

S. FRENCH.
PLATE HOLDER.
APPLICATION FILED MAY 27, 1904.

FIG.3.

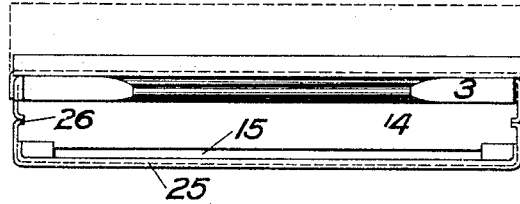


FIG.2.

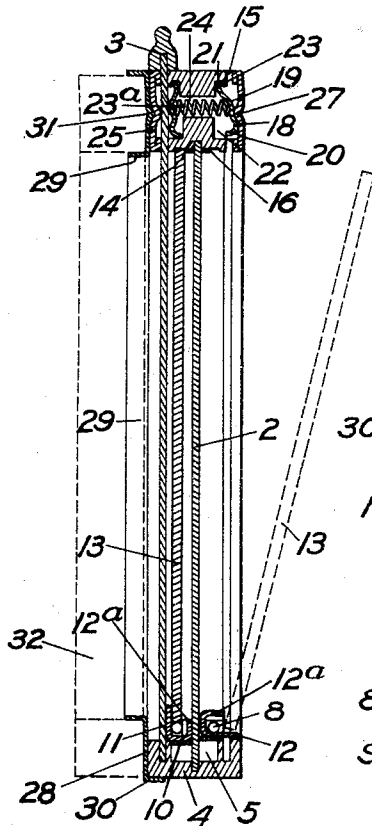
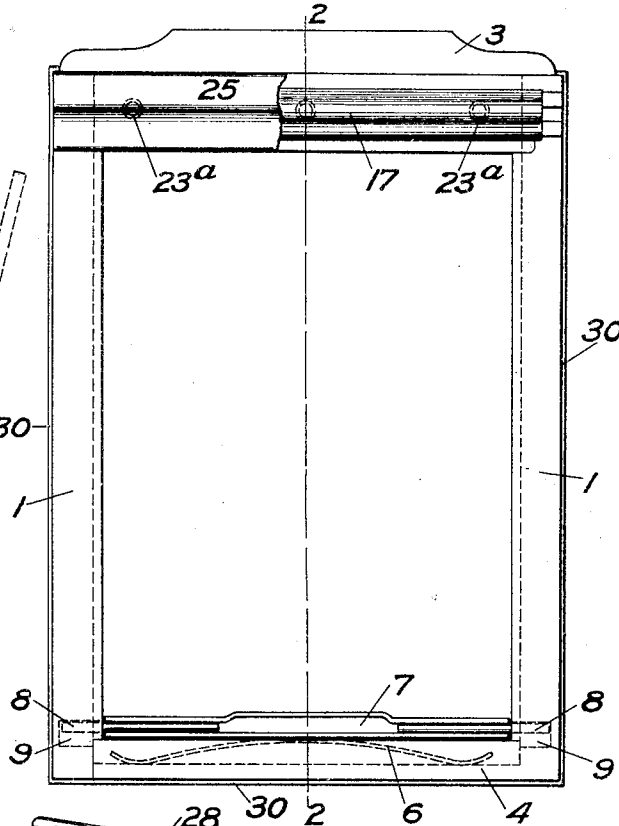
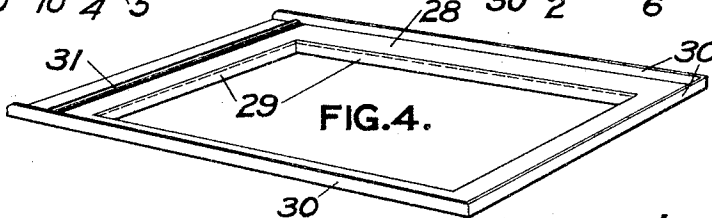


FIG.1.



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UNITED STATES PATENT OFFICE.

SILAS FRENCH, OF ROCHESTER, NEW YORK.

PLATE-HOLDER.

SPECIFICATION forming part of Letters Patent No. 780,649, dated January 24, 1905.

Application filed May 27, 1904. Serial No. 210,116.

To all whom it may concern:

Be it known that I, SILAS FRENCH, a citizen of the United States, and a resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Plate-Holders, of which the following is a specification.

This invention relates to plate-holders and means for adapting them to cameras.

The invention consists in the devices and combinations hereinafter set forth and claimed.

In the drawings, Figure 1 is an elevation of a plate-holder embodying this invention, parts being broken away to show internal construction and certain parts being shown in dotted lines. Fig. 2 is a vertical section on the line 2 2 of Fig. 1. Fig. 3 is a top view of the device shown in Fig. 1, and Fig. 4 is a perspective view of the adapter.

This plate-holder has the usual side rails 1 1, septum 2, and slides 3. The lower rail 4 has a socket 5 cut in it, in which rests a flat spring 6. Above the spring is the plate-retainer 7, adapted to tilt on the pivots 8 8, which extend into loose bearings or slots 9 9 in the side rails 1. The plate-retainer has two flat sides 10 and 11, Fig. 2, which are adapted to press upon the flat spring 6 and to be held thereby in either of the two tilted positions of the plate-retainer. The said plate-retainer has also a flange 12, which is adapted to lie flat against the front surface of the plate 13, adjacent to its lower edge, when the retainer is tilted into the position shown at the left hand in Fig. 2. The plate-retainer may be of U shape in cross-section, with one flange longer than the other. By this construction the pivot-pins 8 8 may be fastened in the curve of the retainer and the shorter flange 12^a may force the plate out of its retained position when the retainer is tilted into the position shown at the right-hand side of Fig. 2.

The top rail 14 of the plate-holder has the usual slots 15 for the slides 3 when the plate-holder is double, as shown herein. The lower

edge of the rail 4 has, adjacent to the septum 2, a rabbet or groove 16 for the upper edge of the plate 13. The retainer 7 is tilted into the position shown at the right hand in Fig. 2, and the upper edge of the plate is put into the groove 16 and over the flange 12 of the plate-retainer. The plate-retainer is then tilted into the position shown at the left hand in Fig. 2 and the pressure of the spring 6 against the flat side 10 of the retainer holds it in position, so that the flange 12 holds the lower edge of the plate, while the groove 16 holds the upper edge, and the lower edge of the plate is or may be supported on the narrow flange 12^a.

Shaking and jarring of the plate-holder cannot release the plate. Further, the fact that the pins and pivots 8 move in slots 9 in the rails 1 enables the plate-retainer to take plates of slightly-varying length.

In the better class of plate-holders a light-excluding shutter is employed to prevent light from leaking in upon the plate through the slot by which the slide is inserted into the plate-holder to cover the plate.

The improved light-excluding shutter of this device consists of a sheet of metal 17, having the two longitudinal ribs 18 19, the downwardly-turned or rounded edge 20, and the flat edge 21. The shutter 17 lies in a cavity 22 in the upper rail 14, and the flat edge 21 lies loosely in a groove 23, whereby the shutter 17 may turn from the flat edge 21 as a pivot, but with some freedom by reason of the looseness of said edge in the groove 21. One or more springs 23 tend to press the shutter 17 outward to press against the slide 3 or against the inner side of the cavity 22 and across the slot 15. In the double plate-holder herein shown the springs 23 lie in holes 24, drilled through the upper rail 14, and the opposite ends of the springs 23 press against the two shutters.

Over the cavities 22 are metallic covers 25, fastened to the plate-holder in any suitable way, such as by turning the ends of said cover 25 around the ends of the rail 14 and again

bending said ends, as at 26, Fig. 3, to rest in sockets in the edges of the upper rail. The cover 25 has an inwardly-projecting rib 27, which corresponds to the depression between the ribs 18 and 19 of the shutter 17, so that when the shutter is pressed outward by the spring the rib 27 lies between the ribs 18 and 19, as shown in Fig. 2. The flat edge 23 of the shutter 17 is the upper edge, as shown in Fig. 2. If now the slide 3 is inserted through the slot 16, it will press against the shutter 17 and force it back from the right-hand position of Fig. 2 into the left-hand position of said figure and the inner side of the slide is in contact with both ribs 18 and 19 of the shutter 17, so that there are two surfaces of the shutter in contact with two portions of the surfaces of the slide and light cannot filter through into the plate-cavity of the plate-holder. The shutter 17 may be made of very thin metal, so as to be slightly flexible, and thus to fit better against the slide.

Camera-backs are made of practically uniform sizes; but plate-holders are of numerous different forms. In order to adapt any camera to my plate-holder, I provide a thin metallic frame 28, (shown in Fig. 4,) having the center punched out and the edges 29 of the center opening turned down to form a frame, which is adapted to fit into the back of any camera of the size for which the adapter is intended. Three of the outer edges 30 of said frame 28 are turned up, and across that portion of the frame corresponding to the fourth edge is a rib 31, corresponding in position to a groove in the cover 25 of my plate-holder, which is, in fact, the back of the rib 27, above mentioned.

Inasmuch as the downwardly-turned edges 29 will fit in any camera-back of the standard size for which the adapter is intended, my plate-holder may be adapted to any camera of that size, and the downwardly-turned edges of the frame 28, in combination with the upwardly-turned edges thereof and the rib 31, constitute a perfect light-tight connection between the plate-holder and the camera. Of course the usual devices (not shown) are employed for holding the plate-holder against the camera-back 32.

What I claim is—

1. In a plate-holder, the combination of a frame having holding means for one edge of the plate, a slide therefor, and a tilting spring-held retainer for the other end of the plate pivoted in the side rails of the frame.

2. In a plate-holder, the combination of a frame having holding means for one edge of the plate, a slide, a retainer for the other end of the plate pivoted in loose bearings in the side rails of the frame, and a spring for pressing said holder toward the plate.

3. In a plate-holder, the combination of a

frame having holding means for one edge of the plate, a slide, a tilting retainer for the other end of the plate having two flat sides and pivoted in the side rails of the frame and a spring for pressing against said two flat sides for retaining the holder in two positions.

4. In a plate-holder, the combination of a frame having holding means for one edge of the plate, a slide, a tilting retainer for the other end of the plate having two flat sides and pivoted in loose bearings in the side rails of the frame, and a spring for pressing against said two flat sides for retaining the holder in two positions.

5. In a plate-holder, the combination of a frame having holding means for one edge of the plate, a slide, a tilting retainer for the other end of the plate, and pivoted in the side rails of the frame, and having a flange which when the holder is tilted presses against the front of the plate adjacent to its edge, and a portion which when the holder is tilted into a second position moves that edge of the plate outward.

6. In a plate-holder, the combination of a frame having holding means for one edge of the plate, a slide, a tilting retainer for the other end of the plate and pivoted in the side rails of the frame and having a flange which when the retainer is tilted presses against the front of the plate adjacent to its edge, a portion which when the retainer is tilted into a second position moves that edge of the plate outward, and means for holding said tilted retainer in either of said two positions.

7. In a plate-holder, the combination of a frame having holding means for one edge of the plate, a slide, a tilting retainer for the other end of the plate and pivoted in the side rails of the frame and having a flange which when the retainer is tilted presses against the front of the plate adjacent to its edge and a portion which when the retainer is tilted into a second position moves that end of the plate outward, said retainer having two flat sides, and a spring for pressing against either of said two flat sides and for retaining the retainer in either of said two positions.

8. In a plate-holder, the combination of a plate-holder frame having a groove along and parallel to one end, an adapter consisting of thin metal having three edges turned up in which said frame fits, and a rib fitting into the said groove when the frame is in place, and downwardly-turned edges adapted to fit in a standard camera-back.

9. In a plate-holder, having an end rail provided with a slot for the plate-holder slide and a longitudinal groove, a light-excluding shutter consisting of a metallic plate having a flat edge set loosely in the groove in said end rail and two ribs adapted to rest against

said slide, and a spring adapted to throw said shutter.

10. In a plate-holder having an end rail and a slot therein for the plate-holder slide
5 and a cavity across said end rail, a cover for said cavity having an inwardly-projecting rib, a light-excluding shutter having a curved edge, two ribs and a flat edge adapted to fit

in a groove in the end rail in said cavity, and a spring for throwing said shutter whereby 10 the rib of the cover fits between the two ribs on the shutter.

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