

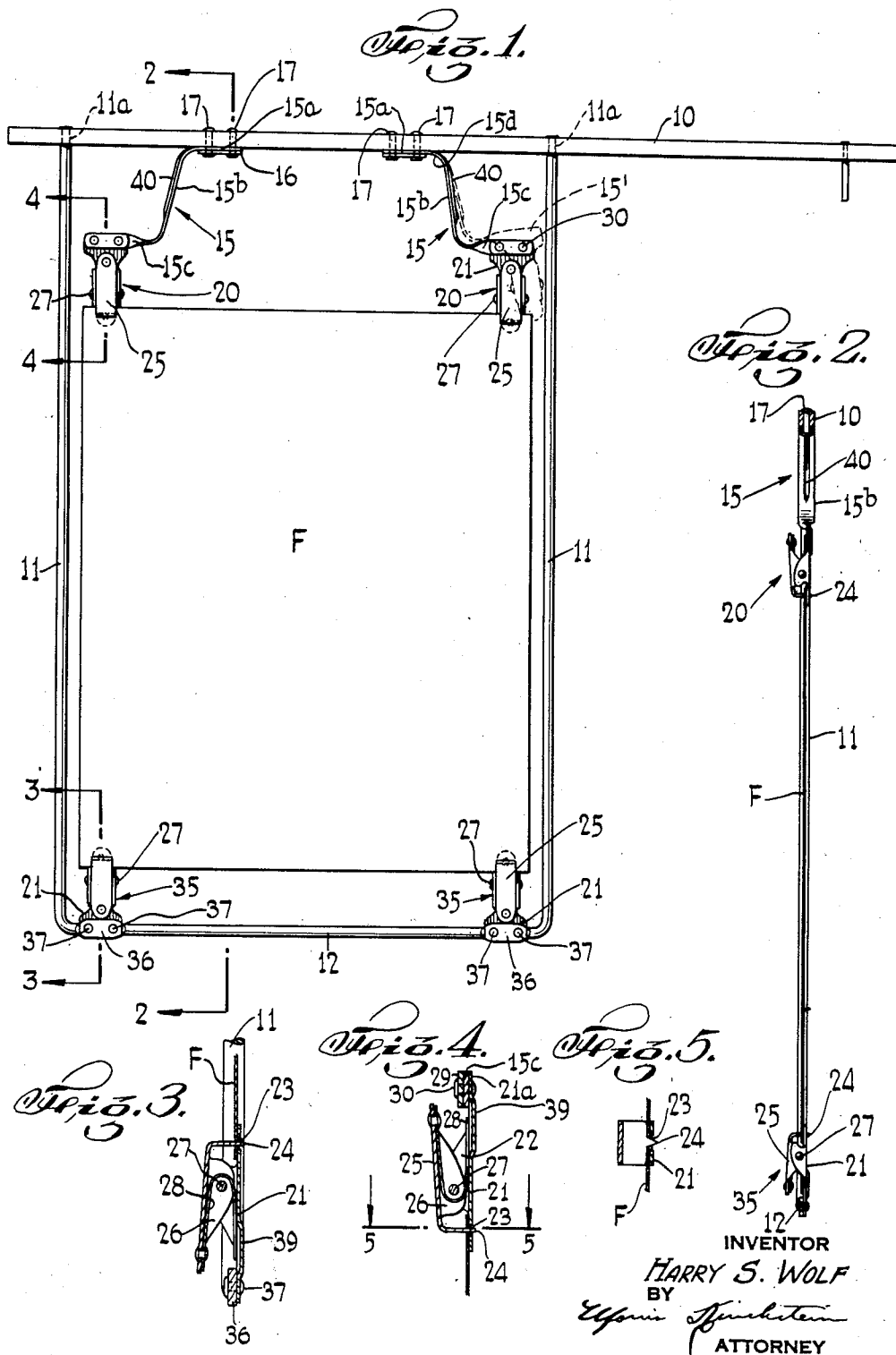
Oct. 27, 1942.

H. S. WOLF

2,299,779

FILM HOLDER

Filed Jan. 27, 1940



UNITED STATES PATENT OFFICE

2,299,779

FILM HOLDER

Harry S. Wolf, Brooklyn, N. Y.

Application January 27, 1940, Serial No. 315,991

4 Claims. (Cl. 95—109)

This invention relates generally to film holders. More particularly, my invention relates to an improved construction for film holders of the type adapted to support photographic films during the handling thereof for the purpose of developing and drying.

One of the objects of my invention is to provide an improved photographic film holder of the type disclosed in my Patent No. 1,932,946, issued October 31, 1933, for Film holder, and which shall possess certain additional structural advantages and improvements resulting from experimentation and a period of actual use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the claims.

In the accompanying drawing, in which is shown one of the various possible embodiments of this invention,

Fig. 1 is an elevational view of a film holder embodying my invention and illustrating the manner of supporting a film thereby;

Fig. 2 is a cross-sectional view taken substantially on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged cross-sectional view taken substantially on the line 3—3 of Fig. 1;

Fig. 4 is an enlarged cross-sectional view taken substantially on the line 4—4 of Fig. 1; and

Fig. 5 is a cross-sectional view taken substantially on the line 5—5 of Fig. 4.

Referring now in detail to the drawing, there is illustrated a photographic film holder constructed in accordance with my invention, and which is of the type shown in my said Patent No. 1,932,946, comprising a longitudinal cross member 10 and a U-shaped frame member having parallel arms 11 and a bottom interconnecting member 12. The said cross member 10 and U-shaped member 11, 12 are preferably made of metallic material, the former being substantially rectangular in cross section and the latter being preferably circular in cross-sectional contour. The arms 11 of the U-shaped frame are provided with reduced upper end portions 11a, which pass through corresponding apertures in the member 10 and are riveted over and to hold the same rigidly in assembled relationship.

For supporting a film F on the holder, there is provided a pair of symmetrically disposed spaced resilient members 15, which are preferably made from a single piece of flat metallic stock. Each of the said members 15 comprises a horizontal portion 15a contactively overlying the bottom surface of the cross member 10, an integral depending portion 15b and a second horizontal portion

15c, the latter portion being twisted to lie in a plane at right angles to the plane of the first horizontal portion 15a. Each of the members 15 is rigidly attached to the cross member 10 by means of a plate 16 overlying the portion 15a and permanently attached to the said cross member 10 by means of the pairs of rivets 17 passing through the portion 15a, the plate 16 and the cross member 10. The material of the members 15, while relatively rigid, possesses a sufficient amount of resilience so that they may be moved from their normal dotted line position 15' to the full line position. In other words, with the portion 15d of the members 15 as a fulcrum, the integral portions 15b and 15c may be pivotally moved from the dotted line position 15' to the full line position and, upon release, will be again restored to the said dotted line position.

Attached to the twisted portions 15c of the members 15 are clip members 20 adapted to firmly grip the film F adjacent the upper edge thereof. The clips 20 may be of the type fully shown and described in my said Patent No. 1,932,946, and may comprise a sheet metal member 21 having a pair of parallel upstanding ears 22 provided with aligned bearing openings. The member 21 is provided with an opening 23 adjacent the bottom end thereof, designed to receive therein a projection 24 of a second sheet metal member 25. The said member 25 is provided with a pair of parallel ears 26 having aligned bearing openings. The aligned bearing opening in the ears 26 and in the ears 22 receive therein a pivot 27 to thus hold the members 21 and 25 in pivotally assembled relationship. A spring 28 normally tends to urge the lower end of the members 25 and 21 toward each other in a position such as shown in Figs. 4 and 5 of the drawing, where the projection 24 is received in the opening 23. The member 21 is provided with a flared upper portion 21a, which lies adjacent the underneath surface of the twisted portion 15c. A plate 29 overlying the opposite surface of the said portion 15c serves to permanently attach the clips 20 to the said members 15 by means of the rivets 30. It is thus seen that the clips 20 are permanently and rigidly attached to the members 15 for movement therewith, and the members 21 of the clips 20 are prevented from movement relatively to the members 15.

The film F is adapted to be tightly gripped by the clip members 20 by positioning the same between the spread apart members 21 and 25 of the clips 20, which, upon release, will cause the projection 24 to pierce the film F and thus hold said film tightly gripped adjacent the upper edge thereof.

A pair of clips 35, similar in construction to the clips 20, having the flared flattened ends thereof rigidly attached to portions 36 of the bottom

frame member 12, which portions 36 are flattened to correspond to the said portions 21a, are provided. The clip members 35 are then permanently and rigidly attached to the frame part 12, by means of the rivets 37.

In attaching a film to the holder, the bottom edge of the film may first be gripped by the clip members 35, after which the clip members 20 are brought down from their normal dotted line position 15' to the full line position shown in Fig. 1, where they grip the upper edge of the film and produce a tension on the film by their tendency to be restored to their original dotted line position, thus keeping the film in a flat uncrinkled condition.

It is thus seen from the above described construction that when the film F is tightly gripped by the upper and lower pairs of clip members 20 and 35 respectively, it will be held against movement in all directions, since it is noted that, due to the flat rod-like construction of the members 15, lateral displacement will be prevented, so that the film F will maintain its position in the same plane and will therefore not contactively engage other films or other undesirable objects.

The cross member 10 is preferably made of such size as to project considerably beyond one of the arms 11, to provide a portion for convenient handling. To further insure against disalignment of the members 15, the portions 15b thereof are provided with longitudinal ribs 40. In the present invention, I have found that satisfactory results are obtained when the ribs 40 are formed by pressing out the material from the opposite sides of said ribs. I have also found that rigidity is added to the clip members by providing the member 21 thereof with a rearwardly pressed out rib 39.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

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

1. In a film holder having a frame and wherein a clip movably mounted with respect to said frame and having a pair of jaws is employed for gripping portions adjacent one edge of a film between said jaws, that improvement which comprises the provision of a clip support having one end attached to said frame and the other end attached to said clip, said clip support including a resilient member of flat bar stock having a pair of substantially horizontally disposed end portions interconnected by a transversely disposed central portion, the end portion of said stock attached to said frame and the central transverse portion having their flat sides perpendicular to the plane of said frame, the end portion of said stock attached to said clip being axially twisted so that its flat side is parallel to the plane of said frame and disposed substantially at right angles to the flat side of the central portion and the end portion which is attached to said frame.

2. In a film holder having a frame and where-

in a clip movably mounted with respect to said frame and having a pair of jaws is employed for gripping portions adjacent one edge of a film between said jaws, that improvement which comprises the provision of a clip support having one end attached to said frame and the other end attached to said clip, said clip support including a resilient member of flat bar stock having a pair of substantially horizontally disposed end portions interconnected by a transversely disposed central portion, the end portion of said stock attached to said frame and the central transverse portion having their flat sides perpendicular to the plane of said frame, the points of attachment between said frame and an end portion of said stock and between said clip and the other end portion of said stock being disposed adjacent opposite ends of said transverse central portion.

3. In a film holder having a frame and wherein a clip movably mounted with respect to said frame and having a pair of jaws is employed for gripping portions adjacent one edge of a film between said jaws, that improvement which comprises the provision of a clip support having one end attached to said frame and the other end attached to said clip, said clip support including a resilient member of flat bar stock having a pair of substantially horizontally disposed end portions interconnected by a transversely disposed central portion, the end portion of said stock attached to said frame and the central transverse portion having their flat sides perpendicular to the plane of said frame, the end portion of said stock attached to said clip being axially twisted so that its flat side is parallel to the plane of said frame and disposed substantially at right angles to the flat side of the central portion and the end portion which is attached to said frame, the points of attachment between said frame and an end portion of said stock and between said clip and the other end portion of said stock being disposed adjacent opposite ends of said transverse central portion.

4. In a film holder having a frame and wherein a clip movably mounted with respect to said frame and having a pair of jaws is employed for gripping portions adjacent one edge of a film between said jaws, that improvement which comprises the provision of a clip support having one end attached to said frame and the other end attached to said clip, said clip support including a resilient member of flat bar stock having a pair of substantially horizontally disposed end portions interconnected by a transversely disposed central portion, the end portion of said stock attached to said frame and the central transverse portion having their flat sides perpendicular to the plane of said frame, the end portion of said stock attached to said clip being axially twisted so that its flat side is parallel to the plane of said frame and disposed substantially at right angles to the flat side of the central portion and the end portion which is attached to said frame, the axially twisted part of the end portion to which said clip is attached being disposed immediately adjacent an end of said central transverse portion, the points of attachment between said frame and an end portion of said stock and between said clip and the other end portion of said stock being disposed adjacent opposite ends of said transverse central portion.

HARRY S. WOLF.