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APPARATUS FOR FLASHING IN CORNERS AND MARGINS OF PHOTOGRAPHS DURING PROJECTION PRINTING THEREOF

Filed Jan. 22, 1957

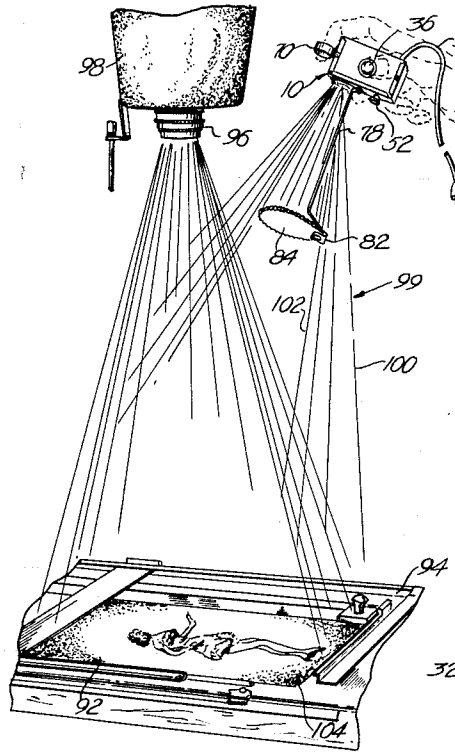


Fig. 1.

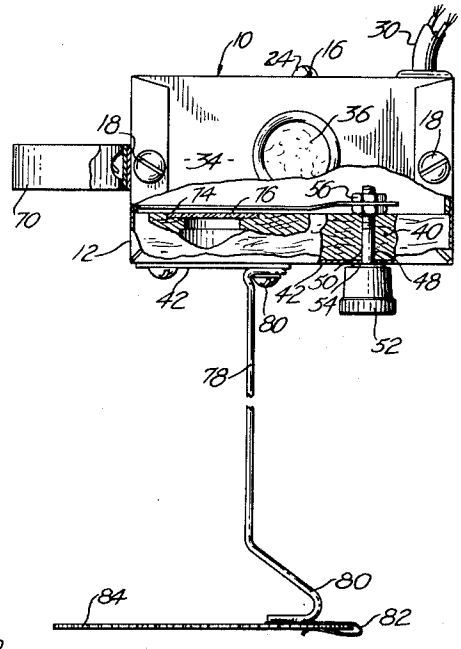


Fig. 2.

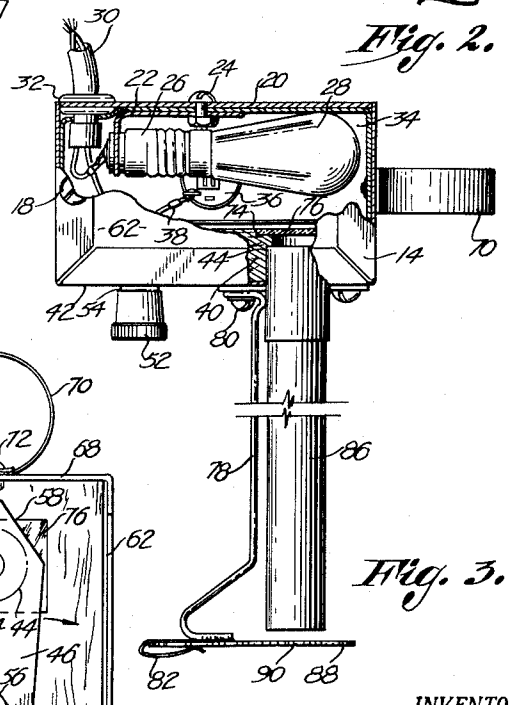


Fig. 3.

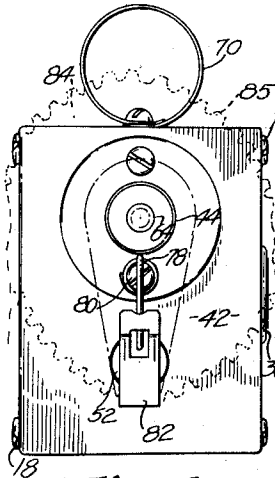


Fig. 4.

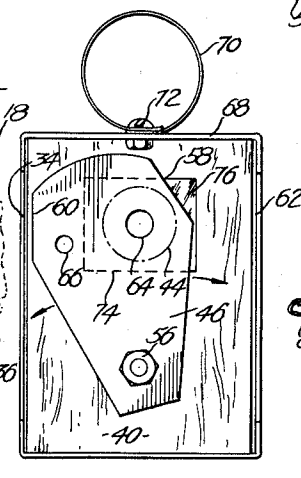


Fig. 5.

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APPARATUS FOR FLASHING IN CORNERS AND MARGINS OF PHOTOGRAPHS DURING PROJECTION PRINTING THEREOF

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This invention relates to the field of photography and more particularly to apparatus for flashing in corners and margins of photographs during projection printing operations involving reproduction of photographs on emulsion type paper from a negative or the like.

As is well known, in the production of finished prints from photographic negatives, a projector is ordinarily employed to expose the sensitive paper with light rays passing through the negative, it being appreciated that by utilizing a suitable lens and varying the distance of the lens from the emulsion paper, an enlargement of the negative on the print may be obtained. The process of printing photographs from negatives involves a great deal of skill and experience and especially in the field of portraiture, it is desirable oftentimes to improve the various lighting effects found on the negative, in the finished print. In other words, it is frequently necessary to make certain areas lighter or darker than those in the negative to obtain a satisfactory and effective finished portrait.

Since the negative is exactly reversed from the finished product, it is understandable that light blocked off by the negative does not reach the emulsion of the printing paper to cause a chemical reaction, and thus this blocked off area shows white in the finished print. In many negatives the various portions of the scene reproduced that show up in the margin of the portrait are distracting and need to be eliminated and also, it has been found that by producing dark corners and side margins, the overall effect of the portrait may be greatly heightened.

Although "flashing in" is not new in the art and has been practiced for some time to produce the aforementioned black or dark corners and margins, the heretofore practiced methods of "controlled" fogging have been time consuming and relatively expensive because of the uncertainties of the method, as well as requiring one highly skilled in the particular process. In order to eliminate distracting areas and add a greater range of tonal scale to the paper by enriching the various blacks, it has been the usual practice to develop the print from the negative by utilization of a standard projection enlarger and then subsequently flash in the corners and margins by subjecting the print to a source of light while holding a piece of cardboard or the like between the source and the emulsion paper. From this it can be seen that it is necessary to expose the paper to the light at least four separate times if it desired to darken the entire border of the portrait or picture, and it is virtually impossible to obtain uniform darkening of the margin unless the paper is exposed to the maximum amount of light necessary to turn the paper completely black. Many times it is not desired to darken the areas of the print to this degree and, as an answer to this problem, the process of "spot dodging" has been developed wherein a generally circular panel is positioned between the source of light and the print at a point where only the margins of the paper are exposed to the light. Manifestly, it can be seen that this process requires a great deal of skill because it cannot be readily ascertained exactly where the dodger should be positioned, nor is the light controllable to the extent necessary to produce the best reproductions. Effective control of the amount of light to which the printing paper is exposed during the flashing in process is difficult as it is recognized that the relative darkness of the blacks in the print is directly proportional to the amount of light and the time to which the print is exposed. The problem of flashing in corners is increased with the use of spot dodging methods because of the fact that a sharp line of demarcation is apparent where the peripheral edge of the dodging panel cuts off light from the source directed onto the printing paper.

Having the foregoing problems in mind, it is the most important object of this invention to provide apparatus for flashing in photographic paper simultaneously with printing of the same from a negative.

An equally important object is to provide apparatus for flashing in photographic paper simultaneously with printing of the same wherein there is provided a light source and means for selectively controlling the amount of light emanating from the apparatus and directed onto the paper, whereby the area of the paper exposed to the rays of light is darkened in conformity with the amount of light available and the variable time factor.

Another important object relates to provision of apparatus as set forth above wherein there is provided dodging means removably interposable between the source and the paper to be printed so that the inner peripheral boundary of the field of radiation of the source can be controlled.

A further important object of this invention is to provide portable flashing in apparatus to be employed simultaneously with printing of the paper from a negative, wherein there is provided a light source and means for selectively controlling the intensity of the light from the source and, in addition thereto, prevent sharp lines of demarcation between the flashed in portions of the print, and those protected from the field of radiation emanating from the apparatus.

Another important object of this invention relates to the provision of apparatus as set forth above wherein there is provided a light source disposed in a relatively small housing adapted to fit comfortably and easily in the hand of the operator, so that the field of radiation from the light source may be readily and easily controlled by the operator, by merely moving the relative position of the housing.

Also an important object of this invention is to provide apparatus for flashing photographic paper wherein there is provided means interposable between a source of light and the paper to be printed which allows the field of radiation of the source to be selectively varied at the will of the operator of the apparatus and thereby control the amount of light emanating from the device, and further to provide apparatus as above mentioned wherein an elongated tubular element is disposable on the apparatus in alignment with the light source to produce a relatively narrow field of radiation of relatively less light intensity, and thereby allow fine and controlled fogging of the print in small areas.

Other objects of this invention include apparatus capable of carrying out the aforementioned aims and also to provide mechanism which allows a plurality of various types of dodgers to be releasably interposed between the source of light and the paper to be printed; the provision of apparatus wherein diffusion glass is placed between the source of light and the paper to be printed so that the rays are directed onto the emulsion paper in a diffused manner; and apparatus comprising a relatively small, box-like housing enclosing the source of light and having an opening therein through which light rays from the source are directed onto the paper to be printed, the housing being small enough that it readily fits in the hand of the operator and is movable at will to get the desired flashing in effect. Other objects and

details of construction will become obvious or explained more clearly hereinafter.

In the drawing:

FIGURE 1 is a fragmentary, side perspective view of apparatus made in accordance with the principles of this invention and showing the manner in which photographic paper being printed by a projection enlarger having a negative therein is being simultaneously flashed in;

FIG. 2 is an enlarged, elevational view of one side of the apparatus illustrated in FIG. 1, certain parts being broken away and in section for clarity of illustration;

FIG. 3 is an enlarged, elevational view of the instant apparatus showing the opposite side thereof, parts being broken away and in section to show details of construction, and showing the optional elongated tube in its operable position;

FIG. 4 is an enlarged, front elevational view of the invention and showing one of the dodging panels in phantom; and

FIG. 5 is a rear, elevational view of the apparatus, the back cover having been removed to show interior details.

Portable flashing in apparatus designated broadly by the numeral **10** preferably comprises a box-like housing **12** which includes a U-shaped front component **14** and a U-shaped rear component **16**. Components **14** and **16** are releasably held in position to form box-like housing **12** by a plurality of metal screws **18**. It can be seen that box **12** is quickly and easily dissassembled by merely removing screws **18** to expose the interior parts thereof.

Mounted on the rear wall **20** of component **16** is a bracket **22** held in position by mounting screw **24** passing through wall **20**, and secured to bracket **22** is an electric light socket **26** adapted to receive a suitable source of light **28** such as a 6-watt 120-volt bulb. Connected to socket **26** are suitable electrical conduits **30** which pass through insulator **32** mounted in wall **20**.

Also provided in side wall **34** of component **16** is a press-button switch **36** connected to socket **26** by suitable leads such as **38**.

From FIG. 3 of the drawings it is apparent that an opening **44** traverses member **40** and wall **42** and is in substantial alignment with the filament of bulb **28**. Rotatably mounted on member **40** is an irregularly shaped, relatively thin, metal aperture control plate **46**. Means for rotatably mounting plate **46** on wall **42** preferably comprises an elongated pin **48** passing through opening **50** in wall **42** and member **40**. Disposed on the outermost end of pin **48** is a circular control knob **52**, there being a washer **54** disposed between wall **42** and knob **52**, and pin **48** being threaded at the innermost end thereof for receiving a pair of lock nuts **56** between which the lowermost end of control plate **46** is disposed. From the foregoing it can be seen that upon rotation of knob **52** by the operator of apparatus **10**, control plate **46** is shifted within housing **12** and it is preferred to provide a pair of opposed, flat cam surfaces **58** and **60** on plate **46** which are engageable with walls **62** and **34** respectively of component **16**.

A plurality of apertures are provided in plate **46** and as illustrated in FIG. 5, it is convenient to provide an aperture **64** of lesser area than the area of opening **44** and also an aperture **66** of less area than the area of aperture **64**. Apertures **64** and **66** are disposed so as to be in concentric alignment with opening **44** when cams **58** and **60** contact their respective walls **62** and **34**. Thus, apertures **64** and **66** are independently alignable with opening **44** upon rotation of control knob **52**. A rectangular indentation **74** is provided in the innermost face of member **44** for receiving a glass diffusing plate **76** in overlying relationship with opening **44**.

Disposed on the wall **68** of component **14** is a finger ring **70** held in position by securing means **72**.

Secured to the outermost face of wall **42** is an elongated dodging panel bracket mounting rod **78** held in place by a screw **80** and having a J-shaped integral bend at the outermost end thereof to which is soldered a U-shaped panel receiving clip **82**. Clip **82** is adapted to receive any one of a number of suitable dodging panels such as **84** and from FIGS. 2, 3, and 4 of the drawing it can be seen that panel **84** is in alignment with opening **44** when the former is disposed in clip **82**. Panel **84** preferably, although not necessarily, has a series of equally spaced, trapezoidal or triangular indentations **85** in the outermost peripheral edge thereof.

In FIG. 3 of the drawings, optional elongated tube **86** is shown in position in frictional engagement with the innermost surface of the walls of member **40** and wall **42** forming opening **44**, and it can be seen that the outermost open end of tube **86** terminates just short of a panel **88** disposed in clip **82**. Panel **88** is most usually provided with a small perforation **90** concentric with the axis of tube **86** when the latter is disposed in opening **44** for reasons to be hereinafter outlined.

As illustrated in FIG. 1, apparatus **10** is adapted for flashing in corners of photographic paper **92** held in position by suitable frame mechanism **94** simultaneously with printing of the paper by passing of light through a lens **96** located on the lowermost end of a projection enlarger **98**. From this figure it can be seen that the rays of light emanating from bulb **28** and passing through opening **44** define a field of radiation **99** having an outermost boundary **100** and an inner peripheral boundary **102**. Such flashing in by apparatus **10** produces dark corners **104** in the manner to be described.

In operation, after the operator of enlarger **98** has started printing of emulsion paper **92** by passing light through the negative in enlarger **98** and lens **96**, apparatus **10** is held a suitable distance above the uppermost face of print **92** and light rays are caused to emanate from opening **44** by pressing switch **36** for a suitable length of time. Inasmuch as printing of paper **92** consumes several seconds, there is ample opportunity to flash in or fog the corners **104** and/or the margins of paper **92** because of the fact that when larger aperture **64** is disposed in alignment with opening **44**, the amount of light emanating therefrom is sufficient to flash in the desired areas in approximately one-half the total printing time of the enlarger, whereas when smaller aperture **66** is in independent alignment with the opening **44**, the flashing in time is still slightly less than the overall printing period.

As shown in FIG. 1, a panel **84** is disposed in clip **82** so that an inner peripheral boundary **102** of the field of radiation **99** is formed in addition to the outer boundary **100**, which is controlled by opening **44**. Since rays of light emanating from bulb **28** pass through glass diffusing plate **76** after passage through either aperture **64** or **66**, it can be readily recognized that the field of radiation **99** emanating from opening **44** is in a highly diffused state. Because of the diffused condition of the field of radiation **99** it is manifest that the amount of light directed onto print **92** is proportional to the size of apertures **64** and **66**, less light being directed onto print **92** when aperture **66** is in independent alignment with opening **44** than when aperture **64** is in alignment with opening **44**.

It can now be appreciated that the boundary **102** as well as the amount of light emanating from opening **44** are variable at the command of the operator of apparatus **10**, the amount of light from bulb **28** being selectively variable by rotation of knob **52** to thereby independently align apertures **64** or **66** in alignment with opening **44** at the election of the operator, and also inner boundary **102** being variable by insertion of other types of panels **84** in clip **82**. The shape of the additional panels **84** may be varied so as to provide elliptical, circular or triangular dodging panels as the situation warrants and the operator of apparatus **10** may quickly and easily replace the panels **84** as needed. By provision of indentations **85** in the outer peripheral edge of panel **84**, the boundary **102** of the field of radiation **99** is not circular but tends to be an intermediate zone of penum-

bra between the area of light 99 and the darkness in the center of the conical field of radiation. In this manner a clear line of demarcation between the darkened corners 104 and the white portions of print 92 is effectively precluded and the dark area 104 tends to merge into the white area of the print.

This diffusion process is further heightened by provision of glass plate 76 and thus the darkened areas of print 92 are uniform, without blotches or the like.

In many instances, the operator of apparatus 10, in order to obtain the desired results of flashing in, must have a relatively narrow field of radiation emanating from apparatus 10 and therefore, tube 86 is inserted into opening 44. Thus when tube 86 is so disposed, the outer boundary 100 of the field of radiation 99 is limited by the outermost open end of the tube 86 and relatively narrow portions of print 92 may be suitably fogged. However, in order to provide an even narrower field of radiation, it is possible to use a dodging panel 88 having a narrow aperture such as 90 therein, so that the field of radiation 99 emanating from apparatus 10 is very narrow and constitutes only a thin beam of light. With this beam of light, the operator of apparatus 10 can literally sketch on print 92 and make fine lines or the like.

Finger ring 70 is provided for use in hanging the apparatus 10 up during periods of non-use and so that better control over apparauts 10 may be obtained during the flashing process and as illustrated in FIG. 1, is adapted so that a forefinger may be inserted into the ring to afford instant control over the mechanism. By the same token, switch 36 is disposed in a position where it may be operated by a thumb and thus instantaneous control over field of radiation 99 is assured.

From the foregoing it can be appreciated that there is now presented apparatus adapted for flashing in photographic prints simultaneously with printing of the same and quickly and easily changeable to meet all exigencies as they occur.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent is:

1. The combination with an operable projection printer of an apparatus for flashing photographic paper simultaneously with the printing operation, said apparatus including a hollow housing of dimensions adapting the same to be conveniently held in one hand, said housing having a side wall provided with an opening through one face thereof and of smaller dimensions than said face; a light source within the housing and aligned with said opening to permit rays of light to be directed through said opening and onto the paper during said printing thereof and upon actuation of said light source; an opaque, flat dodging panel of greater dimensions than said opening; bracket means on said housing movably carrying said panel in outwardly spaced relationship from said opening in substantially perpendicular relationship to said rays of light and thereby interposed directly between the light source and the paper for defining a boundary of the field of radiation of the source to control exposure of the paper to the rays; and a plate member movably mounted on the housing and provided with a plurality of apertures having differing areas and of less area than said opening, said plate member being interposable over the opening with any one of the apertures aligned with said opening, the boundary of the field of radiation of the source through the opening being selectively restricted upon interposition of the plate member over the opening whereby the amount of exposure of the paper to the rays may be variably controlled.

2. The combination with an operable projection printer of an apparatus for flashing photographic paper simultaneously with the printing operation, said apparatus including a hollow housing of dimensions adapting the same to be conveniently held in one hand, said housing having a side wall provided with an opening through one face thereof and of smaller dimensions than said face; a light source within the housing and aligned with said opening to permit rays of light to be directed through said opening and onto the paper during said printing thereof and upon actuation of said light source; an elongated tubular member mounted on the housing within the opening and extending longitudinally outwardly with the axis thereof coincidental with the axis of the opening; a flat, opaque panel of dimensions at least as great as the outer end of the member and having an aperture therein of substantially lesser area than said outer end of the member; and extension means on the housing for releasably holding the panel in proximal, overlying relationship to the outermost end of the member with the aperture in alignment therewith to define a boundary of the field of radiation of the source through the opening and the outermost open end of the member thereby controlling the area of the paper exposed to the rays.

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