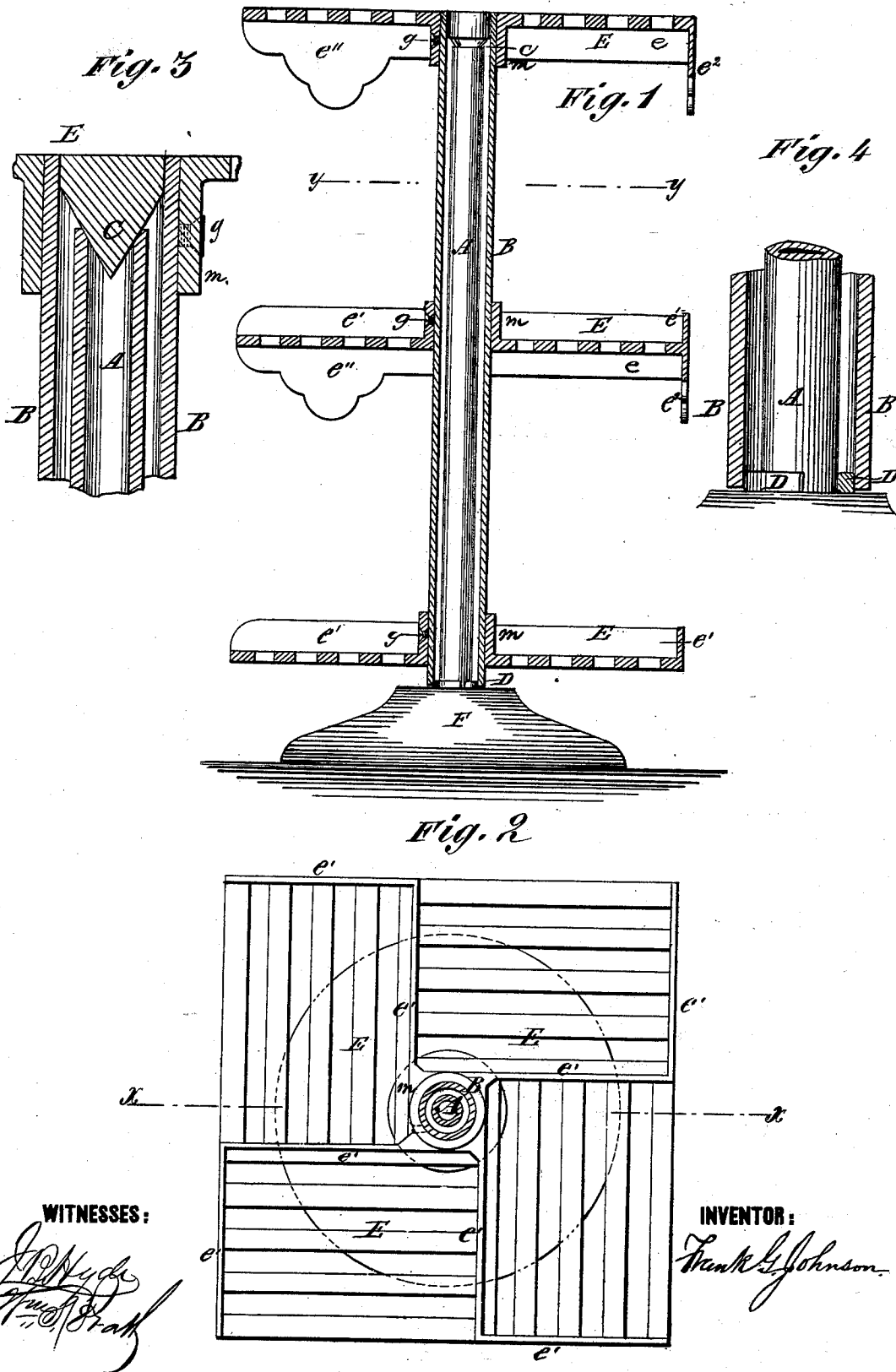


F. G. JOHNSON.
Book-Case.

No. 222,911.

Patented Dec. 23, 1879.



WITNESSES:

J. P. Hyde
Wm. J. Strick

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UNITED STATES PATENT OFFICE.

FRANK G. JOHNSON, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN BOOK-CASES.

Specification forming part of Letters Patent No. **222,911**, dated December 23, 1879; application filed March 11, 1879.

To all whom it may concern:

Be it known that I, FRANK G. JOHNSON, of the city of Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Book-Cases, of which the following is a specification, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section of a book-case constructed according to my improvement; Fig. 2, a horizontal section through the line *y y* on Fig. 1; and Figs. 3 and 4 are enlarged sectional details, showing the top and bottom of the vertical tubes forming the support for the shelves.

This invention relates to that class of revolving book-cases in which the shelves are adjustable.

It consists, mainly, in such a construction of the parts as will allow not only of the shelves being readily adjusted toward each other, but in such a construction as will also prevent the books being thrown outward by centrifugal force when the case is rapidly revolved; and it further consists in certain details of construction, which will be hereinafter fully described, and then pointed out in the claims.

Referring to the drawings, A represents a rod or tube screwed into a suitable base, F, which may be provided with casters, if preferred. Surrounding this rod is a tube, B, provided with a conical plug, C, which, passing into a conical opening in the top of the tube A, forms a center on which the tube B turns.

At the bottom of A, and between it and B, is a flat or helical spring, D, which prevents the latter from oscillating on the center above. Attached to this outer tube are several shelves, differing somewhat in construction, according to the position they occupy.

The upper shelf is plain on top, but provided with depending ribs, as shown at *e*, and guards *e''*. The bottom shelf has only the upwardly-projecting ribs, (shown at *e'*.) The intermediate shelf or shelves have both the depending ribs and guards, and the upwardly-projecting ribs also.

Each of the shelves is formed of a series of grates, E, having their bars arranged at

right angles to the guards *e''*, so as to be in a transverse position to that occupied by the books on the shelves.

All of the bars forming the grates are connected to the ribs or guards, and each guard is connected to a rib that is also connected to a central boss, *m*, by which the shelf is secured to the tube B by the set-screw *g*.

This peculiar construction of the shelves possesses several advantages over any other plan heretofore employed. By the use of the guards and ribs depending from the under side of the shelves the books are prevented from being thrown out by centrifugal force when the book-case is turned rapidly. In no style of adjustable book-shelf heretofore patented has this feature been used.

Book-cases having adjustable shelves with upwardly-projecting guards have been patented; but unless these were made so high as to be very heavy and expensive they would not prevent the books being thrown out when the book-case was quickly turned, whereas by the use of the downwardly-projecting guards, combined with the adjustability of the shelves, comparatively small guards may be used. In fact, if all the books between any two shelves are nearly of the same size, the guards need not be more than half an inch deep, as by the adjustability of the shelves the guards and ribs can be brought so near together as to prevent the books being thrown out, no matter how rapidly the book-case is turned.

The extension of the guards downward to a considerable depth is an advantage and a necessity, however, where the books vary in size in the same division, and I therefore prefer to make them in this way.

I am aware that book-cases have been provided with side guards running from the top to the bottom of the entire case; but such book-cases have not adjustable shelves, nor can they be made so without entire reconstruction; and my book-case presents, therefore, a great advantage over them, as the divisions can be readily adjusted to any size to suit the books of the purchaser, who can adjust the shelving to contain three, four, or more divisions, according to the size of the books he owns; or

he can purchase a stand with one or two divisions and add other shelves as his books increase in number.

By the peculiar arrangement of the metal in the shelves, proper support for the books is obtained, together with comparatively great strength combined with little weight, as the ribs and guards support the lars that receive the weight of the books, and these ribs and guards are connected with the central boss by which the shelf is secured to the tube B.

I do not wish to be understood as claiming revolving adjustable shelves, or revolving shelves having guard-strips extending from one shelf to the next, as I am aware that such are old, and they do not present the main feature of my invention, which consists, essentially, in the use of two or more revolving shelves adjustable toward each other, and provided with guards and ribs above and below, as shown, so that by the adjustment the guards on the undersides of the shelves may be brought nearer to the ribs projecting upward from the shelf below it, so as to securely hold either large or small books with equal facility.

What I claim as new is—

1. The combination, in a revolving book-case, of a central tubular vertical support and adjustable shelves provided with ribs or flanges, substantially such as shown and described.

2. The combination, in a revolving book-case, of a central vertical support, a surrounding tube, and two or more metallic shelves, each shelf consisting of a single casting having a central boss and set-screw, and a series of ribs dividing the shelf into four equal divisions, each of which has ribs on three sides, substantially as described, and for the purpose specified.

3. The combination, with a central vertical support, of a shelf or shelves, each shelf being provided with a central boss and a series of ribs connected with said boss, each rib passing in a straight line to one of the sides of the shelf, and then turning at right angles along said side to form a support for the bottom of the shelf and a guard for the books, substantially as described.

FRANK G. JOHNSON.

Witnesses:

J. B. HYDE,

WM. T. PRATT.