

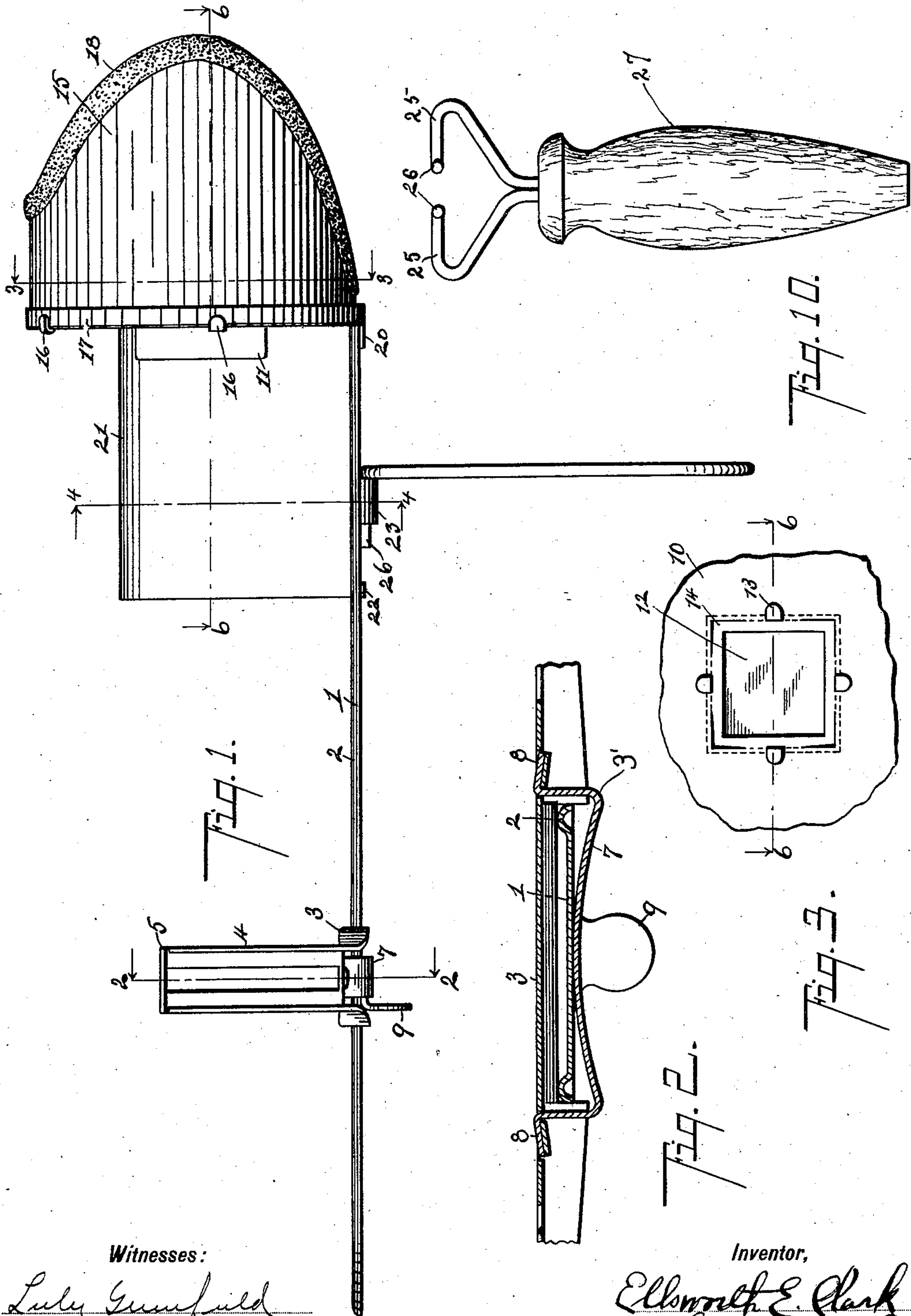
No. 876,329.

PATENTED JAN. 14, 1908.

E. E. CLARK.
STEREOSCOPE.

APPLICATION FILED APR. 8, 1907.

2 SHEETS—SHEET 1.



Witnesses:

Lulu Greenfield
Gertrude Tallman

Inventor,

Elmore E. Clark
By Chappell & Clark
Att'ys

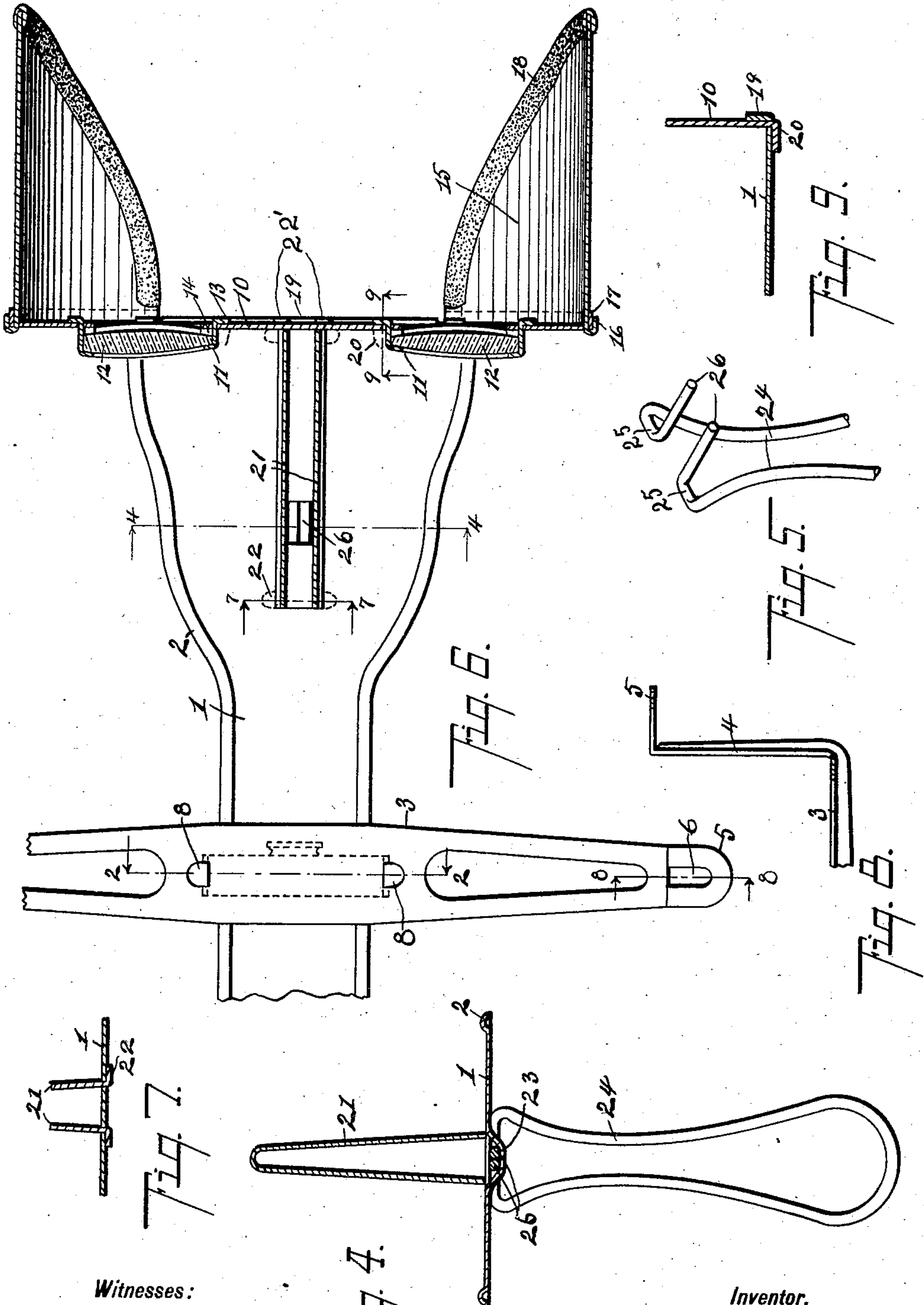
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Lulu Greenfield
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Inventor,

Ellsworth E. Clark
By *Chappell & Earl*
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UNITED STATES PATENT OFFICE.

ELLSWORTH E. CLARK, OF KALAMAZOO, MICHIGAN.

STEREOSCOPE.

No. 876,329.

Specification of Letters Patent.

Patented Jan. 14, 1908.

Application filed April 8, 1907. Serial No. 367,063.

To all whom it may concern:

Be it known that I, ELLSWORTH E. CLARK, a citizen of the United States, residing at the city and county of Kalamazoo, State of Michigan, have invented certain new and useful Improvements in Stereoscopes, of which the following is a specification.

This invention relates to improvements in stereoscopes.

- 10 The objects of this invention are, first, to provide in a stereoscope an improved construction and arrangement of the parts which may be formed of sheet metal and assembled without the use of rivets or solder.
- 15 Second, to provide an improved stereoscope made of sheet metal which is very light, and at the same time very strong and rigid.
- 20 Third, to provide in a stereoscope an improved lens holder. Fourth, to provide in a stereoscope an improved picture holder. Fifth, to provide in a stereoscope an improved handle.

Further objects, and objects relating to details of construction, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

30 The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which,

- 35 Figure 1 is a side elevation of a structure embodying the features of my invention. Fig. 2 is a detail section taken on a line corresponding to line 2—2 of Fig. 1, showing details of construction of the slide or picture holder. Fig. 3 is an inside elevation of the lens holder. Fig. 4 is a detail section taken on a line corresponding to line 4—4 of Fig. 1, showing details of the septum or division plate and the means for connecting the detachable handle to the shaft. Fig. 5 is a detail perspective of the handle removed from the shaft. Fig. 6 is a detail section taken on a line corresponding to line 6—6 of Figs. 1 and 3, showing structural details of the lens holder, hood, and division plate or septum. Fig. 7 is a detail section taken on a line corresponding to line 7—7 of Fig. 6, showing details of the septum or division plate. Fig. 8 is a detail section of the picture holder, taken on a line corresponding to line 8—8 of

Fig. 6. Fig. 9 is an enlarged detail taken on a line corresponding to line 9—9 of Fig. 6, showing the details of the hood and shaft connections. Fig. 10 is an elevation of a modification in which the handle is provided with a wooden hand-piece.

In the drawing, the sectional views are taken looking in the direction of the little arrows at the ends of the section lines, and similar reference characters refer to similar parts throughout the several views.

Referring to the drawing, the shaft 1 is formed of sheet metal, its edges 2 being beaded to strengthen the same and also to add to its appearance. The slide or picture holder 3 is formed of a piece of sheet metal having its ends turned upwardly into arms 4, which are slotted to receive the picture, the upper ends of the arms being turned outwardly at 5. The edges of the slide are turned downwardly and are slotted at 3' to receive the shaft. The spring retaining plate is provided with tongues 8 at each end, which are arranged through suitable slots in the holder to secure the retaining plate thereto. The retaining plate is curved upwardly to engage the under side of the shaft, thereby forming a spring for holding it in its adjusted position on the shaft. A finger-piece 9 is turned down at one edge of the retaining plate, as clearly appears from the drawing. I thus secure a picture holder or slide which may be formed of sheet metal, and which is at the same time economical to produce and light in weight.

The rear end of the shaft is turned up into a flange 19. The lens plate 10 rests on the rear end of this shaft against this flange and is secured to the shaft by tongues 20 on its lower edge arranged through the shaft. The edges of the lens plate are turned rearwardly into a flange 17, into which the hood 15, which is formed of one piece of sheet metal, is fitted. The hood is provided with retaining tongues 16 on its forward edge, which are arranged through suitable slots in the lens plate and turned rearwardly, as clearly appears in Fig. 6. This secures the hood to the lens plate in a simple and effective manner, and, at the same time, produces a perfect joint.

The septum or division plate 21 serves to brace and aid in securing the lens plate and shaft together. The septum is formed of a piece of sheet metal, A-shaped in cross sec-

tion having retaining tongues 22 on each arm thereof inserted through the shaft. The septum is secured to the lens plate by tongues 22' arranged therethrough. By thus forming the septum and connecting it to the adjacent parts, it not only serves its function as a septum or division plate but also serves to very effectively connect and brace the parts. The rear edge of the hood is suitably conformed to and is preferably provided with a cover 18 of felt or other suitable material. The lenses 12 are carried by the lens pockets 11, which are also formed of sheet metal and are preferably secured to the lens plate by the retaining tongues 13 arranged therethrough. The lenses are supported in the pockets by means of the spring 14 formed by slitting and punching up parts of the lens plate, as clearly appears in Figs. 3 and 6. Four of these springs are preferably provided to engage the lens at each corner holding it firmly in the pocket, preventing the necessity of accurate fitting of the parts. A further very great advantage of this construction is that the lenses are not likely to be injured in the assembling of the structure. This lens holder is very economical to produce and is at the same time entirely satisfactory, as it holds the lens in a highly satisfactory manner.

I preferably provide my improved stereoscope with a detachable handle 24. This I preferably form entirely of wire, the wire being bent into a suitable loop to form the hand-piece and its ends being bent inwardly at 25 to form shoulders to engage the under side of the shaft and turned forwardly into engaging fingers 26. On the shaft I provide a strap 23 preferably by slitting and punching down a portion thereof adapted to receive these engaging fingers when they are brought together, as clearly appears in Fig. 4. The handle is so formed that the engaging fingers of its shank tend to normally spring apart, so that they are held in the strap by spring tension. In the modified construction shown in Fig. 10, I provide a wood handle portion 27 for the handle, the shank portion being substantially the same as that shown in Fig. 4.

By arranging the parts as I have illustrated and described, I provide a stereoscope which is light, economical in material and labor, and, at the same time, one which is attractive in appearance.

I have illustrated and described the same in detail in the form preferred by me on account of the structural simplicity and convenience and economy. I am, however, aware that it is capable of considerable variation in structural details without departing from my invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a stereoscope, the combination of a shaft formed of sheet metal having an up-turned flange at its rear end; a sheet metal lens plate having a rearwardly turned flange at its edge arranged to rest on said shaft against the said flange thereof, said lens plate having retaining tongues on its lower edge passed through said shaft; a hood fitted into said flange on said lens plate, and having retaining tongues at its forward edge passed through said lens plate; and a sheet metal septum A-shaped in cross section having retaining tongues on its lower edges passed through said shaft and on its rear end passed through said lens plate.

2. In a stereoscope, the combination of a shaft formed of sheet metal having an up-turned flange at its rear end; a sheet metal lens plate having a rearwardly turned flange at its edge arranged to rest on said shaft against the said flange thereof, said lens plate having retaining tongues on its lower edge passed through said shaft; a hood fitted into said flange on said lens plate, and having retaining tongues at its forward edge passed through said lens plate; and a sheet metal septum having retaining tongues on its lower edge passed through said shaft and on its rear end passed through said lens plate.

3. In a stereoscope, the combination of a shaft formed of sheet metal having an up-turned flange at its rear end; a sheet metal lens plate having a rearwardly turned flange at its edge arranged to rest on said shaft against the said flange thereof, said lens plate having retaining tongues on its lower edge passed through said shaft; and a hood fitted into said flange on said lens plate, and having retaining tongues at its forward edge passed through said lens plate.

4. In a stereoscope, the combination of a shaft formed of sheet metal having an up-turned flange at its rear end; a sheet metal lens plate having a rearwardly turned flange at its edge arranged to rest on said shaft against the said flange thereof, said lens plate having retaining tongues on its lower edge passed through said shaft; a hood; and a sheet metal septum A-shaped in cross section having retaining tongues on its lower edges passed through said shaft and on its rear end passed through said lens plate.

5. In a stereoscope, the combination of a shaft formed of sheet metal having an up-turned flange at its rear end; a sheet metal lens plate having a rearwardly turned flange at its edge arranged to rest on said shaft against the said flange thereof, said lens plate having retaining tongues on its lower edge passed through said shaft; a hood; and a sheet metal septum having retaining tongues on its lower edge passed through said shaft and on its rear end passed through said lens plate.

6. In a stereoscope, the combination of a

shaft formed of sheet metal having an up-
turned flange at its rear end; a sheet metal lens
plate having a rearwardly turned flange at
its edge arranged to rest on said shaft against
5 the said flange thereof, said lens plate having
retaining tongues on its lower edge passed
through said shaft; and a hood.

7. In a stereoscope, the combination of a
shaft formed of sheet metal; a sheet metal
10 lens plate having a rearwardly turned flange
at its edge secured to said shaft; and a sheet
metal hood fitted into said flange on said
lens plate having retaining tongues at its
forward edge passed through said lens plate.

15 8. In a stereoscope, the combination of a
shaft formed of sheet metal; a sheet metal
lens plate secured to said shaft; a hood; and a
sheet metal septum A-shaped in cross section
having retaining tongues on its lower edges
20 passed through said shaft and at its rear end
passed through said lens plate.

9. In a stereoscope, the combination of a
shaft formed of sheet metal; a sheet metal
lens plate secured to said shaft; a hood; and a
25 sheet metal septum A-shaped in cross section
secured to said shaft and said lens plate.

10. In a stereoscope, the combination of a
sheet metal lens plate; a lens pocket formed
of sheet metal having retaining tongues at its
30 rear edges adapted to be arranged through
said lens plate; and a plurality of lens-en-
gaging springs formed integrally with said
lens plate, said springs being adapted to co-
act with said pocket in retaining a lens.

35 11. In a stereoscope, the combination of a
sheet metal lens plate; a lens pocket formed
of sheet metal secured to said lens plate; and
a plurality of lens-engaging springs formed
integrally with said lens plate, said springs
40 being adapted to coact with said pocket in
retaining a lens.

12. In a stereoscope, the combination of a
shaft; a slide or picture holder formed of
sheet metal having downturned flanged edges,
45 said edges being slitted to form a socket for
said shaft; and a retaining spring formed of
sheet metal secured to said holder by retain-
ing tongues at each end thereof, said retain-
ing spring being curved upwardly to engage
50 the under side of said shaft; and a down-

wardly-projecting finger piece formed inte-
gral with said retaining spring.

13. In a stereoscope, the combination of a
shaft; a slide of picture holder formed of
sheet metal having downturned flanged edges, 55
said edges being slitted to form a socket for
said shaft; and a retaining spring formed of
sheet metal secured to said holder, said re-
taining spring being curved upwardly to en-
gage the under side of said shaft; and a 60
downwardly-projecting finger piece formed
integral with said retaining spring.

14. In a stereoscope, the combination with
a sheet metal shaft, of a handle formed of a
single piece of wire bent into a loop, said 65
handle having a shank portion formed by
bending the ends of said wire to form shoul-
ders 25 and fingers 26, said fingers being
adapted to normally separate or spring apart;
and a strap or loop on the under side of said 70
shaft adapted to receive said fingers when
brought together, formed by punching down
a portion of the body thereof.

15. In a stereoscope, the combination with
a sheet metal shaft, of a handle formed of a 75
single piece of wire bent into a loop, the said
handle having a shank portion formed by
bending the ends of said wire to form shoul-
ders 25 and fingers 26, said fingers being
adapted to normally separate or spring apart; 80
and a strap or loop on the under side of said
shaft adapted to receive said fingers when
brought together.

16. In a stereoscope, the combination with
a sheet metal shaft, of a handle, said handle 85
having a shank portion formed of wire bent
to form shoulders 25 and fingers 26, said fin-
gers being adapted to normally separate or
spring apart; and a strap or loop on the
under side of said shaft adapted to receive 90
said fingers when brought together, formed
by punching down a portion of the body of
said shaft.

In witness whereof, I have hereunto set
my hand and seal in the presence of two wit- 95
nesses.

ELLSWORTH E. CLARK. [L. s.]

Witnesses:

LULU G. GREENFIELD,
OTIS A. EARL.