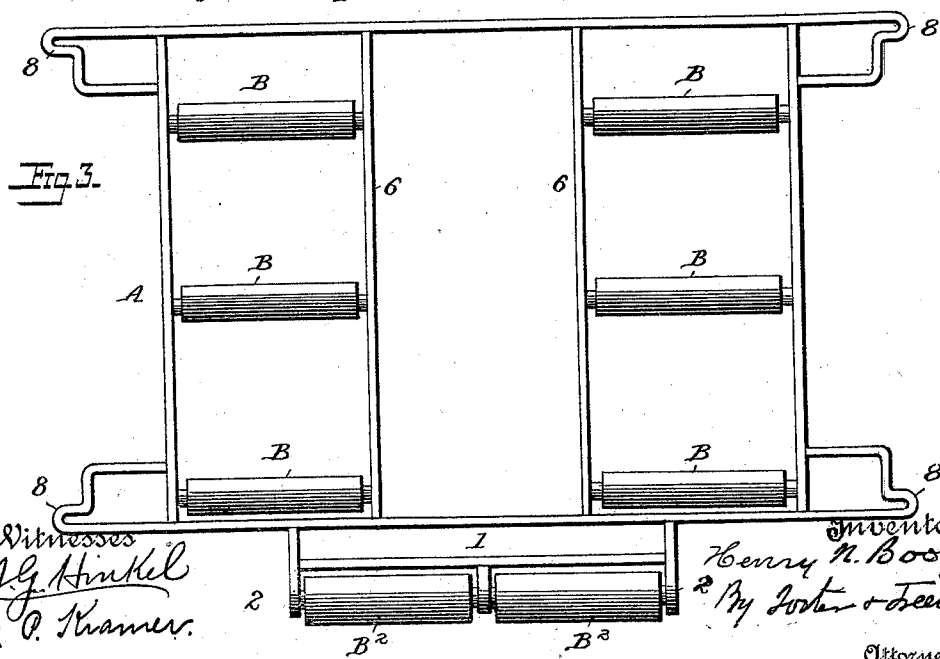
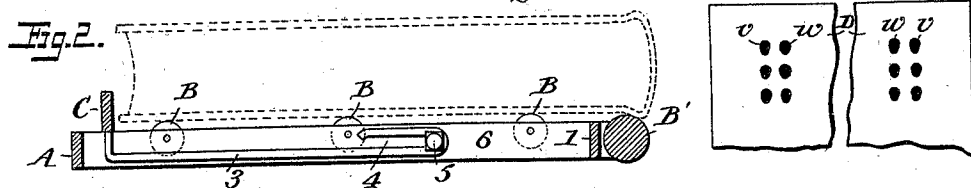


H. N. BOOZ.
ROLLER SHELVING.

Patented Feb. 4, 1896.



Witnesses
J. G. Hinkel
L. O. Kramer.

Inventor
Henry N. Booz
By Foster & Freeman
Attorneys

UNITED STATES PATENT OFFICE.

HENRY N. BOOZ, OF PHILADELPHIA, PENNSYLVANIA.

ROLLER-SHELVING.

SPECIFICATION forming part of Letters Patent No. 554,213, dated February 4, 1896.

Application filed May 3, 1894. Serial No. 509,971. (No model.)

To all whom it may concern:

Be it known that I, HENRY N. BOOZ, a citizen of the United States, residing in the city and county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Roller Shelves and Frames, of which the following is a specification.

My invention relates to book shelves and cases and more especially to that class of shelves in which there are roller-bearings for the books; and my invention consists in constructing the shelf to secure an extended front support for the book while permitting it to be readily grasped by both hands, and in otherwise constructing it to regulate the position of the book thereon, and to facilitate its adjustment within the case, and in constructing the shelf and case to permit two shelves to be secured with facility in line with each other upon opposite sides of the same partition, all as fully set forth hereinafter and as illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my improved shelf, illustrating the same applied between the partitions of the case. Fig. 2 is a section on the line 2 2. Fig. 3 is a plan showing another form in which my improvement may be embodied. Fig. 4 is a side elevation of one of the partitions of the case.

The frame A of the shelf may be of any suitable construction to support the bearings of any desired number and arrangement of rollers B, which constitute the roller-supports for the book which lies flat upon said supports, as in other shelves of this character. Heretofore in this class of shelves it has been customary to so construct the frame as to leave a space between the forward rollers in order that the center of the book may be grasped by the hand to remove or replace the book without bringing the fingers in contact with the frame or rollers. This has proved to be extremely efficient, but in connection with very large books, such as are used by architects and engineers and in prothonotaries' offices, the central grasp of the books does not in some instances afford a sufficient hold upon the same. To overcome this objection the front roller-support, which may be a single roller or two or more rollers in line, is arranged centrally of the frame and beyond the main

body of the latter so as to leave two hand-holes or recesses adjacent to the ends of the front roller, so that the book may be grasped to remove or replace it by applying the hands to the same near the opposite ends instead of at the center, as heretofore.

In the construction shown in Fig. 1 the single roller B' is in front of the front bar 1 of the frame with its bearings in two ears or lugs 2 2, and the front portion of the frame is bent back or retracted or otherwise formed to leave the desired spaces or hand-holes opposite the ends of the central roller-bearing.

In Fig. 3 the front roller-support is in two sections B² B² arranged in front of the front bar 1.

In this class of shelves, whatever may be the arrangement of the front roller-support, it has heretofore been common to construct the shelf of a depth adapted to that of the book; but as books stored in the same case are frequently of different depths, a bearing-bar has sometimes been secured so as to extend across the width of the frame at such a point as to afford a bearing for the rear edge of the book. I have found that such a bearing-bar may be very much reduced in length and secured adjustably to the frame in such manner as to reduce the expense of attachment and adjustment. Thus, a short blade C has connected to it the bent ends of two stout wires or rods 3 3; each of which has a loop 4 at the forward end forming a slot adapted to receive the shank of a screw-bolt 5 extending into one of the bars 6 of the frame. By loosening the bolts the bearing-bar C may be set to different positions and then may be secured by tightening the bolts.

In fitting cases with shelves of this character, it is extremely desirable to avoid waste of room, and to this end the sides or partitions D D of the case are set at a distance apart but little exceeding the length of the book that is to pass between them. As the side bearings of the frame must be against the inner faces of these sides or partitions, it has heretofore been necessary to wholly remove the fastening devices in order to adjust the frames from one level to another. In order to obviate this objection, I so construct the frame of the shelf that the bearing-points 8 8 will project beyond the outer side portions

of the frame to permit the heads 9 of the threaded bolts 10 to be drawn back of these bearing-points 8 when the shelf is introduced between the sides or partitions of the case, thus permitting the shelf to bear against the opposite faces of the sides or partitions, and to be adjusted to its desired position, after which the bolts 10 may be thrust outward to engage with the bearings in the sides or partitions, which bearings may be of any suitable character.

In the construction shown in Fig. 1 there are four bearings 8 at each side of the frame, and the side of the frame between each two bearings is curved back, as shown. In the construction shown in Fig. 3 there are but two side bearings 8 projecting beyond the other portions of the side pieces of the frame, but in either case the head of the bolt may be drawn back of the bearings.

In order that shelves may be arranged in line with each other on opposite sides of the same partition, I form in each partition two parallel series of openings *v v*, each opening enlarged at the upper end and contracted at the lower to permit the head of the bolt to pass through the upper enlarged end and then the shank to take its bearing in the lower contracted end, and I arrange the bolts at one side of the shelf, so that they will pass respectively through the openings of one of the series. I also form two other parallel series of like openings *w w* as close as possible to the openings *v v*, and I arrange the bolts at the opposite side of the shelf in such position as to pass through the openings *w*. When therefore there are two shelves on opposite sides of a partition D, as shown in Fig. 1, the bolts of one shelf may pass through the openings *v* and the bolts of the other shelf through the openings *w* without interference with each other, and with the two frames on the same plane.

I do not claim in a bookcase the combination, with suitable side pieces, of the adjustable stop-plate having forwardly-ending arms

provided with long slots and adjusting-bolts passing through said slots, whereby said stop-plate can be readily adjusted.

Without limiting myself to the precise construction and arrangement of parts shown, I claim as my invention—

1. The combination with the frame of a book-shelf having set-back portions, of headed securing-bolts having their bearings in said frame and arranged so that their heads will fit into the set-back portions, substantially as described.

2. The combination with partitions having rows of keyhole-slots, of the roller-frames provided with securing devices at opposite sides having set-back portions and headed bolts mounted in said frames and arranged so that their heads will fit into said set-back portions, the securing devices at one side of the frame being forward of those at the opposite side, substantially as described.

3. The combination with partitions having rows of keyhole-slots, of roller-frames provided with securing devices at opposite sides having set-back portions, headed bolts mounted in said frames, those at one side being forward of those at the opposite side, and clamping-nuts for the bolts, whereby the frames and partitions may be secured in place, substantially as described.

4. The combination of a case having partitions each with four series of openings arranged upon vertical parallel lines and shelves having securing devices at opposite sides adapted to said openings, those at one side arranged to engage two of the series of openings and those at the other to engage the other two series, substantially as and for the purpose set forth.

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

HENRY N. BOOZ.

Witnesses:

ALLE N. DOBSON,
GEORGIA P. KRAMER.