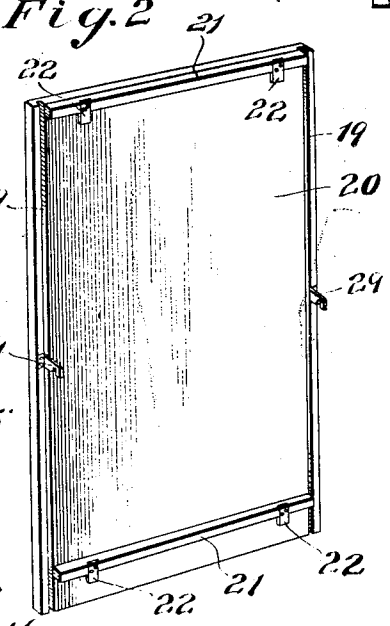

Fig. 5

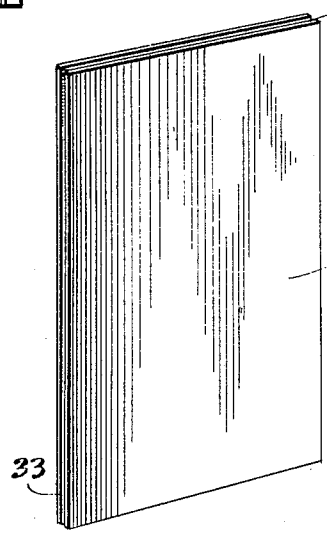

Fig. 6.

Witnesses

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3 SHEETS—SHEET 3.

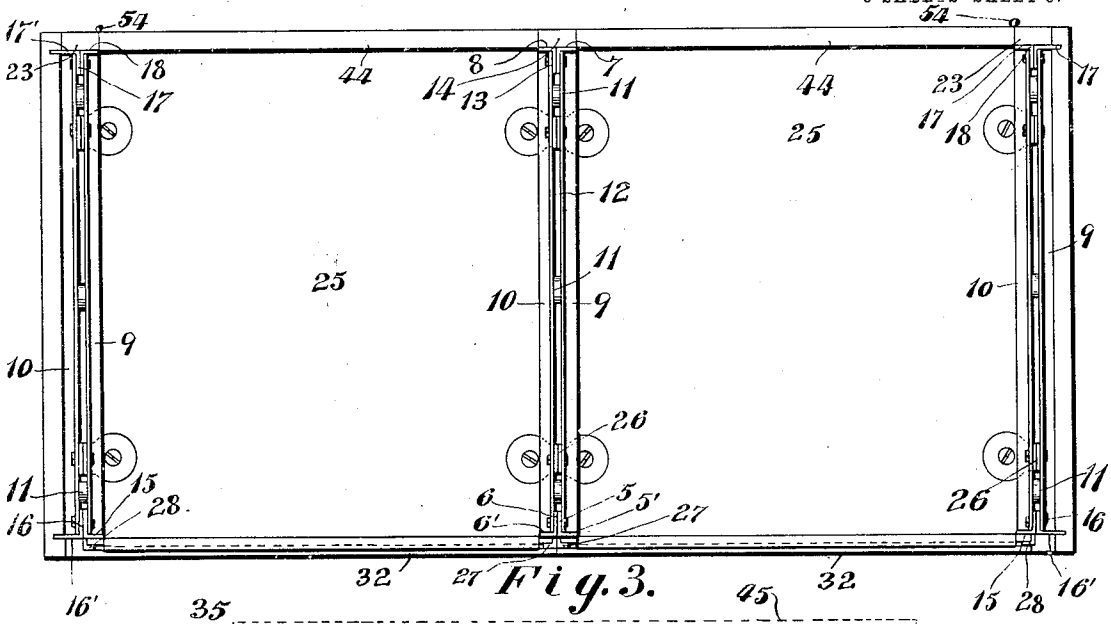

Fig. 3.

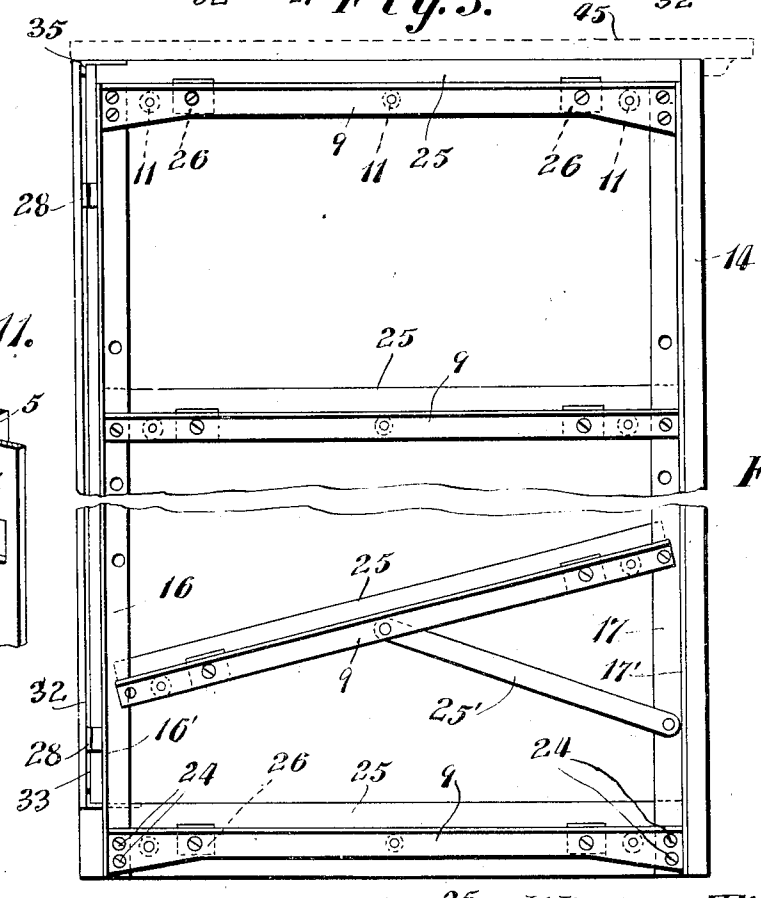

Fig. 4.

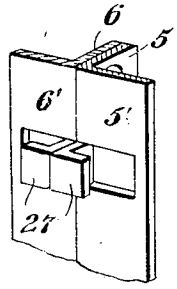

Fig. 11.

Fig. 12.

Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM TIETZ, OF RICHMOND, VIRGINIA.

SHELF STRUCTURE.

1,025,032. Specification of Letters Patent. Patented Apr. 30, 1912.

Application filed May 18, 1911. Serial No. 627,953.

To all whom it may concern:

Be it known that I, WILLIAM TIETZ, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented new and useful Improvements in Shelf Structures, of which the following is a specification.

This invention relates to improvements in sectional cases and shelvings, the leading object in view is to provide a sectional construction adapted for holding goods for display or for storage including a series of vertical sections forming units adapted to be interlocked to each other and provided with shelves adjustable to varying positions on the sections.

One of the leading objects of the invention is to provide a sectional case and shelving construction for which the units are provided with improved means for locking one unit to the other against horizontal movement.

Another object of the invention is to provide a sectional shelving construction or sectional case embracing a plurality of interlocking sections adapted to be arranged in knock-down fashion for shipment in a very compact condition and so constructed that there will be no necessity for breakage in disassembling the shelving or case, and consequently a minimum amount of lumber will be required.

A still further object of the invention is to provide a sectional shelving or case construction including a series of frame supports and a series of connecting members adapted to interlock the said frame supports and to inclose goods arranged within the case or on the shelves so as to protect said goods against dust and other destructive influences.

With the above and other objects in view the invention consists in certain construction, combination and arrangement of parts clearly described in the following specification and clearly illustrated in the drawings, in which:

Figure 1 is a front elevation of a construction embodying the invention with portions broken away to illustrate the connecting parts; Fig. 2 is a vertical sectional view showing the arrangement of the shelves and the supports therefor; Fig. 3 is a bottom plan view; Fig. 4 is an end view with one of the end panels removed; Fig. 5 is a detail perspective view on a reduced scale, of one of the end panels; Fig. 6 is a detail perspective view of one of the members of the case; Fig. 7 is a detail perspective view partly in section showing the lock between the end panel and the vertical supports of the case; Fig. 8 is a detail perspective view of one of the supports of the case showing the construction of one of the locking members or tongues; Fig. 9 is a detail perspective view of one of the locking connections between the shelves; Fig. 10 is a detail sectional view taken on the line 10—10 of Fig. 1; Fig. 11 is a detail sectional perspective view of a pair of tongues for locking the back panels of the case or shelving; Fig. 12 is a detail perspective view of one of the locking flanges carried by the top connecting member.

In the accompanying drawings, I have illustrated a sectional case or shelving construction comprising three vertical supports, which are formed of angle irons and which are adapted to be interlocked to the horizontal supports. A greater or lesser number of the vertical supports may be employed, if desired.

The central vertical supports consist of rear angle bars 5 and 6, which are joined together so as to provide rear flanges 5′ and 6′. The rear angle bars 5 and 6 are connected to the front angle bars 7 and 8 by means of the horizontal angle iron shelf supports 9 and 10, which horizontal shelf supports 9 and 10 are spaced apart from each other by washers 11 so as to provide spaces 12. The horizontal shelf supports 9 and 10 are adjustably connected to the vertical angle bar supports 5, 6, 7, and 8 by means of screw bolts 13 or like connecting devices. The angle bars 7 and 8 are secured to a front vertical strip 14, preferably of wood. The end vertical supports are also formed of angle bars arranged in contacting pairs. The rear pairs include angle bars 15 and 16 and the front pairs include angle bars 17 and 18. The rear angle bars 15 and 16 are connected to the front angle bars 17 and 18 by means of the horizontal angle bar shelf supports 9 and 10. The rear angle bar supports 16 are provided with flanges 16′ forming tenons and the front angle bars 17 are provided with flanges 17′ forming tenons, which tenons are adapted to enter the vertical grooves 19 formed in the end panels 20. The end panels 20 are provided with tongues or arms 29 which are formed with notches

adapted to engage the tongues 31 stamped out of the flanges 16′ as shown in Fig. 8. The end panels 20 are provided with cross pieces 21 arranged near the upper and lower extremities thereof, and which carry depending metallic arms 22. The depending arms 22 are adapted to engage the horizontal shelf supports 9 and 10 and enter the spaces 12 between said supports 9 and 10, as shown in Fig. 9. In this way the end panels are locked to the horizontal shelf supports and to the vertical supports. The front supports 17 and 18 are fixed to vertical wood strips 23.

The lower horizontal shelf supports 9 and 10 are enlarged at their ends to receive screws 24 adapted to prevent pivotal movement of said supports on the lower end of the vertical angle bar supports and the upper horizontal supports 9 and 10 are constructed the same way as the lower horizontal shelf supports and for the same purpose. The horizontal shelf supports 9 and 10 support the shelves 25, which are provided at their ends with depending flanges or arms 26 adapted to enter the spaces 12 between said supports 9 and 10.

The central rear vertical angle bar supports 5 and 6 are provided with rearwardly extending right angular flanges or tongues 27 stamped out of the flanges 5′ and 6′ and the flanges of the rear angle bar supports 15 are provided with right angular tongues 28 stamped out of the rearmost flanges thereof. The tongues 27 and 28 form holding tongues for the back panels 32 which are formed with edge grooves 33, whereby said back panels may be forced into position between the tongues 27 and 28 as shown in Fig. 3. The upper and lowermost shelves 25 are provided with depending flanges 35 adapted to enter the upper edge grooves 36 formed in the back panels 32. The lowermost shelves 25 may be connected to the front or facing strips 38, which are provided with end tongues 39 adapted to engage the tongues 40, and the uppermost shelves 25 may be connected with the upper facing strips 41 which are provided with end tongues 42, which are notched to engage the tongues 43, as shown in Fig. 1. Doors 44 are hinged at 54 to the strips 23 and are adapted to close against the central strip 14. If desired vertical or horizontal sliding doors may be used instead of the swinging doors. An ornamental top piece 45 is removably mounted on the upper end of the case or shelving so as to more effectively protect the same and improve its general appearance.

By means of the improved construction all of the parts can be formed in predetermined factory sizes in the manner that sectional book cases are now constructed, and can be shipped in disassembled form to the distributing points or buyers. After being received they can be readily assembled with the aid of a screw-driver and without the necessity of any carpenter work. After being set up they can again be disassembled or knocked down without the necessity of breaking any of the parts, and in this way no lumber will be wasted and the parts can be repeatedly used. When the members of the shelving or casing construction are connected together the interior of the shelving or case will be protected against dust and other destructive force, likely to cause a deterioration in the goods. In this way lumber that is now destroyed in erecting shelving and store cases can be applied in a more economical manner, and since the supply of lumber is decreasing and its cost correspondingly rising the invention provides for the conservation of lumber. When it is desired to arrange the shelves in tilting positions a brace 25′ is pivoted to the horizontal shelf supports 9 and 10 and to one set of the vertical angle bar supports, as shown in Fig. 4.

Having thus described my invention, what is claimed as new is:

1. A sectional shelving construction comprising a series of vertical angle bar supports arranged in contacting pairs, a series of shelf supports adjustable on said vertical supports, shelves adapted to be locked to the shelf supports and to be adjustable therewith, and lateral tongues extending from a part of the vertical supports and end panels provided with locking devices having notches adapted to engage the tongues.

2. A sectional shelving construction comprising vertical angle bar supports arranged in contacting pairs, a series of horizontal shelving supports adjustable on said vertical angle bar supports, a part of said vertical angle bar supports having flanges forming tenons, vertical members secured to the supports and end panels having vertical grooves adapted to receive the tenons and be interlocked with the angle bar supports carrying said tenons.

3. In a sectional shelving construction, a series of vertical angle bar supports, vertical members secured to said supports, the end vertical angle bar supports being provided with lateral tongues, a series of horizontal shelf supports adjustable on the vertical end angle bar supports, a series of end panels having grooves adapted to receive portions of the end vertical angle bar supports, and notch locking device secured to the end panels adapted to lockingly engage the tongues of said vertical end supports.

4. A shelving construction including vertical supports, shelving supports adapted to be secured at either end to the vertical supports, and braces pivoted medially of the shelving supports and adapted to be secured to the vertical supports for holding said

shelving supports in inclined positions and adapted to be secured to either set of the vertical supports, whereby the shelving supports may be inclined in either direction.

5. In combination, a series of vertical supports formed of angle iron, means for connecting the supports in spaced relation, and a top shelf adapted to be interlocked to said connecting means and having a depending flange on its rear edge.

6. In combination, a series of vertical supports formed of angle iron, horizontal angle bar shelf supports connecting said vertical supports, and panels removably interlocked with the supports, back panels interlocked with the rear vertical supports, doors for the front of the supports, and upper and lower shelves having depending edge flanges forming dust shields and adapted to interlock with the back panels.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM TIETZ.

Witnesses:
E. EDMONSTON, Jr.,
DAVID W. GOULD.