Feb. 8, 1927. 1,616,906

R. KROEDEL

HOLDER FOR PHOTOGRAPHIC MATERIALS, SUCH AS CUT FILMS

Filed July 11, 1924 2 Sheets-Sheet 1

FIG. 1.

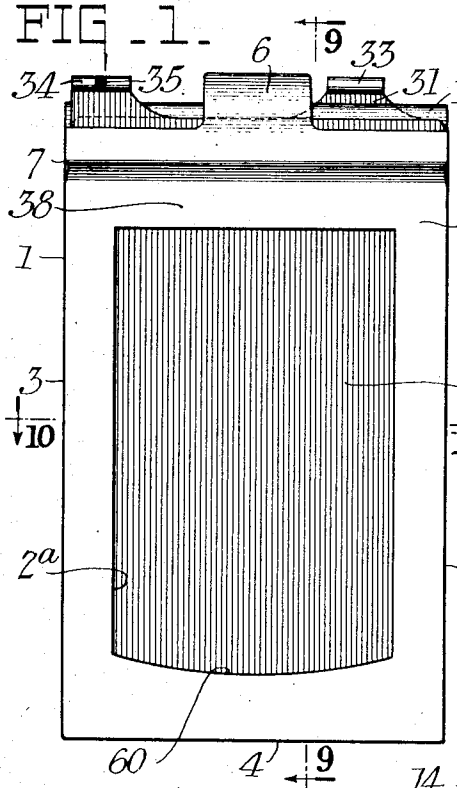


FIG. 2



FIG. 3.

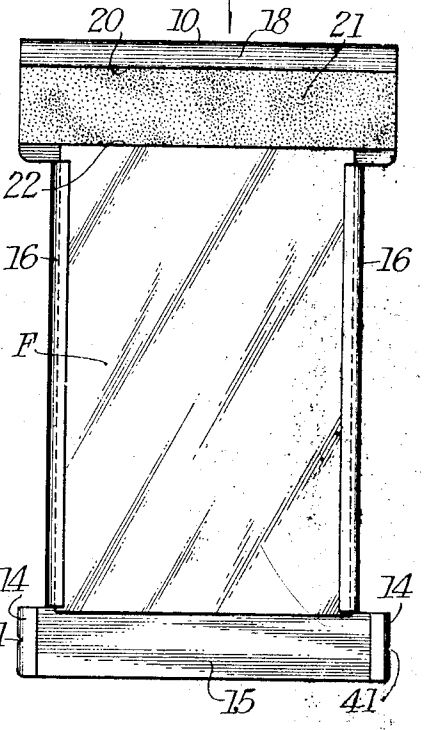


FIG. 4

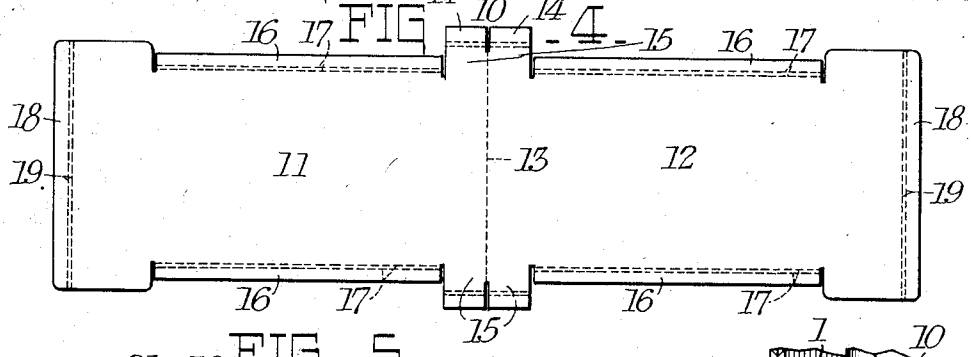


FIG. 5.

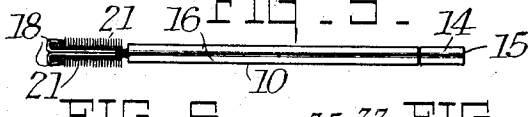


FIG. 6.

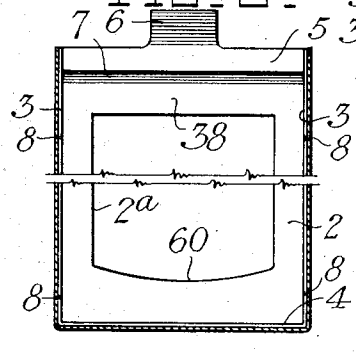


FIG. 7.

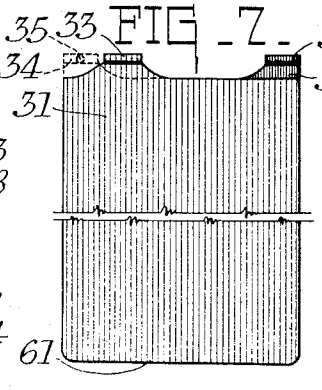
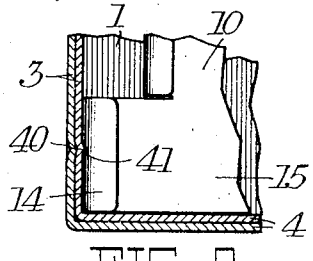


FIG. 8.



INVENTOR,
Robert Kroedel,
BY R. L. Stinchfield
Duncan & Stewart
ATTORNEYS.

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R. KROEDEL

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FIG. 9.

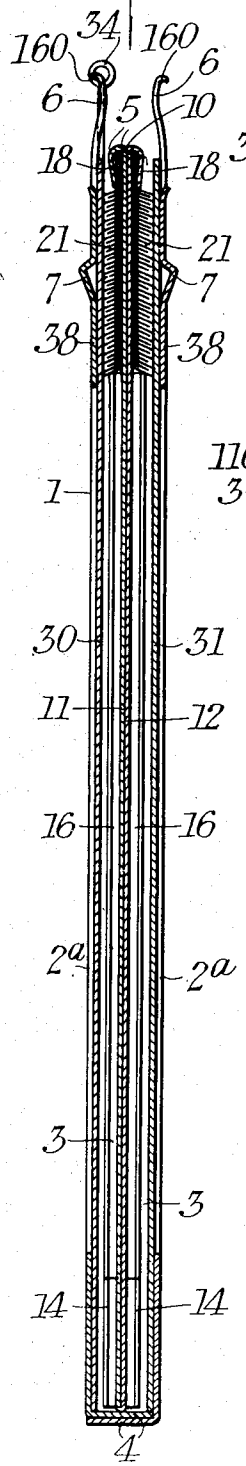


FIG. 10.

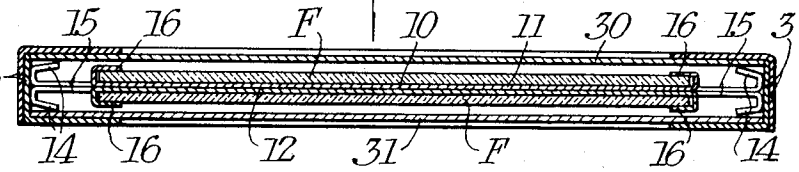


FIG. 11.

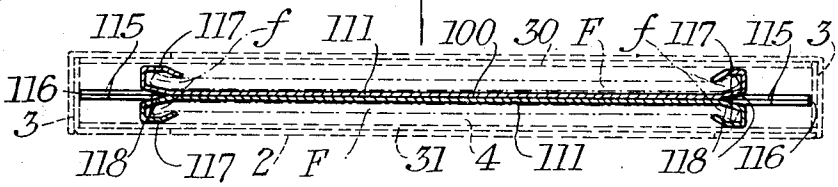


FIG. 12.

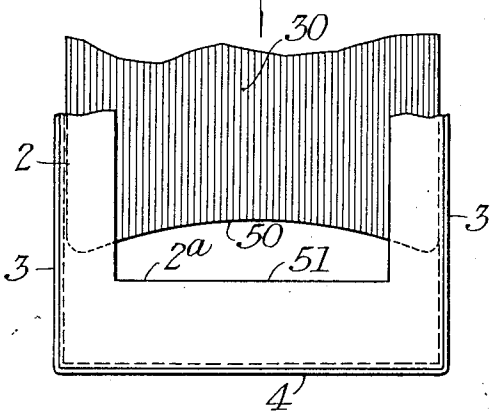
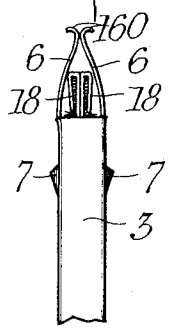


FIG. 13.



INVENTOR,
Robert Kroedel,
BY P. L. Stinchfield
Enoch K. Stewart
ATTORNEYS.

Patented Feb. 8, 1927. 1,616,906

UNITED STATES PATENT OFFICE.

ROBERT KROEDEL, OF ROCHESTER, NEW YORK, ASSIGNOR TO EASTMAN KODAK COMPANY, OF ROCHESTER, NEW YORK, A CORPORATION OF NEW YORK.

HOLDER FOR PHOTOGRAPHIC MATERIALS, SUCH AS CUT FILMS.

Application filed July 11, 1924. Serial No. 725,520.

This invention relates to photography and more particularly to photographic plate holders. One object of my invention is to produce a holder for two sheets of film which is of the minimum size and weight; another object is to provide a holder which is simple to operate, particularly in loading and unloading; another object is to provide a convenient manipulating handle for the holder; another object is to provide a holder consisting of but few simple parts; another object is to provide a holder which can be easily assembled, and other objects will appear hereinafter from the following specification, the novel features being pointed out in the claims at the end thereof.

In the drawings, wherein like reference characters denote like parts throughout:

Fig. 1, is a plan view of a plate holder constructed in accordance with and illustrating one form of my invention;

Fig. 2, is a side elevation thereof;

Fig. 3, is a plan of the film kit removed from the holder for loading;

Fig. 4, shows the blank from which the kit is made;

Fig. 5, is a side elevation of the kit;

Fig. 6, is a section showing the main frame with kit and dark slides removed;

Fig. 7, is a plan of the dark slides lying one behind the other;

Fig. 8, is an enlarged detail section showing the snap latch between the main frame and kit;

Fig. 9, is a greatly enlarged section on line 9—9 of Fig. 1;

Fig. 10, is a section on line 10—10 of the same figure;

Fig. 11, is a section of a modified form of kit;

Fig. 12, is a fragmentary plan of a modified form of dark slide; and

Fig. 13, is a fragmentary side elevation of the holder manipulating handles in one position.

Broadly this holder comprises a main frame closed on the sides and bottom and open along the top. A kit for holding two plates is insertable through the open top, carrying a light locking pad on each side of the kit top.

When I refer to film or plates, I wish these terms understood to embrace all supports commonly used for a photographically light sensitive medium which is in the form of a layer upon the support. The best known supports are glass and pyroxlin, paper being also sometimes used.

This holder is preferably made of thin sheet metal and comprises a frame made from two frames 2 each having side flanges 3 and bottom flanges 4. The flanges above described of one frame fit into the other as shown in Fig. 6, and form channel-shaped sides and bottom members, and leaving an open top 5. Along the top are tabs 6 to form manipulating handles. Formed up ridges 7 make light guards. There is an opening 2^a in each frame through which the exposure is made.

These frames may be joined by riveting the flanges, or by any other suitable manner such as soldering, or spot welding. In Fig. 6 I have indicated the preferred spot welds 8 for uniting the two parts of the frame 1. The double thickness of metal around the edges forms a reinforcing or strengthening strip. I have found in practise two frames can be made of exactly the same dimensions and on one the side and bottom flanges may be slightly bent in and then forced into the other, as the metal of which they are made is preferably very thin. By spot welding a tight and strong joint is made.

A kit 10 for holding (in the present embodiment of my invention) two sheets of cut film F, are shown in Figs. 3 and 4. Fig. 4 shows the kit as made of a single piece of blanked out metal, the dashed lines indicating where the blank is to be bent. The sides 11 and 12 are folded back to back along line 13, and stiffening lower flanges 14 are formed on both ends of the bottom bars 15. Side film holding flanges 16 are bent along lines 17 so that a sheet of film may be inserted under each pair as shown in Fig. 3. The top bars 18 are bent on the lines 19 to hold one edge 20 of plush strips 21, the nap of the plush forming a flexible light tight closure for the open end of the frame 1 when the kit 10 is inserted therethrough. The dark slides 30 and 31 are inserted between the kit and the frames 2. When removed the plush enters the inside of the formed up ribs 7 thus forming a light lock. When inserted in the holder the plush presses against the dark slides themselves to form a light tight closure. The thickness of the closure members 21, when removed from the frame (Fig. 5) is greater than the inside width of

the frame consequently when slid into the frame, the nap on the plush presses against the spaced strips 38 joining the edges 3.

To load or unload the holder the dark slides 30 and 31 are preferably withdrawn, as in Fig. 2, and then the kit 10 is withdrawn by the top bars 18. The film F can be readily slid beneath flanges 16 from the bottom up, the lower edge 22 of the plush 21 forming a stop limiting the upward movement of the film (Fig. 3).

The kit is preferably retained in frame 1 by the snap latch formed by the struck in lug 40 near the bottom of the side flanges 3 (Fig. 8). This lug engages a detent or indentation 41 in the stiffening flanges 14.

Dark slides 30 and 31 are provided with operating handles 33, 34 located unsymmetrically and having an exposure signal 35 on one side of the handle. The handles are preferably rolled to form a convenient grip. The reason for placing the handles unsymmetrically is that the slides are reversed by an operator after making an exposure to so indicate by having the signal 35 visible. No matter how the slides may be placed, as for instance when dark slide 30 is reversed it will occupy the position shown in broken lines (Fig. 7) in which position handle 33 of dark slide 30 is alongside of, and not covering up handle 34.

It will be noted that ribs 7 have a double light locking feature. On the outside, the rib engages a corresponding notch in a camera in the usual manner, while on the inside clearance is provided so that the nap of the plush can spring outwardly into the slot when the dark slide is withdrawn forming an effective light tight joint.

In Fig. 11 I have shown a modified kit 100 wherein sheets of cut film F may be held particularly flat by raising the edges *f* due to the inclined edges 118 and overhanging flanges 117. In this case the bottom bar 115 may have flat ends 116 and the positioning of the septum crosswise of the frame may be solely due to flanges 117.

I prefer to curve the edge of frames 2^a at the bottom 60 to facilitate sliding the edge 61 of the dark slide into the holder. As shown in Fig. 12, however, I may curve the lower edges of the dark slides 30, 31 as at 50 and provide a straight lower edge 51 to frame aperture 2^a.

While the drawings are approximately to scale Figs. 9, 10 and 11 are greatly exaggerated in width, and in all cases the relative thickness of the metal is exaggerated. Consequently the holder is much more compact than the drawings indicate.

Each time the plate holder is inserted or removed from a camera the handles 6 are used. These may have hooks 160 as shown in Fig. 9. These handles are naturally squeezed together each time they are grasped, as shown in Fig. 13, thus tending to bend the open ends of frames 2 toward each other. This feature is useful in working against a flat wall of a camera giving more room to handle the holder.

It should be noted that in kits constructed as above described the spaced flanges 14 and 18 form positioning members, and certain of flanges 14, 16 and 18 or 115 and 117 form spacers to position the dark slides and hold them from contact with the sensitive film F. Thus, in Fig. 10 I have shown flanges 14 as positioning dark slides 30 and 31 although of course flanges 16 prevent, to a certain extent, the slides from being bent inwardly damaging the film and possibly admitting light thereto. In Fig. 11 flanges 117 hold the slides 30, 31 in their proper position against the frames 2 and spaced from films F, and flanges 115 position the kit laterally of the holder.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A cut film holder including a hollow frame member, channel like edges carried by the frame member, a kit slidable into the frame member and having flanges adapted to engage the channel edges, and flanges spaced from the first mentioned flanges for positioning the film.

2. A cut film holder including a hollow frame member, channel like edges forming a part of the frame member, a kit formed of a substantially flat sheet and slidable in the channel members, a plurality of flanges on the kit for positioning the kit and for holding a film, certain of said flanges being bent at an angle to the flat sheet of which the kit is made, whereby portions of the flange are spaced from the sheet, and dark slides for the cut film holder also slidable into the channel members with the kit, being spaced from the latter by the bent flanges.

3. A cut film holder including a hollow frame member having channel like edges, a film-holding kit adapted to slide in the channels, flanges on the kit adapted to retain a film in the kit, and a dark slide adapted to enter and slide in the channels between the frame and the kit, said dark slide being spaced from a film held in the kit by the flanges which hold the film in the kit.

4. In combination, an open-topped frame member having channel shaped side and bottom members, a kit slidable into the channel members through the open top of the frame, dark slides also slidable into the channel members through the open top of the frame, and means carried by the kit for spacing the dark slides from the kit.

5. In combination, an open-topped frame member having channel shaped side members and the open top having strips joining

the side members, a kit slidable into the channel members through the open top of the frame, and between the joining strips, said kit being of less thickness than the inside width of the channel members so as to be freely slidable therein, and a closure for the open top consisting of a member of greater width than the inside width of the channel members, said closure having parts capable of being compressed so as to slide into and out of the frame member between the joining strips, forming a light tight connection therewith.

6. A cut film holder for cameras including a thin sheet metal frame, an integral operating tab by which the frame may be manipulated, said operating tab being capable of flexing whereby the cut film holder may be handled when lying close to a wall of a camera.

7. A cut film holder for cameras including a pair of sheet metal frames united along the edges, each frame carrying a resilient operating tab, said tabs being normally spaced one from the other, and being capable of being compressed toward each other whereby the holder may be manipulated close to a camera wall.

Signed at Rochester, New York, this 7th day of July, 1924.

ROBERT KROEDEL.