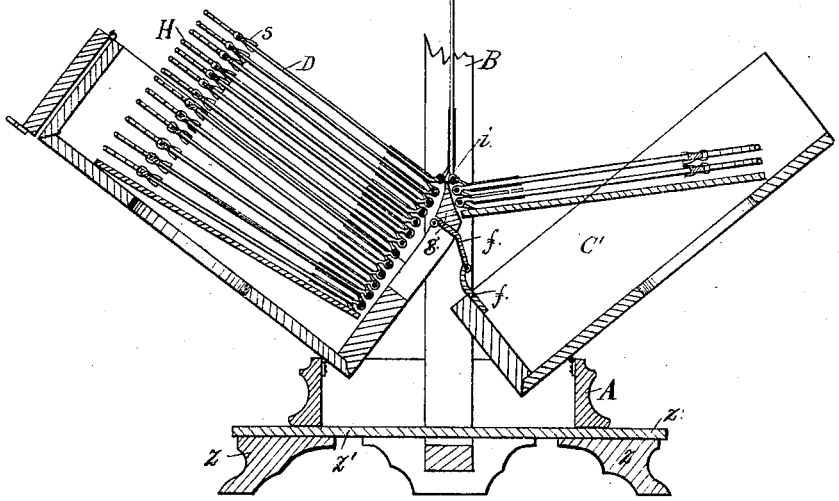
3 Sheets--Sheet 1.

L. D. SIBLEY.

Stereoscopes.

No. 166,942. Patented Aug. 24, 1875.

Fig. 1.



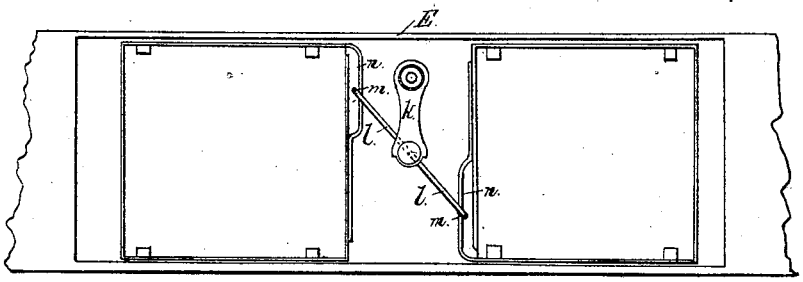
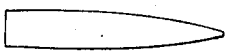


Fig. 3.



Witnesses

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3 Sheets--Sheet 2.

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Fig. 2.

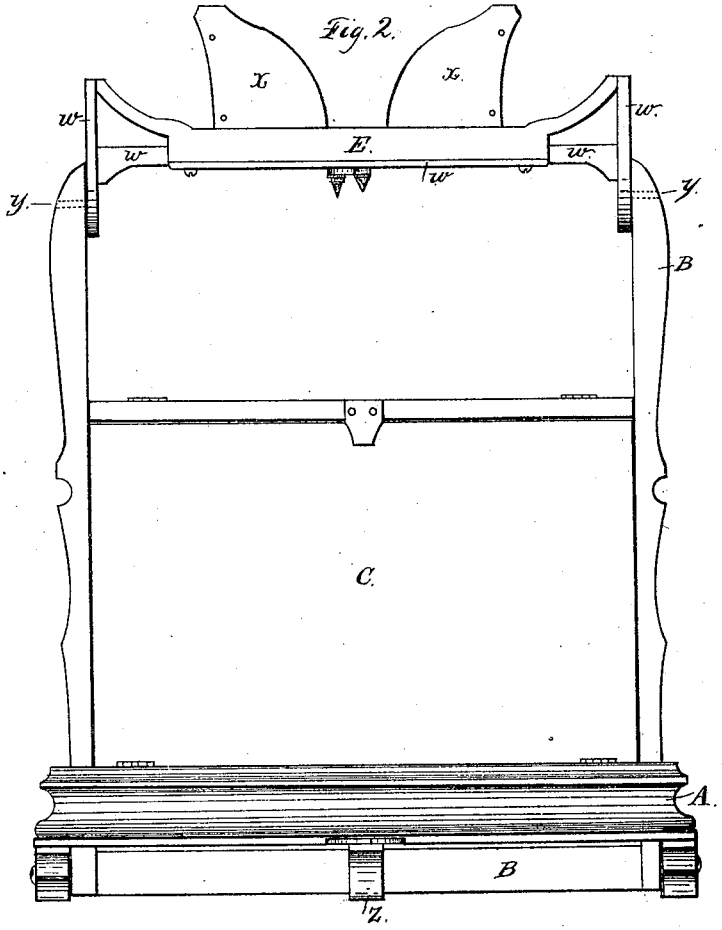

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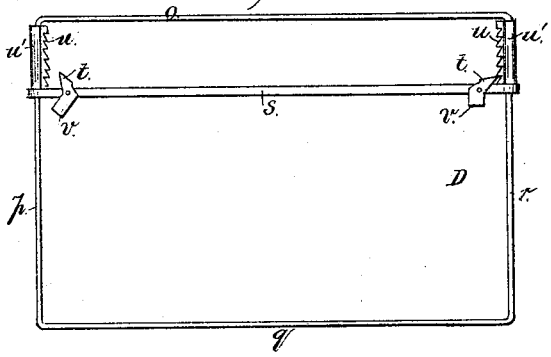
Fig. 4.



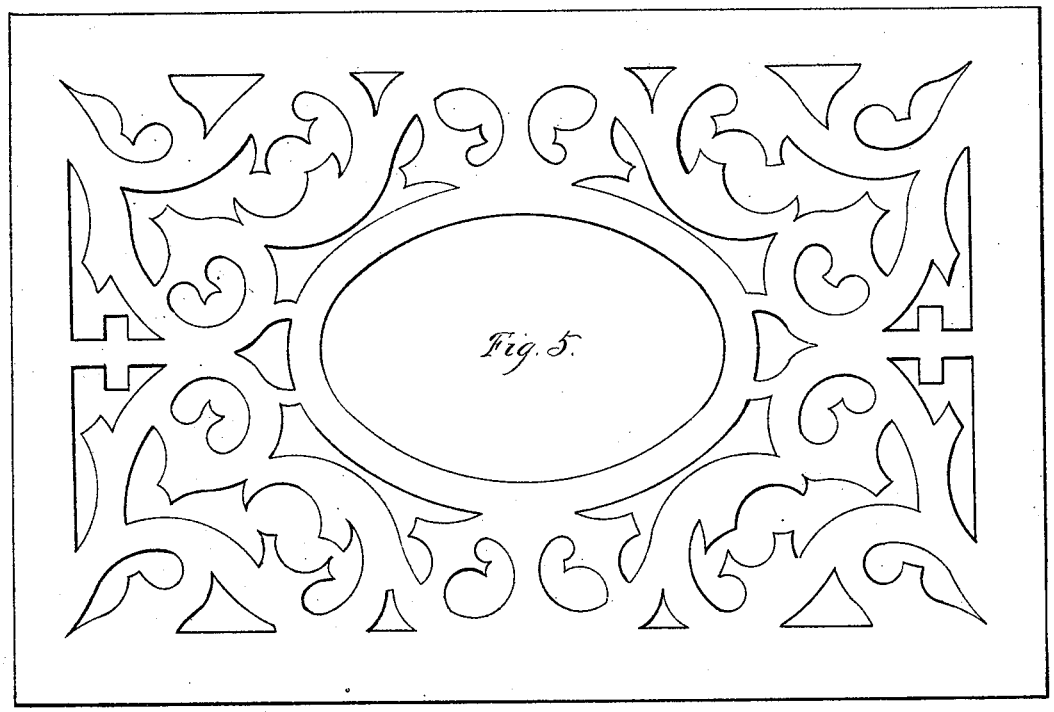


Fig. 6

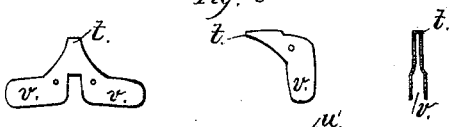
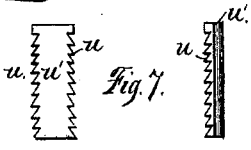


Fig. 7.



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Inventor.

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By John J. Halsted
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UNITED STATES PATENT OFFICE.

LORENZO D. SIBLEY, OF VINELAND, NEW JERSEY.

IMPROVEMENT IN STEREOSCOPES.

Specification forming part of Letters Patent No. **166,942**, dated August 24, 1875; application filed March 17, 1875.

To all whom it may concern:

Be it known that I, LORENZO D. SIBLEY, of Vineland, county of Cumberland and State of New Jersey, have invented new and useful Improvements in Stereoscopes; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification is a description of my invention sufficient to enable those skilled in the art to practice it.

My present invention is an improvement on that shown in my patent No. 141,822, dated August 12, 1873, in which is used a book for holding the pictures, so that the opening of a leaf or leaves of this book will present to view the picture desired, or all successively, and in which the lens-frame is arranged to swing to either side to bring to view another set of pictures held by the leaves of the book.

My improvements consist in a platform, either level or inclined, against or upon which the back of the book may rest to support it, this platform being provided with a ledge or border, from and over which the leaves may be turned, as desired; also, in making the frame or box in two parts, so that when brought together they become inclosed, and box up the pictures compactly, and when the instrument is being used these parts open out from each other and lay the book in proper position for use; also, in a provision for shifting laterally the lenses to vary their refrangibility, and adapt them to the eyes of different persons; also, in constructing the frames which form the book-leaves of wire at all the edges, instead of open at one edge, thus insuring greater strength and tightness; also, in the employment, with these leaf-frames, of movable bars arranged to slide and to catch in notches at the opposite ends or sides of the leaves or hinged frames, to accommodate themselves to pictures of different widths, and to hold them in place in the leaf; in arranging the lens-frame on the swinging arms, so that when it is not in use its hood may be swung down out of the way, and beneath its supporting-bar, and not project above it, thus protecting it, and making the structure more compact; in a swinging or pivoted piece for attachment to the movable bars, having a catch or a clasp, or both, for holding the picture to place, the catch being designed for holding it near the corner at one side, and the clasp for holding it near the corner at the top; also, in other details hereinafter named.

In the drawings, Figure 1 is a vertical transverse section of a stereoscope illustrating my invention, partly broken away, the box and book being spread open. Fig. 2 is a front view of the box and frame when closed; Fig. 3, a detached view of the devices for shifting the lenses and a section of a lens; Fig. 4, one of the wire picture-frames, with its shifting-bar and fastening devices and picture-clasps; Fig. 5, one of the open-work sides of the box; Figs. 6 and 7, details of the catches, clasps, and teeth of the picture-frame, and of the blanks for making the same.

A is the main frame; B, the swinging lens-frame; C, the divided box for holding the book of pictures; D, the metallic frames for each leaf of this book; E, the reversible lens-support on the frame B. The box is made in two parts, C C′, linked together by links *f*, and one of these parts has a bottom or platform, *g*, which may be either level or inclined, and upon which the back of the book H closely rests or lies, and over a sharp edge or border, *i*, of this platform, as on a fulcrum, the leaves of the book, successively falling, and acting like levers, draw the entire book, leaf by leaf, until it rests, by its opposite back, on the other platform, where it is then ready to be drawn back in a similar manner to display a different set of pictures, viewed through the lenses, which, for this purpose, are then swung to the opposite side of the main frame. An inclined revolving button may be employed, if desired, to turn over the leaves successively, substantially as shown in my patent No. 141,822.

These platforms or bottoms, it will be seen, always support the book, which, therefore, does not, as in constructions heretofore used, hang by its entire weight on a sharp edge, and therefore soon wear out; and the platform also prevents the book from "climbing" when turning over an upright support merely. The leaves of the book are linked or hinged together. The two parts C C′ of the box are each pivoted to the frame, so as to swing back from a vertical to an inclined position, their

vertical position bringing them together to inclose the book when the apparatus is no longer wanted for use, and their separated or inclined position adapting them for use by bringing the platforms and ledge *i* and the book of pictures into proper position relatively to the lenses.

The link or links *f* limit the distance to which C and C′ may be separated; and each half, C or C′, of the box serves precisely the same function or duty, in permitting the pictures to turn or open from either half into the other, the one ledge *i* performing the same function or duty in both cases. This division of the box and its opening apart renders it adapted for using single or disconnected stereoscopic pictures, as well as a book of them united together.

It will be understood that each leaf-frame D is designed to hold two pictures back to back, and therefore that upon reversing the apparatus by swinging back the lens-frame B a new set of pictures is presented to the view.

The sides of the box I make open in ornamental open-cut or fancy scroll-work of attractive patterns, which not only reduces the weight of the apparatus, but also permits the pictures, or the covers of a book of pictures, or any inserted card or picture, or bright colors to show through, and thus add at the same time to the beauty of the box.

The somewhat wedge-shaped lenses used in stereoscopes, as is well known, are of such varying thicknesses that their capacity for refracting the rays of light differs considerably at different points in the lens. They are thus not adapted for all kinds of eyes, the eyes of many persons being nearer together or farther apart than those of others. Hence, I make my lenses adjustable in position, as may be required, employing for this purpose a lever, *k*, having arms *l l*, each of which has a bend or pin, *m*, entering a loop, *n*, connected with a lens. The shifting of the lever thus moves the lenses nearer to, or farther from, each other to any desired extent, the lenses moving in suitable guideways. Each leaf-frame of the book is not, as in my former patent, open at the top, nor does it hold and release the card or picture by bending over upon it the metal sides of the frame every time the picture is inserted or removed. On the contrary, my present book is formed of wire at all its edges, sides and top included, as seen at *o p q r*, thus making it stronger and more durable, as well as less liable to damage and breakage. It is also much lighter than when formed partly of wood. In order to accommodate pictures of different widths, and yet hold them firmly in each leaf, I employ movable sliding bars *s*, having near each end a pivoted or a sliding pawl or catch, *t*, adapted to engage with any one of a series of teeth or notches, *u*, made on the wire leaf or preferably on a piece of sheet metal, u^1, Fig. 7, and bent to place on the frame, the teeth being on the inside of the leaf or hinged frame. The shifting of this bar *s* permits the introduction of the cards into the frame, and also the adjustment of the bar, so that the catches *t*, whether made to swing or to slide, shall hold it firmly when adjusted. I also employ clasps *v* on the bars to embrace the top of the picture at each end, and I prefer to make the catch *t* and clasp *v* in one piece, both swinging or pivoted on the same pivot; and the proper adjustment of the catch in the proper notches in such case also adjusts the clasp on the picture.

The swinging clasps and the catches may, however, be separate and distinct from each other.

On the swinging lens-support E is mounted a frame, *w*, on which are sustained the lenses and the hoods *x x*, this frame *w* having journals *y y*, whereby, when the stereoscope is no longer in use, or is to be packed away, the hood may be swung down, and lie beneath instead of above the lenses, and be out of the way of damage.

The box has two central projections, Z Z, at its sides, for two reasons, viz: to keep the stereoscope from tipping, and thus answering as supporting-legs, and also to serve as handles when it is desired to hold the instrument in the hands. I prefer to have these legs on or as forming part of a central cross-bar, *z′*, extending across the bottom of the box, thus giving great strength when used as a handle, while at the same time serving to strengthen the box.

I claim—

1. In a stereoscope, a platform, *g*, for supporting the back of a book, holding a series of pictures, and provided with an edge over which the leaves of the book are turned, substantially as shown and described.

2. The box made in two hinged parts, C C′, opening from each other, each part being adapted for supporting the back and displaying the pictures as they are viewed from either side of the apparatus.

3. In combination with the lenses of a stereoscope, mechanism operating substantially as described, whereby they may be adjusted to or from each other, for the purpose set forth.

4. The leaf-frame of the book, for the reception and holding of stereoscopic pictures, constructed of continuous wire extending around all its four sides, substantially as and for the purpose set forth.

5. In combination with the wire frames *o p q r*, the notches *u* at their inner sides, whether made on the wire or on a separate piece, *u′*, and applied to the frame, as and for the purpose set forth.

6. The movable and adjustable bars *s*, provided with swinging or sliding catches *t*, adapted to engage with teeth *u* on the leaves, substantially as and for the purpose set forth.

7. The movable and adjustable bars *s*, provided with swinging clasps *v*, adapted to receive and clasp the edges of the pictures, substantially as and for the purpose set forth.

8. The piece *t u*, constructed as described, from sheet metal, and bent so as to form both the catch or pawl *t* and the clasp *u*, about at right angles to each other, and provided with a pivot-hole near its angle, substantially as and for the purpose described.

9. In combination with the swing-frame B, the reversible or turning lens-support E, as and for the purpose described.

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Witnesses:
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