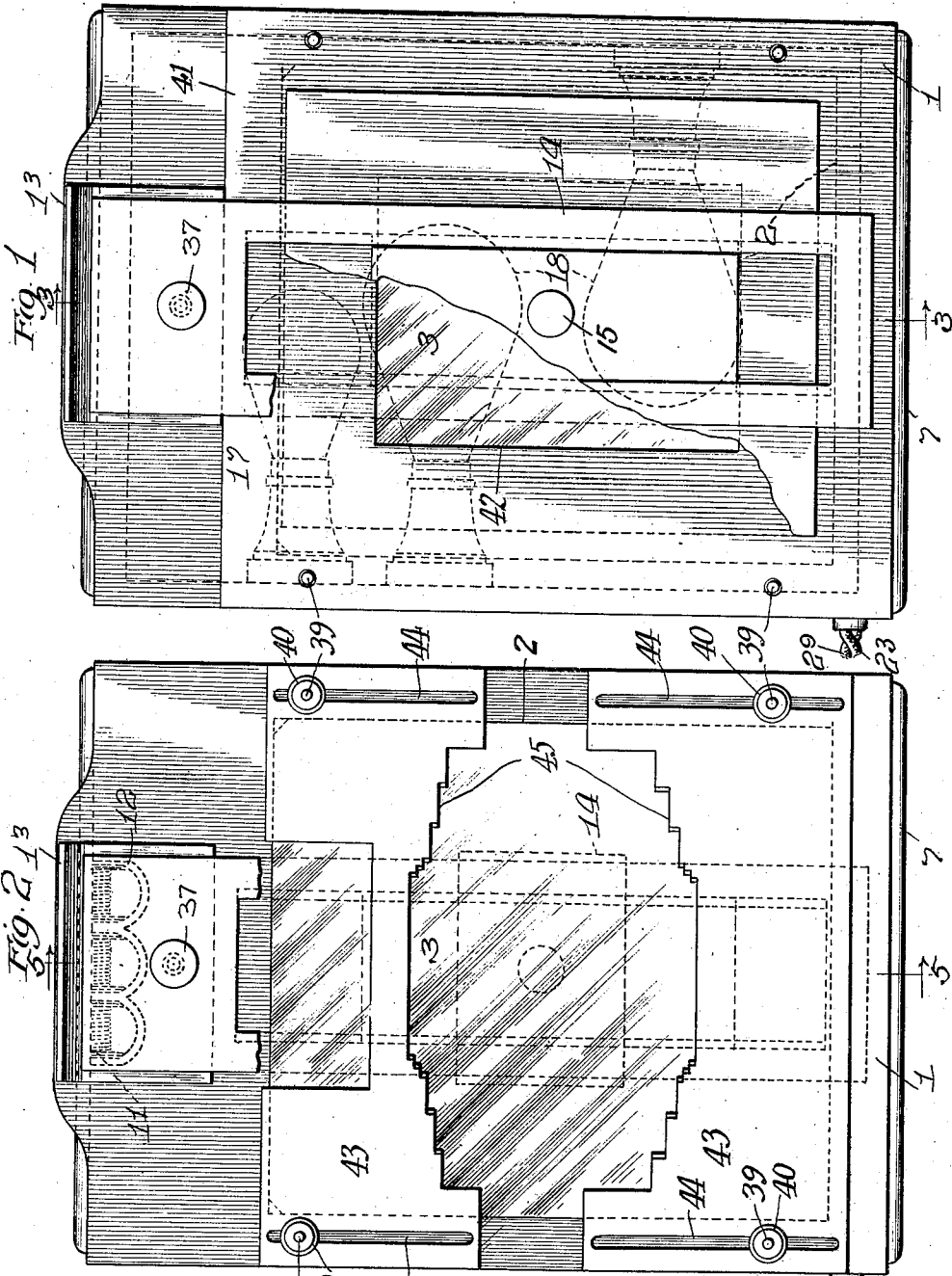


H. BURKE & D. JAMES.
 PHOTOGRAPHIC PRINTING APPARATUS.
 APPLICATION FILED JAN. 2, 1909.

989,330.

Patented Apr. 11, 1911.

4 SHEETS—SHEET 1.



Witnesses
 R. A. White,
 Harry R. L. White.

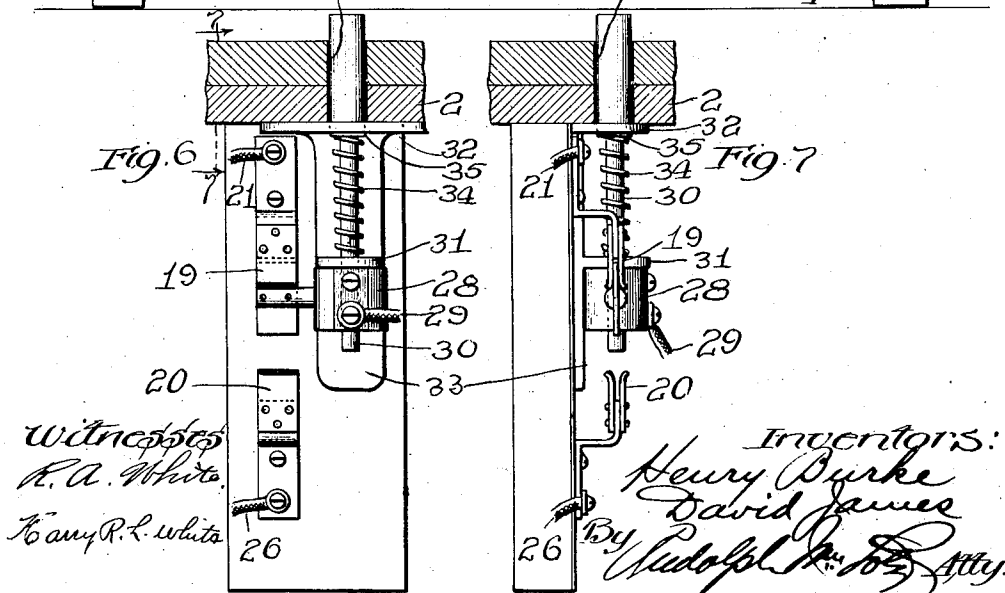
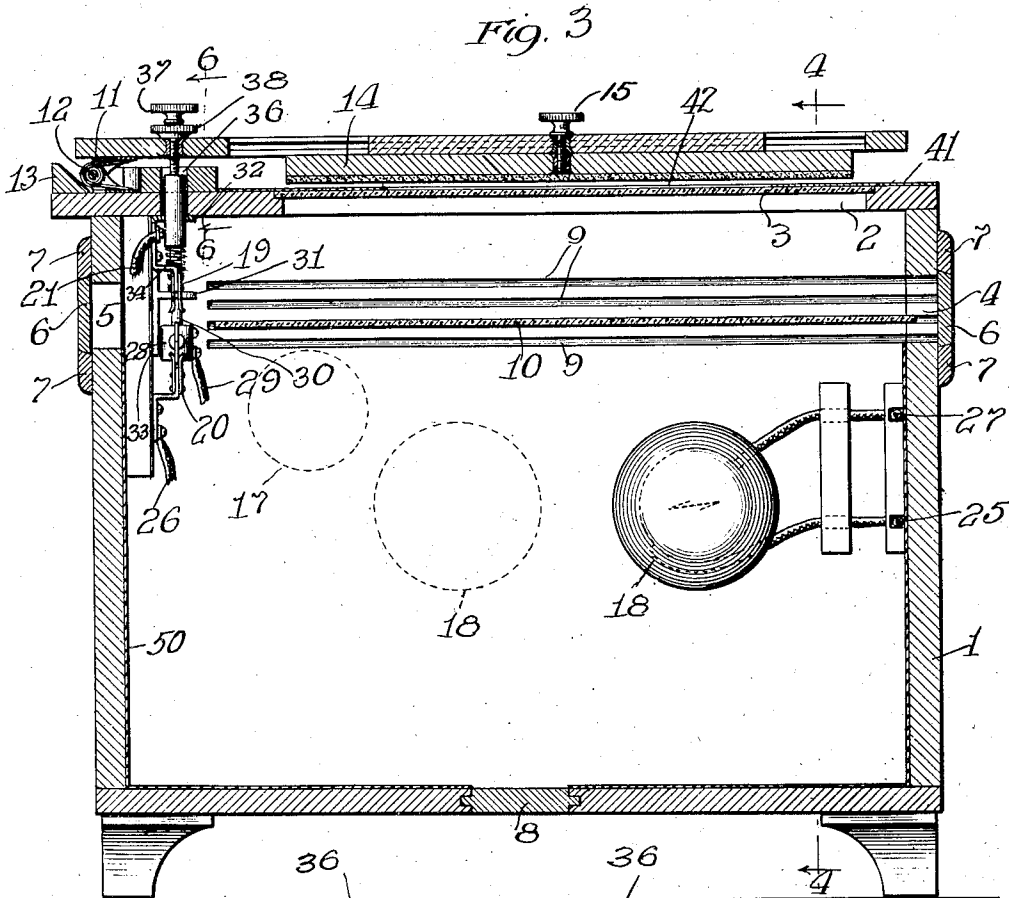
Inventors
 Henry Burke
 David James
 By Rudolph M. [Signature]

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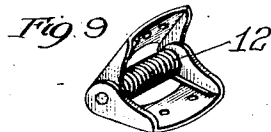
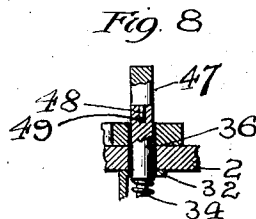
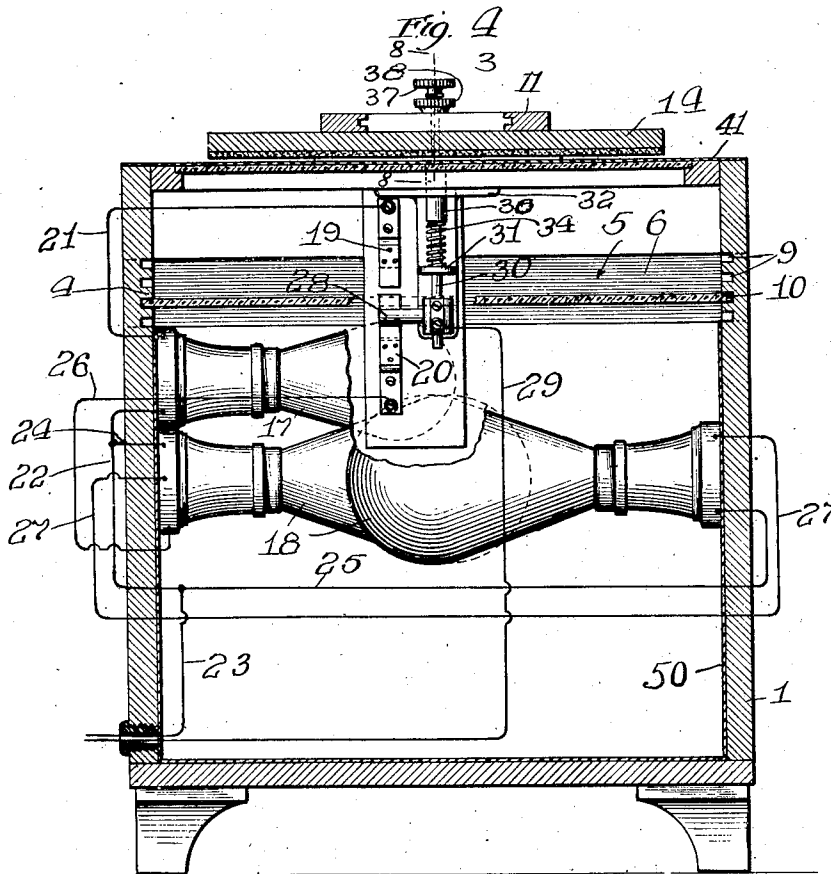


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4 SHEETS—SHEET 3.



Witnesses
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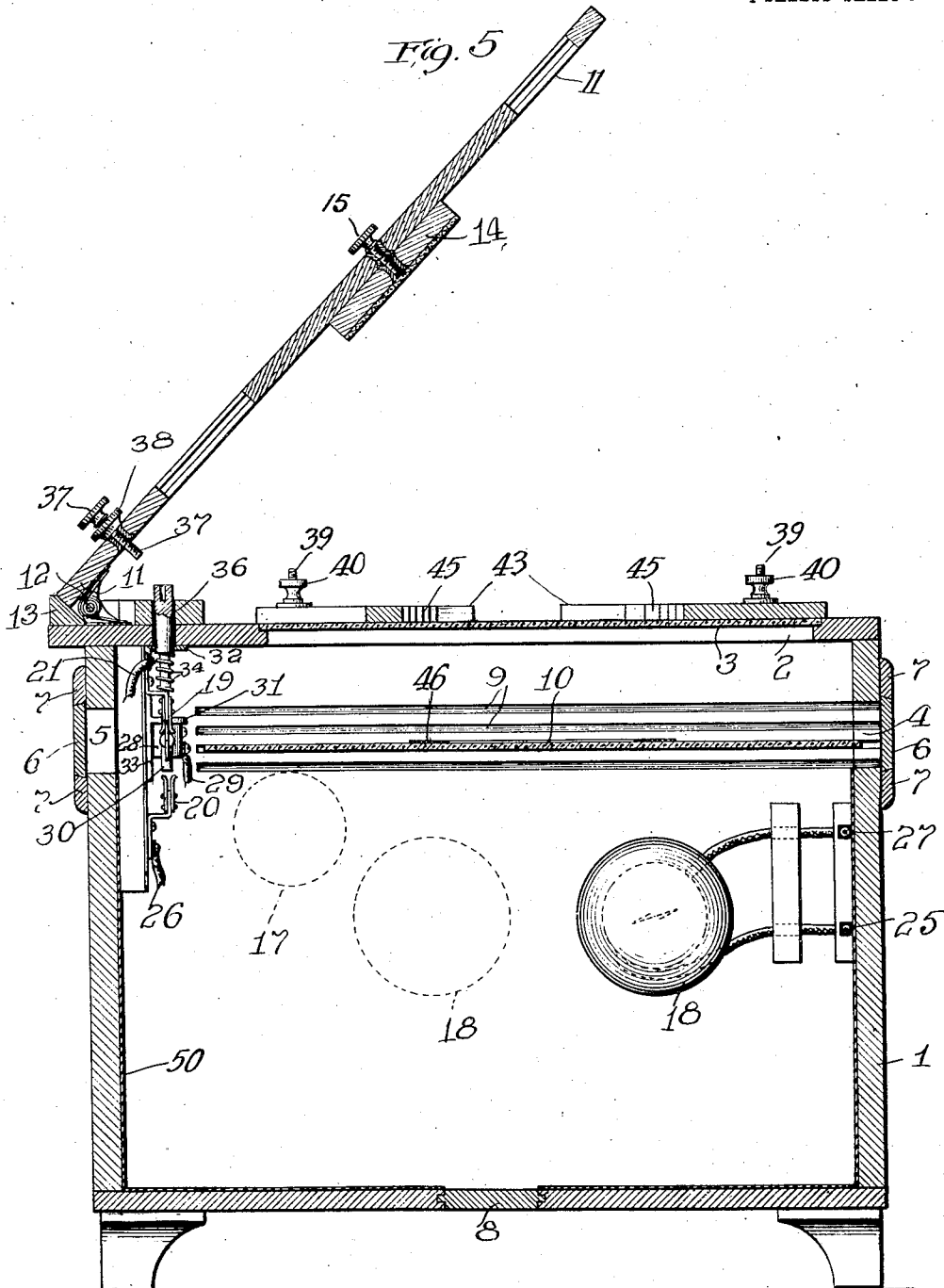
Inventors:
 Henry Burke
 David James
 By *Rudolph H. [Signature]* Atty.

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4 SHEETS—SHEET 4.



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Inventors:
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 David James
 By *Rudolph A. [Signature]* Atty.

UNITED STATES PATENT OFFICE.

HENRY BURKE AND DAVID JAMES, OF CHICAGO, ILLINOIS, ASSIGNORS TO BURKE & JAMES, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

PHOTOGRAPHIC-PRINTING APPARATUS.

989,330.

Specification of Letters Patent.

Patented Apr. 11, 1911.

Application filed January 2, 1909. Serial No. 470,813.

To all whom it may concern:

Be it known that we, HENRY BURKE and DAVID JAMES, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Photographic-Printing Apparatus; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a novel construction in a photographic printing apparatus for use in making artificial light prints, the object being to provide an apparatus which is compact and easily operated and controlled, and consists in the features of construction and combinations of parts herein after fully described and claimed.

In the accompanying drawings illustrating our invention: Figure —1— is a top plan view of a photographic printing apparatus constructed in accordance with our invention. Fig. —2— is a similar view showing a modified form of construction. Fig. —3— is a central vertical section of the apparatus on the line 3—3 of Fig. —1—. Fig. —4— is a vertical transverse section of the same on the line 4—4 of Fig. —3—. Fig. —5— is a central vertical longitudinal section on the line 5—5 of Fig. —2—. Fig. —6— is a fragmentary detail section on the line 6—6 of Fig. —3— showing in front elevation the electric switch employed. Fig. —7— is a section on the line 7—7 of Fig. —6— showing the switch in side elevation. Fig. —8— is a fragmentary detail vertical section on the line 8—8 of Fig. —4— showing an extension member employed to operate the switch by pressure of the finger. Fig. —9— is a detail perspective view showing a spring hinge employed.

In making prints from photographic negatives with the aid of artificial light, care must be exercised in handling the paper so as not to expose the same to light other than deep yellow to which it is not sensitive. Rapidity and ease of handling are also essential and are possible only where caution against accidental exposure is obviated. Furthermore it is desirable that in printing from negatives such devices as vignettes or means for throwing shade on parts of the negative may be readily resorted to in order

that artistic effects may be readily produced.

The object of our invention is to provide an apparatus which will enable prints to be made with great ease and rapidity and enables vignettes and the like to be easily and quickly applied.

The apparatus comprises a rectangular box —1— which may be made of any suitable material which is provided in its top wall with an opening —2— the edges of the wall of which are rabbeted on their upper corners to receive the edge portions of a plane —3— of glass. Said box is also provided in its front and rear walls with slots —4— and —5— which are adapted to be closed by the slides —6— movable in guides —7— and is further provided in its bottom with a slot adapted to be closed by a slide —8—. In the inner faces of the side walls of the box are a plurality of horizontally disposed grooves —9— opposite the slot —4— and in which one or more panes —10— of glass are received and supported, said pane or panes being inserted through the said slot —4—. The top wall of the said box projects slightly beyond the rear wall thereof and upon the same adjacent the rear wall thereof a lever —11— is pivotally secured by means of spring hinges —12—. A stop —13— limits the upward movement of the said lever —11—, the latter carrying a presser plate —14— between its ends which is adapted to press the paper uniformly upon the negative supported on the pane —3— when the said lever is depressed against the action of the hinges —12—. Said presser plate 14 is removably secured to the lever —11— by means of the thumb-screw —15— mounted in an adjustable plate —16— movable in guides with side rails of said lever and is interchangeable with a number of varying sizes of said plates on boards. Mounted within the said box —1— and preferably upon the side walls thereof are two or more electric incandescent lamps —17— and —18—, the former being preferably of a deep amber shade and the latter clear glass. The bulbs of the lamp or lamps —18— are projected so that they are disposed midway between the side walls and so that the source of printing light is midway of the ends of the opening —2— of the box. The lamp —17— is preferably smaller and may be disposed in any convenient place in

the box. Supported on the rear wall of the box are two terminals —19— and —20— of one of two electric circuits in which the lamps —17— and —18— are disposed, the said terminal —19— being connected by the wire —21— with the lamp —17—, through the latter with wire —22— which connects with one side —23— of an incoming line. The latter connects also by means of the wire —22— and wires —24— and —25— with each of the two lamps —18— illustrated. The terminal —20— connects by means of the wire —26— with one of said lamps —18— and through the latter with wire —27— to the other lamp —18—. The reciprocating switch member —28— is connected by means of flexible cord —29— with the other side of the incoming line.

The circuits are closed as follows: In the position shown in Fig. —4— the current passes from wire —29— to switch member —28— and terminal —20— wire —26— to first lamp —18—, through the latter to wire —27— to other lamp —18—, through the latter to wire —25—, to wire —23— or vice versa. The lamp —17— is now out of the circuit. As said member —28— is raised and engages the terminal —19— the circuit through the lamps —18— is opened and that through the lamp —17— is closed as follows: wire —29— to terminal —19—, wire —21— to lamp —17—, through the latter to wires —22— and —23—. The said member —28— is rigidly mounted on a vertically reciprocating plunger —30— which passes through openings in horizontal projections —31— and —32— of a plate —33— secured to the rear wall of the box, the upper end portion of said plunger being of greater diameter than the lower end portion thereof, said larger end portion moving in a correspondingly larger opening in the projection —32—. A compression spring —34— rests on the projection —31— and bears at its upper end against the shoulder —35— on the lower end of the enlarged portion of said plunger thus serving to maintain said plunger normally at the upper limit of its movement. The said enlarged portion of said plunger —30— projects through an opening —36— in the upper wall of the box and is adapted to be engaged by the lower end of a set screw —37— mounted in the lever —11, the said set screw being adjustable and locked against rotation after adjustment by means of the lock-nut —38—.

Mounted in the top wall of the box —1— are threaded projections —39— each of which receives a thumb nut —40—. A frame —41— of strong cardboard or thin sheets of fiber or metal or other suitable material having a central rectangular opening —42— corresponding in size with the plate to be received therein is laid upon the top wall of the box —1— and is provided with perfora-

tions receiving the said projections —39— whereby it is held in place. A negative deposited upon the pane —3— within said opening —42— in the frame —41— is held against lateral movement in all directions. The presser plate —14— is of a size sufficiently large to cover the largest negative which the apparatus will receive. This feature of the construction may be modified, however, as shown in Figs. —1— and —5— in which two plates —43— provided adjacent their side edges with longitudinal slots —44— through each of which one of said projections —39— passes are adjustable toward and away from each other and are provided midway between the ends of their opposing edges with stepped recesses —45—. The variations in width of said recesses at different points are in accordance with the variations in width or length of various standard sizes of photographic plates, so that any standard size plate may be received between said plates —43— and be held against lateral movement in any direction therebetween. Where said plates —43— are employed it is necessary to provide presser plates or boards —14— corresponding in size with the various standard sizes of photographic plates. We prefer, to employ the frames —41— shown in Figs. —1— and —3— for the reason that the latter are cheaper and generally only one of the same is needed as each operator usually uses only one size of plate.

The operation of our apparatus is as follows: A frame —41— having an opening adapted to receive a negative of same size is secured upon the top wall of the box —1— and the negative deposited upon the pane —3— within the opening of the frame. The lever —11— is normally supported in the position shown in Fig. —5— and when in said position the electric circuit through the lamp —17— is closed thus throwing a yellow light to which artificial light papers such as "Velox", "Cyko", "Nepera" and "Bromide" are not sensitive. Unless it is desired to vignette or otherwise vary the print from an exact reproduction from the negative, a sheet of sensitized paper is laid upon the latter and the lever —11— is then depressed and is maintained in this position during an interval sufficient to enable the rays of light from the lamp or lamps —18— to penetrate the sensitized surface to a sufficient depth to produce a picture of desired tone. The depression of the lever opens the circuit through the lamp —17— and closes the circuit through the lamp or lamps —18—. By releasing the lever —11— the last-named circuit is reopened and the circuit through the lamp —17— closed. The paper is now removed and another sheet placed on the negative and the operation repeated. If it is desired to use a vignette or to dim the light

thrown on a certain part of the negative to vary the print, it is necessary to adjust the vignette and other shadow throwing means before producing prints. The vignette 5 —46— is deposited upon the pane —10—, and the circuit is then closed through the lamp or lamps —18— by depressing the plunger —30— without depressing the lever —11—. For this purpose we provide an extension member —47— for the plunger 10 —30—, said member consisting of a cylindrical piece of metal or other material having a central projection —48— at one end which enters the central opening —49— in 15 the upper end of the plunger —30— and enables the latter to be depressed by pressure of the finger, a sufficient distance to throw the member —28— into engagement with the terminal 20. The said plunger is maintained depressed while the operator adjusts the vignette laterally after having adjusted the pane —10— to the elevation best suited to the attainment of the desired result. The 25 vignette may be adjusted by inserting the hand into the opening 4 or by withdrawing the pane 10 and reinserting the same after the vignette has been adjusted. Adjustment in one direction may be effected by merely moving the pane 10 slightly without changing 30 the position of the vignette thereon. After thus properly adjusting the vignette the operation of printing as above described is followed.

The slides —6—, —7— and —8— serve 35 as means for ventilating the box in order to prevent heating thereof to a higher degree.

For purposes of safety the box —1— is lined internally with asbestos paper —50— or similar fire-proof material.

We claim as our invention:

A device of the kind specified, comprising 40 a box provided in its top with a pane of glass upon which a negative is adapted to be supported, adjustable means engaging said negative to hold same against lateral 45 movement, electric lamps of different colors within said box, two electric circuits controlling said lamps, a switch within the said box controlling said circuits, a spring opera- 50 tively engaging said switch to maintain one of said circuits normally closed and the other open, there being ventilating openings in the bottom and end walls respectively of said box, supports for a second pane of glass at 55 different elevations within said box above the lamps therein and in alinement with one of said ventilating openings, a spring supported lever pivotally secured to said box at one end thereof, a set-screw therein adapted 60 when said lever is depressed to operatively engage and actuate said switch against the action of its spring to close the normally open circuit and vice versa, there being a longitudinal slot in said lever, a member 65 movable in said slot, and a presser board corresponding in size with the supported negative mounted on said movable member in said lever and adapted when the latter is depressed to press sensitized paper into uniform surface contact with said negative. 70

In testimony whereof we have signed our names in the presence of two subscribing witnesses.

HENRY BURKE.
DAVID JAMES.

Witnesses:

RUDOLPH WM. LOTZ,
E. H. MACDOWELL.