

[54] **MASS PRODUCTION PHOTOGRAPHIC PRINTING METHOD**
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 [58] Field of Search 355/46, 77, 40, 74, 125, 127, 355/114, 132, 54

[56] **References Cited**
 UNITED STATES PATENTS
 2,490,033 12/1949 Current 355/77

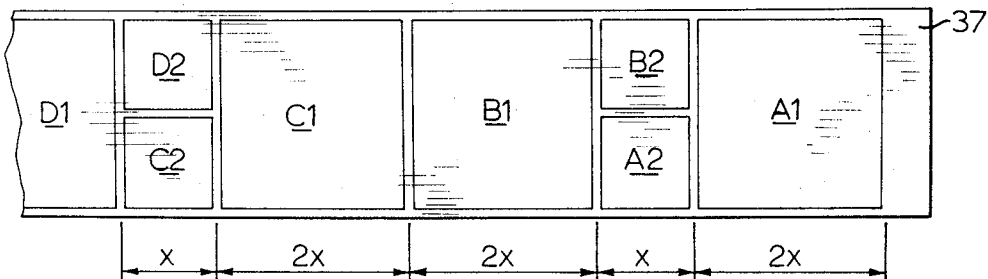
2,682,193 6/1954 Schubert et al. 355/77
 3,401,594 9/1968 Daughtery 355/46
 3,418,049 12/1968 Whitlatch 355/74
 3,424,527 1/1969 Bremson 355/46

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[57] **ABSTRACT**

A mass production photographic printing method for producing a strip containing a plurality of large and small prints, with one large print and one small print made simultaneously from each negative. The prints are arranged on the strip so that for every two regular sized prints, there is a space of predetermined size, with two wallet sized prints substantially filling such space. The strip is cut after printing so that each regular sized print has one wallet sized print associated with it.

1 Claims, 7 Drawing Figures



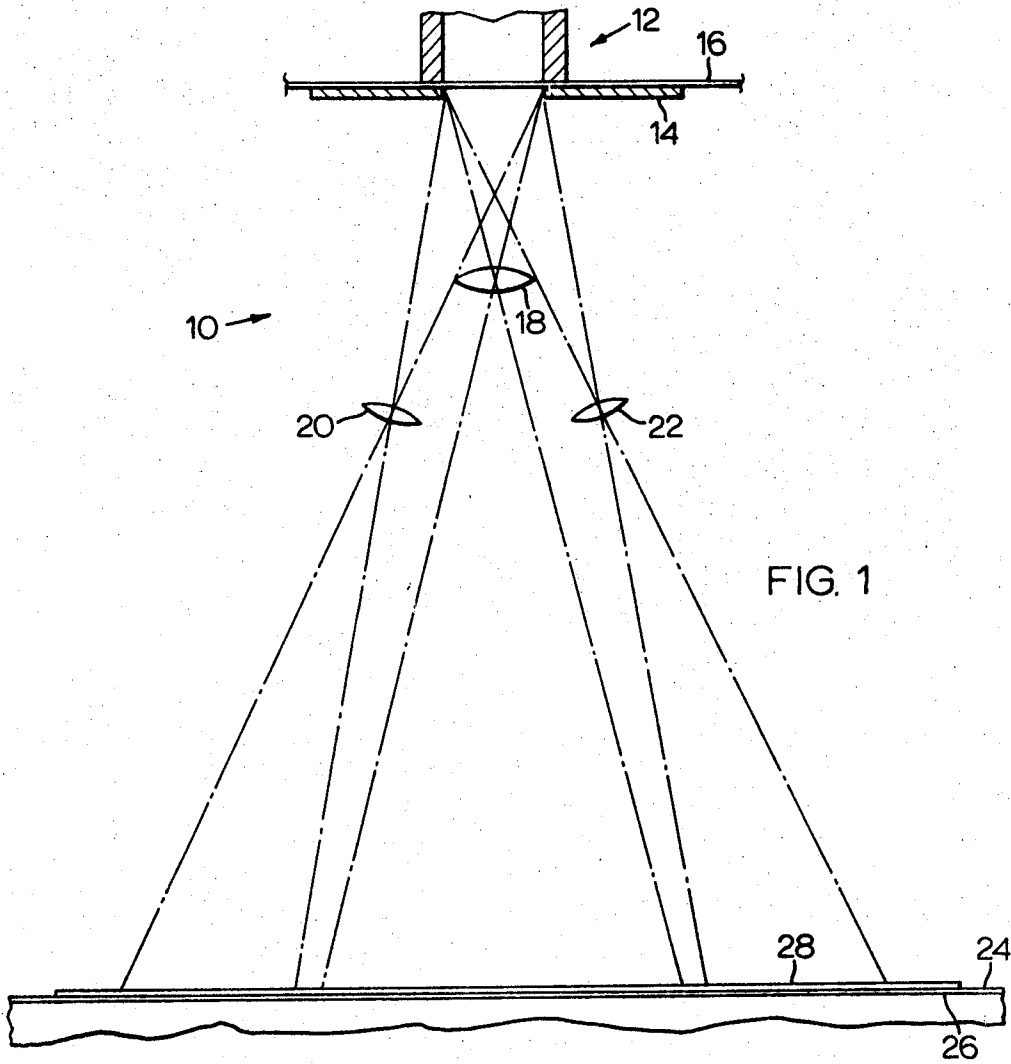


FIG. 1

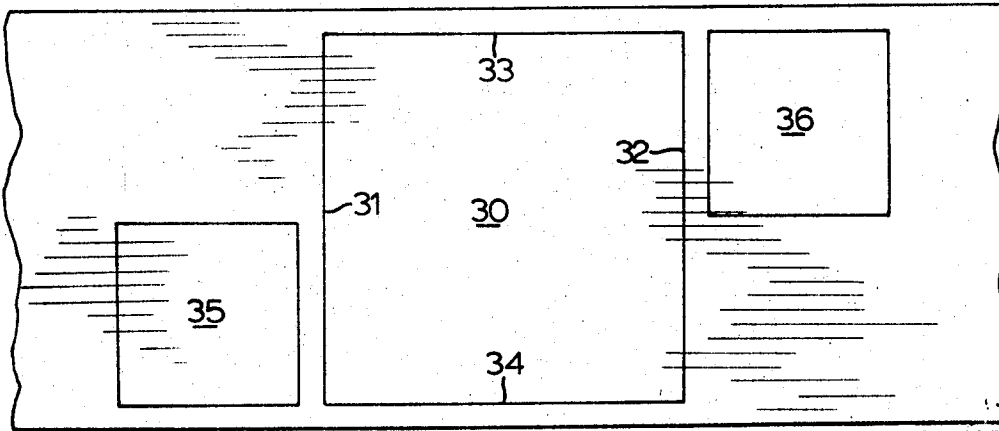
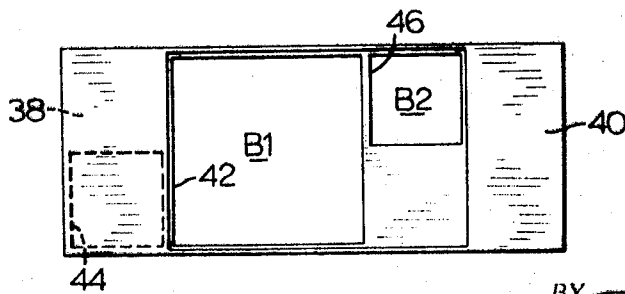
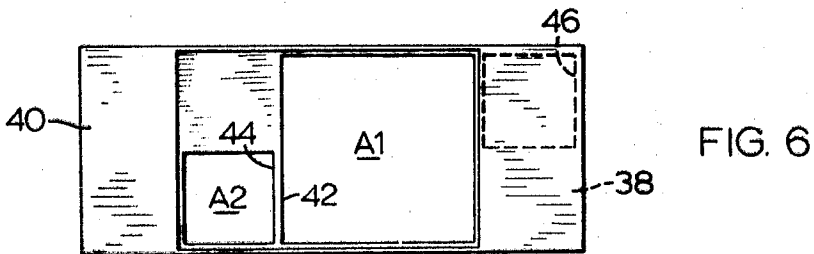
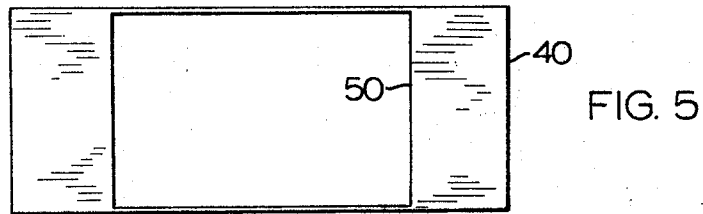
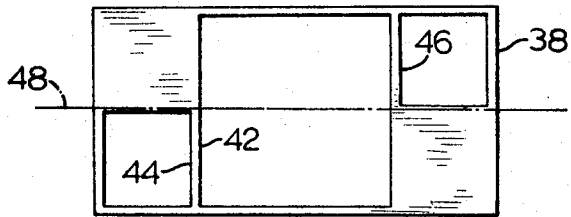
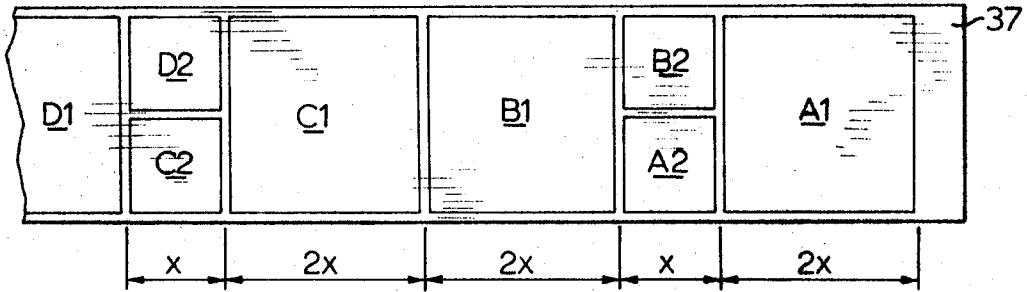


FIG. 2

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MASS PRODUCTION PHOTOGRAPHIC PRINTING METHOD

This invention relates to the art of mass production photographic printing and in particular to a new method of producing a strip of prints from photographic negatives.

A number of photographic finishing firms offer a free wallet size print with every regular size print they make, as a sales promotion. In a popular method used by many such firms, the wallet size print is printed beside the regular print, and the relative sizes of the prints is such that an extra blank space is left beside the wallet size print, this space generally being used for advertising. This extra space results in a considerable amount of wastage of photographic paper, and it is an object of this invention to eliminate such wastage.

In the present invention, when successive negatives are passed through a mass production photographic printing machine, a large print and a small print are made simultaneously from each negative. The prints are made from a large strip of photographic paper (usually in a roll) and the prints are arranged on the strip so that for every two regular size prints, there is a space of predetermined size, with two wallet size prints substantially filling such space. The strip is cut after the roll has been printed so that each regular size print has one wallet size print associated with it.

In the drawings:

FIG. 1 is a diagrammatic view of a portion of a photographic printing machine;

FIG. 2 is a plan view of a strip of photographic printing paper illustrating the relative positions of prints produced by the printing machine in accordance with the present invention;

FIG. 3 is a view similar to FIG. 2 showing the relative positions of a number of prints on a strip of photographic printing paper;

FIG. 4 is a plan view of a stationary mask for use with the printing machine;

FIG. 5 is a plan view of an oscillatory mask used together with the stationary mask; and

FIGS. 6 and 7 are diagrammatic plan views showing the function of the masks.

Referring to FIG. 1, a photographic enlarger is generally indicated by reference numeral 10, and it includes a conventional light source 12 and a negative guide 14 for guiding a strip of photographic negatives 16 past the light source 12. The enlarger 10 has three lenses 18, 20 and 22 which form three separate images from the same negative. A strip of photographic printing paper 24 is held in place on a flat surface 26 beneath a two-piece mask 28, in the focal plane of the lenses 18, 20 and 22. The relative positions of the images produced by the lenses 18, 20 and 22 is best shown in FIG. 2. Lens 18 produces a relatively large square image 30 which has transverse sides 31, 32, and longitudinal sides 33, 34, and lenses 20 and 22 produce smaller square images 35 and 36 respectively. The area of the image 30 is approximately four times the area of each of the similar images 35 and 36 so that the sides of the images 35, 36 are of half the length of the sides of the image 30. The mask 28 is arranged to blank out either the image 35 or the image 36 so that in one projection through the enlarger 10 the image 30 is produced together with one of the images 35, 36. The details of the mask 28 will be described below.

Reference is now made to FIG. 3 which shows a series of prints A1, A2; B1, B2; C1, C2; and D1, D2 on a strip of photographic printing paper 37. The prints A1 and A2 are made simultaneously, then the prints B1 and B2, and so on. To produce these prints a pair of masks 38 (FIG. 4) and 40, (FIG. 5) are placed together to form the mask 28 (FIG. 1). The mask 38, which is stationary, comprises a thin sheet of opaque material having a central aperture 42 corresponding to the

size of the relatively large prints A1, B1 etc., and a pair of smaller similar apertures 44, 46 which correspond to the size of the smaller prints A2, B2, C2 etc. The apertures 44, 46 are positioned on either side of the aperture 42 with the aperture 44 on one side of a longitudinal centerline 48 and the aperture 46 on the opposite side of the centerline 48.

The oscillatory mask 40 has a central rectangular aperture 50, the sides of which are proportioned such that when the mask 40 is superimposed on the mask 38 in one of the positions shown in FIGS. 6 and 7, the mask 40 exposes either the apertures 42 and 44 (FIG. 6) or apertures 42 and 46 (FIG. 7) depending upon the position of the mask 40.

Reference is again made to FIG. 3. The strip 37 of photographic printing paper is positioned in the projector 10 (FIG. 1) with the oscillatory mask 40 in the position shown in FIG. 6 relative to the stationary mask 38. A first negative is projected to expose the prints A1 and A2 simultaneously. Next the printing paper is advanced a distance of $3x$, where x is the length of the prints A2, B2, etc., and $2x$ is the length of the prints A1, B1, etc., (these dimensions include a border if desired). At the same time as the printing paper is advanced, the oscillatory mask 40 is moved to a second position as shown in FIG. 7. A second negative is exposed to produce prints B1 and B2 and the oscillatory mask is then returned to its first position and the printing paper is advanced a distance of $2x$. A third negative is then exposed to make prints C1 and C2 and the cycle is repeated. Each cycle produces four prints similar to A1, A2 and B1, B2.

The strip 36 can be perforated so that prints A1, A2 can be separated from the strip 37 and also from each other. If desired, rectangular prints can be made from rectangular negatives, the proportions of the large prints relative to the small prints will remain the same. It will be understood that other forms of masks could be employed in accordance with the invention. For example, the mask 40 could be kept stationary and the mask 38 oscillated transversely instead of longitudinally as described above. Alternatively, the mask 38 could be provided with hinged flaps covering the apertures 44, 46, the flaps being pivotable in either a horizontal or a vertical plane to alternately mask or expose the printing paper beneath the respective apertures 44, 46.

What I claim as my invention is:

1. A method of producing a plurality of photographic prints in a strip of photographic paper, comprising:
 - a. masking said strip to expose a first region and a second region, the area of the second region being about one-quarter the area of the first region, the first and second regions being rectilinear and of similar shape, one side of said first region being aligned with one side of said second region and said first and second regions being positioned side by side on said strip,
 - b. photographically exposing said first and second regions to light containing an image to be printed,
 - c. advancing said strip a distance equal to three times the length of said one side of said second region,
 - d. masking said strip to expose a third region and a fourth region, the third region being identical to the first region and the fourth region being identical to the second region, the second and fourth regions being positioned side by side transversely to said strip, one side of said third region being aligned with one side of said fourth region, said one side of said third region being opposite to said one side of said first region,
 - e. photographically exposing said third and fourth regions to light containing another image to be printed,
 - f. advancing said strip a distance equal to two times the length of said one side of said fourth region, and
 - g. repeating the aforesaid steps.

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