

F. TOCCI.
Book-Case.

No. 228,141.

Patented May 25, 1880.

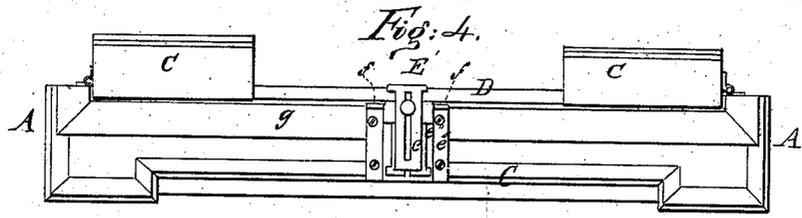
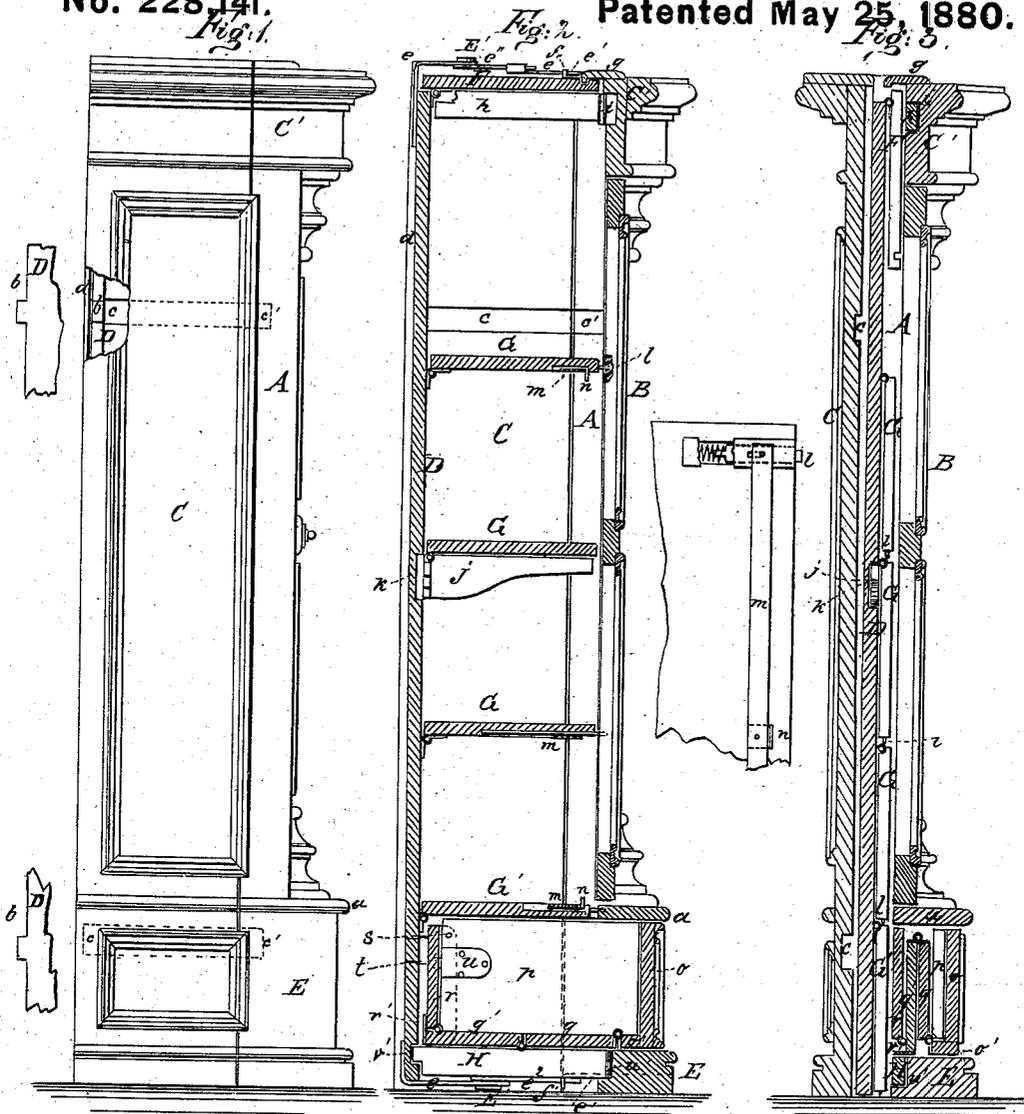


Fig. 5.

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BOOK-CASE.

SPECIFICATION forming part of Letters Patent No. 228,141, dated May 25, 1880.

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To all whom it may concern:

Be it known that I, FELICE TOCCI, of the city, county, and State of New York, have invented a new and Improved Book-Case, of which the following is a specification.

The object of my invention is to so construct the book-case that it can be folded and its depth greatly lessened, thus enabling it to be packed in a much smaller space than when it is in use, and to be carried through narrow spaces where ordinarily it will not pass, and also greatly facilitating the handling of the case in moving and shipping.

In the accompanying drawings, Figure 1 is a side elevation of my improved book-case. Fig. 2 is a vertical cross-section of the same arranged for use, all the parts being extended. Fig. 3 is a vertical cross-section of the same when folded. Fig. 4 is a top view of the case folded, and Fig. 5 represents the drawer when folded.

Referring to the drawings, A A are the side frames of the front of the book-case, to which the doors B are hinged. C' is the top frame and cornice, and E is the bottom part of the frame, forming the drawer-case, and divided from the upper part by a shelf, a. C C are the sides of the book-case, hinged by one edge to A E, so as to swing out flush therewith, or back and in toward the rear, as indicated in Fig. 4. D is the back. It has on its edges, near the top and bottom, projections b, which fit into horizontal grooves c in the adjacent surface of the sides, and which are extended into the adjacent parts of the frame A, which extensions are indicated by c' in Figs. 1 and 2. A batten, d, on the inside edge of the folding sides closes the outer ends of these grooves, and thus prevents the projections b from slipping out. The sides C C are limited in their outward swing to a position at right angles to the front of the case; hence the back D, by means of the projections b, confined in grooves c, is held between the sides parallel to the front; but, as the projections slide freely in the grooves c, the back can be pushed in toward the front until the projections enter the extensions c' of grooves c, when the outer surface of the back is flush with the adjacent edges of parts A and E, as shown in Fig. 3. This enables the sides C C to be swung around

against the back parallel with the front and back of the book-case, as indicated in Fig. 4. The back at top and bottom is connected with the top and bottom of the front frames by means of sliding extension-plates E' E', composed of slotted plates e, attached to the back, a similar plate, e', attached to the front frames, and having guides f f at the end, and one or more intermediate plates, e'', held between the guides, and connected with the plates e e' at the adjacent ends by rivets passed through the slots into said plate e'', so as to permit it to slide freely, and thus extend when the back is pushed out and contract when the back is pushed in, the two positions being indicated in Figs. 2 and 4. These sliding plates connect the back with the front frames and assist the grooves and projections in guiding the back in folding and unfolding and limiting its backward movement.

F is the top of the book-case, hinged by its under side to the top edge of the back D, so that when the back is pushed in, as shown in Fig. 3, it may be dropped to a vertical position, and when the back is pushed out and the case adapted to use it is swung up to a horizontal position until its free edge strikes against a projecting ledge, g, on the top frame, (a groove in its surface engaging a downward-projecting tongue on the said ledge to enable a close joint to be made,) where it is sustained by an arm or bracket, h, placed on each side, and hinged by one end in a recess, i, in the rear side of the top frame, C'. These arms swing out at right angles to the front to support the top, as shown in Fig. 2; but when the case is folded they are drawn into the said recess parallel to the front and flush with the rear side thereof, so as to be out of the way when the back is pushed in.

The shelves G G G and bottom G' are hinged to the back by their rear edge, the same as the top, so that they will drop to a vertical position parallel with the back when the book-case is folded, as in Fig. 3, or be sustained in a horizontal position when it is in use, as shown in Fig. 2.

The devices used for sustaining the shelves in position may be of any suitable kind, it being only necessary that they be sunk into the part with which they are connected, so as to

avoid interference with the folding of the parts of the book-case. Two devices for this purpose are shown in the drawings, one consisting in an arm or bracket, *j*, for each end of the shelf, like that supporting the top, only having its fixed end hinged in a recess, *k*, in the back *D*, so that it will swing out at right angles to support the shelf, and back into the recess when folded, as in Fig. 3.

10 The other devices consist in spring-bolts *l*, let into the shelves at each end, and parallel with the ends, which are adapted to shoot out into recesses in the adjacent side of the front frame, as in Fig. 2.

15 The bolts at each end are connected by a bar, *m*, let into a recess parallel with and close to the front edge of the shelves, and having midway of their length a thumb-piece, *n*. By pushing on this both bolts are pushed out of the recesses in the front frames, and the shelves drop to a vertical position. The springs keep the bolts out, so that they are always in position to engage the recesses when the shelves are thrown up.

25 The bottom *G'* is held up by spring-bolts like those just described, recesses being provided in the shelf *a* to receive them.

The drawer of the book-case, which is fitted into the case formed by the part *E* of the frame under the bottom *G'* and shelf *a*, is arranged to fold up in the space under the shelf *a*, as shown in Fig. 3. This is accomplished by placing on the lower edge of the front *o* a piece, *o'*, which projects beyond the inside of the front to a depth equal to the thickness of the end pieces, *p p*, of the drawer. These pieces are hinged by one end to the ends of the front *o* and fold inward against the same. The bottom is in two parts, *q q'*. The first is hinged by one edge to the edge of *o'*, so that it will fold upward, and the latter is hinged by one edge to the edge of *q*, so that it folds downward against *q*, and to the opposite edge of *q'* is hinged the back of the drawer, *r*, so that its outer side is flush with the edge of *q'*, whereby it is adapted to fold up against *q'*, but when swung up is retained at right angles thereto, a metal plate, *v'*, attached to the edge of *q'*, giving stiffness to it.

50 On the ends of back *r* are inwardly-projecting plates *s s*, with slots through them to receive tongues *t* on plates *u*, projecting at right angles from the edges of ends *p p*, so as to engage said slots when the drawer is folded, and thus hold the ends and back together. Rabbits *v* are made in the end pieces, *p p*, to receive plates *s* and form a flush connection therewith.

60 Instead of slots in the plates *s*, holes may be made in them to receive bolts passed through the ends *p p* near their free edges, so as to enter the holes in the plates *s*.

65 Other arrangements may be adopted to connect the free edges of the end pieces, *p p*, with the adjacent ends of the back in place of the devices described.

The unfolded drawer is shown in cross-section in Fig. 2. To fold it, it is drawn out, the end pieces, *p p*, are disconnected from the back *r* and folded against the front *o*, section *q* of the bottom is folded up against the ends, *q'* is folded down against *q*, and the back *r* is folded up against *q'* in the manner shown in Fig. 5, when it is placed in the space between the shelf *a* and the bottom part of the front frame, *E*, thus leaving ample space behind for the back and bottom *G'*, as shown in Fig. 3.

To support the drawer, when unfolded, in sliding in and out of the case, supports *H* are hinged at one end in a rabbet, *u'*, in the rear side of the bottom part of frame *E*, one being placed near each end of the case, so as to support the two ends of the drawer. When swung out the free ends enter recesses *v'* in the back *D*, and are thus supported; but when drawn in they enter the rabbet *u'*, out of the way of the back when pushed in. The two positions of these supports are clearly shown in Figs. 2 and 3.

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

1. As an improvement in folding book-cases, the sides *C C*, hinged to the front frames, *A E*, so as to swing from a position at right angles to the front of the book-case to a position parallel thereto, and provided with the horizontal grooves *c*, in combination with the back *D*, provided with projections *b* on its edges, which are held in the grooves *c*, and the frames *A E*, provided with extensions *c'* of the grooves *c*, whereby the said back is adapted to be pushed in until it is flush with the rear side of the frames *A E*, and the sides *C* are adapted to be folded in against the back *D*, substantially as described.

2. The folding drawer composed of front *o*, right-angular piece *o'*, projecting inward, end pieces, *p p*, hinged to front *o*, the bottom formed of two sections, *q q'*, the first hinged to pieces *o'* and the second to *q*, so as to fold in opposite directions, and the back *r* hinged to the edge of *q'*, so as to fold up against it, the whole combined and arranged so as to be extended out into a drawer, as in Fig. 2, or to be folded, as in Fig. 5, in the manner substantially as described.

3. The folding drawer constructed and operating as described, in combination with the case formed by the part *E* of the front frame, the sides *C C*, the back *D*, and the folding supports hinged in the rabbet *u'* in the bottom part of *E*, whereby the said drawer is adapted to be extended out into the said case when the book-case is in use, but when folded up it is folded so as to occupy the space below the shelf *a* in the frame *E*, substantially as described.

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Witnesses:

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