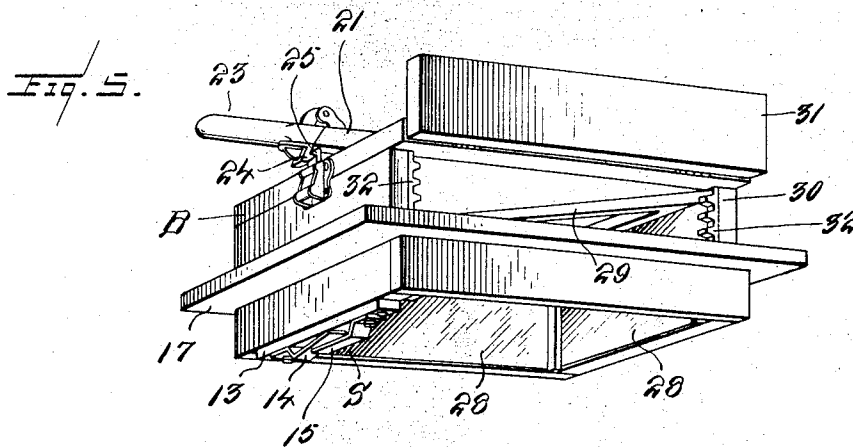
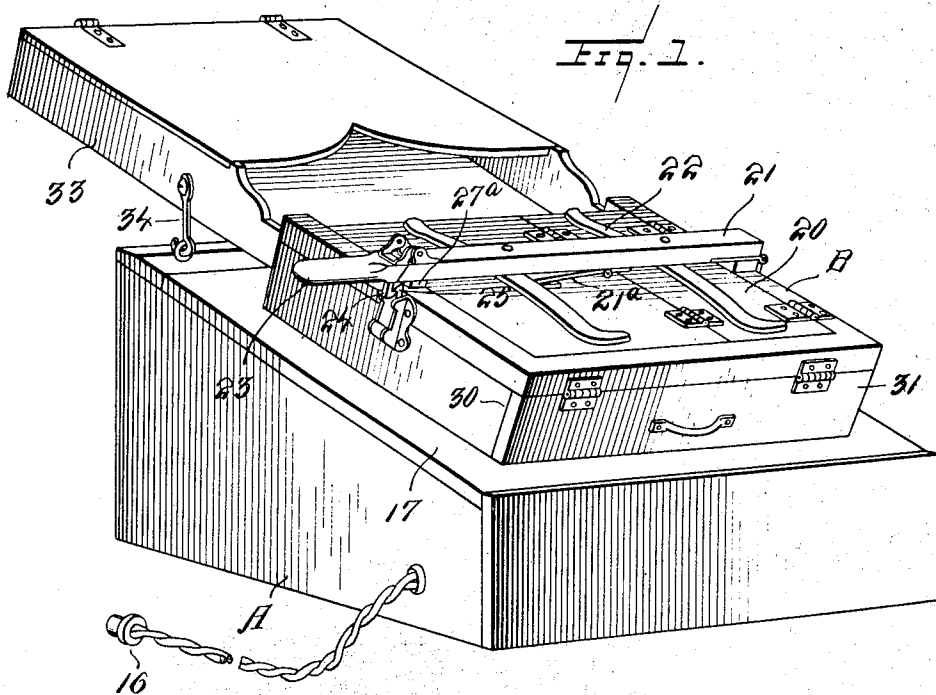


G. A. LEY.
PHOTOGRAPHIC PRINTING APPARATUS.
APPLICATION FILED MAY 24, 1910.

1,052,732.

Patented Feb. 11, 1913.

3 SHEETS—SHEET 1.



Witnesses
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C. Broadway.

Inventor
George A. Ley

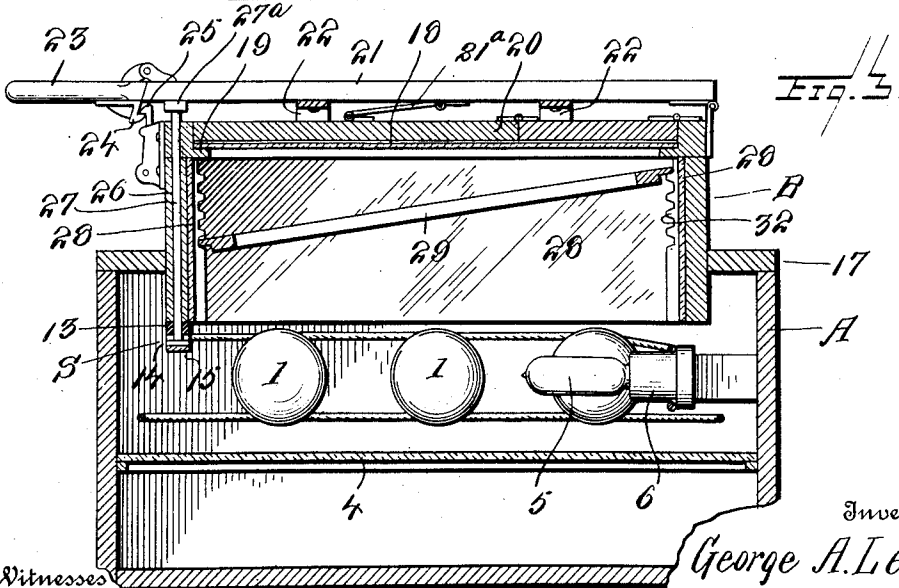
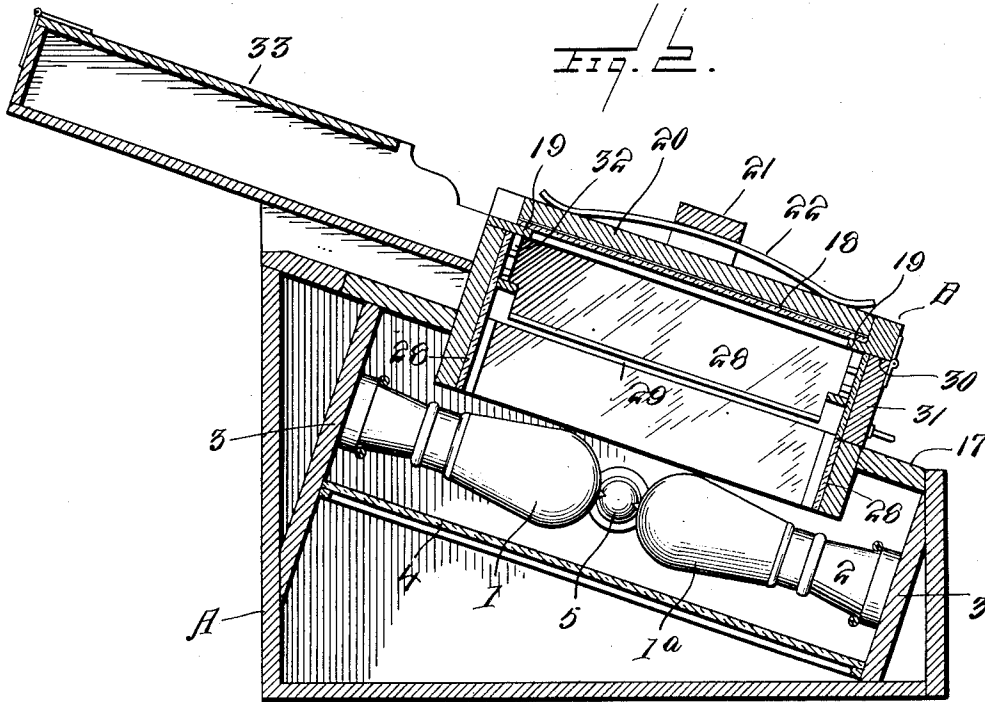
By Victor J. Evans
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3 SHEETS—SHEET 2.



Witnessed
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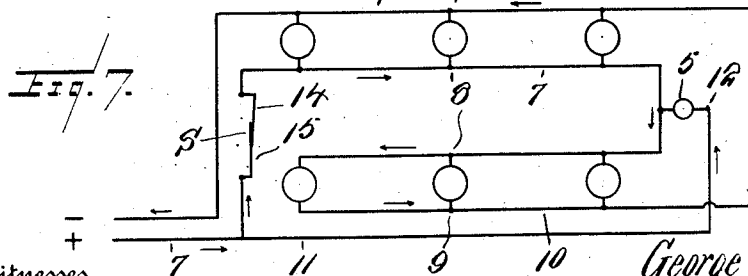
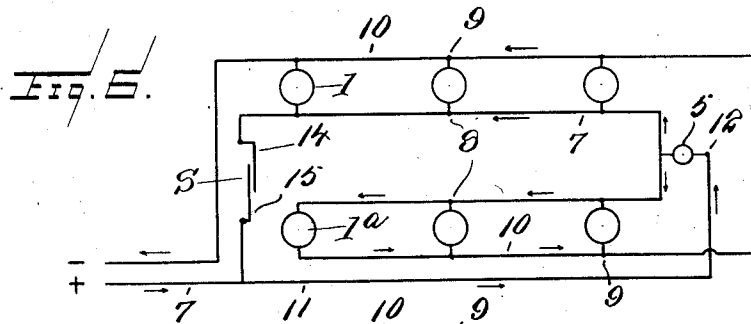
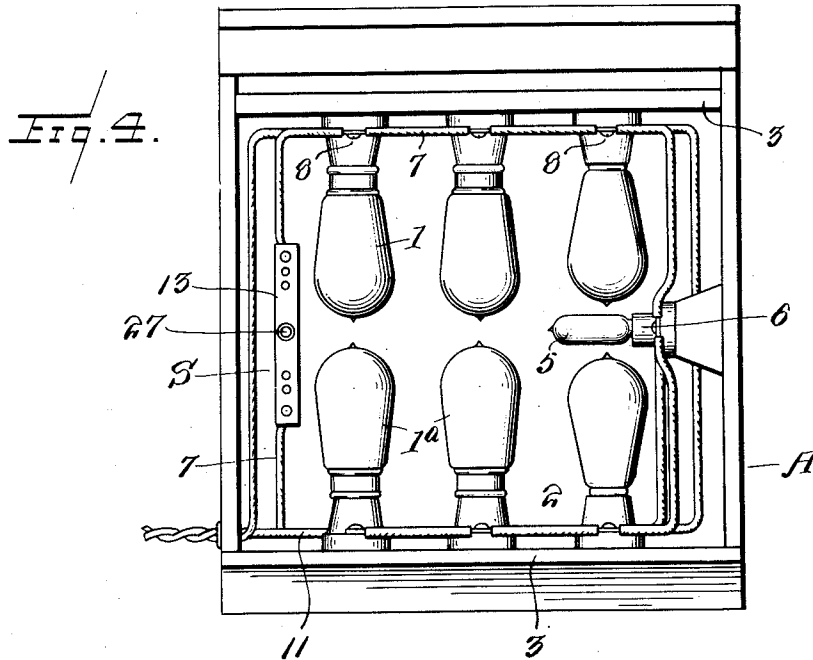
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3 SHEETS-SHEET 3.



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UNITED STATES PATENT OFFICE.

GEORGE A. LEY, OF SOUTH BEND, INDIANA.

PHOTOGRAPHIC-PRINTING APPARATUS.

1,052,732.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed May 24, 1910. Serial No. 563,172.

To all whom it may concern:

Be it known that I, GEORGE A. LEY, a citizen of the United States, residing at South Bend, in the county of St. Joseph and State of Indiana, have invented new and useful Improvements in Photographic-Printing Apparatus, of which the following is a specification.

This invention relates to photographic printing machines of that type in which electric lamps are automatically turned on by the closing of the platen and locking of the presser bar and automatically turned off upon the releasing of the presser bar and opening of the platen.

The invention has for one of its objects to improve and simplify the construction and operation of apparatus of this character so that such apparatus will be comparatively simple and inexpensive to manufacture, reliable and efficient in use, and of such design that the making of prints can be carried on with great rapidity.

Another object of the invention is the provision of a system of lighting for such an apparatus including one of more actinic and non-actinic lamps that are automatically controlled by a single switch which closes by the locking of the platen by the presser bar and opens by the unlocking of such platen.

With these objects in view and others as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one embodiment of the invention:—Figure 1 is a perspective view of the apparatus closed. Figs. 2 and 3 are vertical transverse sections of the apparatus taken at right angles to each other and taken on lines 2—2 Fig. 3, and 3—3 Fig. 2. Fig. 4 is a plan view of the apparatus with the top section or negative holder removed to show the arrangement of the lamps. Fig. 5 is a perspective view of the top section removed. Figs. 6 and 7 are diagrammatic views of the lighting circuits showing the path of the current when the switch is open and closed.

Referring to the drawing, A designates the casing of the apparatus, which is a box-like structure having an open inclined top

into which is set the negative holder or top section B. Within the casing A are arranged groups of actinic lamps 1 and 1^a mounted in sockets 2 secured to supports 3 fastened in the casing, and under these lamps is a flat mirror 4, which serves to reflect and concentrate the light directly upon the negative. Also mounted in the casing is a ruby or non-actinic lamp 5, which is cut into circuit when the actinic lamps are extinguished so as to emit sufficient light to enable the operator to see when taking out or putting in the negative paper, and this lamp is mounted in a socket 6 suitably secured in the casing. Both groups of actinic lamps and the non-actinic lamp are all connected with a positive wire 7 that is fastened to the terminals 8 of such lamps, while the other terminals 9 of the actinic lamps are connected with a negative wire 10. A shunt wire 11 leads from the positive wire to the other terminal 12 of the ruby lamp, and in the main positive wire 7 is arranged a switch S, which controls the turning on and off of the lights. This switch consists of a supporting member 13 of insulation, which carries normally separated spring contacts 14 and 15 to which the positive wire 7 is connected, said wire being cut into for connection with the said contacts of the switch. The contact 14, which is normally sprung away from the contact 15 is pressed into engagement with the contact 15 when the platen is closed and the presser bar locked, but when the presser bar is released, the switch opens by the contact 14 moving away from the contact 15. The effect of this opening and closing of the switch can be best understood by reference to Figs. 6 and 7. Fig. 6 represents the condition of the circuits when the apparatus is open, with only the non-actinic lamp lighted, it being understood that connection with the ordinary lighting system can be effected by a socket plug 16, as shown in Fig. 1. Current flows through the positive wire 7, the shunt wire 11, lamp 5, and at this point the current flows, by that portion of the positive wire 7 between the actinic lamps and switch S, through both groups of actinic lamps, and returns by the negative wire 10, the direction of flow being indicated by the arrows. The ruby lamp is of so much less amperage and candle power than the actinic lamps that the current flowing through the latter will not be sufficient to cause the filaments to

glow, although the filaments will be kept warm, and thus be prevented from sudden contraction and expansion when the maximum current is turned on and off. When the printing apparatus is closed to print a negative, the switch S will be closed, as shown in Fig. 7, and current now flows through the positive wires 7 and switch S, both groups of actinic lamps 1 and 1^a and negative wire 10. No substantial flow of current will take place through the ruby lamp, because the latter is of much higher resistance than the path through the actinic lamps, which latter will continue to glow as long as the machine is closed. As soon as the machine is opened, the circuits will be altered by the switch S so that the current will flow through the ruby lamp, which will now be in a series with the actinic lamps. Expressed in a different way, the ruby lamp is never directly connected with the negative side of the circuit, but must be connected through the actinic lamps. When the non-actinic lamp is lighted, it is in series with the actinic lamps, and when the actinic lamps are glowing, the non-actinic lamp is in parallel with the feed wire, but the relative resistances of the two paths are such that very little current flows through the non-actinic lamp. The changes effected in the circuits are accomplished by a single switch, which, as stated before, opens and closes automatically so that the operator is required to give no attention to the throwing on and off of the lights.

The negative holding section B consists of a box like structure which is set into the open top of the casing A, and is provided with a surrounding frame 17 which fits on top of and is suitably secured to the casing. The negative holding section is open at its bottom so that the direct and reflected rays of light from the lamps will pass through the negative plate or film 18, which rests on a shoulder or ledge 19 at the open top of the section B. The paper to be printed is held against the negative by a platen 20, hingedly connected with the negative holding section B so as to swing open and closed, the said platen being composed of hingedly connected parts in the usual manner. Co-operating with the platen is a presser bar 21 hingedly mounted on the section B and having bowed tensioning springs 22 for causing the platen to press the paper against the negative, the presser bar 21 being connected by a link 21^a to the platen. On the outer end of the platen is a hinged grip section 23 that has a depending catch 24, which engages a latch 25 on one side of the negative holder. To unlock the presser bar, it is merely necessary to swing the grip 23 upwardly to release the catch from the latch and after this is done, the presser bar is thrown back so that the platen will open.

In one of the side walls of the section B, preferably that on which the catch is mounted, is an opening 26 through which extends a push rod 27 that has its lower end bearing on the movable contact 14 of the switch S, and its upper end protruding from the top of the negative holder when the presser bar is open. On the under side of the presser bar is a yielding block 27^a which engages the upper end of the push rod 27 so as to force the latter downwardly and close the switch S when the presser bar is locked closed to make a print. As soon as the presser bar is released, however, the switch S will automatically open, since the pressure will be released on the push rod 27 which allows the spring contact 14 of the switch to move away from the other contact 15. On the bottom edge of this wall through which the rod 27 passes, the switch supporting plate 13 is fastened, so that when the section B is removed, it will be necessary to break the connections between the circuit wires and switch, since the circuit wires and lamps are fixed in the bottom section A of the apparatus.

To reflect and concentrate the light, the inner faces of the walls of the negative holder or section B are faced with plate mirrors 28 and immediately under the negative may be inserted vignettors 29 which can be inserted through an opening 30 in one side of the section B above the frame 17, the said opening being normally closed by a hinged door 31. In the corners of the section A and disposed between adjacent mirrors are series of corner seats 32, in which the corners of the vignettors may be engaged. On the top of the apparatus may be arranged a receptacle 33 for receiving the prints as they are made, the said receptacle being removably held on the casing by hook fasteners 34.

From the foregoing description taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention relates, and while I have described the principle of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes made be made when desired as are within the scope of the claims.

What I claim as new and desire to secure by Letters Patent is:—

1. A printing apparatus comprising a negative holder adapted to be supported in an inclined position and having an open top and bottom, a source of light for said holder, a platen coöperating with said holder at the top thereof, said negative holder being provided with shoulders for retaining a plate therein, a pressure bar hinged to said holder,

a link connection between said pressure bar and said platen and locking means for holding said pressure bar in platen closing position.

5 2. A print apparatus comprising a negative holder adapted to be supported in an inclined position and having an open top and bottom, a source of light for said holder, a platen cooperating with said holder at the
10 top thereof, said negative holder being provided with shoulders for retaining a plate therein, a pressure bar hinged to said holder, a link connection between said pressure bar and said platen and locking means for holding
15 said pressure bar in platen closing position, and a print receiving receptacle removably secured to said apparatus and having an open end contiguous to said negative holder.

20 3. A printing apparatus comprising a negative holder adapted to be supported in an inclined position and having an open top and bottom, a source of light for said holder, a platen cooperating with said holder at the
25 top thereof, said negative holder being provided with shoulders for retaining a plate therein, a pressure bar hinged to said holder, a link connection between said pressure bar and said platen and locking means for holding
30 said pressure bar in platen closing position, rack bars arranged in said holder at

opposite sides thereof; said holder being provided with a door opening, and a vignetter adapted to be inserted through said door opening into engagement with said rack bar. 35

4. A printing apparatus comprising a negative holder adapted to be supported in an inclined position and having an open top and bottom, a source of light for said holder, a platen cooperating with said holder at the
40 top thereof, said negative holder being provided with shoulders for retaining a plate therein, a pressure bar hinged to said holder, a link connection between said pressure bar and said platen and locking means for holding
45 said pressure bar in platen closing position, a normally opened switch carried by said holder at the inner end thereof, a push rod mounted in said negative holder and projecting beyond the open ends thereof, 50
said push rod being adapted to contact with said switch at one end thereof, and means carried by said pressure bar for engaging the other end of said push rod for closing
55 a circuit through said switch.

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

GEORGE A. LEY.

Witnesses:

J. W. McINERNY,
WILLIAM A. McINERNY.