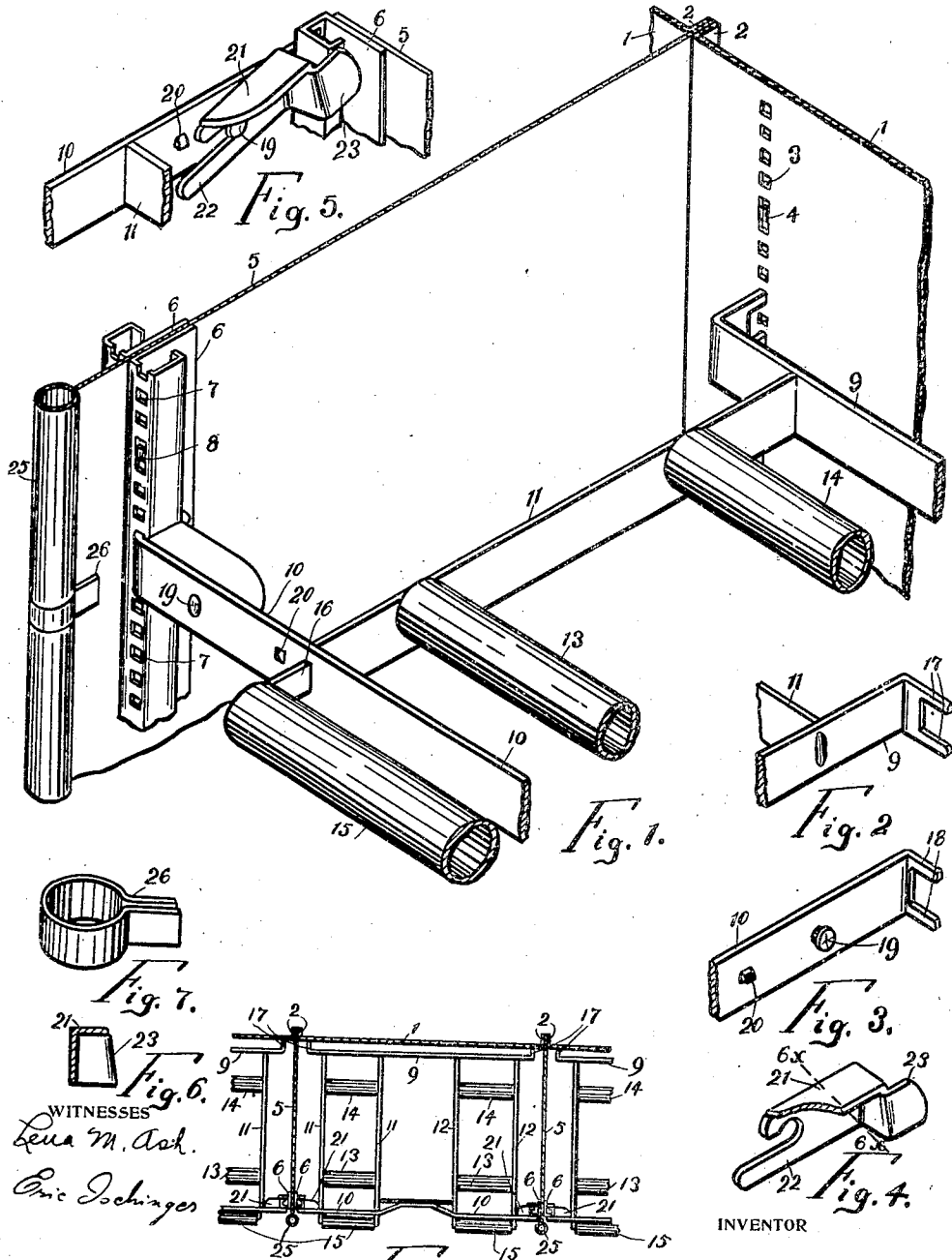


L. J. ISBELL.
 ADJUSTABLE SHELF AND CASE THEREFOR.
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WITNESSES
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Fig. 8. BY *Lewis J. Isbell*

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To all whom it may concern:

Be it known that I, LEWIS J. ISBELL, a citizen of the United States, residing at Jamestown, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Adjustable Shelves and Cases Therefor, of which the following is a specification.

The object of this invention is to provide a construction for a case which will support shelves that will be readily adjustable therein to different heights and to different spaces between consecutive shelves.

Another object of this invention is to provide means for locking the shelves securely in place so that they will be made firmly a part of the case and will not rattle therein.

Another object of the invention is to provide adjustable means for holding and locking the shelves in place, which can be used or changed without the use of tools.

These and other objects of my invention will be fully illustrated in the drawings, described in the specification and pointed out in the claims at the end thereof.

In the accompanying drawings, Figure 1 is a perspective view of a case and a shelf mounted therein. Fig. 2 is a perspective detail view of a portion of the rear supporting member of the shelf. Fig. 3 is a perspective detail view of a portion of the front supporting member of the shelf. Fig. 4 is a perspective view of the locking clip that is used for locking the shelf in place. Fig. 5 is a perspective detail view of the locking clip advanced toward locking position. Fig. 6 is a sectional view of the locking clip on the line 6*-6* in Fig. 4. Fig. 7 is a detail view of the bearing for the vertical roller. Fig. 8 is a horizontal sectional view of the case, showing the general arrangement of the parts.

In the accompanying drawings, like reference numerals refer to like parts.

Reference numeral 1 represents the back of the case having the upright flanges 2, 2 thereon. This back is perforated on both sides at 3, 3 with holes which are provided for the purpose of supporting the rear end of the shelves which may be placed in the case. As shown at 4, the sheet material between two consecutive holes is indented for

the purpose of marking every sixth hole, it being understood that the frequency with which the indentation occurs in the series may be changed at will. Between the flanged ends 2, 2 of two consecutive plates 1, 1 are clamped in any suitable manner the upright side plates 5. These side plates near the front are provided with the adjustment strips or channels 6, which channels are bent up of a single sheet of metal to the shape indicated in perspective at the top of Fig. 1. In the front these channels are perforated with holes 7, 7, between which at the same intervals the sheet metal is indented at 8 for the purpose of marking the series of holes in the same way as is the back plate 1. Within this case are provided supporting shelves which may be either solid or built up with a framework having rollers therein such as are shown in the drawings of this application. The roller shelf shown herewith is formed of the bars 9 and 10 and the cross bars 11, 11 and 12, 12, between which cross bars are mounted the rollers 13, 14 and 15. The cross bars 11 and 12 have each a reduced end 16 which extends through suitable openings in the bar 10 at the front, which opening is substantially the same width as the widest part of the reduced end 16 but narrower than the cross bar 11 which on that account abuts against the bar 10 of the shoulder. By riveting the bar 10 down slightly the parts are locked in place firmly. The rollers 13, 14 and 15 are provided with trunnion ends which rotate in suitable openings or bearings in the cross bars by which they are supported. The ends of the bars 9 and 10 are bent back and are cut away to form a fork or lugs on the end thereof, which lugs can engage with the openings 3 in the rear plate 1 and with the openings 7 in the supporting channels 6. The lugs 17 on the bars 9 are preferably a little longer than the lugs 18 on the bar 10, which facilitates the engagement of the shelf with its supporting holes.

The bars 10 are provided at each end with the studs 19 at a suitable distance from the end thereof, and adjacent said studs a lug 20 is struck up thereon. A clip 21 is provided which is capable of engaging with the stud 19 and rotating to a horizontal position so

that the long finger 22 thereon will engage with the lug 20 from underneath, by which and by the stud it is held in a horizontal position. The clip 21 is provided with the out-
 5 turned end 23 which when the shelf is placed in position as shown in Fig. 1, will engage with the channel on the adjusting strip 6. To facilitate this engagement, the lower end of the part 23 is turned out farther than
 10 the upper end, so that as the part is rotated it will the more rigidly engage with the channel and draw tighter thereon so as to clamp the channel between the clip and the bar 10. The end of the part 23 also engages
 15 with the flat portion of the adjusting strip 6 and will drive the bar 10 endwise away from the adjusting strip 6, securely locking the lugs 18 into the holes with which they are engaged, and taking up all the lost motion between the shelf and the supporting
 20 strip on which it is carried. By rotating the clip in the reverse direction the bar 10 is freed from the supporting strip so that the shelf may be taken out and placed in another position.

It will be understood that clips 21 may be placed at each end of the bar 10 so that the shelf will be locked in place on both sides at the front, which in turn will hold it locked
 30 in place at the rear as well.

Mounted in front of the upright side plates 5 are the rollers 25 supported and guided by the bearing clips 26 which are fastened to the plates 5, by which rollers
 35 any book or article that is placed on the shelf is steered to position with the least possible friction, being thereby held laterally out of contact with all of the stationary parts of the shelf. The rollers 13, 14 and
 40 15 also support the book from underneath so that it does not come in contact with any of the stationary parts of the shelf. The rollers 25 are cut away with an annular groove with which the clips 26 engage and
 45 by which the rollers are supported from the plates 5.

It will be noticed that the channels 6, 6 act as stiffening ribs for the side plates 5 and that the shelves are locked at the front
 50 to the stiffening ribs and side plates, preventing them from spreading.

Having thus described my invention, what I claim as new and patentable is as follows:

1. In a filing case, the combination of a
 55 back plate and side plates, adjustment strips fastened to said side plates, perforations uniformly spaced in said adjustment strips and in said back plate, a shelf having rearwardly projecting lugs at the front and
 60 back thereof to engage with said perforations, a clip pivotally mounted on said shelf and adapted to engage the adjacent flange on two sides and hold said adjustment strip between said clip and the adjacent lugs on
 65 said shelf.

2. In a filing case, the combination of a back plate and side plates, adjustment strips fastened to said side plates, perforations spaced in said adjustment strips and in said back plate, a shelf having rearwardly projecting lugs at the front and back thereof to engage with said perforations, a clip pivotally mounted on said shelf and adapted to engage the adjacent adjustment strip on two sides and hold said strip between said clip
 70 and the adjacent lugs on said shelf, said shelf being composed of a plurality of longitudinal bars connected by cross bars extending transversely thereto, rollers mounted between said cross bars and parallel to
 75 said longitudinal bars.

3. In a filing case, the combination of an adjustable shelf having longitudinal bars therein, cross bars connecting said longitudinal bars, the ends of said longitudinal
 85 bars being bent rearwardly and cut away to form forks therein, a clip pivotally mounted on the longitudinal bar on one side of said shelf having a bearing surface thereon extending transversely of said bar and forwardly toward said forked end of said bar,
 90 substantially inclosing a pocket between said clip and the end of said bar.

4. In a filing case, the combination of an adjustable shelf having longitudinal bars
 95 thereon, a stud on one of said bars, a clip having an open ended slot therein engaging with said stud and forming a pivotal connection therewith, a lug formed on said bar, an arm on said clip extending rearwardly
 100 from said slot and adapted to engage with said lug and hold said clip in a fixed position.

5. In a filing case, the combination of a back plate and side plates fastened perpendicular thereto, adjustment strips fastened to said side plates, perforations uniformly spaced in said back plate and adjustment strips, a shelf having projections thereon at each corner extending rearwardly, said projections at the rear engaging with said back plate and at the front engaging with said supporting strips, clips pivotally mounted on said shelf, each having a bearing surface thereon extending rearwardly of said shelf
 110 and transversely toward said projections at the corners of said shelf, said clips engaging with said supporting strips to hold said projections in engagement therewith.

6. In a filing case, the combination of a
 120 back plate and side plates fastened perpendicular thereto, adjustment strips fastened to said side plates, perforations uniformly spaced in said back plate and adjustment strips, a shelf having projections thereon at each corner extending rearwardly, said projections at the rear engaging with said back plate and at the front engaging with said supporting strips, a clip pivotally mounted on said shelf having a bearing surface there-
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on extending rearwardly of said shelf and
then extending transversely toward one of
said projections at a corner of said shelf and
flaring downwardly and toward the rear of
5 said adjustment strip, said clip engaging
with said supporting strip to hold the pro-
jections in engagement therewith.

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

LEWIS J. ISBELL.

Witnesses:

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E. ROSS BROWN.