

Oct. 11, 1949.

S. I. ROCHWITE
STEREOSCOPE

2,484,591

Filed May 8, 1945

6 Sheets-Sheet 1

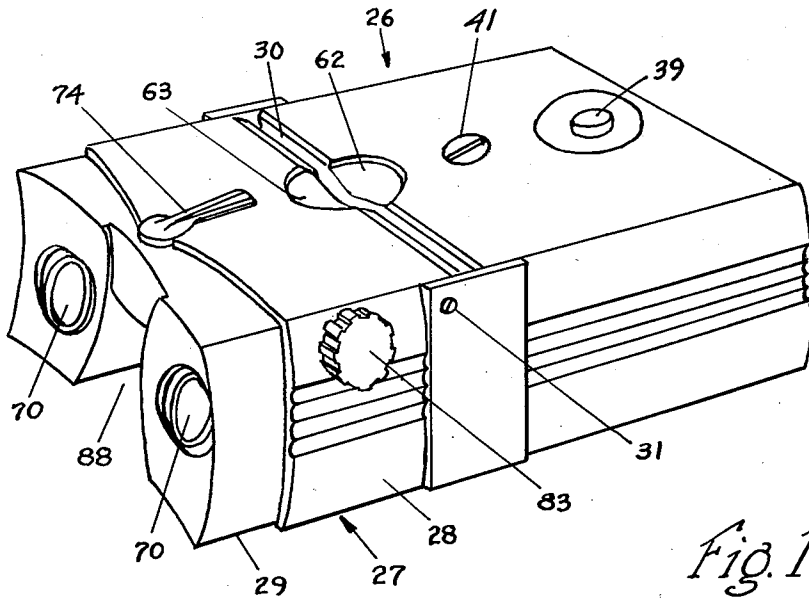


Fig. 1

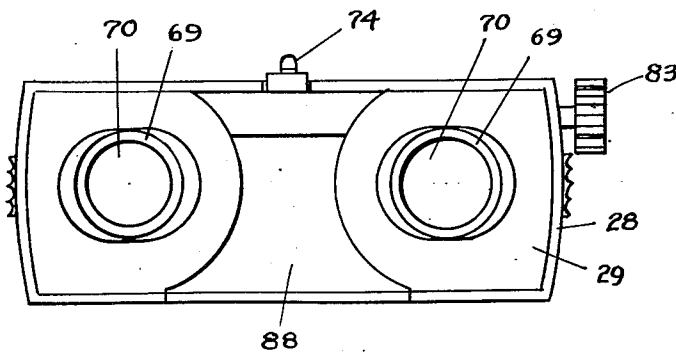


Fig. 2

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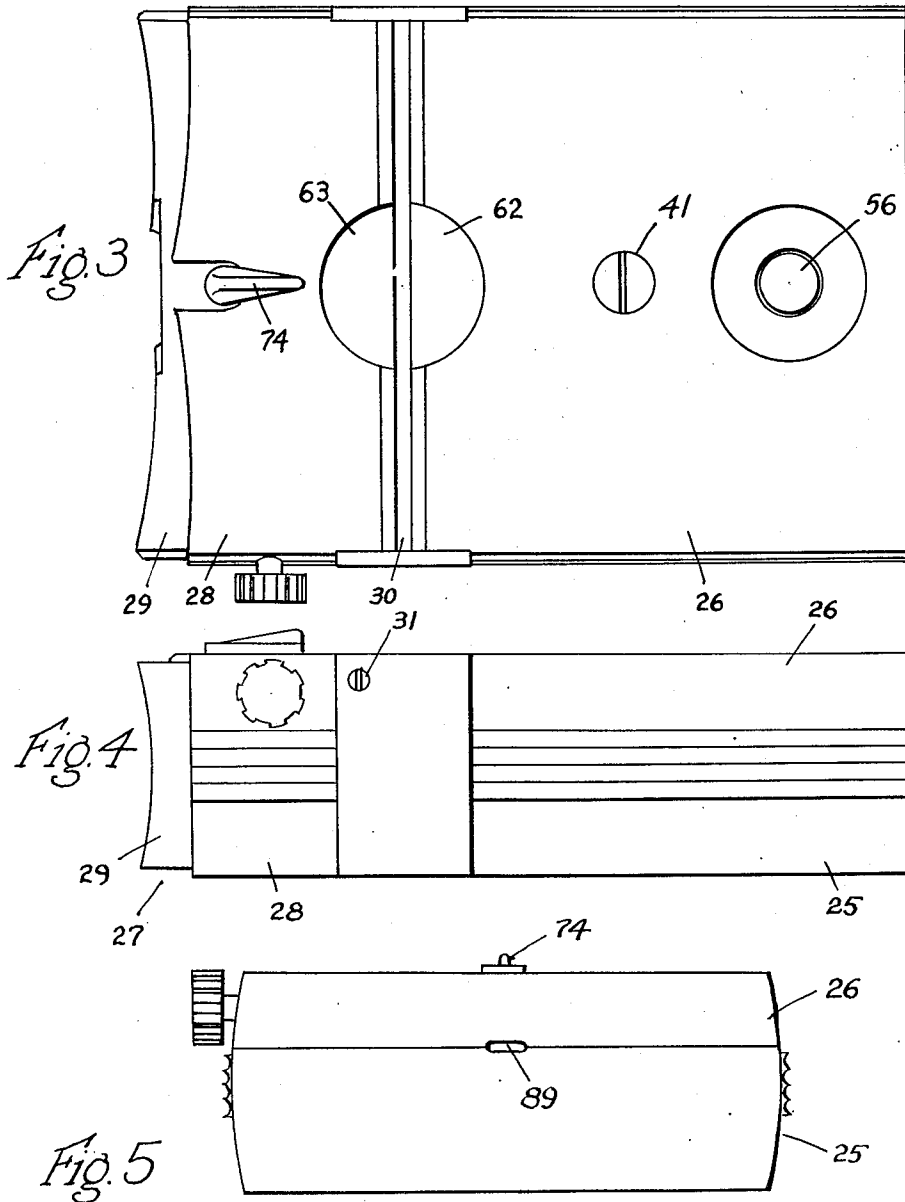
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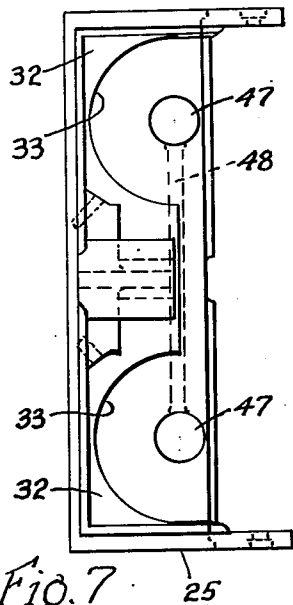


Fig. 7

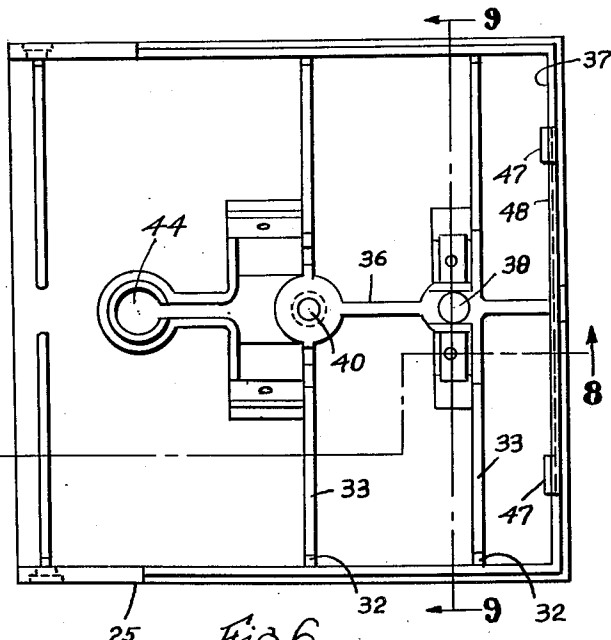


Fig. 6

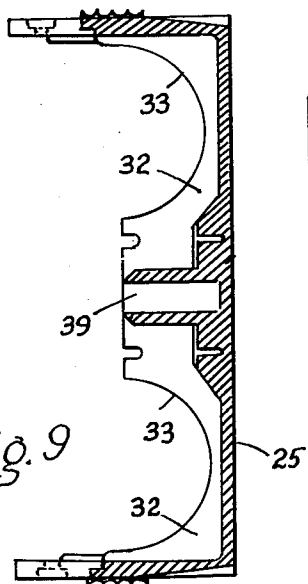


Fig. 9

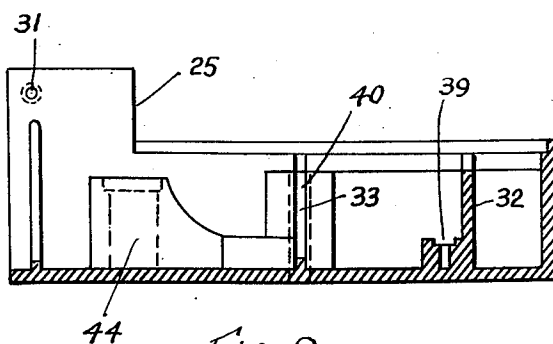


Fig. 8

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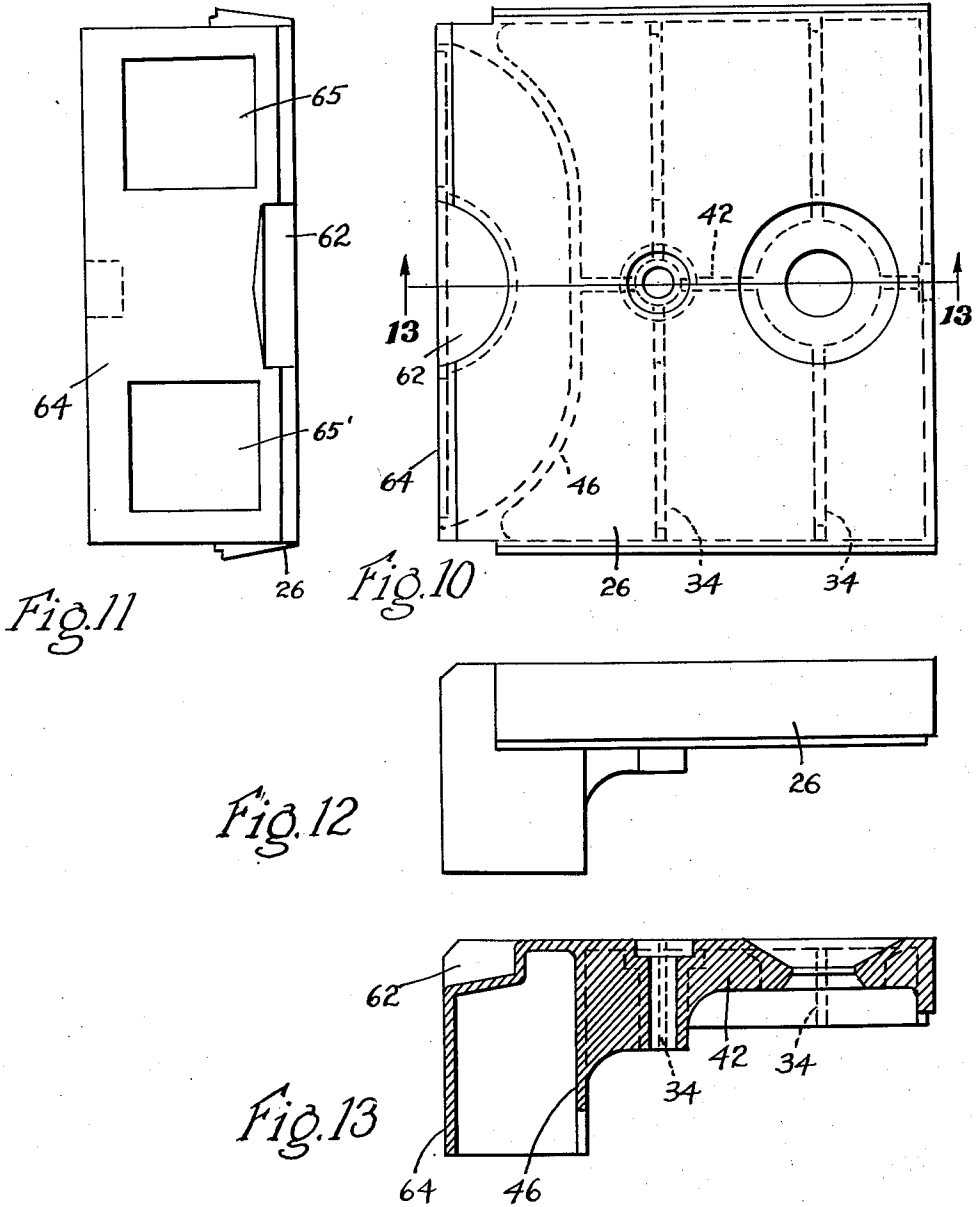
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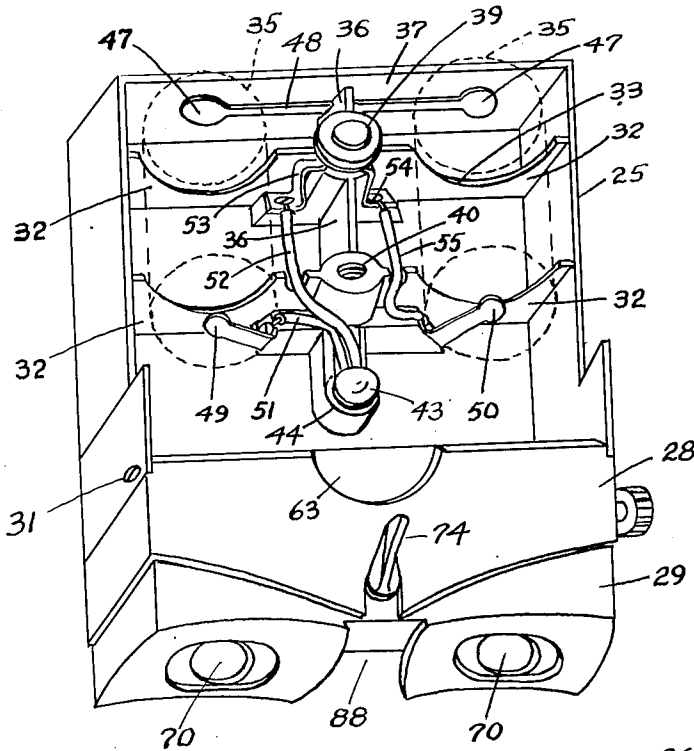


Fig. 14

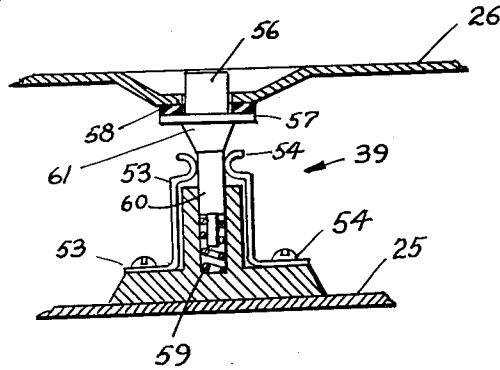


Fig. 15

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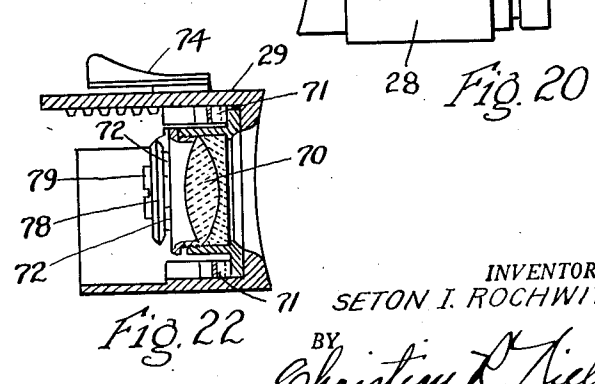
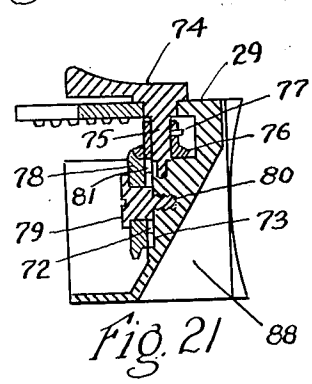
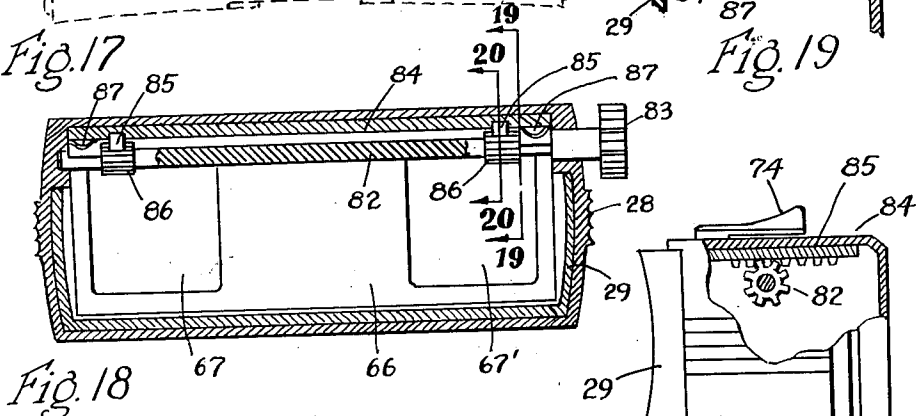
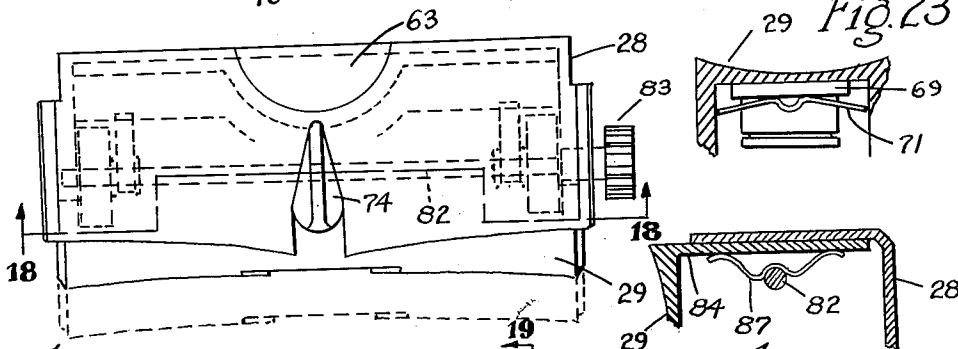
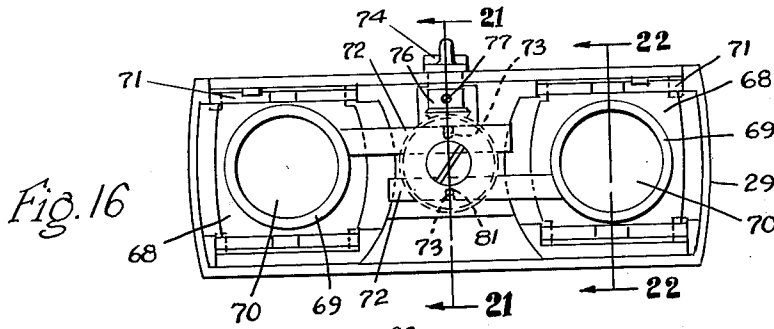
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6 Sheets-Sheet 6



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UNITED STATES PATENT OFFICE

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STEREOSCOPE

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Application May 8, 1945, Serial No. 592,539

3 Claims. (Cl. 88—29)

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My invention relates to stereoscopes, and more particularly, to a type of stereoscope that is used in conjunction with photographic films mounted as transparent stereograms commonly referred to as slides.

The object of my invention is to provide a device in which the stereograms are inserted and enclosed during observation.

Another object of my invention is to construct the device in a manner to permit illuminating of the stereograms by proper reflection of the light controlled by manual operation.

Still another object of my invention is to provide means to easily control the focusing mechanism to fit the eyesight of the operator.

A still further object of my invention is to provide interocular adjustment of the lenses for proper use.

Another object of my invention is to construct and provide a device of the character described that is compact, easily adjustable, having all parts accessible and efficiently adaptable for the purpose for which it is intended.

Other and further objects of my invention will become more apparent as the description proceeds, when taken in conjunction with the drawings, in which:

Figure 1 is a perspective view of the device, illustrating the complete stereoscope assembly.

Figure 2 is a front view of the unit, showing the eye piece and lens arrangement.

Figure 3 is a top view of the assembled unit consisting of the lens compartment and the battery case.

Figure 4 is a side view of the assembled unit, as shown in Figure 3, taken from the side on which the focusing adjustment lever is located.

Figure 5 is a rear view of the assembled unit, as shown in Figure 3.

Figure 6 is a plan view of the battery case.

Figure 7 is a front view of the battery case, shown in Figure 6.

Figure 8 is a cross-sectional view of the battery case, taken at line 8—8 in Figure 6.

Figure 9 is a cross-section of the battery case, taken at the line 9—9 in Figure 6.

Figure 10 is a plan view of the battery case cover.

Figure 11 is a front view of the battery case cover, shown in Figure 10.

Figure 12 is a side view of the battery case cover, shown in Figure 10.

Figure 13 is a cross-sectional view of the battery case, taken at the line 13—13 in Figure 10.

Figure 14 is a perspective view of the unit with

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the battery case cover removed and showing the batteries in phantom.

Figure 15 is a cross-sectional view of the push button and lighting switch arrangement.

Figure 16 is a view of the interocular adjustment assembly.

Figure 17 is a plan view of the focusing mechanism assembly.

Figure 18 is a cross-sectional view of the focusing mechanism, taken at line 18—18 in Figure 17.

Figure 19 is a cross-sectional view of the focusing mechanism, taken at the line 19—19 in Figure 18.

Figure 20 is a cross-sectional view of the focusing mechanism, taken at the line 20—20 in Figure 18.

Figure 21 is a cross-sectional view of the interocular mechanism assembly, taken through its center at the line 21—21 in Figure 16.

Figure 22 is a cross-section of the interocular mechanism assembly, taken through the lens at the line 22—22 in Figure 16, and

Figure 23 is a partial top view of the interocular adjustment arrangement, showing the resilient member in position.

Throughout the various views, similar characters of reference indicate corresponding parts, and by referring to the same, the character 25 shows a battery case provided with a cover 26, which engages the case 25 in a manner to seal the enclosure formed. The assembly of the case 25 and cover 26 engages a focusing mechanism assembly 27 consisting of a body 28 and an eye piece 29.

The assembly of the focusing mechanism 27, with the battery case 25 and cover 26, provides a slot 30 adapted to receive the stereogram, not shown, consisting of a flat transparent plate on which the films to be viewed are mounted. This stereogram is inserted into the slot 30 in a vertical manner. The assembly 27 is attached to the battery case 25 by means of screws 31.

The battery case 25 is provided with vertical partitions 32 having radial depressions 33 therein, and the cover 26 has corresponding vertical partitions 34, registering therewith, disposed to receive the batteries 35, shown in phantom in Figure 14. A vertical partition 36, centrally disposed within the battery case 25, leads from the inner back wall 37 of the case 25 to a socket 38 from the push button and switch arrangement 39 to a threaded member 40 for engagement of the cover screw 41 and a vertical partition 42 disposed within the cover 26 corresponds and registers with the partition 36. An illuminating means, in the form of a lamp 43, mounted in a

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socket 44 forming a part of the case 25, is disposed in the battery case 25 ahead of a reflector partition shown as the member 46 in the cover 26. This reflector is parabolically disposed toward its outer ends to reflect the rays of light from the lamp 43 toward the films mounted on the stereogram, not shown, when the stereogram is inserted into the slot 30. Contact points 47, shown imbedded into the rear wall 37 of the case 25, are connected to one another by means of the metallic member 48, and individual contact means 49 and 50 extend outward and register in direct alignment with the parts 47 in the wall 37. These parts 47, 49 and 50 contact the dry cells 35 and are connected, as shown in Figure 14, wherein a wire 51 extends from the contact 49 to the socket 44, and a wire 52 extends from the socket 44 in the illuminating means assembly to a contact 53 in the switch arrangement 39, and from the other contact 54 in the switch arrangement 39, a wire 55 leads to the contact 50.

The switch arrangement 39, as illustrated in Figure 15, shows a push button 56 having outwardly extending flanges 57 supplied with a felt washer 58 forced upward against the inner face of the cover 26 by means of a spring 59. The stem 60 of the push button, being of a non-conducting material, insulates the contacts 53 and 54 from one another, however, a metallic member 61, encircling the non-conducting material of the push button 56 and stem 60, when brought down and held against the pressure of the spring 59, will make contact with the points 53 and 54, thereby causing the current to flow from the battery 35 to the point 49 through 51 to 44, and from the lamp 43 in the illuminating assembly to contacts 53 and 54 in the switch arrangement through 55 to the contact 50, causing the lamp 43 to be actuated for illuminating the interior of the device.

The battery case cover 26 and the focusing mechanism body 28 are provided with a recessed portion 62 and 63 respectively to provide access to the top of the stereogram when inserted vertically into the slot 30 of the assembled unit, and the cover 26 is provided with a front plate 64 in which are shown rectangular apertures 65 and 65' registering with the films mounted on the stereogram when inserted.

The focusing mechanism body 28 is provided with a back wall 66 provided with rectangular apertures 67 and 67' registering with the apertures 65 and 65' in the plate 64 of the battery case 25.

In Figure 16, I show an interocular adjustment assembly consisting of the eye piece 29 in which is mounted a pair of lens mountings 68, provided with lens retaining rings 69 supporting the lenses 70. The lens mountings are held in position by means of lens mount retaining springs 71, and are provided with an inwardly extending member 72 equipped with recessed slots 73 employed for the horizontal movement of the lens mountings when making interocular adjustment.

The actual adjustment of the lens mountings is accomplished by the radial movement of the lever 74 provided with a downwardly disposed shaft 75 on which is mounted a bevel pinion 76 attached to the shaft 75 by means of a set screw 77. This pinion 76 engages a bevel gear 78 mounted to the eye piece 29 by means of a screw 79 at 80, as shown in Figure 21. There are outwardly extending pins 81 on the face of the gear 78 which engage the recessed slots 73 on the member 72. Thus, as the lever 74 is moved in a

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radial path, the pins 81 engaging the slots 73 in the member 72 will cause both of the inwardly extending members 72 to move horizontally toward and away from one another, thereby providing the interocular adjustment of the lenses 70. The resilient springs 71 insure a smooth sliding movement by exerting pressure against the moving parts. The focusing of the lenses 70 in relation to the stereograms is accomplished by the sliding of the eye piece 29 telescopically within the focusing body 28 as illustrated in Figures 17, 18, 19 and 20.

A shaft 82 is mounted horizontally into the walls of the body 28 and is provided at one end with a knob or lever 83 extending outside of the body 28 at one side. The upper wall 84 of the eye piece 29 is provided with gear racks 85 which engage gears 86 mounted onto the shaft 82 in direct alignment with the racks 85, and as the knob 83 is turned by the operator, it will cause the shaft 82 to revolve, thereby revolving the gears 86 engaging the racks 85 which are fastened to the wall 84 of the body 29 causing it to move, and its smooth movement is insured by the use of a pair of resilient members 87 which exert pressure and urge the wall 84 into frictional contact with the inside surface of the case 28, and prevent the focusing shaft 82 from being withdrawn.

The entire device is compact and extremely simple in construction. The slot 30 is easily accessible to inserting the stereogram and the eye piece 29 of the focusing mechanism is provided with a recessed portion 88 to conform with the user's facial features. The push button 56, when held down, will illuminate the lamp 43 and its light will be reflected onto the transparent film mounted onto the transparent body of the stereogram. By revolving the knob 83, the eye piece 29 will telescopically move within the body of the focusing assembly for the proper focusing of the lenses, and the lenses may be moved horizontally away from and toward one another for interocular adjustment by means of a rotating movement of the lever 74. The depressed portions 62 and 63 are of a depth sufficient to provide access to the stereograms when inserting or replacing them.

If desired, the batteries may be eliminated and a cord from a source of electric energy may be led into the enclosure through the aperture shown as 89 in Figure 5. This cord may be connected to the switch arrangement and the illuminating means in the conventional manner.

While I have herein disclosed with considerable particularity a single and preferred embodiment of my invention, it will be manifest to persons skilled in the art that many changes in the general arrangement, form and configuration of the structure may be made and the parts thereof may be varied without departing from the spirit of my invention or the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent in the United States is:

1. A stereoscope of the character described to be used in combination with a transparent stereogram, said stereoscope comprising in combination a focusing mechanism consisting of a body portion and an eye piece, a pair of lenses, a pair of lens mountings supported by said eye piece, inwardly extending members on said lens mountings, said lenses attached to said lens mountings by retaining means, an enclosure consisting of a

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body, a cover for said body, said enclosure attached to and spaced rearwardly from said focusing mechanism in a manner to provide a vertical slot between them, said enclosure provided with dry cells, a lamp socket, a lamp within said socket, a contact switch for controlling the current from said dry cells to said lamp, a sealing wall at the front of said enclosure, a sealing wall at the back of said focusing mechanism body, a pair of apertures within said walls registering with the films mounted on said stereogram, recessed portions within the upper face of said enclosure and focusing body to permit access to the stereogram disposed within said vertical slot, means to provide interocular adjustment of said lens mountings, said means consisting of a vertical shaft, a pair of beveled gears, said gears disposed for engagement with the inwardly extending members on said lens mountings, a horizontal shaft within the body of said focusing mechanism, gears mounted on said shafts, gear racks mounted on the inside of said eye piece, and a revolving member on the outside of said focusing mechanism body for rotating said shaft thereby telescopically moving the eye piece of said focusing mechanism within said body.

2. A stereoscope to be used in combination with a transparent stereogram, said stereoscope comprising a focusing mechanism consisting of a body portion and an eye piece portion, revolving means for telescopically moving said eye piece portion within said body portion, a pair of lenses, a pair of lens mountings, said lens mountings supported by said eye piece portion, inwardly extending members forming a part of said lens mountings, retaining rings supporting said lenses to said mountings, a battery case, a cover, said battery case and cover forming an enclosure disposed for housing illuminating means consisting of dry cells, a socket, a lamp within said socket, a switch arrangement for controlling the current from said dry cells to said lamp, a reflector within said battery enclosure reflecting the light from said lamp to said stereoscope, said battery enclosure provided with a front wall, said focusing mechanism provided with a rear wall, said walls providing a vertical slot, a pair of apertures disposed within said walls in direct alignment with the films mounted on the transparent stereogram disposed within said slot, recessed portions on both sides of the slot supporting said stereogram to provide access to said stereogram, means for providing interocular adjustment of said lenses, said means consisting of a shaft extending outward through said focusing mechanism body, beveled gears operated by said shaft for the actuation of said lens mountings, gear racks on the inside of said focusing body, a horizontal shaft, said shaft provided with gears registering with said racks, and means for revolving said shaft thereby providing a telescopic adjustment of said eye piece within said body of said focusing mechanism.

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3. A stereoscope of the character described to be used in combination with a transparent stereogram, said stereoscope consisting of a focusing mechanism comprising a body and an eye piece, a pair of lens mountings slidably mounted within the eye piece of said focusing mechanism, inwardly extending members on said lens mountings, retaining rings for supporting said lenses to said mountings, a battery case, a cover for said battery case, said case and cover providing an illuminating enclosure, dry cells within said enclosure, a lamp, said lamp disposed within a light socket, a switch arrangement for controlling the current from said dry cells to said lamp, a reflector within said illuminating enclosure, said reflector directing the light from said lamp to said stereoscope, a front wall to said illuminating means, a rear wall to said focusing means, a pair of apertures within each of said walls registering with the objects on said stereogram, said focusing mechanism and illuminating enclosure attached to one another in a manner to provide a vertical slot for the reception of said stereogram, indentations on both of said illuminating enclosure and focusing mechanism body adjacent the slot to permit access to said stereogram, means for providing interocular adjustment, said means consisting of a vertical shaft provided with a pair of beveled gears, one of said gears contacting the inwardly extending members on said lens mountings, a focusing mechanism consisting of a horizontal shaft mounted within said body, means for rotating said shaft, a pair of gears mounted on said shaft, a pair of gear racks mounted to the inside of said eye piece, resilient means for retaining frictional contact of said eye piece with said body in focusing mechanism thereby providing smooth telescopic adjustment of said eye piece in relation with said focusing body.

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