(No Model.) 2 Sheets—Sheet 1.

A. A. AMBLER.

BOOK HOLDER.

No. 520,627. Patented May 29, 1894.

Fig. 1

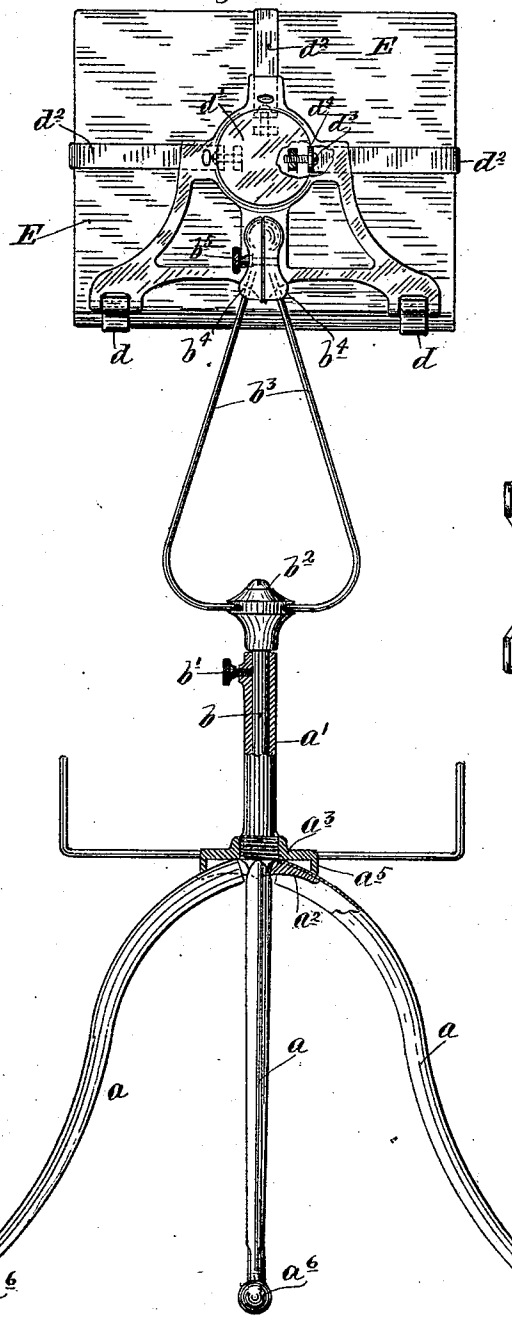


Fig. 8

Fig. 7

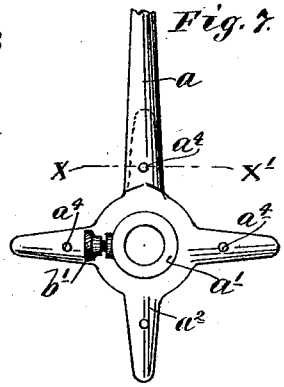


Fig. 4

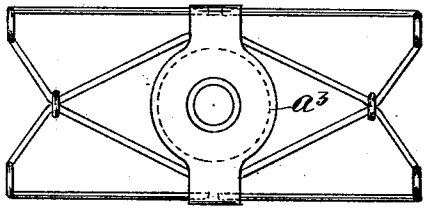
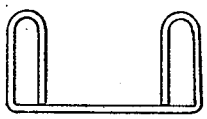


Fig. 5



Witnesses.
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Jas. F. Williamson

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

A. A. AMBLER.

BOOK HOLDER.

No. 520,627. Patented May 29, 1894.

Fig. 2.

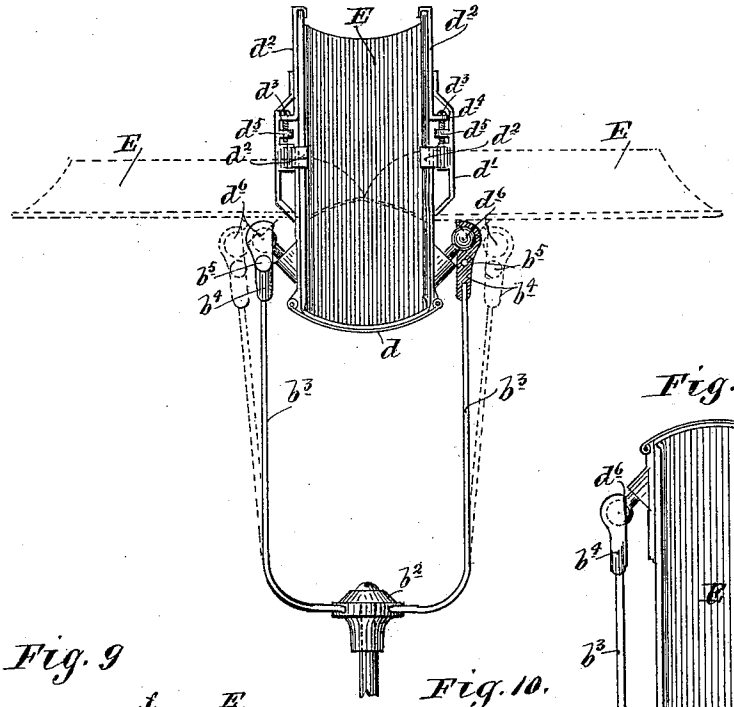


Fig. 6.

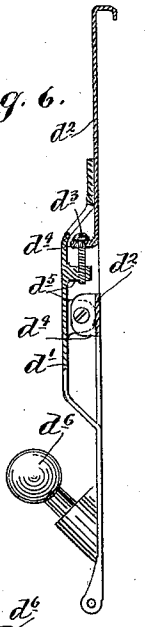


Fig. 3.

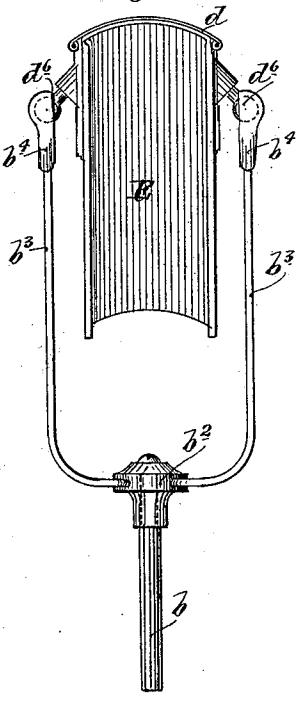


Fig. 9

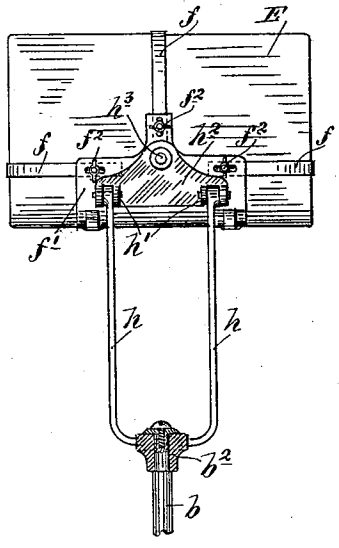
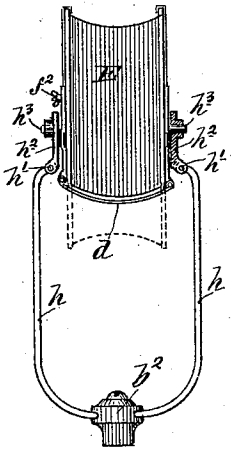


Fig. 10.



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Inventor.
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By his attorney
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THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ARTHUR A. AMBLER, OF ST. PAUL, MINNESOTA.

BOOK-HOLDER.

SPECIFICATION forming part of Letters Patent No. 520,627, dated May 29, 1894.

Application filed October 9, 1893. Serial No. 487,561. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR A. AMBLER, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Book-Holders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to bookholders, for supporting heavy books, such as dictionaries, Bibles, albums, &c.; and has for its object to provide an improved construction, with a view of greater convenience and less cost.

To this end, my invention consists of the novel devices and combinations of devices hereinafter fully described and particularly defined in the claims.

One feature of my improvement is directed to the connections uniting the book-saddle with a suitable support for the same, the construction being such as not only to permit the book opening and closing movement, but also to permit the book to be turned upside down edgewise when closed.

Another feature is directed to the clasps of the book-saddle for firmly securing said saddle to the lids of the book-cover, and adapting the same to different sizes of books.

A third feature is directed to a convenient means for securing the legs to the standard of the supporting pedestal.

Other features will appear in the detailed description and claims.

The accompanying drawings illustrate my invention, wherein, like letters referring to like parts throughout the several views—

Figure 1 is a side elevation of my preferred construction, with some parts shown in vertical section. Fig. 2 is an end elevation of the book-saddle and its supporting arms, shown right side up, in full lines, and shown opened out in dotted lines. Fig. 3 is a view in end elevation, showing the same parts with the book-saddle and book turned upside down with the book in its closed position. Fig. 4 is a plan view, showing the combined book-shelf and leg-lock detached. Fig. 5 is a detail or end elevation of the same. Fig. 6 is a sectional view, showing one of the saddle-clasps and the means for adjusting the clasp-straps. Fig. 7 is a plan view of the standard and spider, to which the pedestal legs are secured. Fig. 8 is a detail of the same, in cross section, on the line X X′ of Fig. 7. Figs. 9 and 10 are respectively a side elevation and an end view of a book-saddle, and its supporting arms, with a modified form of the pivotal connections for uniting the saddle to the arms.

The pedestal is composed of a series of supporting legs a, hollow standard a', provided with a leg supporting spider a^2, at its lower end, and a combined pedestal book-shelf and leg-lock a^3, having screw-threaded engagement with the lower end of the standard and serving to lock the legs to the prongs of the spider. The legs a are preferably formed of sheet metal turned up into cylindrical form throughout the greater portion of their length, and into angular or trough-like form at their upper end portions, for overlying and engaging with the prongs of the spider a^2; which prongs are of corresponding angular form in cross section.

The spider-prongs are provided each with a conical projection a^4, engaging with a corresponding hole of the leg, for centering the same, when being placed in position and for preventing any sliding motion of the legs on the spider. When the legs are thus placed in position on the spider the lock-shelf a^3 is screwed down into its locking position; and a downwardly extended angular flange a^5, on the under side of the shelf, will then engage with the upper surface of the legs, near the outer edge of the spider-prongs, and the extreme upper ends of the legs will be engaged by the under surface of the hub portion of the shelf. By this clamping action of the shelf a^3, on the spider a^2, with the legs a between the shelf and the spider, the legs will be securely held in position; but may be readily removed by simply raising the shelf. The legs a' may have ball feet a^6.

In the fixed standard a', telescopes a vertically movable standard section b, securable in any desired adjustment to the fixed standard by a set-screw b'. The standard section b terminates at its upper end in a swiveled head b^2, to which is secured a pair of spring supporting arms, each composed of two spring sections b^3. The arm sections b^3 converge at their upper ends and terminate in two half

sockets b^4, one carried on each section, which are securable together by a clamping screw b^5.

The book-saddle is composed of suitable back-straps d, and a pair of pivoted clasps securable to the lids of the book cover; each of which clasps is composed of a body plate d' and three independently adjustable clasp-straps d^2, securable to the margins of the book-cover and adjustable with respect to the body plate d', by means of draw-screws d^3 and bearing-lugs d^4 d^5, through one of which lugs the draw-screw works and has screw-threaded engagement with the other, one of said lugs being on the body plate, and the other on the clasp-strap. The back-straps d connecting the swinging clasps, are shown, as composed of spring metal, which is preferably steel, with the body plates d' of the clasps, pivotally connected thereto; but it will of course be understood that leather or other flexible material might be substituted in lieu of the metallic back-straps d. The metallic straps are, however, preferable for the reason, that they give a firmer structure for the saddle, and tend to hold the clasps properly spaced apart, when the book is removed.

The body plates d' of the saddle-clasps have formed integral therewith, projecting ball-bearings d^6, which are engaged by the half sockets b^4 on the arm sections b^3, to form ball and socket pivotal connections between the book-saddle and the supporting spring-arms b^3, by which the saddle is sustained, with freedom for the book opening and closing movement, and for turning the book, when closed, upside down, edgewise, into an inverted position, as shown in Fig. 3. The ball bearings d^6 are set at an angle to the body-plates d' of the clasps, to afford the proper clearance and to hang the saddle from the proper centers, to bring the same, together with the book supported thereby, into their desired different positions. In the main views of the drawings, a book E is shown in position on the book-saddle, the book being in its upright and closed position in Figs. 1, 2, 9 and 10, in full lines, in its inverted position in full lines in Fig. 3, and in dotted lines in Fig. 10; and in its open up or reading position in dotted lines in Fig. 2.

The half sockets b^4 are held together by their uniting clamp screw b^5; under any required friction, on the ball bearings d^6, for holding the book-saddle and book in any position, in which it may be set relative to the supporting arms b^3. When the book is thrown into its open or reading position, as shown in dotted lines in Fig. 2, the upper and inner edges of the half sockets b^4 co-operate with the stems of the ball bearings d^6, and the shoulders of the same at their union with the body-plates of the clasps, to form stops for the clasps, which limit the outward pivotal movement of the same. These parts are so constructed and arranged, that the book saddle and book may be opened up into the horizontal position; but of course, might be constructed to permit the book to be opened up beyond the horizontal, so as to throw the leaves of the same on a downward and outward dip. As before stated, the opening movement of the book may be stopped at any point short of the horizontal or other extreme opening limit; and the saddle and book will be there held by the friction between the parts of the ball and socket pivotal connections uniting the saddle with the supporting arms b^3. In this opening and closing movement of the book, the supporting arms b^3 yield or spring laterally, assuming the positions shown in dotted lines in Fig. 2.

Having regard to the edgewise pivotal movement of the book-saddle and book, it is obvious that with the ball and socket connections described, the saddle and book are capable of complete rotation edgewise in the vertical plane; and in virtue of the friction between the ball and socket members of the pivotal connections, the saddle and book will be held at any point in the plane of their rotation. This will of course, not only permit the book to be turned upside down, as shown in Fig. 3; but will permit the book-saddle and book to be set at any desired inclination lengthwise of the page, for the convenience of the reader. In the rotary movement of the book-saddle and book, the two sections of each of the supporting spring arms b^3, will spring, with respect to each other, and their clamp-screws b^5 and the ball-bearings d^6, sufficiently to permit of the said rotation of the book-saddle and book.

The especial construction of the saddle-clasps with the body-plates d', and the independently adjustable clasp-straps d^2, permit the clasps to be fitted to various sizes of book-covers with a firm grip, without any mutilation of the book cover.

Referring now to the modification shown in Figs. 9 and 10, the book-saddle might be exactly the same, as that shown in Fig. 2, but is of slightly different form, in the fact that the clasp-straps f, are adjustable, with respect to the body plates f', by slot and screw engagement, as shown at f^2. The main feature of the modification, however, consists in the substitution of a double pivot, instead of the ball and socket-bearings, for uniting the book-saddle to its supporting arms. The supporting arms h, are each composed of two sections, but instead of converging toward their upper ends, as in the principal views, may be parallel with each other. The upper ends of the arm-sections h are hinged or pivoted, as shown at h' to a pivot plate h^2; which plates h^2 are in turn connected by single pivots h^3, with the body-plates f', of the saddle clasp. With this construction, it is obvious that the book-saddle and book may rotate on the pivots h^3 in the vertical plane, while the clasps may swing outward with the plates h^2 on the pivots h' to open the book. In other words, the opening and closing movement of the book-saddle and book, is effected on the piv-

ots h', the pivot-plates h^2 swinging with the clasps; while the rotary movement of the book-saddle and book is made, with respect to the pivot-plates h^2, on the pivots h^3. With this construction the book may be thrown into its open or closed position; and when closed, the book-saddle and book may be turned edgewise into an inverted or upside down position, as shown in dotted lines in Fig. 10. Also, as in my preferred construction, the book-holder and book may be given a complete rotation in the vertical plane. This modified construction shown in Figs. 9 and 10, for connecting the book-saddle with its supporting arms, is not so desirable as the form shown in the other views, for the reason that the book-saddle and book cannot be so readily secured in any desired angular position, either in the planes of its opening and closing movement, or in the plane of its rotation. For inverting the book, however, while permitting the same to be opened and closed, it is equally effective. This feature of inverting the book-saddle and book is an important one, as it enables the book to be protected from dust and dirt, when not in use; and is of further advantage, in the fact, that it lowers the center of gravity adding greater stability to the stand.

While the bearings shown, for connecting the book-saddle to the supporting spring-arms, are completely rotatable in the vertical plane, and have a pivotal motion in planes cutting the plane of their vertical rotation, it is obvious that the book might be turned upside down when closed, by a half revolution in the vertical plane, either forward or backward. The complete rotation, however is desirable.

The term "clasps" as herein used, is intended to include and cover any kind of pivoted plates, for the wings of the saddle regardless of the manner in which the same may be attached to the lids of the book-cover.

It is obvious, that many of the details of the construction might be changed, without departing from the spirit of my invention. So far as I know, I am the first to provide any kind of a construction, which will permit the book to be turned upside down edgewise, when in its closed position.

The swiveled head b^2, on the standard section b, permits the supporting spring arms b^3 together with the book saddle and book to be rotated in the horizontal plane, as may be desired.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. A book-holder, comprising a suitable support, a saddle provided with pivoted clasps securable to the covers of the book, and bearings uniting the saddle to said support with freedom for the rotation of the saddle in the vertical plane, whereby, the saddle and the book held thereby may be turned upside down edgewise, when closed.

2. In a book-holder, the combination with a pair of supporting spring-arms, of a book-saddle provided with pivoted clasps securable to the covers of the book, and bearings uniting the saddle clasps to said arms with freedom for the pivotal movement of the clasps, with respect to the saddle, and for rotation of the saddle and the book held thereby, in the vertical plane, substantially as and for the purposes set forth.

3. A book holder, comprising a suitable support, a book saddle having pivoted clasps securable to the covers of the book and bearings uniting the saddle to said support rotatable in the vertical plane and having a pivotal motion in planes cutting the plane of their vertical rotation, substantially as described.

4. In a book-holder, the combination with a suitable support of a book saddle having pivoted clasps securable to the covers of the book, bearings uniting the saddle to said support rotatable in the vertical plane and having a pivotal motion in planes cutting the plane of their vertical rotation, and means for securing the saddle and book in any desired adjustment on said bearings, substantially as described.

5. In a book-holder, the combination with a pair of spring supporting arms, of a book saddle having pivoted clasps securable to the book cover and ball and socket bearings connecting said saddle with said supporting arms, substantially as described.

6. In a book support, the combination with a pair of supporting spring arms, of a book saddle having pivoted clasps securable to the book cover, and ball and socket bearings connecting said saddle with said arms, the socket members of which bearings are divided and provided with clamping screws, substantially as and for the purpose set forth.

7. In a book holder, the combination with the supporting spring arms each composed of a pair of spring sections terminating in half sockets connected by clamping screws, of the book saddle with pivoted clasps securable to the book cover lids and provided with ball bearings engaged by the sockets on said spring arms, whereby the arms will yield laterally and the sections in respect to each other, substantially as described.

8. A pedestal, for a book holder, or other article, comprising a standard terminating below in spider prongs, independent legs engaging said spider prongs and a clamping block having screw threaded engagement with said standard and serving to clamp the legs to said spider prongs, substantially as described.

9. A pedestal, for a book holder or other article, comprising a standard terminating below in spider prongs of angular form in cross section, independent legs of trough-like form at their upper ends overlying and embracing said spider prongs, and a clamping

block having screw-threaded engagement with said standard and clamping the legs to the spider prongs, substantially as described.

10. In a pedestal, for a book holder or other article, the combination with the standard a' having the spider a^2, the prongs of which are angular in cross section, and provided with the conical projections a^4, of the legs a, having trough-like upper portions engageable with said spider prongs and the projections a^4, and the combined book shelf and clamp block a^3 having screw threaded engagement with the standard a' and provided with the flange a^5, for clamping said legs to said spider prongs, substantially as described.

11. In a book-holder, the combination with the pedestal standard a', of the vertically adjustable standard section b, the swiveled head b^2, the spring supporting arms b^3, fixed to said swiveled head, the book saddle and bearings, uniting said saddle to said arms, rotatable in the vertical plane and having a pivotal movement in planes cutting the plane of their vertical rotation, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ARTHUR A. AMBLER.

Witnesses:
J. A. PLOPPER,
JAS. F. WILLIAMSON.