(No Model.)

P. KAFFENBERGER.

FOLDING BOOK CASE.

No. 399,415. Patented Mar. 12, 1889.

Fig. 1

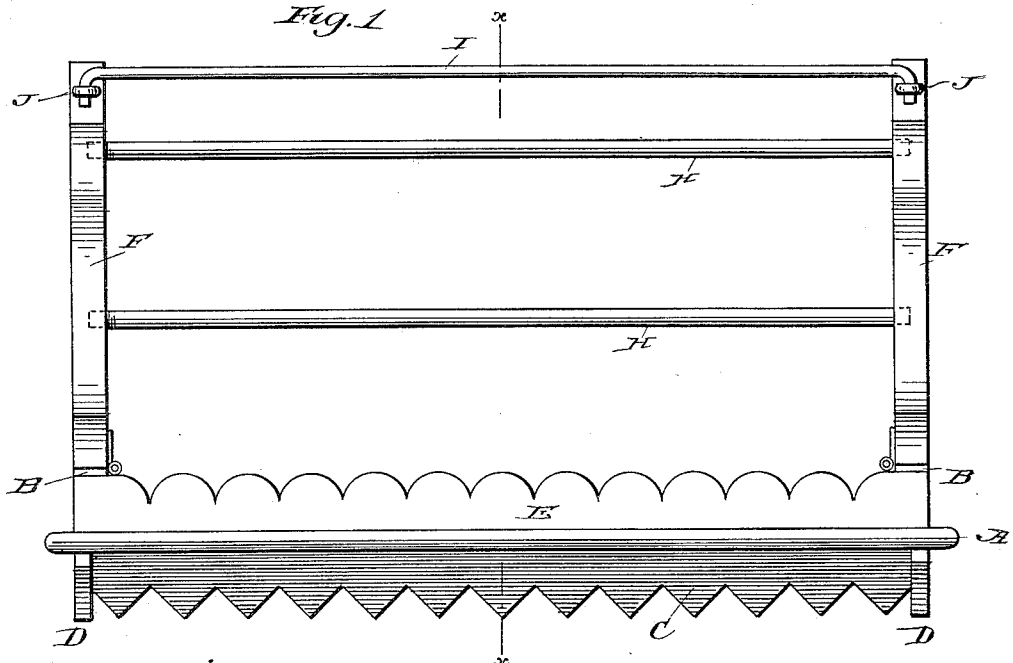


Fig. 2.

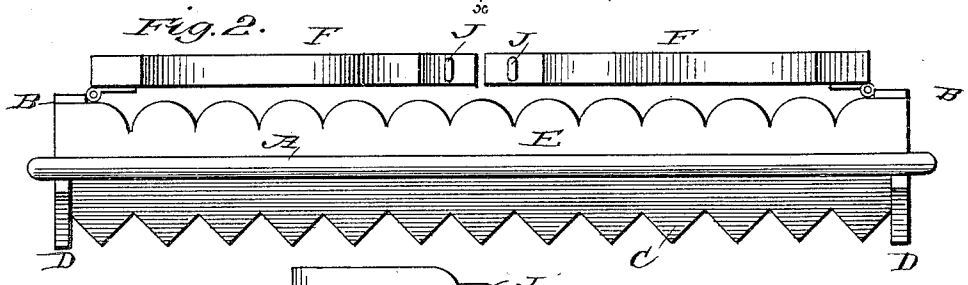
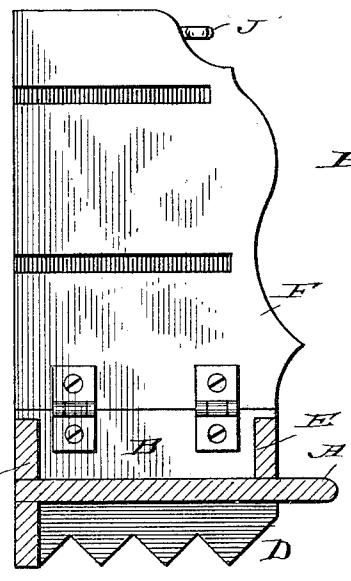


Fig. 3.



WITNESSES:

D. C. Reusch

C. Sedgwick

INVENTOR:

P. Kaffenberger

BY Munn & Co

ATTORNEYS.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

PHILLIP KAFFENBERGER, OF SPRINGFIELD, MISSOURI.

FOLDING BOOK-CASE.

SPECIFICATION forming part of Letters Patent No. 399,415, dated March 12, 1889.

Application filed November 19, 1888. Serial No. 291,196. (No model.)

To all whom it may concern:

Be it known that I, PHILLIP KAFFENBERGER, of Springfield, in the county of Greene and State of Missouri, have invented a new and useful Improvement in Folding Book-Cases, of which the following is a specification.

Folding book-cases and other folding articles have heretofore been made in such manner that after the shelves were removed the sides would fold upon themselves, and also in such manner that the shelves and front posts would fold together. These constructions have been found convenient for some purposes, but for others objections have been raised to them.

My invention consists in providing a permanent shelf upon which a permanent piece is supported at each end, which permanent pieces form portions of the sides, and combining with these permanent parts folding sides and removable shelves. By this construction a certain amount of rigidity is given to the entire structure, which I further provide for by providing rods to unite the folding sides, when in place, with the removable shelves between them.

I will describe in detail the manner of carrying out my invention, and point out in claims the particular features thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a front view of my improved book-shelf with the parts in position for use. Fig. 2 is a front view showing the hinged parts in their folded position without the removable shelves; and Fig. 3 is a view of the inner face of one of the ends of the structure, showing also a section through the permanent shelf, taken on the plane of the line *x x*, Fig. 1.

The permanent portion of my contrivance comprises a permanent board or shelf, A, and side pieces B B, supported thereon. The board A may have strips supported thereon or pendent therefrom, which may serve both as ornaments to the structure and as forming portions of receptacles for the removable parts during transportation or storage, and when the structure is in place for any article of ornament or use. I have shown the strip C pendent from the bottom of the shelf A at its rear edge, and provided with an ornamental edge. I have also shown the strips D D pendent from the bottom of the shelf A at each end thereof. The three-sided receptacle thus formed may be used during transportation or storage to receive the removable shelves of the structure, and thus a saving in bulk of package is effected. They may also serve as legs to the structure when used as a standing book-case. I have also shown the shelf A as provided with a longitudinal strip, E, at its front and rear edge, forming with the permanent end pieces B B a rectangular space, which may be of depth and width sufficient to hold, say, towels or other toilet articles when the structure is in place for use, or may, when folded for transportation or storage, hold the removable shelves. I have not shown in the drawings this rectangular space of sufficient proportion as to length and width to serve as a receptacle for the removable shelves; but any mechanic will readily be able to so proportion the parts.

Attached to the permanent piece B, at each end of the shelf A, is a folding end, F. I have shown a leaf-hinge as the attaching device; but any other device permitting of the part F swinging inward will answer. The part F is provided with means of removably connecting therewith shelves H, of which any desired number may be used. In the example of my contrivance shown in the drawings I have shown the end pieces F as grooved to receive the shelves H; but it is obvious that a supporting-strip or other device for the shelves might be used to good purpose without departing from my invention.

When the manner of connecting the shelves H and ends F is such that the shelves do not act as a tie for the parts—as, for instance, when a groove is employed, as in the example shown in the drawings—I use a tie-rod, I, connecting the ends F F by means of the eyes J J, located, preferably, above the uppermost shelf, and either at the back or front of the structure. This tie-rod may serve as a curtain-rod.

The manner of operating my contrivance will be apparent from the foregoing description.

By the combination of the parts in the manner described I produce a folding case, which, when put together for use, shall be solid and without liability of collapsing, and which during transportation or storage may be folded into a very small bulk.

It will be apparent to any one that my folding book-case may be inverted and used in the inverted position. Of course when thus used what I have termed the "bottom board" becomes the top board, the other parts changing relatively also. The shelves will then be secured in place by any suitable means or as above indicated. If the groove is used to secure them in place the tie-rod will simply be hooked into the eyes from the other side, when the structure will be held rigidly, as before.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a folding case, the combination of a permanent shelf with permanent end pieces and folding end pieces mounted upon the permanent end pieces to move toward each other and the shelf, said folding pieces being provided with means for removably connecting one or more shelves thereto, substantially as specified.

2. In a folding case, the combination of a shelf, A, permanent end pieces B B, folding end pieces F F, removable shelves H, and tie-rod I, substantially as specified.

3. In a folding case, the combination of a permanent shelf and end pieces with a strip, E, connecting the front and rear ends of said end pieces, and folding end pieces mounted upon the permanent end pieces to move toward each other and the permanent shelf, said folding pieces being provided with means for removably connecting one or more shelves thereto, substantially as specified.

PHILLIP KAFFENBERGER.

Witnesses:

AUG. LOHMEYER,

CHAS. W. MOON.