

J. GRANZ.
OPTICAL PROJECTION LANTERN.
APPLICATION FILED MAR. 28, 1919.

1,399,111.

Patented Dec. 6, 1921.

2 SHEETS—SHEET 1.

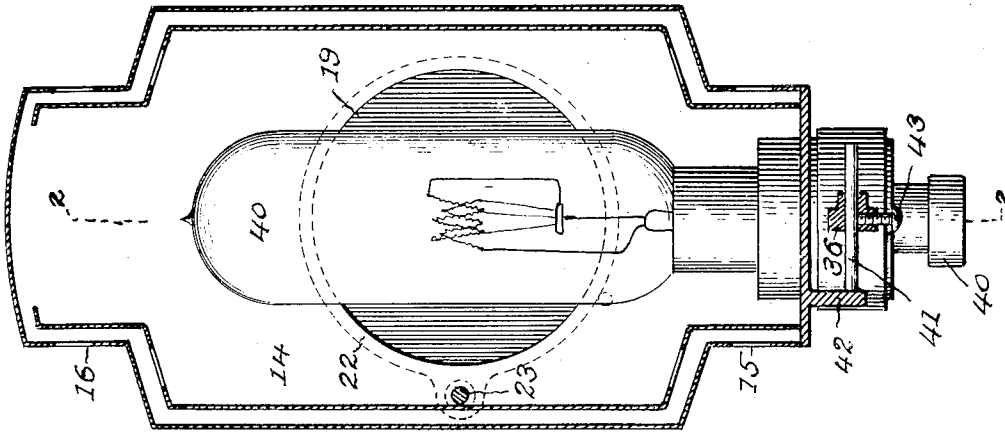


Fig. 1.

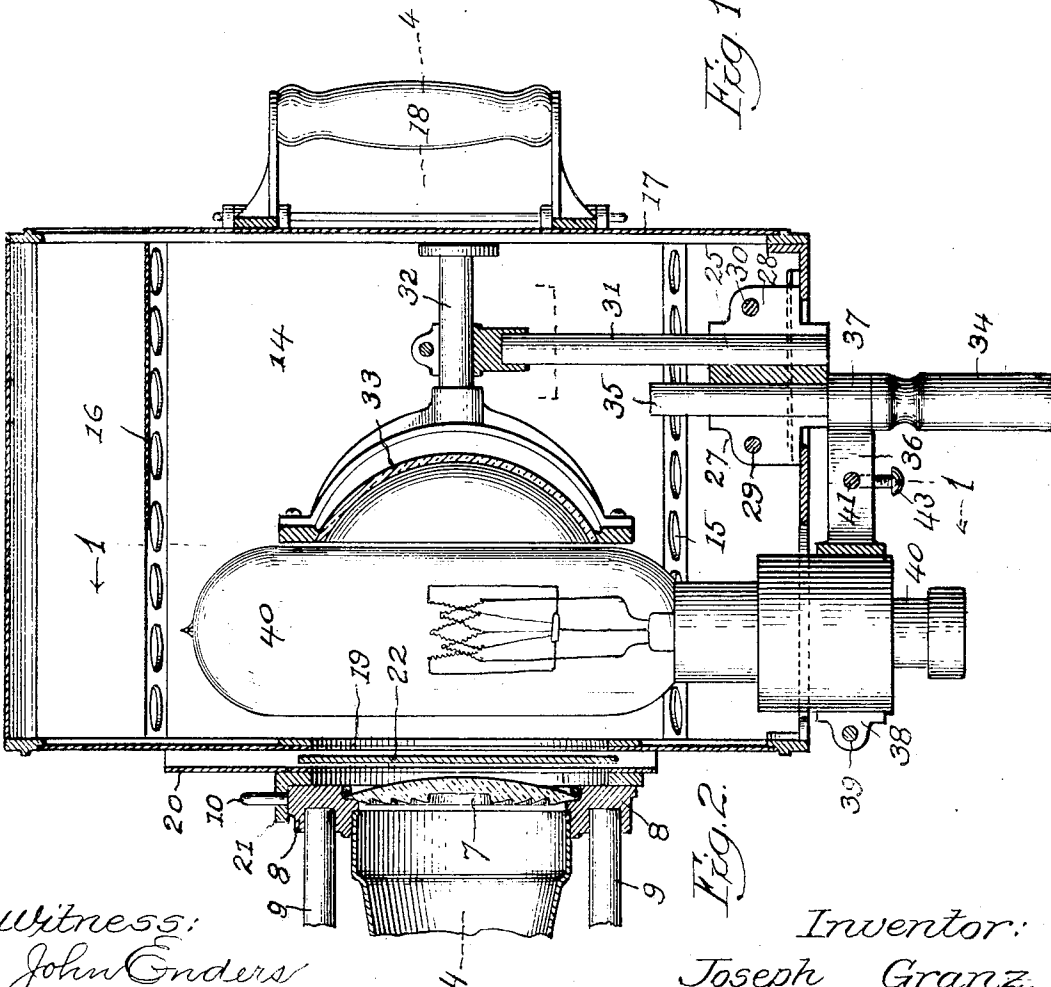


Fig. 2.

Witness:
John Enders

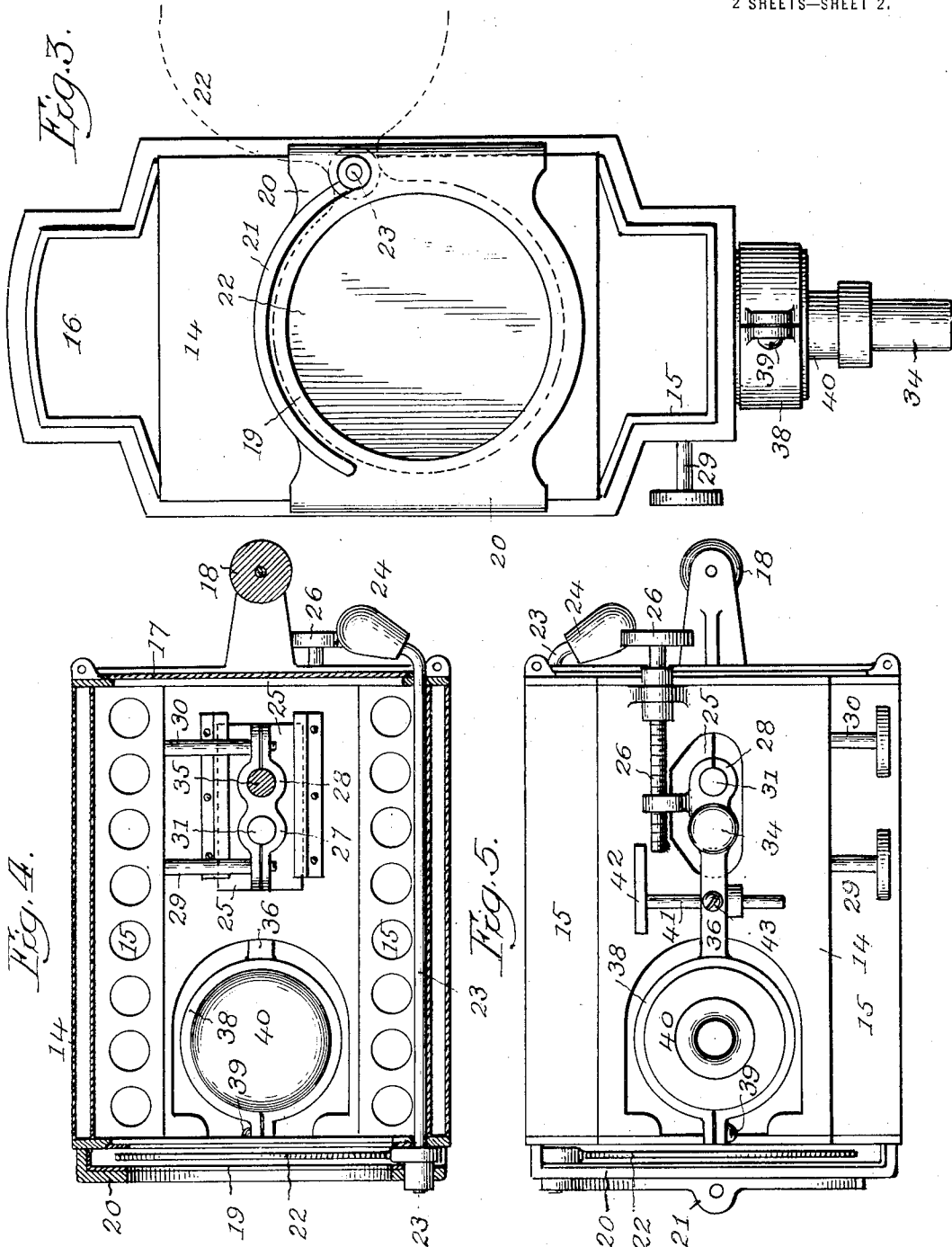
Inventor:
Joseph Granz,
by Robert Rums, Atty.

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Witness:
John Anders

Inventor:
Joseph Granz,
by *Robert Burns,*
Att'y.

UNITED STATES PATENT OFFICE.

JOSEPH GRANZ, OF DULUTH, MINNESOTA.

OPTICAL-PROJECTION LANTERN.

1,399,111.

Specification of Letters Patent.

Patented Dec. 6, 1921.

Application filed March 28, 1919. Serial No. 285,760.

To all whom it may concern:

Be it known that I, JOSEPH GRANZ, a citizen of Czecho-Slovakia, who has declared his intention of becoming a citizen of the United States of America, and a resident of Duluth, in the county of St. Louis, State of Minnesota, have invented certain new and useful Improvements in Optical-Projection Lanterns, of which the following is a specification.

This invention relates to the lamp house or illuminating means for moving picture machines and like optical projection apparatus, and has for its objects:—

To provide an incandescent lamp member or unit for optical projection lanterns, in which the lamp unit has independent adjustments in horizontal, vertical and transverse planes in relation to its supporting base, in order that the substitution of a fresh lamp unit for one previously in use can be conveniently and accurately attained, and to such end each lamp unit will have means whereby a standard adjustment of the center of brilliancy of the lamp filament with relation to the attaching means of the lamp units in the initial assemblage thereof.

To provide a structural formation and combination of parts whereby the incandescent lamp of an optical projection lantern is adapted for ready attachment to and detachment from the main lamp house casing in a vertical direction through the floor or bottom of the same, all as will hereinafter more fully appear.

In the accompanying drawings:—

Figure 1 is a transverse section on line 1—1 Fig. 2 of a lamp house and accessories embodying the present invention.

Fig. 2 is a longitudinal section on line 2—2 Fig. 1.

Fig. 3, is a front elevation of the lamp house.

Fig. 4, is a horizontal section on line 4—4 Fig. 2.

Fig. 5, is an inverted plan, showing the underside of the lamp house.

Like reference numerals indicate like parts in the several views.

Referring to the drawings, 7 designates the condenser or rear lens and 8 the holding frame therefore, of a motion picture machine of the type described in my application for Letters Patent, Serial No. 360,529 filed February 21, 1920, as a division of the present application. In the construction

shown, the holding frame 8 is of an annular form and has fixed attachment by horizontal bracket rods 9 to the rear wall of the casing of a motion picture machine, and carries at its upper end or crown a vertically extending stud 10 for the purpose hereinafter set forth.

14 designates the body portion of the lamp house or lantern of an optical projection apparatus, preferably of the rectangular and double wall construction shown and provided with apertures or passages in its bottom wall or floor, with ventilating openings 15 at its lower end, with a ventilating cowl structure 16 as its upper end, with a door 17 at its open rear end affording convenient access to the lamp mechanisms within the lamp house, and with a hand grip 18 at its rear end for convenient handling of the lamp house.

19 designates the usual light orifice in the front wall of the lamp house 14, the axis of which is adapted to register with the axis of the lens 7.

20 designates a vertical plate member secured in spaced relation to the front wall of the lamp and having side flanges adapted to provide a narrow containing chamber open at top and bottom, for the light and heat intercepting shutter or dowsers herein-after described. The plate member 20 is provided with a light orifice in line with the heretofore described light orifice 19 of the lamp body.

21 designates a segmental or saddle shape bracket flange having fixed attachment to the lamp body 14 and disposed centrally over the light orifices just described. The flange 21 is preferably formed as a part of the aforesaid plate member 20, and is provided with a central vertical orifice adapted to fit over and engage the vertical stud 10 aforesaid, as set forth in detail in my above referred to application, Serial No. 360,529.

22 designates the light intercepting shutter or dowsers above referred to, preferably of a circular disk form pivotally mounted at one edge upon an operating shaft as follows:—

23 designates the operating shaft, journaled longitudinally in the lamp house 14 and carrying at its forward end the shutter 22 aforesaid, while its rear end extends back of said lamp house and carries an operating hand lever 24 to provide a convenient means for operating the shutter or dowsers

22 from the usual position of the operator at the rear of the projecting apparatus.

25 designates an attaching block moving in longitudinal guides on the floor portion 5 of the lamp house 14 and adapted for limited longitudinal adjustment with relation to an adjoining aperture or passage way in the bottom wall of the lamp house by means of an adjusting screw mechanism 10 26, as illustrated in Figs. 4 and 5. In the present construction the sliding head 25 is formed with a pair of vertical holding sleeves 27 and 28 arranged in parallel and slitted vertically so as to be capable of 15 ready contraction.

29 and 30 designate transverse clamping screws associated with the sleeves 27, 28 and adapted to effect a circular contraction of the same to clamp and hold in place 20 the stems or spindles of the lamp parts now to be described.

31 designates a supporting stem arranged in a vertically adjustable manner in the bore of the rearward sleeve 28 aforesaid, and adapted to be clamped therein by the 25 screw 30. At its upper end the stem 31 supports in a longitudinally adjustable manner the horizontal carrying stem 32 of the reflector 33 of the illuminating means.

34 designates a hand grip or handle having at its upper end a cylindrical stem 35 adapted for engagement in the bore of the forward sleeve 27 aforesaid, and adapted 30 to be clamped therein by the screw 29 aforesaid.

36 designates a horizontally arranged head or carrier having at one end a sleeve or yoke 37 adapted for attachment to the upper portion of the grip or handle 34 aforesaid, 40 and at its other end a sleeve or yoke 38 and clamping screw 39 adapted to receive and hold the base or socket portion of the incandescent lamp 40 used as the illuminant in the lamp house.

In the present improvement the lamp 40 and its described accessories are inserted into place from below and through the aperture or passage in the bottom wall of the lamp house, and with the present construction 50 such insertion, as well as removal, is rendered very easy and convenient and without any disturbance in the position of the reflector 33 and its accessories.

41 designates an adjustable stop stem 55 mounted transversely at the mid-length of the yoke member 36 aforesaid, and adapted to have abutment against a fixed lug or flange 42 on the bottom of the lamp house 14. The stop stem 41 is secured at its adjustment by a clamping screw 43 and is 60 adapted to insure proper positioning of the lamp 40 in a horizontal plane and with relation to the optical center of the lamp house. The adjustment of the lamp 40 in a vertical 65 plane with relation to the optical center of

the lamp house is attained by the clamping sleeve 38 and screw 39 at the time of initial assemblage of parts constituting the heretofore described lamp unit.

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

1. A lamp house for optical projection apparatus having a bottom wall formed with an aperture, an attaching head mounted on 75 said bottom wall, a lamp adapted for insertion through the apertured bottom wall aforesaid, a head carrying said lamp and adapted for engagement with the attaching head aforesaid, in a manner capable of lateral adjustment, an adjustable stop stem 80 on said carrying head, and an abutment lug on the lamp house bottom wall and adapted for contact with the side of the carrying head.

2. A lamp house for optical projection apparatus having a bottom wall formed with an aperture, an attaching head mounted on 85 said bottom wall, a lamp adapted for insertion through the apertured bottom wall aforesaid, and a head carrying said lamp and adapted for engagement with the attaching head aforesaid, said carrying head comprising a horizontal yoke member carrying an attaching stem, a holding sleeve for a lamp 90 and a depending handle.

3. A lamp house for optical projection apparatus having a bottom wall formed with an aperture, an attaching head mounted on 95 said bottom wall, a lamp adapted for insertion through the apertured bottom wall aforesaid, and a head carrying said lamp and adapted for engagement with the attaching head aforesaid in a manner capable of lateral adjustment, said carrying head comprising a horizontal yoke member carrying 100 an attaching stem, a holding sleeve for a lamp, a depending handle and a laterally adjustable stop stem adapted for contact with the side of the carrying head.

4. A lamp house for optical projection apparatus having a bottom wall formed with an aperture, an attaching head mounted in a longitudinally adjustable manner on said 110 bottom wall, means for effecting an adjustment of said head, a lamp adapted for insertion through the aforesaid apertured bottom wall, and a head carrying said lamp and adapted for engagement with the attaching head aforesaid.

5. A lamp house for optical projection apparatus having a bottom wall formed with an aperture, an attaching head mounted in a longitudinally adjustable manner on said 120 bottom wall and having a vertically slitted sleeve, a screw adapted to contract said sleeve, a horizontal yoke member provided with an attaching stem for engagement with the slitted sleeve aforesaid and provided 125 with a holding sleeve for a lamp and with a depending handle, and means for effecting 130

an adjustment of the attaching head aforesaid.

6. A lamp house for optical projection apparatus having a bottom wall formed with an aperture, an attaching head mounted in a longitudinally adjustable manner on said bottom wall and having a vertically slitted sleeve, a screw adapted to contract said sleeve, a horizontal yoke member provided with an attaching stem for engagement with the slitted sleeve aforesaid, with a holding sleeve for a lamp, with a depending handle and with a laterally adjustable stop stem, a fixed stop secured to lamp house body in the path of said adjustable stop stem, and means for effecting an adjustment of the attaching head aforesaid.

7. A lamp house for optical projection apparatus having a bottom wall formed with an aperture, an attaching head mounted on said bottom wall and carrying a pair of vertically slitted sleeves, individual screws for contracting said sleeves, a horizontal yoke member carrying an attaching stem for en-

gagement with a slitted sleeve aforesaid, and provided with a holding sleeve for a lamp and with a depending handle, and a lamp reflector having a vertical stem engaging the other of the slitted sleeves aforesaid.

8. A lamp house for optical projection apparatus having a bottom wall formed with an aperture, an attaching head mounted on said bottom wall and carrying a pair of vertically slitted sleeves, individual screws for contracting said sleeves, a horizontal yoke member carrying an attaching stem for engagement with a slitted sleeve aforesaid and provided with a laterally adjustable stop stem, with a holding sleeve for a lamp, and with a depending handle, a fixed stop secured to the lamp house body in the path of the aforesaid adjustable stop stem, and a lamp reflector having a vertical stem engaging the other of the slitted sleeves aforesaid.

Signed at Duluth, Minn., this 24th day of March, 1919.

JOSEPH GRANZ.