A. G. BUZBY.

Magic-Lantern.

No. 162,896. Patented May 4, 1875.

FIG. 1.

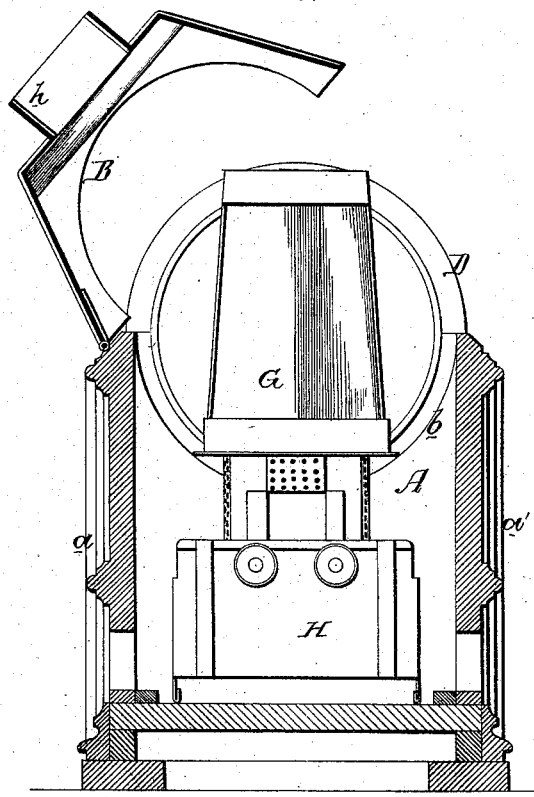
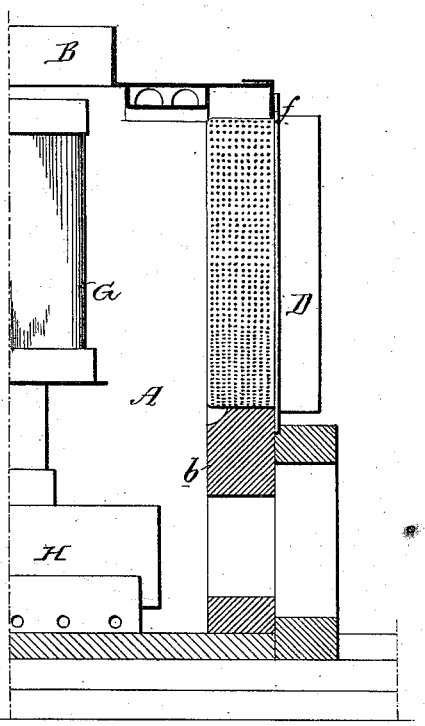


FIG. 2.



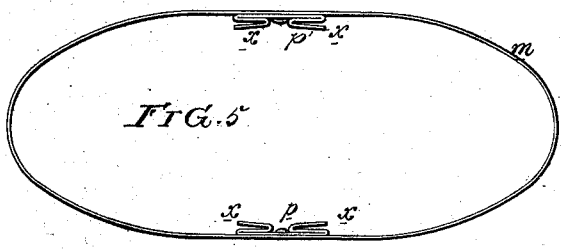


FIG. 5.

FIG. 4.

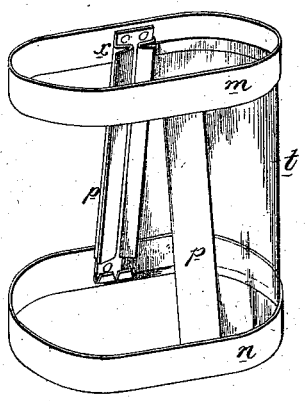
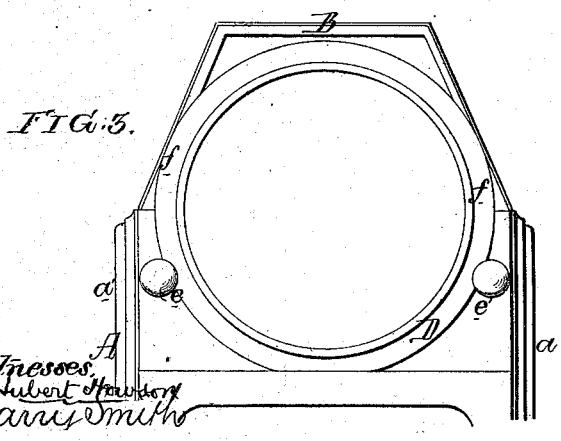


FIG. 3.



Witnesses,
Albert Hawson
Harry Smith

Albert G. Buzby
by his Attorneys
Howson and Sons

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

ALBERT G. BUZBY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MAGIC LANTERNS.

Specification forming part of Letters Patent No. **162,896**, dated May 4, 1375; application filed March 12, 1875.

CASE A.

To all whom it may concern:

Be it known that I, ALBERT G. BUZBY, of Philadelphia, Pennsylvania, have invented certain Improvements in Magic Lanterns, of which the following is a specification:

The main objects of my improvements are, first, to gain ready access to the interior of the body of a magic lantern or stereopticon; second, to prevent the fracture of the main lenses; third, to readily attach the lens-socket to and detach it from the body of the lantern; fourth, to so construct the chimney of the lamp that the sheets of mica can be readily fitted to the same and removed when damaged; and, fifth, to so combine the lamp and its chimney with the top of the lantern that they can be withdrawn and replaced without disturbing the same. These objects I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a transverse section of the body of the lantern; Fig. 2, a longitudinal section of the front portion of the body; Fig. 3, a view of the front end of the same; Fig. 4, a perspective view of the lamp-chimney, and Fig. 5 a sectional plan of the same.

The body A of the lantern consists of a wooden box, the opposite sides *a* and *a'* of which are lined with sheet metal, or the entire lantern may be constructed of metal.

The top B of the box consists of a sheet-metal casing, by preference of the shape shown in Fig. 1, this top having the usual tubular projection *h*, for receiving the lower end of the metal chimney, and the front end of the top is adapted to the cylindrical lens-holder D, the rear end being open, but so as to be closed by a hinged door adapted to the rear of the body. One edge of the top B is hinged to the upper edge of one side, *a*, of the body, the other edge of the top fitting snugly to the opposite side of the body, where it may be secured by any suitable fastening, and released whenever the top has to be moved back, as in Fig. 1, for gaining access to the interior of the body.

When the top is depressed it is very nearly in contact with the upper end of the chimney, but not so close to the latter as to prevent the removal of both lamp and chimney without disturbing the top, the tubular projection *h* of which is directly above the chimney when the lamp is in its place, so that there will be a direct draft through the lamp-chimney and main chimney.

The cylindrical lens-holder D is arranged to fit snugly in a semicircular recess in the front *b*, in which position it is retained by two simple studs, *e e*, the heads of which overlap a flange, *f*, secured to or forming a part of the lens-holder. These studs, as will be seen in Fig. 3, are so situated that after the cover B has been raised the lens-holder can be readily withdrawn vertically from its bearings, and as readily refitted to its place.

The main lenses of stereopticons and magic lanterns are liable to be fractured by the heat—a difficulty which I overcome by perforating that portion of the holder which is fitted to the end *b* of the box, as shown in Fig. 2.

I have found that by perforating the lens-rings, and thereby permitting the air to circulate freely through the holder and between the lenses, the fracture of the latter is prevented.

The lamp H is similar to that for which Letters Patent No. 150,824 were granted to me on the 12th of May, 1874, and the chimney G shown consists of a frame of sheet metal fitted with sheets of mica; but in the present instance the frame is so constructed that the mica strips can be readily removed from and replaced in the frame.

It will be seen on referring to Figs. 4 and 5 that the frame consists of the upper and lower rims *m* and *n*, connected together by strips *p p*, each of the latter being of sheet metal, so bent as to form grooves *x x*, so that the two strips *t* of mica may be fitted to the frames by first bending each sheet in one hand and holding the frame, and then sliding the strip with each edge in a groove, *x*, from the base of the frame upward.

I claim as my invention—

1. The combination of the body A of a stereopticon or magic lantern with the cover B, hinged to one side of the said body, as set forth.

2. In a magic lantern, a lamp and chimney combined with the top of the body, substantially as described, so as to permit the withdrawal and replacing of the said lamp and chimney, as specified.

3. The lens-holder D, perforated in the manner and for the purpose described.

4. The lens-holder D and its flange *f*, in combination with the studs *e* at the end of the box.

5. The chimney-frame composed of the endless strips *m* and *n* of sheet metal and the connecting-strips *p*, with their grooves *x x*.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT G. BUZBY.

Witnesses:

HUBERT HOWSON,

HARRY SMITH.