Sept. 2, 1941. G. M. DYE 2,254,798

FILM HOLDING CLIP

Filed Oct. 9, 1939

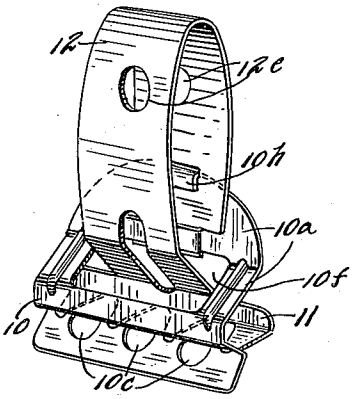


Fig. 1.

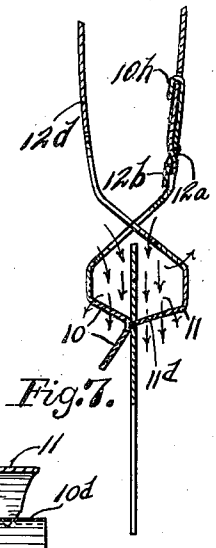


Fig. 7.

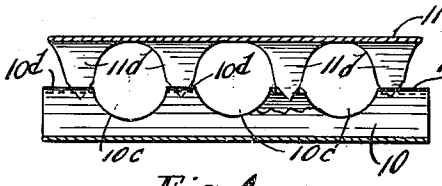


Fig. 4.

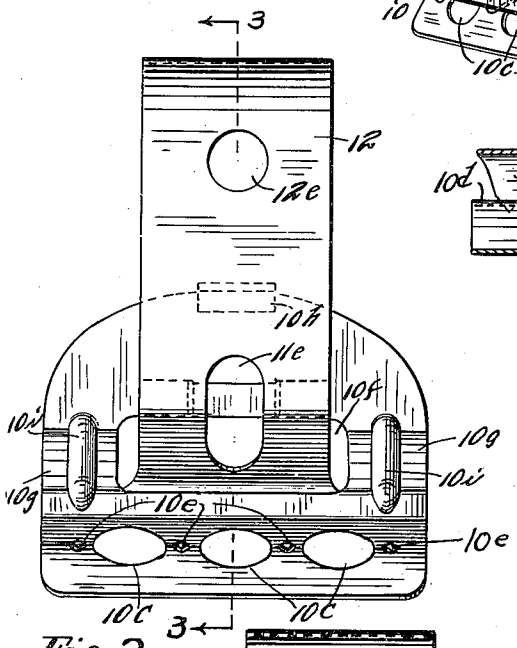


Fig. 2.

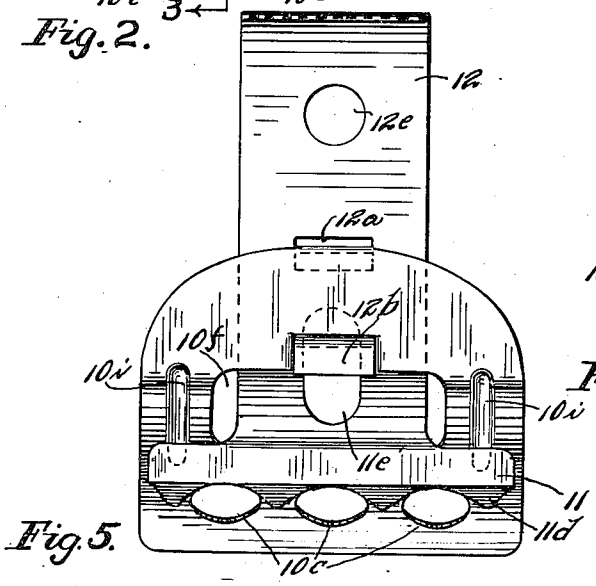


Fig. 5.

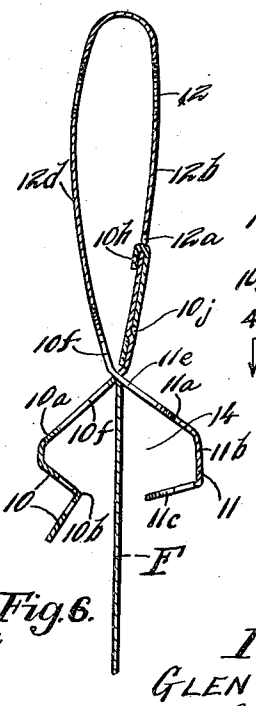


Fig. 6.

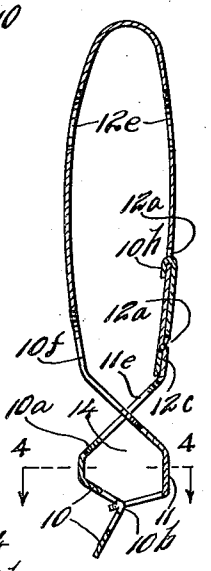


Fig. 3.

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FILM HOLDING CLIP

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1 Claim. (Cl. 24—259)

This invention relates to a clip and while the clip may have various applications, it particularly is designed for a clip to hold photographic roll films. Such films are held in position by clips at the ends thereof and the films are usually, though not invariably, suspended in vertical position. It is the most customary practice to have a clip clamping the film adjacent the top thereof and another clip clamping the film adjacent the bottom thereof. The latter clip is usually weighted to hold the film taut in suspended position.

The films are placed while supported by the clips in various treating solutions, such as the developing, fixing and washing solutions. After passing through these solutions they are suspended for drying. Air is often blown over the films while in drying position.

It is desirable to have a clip which will have small area engaging the film. If there is a flat surface engaging or closely adjacent the film water pockets are apt to be formed on the clip and these usually cause streaked drying of the films caused by water draining down on the film. It is also desirable to have a very small area engaging the film so that all parts of the film can be reached by the drying air. The clip should be constructed so that air can circulate freely therethrough in all directions so as to engage the film.

It has frequently happened with clips or holders of the prior art having opposed jaws, that when the edge of the film is pushed between or inserted between the jaws, the edge will fold over or be guided over into a fold. This is objectionable as it provided a portion of the film which will collect water and moisture, causing spotted or streaked drying. Furthermore, the end of the film is not properly disposed. The films are usually placed in the clips in a dark room and the operation is done quickly. It is desirable, therefore, to have a structure of clip which will prevent the above objectionable occurrence.

It is an object of the present invention, therefore, to provide a clip for holding photographic films which has a very small area engaging the film.

It is a further object of the invention to provide a clip so constructed that water pockets cannot form thereon.

Another object of the invention is to provide a clip constructed and arranged to have air circulate freely therethrough in all directions.

It is still further an object of the invention to provide a clip so constructed that the edge of the film will not fold over or be moved into bent-over position when inserted between the jaws thereof.

These and other objects and advantages of the invention will be fully set forth in the following description made in connection with the accompanying drawing in which like reference characters refer to similar parts throughout the several views and in which:

Fig. 1 is a perspective view of the clip embodying the present invention;

Fig. 2 is a view in side elevation of said clip;

Fig. 3 is a vertical section taken on line 3—3 of Fig. 2 as indicated by the arrows;

Fig. 4 is a horizontal section taken on line 4—4 of Fig. 3 as indicated by the arrows;

Fig. 5 is a view in side elevation as seen from the side opposite that seen in Fig. 2;

Fig. 6 is a view similar to Fig. 3 illustrating one function of the clip; and

Fig. 7 is a partial and sectional view similar to Fig. 3 showing a film suspended in the clip.

Referring to the drawing, a clip is shown comprising jaw portions 10 and 11. These jaw portions are supported by and carried by carrying portions 10*a* and 11*a* and said carrying portions are secured to a resilient loop 12 so that jaws 10 and 11 are moved resiliently toward each other. The jaw portion 10 is of angular form, the vertex portion 10*b* of said angle being directed toward jaw 11 and thus forming the film engaging portion of jaw 10. In the embodiment of the invention illustrated, jaw 10 is formed of sheet metal bent into the described form. Jaw 10 has extending therethrough spaced holes 10*c* of considerable diameter so that only narrow portions 10*d* are left therebetween. These narrow portions 10*d* have extending centrally therethrough holes 10*e* of very small diameter. It will be seen that the upper portion of jaw 10 slopes downwardly and that the lower portion of jaw 10 slopes downwardly and away from the film, which film F is indicated in dotted lines in Fig. 6. The jaw 11 has a vertical portion 11*b* and a portion 11*c* which slopes somewhat downwardly and toward the film F. Portion 11*b* is formed with spaced pointed teeth 11*d* of comparatively narrow width, said teeth tapering toward their pointed portions and the points of said teeth being alined with the apertures 10*e* of jaw 10. The points of teeth 11*d* enter the holes 10*e* when the clip is in normal position out of engagement with the film. The carrying portion 10*a* extends upwardly and inwardly and has an opening 10*f*

therethrough for the greater part of its width, thus leaving only quite narrow portions 10*g* at the sides thereof. The said carrying portion as seen in Fig. 2 has a curved upper edge, the same being provided centrally with a tongue 10*h* which extends through an opening 12*a* in one side of loop 12 and is bent over and clamped to said side. Said carrying portion has an opening 10*j* therethrough and the lower portion of the side 12*b* of loop 12 has a tongue 12*c* extending through said opening. Carrying portion 10*a* is offset opposite tongue 12*c* the thickness of the metal so that the outer surfaces of said carrying portion and tongue 12*c* are in the same plane. The carrying portion 11*a* also extends upwardly and inwardly from portion 11*b* of jaw 11 and the same is formed inwardly with the side 12*d* of loop 12. It will be noted that carrying portion 11*a* extends through opening 10*f* centrally of said opening. Said carrying portion 11*a* is also provided with an elongated opening 11*e* shown as having rounded ends. It will also be noted that opening 11*e* is alined with opening 10*f* and that there is a free space 14 which extends laterally between jaws 10 and 11 and carrying portions 10*a* and 11*a* throughout the width of the jaws and that openings 10*f*, 11*e* and 10*c* communicate with this space.

The sides of loop 12 are provided with alined openings 12*e* adjacent the top of said loop to permit a supporting member to be disposed in one or both of said openings.

The narrow portions 10*g* are shown as having strengthening ribs 10*i* struck up therefrom, said ribs being arcuate in cross section.

The clip is normally in the position shown in Figs. 1 and 3. When a film is to be held by said clip the operator merely presses the sides 12*a* and 12*d* of loop 12 together and this separates jaws 10 and 11 as shown in Fig. 6. The edge portion of the film F can then be inserted. It will be noted that when the film is moved upwardly between the jaws and between portions 10*a* and 11*a* that it will be guided toward the vertex of the angle formed by portions 10*a* and 11*a* should it strike one of said portions. When the edge engages in the vertex of the angle as shown in Fig. 6 it is definitely stopped. It will not be guided to either side to form a bend, roll or fold. This formation of such a bend, roll or fold has been a serious defect in clips of the prior art. With the present construction it is assured that the film will be in vertical and proper position. When the film is inserted as shown in Fig. 6, the operator releases the pressure on the sides of loop 12 and the jaws 10 and 11 move together in engagement with the film. The points of teeth 11*d* engage one side of the film and hold the other side against the vertex portion 10*b* of jaw 10 as shown in Fig. 7. Owing to the narrow portions 10*d* and the angular formation of jaw 10, the film is engaged only along very small portions thereof and substantially along only a line. The film is thus engaged at one side only at spaced points and at the other side only at a few small line portions. It will be seen that there is no place on the clip for water to accumulate or for water pockets to form. It will also be seen that air can circulate through the clip in all directions. The air can blow horizontally directly through the entire space 14 and the air can blow horizontally through openings 11*e* and openings 10*f*. The air can also pass vertically through openings 11*e* and 10*f*, through the openings 10*c* and through the openings between the teeth 11*d*. Rapid and efficient drying of the film is thus insured and there will be no water accumulate on the clip to spot the film or to run down on the film and streak the same. It will be noted that the film is not engaged by any flat surface. The clip is made of two pieces of metal as described for the convenience of assembly.

From the above description it will be seen that I have provided a very novel, simple and very efficient clip for holding photographic films. The device can be easily made and can be made very durable for long service. The same has been amply demonstrated in actual practice and found to be very successful and efficient.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts, without departing from the scope of applicant's invention, which generally stated, consists in a device capable of carrying out the objects above set forth, in the parts and combinations of parts disclosed and defined in the appended claim.

What is claimed is:

A clip for holding photographic films comprising opposing jaws resiliently movable toward each other to clamp said film, one jaw having formed thereon spaced pointed teeth with openings of appreciable width therebetween, the other jaw having portions alined with the points of said teeth and having openings of appreciable width between said portions, said jaws having carrying portions thereabove, one of which has an opening extending laterally therein for the greater portion of its width and extending closely adjacent to the jaw carried by said portion, the other of which has a central opening therethrough alined with said last mentioned opening and extending adjacent to the jaw carried by said other portion, said jaws having an open space extending laterally thereabove for their entire width with which all of said openings communicate, whereby air may circulate horizontally and vertically about said jaws and carrying portions.

GLEN M. DYE.