July 18, 1944.

H. F. STIFFLER

2,353,769

REMOVABLE HOOD

Filed Aug. 5, 1943

FIG. 1

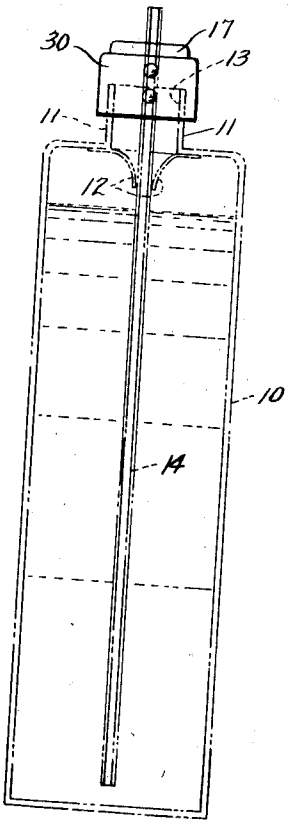


FIG. 2

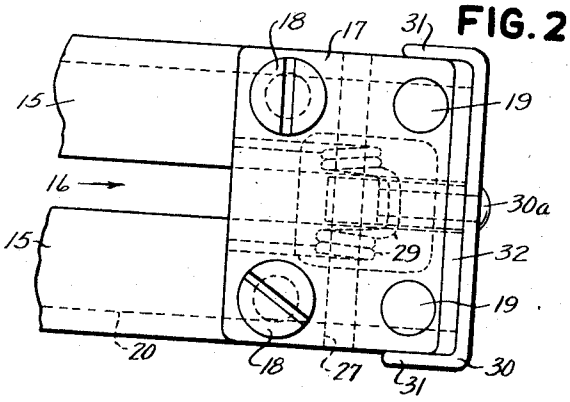


FIG. 3

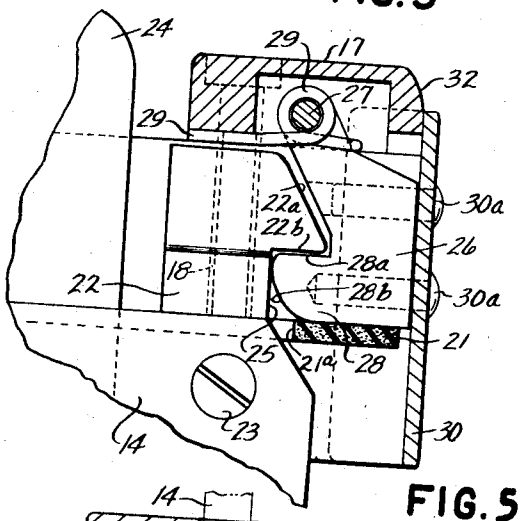
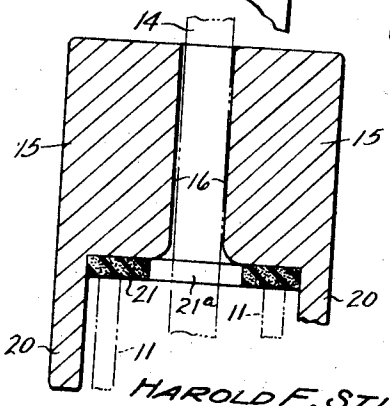


FIG. 5



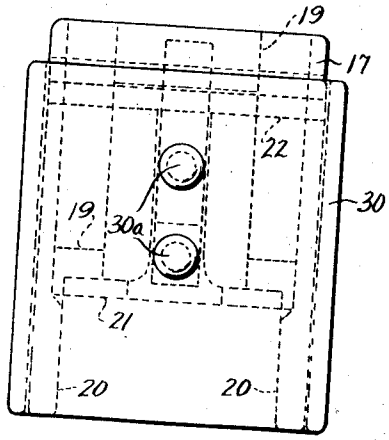


FIG. 4

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UNITED STATES PATENT OFFICE

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REMOVABLE HOOD

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Application August 5, 1943, Serial No. 497,535

5 Claims. (Cl. 95—90)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to removable hoods for photographic film holders, adapted to be used on such holders when they are inserted through the opening in the top of a daylight processing or developing tank. The general object of the invention is to provide a hood which is an effective light guard at the top of the tank but permits a slight oscillation of the holder while in the tank for the purpose of agitating the solutions. Other objects are to provide a removable hood which is attached by a single motion of the user, which is positively locked in position when attached and which may be easily detached, with one hand if necessary. A further object is to provide attaching means for a hood which employs no projections beyond the normal outline of the holder such as would interfere with use of the holder. Other objects will be apparent from the following description of a preferred embodiment of the invention shown in the accompanying drawing, wherein—

Fig. 1 is a somewhat diagrammatic sectional elevation showing a developing tank in phantom with a film holder inserted in the tank and the removable hood of the invention attached to the holder;

Fig. 2 is a top plan view, on a large scale, of one of the two like ends of the hood;

Fig. 3 is a fragmentary sectional elevation of the same, on the same scale, showing a portion of the film holder;

Fig. 4 is an end elevation of the hood on the same scale; and

Fig. 5 is a cross section through the two spaced bars of the hood body, part being broken away, the film holder and top flanges of the tank being shown in phantom.

Referring particularly to the drawing, the developing tank 10 has upstanding flanges 11 at the top on which the hood rests, as will be described. Light-shielding gaskets 12 are mounted in the tank below the opening 13 and embrace the sides of film holder 14 when the latter is immersed in the tank. The several partitions which divide the tank into compartments are omitted as well as other features of the tank, since the invention is independent of any of these features.

The hood of my invention comprises two parallel bars 15, with a long, narrow opening 16 between them for the holder 14, and two blocks 17 secured at the ends of the bars. A pair of screws 18 and a pair of pins 19 are shown as securing each block 17 to the ends of the two bars so that the hood assembly is rigid. Each bar has a depending integral flange 20 extending for its entire length, and a sponge rubber gasket 21, with a central opening 21*a* for the film holder, is secured to the underside of each bar adjacent the flange 20 but on the inside thereof. As shown in Fig. 5, the gasket 21 seats on the top edges of the flanges 11 of the tank and helps to exclude light from the film holder when in the tank. To secure the hood upon the holder, the latter is provided with two flat metal inserts 22 secured by screws 23 at the two uppermost corners on either side of the dark slide 24, which is slidable in and out of the film holder, as is conventional. These inserts have notches 25 for cooperating with latches 26 carried at each end of the hood. Each latch 26 is pivoted on a pin 27 secured in one of the blocks 17 and has a projecting nose 28 with a flat upper edge 28*a* and a cam edge 28*b*, said nose being received within the notch 25 when the parts are secured together (Fig. 3). A spring 29 mounted on pin 27 urges the latch into engagement with the notch, while permitting manual release of the latch. When the parts are locked, any pull or lifting force on the hood will act directly through the central axis of pin 27, so that there is no tendency for the latches to disengage or loosen even when subjected to severe stresses. To operate each latch and also enclose it and exclude light, a U-shaped plate 30 is secured to the latch as by a pair of pins 30*a*, each plate having end flanges 31 which fit around the outside of the block (Fig. 2). Movement of the latch inwardly beyond the position shown in Fig. 3 is prevented by engagement of the plate 30 with the block.

When the hood is to be applied to a holder, both ends are ordinarily grasped and the hood is moved down until the rounded surface 28*b* of each latch engages the cam edge 22*a* of the metal insert 22, whereupon the latch is moved outwardly against the resistance of the spring. The block is arcuately rounded on the axis of the pin as indicated at 32 (Fig. 3), so that as the plate moves upwardly with outward releasing movement of the latch, its upper end slides over the surface of the block, maintaining a light seal at the contacting surfaces. Finally, the flat edge 28*a* of the latch snaps beneath the flat edge 22*b* of the metal insert, and the hood is securely locked at both ends. Disengagement may be made by one hand only, if necessary, by pulling out on the lower end of either U-shaped plate

30, which swings the latch attached thereto to clear the notch **25**, whereupon the hood may be disengaged at the opposite end and lifted off. The construction and arrangement even permits manipulation of the hood by a gloved hand, which saves the photographer's time, since he must sometimes work with rubber gloves or even heavy lined mittens. When the hood is in position the holder may be oscillated to agitate the solutions in the tank, without permitting light to enter. This oscillation is possible because the film holder is supported on the tank entirely through the soft gaskets **21** and because the holder fits loosely in the tank opening.

It has been proposed to employ a portable developing tank having a removable top member provided with a fibrous light-excluding strip in contact with the usual slide, and also provided with locking means to secure the top member to the upper end of a negative carrier which is slidable into a frame. This disclosure is found in the Gindele Patent No. 1,256,893, dated February 19, 1918. However, so far as I know, I am the first to provide a hood for film holders which will permit a slight oscillation of the holder while in the tank for the purpose of agitating the solutions; also to provide positive and dependable locking means for the hood which may be manipulated by one hand, if necessary.

Obviously the present invention is not limited to the particular embodiment herein disclosed but may assume many forms within the scope of the claims.

What I claim is:

1. In combination with a film holder having a notch at each upper corner; a hood enclosing the upper end of the film holder; a spring-actuated latch at each end of the hood and adapted to engage the notch in the adjacent corner of the film holder; and a plate secured to each latch and providing convenient means for releasing the latch; each latch automatically engaging when the hood is moved down over the end of the film holder.

2. In combination with a developing tank and a film holder adapted to be inserted in the tank at the top thereof, a removable hood for the film holder; co-operating means on the hood and film holder to lock the hood upon the upper end of the film holder; and means to mount the hood on the tank to permit oscillation of the film holder within the tank when locked to the hood, thereby to agitate the tank solutions.

3. A removable hood for film holders of the type which are insertible in developing tanks having upstanding, spaced top flanges, comprising a pair of parallel bars rigidly secured together, the space between the bars being sufficient to admit the end of the film holder, which is, therefore, slidable through the hood; operator-released means to secure the hood to the film holder; and means on the hood to fit over the flanges on the tank and exclude light from the tank.

4. The invention according to claim 3, wherein the means to secure the hood to the film holder comprises a spring-actuated latch pivoted on the hood at one end, and a co-operating latch-engaging member fixed at the top of the film holder and adapted to engage the latch and by cam action force the latch out of its path as the hood is being assembled with the film holder, the latch finally snapping under the latch-engaging member when the parts are completely assembled, to lock the hood rigidly on the film holder; a plate rigidly secured to the latch at the end of the hood and swingable with the latch, and being constructed and arranged to serve as a handle for latch releasing by the operator; the hood being cut away on an arc to permit swinging of the plate with the latch, and the plate closely fitting the arcuate surface of the hood to prevent light from reaching the film on the film holder during manipulation of the latch.

5. In combination with a developing tank having upstanding top flanges and a film holder adapted to be inserted in the tank at the top thereof between said flanges, a removable hood for the film holder; a latch at each end of the hood; means on the film holder with which the latches engage to lock the hood on the film holder; a pair of parallel soft gaskets secured to the underside of the hood; said gaskets seating on the upper edges of the top flanges of the tank so that the film holder has its only support on the tank through said gaskets; the gaskets being of soft material not only to make light-sealing contact with the top flanges, but also to permit movement of the film holder when in the tank.

HAROLD F. STIFFLER.