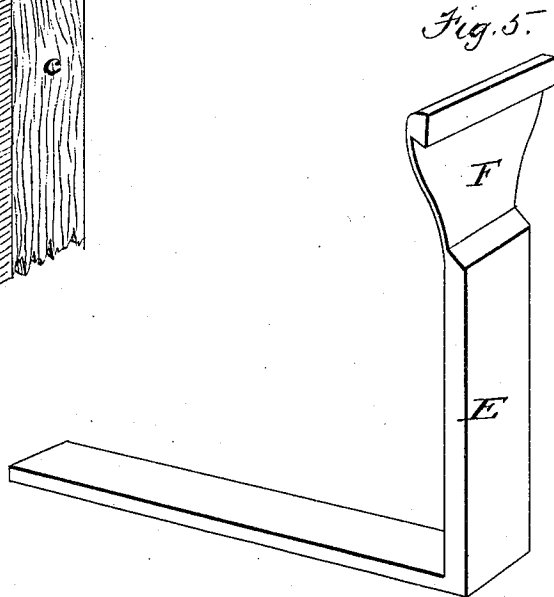
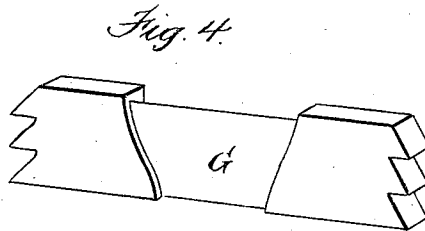
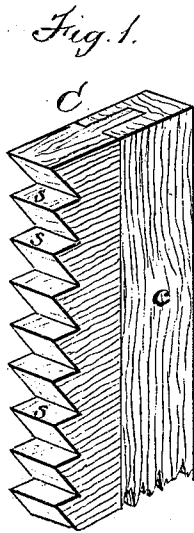
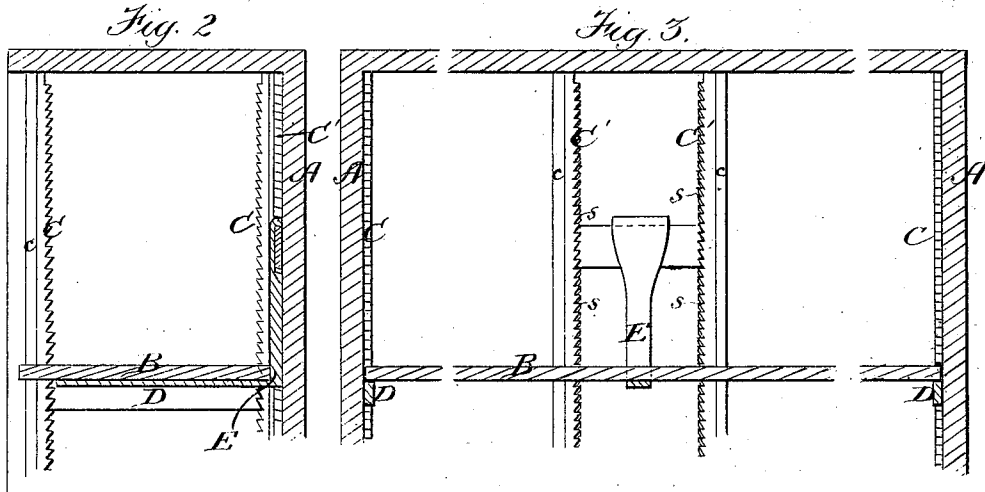


E. C. DONNELL.
ADJUSTABLE SHELVES.

No. 181,320.

Patented Aug. 22, 1876.



Witnesses.

Sam^l. M. Barton
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Inventor.
E. C. Donnell
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UNITED STATES PATENT OFFICE.

ELBRIDGE C. DONNELL, OF CHELSEA, MASSACHUSETTS.

IMPROVEMENT IN ADJUSTABLE SHELVES.

Specification forming part of Letters Patent No. **181,320**, dated August 22, 1876; application filed January 17, 1876.

To all whom it may concern:

Be it known that I, ELBRIDGE C. DONNELL, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Adjustable Shelves, of which the following is a specification:

In the accompanying drawing, forming a part of this specification, Figure 1 represents a perspective view of a part of my invention. Fig. 2 represents a transverse vertical section of my invention. Fig. 3 represents a longitudinal vertical section of the same; and Figs. 4 and 5 are perspective views of the adjustable bracket and its supporting- cleat detached.

This invention relates to that class of vertically-adjustable shelves which are supported at their ends by cleats resting on shoulders formed by notches in vertical wooden strips attached permanently to the ends of the casing of the shelves, the cleats being removable and adapted to be supported at various heights on the notched strips.

My invention has for its object, first, to effect certain improvements in the construction of the notched wooden strips, whereby the notches or shoulders can be made closer together than heretofore, without weakening the shoulders; and, secondly, to provide means whereby vertically-adjustable shelves can be supported at one or more points between their ends without obstructing the spaces between the shelves.

To these ends my invention consists, first, in making the notched strips of wood having its grain extending transversely, and providing each strip with a backing or strengthening strip of wood, with its grain extending longitudinally. My invention consists, secondly, in a bracket adapted to support a vertically-adjustable shelf between its ends, combined with suitable devices whereby said bracket is supported in the rear of the shelves, and enabled to be adjusted with the shelf which it supports. My invention consists, lastly, in certain details of construction, all of which I will now proceed to describe.

In the drawings, A represents a casing adapted to contain a series of shelves, B. C C C represent serrated or notched vertical strips rigidly attached to the casing at the

corners thereof in the usual manner, the adjacent sides of each pair of strips being notched in such manner as to form a series of substantially horizontal shoulders, *s*, on each strip. D D represent cleats of suitable length to extend across the space between the notched sides of each pair of strips and rest at their ends upon the shoulders *s*. The cleats D are removable from the strips C, and can be supported at any desired height thereon. The shelves B rest at their ends on the adjustable cleats D, and are adapted to be adjusted vertically by raising and lowering the cleats in the usual manner. The notched strips C differ in construction from those ordinarily employed in being made with the grain of the wood running horizontally or substantially parallel with the upper surfaces of the supporting-shoulder *s*, and with the plane sides of the strips, instead of running vertically and at right angles with the upper surfaces of the shoulders, as heretofore. This construction enables the shoulders to be made at comparatively short distances apart, say a quarter of an inch, without being liable to be broken off, the horizontal direction of the grain of the wood obviating the brittleness which would exist in the shoulders if the grain was vertical, the fibers which compose the shoulders continuing across the strip. In consequence of the closeness with which the shoulders are made, I am enabled to form a much greater number than is usual upon each strip, and effect very slight vertical adjustments of the shelves, which is often very desirable in book-cases and libraries. Each of the strips C is provided with a backing-strip, *c*, the grain of which extends vertically, the two being connected by a tongue and groove or otherwise, this construction strengthening the strips and preventing them from warping. E represents a bracket, which is, preferably, composed of an L-shaped piece of metal, having in its vertical portion a suitable socket, F, or other means for detachably connecting it to a vertically-adjustable cleat, G. The latter is supported at its ends by shoulders *s* formed on notched vertical strips C' C', which are similar to the strips C, and are similarly attached to the back of the casing A, between the ends thereof. The horizontal portion of the bracket

E projects outwardly from the back of the casing, and is adapted to support a shelf, as shown in Fig. 2, the length of the horizontal portion being, preferably, nearly equal to the width of the shelf. A support is thus afforded for each shelf between its ends, this support being adjustable with the shelf, and affording no obstruction between the shelves, as it is supported entirely from the back of the casing. Any desired number of brackets and bracket-supports, such as have been described, may be provided between the ends of the shelves, the number, of course, being governed by the length of the shelves and the weight they have to support. I prefer to give the notches which form the shoulders *s* in the strips C' C' a downward inclination from the front to the back of the strip, and a corresponding inclination to the notched ends of the cleat G. This construction obviates, in a measure, the liability of the cleat becoming disengaged from the strips C'. If desired, the strips C and cleats D may be similarly constructed.

I claim as my invention—

1. The notched strips C C', composed of wood, the grain of which runs transversely, combined with the backing-strips *c*, composed of wood the grain of which runs longitudinally, substantially as described, for the purpose specified.

2. The strips C' C', having the inclined notches, combined with the removable cleat G, having similarly inclined notched ends, substantially as described, for the purpose specified.

3. The combination of the bracket E, cleat G, notched strips C' C', and a vertically-adjustable shelf, all arranged and operating substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ELBRIDGE C. DONNELL.

Witnesses:

CHARLES A. DREW,
CHARLES F. BROWN.