

April 7, 1931.

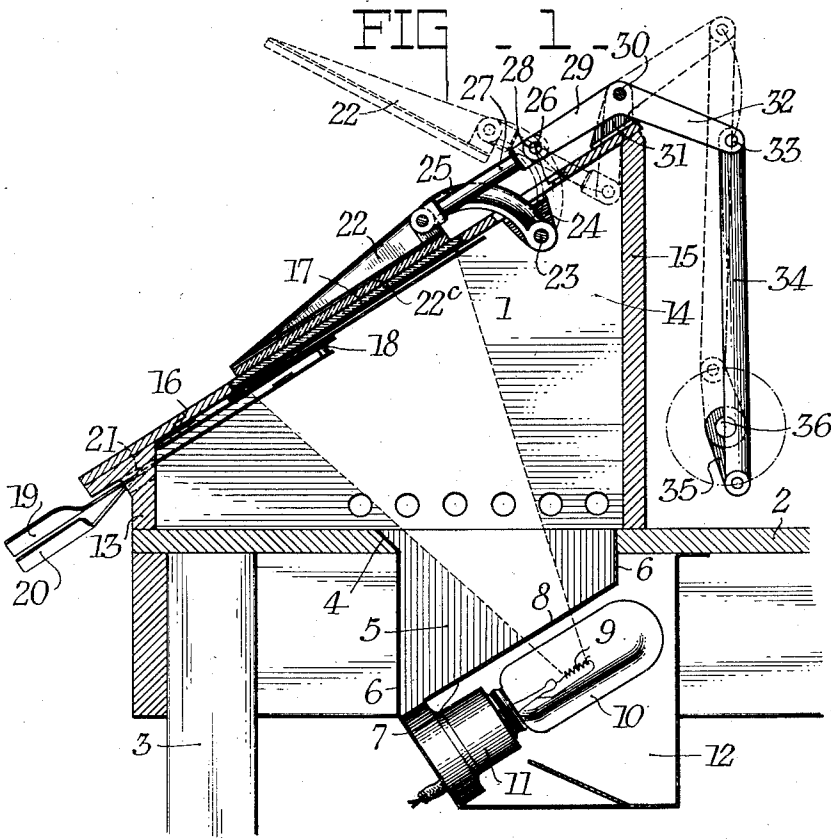
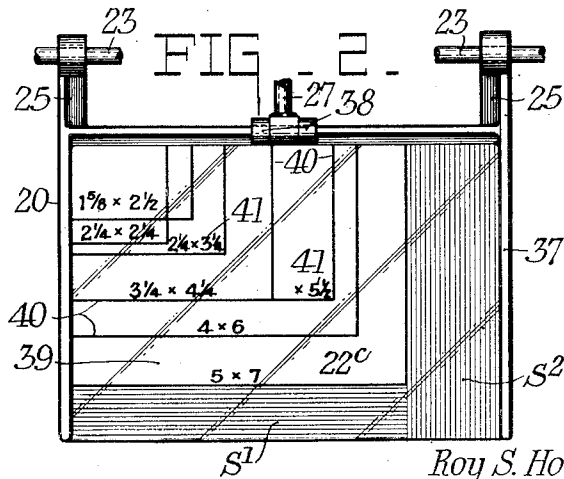
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1,799,818

PHOTOGRAPHIC PRINTING AND VIGNETTING APPARATUS

Filed June 24, 1927

2 Sheets-Sheet 1



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FIG. 3.

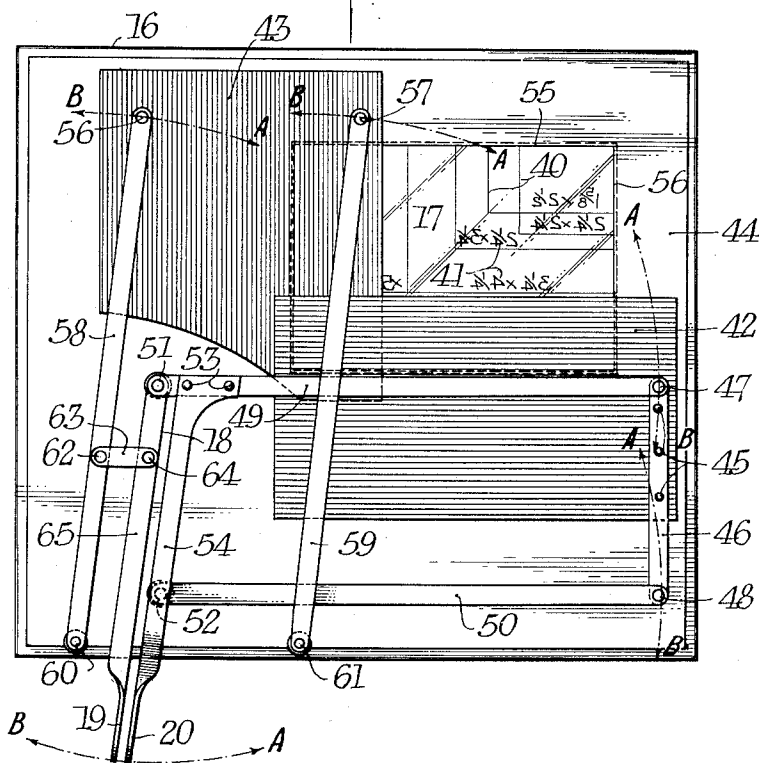
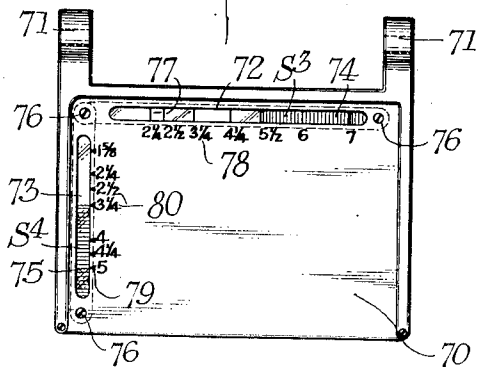


FIG. 4.



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PHOTOGRAPHIC PRINTING AND VIGNETTING APPARATUS

Application filed June 24, 1927. Serial No. 201,167.

This invention relates to photography, and more particularly to photographic printing apparatus provided with vignetting mechanism. One object is to provide a masking device which may be easily altered in shape by a convenient control. Another object is to provide separate controls for the movable mask members which may be moved together for rapid adjustment, and which may be individually moved for fine or accurate adjustment. Another object is to provide a simple means for visually adjusting the masking members. Another object is to provide transparent paper and negative holders, such as a printing panel and platen, through which adjustment of the masking members may be observed. Another object is to provide a suitable marking on the platen by which registration may be obtained, and other objects will appear hereinafter from the following specification the novel features being particularly pointed out in the claims at the end thereof.

This printing machine is for an improvement over the machine shown in my copending application, Serial No. 129,230, filed Aug. 14, 1926, for Photographic printing machine.

Coming now to the drawings wherein like reference characters denote like parts throughout:

Fig. 1 is a section through a typical embodiment of my invention parts being omitted for the sake of clearness;

Fig. 2 is a top plan view of a preferred form of platen constructed in accordance with and illustrating one embodiment of my invention, portions of the masking members being diagrammatically shown in this view;

Fig. 3 is a bottom plan view of the top of the printing machine shown in Fig. 1; and

Fig. 4 is another embodiment of a platen which may be used with my machine.

As shown in Fig. 1, this printing machine is preferably of a type using a point light source such as is described in my copending application above referred to. It may consist of a cabinet 1 mounted above a table top 2 which is supported by legs 3. There is an aperture 4 in the table top to support a two-part lamp house, part 5 consisting of

side and end walls 6 and an angularly disposed bottom wall 7 having a window 8 of sufficient size to permit a beam of light from the filament 9 of lamp 10 mounted in a socket 11 in the second lamp house compartment 12 to pass therethrough.

The cabinet 1 preferably consists of a front wall 13, side walls 14 and a rear wall 15, all of which support an angularly disposed top wall 16. The top wall 16 carries a panel 17 which is preferably of plate glass. Between the panel 17 and the lamp 9 is movably mounted a masking mechanism designated broadly as 18. As will be hereinafter more fully described the parts of this masking mechanism may be adjusted by means of the handles 19 and 20 which project out through a slot 21 in the front wall of the cabinet.

Over the printing panel 17 there is mounted a platen 22 which in the form illustrated is preferably hinged at 23 to a shaft which is supported by the brackets 24, the platen having arms 25 which are grooved and which extend through suitable slots 26 in the top of the printer. The platen may be operated by means of a link 27 pivoted at 28 to one arm 29 of the bell crank lever pivotally supported at 30 by a bracket 31 and having an arm 32 pivoted at 33 to a link 34 which may be operated through a crank 35. Shaft 36 supporting crank 35 may be turned through 180° by any suitable mechanism, which is not shown since it forms no part of the present invention.

In a preferred embodiment of my platen, shown in Fig. 2, there is a metallic frame 37 having arms 25 preferably forming a part thereof, and having a bearing 38 which supports a link 27. I prefer a sight opening through the platen and in this case the sight opening constitutes approximately the entire face of the platen. Here it consists of a heavy sheet of pyroxylin composition material 22C which may be suitably attached to the frame 37. I prefer to tint this material red, green, or some other color which will permit the operator to look through the platen and not become blinded by the brilliance of the printing lamp 9, it being only necessary for the purpose of this invention to be able to deter-

mine the location of the mask by looking through the platen.

In the form shown in Fig. 2 I provide a series of lines 40 which may be ruled or engraved on the light transmitting portion 39, these lines being preferably made of the size and shape of the most popular photographs. I also find it useful to provide designating characters 41 for indicating the size of the various picture areas defined by the lines. Obviously when the masking mechanism 18 is moved by the handles 19 and 20 that part of the printing panel 17 which is not covered by the masking mechanism will transmit light, and since a point light source is used the lines will be sharply defined. In Fig. 2 the shaded areas S1 and S2 indicate the areas covered by parts of the mask and illustrate how an operator may view the masking mechanism through the side opening in the platen when the mechanism has been set for 5 x 7 inch prints.

As shown in Fig. 3 the masking mechanism 18 preferably consists of two plates 42 and 43 which are movably mounted on the underneath side 44 of the printer top 16. Each of these plates is pivotally carried by a pair of parallel arms. Plate 42 is riveted at 45 to a strap 46 which at 47 and 48 is pivoted to the parallel arms 49 and 50. Arm 49 is attached to the stud 51 and arm 50 is pivoted to a second stud 52. Arm 49 is riveted at 53 to the arm 54 which terminates in a handle 20. Obviously when this handle is moved in the direction A or B the parallel arms 49 or 50 swing the masking member 52 to and from the edges 55 of the printing panel 17 which constitutes one edge of the mask.

Plate 43 is pivotally attached at 56 and 57 to the parallel links 58 and 59 which are supported by the studs 60 and 61. Link 58 is pivoted at 62 to a connecting link 63 which is pivoted at 64 to an arm 65 mounted upon the stud 51. Arm 65 terminates in the handle 19. As the handle 19 is swung in the direction A or B the mask member 43 is swung to or from the edge 56 of the printing panel 17 which constitutes a second edge of the masking device.

It should be noted that when handle 20 is swung in the direction indicated by A that the movable plate 42 moves to reduce the uncovered area of the platen 17. Similarly when handle 19 is swung in direction A masking plate 43 moves towards edge 56 to close the uncovered area of the printing panel. By thus arranging these handles they are adapted to be moved together so that the masks may be quickly and simultaneously moved to reduce or enlarge the size of the printing mask. After the approximate size is obtained each masking member may be individually adjusted by moving both or either handle separately.

In Fig. 4 I show a second embodiment of

my invention in which the platen consists of an opaque plate 70 which is provided with bearings 71 which may be suitably mounted on the printing cabinet. In the opaque plate 70 I provide a pair of sight openings 72 and 73, these openings preferably being in the form of windows which may be covered with light transmitting material such as colored or uncolored pyroxylin sheets 74 and 75. These sheets may be countersunk in the base of the platen 70 so as to be flush therewith, and may be attached to the platen in any suitable manner as by screws 76.

I have shown window 74 as being provided with a series of scale lines 77 opposite each of which there is a designating character 78 for indicating the size of the mask opening. In side opening 73 I have shown a different type of scale wherein arrows 79 are used, the line 77 being omitted. The scale 80 is provided to indicate the different mask sizes. The shaded areas S3 and S4 indicate how the sight openings would appear to an operator who has adjusted the masking members for $3\frac{1}{4} \times 5\frac{1}{2}$ inch pictures.

The operation of my printing machine is as follows: In commercial work where standard mask sizes are used the operator may lower the platen 22 and may move handles 19 and 20 until the masking members 42 and 43 approximate the size of the mask to be used. Fine adjustment of these members may then be made by moving handles 19 and 20 separately if necessary. By looking through the sight openings in the platen the masks may be accurately adjusted by bringing them into registration with the size designating scales of the platen. Since it is generally difficult to read scales in a dark room I prefer the embodiment shown in Fig. 2 wherein both the size designating lines and characters are always visible due to the fact that the area of the printing panel being used is always uncovered so that the particular portion of the scale being used is illuminated by the printing lamp 10. By simultaneously using both masking members for at least the greater part of their movement in changing from one mask size to another masking member, much time is saved so that mechanism constructed in accordance with my invention as above described greatly facilitates the rapid alteration of the masking mechanism.

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

1. In a printing device, the combination with a panel, of a platen movable with respect to the panel, said platen having a sight opening therethrough, a scale on the platen graduated into units of size visible together with the sight opening, movable masking mechanism at least partially visible through the sight opening in the platen, means for adjusting the masking mechanism to different

sizes, whereby the masking mechanism may be adjusted by moving the mechanism into registration with the desired scale graduation on the platen.

2. In a printing device, the combination with a panel, of a platen movable with respect to the panel, said platen having a sight opening therethrough, a light transmitting covering for the sight opening, a scale graduated into units of size thereon, movably mounted masking mechanism, and a handle for operating said mechanism whereby the mask size may be altered by the handle, the masking mechanism being registered with the scale graduation.

3. In a printing device, the combination with a panel, of a platen movable with respect to the panel, said platen having a sight opening therethrough, a light transmitting covering for the sight opening, a plurality of angularly disposed lines carried by the light transmitting covering of the sight opening, a mask including a movably mounted member adapted to be moved to and from registration with the angularly disposed lines, whereby the size of the mask may be visually adjusted.

4. In a printing device, the combination with a panel, of a platen movable with respect to the panel, said platen having a sight opening therethrough, a colored light transmitting material covering the sight opening, size graduations carried by the colored material, and adjustable masking members adapted to be positioned visually by locating said movable members by the graduations.

5. In a printing device, the combination with a panel, of a platen movable with respect to the panel, said platen having a sight opening therethrough, a colored light transmitting material covering the sight opening, a plurality of size designating lines carried by the light transmitting material, a plurality of movable masking members, and means for moving the masking members to and from registration with the plurality of size designating lines.

6. In a printing machine, the combination with a printing panel, of a platen movable to and from the panel, said platen including a frame and a transparent area on the frame adapted to lie over the panel when the platen is lowered thereon, a plurality of print sizing lines on the transparent panel, a movable masking device adapted to be adjusted relative to the print sizing lines whereby a mask size may be determined through the platen.

7. In a printing machine, the combination with a printing panel, of a platen movably mounted thereover having a sight opening therethrough, a light spaced from the panel, masking mechanism between the light and platen, and size designating characters located outside of the area between the light and printing panel by which the mask size

may be determined through the sight opening of the platen.

8. In a printing machine, the combination with a printing panel, of a platen movably mounted thereover having a sight opening therethrough, a picture size designating scale carried by the platen cooperating with the sight opening, a light spaced from the panel, masking mechanism between the platen and the light whereby a shadow cast by the masking mechanism may be visible through the sight opening enabling the mask size to be read off the size designating scale.

9. In a printing machine, the combination with a printing panel, of a platen movably mounted thereover having a sight opening therethrough, a light spaced from the panel, masking mechanism between the light and platen, size designating characters carried by the platen cooperating with the sight opening, and handles for altering the size of the mask opening interconnected with the masking mechanism, the movement of the masking mechanism under the force applied to the handles being visible through the sight opening in the platen.

10. In a printing machine, the combination with a printing panel, of a platen movably mounted with respect thereto and having a top spaced from the printing panel, a masking device associated with the printing panel and located beneath the platen, size designating characters located on the top of the platen and means for indicating on said size designating characters the location of the masking mechanism.

11. In a printing machine, the combination with a printing panel, of a platen movably mounted with respect thereto, said platen including a light transmitting area, and size designating data carried by the light transmitting platen area.

Signed at Rochester, New York, this 18th day of June, 1927.

ROY S. HOPKINS.