

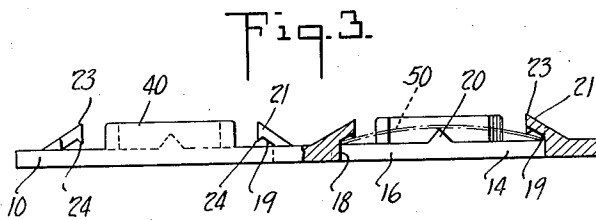
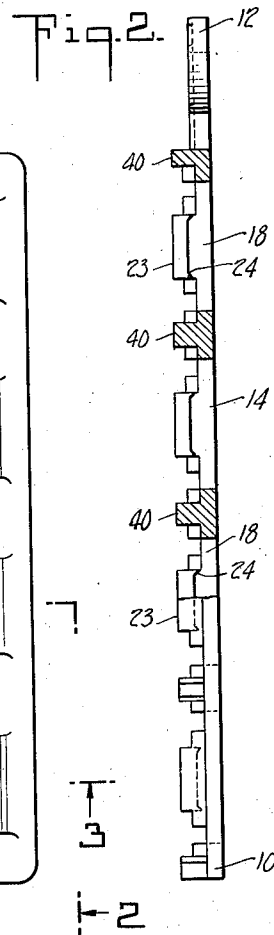
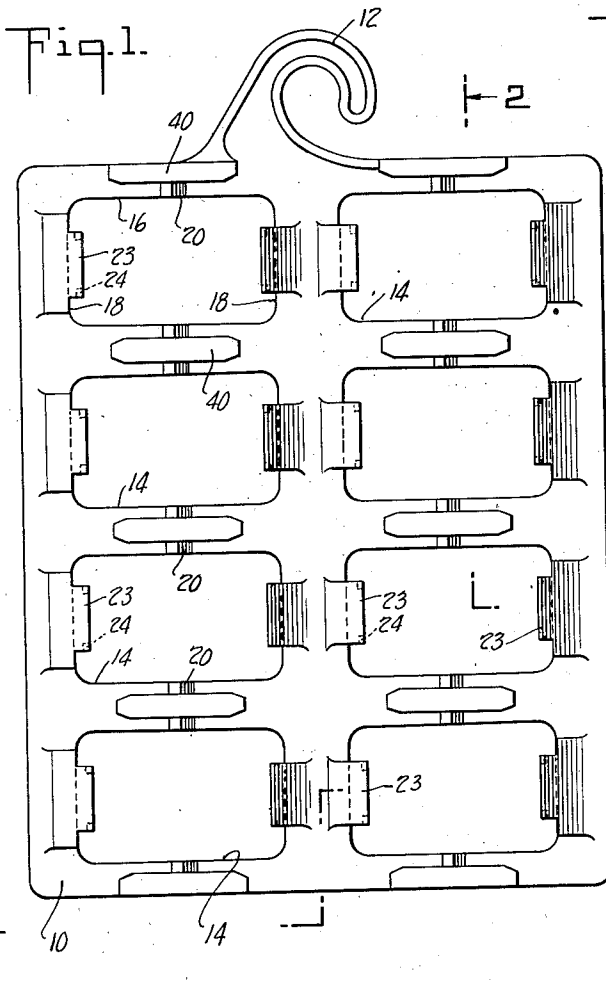
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FILM HOLDER

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2,290,831

FILM HOLDER

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3 Claims. (Cl. 95—160)

My invention relates to film supports.

The main object of my invention is the provision of a device for supporting a film in such manner as to reduce to the minimum contact between the film and the support, consistent with 5
securement thereof within the support.

Another object of my invention is the provision of a device for supporting a film while tensioning same, so as to minimize the possibility of film movement within the support and injury 10
thereof.

Another object of my invention is the provision of a device for supporting a film which will drain freely and have no pockets, grooves or other liquid traps.

Other and associated objects of my invention will in part be obvious and in part be pointed out specifically in connection with the following description of an illustrative embodiment.

In the drawing annexed hereto and forming 20
a part hereof

Figure 1 is a plan view of one form of device constructed according to and embodying my invention;

Fig. 2 is a section along the line 2—2 of Fig. 1; 25
and

Fig. 3 is a section along the line 3—3 of Fig. 1.

While my device is adapted to support photographic films generally, I will describe same with specific reference to the films used in dental X-ray work. These are fairly small, and generally rectangular in shape, with rounded corners. After exposure, these films must be processed. During the various processing steps (such as developing, fixing, washing, drying, etc.) the base of, and the emulsion on the film are softened and extremely susceptible to damage, and it becomes important to handle the films as little as possible until such time as the emulsion has hardened and dried. I have, therefore, invented a holder 40
which reduces to a minimum the possibility of damage to the film during the several processing steps because the film is rigidly secured therewithin.

As examples of conventional structures used for this general purpose, the constructions shown in the Mabey Patent No. 1,629,285, dated May 17, 1927, the Elliott Patent No. 1,792,005, dated February 10, 1931, and the Wilson Patent No. 2,186,891, dated January 9, 1940, are fairly representative. These either do not support the film on all sides thereof, or permit the film to move about within the container, or have pockets or grooves into which the processing liquids collect, or in other ways are unsatisfactory. In none of these con- 55

ventional structures is there any provision made for flexing the film, for supporting the film under flexion along all its edges, nor do the conventional constructions teach "point" support on all the film edges, nor do they permit the ready, rapid draining of my invention.

Reference numeral 10 indicates my support generally, which comprises a generally flat, level base member 12, which may be formed as by molding, stamping or otherwise of synthetic plastic material, metal or the like. Base 10 may be rectangular in shape, as shown, as to fit within the conventional processing tanks, but it may be otherwise shaped without departing from my 15
invention.

A hook member, as 12, may be formed integral with the support 10, and located in such position at one end thereof that when suspended from a support, the device will hang straight (as shown). The hook may be placed in any other suitable or desired location, or it may be eliminated entirely.

A plurality of openings 14 are formed in and through support 10. These openings 14, 14 may be square, rectangular, or circular, but they are preferably shaped substantially like the film for which the holder is designed to be used.

As the presently illustrated form of my invention is designed for use with dental X-ray films which are generally rectangular in shape, openings 14 are formed of generally rectangular shape; the longer sides 16, 16 of said openings extending across the width of the holder 10 and the shorter sides 18, 18 extending lengthwise of the device. The direction of the openings is not important, the presently described arrangement being illustrative only. The openings 14, 14 are provided to permit ready access of the processing fluids to the film.

On each of the longer margins 16, 16 of each opening 14, and midway thereof, I provide an upwardly pointed projection 20, which may be formed integral with portion 10. On each of the shorter sides 18, 18, of each opening 14, I provide a member 23 which extends upwardly of the base portion 10 as at 19, and reaches out over the openings 14 as shown at 21. The underside of each overhanging portion 23 is provided with a pair of downwardly extending points 24, 24. Overhangs 23, 23 may also be formed as integral parts of the support member.

Overhangs 23 are so spaced that the longitudinal distance between the upwardly extending portions thereof is slightly smaller than the length of the film with which the device is to

be used. Thus, when the leading edge of a film as 50 is inserted under one of the overhangs, the film must be buckled transversely to be slid in under the overhang on the opposite side of the opening. The pointed projections 20 which contact and bear against one side of the film will cause the film to bend and the points 24, 24 projecting downwardly from the underside of the overhangs 23, 23 will contact and bear on the other face of each film. Straight-sided wall portions 40, 40 are formed adjacent projections 20 on each side of opening 14. These are preferably spaced apart a distance greater than the width of the film, and serve, with the portions 19 of overhangs 23 to form a lateral retaining receptacle for each film.

With the above described construction, I provide point support for the film along each lateral edge thereof, but not on the same side of the film. Referring to Fig. 3, it will be seen that at the underside of film 50, the film is contacted only by the projections 20. The edges of the film are contained within the enclosure formed by walls 40, 40 and the overhangs, while the top face of the film is contacted only by the downwardly projecting pin points 24 of the overhangs 23. The film is kept buckled by this arrangement, and the tensioning thereof will exert some pressure against the pin points and the extensions. After the films have been inserted in the holder, the device may be disposed within a tank containing the processing fluids, either by resting same on the bottom of said tank or by supporting same within the tank by hook 12. When the processing has been completed and the device is removed from the tank for drying, same may either be supported upon any suitable support or may be suspended in mid-air by hook 12, but however this is done, it will be seen that no obstacle or obstruction is present against the ready flowing off or evaporation of the processing fluids. There are no pockets, recesses or

traps within which any of the processing liquids may collect to retard drying of the film.

While my film retaining means are shown on but one face of base member 12, they may be provided on both faces thereof, if it is desired to double the film holding capacity of the holder.

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

1. A device for supporting cut film during processing, comprising a flat base portion, a generally rectangular opening therethrough, and means on and an integral part of the base to support a film in buckled condition over the opening, said means comprising a pair of pointed members projecting upwardly of the base on opposite sides of the opening to contact the underside of the film and a second pair of members projecting upwardly of the base and out and over the opening on the other two opposite sides of the opening to contact the upper side of the film.

2. A holder as in claim 1 in which the members projecting upwardly of the base and out and over the opening have a plurality of fingers thereon projecting downwardly towards the opening.

3. A device for supporting cut film in buckled condition during processing comprising a flat base portion, a plurality of generally rectangular openings therethrough, each opening having film supporting means about the marginal edges thereof, said means comprising a pair of pointed members projecting upwardly of the base on each of two opposite sides of each opening to contact the underside of the film and a second pair of members projecting upwardly of the base and out and over the opening on the other two opposite sides of each opening to contact the upper side of the film, means on and an integral part of the base, projecting upwardly therefrom between adjacent openings to prevent lateral movement of the films supported over the openings.

LAWRENCE R. FINK.