March 9, 1926. 1,575,990

H. R. HAYS

MULTIPLE ATTACHMENT FOR CAMERAS

Filed March 28, 1925

Fig. 1.

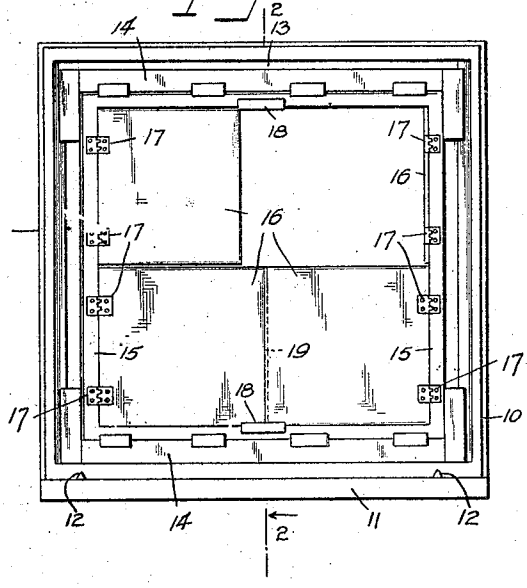


Fig. 2.

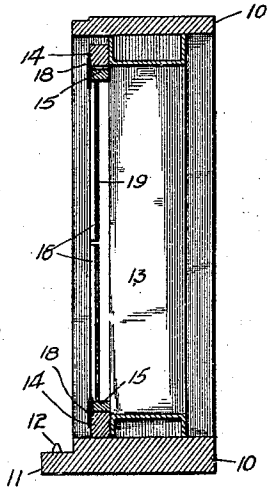


Fig. 3.

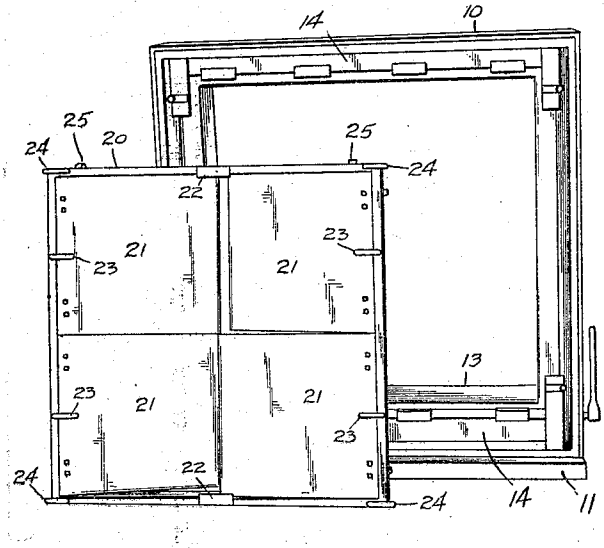
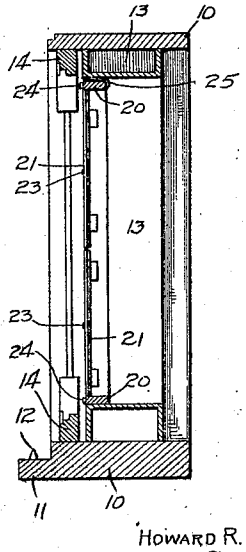


Fig. 4.



HOWARD R. HAYS
Inventor

By his Attorney

Patented Mar. 9, 1926. 1,575,990

UNITED STATES PATENT OFFICE.

HOWARD R. HAYS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HOWARD S. LEVY AND LIONEL LEVY, OF PHILADELPHIA, PENNSYLVANIA.

MULTIPLE ATTACHMENT FOR CAMERAS.

Application filed March 28, 1925. Serial No. 18,946.

To all whom it may concern:

Be it known that I, HOWARD R. HAYS, citizen of the United States of America, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented new and useful Improvements in Multiple Attachments for Cameras, of which the following is a specification.

My invention relates generally to process photographic apparatus and has specific reference to a removable multiple attachment for the screen carrying box of a process camera.

In the course of commercial work the use of small plates often becomes necessary and under normal conditions each plate, irrespective of its size, requires a single sensitive plate. As a measure of economy, as many as four plates are sometimes photographed on one large plate during four separate exposures; which are made necessary by the fact that each original may require different reduction and exposure. Camera construction often includes, as a built in feature, a plurality of doors or flaps, preferably four, which are fitted into the screen carrying box and operated independently from the outside of the box, one door being opened to expose one quarter of the sensitive plate, then closed and the next door opened to expose another quarter and so on.

According to the present invention, it is the purpose thereof, to provide a separate removable attachment, having multiplying doors or flaps, which may be used in one camera or another, as desired.

My invention is illustratively exemplified in the accompanying drawings, in which Figure 1 is an end elevational view of the back box of a process camera showing the multiple attachment supported in the screen bars; Figure 2 is a substantially longitudinal section of the box and attachment taken on line 2—2 of Figure 1; Figure 3 is an elevational view of the screen carrying box and multiple attachment removed therefrom; and Figure 4 is a longitudinal sectional view of the box showing the multiple attachment removably supported in the interior of the box rearwardly of the screen bars.

Referring to the drawings, and particularly to the screen carrying box, 10 designates the rectangular wooden frame having a protruding ledge 11 on its lower wall provided with centering projections 12 to receive the plate holder, not shown. The interior wall of the frame 10 is provided with a lining 13 set slightly back of the face of the box, the lining being developed to house parts of the screen carrying mechanism. Suitable screen bars 14 are adjustably mounted between the lining 13 and face of the frame 10 to receive and hold the screen parallel with the negative glass in the plate holder, all of which is well known and needs no further detail description.

Referring now, to the multiple attachment, shown particularly in Figures 1 and 2, it will be clear that the frame 15, is supported by the screen bars 14, in the same manner as the screen itself would be held. The frame 15 comprises a rectangular arrangement having four doors 16, two thereof being hinged to each upright side portion of the frame. Suitable hinges 17 are used to hang the doors 16 and stop plates 18 are attached to and project from the inner midportion of the lateral sides of the frame 15 to prevent the doors 16 from swinging outwardly beyond the face of the frame. This construction confines the movement of the doors 16 to the inside of the box 10 and out of the way of any screen operating mechanism. A light-tight connection is effected between the free edges of each pair of doors 16 by overlapping tongues 19, one thereof being provided on the outer edge of each door. No attempt is made to obstruct the narrow ribbon of light which may appear between the upper and lower pairs of doors, because work is usually arranged so as to require either one half of a plate or two separate quarters.

In the preferred embodiment of the invention, illustrated particularly in Figures 3 and 4, the frame 20 is constructed of a single piece of cast metal which may be depended upon to retain its true dimensions. The doors or flaps 21 are thin metal sheets arranged in pairs and hinged to the upright members of the frame. The length of each door is slightly greater than required to close one quarter of the frame opening so that when the doors of a pair are closed the ends overlap and prevent light leaks. The upper and lower portions of the frame 20 are provided with stop plates 22 disposed midway thereof, and to further insure correct closed position of each door 20, the lat-

ter are provided with fingers 23 projecting beyond the hinged edges and adapted to abut the outer surface of the frame 20. Projecting laterally from the four corners of the frame 20 I provide stop fingers 24, and on two outside edges, preferably at the top and on one adjacent side, of the frame 20 are disposed suitable spring members 25. It will be clear, especially in connection with Figure 4, that the frame 20 is intended primarily to fit between the walls of the lining 13, so as not to interfere with the screen bars 14 nor the use of a screen, and in order to insure perfect support for the attachment the spring members 25 yieldably hold the frame 20 against the opposite walls of the lining.

In the form of installation, illustrated in Figures 1 and 2 the multiple attachment is used only in connection with line work, i. e. without a cross line screen, while in Figures 3 and 4 the attachment is removably carried by the lining of the screen carrying box and may be used with or without the screen attachment.

To attach or remove the frame 20 from the screen box of the camera, the screen bars 14 are adjusted to the extremes of the box and the attachment is then free to be moved between the bars.

What I claim is:

1. A removable multiple attachment for the screen carrying box of a process camera, comprising a frame, four doors hinged to the upright sides of the frame, means carried by the frame and doors to limit movement of the latter to one face of the frame, and spring members disposed on two adjacent edges of the frame to yieldably hold the latter in position in the screen box.

2. A removable multiple attachment, as claimed in claim 1, including means carried by the frame to rest against the face of the screen bars, substantially as described.

In testimony whereof I affix my signature.

HOWARD R. HAYS.