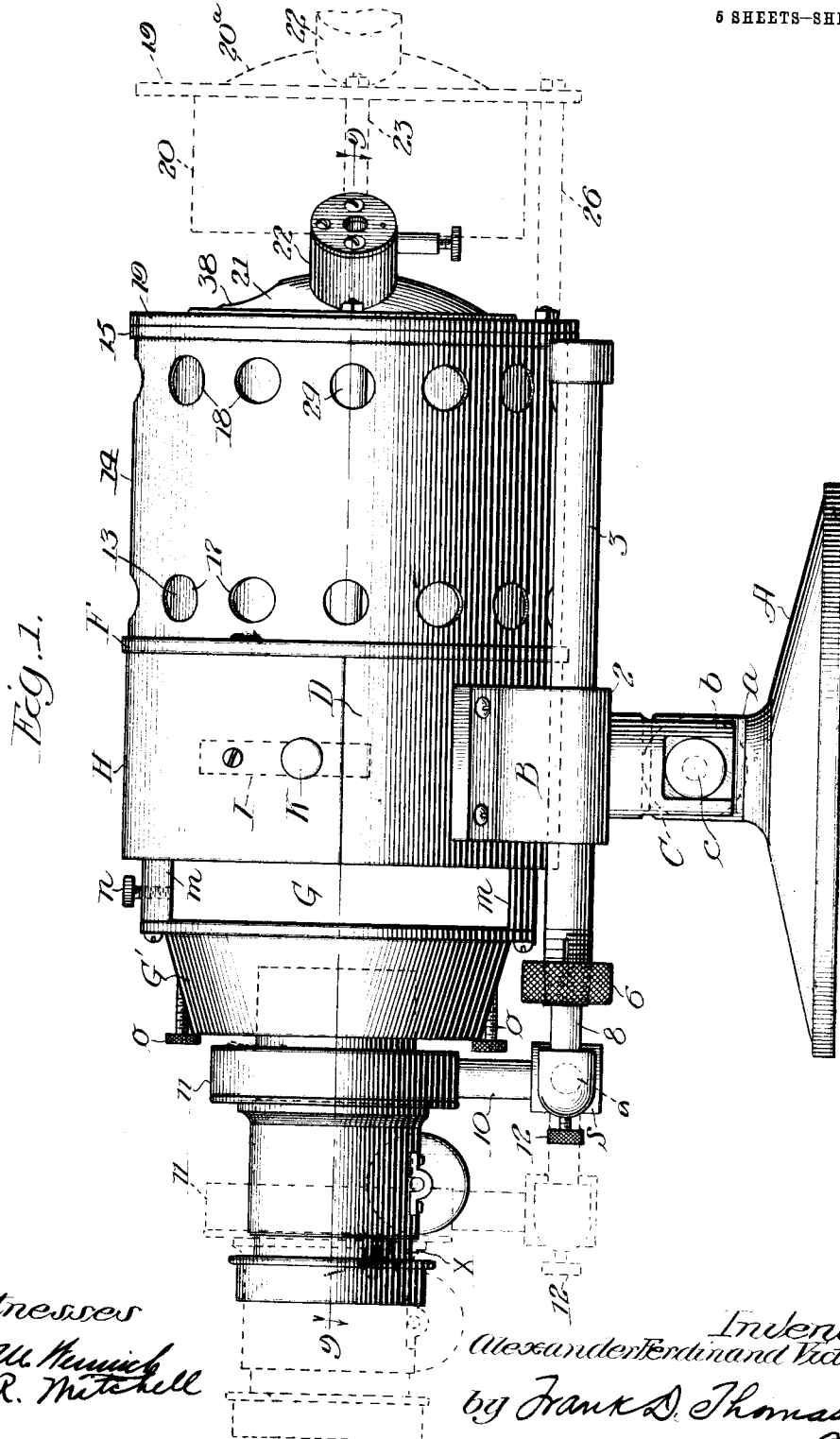


APPLICATION FILED FEB. 26, 1912.

1,062,622.

Patented May 27, 1913.

6 SHEETS—SHEET 1.



Witnesses
O. H. Hennrich
J. R. Mitchell

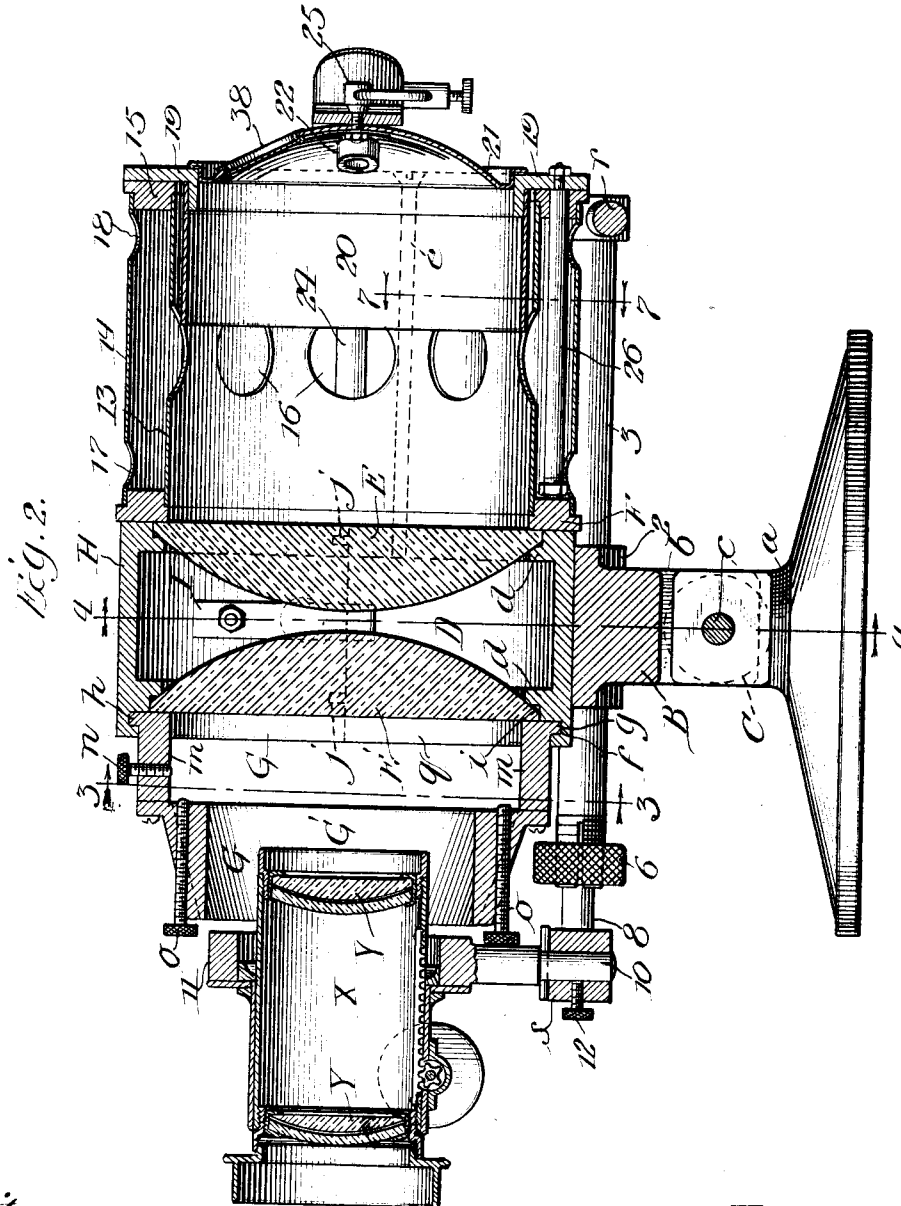
Inventor
Alexander Ferdinand Victor
by Frank S. Thomason
Att'y.

A. F. VICTOR.
STEREOPTICON.
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6 SHEETS—SHEET 2.



Witnesses
O. M. Hennrich
J. R. Mitchell

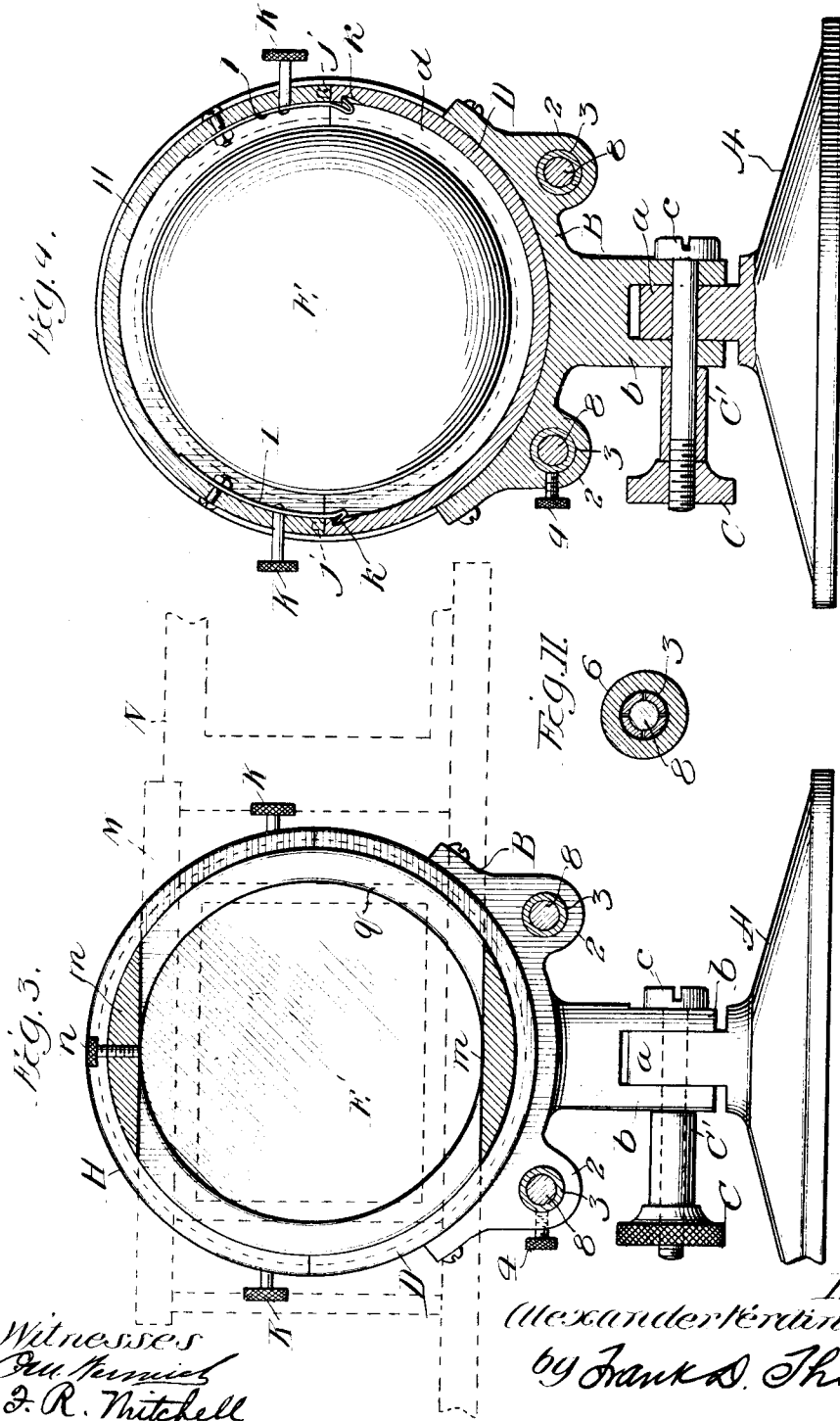
Inventor
Alexander Ferdinand Victor
by Frank D. Thomason
Att'y

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6 SHEETS—SHEET 3.



Witnesses
Geo. H. Smith
J. R. Mitchell

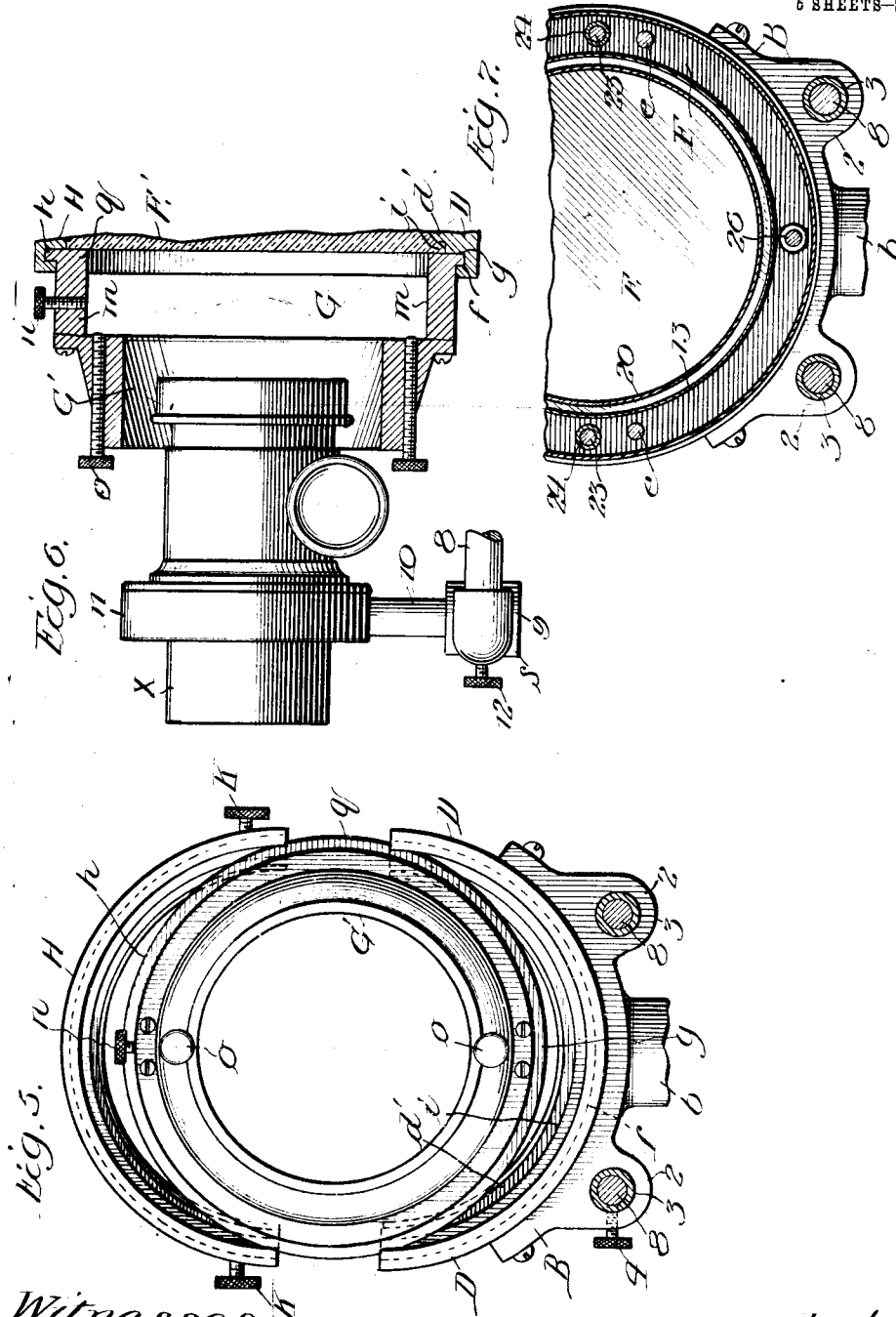
Inventor
Alexander Ferdinand Victor
 by *Frank A. Thomson*
Atty.

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5 SHEETS—SHEET 4.



Witnesses
O. H. Hennich
J. R. Mitchell

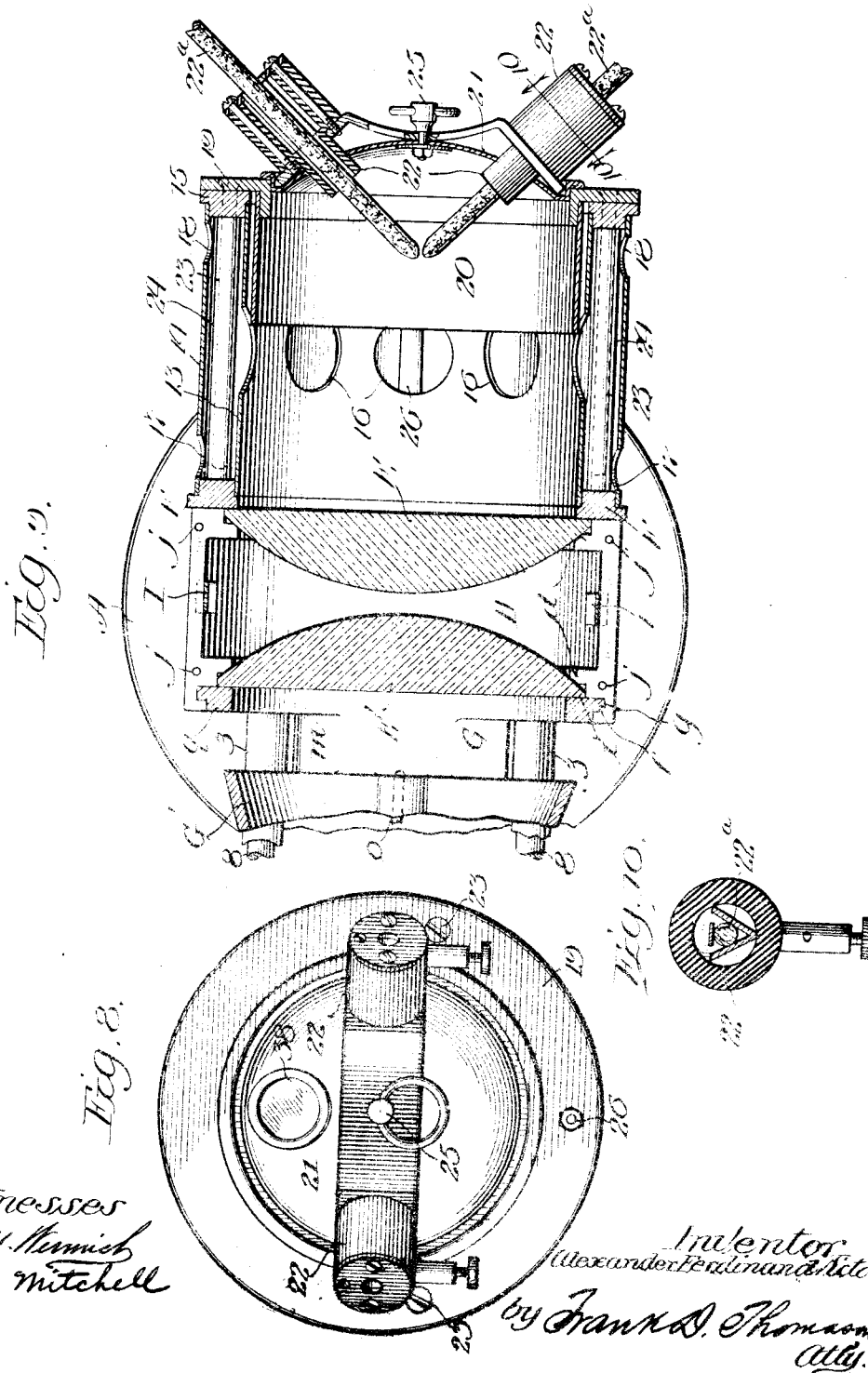
Inventor
Alexander Ferdinand Victor
by Frank B. Thompson
Att'y.

A. F. VICTOR.
 STEREOPTICON.
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1,062,622.

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5 SHEETS—SHEET 5.



Witnesses
Chas. Hemish
J. A. Mitchell

Inventor
Alexander Ferdinand Victor
 by *Frank D. Thompson*
Atty.

UNITED STATES PATENT OFFICE.

ALEXANDER FERDINAND VICTOR, OF DAVENPORT, IOWA.

STEREOPTICON.

1,062,622.

Specification of Letters Patent.

Patented May 27, 1913.

Application filed February 26, 1912. Serial No. 679,940.

To all whom it may concern:

Be it known that I, ALEXANDER FERDINAND VICTOR, a subject of the King of Sweden, residing at Davenport, in the county of Scott and State of Iowa, have invented new and useful Improvements in Stereopticons, of which the following is a full, clear, and exact description.

My invention relates to stereopticons or apparatus for projecting transparent pictures upon a screen by means of a powerful light placed back of them. Heretofore the casing of apparatus of this kind has been mounted upon a rectangular supporting-frame, whose longitudinal members were jointed to and adjustable vertically, on leg members and given a certain amount of flexibility to the frame in order to obtain the proper focal axis of projection and adjust the pictures straight on the screen. In addition to this, it has been customary to separate the lamp housing and the lens carrying device, thus making it necessary to adjust each of them and rendering it more difficult, in view of the jointed character of the supporting-frame to keep them in focal alinement during the adjustment of the same to and from each other to get the proper focus.

The objects of my invention are to support all of the parts of this stereopticon concentric to the focal axis upon one base; to provide for the adjustments of all of said parts in order to properly project the pictures on the screen without disturbing the focal alinement thereof; to accomplish all of these adjustments easily and conveniently, and to provide a light which will always be in alinement with the focal axis, which will always be exposed to the view of the operator and readily manipulated by him, and which has a casing that allows for the escape of the heat generated thereby and affords a protection to the operator; substantially as will hereinafter be described, and as particularly pointed out in the claims.

In the drawings: Figure 1 is a side view of my invention. Fig. 2 is a longitudinal vertical section. Fig. 3 is a transverse section taken on dotted lines 3—3, Fig. 2. Fig. 4 is a transverse section taken on dotted lines 4—4, Fig. 2. Fig. 5 is a view of the front end of the machine with the lens carrier removed, and the telescopic support-

ing bars in section in the plane indicated by the dotted line 5, Fig. 2. Fig. 6 is a fragmentary view showing a side elevation of the lens-tube in its reversed position, and the front part of the housing that supports the picture-slides in longitudinal section. Fig. 7 is a transverse section of the lower broken away portion of the lamp-housing taken in the transverse plane indicated by the dotted line 7, Fig. 2. Fig. 8 is a rear end view of the lamp-chamber. Fig. 9 is a horizontal central section taken in the plane of the focal axis of the apparatus. Fig. 10 is a sectional detail of the holder for the carbon-electrodes taken on line 70 10—10, Fig. 9. Fig. 11 is a transverse vertical section of the clamping means for the telescopic adjusting rods.

Referring to the drawings, A represents a comparatively heavy base and of such diameter as to insure the stability of the structure of the stereopticon supported thereby. This base has a pivotal lug *a* projecting up from its center to which the bifurcated lug *b*, projecting downward from a saddle B, is pivotally and adjustably secured by means of bolt *c*, and a nut C. Bolt *c* extends out to the side of the apparatus, and a sleeve C', is interposed between said nut and the lug *b* so as to bring the said nut within convenient reach of the fingers of the operator, substantially as shown in Figs. 3 and 4 of the drawings.

The saddle B comprises a segmental frame the concave side of which is uppermost and the curvature of which is struck from the center of the focal axis of the apparatus, and this saddle supports and has secured thereto a semi-circular metal block or pillow D, that directly supports the condensing lenses E and E', and also the slide-holding elements, substantially as hereinafter more fully explained. Pillow D has flanges *d*, *d'*, that project from the inner semi-circular surface thereof, and the concaved edges of these flanges are rabbeted on the side nearest the end edges of the pillow, to form channels or seats for the lower half of the circumferential edges of the condensing lenses. An annulus or ring F, the radius of whose inner circumference is the same as the radius of the inner curved surface of flange *d*, is secured to the rear edge of pillow D by means of the screws *e*, *e*, and completes the rear wall of the channel in which the lower half

of the circumferential edge of the lens E is seated. The front end portion of the pillow is extended a short distance beyond flange d' , and the radius of the inner curved surface of this extension is the same as that of the pillow between its flanges d and d' , and immediately next flange d' this extension is provided with a circumferential channel f which is engaged by and forms a seat for the circumferential flange g projecting outward from the rear end of the circular frame constituting the slide-holder G. The inner circumference of this circular-frame of the slide-holder, is of the same radius as the inner circumference of flange d' , and when it is seated in the channel f its rear surface constitutes the front wall of the channel or seat in which the lower half of the circumferential edge of the forward condensing lens is seated.

The lenses E, E', are arranged so that their convexed surface face each other, and when in the position shown in Fig. 2 of the drawings, and when the slide-holder is seated in the pillow, said lenses and slide-holder are secured in place by means of a semi-circular cap H, which latter is an exact replica of pillow D except that it is turned upside down. The butt edges of this cap are adapted to be seated upon the butt edges of pillow D, and are provided with openings into which dowel pins j, j , projecting upward from the pillow are adapted to enter and retain the cap in the position, shown in Fig. 4 of the drawings. Flat spring-catches I are secured to the inner surface of said cap near its butt edges by means of suitable rivets or bolts, in such manner that their free ends project beyond the butt edges of the cap and their hooked extremities catch in notches k in the inner surface of the pillow and retain the same thereon. These catches are provided with headed pins K that extend out through suitable apertures in the cap, and by pressing inward upon these pins the catches will release from the pillow and the cap can be lifted off therefrom. When thus removed lenses E, E' can be easily lifted and taken out of the apparatus and cleaned and replaced whenever desired. The slide-holder G can also be removed, if desired.

The inner circumferential groove h of the inner surface of the forward extension of the cap and the grooves i of the pillow form a continuous circumferential channel for the circumferential flange g of the picture-slide-holder G to move and rotate in, when desired. This slide-holder comprises a circular front part G', and the rear circular-frame g , hereinbefore referred to, which is greater in diameter than said front portion, and these front and rear portions are connected by segmental webs m, m , that are located diametrically opposite each other, and

space apart the said front and rear portions to permit of the insertion and transverse movement of the slide-frame N between them. This slide-frame is similar to those now in common use, and is shown in dotted lines in Fig. 3 of the drawings. It is adapted to fit snugly in the transverse passageway made for it between the front and rear portions of the slide-holder, and by reason of the rotatable character of the latter, the slide, after it is brought transverse into focus, can be tilted in one direction or the other so as to display the picture straight upon the screen. In the event of the picture being arranged so that its vertical dimensions are lengthwise the slide, said slide-holder can be rotated until the slide is perfectly vertical.

Each wing of the saddle is provided with depending ears, 2, 2, and these ears are provided with longitudinal openings through which longitudinally disposed tubes 3, 3, extend and are adjustably secured by means of a set-screw 4. The rear ends of these tubes are, preferably, connected by a suitable cross-member r , and their front ends are split longitudinally and exteriorly screw-threaded and engaged by rilled-nuts 6. Suitable rods 8 are telescoped into the front ends of tubes 3 and the forward ends of said rods 8 are connected by a cross-bar 9, which latter, at its center of length, is provided with a boss s which is perforated vertically to provide a seat for the reduced lower end of a standard 10. The upper end of this standard is made into a circular frame 11, the center of the opening through which aligns with the focal axis of the reduction lenses. The circular opening of this frame is provided with means, which it is unnecessary to explain in detail, for holding the longitudinally adjustable tube X containing the projecting lenses Y of the apparatus.

Standard 10 is rotatable and is secured in the position, shown in Fig. 2, or a position the reverse thereof, by a set screw 12, tapped through the front part of the bar 9. It is obvious that by drawing the telescopic bars or rods 8 out of the tube 3 a sufficient distance, the lens-tube X can be reversed and by forcing rods 8 back into tube 3 again, the tube X can be made to enter the slide-holder, and thus make a more compact body of the apparatus when it is desired to transport the same from place to place. By turning nut 6 so as to move toward the front ends of tube 3, rods 8 can be clamped in any longitudinal position to which they may be adjusted.

Secured to and projecting rearwardly a corresponding distance from the annulus F are inner and outer sheet-metal cylinders, 13 and 14, respectively, constituting the walls of the housing that contain the lamp.

The rear ends of these cylinders are connected to a ring 15, and form the walls of the housing that contain the lamp. The screws *e. e.*, hereinbefore referred to, are
 5 tapped through ring 15 and connect the same to annulus F and by tightening up these screws the cylinders 13 and 14 are retained in a spaced relation. The inner cylinder 13 is provided with a circumferential series of openings 16 located about its center of length and the outer cylinder 14 is
 10 provided with a forward circumferential series of openings 17 and a rear circumferential series of openings 18, substantially as shown. The arrangement of these cylinders and the openings therein provide for the ventilation of the lamp-housing and keep the same sufficiently cool to avoid discomfort to the operator. The rear open end
 20 of the lamp-housing is closed by the lamp-carrier which consists of a circular angle-iron frame 19, a cylindrical shell 20, whose rear end is secured to the outer circumference of the horizontal portion of frame 19, and a head 21 that closes the rear of the center opening in frame 19, in any suitable manner.

The lamp comprises a bracket that consists of a flat strip of metal 30 which is secured at its center of length to the center of head 21, preferably, by the bolt of a suitable handle 25, and its end portions are, preferably, bent forward at an angle of forty-five degrees (45°) to the focal axis of the apparatus. These forwardly bent end portions or wings 31, 31, are provided with openings therethrough and the reduced forward parts of tubular carriers 22, 22, of suitable insulating material are inserted
 40 therethrough and through alining openings made in the head 21, until the shoulders resulting from said reduction bear against wings 31. Suitable escutcheons are placed against the rear ends of these carriers 22, and the latter are secured in place by screws 33, tapped longitudinally through them alongside the bores thereof, into said wings.

Carbon-electrodes 22^a, 22^a, are inserted longitudinally into and through the bores of the carriers 22, until their forward ends touch or are near enough to arc at a point intersected by the focal axis of the lenses, and they are retained in this position by seating them within a metallic V-shaped
 55 trough 35, longitudinally disposed and retained within the bore of each carrier, and by a flat spring 36, arranged longitudinally within the bores of each carrier opposite to the side edges of trough 35. The pressure to which the carbons are subjected between this trough and spring will retain them in any position to which they may be adjusted longitudinally, and will permit them to be revolved on their own axes to get the right
 65 kind of an electric arc. Suitable contacts

37, are secured to and pierce the lower segments of the carrier 22, and connect with the metallic troughs. Other means for conveying electric current to the carbon-electrodes may be adapted if desired.

It will be observed that by this novel arrangement of the carbon-electrodes the arc is always intersected by the focal axis of the apparatus, and that said electrodes can be adjusted in or out, or rotated on their axes, independent of one another, to get the desired result, which the operator can observe through the peep-hole 38.

The frame 19 is provided at points diametrically opposite each other, preferably, in a horizontal plane of the focal axis of the apparatus with rods 23, but project forward through suitable tubes 24, 24, which latter connect annulus F and ring 15. The lamp-carrier can be drawn rearwardly out of the lamp-housing sufficiently far to permit of the operator manipulating the carbons or cleaning the interior of the housing, or for other purposes, by means of handle 25, and in this position it will be sustained by the rods 23. When it is desired to close the rear end of the lamp-housing, the lamp-carrier is moved forward until the bolt 26, (which is tapped through the lowermost segment of the circular frame 19, and extends forward through the ring 15 between the cylinders 13 and 14, and has its forward end terminating a distance corresponding to that between the circular frame 19 and the annulus F) strikes against said annulus.

The principal feature of my improvement is the alinement of all of the parts of my improved stereopticon consisting of the lamp, condensing lenses, slide and the projecting lenses in the focal axis of the apparatus, and the easy manner with which said parts may be adjusted with relation to each other to accomplish the perfect projection of the picture on the screen by an operator not possessing the degree of expert ability heretofore required in the operation of apparatus of this kind.

What I claim as new is:

1. A stereopticon comprising projecting lens, a slide-holder, condensing lenses, and a housing for a lamp arranged in the order stated concentric to the same focal axis, and supported by said housing and carbon-electrodes disposed lengthwise at an angle to each other and at angles to said focal axis in said housing in the same horizontal plane and arcing at a point intersected by said axis.

2. A stereopticon comprising projecting lens, a slide-holder, condensing lenses, and a housing for a lamp, and a longitudinally adjustable rear end for said housing arranged in the order stated concentric to the same focal axis, and carbon-electrodes mounted in the same horizontal plane in

said adjustable rear end and disposed lengthwise at an angle to each other and at angles to said focal axis in said housing and arcing at a point intersected by said axis.

5 3. A stereopticon comprising projecting lens, a transversely rotatable slide-holder, condensing lenses, and a housing for a lamp arranged in the order stated concentric to the same focal axis, and carbon-electrodes
10 disposed lengthwise at an angle to each other and at angles to said focal axis in said housing in the same horizontal plane and arcing at a point intersected by said axis.

4. A stereopticon comprising projecting
15 lens, a slide-holder, condensing lenses, and a housing for a lamp arranged in the order stated concentric to the same focal axis, carbon-electrodes disposed lengthwise at an angle to each other and at angles to said
20 focal axis in said housing and arcing at a point intersected by said axis, a telescopic end member in which said electrodes are mounted, and a single base supporting the aforesaid parts.

25 5. A stereopticon comprising a projecting lens, a slide holder, condensing lenses and lamp, a casing that supports the guides for said slide holder and incloses the condensing
30 lenses and lamp, said casing having a removable portion above said condensing lenses and adapted to permit access to the same.

6. A stereopticon comprising a projecting
35 lens, a slide holder, condensing lenses and a lamp, a casing that supports the guides for the slide holder and incloses the condensing lenses and lamp, and a single base supporting said casing; said casing having a removable
40 portion above said condensing lenses and adapted to permit access to the same.

7. A stereopticon comprising a projecting
45 lens, a transversely movable rotatable slide holder, condensing lenses and a lamp, a casing that supports the guides for the slide holder and incloses the condensing lenses
50 and lamp, and a single base supporting said casing; said casing having a removable portion above said condensing lenses and adapted to permit access to the same.

8. A stereopticon comprising a projecting
55 lens, a slide holder and condensing lenses, a casing that incloses said condensing lenses and extends a suitable distance to the rear thereof, a lamp comprising carbon electrodes and a housing that carries and incloses the
60 arcing ends of said electrodes and that is supported by and is telescopically adjustable in the rear portion of said casing.

9. A stereopticon comprising projecting
65 lens, a rotatably adjustable slide-holder, condensing lenses, a lamp and a casing supporting the guides for said holder and inclosing said condensing lenses and lamp, a single base supporting said casing, adjustable means supported by said base for sup-
35 porting said projecting lens independently

of said casing, a longitudinally adjustable rear end for said casing, and carbon-electrodes carried thereby.

10. A stereopticon comprising a project-
70 ing lens, a slide holder and condensing lenses, a casing that supports the guides for the slide holder and incloses said condensing lenses and extends a suitable distance to the rear thereof, a single base supporting said
75 casing, a lamp comprising carbon electrodes and a housing that carries and incloses the arcing ends of said electrodes and that is supported by and is telescopically adjustable in the rear portion of said casing.

11. A stereopticon comprising projecting
80 lens, a slide-holder, condensing lenses, lamp, a casing inclosing said holder, and condensing lenses, a rear end for said casing telescopically adjustable into and out of the same, insulated carriers mounted in said rear
85 ends on either side of the center thereof, the axes of the bores of which are at an angle to and intersect at a point intersected by the focal axis of said lens, and removable carbon-electrodes adjustable longitudinally and
90 rotatably in the bores of said carriers.

12. A stereopticon comprising projecting
95 lens, a slide holder and condensing lenses, a casing inclosing said holder and condensing lenses, a rear end for said casing that is supported by and is telescopically adjustable into and out of the same, insulated carriers having suitable bores mounted in said rear
100 end on either side of the center thereof, carbon electrodes mounted in said carriers, means that press laterally against said electrodes and retain them in their adjusted positions within the bores of said carriers, said bores having their axes arranged at an
105 angle and intersecting at the focal axis of said lenses, said electrodes being adjustable longitudinally and rotatably in said bores.

13. A stereopticon comprising projecting
110 lens, a slide-holder, condensing lenses, lamp, a casing inclosing said holder and condensing lenses, a rear end for said casing that is supported by and is telescopically adjustable into and out of the same, insulated carriers mounted in said rear end on either side
115 of the center thereof, devices contained within the bores of said carriers, suitable electrical contacts arranged at right angles to and connected with said devices, the axes of the bores of which are at an angle to and intersect at a point intersected by the focal
120 axis of said lens, and removable carbon-electrodes adjustable longitudinally and rotatably in the bores of said carriers.

14. A stereopticon comprising projecting
125 lens, and condensing lenses and lamp, a casing inclosing said condensing lenses and lamp, and a rotatably adjustable slide-holder comprising a circular frame mounted and movable in suitable channels in the front
130 of said housing and between said condensing

lenses and projecting lens in which the slide-frame of the stereopticon is adjustable transversely; said projecting lens, slide-holder, condensing lenses and being concentric to the focal axis of the stereopticon.

15 15. A stereopticon comprising projecting lens, a slide-holder, condensing lenses and lamp arranged concentric to the focal axis, a casing for said lamp comprising two separated concentric cylinders each having a series of perforations therein, an annulus to which the forward ends of said cylinders are secured, and a ring to which the rear ends thereof are secured, and a rear end or head telescopically adjustable into the innermost of said cylinders.

20 16. A stereopticon comprising projecting lens, a slide-holder, condensing lenses and lamp arranged concentric to the focal axis, a casing for said lamp comprising two separated concentric cylinders each having a series of perforations therein, an annulus to which the forward ends of said cylinders are secured, and a ring to which the rear ends thereof are secured, and a rear end or head, tubes connecting said annulus and ring, and rods connected to the marginal portion of said rear end or head adapted to telescopically engage said tubes, to telescopically adjust said rear end in and out of the innermost of said cylinders.

25 17. A stereopticon comprising a single base, a saddle pivotally connected thereto, a semi-circular pillow and a corresponding reversed removable cap having circumferential grooves in their inner circumferences in the same transverse plane and communicating with each other, condensing lenses removably seated in said grooves, a slide-holder and projecting lens in front of said condensing lenses and a lamp casing at the rear thereof arranged concentric to the said focal axis.

30 18. A stereopticon comprising a projecting lens, a slide holder and condensing lenses, a casing that incloses said condensing lenses and extends a suitable distance to the rear thereof, carbon electrodes and a housing that supports said carbon electrodes in the rear end thereof and incloses the arcing ends of the same and is supported by and telescopically adjustable in the rear extension of said casing.

35 19. A stereopticon comprising a projecting lens, a slide holder and condensing lenses, a casing that incloses said condensing lenses and extends a suitable distance to the rear thereof, a single base supporting said casing, a lamp comprising lenses and which extends a suitable distance to the rear thereof, carbon-electrodes and a housing that supports said carbon electrodes in the rear end thereof and incloses the arcing ends of the same and is supported by and telescopically adjustable in the rear extension of said cas-

ing, said electrodes being longitudinally adjustable in the rear end of said housing.

40 20. A stereopticon comprising a projecting lens, a slide holder and condensing lenses, a casing that incloses said condensing lenses and extends a suitable distance to the rear thereof, carbon electrodes and a housing that supports said carbon electrodes in the rear end thereof and incloses the arcing ends of the same and is supported by and telescopically adjustable in the rear extension of said casing, frictional devices in the rear ends of said housing that inclose said electrodes which latter are adjustable longitudinally in their support.

45 21. A stereopticon comprising a projecting lens, a slide holder and condensing lenses, a casing that incloses said condensing lenses and extends a suitable distance to the rear thereof, carbon-electrodes and a housing that is supported by said casing and is constructed to support said carbon electrodes disposed lengthwise at an angle to each other, and at angles to the focal axis of the lenses and in the same horizontal plane, and so that they are at a point intersected by said axis.

50 22. A stereopticon comprising a projecting lens, a slide holder and condensing lenses, a casing that incloses said condensing lenses and extends a suitable distance to the rear thereof, a single base supporting said casing, carbon electrodes and a housing that is supported by said casing and is constructed to support the carbon electrodes disposed lengthwise at an angle to each other; and at angles to the focal axis of the lenses and in the same horizontal plane, and so that they are at a point intersected by said axis.

55 23. A stereopticon comprising a projecting lens, a slide holder and condensing lenses, a casing that incloses said condensing lenses and extends a suitable distance to the rear thereof, carbon electrodes and a housing that is supported by said casing and is constructed to support said carbon electrodes disposed lengthwise at an angle to each other, and at angles to the focal axis of the lenses in the same horizontal plane, and so that they are at a point intersected by said axis.

60 24. A stereopticon comprising a projecting lens, a slide holder, condensing lenses, and lamp, a casing inclosing said lamp, a rear end therefor supported by and telescopically adjustable into and out of the same, and carbon electrodes in said rear end.

65 25. A stereopticon comprising a projecting lens, a slide-holder, condensing lenses, and lamp, a rear end therefor that is supported by and telescopically adjustable into and out of the same, and carbon electrodes carried by and inclosed in said rear end that are adapted to be independently adjusted both longitudinally and rotatably.

26. A stereopticon comprising a projecting lens, a slide holder, condensing lenses, and lamp, a casing inclosing said lamp, a rear end therefor supported by and telescopically adjustable into and out of the same, carbon electrodes in said rear end, and frictional members for retaining said electrodes in their respective adjusted positions.

27. A stereopticon comprising a projecting lens, a slide-holder, condensing lenses, and lamp, a casing inclosing said lamp, a rear end therefor that is supported by and telescopically adjustable into and out of the

same, carbon-electrodes carried by and inclosed in said rear end that are adapted to be independently adjusted both longitudinally and rotatably, and frictional members for retaining said electrodes in their respective adjusted positions. 15

In witness whereof I have hereunto set my hand this 16th day of February, 1912. 20

ALEXANDER FERDINAND VICTOR.

Witnesses:

SAML. G. ROSE,

MARGUERITE HASSETT.