No. 760,433. PATENTED MAY 24, 1904.

L. A. DOLPH.

STEREOSCOPE.

APPLICATION FILED JAN. 12, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1

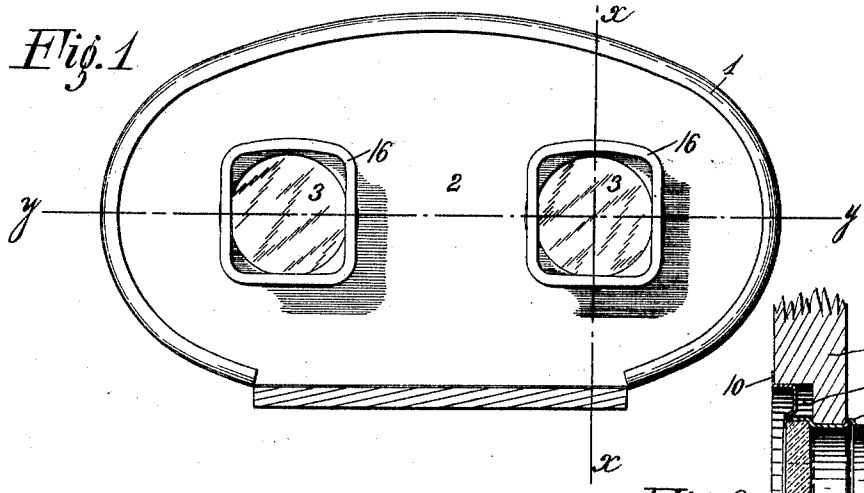


Fig. 3

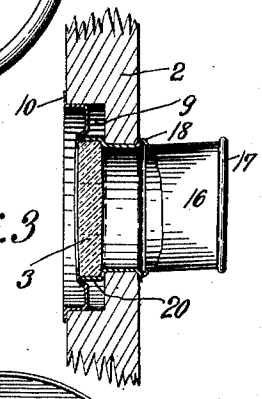


Fig. 2

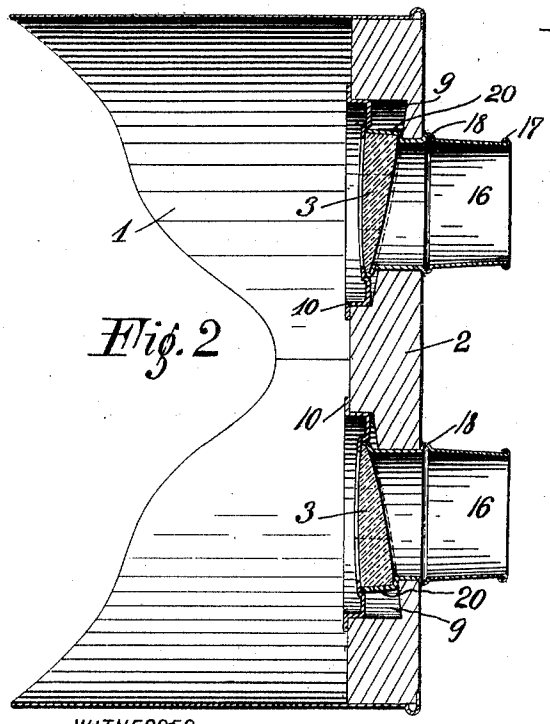
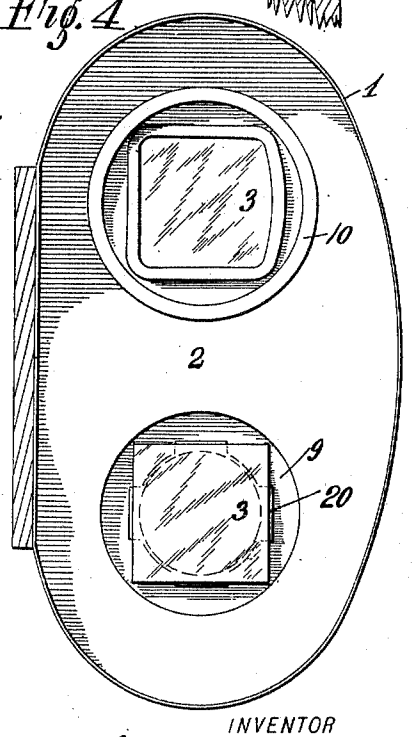


Fig. 4



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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 5

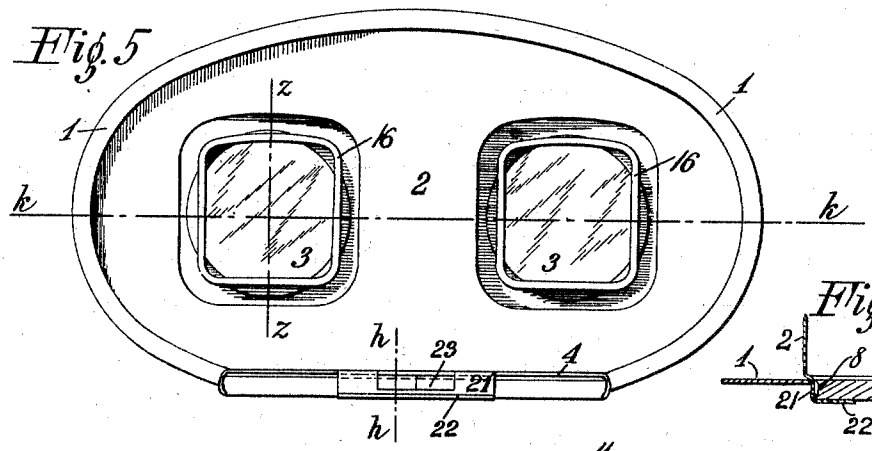


Fig. 9

Fig. 7

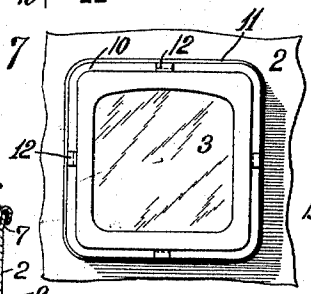


Fig. 8

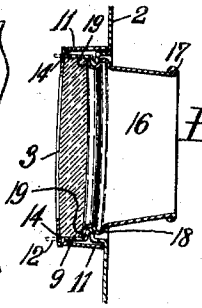
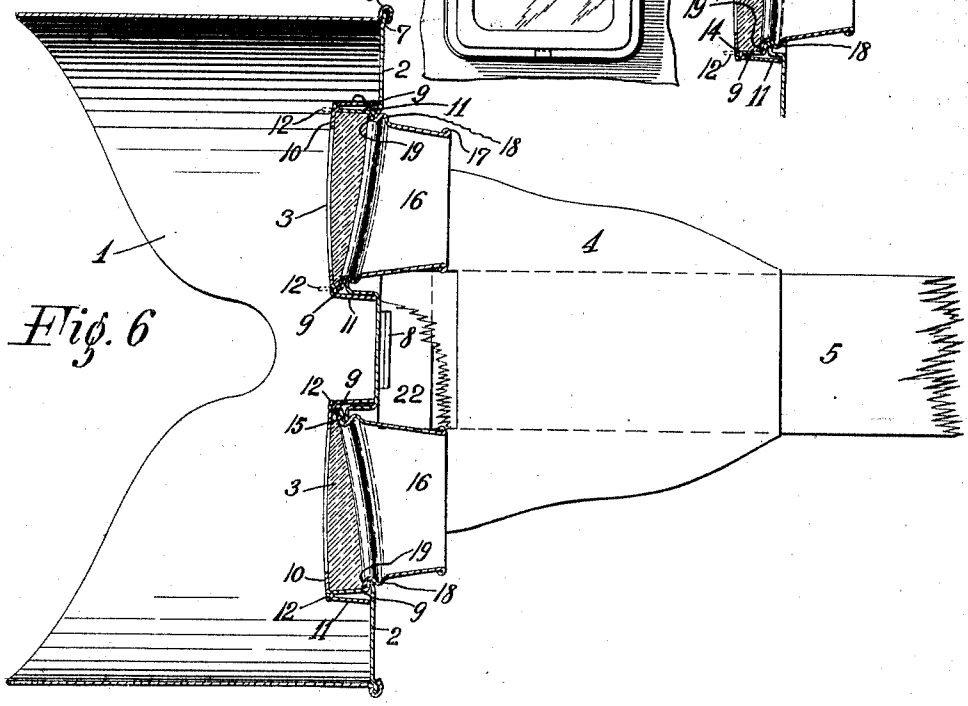


Fig. 6



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No. 760,433. Patented May 24, 1904.

UNITED STATES PATENT OFFICE.

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STEREOSCOPE.

SPECIFICATION forming part of Letters Patent No. 760,433, dated May 24, 1904.

Application filed January 12, 1904. Serial No. 188,778. (No model.)

To all whom it may concern:

Be it known that I, LUTHER A. DOLPH, a citizen of the United States of America, and a resident of Meadville, Crawford county, Pennsylvania, have invented certain new and useful Improvements in Stereoscopes, of which the following is a specification.

My invention relates generally to stereoscopes, and in what particulars will appear as the specification proceeds.

A great disadvantage in using stereoscopes as heretofore constructed has been the ready access of rays of light to the front of the lenses, making the picture to be viewed less distinct than it would otherwise be and, indeed, often producing pronounced halation. It is a matter of common observation that objects appear more distinct when beheld away from the light instead of against the light. I do not know of any attempt hitherto to exclude these rays of light from the front of the stereoscope by the use of what I have termed herein a "dark chamber." The methods of uniting the ends of the hood of the stereoscope have so far been unsatisfactory—that is, there seems to be no method which is cheap which unites the ends securely, yet allows them to be readily disengaged. The presence of an under shaft-plate to support the shaft is another disadvantage in stereoscopes, inasmuch as it adds to the weight and to the cost of construction.

The object of my invention, therefore, is to overcome these disadvantages in the construction and use of stereoscopes as at present made.

The accompanying drawings disclose the various novel features in preferred forms, although changes may of course be made within the scope of the claims.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a front elevation of the hood and lens-frame of a stereoscope, showing my invention. Fig. 2 is a view in section taken on the line *y y* of Fig. 1. Fig. 3 is another view in section taken on the line *x x* of Fig. 1. Fig. 4 is a rear elevation of the lens-frame, showing one lens secured in position, the other placed in its pocket. Fig. 5 is a front elevation showing my invention as applied to a stereoscope having a metal lens-frame. Fig. 6 shows a section of Fig. 5, taken on line *k k*, and also showing a top plan view of the shaft and shaft-plate, parts being broken away. Fig. 7 is a rear elevation showing in detail my method of securing the lenses in position. Fig. 8 is a detail view in cross-section taken on line *z z* of Fig. 5. Fig. 9 is a detail view, also in cross-section, taken on line *h h* of Fig. 5 and showing the shaft in position.

The hood is here shown in conventional form, in one piece, with its rear edge conforming to the outlines of the face and its forward edge joined to the lens-frame by a seam, giving a bead-like appearance around the periphery of the lens-frame. Its ends are secured in position in a novel way hereinafter described. The lens-frame is provided with customary openings for the lenses, and through them projects a member forming a dark chamber in front of the lens-frame and lenses. The shaft passes under a shaft-plate, and its end rests in a let-down flanged portion of the lens-frame later more specifically described.

In Figs. 1, 2, 3, and 4 the lens-frame is shown of wood, in the remaining figures of metal, preferably aluminium. The other parts of the stereoscope, except the shaft, are all preferably of aluminium, although I pause here to remark that I do not wish to be understood as limiting myself to any particular material.

Referring to the drawings, 1 is a hood of conventional form and in a single piece; 2, a lens-frame; 3, lenses; 4, a shaft-plate, and 5 a shaft. The hood is joined at its forward edge to the lens-frame and for that purpose is provided with a grooved and flanged portion 6, adapted to receive the edge of the lens-frame, which in Fig. 6 is shown slightly bent back at 7 to form a seam. Near the ends of the hood are formed portions 8, which project forwardly and which serve to secure the ends in proper position in the manner to be later described.

The lens-frame is provided with openings (here shown circular in form) for the lenses,

which are positioned in suitable recesses or pockets 9, beveled to conform to the angle of the lenses. If a wooden lens-frame is used, these lenses are held in position by a mat 10, conforming to the shape of the pocket and of slightly greater diameter, so that it fits snugly therein. If a metal lens-frame be used, this mat is bent or flanged at 11 to fit over the pocket and is secured by spurs 12, struck up from the edges of the pocket and passing through slots or holes 14 in the mat. These spurs are then bent over, thereby binding the mat to the pocket. In the metal lens-frame the mat and the spurs of the pocket prevent lateral movement, and the lens rests upon a flange 15, bent over the inner face of the pocket through the openings in the lens-frame, and extending forward thereof projects a member 16, preferably of aluminium, being circular in a cross-section taken at the opening of the lens-frame, but substantially rectangular in cross-section at its outer end. This member forms a dark chamber in front of the lenses. The sharp angles are avoided by rounding the corners, and the upper edge is slightly curved to conform to the contour of the stereoscopic views. It will be seen that the diameter of the rectangular form is less than that of the opening of the lens-frame, while the diagonal is greater. The edge of this member is shown beaded at 17, and the change from circular to rectangular form is effected gradually and in a manner adapted to enhance the attractive appearance of the front of the stereoscope.

The member is provided with a suitable shoulder 18 or flange 19, which holds it in position. In the metal lens-frame the shoulder and flange form an **S**, and the flange fits over the inner face of the lens-pocket. In the wooden lens-frame, however, the member is flanged, but parts are continued inwardly in a spurred form, as at 20, thereby serving to prevent lateral movement of the lenses.

The shaft-plate 4 may be a separate plate attached to the lens-frame in some suitable manner, or it may be formed integral with the lens-frame. In the drawings I have shown a portion 21 of the lens-frame cut out and let down at a point opposite the end of the shaft. This let-down portion is flanged forwardly at 22 to form a seat for the inner end of the shaft, thereby doing away with the necessity of an under shaft-plate. Apertures or holes 23 are punched in the vertical face of this let-down portion of the lens-frame, and through these are inserted the projecting portions 8 of the hood before mentioned. When the hood is ready to be secured in place, it is wrapped around the periphery of the lens-frame, (the ends overlapping or not, as desired.) The projecting portions are inserted through the holes in the let-down portion of the lens-frame and then bent over. The hood is now firmly but removably secured, and the end of the shaft can then be rested on the seat 22, as already indicated.

Having thus described my invention, what I claim is—

1. In a stereoscope, a hood, lenses, a lens-frame provided with openings for the lenses, pockets adapted to receive the lenses, a mat engaging with the rear faces of the lenses adapted to hold them in position, a member projecting through said openings about the edges thereof, and adapted to form a dark chamber in front of the lenses, and to hold the lenses against lateral displacement, said member being provided with shoulders adapted to fit against the lens-frame and to hold said member in position.

2. In a stereoscope, a hood, lenses, a lens-frame, provided with openings for the lenses, pockets adapted to receive the lenses, a mat engaging with the rear faces of the lenses adapted to hold them in position, a member projecting through said openings about the edges thereof, and adapted to form a dark chamber in front of the lenses, and to hold the lenses against lateral displacement.

3. In a stereoscope, a hood, lenses, a lens-frame provided with openings for the lenses, pockets in said lens-frame adapted to receive the lenses, spurs formed from said pockets and adapted to keep the lenses fixed against lateral movement, a mat provided with a plurality of holes adapted to receive said spurs, said mat being adapted to hold the lenses in position and said spurs being adapted to secure the mat, a member projecting through the openings about the edges thereof and forward of the lens-frame adapted to form a dark chamber in front of the lenses, said member being provided with shoulders adapted to fit against the lens-frame and to hold said member in position.

4. In a stereoscope, a hood, lenses, a lens-frame provided with openings for the lenses, pockets in said lens-frame adapted to receive the lenses, spurs formed from said pockets and adapted to keep the lenses fixed against lateral movement, a flanged mat, provided with a plurality of holes adapted to receive said spurs, said mat being adapted to fit over said pockets and to hold the lenses in position and said spurs being adapted to secure the mat, a member projecting through the openings about the edges thereof and forward of the lens-frame adapted to form a dark chamber in front of the lenses, said member being provided with shoulders adapted to fit against the lens-frame and to hold said members in position.

5. In a stereoscope of the character described, means for securing the lenses comprising: a lens-frame having openings for the lenses, a portion of said lens-frame forming a pocket adapted to receive the lenses, a mat adapted to fit over the lenses and lens-pocket,

and means adapted to secure the mat in position.

6. In a stereoscope of the character described, means for securing the lenses comprising: a lens-frame having openings for the lenses, a flanged back portion surrounding the lens-openings and forming a pocket adapted to receive the lenses, spurs projecting inwardly from the edges of said pocket, a mat flanged to fit over the lenses and the lens-pocket and provided with a plurality of holes for receiving the said spurs, the spurs being adapted to bend over the edge of said mat to hold it in position and to keep the lenses fixed against lateral movement.

7. In a stereoscope of the character described, means forming a dark chamber in front of the lenses, comprised of a lens-frame having circular openings for the lenses, and a member adapted to fit into the openings and provided with shoulders adapted to fit against the lens-frame to hold the member in position, said member being circular in cross-section at the lens-frame and substantially rectangular in cross-section at its outer end.

8. In a stereoscope of the character described, means forming a dark chamber in front of the lenses, comprised of a lens-frame having circular openings for the lenses, and a member projecting outwardly from the lens-frame, said member being circular in cross-section at the lens-frame, and substantially rectangular in cross-section at its outer end.

9. In a stereoscope, a hood, a shaft, a lens-frame having a horizontal integral portion forming a shaft-plate, and a let-down flanged portion adapted to form a seat for the end of said shaft.

10. In a stereoscope, means for securing the ends of the hood, comprising: a hood having portions projecting forwardly near its ends and a lens-frame having a let-down portion provided with apertures to receive the projecting portions of the hood, said projecting portions being adapted to be bent over to secure the ends of the hood in proper position.

11. In a stereoscope, a shaft-plate, a shaft, a hood having portions projecting forwardly near its ends, and a lens-frame having a let-down flanged portion, adapted to form a seat for the end of said shaft and provided with apertures to receive the projecting portions of the hood, said projecting portions being adapted to be bent over to secure the ends of the hood in proper position.

12. In a stereoscope, a shaft, a hood having portions projecting forwardly near its ends and a lens-frame having a horizontal integral portion forming a shaft-plate and a let-down flanged portion adapted to form a seat for the end of said shaft and provided with apertures to receive the projecting portions of the hood, said projecting portions being adapted to be bent over to secure the ends of the hood in proper position.

Signed at Meadville, Pennsylvania, this 5th day of January, 1904.

LUTHER A. DOLPH.

Witnesses:
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C. L. PAPPENHAGEN.