

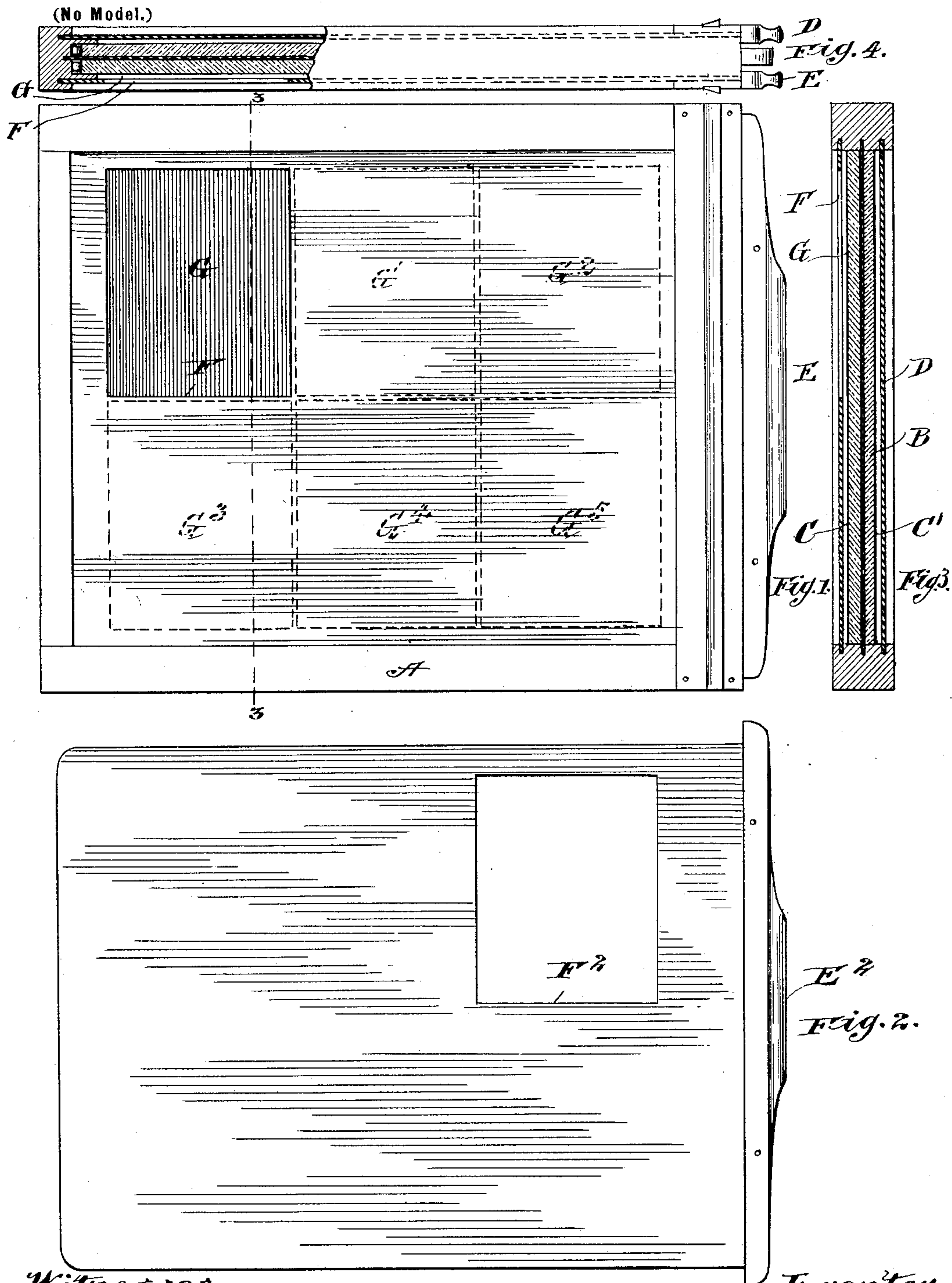
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G. J. MILLER.

MEANS FOR TAKING A SERIES OF PHOTOGRAPHIC NEGATIVES ON SINGLE
PLATES OR FILMS.

(Application filed May 13, 1901.)



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UNITED STATES PATENT OFFICE.

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MEANS FOR TAKING A SERIES OF PHOTOGRAPHIC NEGATIVES ON SINGLE PLATES OR FILMS.

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To all whom it may concern:

Be it known that I, GILBERT J. MILLER, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Means for Taking a Series of Photographic Negatives on a Single Plate or Film, of which the following is a specification.

My invention relates to a novel expedient whereby a single sensitized photographic plate or film may be successively exposed throughout distinct parts or sections thereof to the same or different subjects, thereby producing on the plate or film a series of distinct and separate negatives, preferably of equal dimensions and like shapes and symmetrically arranged or grouped on the plate or film, the object of my invention being to enable a variety of subjects or a variety of poses or positions of a single subject to be presented on a single picture and produced by a single printing operation from a common negative.

To this end my invention resides in a plate or film holder having specially-formed slides which enable different parts or sections of a plate or film to be exposed successively to the rays from the lens without affecting the surface of the plate or film beyond the exposed part, all as hereinafter described, and more particularly pointed out in the claims.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of an ordinary rectangular double plate-holder having my invention applied thereto. Fig. 2 is a side elevation of a slide withdrawn from the holder and illustrating the manner of aperturing the same to produce the effects sought by my invention. Fig. 3 is a transverse sectional view on line 3 3 of Fig. 1; and Fig. 4 is a plan of Fig. 1, showing the holder in longitudinal edge view partly in horizontal section broken away.

Referring to the drawings, in which like letters of reference indicate like parts, A indicates a rectangular double plate-holder of the usual and well-known construction, having the usual centrally-located partition B, upon either side of which are supported the sensitized plates C and C', as well understood

by those familiar with the art of photography.

D indicates a solid or integral slide of the usual form and construction adapted to cover and shield the sensitized plates from the light at all times except when an exposure is to be made through the lens of the camera for the purpose of registering on the plate the object to be photographed. With each double plate-holder there will of course be provided a pair of these usual slides D, one for each plate.

Referring now to the device in which the essential feature of my present invention is embodied and by which, in combination with the usual frame or holder, my invention is carried out, E indicates one of a series of additional or auxiliary slides, which may be made of metal, press-board, celluloid, rubber, or other suitable material and similar in all respects to the regular slide D, except that it has formed therethrough an opening or aperture F. This aperture may be square, oblong, round, oval, diamond, star, or of any other shape or design, but in the particular embodiment of the invention illustrated in the drawings is of oblong rectangular form and occupies approximately one-sixth of the exposed surface of the slide and is made of a size and shape corresponding to the field or space G which it is designed the individual picture shall occupy on the underlying plate or negative. In the form of my invention herein shown there will be employed, in connection with the holder A and the regular slides D, three of these auxiliary apertured or open slides, differing from each other only in the relative locations of the apertures. The slide E has the aperture F located at the left-hand end of the upper half of its area, as shown in Fig. 1. The second auxiliary slide (not shown) will have a similar aperture, which when the slide is in position will overlie a rectangular space on the plate indicated by dotted lines and marked G' in Fig. 1. The third auxiliary slide (shown withdrawn from the holder in Fig. 2 and indicated by the reference-letter E²) has an aperture F², located at the right-hand end of the upper half of its area, which aperture when the slide E² is in position in the holder will overlie the space marked G² in Fig. 1.

By inserting the three apertured slides

above described in the holder A in an inverted relation to that already described and shown in the drawings it will be obvious that the several apertures of the several slides will be
 5 caused to overlies spaces indicated by G^3 , G^4 , and G^5 , respectively, on the lower longitudinal half of the plate or film.

The operation of my invention and the manner of carrying the same into effect for the
 10 purpose of producing a group or series of distinct and separate negatives successively on a single plate is as follows: The ground glass is divided by a series of lines into a series of spaces corresponding in size and
 15 relative location to the spaces indicated by the reference-letters G, G' , G^2 , G^3 , G^4 , and G^5 in Fig. 1. When a series of pictures is to be taken, the subject is focused on the ground glass in one of the separate spaces thus
 20 formed. The lens is then capped, the plate-holder placed in position, the solid slide withdrawn, and that one of the auxiliary slides whose opening corresponds in relative location to the space on the ground glass on which
 25 the subject has been previously focused is inserted in the plate-holder. The exposure is then made, the open slide withdrawn, and the solid slide replaced. This operation is then repeated with reference to the remaining in-
 30 dividual spaces formed on the ground glass until a complete series of pictures occupying the entire area of the plate or film has been recorded, whereupon the latter may be developed and the series of negatives produced
 35 thereon by a single operation.

In the particular embodiment of the invention herein illustrated it will be seen that it will be necessary to employ only half as many open slides as there are separate pictures to
 40 be taken, by reason of the fact that each slide can be used in the position shown and also in an inverted position to effect the taking of two endwise-adjacent pictures on the two longitudinal halves of the plate, respectively.

By reason of the fact that in the taking of each picture only the rectified light-rays transmitted through the lens from the object or field being photographed impinge upon the exposed section of the sensitized plate or
 50 film, and that in lines practically normal thereto, there is no appreciable tendency to fog the plate or film around the margins of the apertures in the slides, and hence the separate areas of exposure G, G' , G^2 , G^3 , G^4 ,
 55 and G^5 may be located closely adjacent to each other.

It will be obvious from the foregoing disclosure of my invention that the same is by no means limited in its principle to the em-
 60 ployment of any particular number of auxiliary slides or to any particular size or relative location of the apertures therein. By making each aperture of the size which corresponds to one-half of either the longitudinal or lateral dimension of the holder a given
 65 number of separate pictures may be taken by the use of half that number of apertured

plates in the manner already described; but this while convenient is by no means essential, for such a separate apertured slide may,
 70 if preferred or found necessary by reason of the particular size or relative location of the apertures, be employed for the taking of each picture. My invention, therefore, is limited
 75 neither to any particular number of auxiliary slides nor to any particular size or relative location of the apertures in said slides, the essential characteristic of operation by which my invention is distinguished residing
 80 in the recording of a series of distinct photographic impressions upon a single plate or film successively by means of a series of auxiliary slides, each having a single aperture so disposed relative thereto as that it may
 85 serve to admit the rectified rays from the lens therethrough upon only that section of the plate or film which is exposed therethrough when the slide is in operative position in the holder and above said plate or film.

I am aware that results generally similar to those contemplated by my present invention have been heretofore sought to be effected by means of a screen pierced as the combination of portraits requires and held in position within the camera by a fixed support
 95 or wall in the center of which is a rectangular open space corresponding to the dimensions of the apertured screens, which latter are placed as near as possible to the dark slide. These screens are used in combination with covers each having a single aperture corresponding to some one of the apertures in the fixed screen, said covers being
 100 employed to protect the parts already or still to be exposed. My invention entirely dispenses with the use of such apertured screens and their fixed support or wall, being applicable to the plate-holders now in common use and requiring no modification or change
 105 in such plate-holders. In my invention it will be observed that the effects sought are secured solely and simply by means of a series of apertured slides which are interchangeable with and at suitable times in the operation of taking a photograph are substituted
 115 for the solid dark slides.

I claim as my invention—

1. In a photographic apparatus, the combination with a holder adapted to contain a flat sensitized field, of an apertured slide for said
 120 holder, said slide when in operative position occupying the place of the regular solid dark slide and alone serving, during the period of exposure, to define and limit the exposed portion of the field to the relative size and location of the opening in the slide, substantially
 125 as described.

2. In a photographic apparatus, the combination with a holder adapted to contain a flat sensitized field, of a series of apertured slides
 130 for said holder, the apertures in said slides occupying different relative positions therein, and said slides when in operative position severally occupying the place of the regular

solid dark slide and being alone adapted, during the period of exposure, to each define and limit the exposed portion of the field to the relative size and location of its aperture, substantially as described.

5 3. In a photographic apparatus, the combination with a holder adapted to contain a flat sensitized field, and the usual solid slide therefor, of a series of auxiliary slides each having an opening formed therethrough, the several openings occupying different relative positions in the several slides, and the said auxiliary slides when in operative position severally occupying the place of the regular solid dark slide and being alone adapted to successively cover the sensitized field during successive periods of exposure, whereby a series of separate and distinct impressions are recorded on the field in spaces corresponding in size and location to the openings of the several auxiliary slides, substantially as described.

4. In a photographic apparatus, the combination with a holder adapted to contain a sen-

sitized plate or the equivalent, and the usual solid slide therefor, of a series of reversible auxiliary slides each having an opening formed therethrough, the several openings occupying different relative positions in the several slides, and the sum of the areas represented by said openings being approximately equal to one-half the area of the sensitized plate, the said auxiliary slides when in operative position severally occupying the place of the regular solid dark slide and being alone adapted to successively cover the sensitized field during successive periods of exposure, whereby a series of separate and distinct impressions equal to twice the number of auxiliary slides employed and collectively substantially coextensive with the total area of the plate are recorded on the latter, substantially as described.

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