

[54] **CONTAINER FOR SHEETS OF LIGHT-SENSITIVE MATERIAL**
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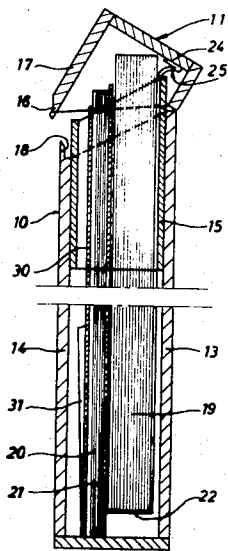
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[57] **ABSTRACT**
A container for a stack of light-sensitive sheets, which comprises a box portion open at one end, a cover hingedly connected to said box portion, and a flexible ejecting strip which is anchored with one end to the box portion and with the other end to the cover, the intervening portion of the strip forming a sling in which the stack of sheets may be located so that upon opening the cover the sheets are pulled out of the box portion.

7 Claims, 2 Drawing Figures



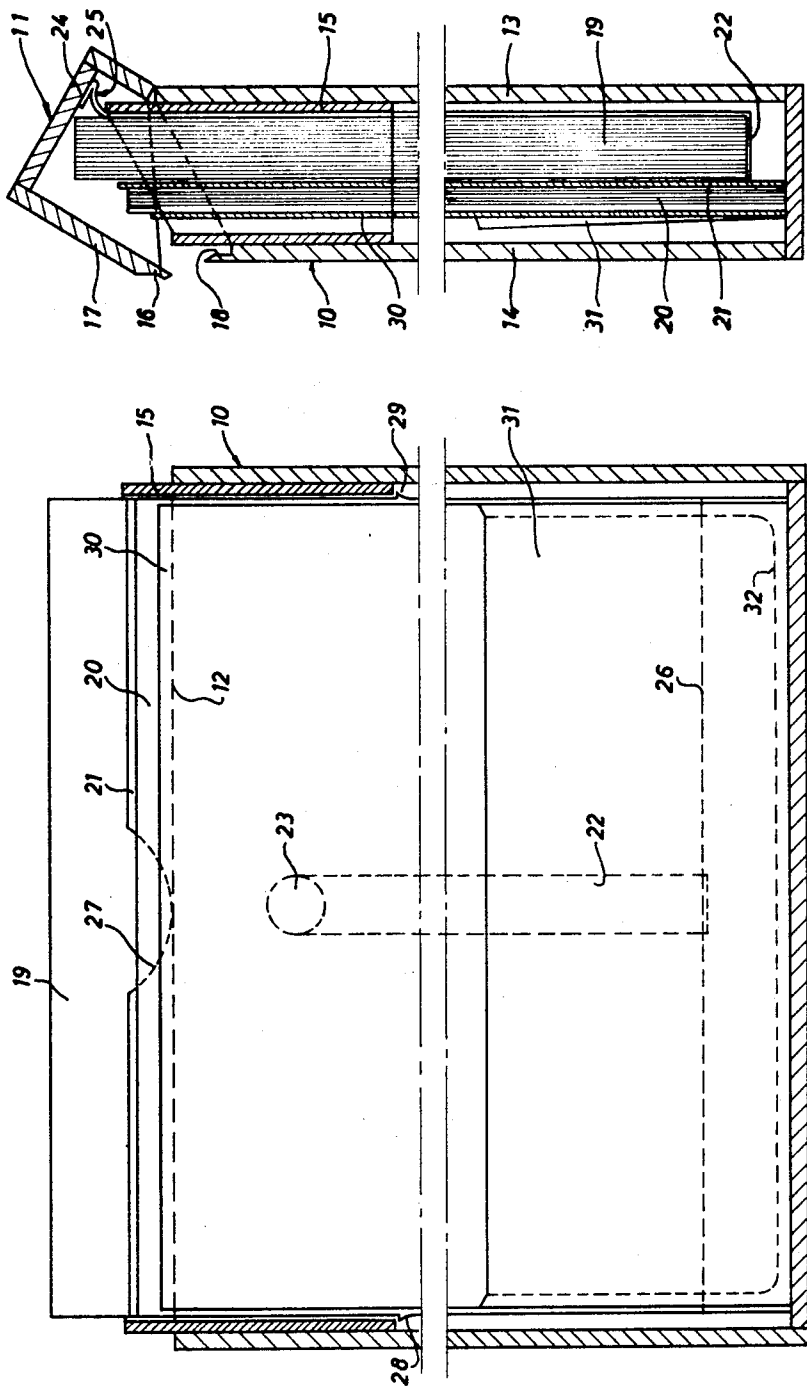


Fig. 2

Fig. 1

CONTAINER FOR SHEETS OF LIGHT-SENSITIVE MATERIAL

The present invention relates to a container for sheets of light-sensitive material and more particularly to such a container provided with an ejecting means for said material.

A container for light-sensitive sheets is known which comprises a box portion, a telescoping cover for said box portion and a flexible ejecting strip which extends around the sides and the lower ends of said sheets in the container and which protrudes with a free end as a finger piece for ready ejection of the sheets. A disadvantage of this prior art container is that its operation requires mostly the use of both hands, one hand for removing the cover and for pulling the ejection strip and the other for holding the box portion. In case there is a close fit between the sheets and the box portion, the first pull on the ejection strip will generally be too gentle to make the sheets of the container available, whereas the second pull will frequently remove the sheets too far from the container so that they must be pushed back. This may cause mutual displacement of the sheets, and as a consequence of friction electrostatic charges may be induced which may become visible upon development of the light-sensitive sheets.

The present invention aims at providing an improved container which may be easily operated by one hand, and wherein the lifting of the sheets in order to make them readily available occurs under the direct control of the cover.

According to the present invention, a container holding or capable of holding a stack of sheets of light-sensitive material, comprises a box portion open at one end, a cover hingedly connected to said box portion, and an ejecting member comprising a length of flexible material having one end anchored with respect to the box portion and the other end secured to the cover, the intervening portion of such member forming within the box portion a sling in which at least part of a said stack of sheets is or can be located so that the appertaining sheets are drawn into a position in which they project or project to a greater extent from the box portion by the pulling force exerted on the said ejecting member when the cover is opened.

A container for holding unwrapped light-sensitive sheets should be light-tight when closed and a container according to the invention may have any suitable form of light sealing means at the joint between the box portion and the cover. For example the container may have wall portions which screen the interior of the container against the entry of light between the box portion and cover when the latter is closed.

The ejecting members may be in the form of a tape or other strip.

According to a preferred embodiment of the invention, the said one end of the ejecting member is anchored to a panel which is displaceably located in the box portion. Such panel may be rigid. Preferably the panel serves as a partitioning member so that light-sensitive sheets which have been withdrawn from the container on one side of the said member and have been exposed may be introduced again in the container, but on the other side of such partitioning member. An effective separation between exposed and non-exposed sheets is thus provided.

Further features will be described hereinafter with reference to the accompanying drawings wherein:

FIG. 1 is a front view of an upstanding container according to the invention, the front wall and the hinged cover being removed,

FIG. 2 is a cross-sectional view of the container.

The container according to the present invention is shown in an upstanding position in FIGS. 1 and 2.

FIG. 1 is a front view of the container, the front wall and the hinged cover being deleted and the ejectable sheets being drawn in their fully lifted position.

FIG. 2 is a cross-sectional view wherein the cover is only partly opened and thus produces only a reduced lifting of the sheets.

The container generally comprises a box portion 10 open at the upper end according to the view of the drawings, and a cover 11 which is hingedly connected to the box portion along a line which is indicated by the broken line 12 (FIG. 1).

The box portion and the cover are made out of cardboard, plastic or the like. The hinged connection between the box portion and the cover may be formed by a strip of flexible material, such as a heavy fabric which is tightly adhered to the outer sides of both elements adjacent the juncture thereof. In the case of a plastic container, however, the hinged connection is preferably formed by a zone of locally weakened cross-section so that the container may be molded, e.g. by injection-molding, as a one piece element.

The opening of the box portion is downwardly sloping from the rear wall 13 towards the front wall 14 to provide an increased opening for enhancing the accessibility to the sheets.

The open part of the cover 11 is sloping in accordance with the opening of the box portion 10 so that the cover closely fits to the box portion in the closed position.

A rectangular sleeve insert 15 is fixed to the inside of the box portion near the open end thereof, and it extends over a distance of about 1 cm above the rim of the box opening. The extending portion of the insert overlaps the walls of the cover when the latter is closed and this relationship assures a good seal against the admission of light in the container. The light sealing of the container is improved by the tongue 16 of the cover which extends over the complete length of the cover wall 17 and which cooperates with the recess 18 which is formed between a portion of reduced thickness of the front wall 14 of the box portion and the insert 15 in the closed position of the container. Additionally, the cooperation of the tongue 16 with the recess 18 provides a closure which is sufficiently tight to keep the cover of the container closed during normal manipulation thereof. The resilience of the wall material, however, is sufficiently great to permit the easy opening of the cover by simply gripping the cover between the thumb and the other finger tips and pulling it backwards.

Inside the container are a stack 19 of unexposed light-sensitive film sheets and a stack 20 of sheets which have been image-wise exposed. Both stacks are separated from each other by a rigid member in the form of a flat cardboard sheet 21 the height of which exceeds by some millimeters the height of the stacked sheets.

A strip 22 of flexible material, e.g. a polyester tape having a width of 15 mm and a thickness of 0.1 mm, is fastened to the rigid member 21 centrally thereof at the area indicated by the numeral 23. The strip runs downwardly between the member 21 and the adjacent side of the stack 19 of the unexposed sheets and extends around the lower ends of the sheets and upwardly along the other side of the stack. The strip is deflected over the top edge of the rear wall of the insert 15 and anchored with the other extremity to the inside of the cover at the area 24. It will be apparent that as the cover is opened further, the strip is pulled out further whereby the length 25 of the strip comprised between the edge of the insert and the point of anchoring in the cover, will increase correspondingly so that the stack 19 of sheets is raised over a distance which is half the length of the strip portion 25. When the cover is completely opened as shown by the position in broken lines in FIG. 2, the ejectable sheets will take a position as shown in FIG. 1, their lower edges taking the position indicated by the broken line 26. It will be understood that the pulling force on the ejecting strip, as the cover is opened, exerts an opposite force on the member 21 as a consequence of the weight of the sheets 19 so that the member 21 is firmly urged against the bottom of the container.

The position of the member 21 may become less sure if the container is used in a horizontal position, the hinged side of the cover being turned downwardly, since in that case the pulling on the strip 22 may cause the member 21 to move together with the sheets of stack 19, so that no displacement occurs between the leading edge of the member 21 and the leading edges of the sheets of stack 19. Although the ready accessibility of the sheets of stack 19 may be improved by the provision of a cut-away portion 27 in the member 21, there is yet another reason for taking care that the position of the member 21 remains fixed in the longitudinal direction of the container, i.e. in the direction of removal of the sheets from the container, when the container is used in an almost horizontal position.

This reason is formed by a particular method of use of the present container, which comprises the step of reintroducing the sheets in the container at the opposite side of the member 21 after the image-wise exposure. This particular operating method is appreciated for the following reasons.

First, the operator who is occupied with the exposing of the light-sensitive sheets, e.g. on a repro-camera, need not use a separate box or container wherein the image-wise exposed film sheets are put prior to their processing.

Second, in case the container according to the invention is used as a light-tight holder for the exposed film sheets, e.g. for transport of the exposed sheets to the room where the processing apparatus is located if such apparatus is not located in the room where the exposure occurs, or for light-shielding the sheets as the light in the printing room is put on for preparing or checking the processing apparatus if this is located in the same room as the printing apparatus, the light-shielding of the sheets is much safer than with empty film boxes or the like which are used conventionally for that purpose.

The position of the exposed sheets in the container according to the described operating method, is in-

dicated by the stack of sheets 20. It will now be understood that by using the container in horizontal position not only the member 21 but also the stack of sheets 20 resting thereon will move forwardly as the stack of sheets 20 is pulled out of the container. The securing of the position of the member 21 as mentioned already hereinbefore may occur in a simple way by retaining means such as the barbs 28 and 29 which are provided at the lateral sides of the member 21 and which abut against the lower rim of the insert 15 as the member 21 will tend to move out of the box portion. The resilience of the member 21 and the projecting barbs is sufficient to permit the unhampered introduction of the member in the box portion and to permit occasionally also the forced removal of the sheet. The latter situation may occur when, after all the sheets of the container have been used, it is desired to use the container, e.g. for file purposes. When in such application the use of the ejecting strip is not wanted, the ejecting strip may be cut off near the fastening to the cover and the member 21 together with the ejecting strip may be removed from the container.

It will be understood that the retaining means need not have the form as shown by the barbs 28 and 29, and any configuration of the member 21 which prevents the easy displacement thereof in the longitudinal direction but, on the contrary, permits an easy relative displacement in the direction from the front wall 14 to the rear wall 13 of the box portion, falls within the scope of the present invention.

An additional feature of the container according to the present invention is formed by the rigid sheet 30 which is provided between the member 21 and the adjacent front wall 14 of the box portion. The sheet 30 has about the same size as the light-sensitive sheets and is provided at its lower end with a portion for retaining small strips cut from the sheets of light-sensitive material. In the present embodiment, the mentioned portion is formed by a flexible sheet 31 which is adhered at the edges, indicated by the broken line 32, to the rigid sheet 30 so as to form a small pocket with the upper side standing open.

The purpose of this pocket is as follows. Preparatory to the exposure of the sheets of stack 19, usually one or more test exposures are made on small strips which have been cut from one sheet of the stack 19. The pocket arrangement now provides a convenient storage place for these exposed strips prior to their processing. As the strips must be processed the rigid sheet 30 is simply pulled out of the container and the strips located in the pocket are readily accessible.

In a modified arrangement, the pocket may be replaced by a lower marginal portion of the sheet 30 which is folded upwardly towards the side of the front wall 14 under an angle so that its free edge is in engagement with the inner side of the wall 14. In the mentioned way a V-shaped receptacle is formed for temporary storage of the mentioned exposed strips.

The description which has been given so far relates to a container with its contents in use. It will be apparent that a container, as it is received from the manufacturer of the light-sensitive material, will include additional packaging envelopes.

Thus, the stack of unexposed sheets will mostly be wrapped in an envelope consisting of a light- and gas-

impermeable material. The container itself may be wrapped in an envelope too, or is at least provided with sealing means indicating that the cover has not yet been opened. Prior to use, the operator removes, in the darkroom, the film sheet package from the container, opens the wrapping envelope, e.g. by means of a tear strip provided to that end, throws away the wrapping envelope, and inserts thereafter the stack of sheets again at the position of the stack 19.

The container according to the present invention may be used for sheets for graphic, radiographic and other purposes. The sheets may be paper or film sheets. In the case of high-sensitive film sheets, the sheets may be separated from each other by a wrapper folded around each of the sheets. In order to prevent defects in the images on the sheets as a consequence of electrostatic charges on the sheets caused by mutual rubbing of the sheets, the relative position of the sheets may be secured by a tight wrapping of the stack of sheets. This feature is undone by the removal of the wrapping when the container with the sheets is taken in use.

We claim:

1. A container for holding a stack of sheets of light-sensitive material, said container comprising four side panels and a floor panel defining a box portion open at one end, a cover hingedly connected to said box portion at said open end, a rigid partition member of a size generally coextensive with said sheets disposed in said box portion generally parallel to the plane of said sheets to separate the box into front and rear compartments, said partition member being free of connection with said box portion, an ejecting member comprising a strip of flexible material having one end anchored to

said partition member at a point spaced from the lower edge thereof and the other end secured to the cover with the intervening portion forming within the box portion a sling extending around the inner end of said stack of sheets so that the stack is lifted by the ejecting member into projection position when the cover is open, and means for resisting withdrawal of said partition member comprising a sleeve inserted in said box portion with its upper end adjacent the upper end of said box portion, said sleeve extending around the partition member and the stack of sheet material within said box portion, and detent means on said partition member engaged with said sleeve.

2. The container of claim 1 wherein said cover has downwardly extending sides and said sleeve extends at its upper end above the upper end of said box portion to overlap with said cover sides when the cover is in closed position.

3. A container according to claim 1, wherein said partitioning member is displaceable within the box from front to rear thereof.

4. A container according to claim 1, wherein said partitioning member has at least one cut-out portion at its free end to improve the accessibility of the sheets.

5. A container according to claim 1, wherein the box portion contains a holder for receiving strips cut from the sheets of light-sensitive material.

6. A container according to claim 5, wherein said holder is formed on the lower end of a member located in the box on the opposite side of the partitioning member from said sling.

7. A container according to claim 6, wherein said holder has the form of a pocket.

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