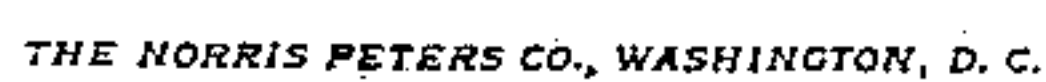


967,569.

Patented Aug. 16, 1910.





# UNITED STATES PATENT OFFICE.

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## MULTIPLIER FOR CAMERAS.

967,569.

Specification of Letters Patent.

Patented Aug. 16, 1910.

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*To all whom it may concern:*

Be it known that I, GEORGE J. SCHAUBERT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Multipliers for Cameras, of which the following is a specification.

My invention relates to a device for use in connection with cameras by which a series of juxtaposed negatives may be taken on single plates or films by successive exposures of different sections thereof.

My object is to provide a simple and novel construction of device of the character above referred to which shall be capable of being readily operated and by which a plurality of juxtaposed negatives may be made on a single plate or film without danger of exposing to the rays of light other sections of the plate or film than the one desired to be exposed at each operation.

Referring to the accompanying drawing—Figure 1 is a view in vertical sectional elevation of the rear end-portion of a camera shown as equipped with a multiplier constructed in accordance with my invention. Fig. 2 is a plan view, partly sectional, of the multiplying device illustrated in Fig. 1. Fig. 3 is a section taken at the line 3 on Fig. 2 and viewed in the direction of the arrow. Fig. 4 is a perspective view of one of a plurality of sliding sections forming a part of my improved device, this view showing the formation of two intersecting edges of the section illustrated; and Fig. 5, a similar view of the same showing the opposite side of the section and the edges thereof not illustrated in the preceding figure.

My improved multiplying device, which is designed to be located in a camera between the lens and plate, or film, to be exposed, as hereinafter described, is represented at 6. It comprises a frame formed of top and bottom members 7 and 8, the lower one of which contains a longitudinally extending groove 9 along its inner side, and the upper one of which contains a similarly located tongue 10; and side-members 11 and 12, shown as formed of metal strips of general U-shape which thus afford channels 12<sup>a</sup> opening toward the inside of the frame, these strips straddling the adjacent members 7 and 8 as represented in Fig. 3, in which position they may be secured in any suitable manner, as by indenting the metal as indicated at 13. It is designed that the frame support be-

tween its sides a plurality of sections which are shiftable therein for the purpose of affording an opening in the multiplier in different positions, whereby exposures of different parts of the plate or film may be made by successive operations. The particular construction illustrated, which has been chosen by me as showing the preferred embodiment of my invention, is provided in a form permitting six juxtaposed negatives to be made on the plate or film. The frame of the device confines between its members five sections 14, 15, 16, 17 and 18, which may be of any suitable material, as for instance wood, these sections being rectangular in shape and each of an area approximately equal to one-sixth of the area of the opening provided in the frame by its members 7, 8, 11 and 12, whereby an opening is provided between the sections and the frame approximately equal to the area of a single one of the sections. Each of the sections is provided on two of its intersecting edges with tongues 19 and on its other two edges with grooves 20, the sections being so arranged in the frame as illustrated as to cause all of the sections to have tongue and groove connection with each other and with the frame-members 7 and 8, and sliding connection with the members 11 and 12 at the channels therein. It will thus be noted that by providing the sliding connection between each of the sections and the frame-members, the sections may be shifted to any position in the frame by sliding them upon the frame-members, thereby presenting an opening in the frame at any one of six positions therein.

In Fig. 1, I have illustrated my improved multiplying device as applied to a particular and well-known form of camera represented at 21. The bellows 22 of this construction extends rearwardly from the suitably supported lens-board (not shown) at the front of the camera, to a box 23 of well-known construction to which it is attached, the box being rabbeted at its rear face as indicated at 24 to provide a seat 25 for receiving a removable and replaceable reversible camera-back 26, which is held in place against the seat 25 on the box 23 by engagement of pins 27 thereon, with apertured spring-fingers 28 on the box 23. The drawing shows a plate-holder 29 confined between flanges 30, flanking an opening 31 in the box 23, and the spring-tensioned ground-glass holder-frame 32, as illustrated



in Fig. 1. The camera-back 26 is rabbeted at its front face to provide an opening 33 coincident with the opening 31, but of larger dimensions, the wall of the opening 33 being undercut to afford a groove 34. The particular construction of multiplier shown is designed to be inserted into the opening 33 and therein held in place by any suitable means, as for instance by a tongue 35 formed on the frame-member 8 of the multiplier, this tongue being adapted to be inserted into the groove 34 upon the act of assembling the multiplying device with the back 26.

The operation of the device is as follows: Assuming the device to be positioned in the back 26, as illustrated in Fig. 1, the sections of the device positioned as illustrated in Fig. 2, and the plate-holder 29 removed, the operator focuses the images upon the ground-glass carried by the holder 32 in a square marked thereon corresponding to the position of the opening represented in Fig. 2 and afforded between the sections and the frame-members of the multiplying device. The plate-holder may then be inserted into the back 26 and an exposure made in the ordinary way. The operator then releases the back at its upper edge from the box, and swings the back to a position in which he may have access to the multiplying device to shift its sections. Assuming a second exposure on the plate is desired to be taken through an opening corresponding to the position occupied by the section 14, as represented in Fig. 2, the operator slides the section 14, at its tongue and groove connection with the adjacent sections and frame-member 7, to the right in Fig. 2 to present an opening between the sections and the frame-sides at the point coincident to that previously occupied by the section 14, whereupon the operator again manipulates the camera to cause the image to be centered on the section of the ground-glass next to the section corresponding to the one previously exposed. The plate-holder may then be inserted into place in the back 26 and the exposure made. The back 26 is then again swung away from the box 23 and the section 15 moved to the right to afford an opening in the frame in the upper left-hand corner thereof, viewing the device as illustrated in Fig. 2. An exposure is made through this opening upon the plate as hereinbefore described. Exposures for the remaining portions of the plate are likewise made by shifting the sections 16, 17 and 18 to present, by successive operations, the opening between the sections and frame-members at points corresponding to the positions occupied by these last referred to sections in Fig. 2.

If desired the sections may be formed with sockets 36 which afford finger-grips, permitting the operator to readily shift the

sections in the frame to the positions desired, though it will be understood that instead of providing the sockets 36 any other means may be provided for this purpose.

While I have illustrated my invention as embodied in a device for enabling 6 juxtaposed negatives to be taken on a single plate or film, I do not wish to be understood as limiting my invention to a device for taking this particular number of negatives, as it may be embodied in a construction for taking 4, 8, 9, 10, 12, or in fact any number of negatives provided such number be a multiple of two or three. Furthermore, by describing my invention as embodied in a frame having a certain feature which enables it to be conveniently secured in position in a camera of a particular construction, I do not wish to be understood as confining my invention to any particular form of frame, as it may be modified in various ways to adapt it for association with cameras of different forms without departing from the spirit of the invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a camera, of a multiplying device, for the purpose set forth, interposed in the camera between the lens thereof and the sensitized plate or film, comprising a frame containing an opening, and a series of rectangular sections supported in the opening, said sections being of a number insufficient to fill the opening in the frame and having sliding connection with each other, for the purpose set forth.

2. The combination with a camera, of a multiplying device, for the purpose set forth, interposed in the camera between the lens thereof and the sensitized plate or film, comprising a frame containing an opening, and a series of rectangular sections supported in the opening in the frame, said sections being of a number insufficient to fill the opening in the frame and having tongue and groove connection with each other.

3. The combination with a camera, of a multiplying device, for the purpose set forth, interposed in the camera between the lens thereof and the sensitized plate or film, comprising a frame containing a rectangular opening, and a series of rectangular sections supported in the opening, said sections being of a number insufficient to fill the opening and having sliding connection with each other and with the frame.

4. The combination with a camera, of a multiplying device, for the purpose set forth, interposed in the camera between the lens thereof and the sensitized plate or film, comprising a frame containing a rectangular opening, opposed frame-members which are tongued and grooved respectively, and a series of rectangular sections supported in the opening, said sections being of a num-



ber insufficient to fill the opening, and each having tongues and grooves on its opposed edges at which the sections have sliding connection with each other and with the frame-members, for the purpose set forth.

5 5. The combination with a camera, of a multiplying device, for the purpose set forth, interposed in the camera between the lens thereof and the sensitized plate or film, 10 comprising a frame containing a rectangular opening and a series of rectangular sections supported in the opening, said sections being of a number insufficient to fill the opening and having sliding connection 15 with each other, each of said sections containing a socket in its face.

20 6. In combination with a removable back of a camera provided with a seat for an adjunct thereto, of a rectangular multiplying device comprising a frame adapted to be applied to said seat and containing an opening, and parallel series of sections supported in the opening in the frame and shiftable 25 therein to present an opening in the frame in different positions therein, for the purpose set forth.

7. The combination with a camera, of a multiplying device, for the purpose set forth, interposed in the camera between the lens thereof and the sensitized plate or film, 30 comprising a frame containing an opening, and parallel series of rectangular sections supported in the opening, said sections being of a number, lacking one, to fill the opening in the frame and having sliding 35 connection with each other at their edges, for the purpose set forth.

8. In combination with the back of a camera, of a rectangular multiplying device secured therein in front of the plane occu- 40 pied by the sensitized body to be exposed, comprising a frame containing an opening, and a series of rectangular sections supported in the opening, said sections being of a number insufficient to fill the opening in the 45 frame and having sliding connection with each other, for the purpose set forth.

GEORGE J. SCHaubERT.

In presence of—

RALPH A. SCHAEFER,  
JOHN WILSON.