(No Model.)

N. S. BOWDISH.

PHOTOGRAPHER'S PLATE HOLDER.

No. 355,056. Patented Dec. 28, 1886.

Fig. 1.

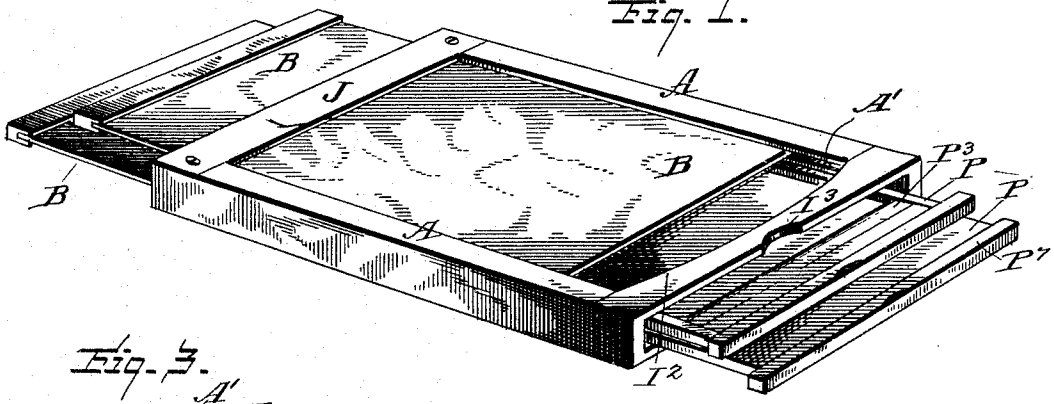


Fig. 3.

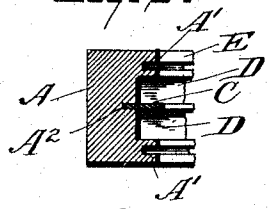


Fig. 2.

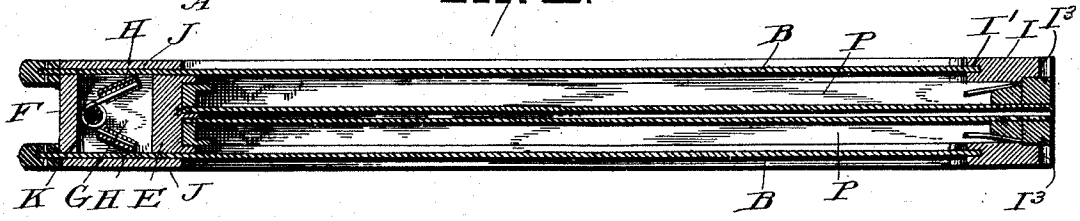


Fig. 4.

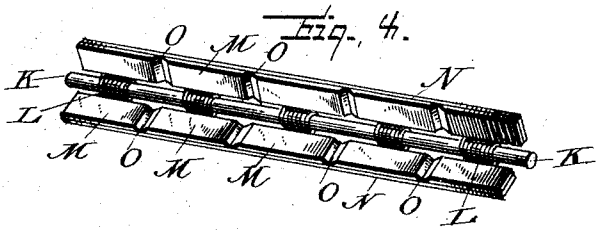
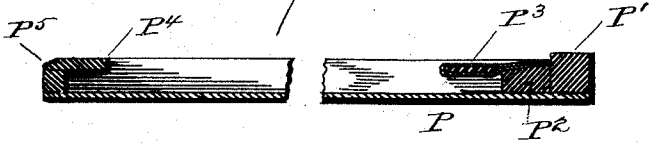


Fig. 5.



Witnesses
L. C. Mills
Wm. S. Durell

Inventor
N. S. Bowdish.
By his Attorney
E. B. Stocking

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

NELSON S. BOWDISH, OF SKANEATELES, NEW YORK.

PHOTOGRAPHER'S PLATE-HOLDER.

SPECIFICATION forming part of Letters Patent No. 355,056, dated December 28, 1886.

Application filed January 5, 1886. Serial No. 187,689. (No model.)

To all whom it may concern:

Be it known that I, NELSON S. BOWDISH, a citizen of the United States, residing at Skaneateles, in the county of Onondaga, State of New York, have invented certain new and useful Improvements in Photographers' Plate-Holders, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has relation to photographers' plate-holders, the object being to provide a holder in which the plates can be readily inserted, completely excluded from the light, and conducted from a dark room or other place to the camera, readily exposed to the action of the light passing through the lens of the camera, and again excluded from the light and conducted to the dark room to be subjected to the usual chemical processes for development; and the invention consists in certain features of construction hereinafter described and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective, and Fig. 2 a longitudinal vertical section, of a plate-holder embodying my invention. Fig. 3 is a vertical transverse section of one of the side rails of the frame. Fig. 4 is a perspective of the shutters, and Fig. 5 a longitudinal vertical section of one of the plate-holders proper.

Like letters indicate like parts in all the figures.

A A represent the side rails of the frame proper, each of which rails is longitudinally grooved upon its inner face to form outer channels, A′, for the reception of the covers or slides B, and a groove, A^2, for the reception of a strip, C, preferably of metal, by which the intermediate space is divided into two channels, D. The upper cross-piece, E, similarly grooved, extends from one side rail to the other, which, in connection with a cap-piece, F, forms a chamber, G, in which shutters H H are arranged and adapted to press outwardly against the inner surfaces of the cover or slides B. The lower end of the frame proper is left open, so as to receive and be closed by devices hereinafter described.

As usual in this class of devices, the slides B are of comparatively light material, either wood, sheet metal, or paper, and for this reason they are apt to warp, bend, or otherwise become misshaped, so that their lower edge is with difficulty received by the groove I′ in the lower cross-bar I of the frame proper. In order to facilitate the entrance of the lower edge of the slide B into said groove I form the upper edge of the cross-bar I so that the same acts to guide a warped or misshaped slide into the slot I′ formed therein, the principal feature of construction in this regard being that the corners of the slide while in the groove A′ are directed into the groove I′, while the central part of the lower edge of the slide is further guided into said grove I′ by cutting away, either on straight or curved lines, the cross-bar I, so that the upper edges of said bar shall act to guide the slide end, working from each corner towards its center, into the groove I′. The curved line I^2, Fig. 1, indicates the outline given to the upper edge of the cross-bar I for the purpose described. I consider this feature of construction one of the important features of my invention, and capable of being used in plate-holders otherwise differing from that herein shown and described. Cross-bars or pieces J serve to cover the recess or chamber G and to complete the outline of the frame proper.

Within the recess J, and extending from side to side of the frame, is a bar or rod, K, which serves as the pivot or point of attachment to the frame-work of a series of coiled springs, L, one terminal of each spring in the series projecting from one side of the rod, while the opposite end of the same springs in the series projects from the opposite side of the rod, and the terminals of all the springs projecting from one side are inserted into the edge of and arranged to press against a wooden strip, M, which is backed by cloth, leather, or other suitable material, N, extending from end to end of said strips M, and, if desired, over said rod from one strip to another to serve as a hinge connection.

Now, in order to give suitable flexibility to the strips M, they are scored or, it may be, separated at intervals across the same, as at O. The scored or separated wooden strips, backed with textile or other fabric and mounted upon springs, as above described, constitute the shutters of the holder, their operation being as well understood from the description, such that the shutter upon each side of the shaft is

forced outwardly or upwardly against the slide, so that the entrance of light between the under surface of the slide and the slot in the end of the frame through which it passes is prevented. As before stated, these slides, being of light material, are apt to become misshaped or bent, so as to admit light at the upper end of the frame, and for this reason it becomes necessary that the shutters should be adapted to automatically conform themselves to the irregularities of the slides. This is accomplished in the manner above described, and the construction detailed I consider another important feature of my invention.

The holder proper comprises a box or receptacle, P, adapted to ride in the recesses D, formed in the rails of the frame-work. In this instance I have shown two holders P, but it is evident that a frame embodying my improvements may be constructed so as to receive but a single holder. The holders P comprise in their make-up a cross-bar, P′, which is adapted to close the opening in the lower end of the frame proper when inserted therein, as clearly shown in Fig. 2. A thumb-hole I^3 is formed in the cross-bar I to facilitate the withdrawal of the holders. Within the holder P is a cleat- P^2, upon which is flexibly mounted a flap, P^3, which, in this instance, consists of a strip of wood, transversely scored or not, as desired, covered by any suitable fabric, and extended over and secured to the cleat P^2. An inwardly-projecting flange, P^4, at the opposite end of the holder is employed, said opposite end being preferably slightly beveled, as shown at P^5, Fig. 6, to facilitate its entrance into the groove D, formed in the cross-rail.

It is readily apparent that the plate may be placed in the holder by inserting one end thereof under the flange P^4 and the opposite end below the flap P^3, said shutter being turned upon its hinge to permit of the insertion of the plate and afterward returned to position to perform its functions of preventing access of light through the joints between the parts constituting the lower end of the frame and holding a sensitized plate in place. In this instance two holders P are employed, and, as usual, are arranged back to back within the frame, so that the plates therein may be exposed by drawing either of the slides B upwardly or out of the frame in the usual manner. By this construction I produce a plate-holder which is compact and strong, yet light and portable, and which serves the function of excluding light from the sensitized plates within the holder, while at the same time irregularities in the slides are prevented from disarranging the shutters and are automatically and positively guided into all of the slots adapted to receive the same.

Having thus fully described my invention and its operation, what I claim is—

1. The frame A, grooved as at A′, I′, and A^2, and cut away as at I^2, and having a strip, C, inserted in the groove A^2, and provided with the cross-bar E, in combination with the slide B and plate-holders P, substantially as specified.

2. A shutter for a photographer's plate-holder, comprising a transversely-scored strip and a textile backing, substantially as specified.

3. The combination of the rod K, springs L, strip M, transversely scored, as at O, and the backing N, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

NELSON S. BOWDISH.

Witnesses:

W. F. GREGORY,

JOSEPH C. WILLETTS.