

(No Model.)

H. J. HOFFMAN.
STORAGE CASE FOR BOOKS, &c.

No. 450,124.

Patented Apr. 7, 1891.

Fig. 1.

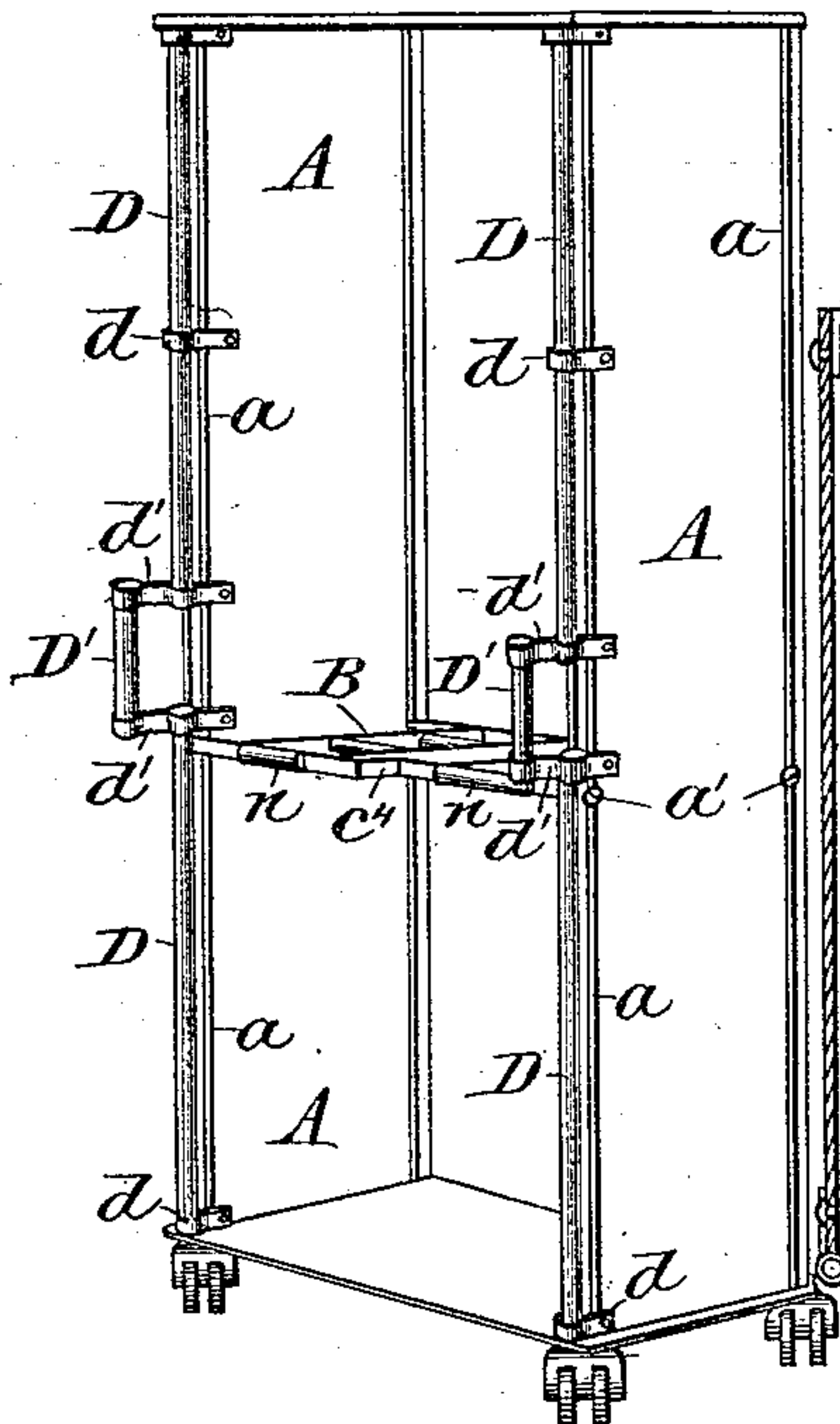


Fig. 2.

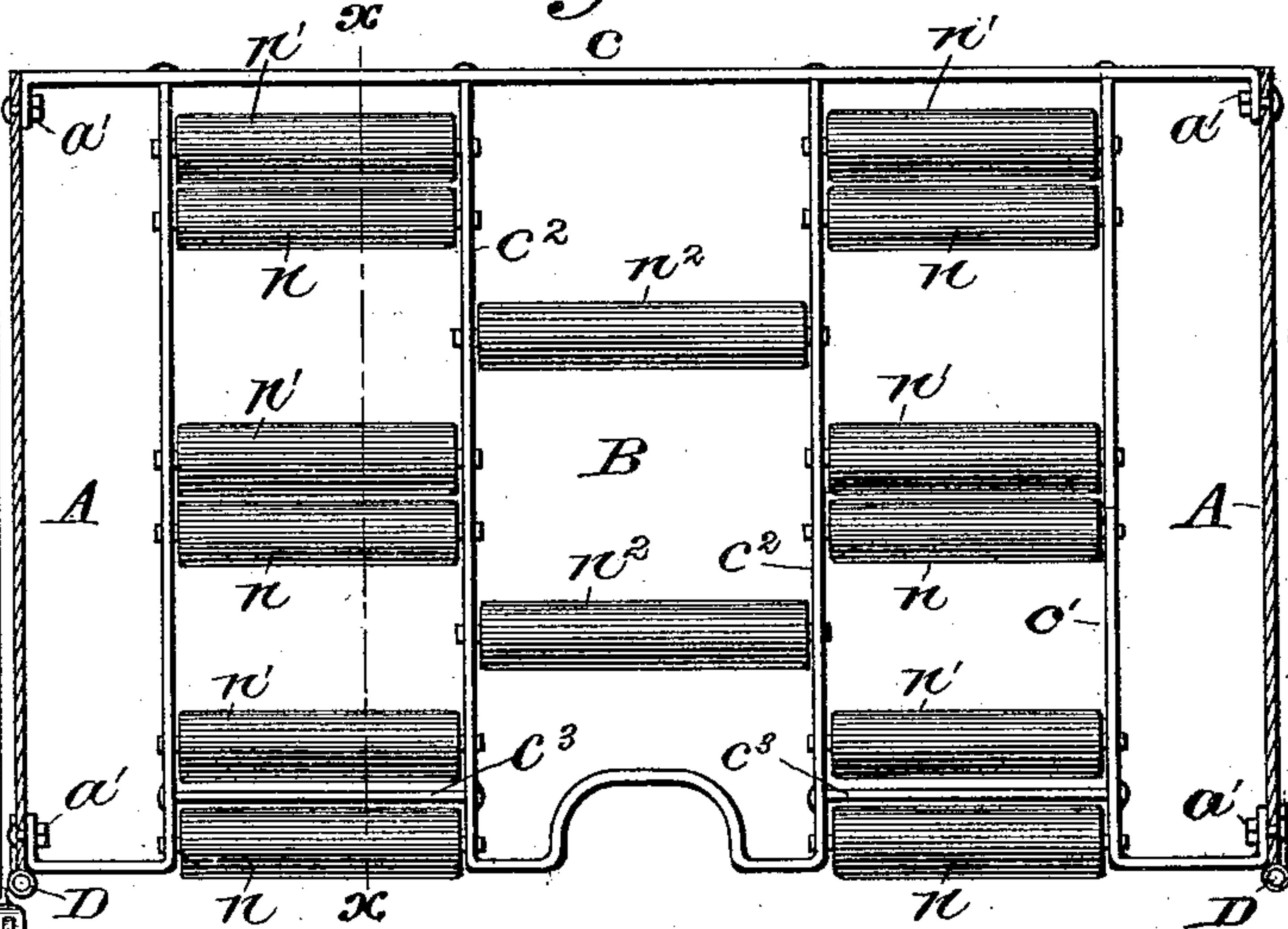


Fig. 4.

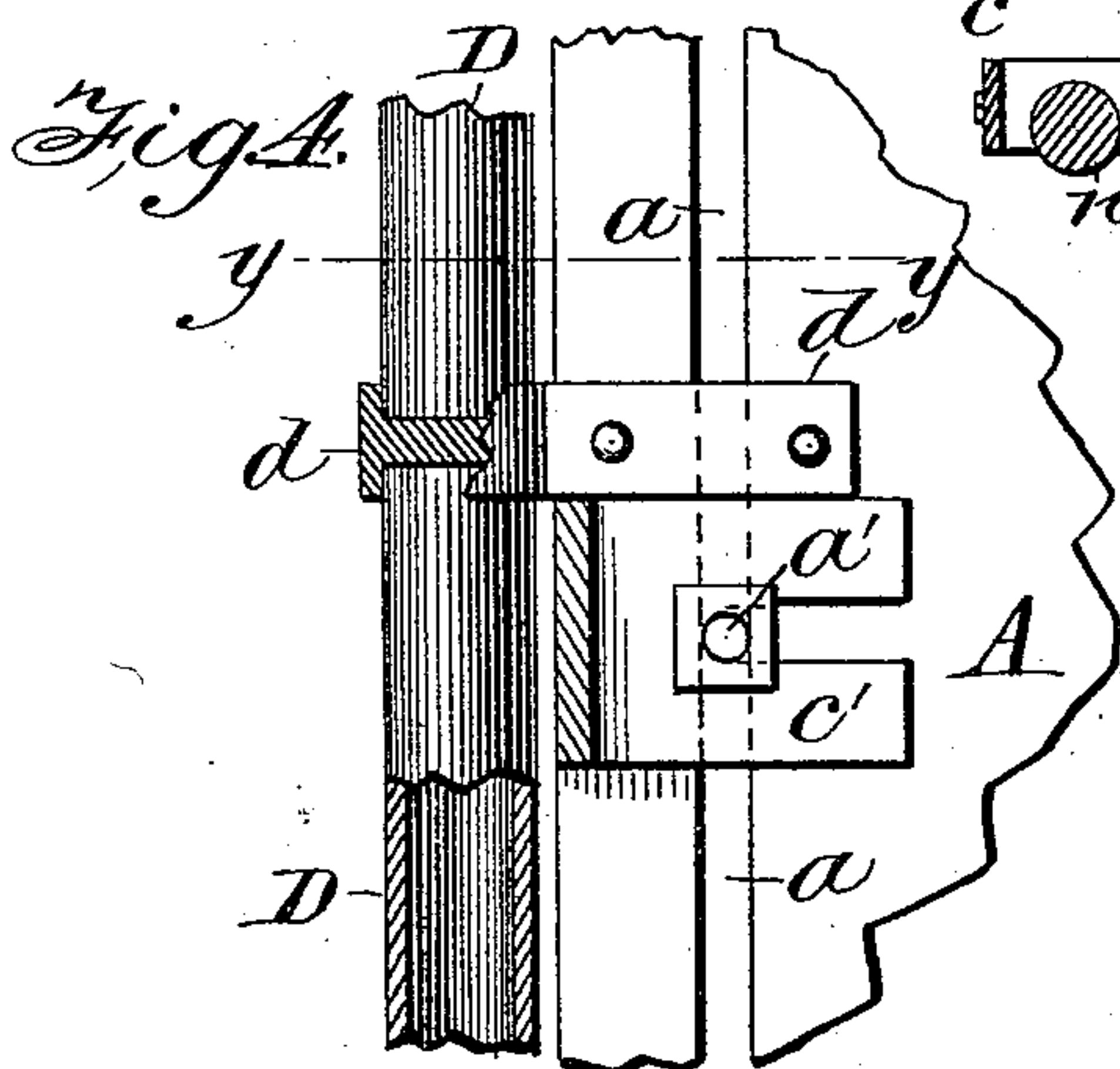


Fig. 3.

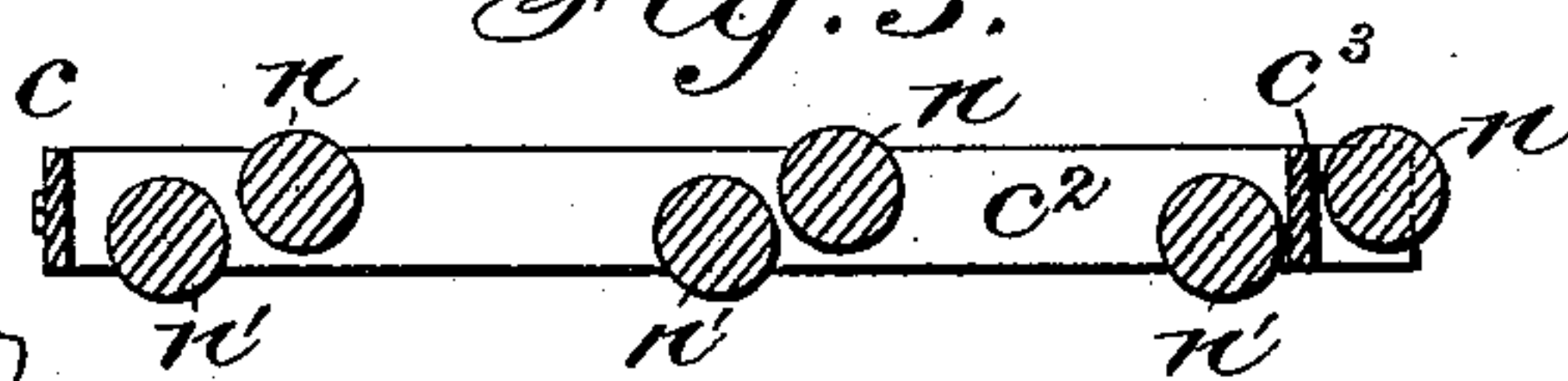
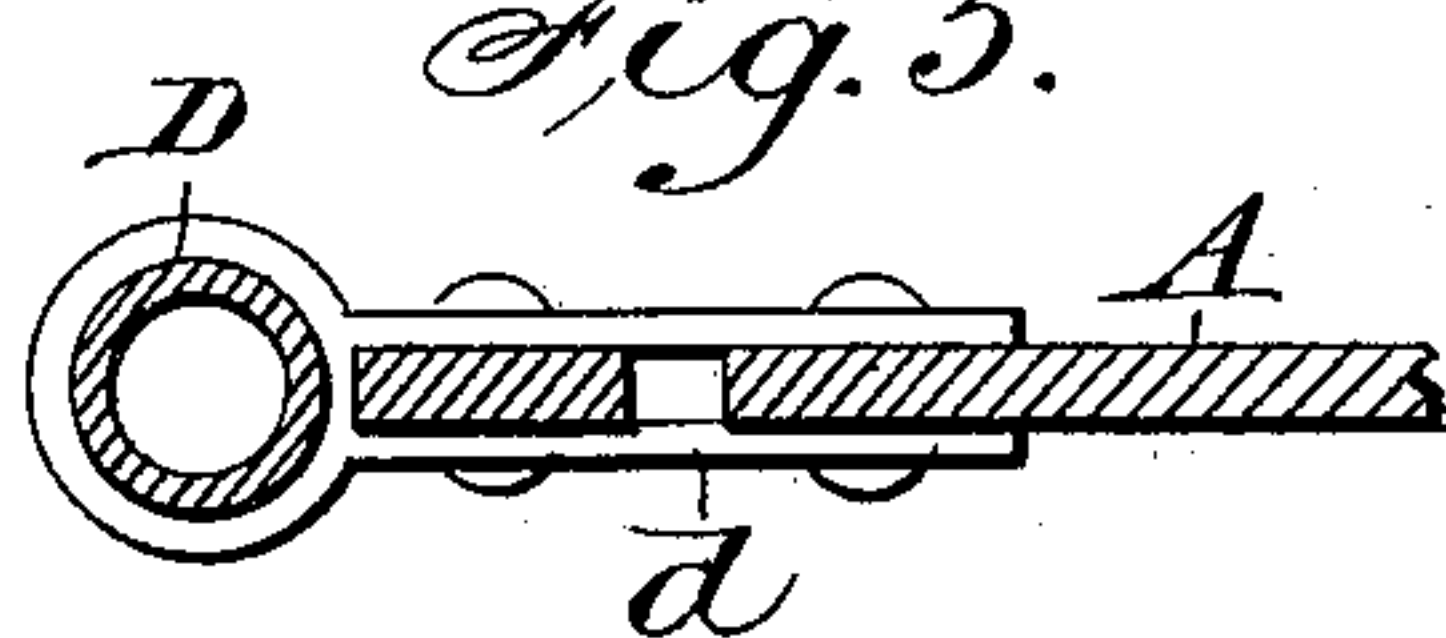


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

HORACE J. HOFFMAN, OF MILWAUKEE, WISCONSIN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE FENTON METALLIC MANUFACTURING COMPANY, OF NEW YORK.

STORAGE-CASE FOR BOOKS, &c.

SPECIFICATION forming part of Letters Patent No. 450,124, dated April 7, 1891.

Application filed February 12, 1887. Serial No. 227,363. (No model.)

To all whom it may concern:

Be it known that I, HORACE J. HOFFMAN, of the city and county of Milwaukee, and State of Wisconsin, have invented certain new and
5 useful Improvements in Storage Cases for Books, &c.; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make
10 and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The object of my invention is to facilitate
15 the handling and prevent the abrasion and injury of heavy books, &c. It consists, essentially, of the peculiar arrangement of the guiding and supporting rollers and of the peculiarities in the construction of the case and
20 shelves hereinafter specifically set forth.

In the accompanying drawings like letters designate the same parts in the several figures.

Figure 1 is a perspective view of a cabinet or case embodying my improvements. Fig.
25 2 is a plan view, on an enlarged scale, of one of the shelves or book-supporting racks. Fig. 3 is a vertical cross-section of the same on the line xx , Fig. 2. Fig. 4 is a sectional detail of one of the upright guide-roll bearings, showing
30 also the method of securing the book shelves or racks in the case; and Fig. 5 is a horizontal section taken on the line yy , Fig. 4.

A represents the cabinet or case, which is preferably formed of heavy sheet-iron, with
35 or without a back, as desired.

B is one of the book-supporting shelves or racks composed of a metallic frame, in which are mounted rollers for guiding and supporting the books, &c. This metallic frame is
40 preferably formed of heavy band iron in sections $c\ c'\ c''\ c^2$ and $c^3\ c^3$.

The section c , forming the back of the rack, extends from side to side of the case A, and is bent forward at each end at right angles,
45 and perforated or notched, as shown in Fig. 4, to receive the bolts $a'\ a'$, by which the rack is secured at the rear to said case. The two sections $c'\ c'$ are attached to the section c a short distance inside of the ends thereof, ex-
50 tend from the back to the front of the case,

and are bent outward at right angles to meet the sides of the case, and again back at right angles at their ends, which are perforated or notched, as seen in Fig. 4, to receive the bolts $a'\ a'$, supporting the frame at
55 the front and securing the same to the sides of said case. The middle U-shaped section c^2 is attached at its ends to the rear section c and extends from the back to the front of the case parallel with the sections $c'\ c'$ and forms
60 the center of the front side of the frame, which is bent inwardly at c^4 , thus exposing a portion of the book to the grasp and facilitating its removal from the case. Cross-sections
65 $c^3\ c^3$, parallel with and a little to the rear of the front of the roller-frame, connect and brace the sections $c'\ c'$ and c^2 .

Rollers $n\ n'$, made of iron, wood, or any suitable material, are mounted, as shown in Fig. 2, in pairs parallel with the front and
70 rear edges of the rack B between the sections $c'\ c'$ and c^2 , which are perforated and furnish bearings for the journals of said rollers. One of each pair of said rollers, preferably the front one n , is set above the other
75 and projects above the roller-frame, as seen in Fig. 2, so as to support a book out of contact with said frame. The rear rollers $n'\ n'$ of each pair are made to project below the roller-frame and thus prevent the book on
80 the rack next below, when tilted in removing or inserting the same in the case, from rubbing against said frame. By thus arranging one set of rollers below the other each set operates independently, and when a book is
85 resting upon the rollers $n\ n$ and a book being placed upon or removed from the shelf or rack next below engages any of the rollers $n'\ n'$ they will turn freely without effect upon the book resting above on the rollers $n\ n$.
90

If desired, rollers $n^2\ n^2$ may be placed between the side limbs of section c^2 of the roller-frame on a level with the rollers $n\ n$ to prevent the book from sagging at the center. For supporting all ordinary sizes of books,
95 however, the rollers $n\ n$, if properly disposed, are sufficient without the rollers $n^2\ n^2$.

The front rollers $n\ n$ are set as seen in Figs. 2 and 3 in front of the cross-sections $c^3\ c^3$ of the roller-frame, and project slightly in front
100

of and above said frame, so as to prevent contact between said frame and a book whenever the latter is inserted in or removed from the case A at any inclination to the racks B.

5 At the ends of the racks B, just in advance of the sides of case A and projecting a little inside of the same, I provide the upright rollers D D, which are journaled in brackets *d d*, secured to the sides of said case A, as seen
10 in Figs. 4 and 5.

For convenience in moving the case two short upright rollers D' D' may be set in advance of the rollers D D in extensions *d' d'* of the brackets supporting the adjacent ends
15 of said rollers D D, as shown in Fig. 1. Said rollers D' D' serve not only as handles for moving the case, but also in place of rollers D to prevent the ends of a book placed on the adjacent rack B from rubbing against
20 the side of said case. The brackets *d d* not only furnish bearings for the upright rollers D D, but serve also to connect and retain in place the upright parts of the case adjacent to and forming the slots *a a*.

25 I do not here claim the combination of horizontal and vertical rollers herein set forth, as the same constitutes the subject of a separate application upon which Letters Patent were issued October 7, 1890, No. 437,833.

Without limiting myself to the precise construction of parts shown, I claim— 30

1. In a storage-case for books, &c., the combination of a supporting rack or shelf composed of metallic strips and having a re-entrant bend or recess in its front edge and
35 rollers journaled in said rack and projecting above and in front of the same on each side of said bend or recess, substantially as described.

2. In a book-shelf, the combination of a supporting-frame, a series of horizontal rollers, the front roller in two separated sections, the intermediate part of the frame being carried
40 back to permit the admission of the hand between said roller-sections, substantially as described. 45

3. In a roller-shelf, a frame with a hand-hole at the front to permit the hand to pass back of the forward bar and with the forward supporting-rollers at opposite sides of
50 said hand-hole, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

HORACE J. HOFFMAN.

Witnesses:

CHAS. L. GOSS,

GEORGE M. GOLL.