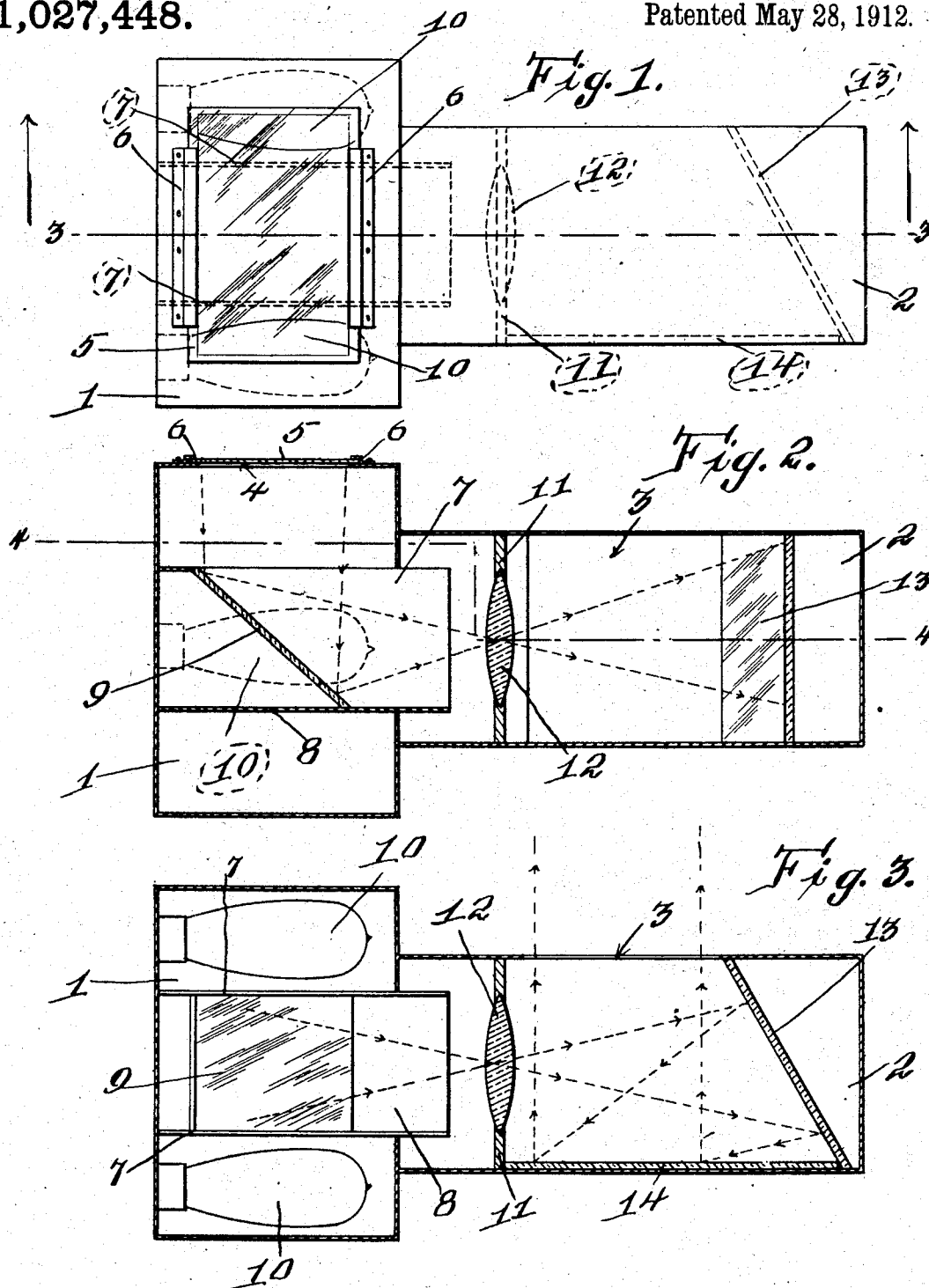


A. J. STEVENS.
PROJECTING DEVICE.
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1,027,448.

Patented May 28, 1912.



Witnesses:
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UNITED STATES PATENT OFFICE.

ALTON J. STEVENS, OF CHICAGO, ILLINOIS.

PROJECTING DEVICE.

1,027,448.

Specification of Letters Patent.

Patented May 28, 1912.

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To all whom it may concern:

Be it known that I, ALTON J. STEVENS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Projecting Devices, of which the following is a specification.

My invention has relation to a device for projecting pictures on a screen or the like, but may also be used for projecting moving or still objects together with printed or other reading matter.

The principal object of my invention comprehends the production of a device of the above character in which the image of the picture, or whatever is to be projected, will be drawn into the device by means of an artificial light, and which will enable the same to be placed in position above the artificial lights right side up, and owing to the arrangement of reflectors and lens, the image of the picture or object will be projected onto the screen right side up, and in the case of printed or other reading matter, to appear on the screen as it does on the card or the like from which it is taken.

A further object is to provide a device of the kind which will enable the placing of the device at one side of the screen, so as to be out of the way and invisible to the spectators.

A still further object of my invention resides in providing a projecting device which will be extremely simple and inexpensive of construction, which will also be small and compact of form so as to enable the carrying of the device easily from place to place.

In the accompanying drawing, which forms a part of this specification and in which like reference numerals indicate corresponding parts throughout the several views,—Figure 1 is a top plan view of the device, Fig. 2 is a vertical longitudinal sectional view taken on the line 3—3 of Fig. 1, and Fig. 3 is a transverse sectional view taken on the line 4—4 of Fig. 2.

In the specific form of my invention shown in the accompanying drawing, it consists of a casing comprising a main rectangular portion 1 and an elongated portion 2, in one of the side walls of which latter is provided an opening 3 through which the image of whatever is to be projected passes out to the screen. The top wall of the main portion 1 of the casing is provided with an opening 4 over which is placed a plate of

glass 5, which is held in position by means of cleats 6, or the like. Mounted longitudinally within the main portion 1 of the casing, and projecting a slight distance within the elongated portion 2, there is a box-like structure comprising side walls 7 and a bottom wall 8. Mounted at an angle of about 45 degrees within the box-like structure, between its side walls 7, there is a mirror or reflector 9. This mirror 9 extends entirely across the box and its forward end comes in contact with the bottom wall 8 a short distance rearwardly of the front wall of the main portion 1 of the casing, as shown most clearly in Fig. 2.

Arranged within the main portion 1 of the casing, between the end walls thereof and the side walls 7 of the box, there are artificial lights 10, which in this particular instance are shown as incandescent lights. These lights 10 are located below the upper edges of the side walls 7 of the box so that no rays therefrom will strike the reflector 9 except from above. The inner sides of the walls of the casing, together with those of the box, may be coated with lamp black or the like, and the front wall of the main portion 1 of the casing is to fit snugly against the side and bottom walls 7 and 8 respectively of the box, so that no light rays will enter the elongated portion 2 of the casing except those reflected from the reflector 9.

Mounted transversely within the elongated portion 2 of the casing, a slight distance forwardly of the front end of the box there is a partition 11 in which, in turn, is mounted, in any suitable manner, a lens 12. Mounted in the forward end of the elongated portion 2 of the casing, there is a mirror or reflector 13 adapted to receive light rays from the mirror 9 after they have passed through the lens 12, and reflect said rays into a mirror or reflector 14. The reflector 13 extends transversely of the portion 2 of the casing and at an angle to the reflector 14 which latter is arranged along the rear side wall of the elongated portion of the casing, between the partition 11 and the rear end of the reflector 13, and from which the image is projected out, through the opening 3 heretofore mentioned, onto the screen (not shown.)

In the practical use of my improved projecting device, the object or picture to be thrown onto the screen is placed or held above the glass plate 5 right side up. The

rays from the artificial lights 10 striking the object or picture will cause an image thereof to be reflected onto the mirror 9, then through the lens 12 to the mirror 13, then through the lens 12 to the mirror 13, 5 thence to the mirror 14, and from said mirror 14 to the screen or curtain. Owing to the arrangement of reflectors and lens, the picture or objects may be held above or placed on the glass plate 5 right side up, 10 and the image thereof will appear in a like position on the screen, and owing to the arrangement of the mirrors 13 and 14, the operator may stand to one side of the screen and throw the images thereon at close range. 15 While I have shown and described my invention in its preferred form, it will be understood that various changes may be made therein without departing from the scope of the appended claims, and no limitation is implied by reason of the particular 20 structure shown.

I claim:

1. A projecting apparatus comprising a casing having object and projection openings, a lens in the casing between said openings, said lens having its optical axis at a 25 right angle to the axis of the object opening,

a reflector in the casing between the lens and the object opening and extending at an oblique angle thereto, to invert the image 30 and reflect the same through the lens, lights in the casing for illuminating the object, and a shade for screening the lights from the lens and reflector.

2. A projecting apparatus comprising a 35 casing having object and projection openings, a box-like structure mounted in said casing below the object opening and having its top and front end open, a reflector mounted within said box-like structure in 40 line with and at an oblique angle to the object opening, lights located within the casing below the top of the box-like structure and on opposite sides thereof, a lens mounted 45 within the casing in front of the open end of the box-like structure, said lens having its optical axis at a right angle to the axis of the object opening.

In testimony whereof I affix my signature in presence of two witnesses.

ALTON J. STEVENS.

Witnesses:

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