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F. BERN

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PHOTOGRAPHIC PRINTING DEVICE

Filed June 30, 1930

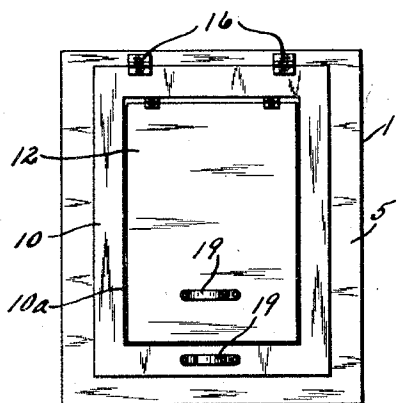


Fig. 1

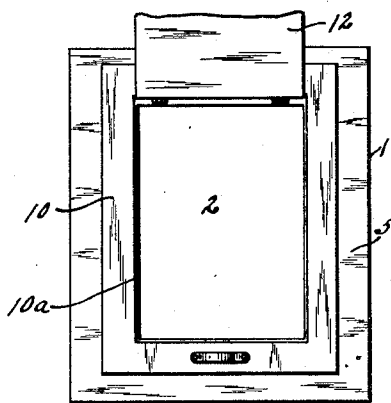


Fig. 2

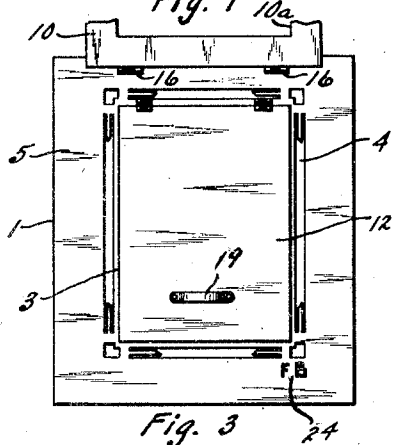


Fig. 3

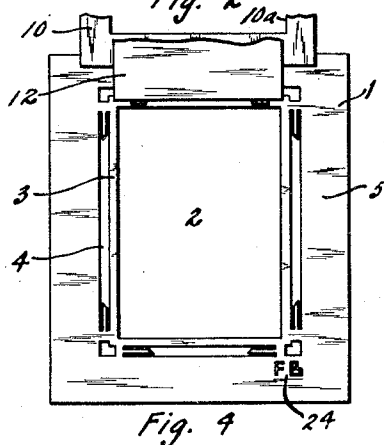


Fig. 4

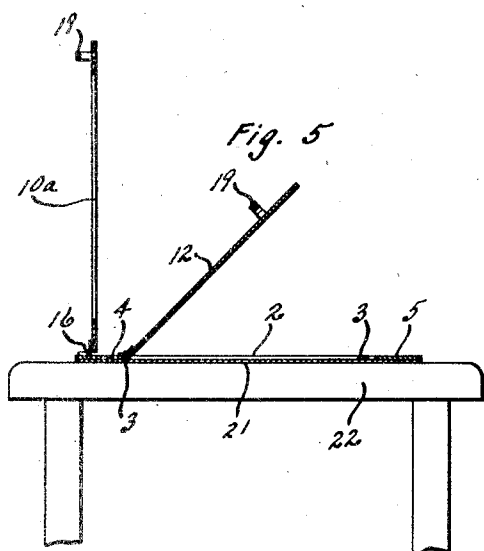


Fig. 5

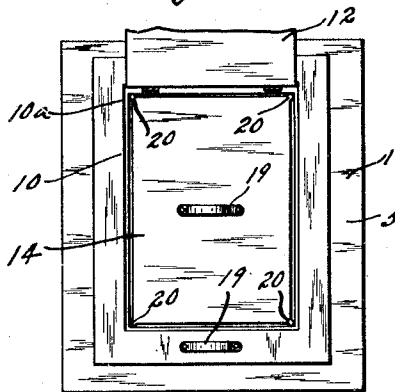


Fig. 6

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PHOTOGRAPHIC PRINTING DEVICE

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This invention relates to improvements in photographic printing devices for use in making by projection bordered photographs, such as enlargements.

5 The general objects of the present invention are the provision of an improved printing device of this character, by the use of which photographs having photographically produced inner borders may be easily, quickly and conveniently made, and without liability of misalignment or improper spacing of the inner border of the picture relative to the image portion thereof. Consequently, there is no loss of time or material due to faulty work and because of this and because of the quickness and ease with which the bordered photographs can be made, the cost thereof can be quite materially reduced. Of equal, if not greater importance, however, is the enhanced attractiveness of the photographs due to their inner borders, especially since said borders can be made in various shapes and designs and in either light or dark shades.

25 As to the construction of the device itself, it is extremely simple, so that it can be manufactured and sold at low cost. Moreover, it is of rugged character and will therefore successfully withstand considerable rough handling.

Further and more detailed objects of the invention are in part obvious and in part will appear more in detail hereinafter.

35 The invention will be more readily understood from the following description thereof, reference being had to the accompanying drawings in which

Fig. 1 is a top plan view of the present improved photographic printing device, with the inner border mask and the main image mask in masking position relative to the combined outer and inner border mask; Fig. 2 is a similar view with the image mask in non-masking position; Fig. 3 is a similar view with the inner border mask in non-masking position, the image mask, however, being in masking position; Fig. 4 is a similar view with both the inner border mask and the image mask in non-masking position; Fig. 5 is a vertical longitudinal

section view of the device with the parts thereof in somewhat the position shown in Fig. 2, said device being positioned on a suitable support and a photo-sensitive sheet being shown beneath said device; and Fig. 6 is a view similar to Fig. 2 but showing a supplemental and modified form of image mask in masking position.

Referring now to said drawings, the photographic printing device therein illustrated includes a suitable combined outer and inner border mask 1 having an inner light-transmitting area 2, an outer opaque area 5 and an intermediate area comprising opaque portions 3 and light-transmitting portions 4. The inner or central light-transmitting area 2 is for the transmission of the image portion of the picture to be printed and said area may be of any desired size and shape. It is here shown as a rectangular area longitudinally positioned or arranged relative to the mask 1, said mask being also of rectangular shape. The light-transmitting portions 4 of the intermediate area of the mask 1 is for the transmission of light for the inner border portion of the picture and said portions may be of any desired size, shape and design, depending upon what sort of inner border is desired in the picture. The intermediate area of the combined outer and inner border mask here shown includes two identical top and bottom parts, two identical side parts and four identical corner parts, as best shown in Fig. 3.

While the combined outer and inner border mask 1 may be made of any suitable material, either molded rubber or sheet metal is quite satisfactory, and the light-transmitting area 2 and the light-transmitting portions 4 thereof, may conveniently be formed by cutting in said mask suitable openings, as will be readily understood.

Obviously, the image and inner border parts of the picture must be made by separate exposures, so that means must be provided for covering or masking each part while the other is being exposed to the light in the printing operation.

The present printing device therefore in-

cludes in addition to the combined outer and inner border mask 1 an inner border mask for covering or masking the light-transmitting portions 4 of the mask 1 used in making the inner border part of the picture; a main image mask 12 for covering or masking the inner light-transmitting area 2 of the mask 1 used in making the image part of the picture; and a supplemental image mask 14 adapted to cover less than the entire surface of the image-transmitting area 2 of the mask 1 and thereby provide or produce within the image part of the picture some ornamental effect, such as a supplemental inner border.

Obviously, said inner border mask and said image masks must be capable of movement into and out of covering or masking position with respect to the combined outer and inner border mask 1, and in the present embodiment of the invention, the inner border mask and the main image mask 12 are hinged to the mask 1, while the supplemental image mask 14 is unattached to the mask 1. The inner border mask is hinged at 16 to the top portion of the outer opaque area 5 of the mask 1 adjacent the top edge thereof while the main image mask 12 is hinged to a top opaque portion 3 of the intermediate area of said mask 1 adjacent the top edge of the inner light-transmitting area 2 thereof. For convenience in manipulating them, each mask, except mask 1 is provided with a suitable handle 19.

As to the construction of the inner border and image masks, they, like mask 1 may be made of any suitable material, either molded rubber or sheet metal being satisfactory. While the inner border mask may have an opaque area of just sufficient size to properly cover the intermediate area of the mask 1, said inner border mask is here shown as having an opaque area 10 of slightly larger size, so that it covers or overlaps some of the outer opaque area 5 of the mask 1 surrounding the intermediate area thereof. Since said inner border mask must not cover the inner light-transmitting, image-exposing area 2 of the mask 1, said inner border mask is provided with a central light-transmitting, image-exposing area 10a herein shown as in the form of an opening and of the same size and shape as said light-transmitting, image-exposing area 2 of the mask 1, as best shown in Fig. 2. The main image mask 12 is, of course, of the same size and shape as the light-transmitting image-exposing area 2 of the mask 1 and of the light-transmitting, image-exposing area 10a of the inner border mask.

The supplemental image mask 14 may be of any desired size, shape and design, depending upon what ornamental effects in the image part of the picture are desired. This mask 14 may be used to provide a bor-

der, either plain or fanciful, at the outer edge of the image part of the picture, or to provide within the image part of the picture any design desired. In construction, this shield may be of the same size and shape as the light-transmitting, image-exposing area 2 of the mask 1 and provided with one or more light-transmitting portions to expose therebelow the necessary part or parts of said light-transmitting, image-exposing area 2 to produce in the image part of the picture the desired border or design. In the present instance, however, the mask 14 has no light-transmitting portions, but is a simple opaque member slightly smaller in size than the light-transmitting, image-exposing area 2 of the mask 1. Therefore, when this mask 14 is in masking position with respect to said area 2 of the mask 1, as indicated in Fig. 6, the outer edge of said area is exposed, so that a narrow border is made just within the image part of the picture.

In order that this supplemental image mask 14 may be easily and quickly positioned in proper masking position with respect to the light-transmitting, image-exposing area 2 of the mask 1 and thereby enable the border produced by the use of said mask 14 to be of the proper width throughout and properly spaced with respect to said image part of the picture, means is provided for fixing and determining the proper masking position of said mask. Since, in the present instance, the light-transmitting, image-exposing area 2 of the mask 1 is in the form of an opening in said mask, said means is here shown as in the form of projections 20 which are arranged at the corners of the mask 14 and which engage the inner edge of an opaque portion 3 of the intermediate area of the mask 1 around said light-transmitting, image-exposing opening 2. By means of these projections, the mask 14 is always centered or properly positioned in the light-transmitting, image-exposing opening 2 of the mask 1, as will be readily understood.

In making bordered photographs, such as enlargements, the present device is used as follows:

Let us assume that the enlargement is to be made on an eleven by fourteen inch sheet of photo-sensitized paper and that the usual or standard size for the image portion of a picture on a sheet of such size is six by eight inches. The photographer selects from his set of printing devices of the character here shown, one which has an eleven by fourteen inch combined outer and inner border mask member provided with an inner light-transmitting, image-exposing area of six by eight inches.

The photo-sensitive sheet 21 on which the picture is to be printed is laid upon a

suitable support, such as the table 22, Fig. 5, arranged beneath the usual enlarging camera (not shown). The printing device is then laid over the sheet with the mask 1 of said device, in proper registry therewith, such registry being a simple thing to accomplish, inasmuch as said mask 1 and said sheet coincide as to their outer dimensions. For the printing of the image part of the picture, which part is the first to be printed, the light-transmitting, image-exposing area 2 of the mask 1 is, of course, exposed and the light-transmitting, inner border-exposing portions 4 of said mask member are, of course, covered or masked by the inner border mask, all as shown in Fig. 2. With the parts of the printing device in the position shown in Fig. 2, the enlarging camera is operated and the image part of the picture is printed by this exposure.

After the image part of the picture has been thus printed, it is covered or masked by the main image mask 12, and the inner border mask is swung to non-masking position, as indicated in Fig. 3. The light in the enlarging camera is again turned on and an inner border corresponding to the now exposed light-transmitting portions 4 of the intermediate area of mask 1 is now photographically produced on the photo-sensitive sheet 21 around the recently printed image part of the picture. The color of the border can be regulated, of course, by the duration of the exposure, the longer the exposure, the darker the border. Since the light-transmitting area 2 for the image part of the picture and the light-transmitting portions 4 for the inner border part of the picture are in the same member, there is always proper relationship or spacing between the image and border parts of the picture, as will be readily understood.

If it is desired to provide the image part of the picture with a border or with some design, then the main image mask 12 is swung to non-masking position, as indicated in Fig. 4, and the supplemental image mask 14 is now used. This supplemental image mask is placed in masking position with respect to the light-transmitting image-exposing area 2 of the mask 1 as indicated in Fig. 6, proper positioning of said mask being determined, in the present instance, by the mask projections 20. The outer edge of the image part of the photo-sensitive sheet 21 is thus again exposed and with the present mask 14 a narrow border is produced just within the image part of the picture. If desired, the light-transmitting portions 4 of the intermediate area of the mask 1 for producing the usual inner border may not be exposed, so that the picture will have but one inner border, to-wit, that produced by the use of the supplemental image mask 14. It is the practice of many photographers

to provide each of the photographs made by them with an identifying marking and this may be photographically accomplished with the present device. In the opaque area 5 of the mask 1, say just below the right hand side of the light-transmitting, image-exposing area 2 thereof, the photographer's name, initials or emblem may be provided in light-transmitting form, two initials 24 being here shown. The means here shown for covering these initials during the image producing exposure is the inner border mask. These initials are exposed, however, during the border producing exposure or exposures, so that said initials will be in either the shade of the main border of the picture or in the darker shade of the supplemental border, if there is one.

As in the case of the picture border or borders, these initials will always be properly spaced or positioned with respect to the image part of the picture, so that there can be no loss of time or material due to faulty work caused by misalignment or improper spacing of either the border or borders of the picture or of the photographer's identifying marking.

From the foregoing, it will be apparent that there is almost no limit to the character of designs or borders with which the pictures may be provided. The light-transmitting portions 4 of the intermediate area of the combined outer and inner border mask 1 may be of any desired design so that the picture may have any desired main border. Likewise, the supplemental image mask 14 may be of any desired shape and design, so that any desired ornamental effect can be produced within the image part of the picture, all as will be readily understood.

What I claim is:

1. A photographic printing device for making bordered photographs by projection, comprising a combined outer and inner border mask, an inner border mask, and an image mask; said combined outer and inner border mask having an outer opaque area, an inner light-transmitting image-exposing area and an intermediate area, said intermediate area being made up of opaque portions and light-transmitting inner-border-exposing portions and said opaque area, during the entire printing operation, lying above and constituting the mask for the outer border part of the printing sheet which receives the bordered photograph; said inner border mask being movable into and out of masking position relative to said combined outer and inner border mask and having a light-transmitting image-exposing area and an opaque area, said light-transmitting image-exposing area being of the same size and shape as the light-transmitting image-exposing area of the combined outer and inner border mask and said

opaque area, during the printing of the image part of the photographic printing operation, constituting the mask for the light-transmitting inner-border-exposing portions of the intermediate area of the combined outer and inner border mask; and said image mask being movable into and out of masking position relative to said combined outer and inner border mask and having an opaque area of the same size and shape as the image-exposing area of said combined outer and inner border mask and hence, of the same size and shape as the image-exposing area of the inner border mask, said opaque area constituting the mask for the inner light-transmitting image-exposing area of the combined outer and inner border mask during the printing of the inner border part of the photographic printing operation.

2. A photographic printing device as set forth in claim 1, characterized in that the inner border mask and the image mask are permanently mounted by hinge means on said combined outer and inner border mask and in that the light-transmitting area of said inner border mask is in the form of an opening in said mask and characterized further in that said image mask is mounted for swinging movement through said light-transmitting opening of said inner border mask.

3. A photographic printing device as set forth in claim 1, characterized in that the intermediate area of said combined outer and inner border mask includes an opaque portion entirely surrounding the inner light-transmitting image-exposing area of said mask.

4. A photographic printing device as set forth in claim 1, characterized in that the printing device also includes a supplemental image mask having an opaque area slightly smaller than the light-transmitting image-exposing area of the combined outer and inner border mask, whereby when said supplemental image mask is in masking position relative to the light-transmitting image-exposing area of the combined outer and inner border mask, the outer edge part of said area is exposed for the printing of a supplemental narrow border at the outer edge of the image part of the picture.

In testimony whereof I hereby affix my signature.

FRANK BERN.