

June 9, 1942.

W. RABKIN

2,286,010

SUPPLY CONTAINER FOR PHOTOGRAPHIC PLATES

Filed April 2, 1941

2 Sheets-Sheet 1

FIG. 1

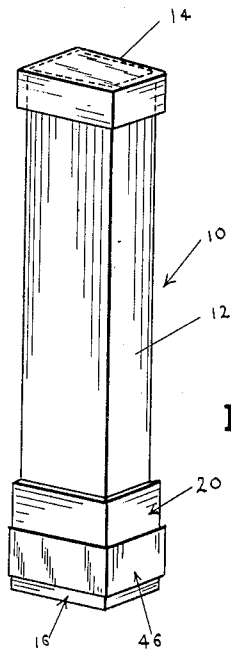


FIG. 2

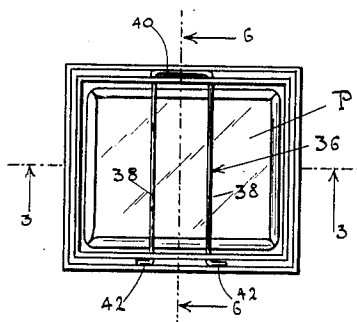


FIG. 6

FIG. 4

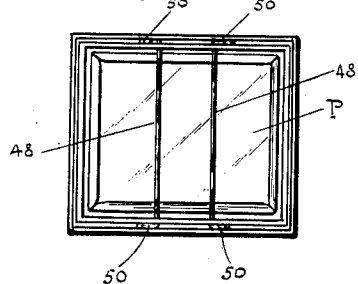
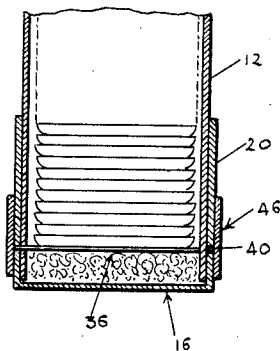


FIG. 3

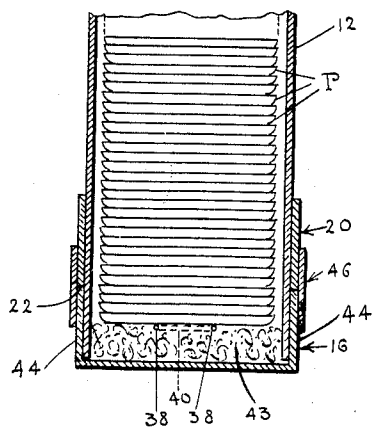


FIG. 5

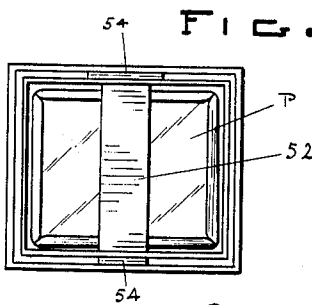
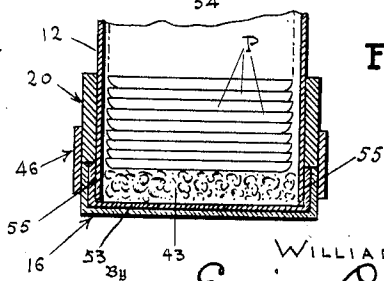


FIG. 13



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SUPPLY CONTAINER FOR PHOTOGRAPHIC PLATES

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2 Sheets-Sheet 2

FIG. 9

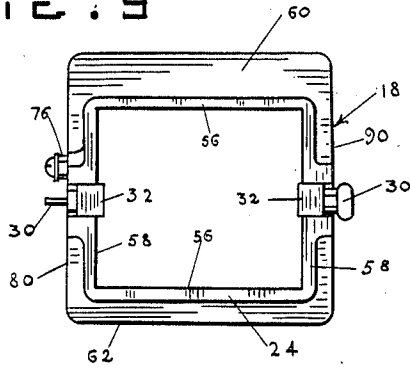


FIG. 11

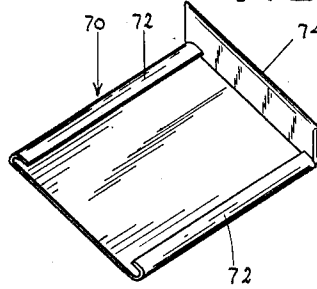


FIG. 10

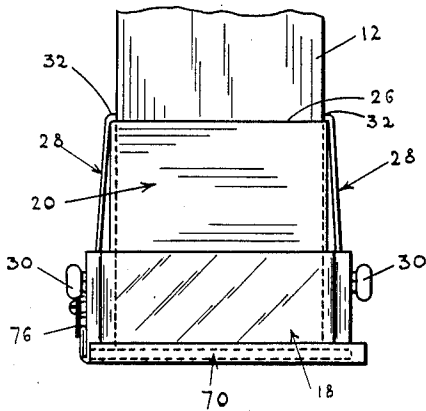


FIG. 7

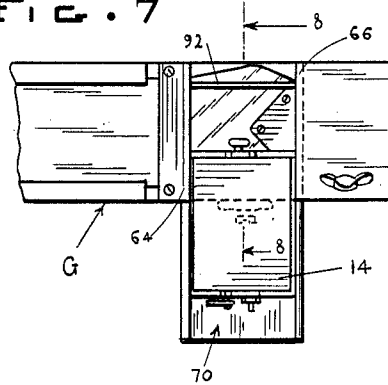


FIG. 8

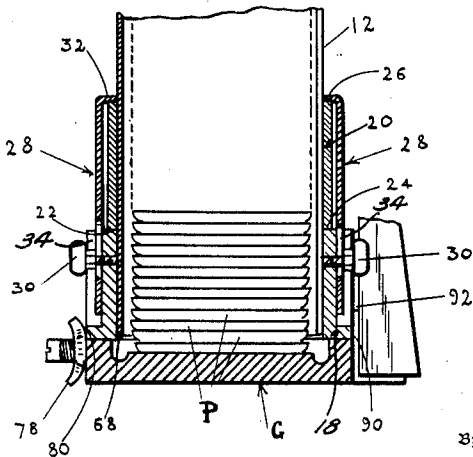
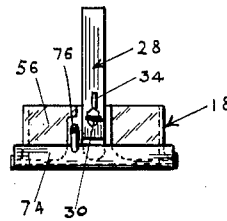


FIG. 12



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UNITED STATES PATENT OFFICE

2,286,010

SUPPLY CONTAINER FOR PHOTOGRAPHIC PLATES

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Application April 2, 1941, Serial No. 386,406
In Canada March 14, 1941

10 Claims. (Cl. 95--19)

The present invention relates to supply containers for framed photographic plates which are used in automatic photographic machines of the type shown in U. S. Patent No. 2,192,755 granted March 5, 1940 to me and Leo Einar Larsen.

As shown in said patent, there is provided a metal container or magazine for the supply of photographic plates, the latter being disposed in stacked relation in said container and fed in succession from the bottom of the magazine to the camera where the plate is exposed in taking the picture. Since the photographic plates are packed and shipped in cardboard containers, it is necessary to transfer said plates from the shipping container or packages thereof to the metal container or magazine of the machine, and this must be done each time the supply of plates in the magazine is depleted or almost depleted. The transfer of the plates from the shipping containers to the magazine container is a disadvantage because of the necessity for reloading the supply container or magazine in a "dark room" in order to avoid exposure of the plates to light. It is, therefore, an important object of the present invention to obviate this disadvantage. More particularly, in accordance with the present invention, the use of a dark room for reloading the plate magazine is unnecessary.

Another important object of the invention is to provide a package of photographic plates which can be used in the photographic machine as part of the supply container or magazine, thus eliminating the metal container and the necessity for transferring said plates from the shipping container or package to said supply container or magazine of the machine.

A further important object of the invention is the provision of a package or container for photographic plates which can be quickly and easily mounted in the photographic machine without danger of exposure of the plates to light.

The above stated, and other objects of the invention, and the invention itself, will be clearly understood from the following description, reference being had to the accompanying illustrative drawings.

In the drawings:

Fig. 1 is a perspective view of a photographic plate package embodying the present invention;

Fig. 2 is a bottom view of the package with the cover removed;

Fig. 3 is a sectional view on the line 3--3 of Fig. 2;

Figs. 4 and 5 are views similar to Fig. 2 illus-

trating other forms, respectively, of the invention;

Fig. 6 is a sectional view on the line 6--6 of Fig. 2 showing another form of the invention;

Fig. 7 is a fragmentary top plan view of the guideway of the photographic machine and illustrates the method of mounting the supply container in position on said guideway;

Fig. 8 is a sectional view on the line 8--8 of Fig. 7, the supply container being in proper position on the guideway;

Fig. 9 is a top plan view of the base of the magazine on which the supply container is mounted;

Fig. 10 is a fragmentary side view of the supply container including the base and a temporary cover for the bottom of the latter;

Fig. 11 is a perspective view of the temporary cover for the bottom of the base;

Fig. 12 is a side view of the base; and

Fig. 13 is a view similar to Fig. 3 showing another form of the plate package.

Referring now more specifically to the drawings, the photographic-plate package 10 embodying the present invention, in the condition in which said package is shipped to its destination for use, is illustrated in Fig. 1. Said package is light-proof and comprises a container which is formed of cardboard or any other suitable material which is opaque. Said container consists of a tubular body portion 12 of oblong cross section in which the framed photo-sensitive plates P are stacked, as illustrated in Fig. 3, with the sensitized surfaces of said plates uppermost. The container conforms interiorly substantially in size and shape to said framed photographic plates and is substantially filled with the latter from end to end, there being ordinarily 100 plates stacked in the container. The top end of the container, considering the latter in vertical position as when it is mounted on the guideway of the photographic machine, is sealed by an end closure or flanged cover 14 glued or otherwise fixedly secured to said end of body portion 12 of the container to prevent the passage of light into the latter. End closure 14 is intended to be non-removable. The other or lower end of body portion 12 is provided with an end closure member or cover 16 similar to cover 14 except that it is intended to be removed to permit the photographic plates to be successively ejected one at a time from the supply container or magazine as will hereinafter appear.

As illustrated in Figs. 8 and 10 the supply container is, when used as part of the plate magazine of the photographic machine, mounted on a

metal base 18, and for this purpose the body portion 12 of the container is preferably provided with shoulder-forming means 20 having a lower peripherally extending edge 22 which is seated upon the upper edge 24 of the base for supporting the supply container in vertical position. Said shoulder-forming member 20 comprises preferably a strip of relatively stiff cardboard of suitable thickness extending completely around the body portion 12 of the container near but spaced from the lower end thereof and securely fixed to the outer surface of said body portion preferably by an adhesive. Member 20 also provides an upper peripherally extending shoulder 26 which, as illustrated in Figs. 8 and 10 are releasably engaged by the retaining members 28 adjustably secured to the sides of base 18 by screws 30. It will be observed that the upper ends of members 28 have inturned end portions 32 which engage shoulder 26 and that said members are provided with slots 34, as shown in Fig. 12, through which adjusting screws 30 pass so that when said screws are tightened members 28 hold the supply container securely on the base.

Provision is made for temporarily supporting the stack of plates P in the supply container when the cover 16 thereof is removed preliminary to the mounting of said container on base 18, in order that the supply container can be held in vertical position with the sensitized surfaces of the plates uppermost during the operation of mounting the supply container on base 18. The means provided for this purpose comprises, in the preferred form thereof illustrated in Figs. 2 and 3, a U-shaped wire member 36 having legs 38 projecting through openings in the opposite side walls of the container. Member 36 extends across the container near the lower end thereof and preferably between said end and the lower edge of shoulder-forming member 20. The connecting end portion 40 of U-shaped member 36 lies close to and preferably abuts the outer surface of the adjacent side wall of the container, and the free ends of legs 38 of member 36 have bent portions 42 which lie close to and abut the adjacent side wall of the container. Closure member 16 being a flanged cover, as stated above, has side portions 44 which, when the cover is in position overlie said end portions 40 and 42 of member 36. It will be understood that end portions of member 36 are initially straight and are bent after said legs 38 are projected through the openings in the opposite side walls of the container. As illustrated in Fig. 3 the upper edge of the cover abuts the lower edge of member 20, which is preferred although not essential. Said cover 16 is secured removably in position by a strip 46 of gummed paper which extends completely around the container and member 20 and the flange of cover 16.

As illustrated in Fig. 4 the means for temporarily supporting the photographic plates comprises individual members 48 instead of a single U-shaped member 36, said members 48 having end portions 50 which are bent so that they lie close to the adjacent sides of the container at the upper surfaces thereof. In other respects the temporary supporting means constituted by members 48 are arranged in the same way as the above described temporary supporting means 36. As illustrated in Fig. 5 the temporary supporting means for the photographic plates P is constituted by a sheet metal member 52 having its opposite ends 54 bent so that they lie close to and preferably abut the adjacent sides of the contain-

er. In Fig. 6 the temporary supporting member 36 is positioned close to the bottom edge of shoulder-forming member 20 and the upper edge of the flange of cover 16 lies adjacent the end portions 40 and 42 of said member 36, said ends 40 and 42 of member 36 being covered by the fastening strip 46. If desired, notches can be provided in the edge of cover 16 to receive the ends of the temporary plate-supporting members, whereby the upper edge of the cover 16 can abut the lower edge of member 20.

When it is desired to replenish the supply of photographic plates in the machine, the container previously mounted on base 18 is removed and a similar container having a stack of unexposed plates therein is mounted on said base. In order to operatively connect the new supply container to the base, it is necessary first to remove cover 16 and thereafter the means provided as described above for temporarily supporting the photographic plates. The removal of cover 16 is readily accomplished by severing fastening strip 46 to permit removal of cover 16. After cover 16 is removed the supply container is positioned over the base with the temporary supporting means engaging the upper edge 24 of the base, and with the container thus positioned the temporary supporting means are removed, the bent ends 42 or 54 thereof, respectively, having been first straightened in order to permit the withdrawal of said temporary supporting means through the openings in the container through which said members project.

By reference to Fig. 3 it will be noted that filling material such as tissue paper 43 is disposed between the lowermost plate P and the end closure member or cover 16, this filling material being provided for holding the plates against movement thereof within the container during shipment and also for the purpose of preventing the passage of light to the container when the closure 16 is removed. It will be understood that this filling material is removed at the time the container is connected to base 18.

In Fig. 13, there is illustrated a modification of the present invention. As here shown, the temporary supporting means for the plate P are constituted by a strip 53 of paper extending across the end of container 12 inwardly of cover 16 and adhesively secured at its ends 55 to the opposite side walls of the container. Said strip 53 is preferably formed of material known as "Scotch tape" which is paper or fabric coated with adhesive which permits stripping the tape from the surfaces to which it is attached. Said tape can be of any suitable width, for example, wide enough to cover the end of the container or, alternatively, of about the same width as supporting member 52 shown in Fig. 5.

Referring now more specifically to base 18, the latter is preferably a metal casting comprising opposite side walls 56 and opposite side walls 58 defining a rectangular tubular portion in which the lower end portion of the supply container has a snug fit as illustrated in Fig. 8. The side walls 56 of the base are provided with flanges 60 and 62 which are slid under the lateral side rail portions 64 and 66, respectively, of the guide way G, of the photographic machine, as illustrated in Fig. 7, whereby the base is properly secured and positioned on said guideway. The lower edge 68 of the supply container terminates at or adjacent the lower surface of base 18, preferably just above said lower surface.

For temporarily closing the lower end of base 18

when the supply container is connected thereto and before mounting the base and the attached container on guideway G, a temporary closure member 70, illustrated in Fig. 11, is provided. Closure member 70 has inturned side edge portions 72 which fit over the side flanges 60 and 62 or base 18 in slidable engagement therewith. Closure member 70 is also provided with an upwardly extending part 74 which limits the movement of said closure member on the base in one direction. Said part 74 is releasably engaged by a latch 76 pivotally mounted on wall 58 of the base.

By reference to Fig. 7 of the drawings, it will be noted that as base 18 and the supply container connected thereto are being mounted as a unit on guideway G of the photographic machine, the temporary closure member 70 is progressively moved off of the base 18, and it will be understood that said temporary closure member 70 is removed entirely from the base when the latter is in its final or operative position on guideway G. When temporary closure member 70 is removed the photographic plates are supported as illustrated in Fig. 8 with the lowermost plate in engagement with and supported by guideway G. Also as illustrated in Fig. 8, it will be observed that after the base and the attached container of photographic plates are mounted on the guideway G said base is held releasably in fixed position on said guideway by a pivoted latch 78 which engages the base 18 at one side edge 80 thereof, the opposite side edge 90 of the base abutting against the fixed part 92 of the photographic machine.

Thus it is seen that the container of the package 10 in which the photographic plates are shipped constitutes together with base 18 a magazine for the supply photographic plates to the photographic machine, and as explained above when the supply of plates in one of the containers is depleted said container is removed from the base and is replaced by a container having a stack of unexposed plates therein. Preferably in replacing the depleted container with a filled container, base 18 is removed from guideway G to facilitate the attachment of the new container, temporary closure member 70 being attached to the base after the removal of the same from the machine and before the new container is attached to the base. Thereafter, the base carrying the new container of photographic plates is replaced in the photographic machine in the manner described above with reference to Fig. 7.

While I have shown and described several forms of the present invention it will be understood that the latter may be embodied otherwise than as here specifically shown or described and that in the illustrated forms of the invention certain changes in the details of construction and in the arrangement of parts may be made without departing from the spirit of the invention. For example, it is possible to omit shoulder-forming means 20 and to support the container on ledges provided interiorly of the base near the bottom thereof, the lower edge of the container engaging said ledges. Likewise, other changes in the construction of the supply container may be made and will occur to skilled artisans in view of the present disclosure. Accordingly, I do not wish to be limited to the invention as herein specifically shown or described except as may be required by the scope of the appended claims.

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

1. A package of photographic plates constructed and arranged to be mounted on a base and to form therewith a plate-supply magazine in a photographic machine, said package comprising a light-proof container having a stack of said plates therein, said container having an opening at one end thereof, a light-proof closure for said open end of the container, said closure being removable to permit said open end of the container to register with the base when said container is mounted thereon, said closure having parts overlying the opposite sides of said container near said end thereof, and means for temporarily supporting said plates in stacked relation in said container when said closure is removed comprising a removable member carried by and extending across the container near said end thereof and terminating in end portions engaged by the inner surfaces, respectively, of said parts of the closure when the latter is attached to the container.

2. A package of photographic plates constructed and arranged to be mounted on a base and to form therewith a plate-supply magazine in a photographic machine, said package comprising a light-proof container having a stack of said plates therein, said container having an opening at one end thereof, shoulder-forming means carried by said container externally thereof near but spaced from said end of the container in position to engage said base for supporting the container thereon in vertical position, a light-proof closure for said end of the container secured thereto and removable therefrom preliminary to mounting said container on the base, removable means for temporarily supporting said plates in stacked relation in said container when said closure is removed, said temporary plate-supporting means extending across said container in position near said end of the container and removably fastened to said container and held in said position independently of the securing of said closure to said container whereby said closure can be removed without unfastening said temporary plate-supporting means.

3. A package of photographic plates constructed and arranged to be mounted on a base and to form therewith a plate-supply magazine in a photographic machine, said package comprising a light-proof container having a stack of said plates therein, said container having an opening at one end thereof, a light-proof closure for said open end of the container, said closure being removable to permit said open end of the container to register with the base when said container is mounted thereon, said closure having parts overlying the opposite sides of said container near said end thereof, and means for temporarily supporting said plates in stacked relation in said container when said closure is removed comprising a plurality of removable members carried by and extending across the container near said end thereof, said members being removably fastened to said container independently of the securing of said closure to said container whereby said closure can be removed without unfastening said members.

4. A package of photographic plates constructed and arranged to be mounted on a base and to form therewith a plate-supply magazine in a photographic machine, said package comprising a light-proof container having a stack of said plates therein, said container having an

opening at one end thereof, a light-proof closure for said open end of the container, said closure being removable to permit said open end of the container to register with the base when said container is mounted thereon, said closure having parts overlying the opposite sides of said container near said end thereof, and means for temporarily supporting said plates in stacked relation in said container when said closure is removed comprising a removable U-shaped member carried by and extending across the container near said end thereof.

5. A package of photographic plates constructed and arranged to be mounted on a base and to form therewith a plate-supply magazine in a photographic machine, said package comprising a light-proof container having a stack of said plates therein, said container having an opening at one end thereof, a light-proof closure for said open end of the container, said closure being removable to permit said open end of the container to register with the base when said container is mounted thereon, said closure having parts overlying the opposite sides of said container near said end thereof, and means for temporarily supporting said plates in stacked relation in said container when said closure is removed comprising a removable U-shaped member carried by and extending across the container near said end thereof and terminating in end portions engaged by the inner surfaces, respectively, of said parts of the closure when the latter is attached to the container.

6. A package of photographic plates constructed and arranged to be mounted on a base and to form therewith a plate-supply magazine in a photographic machine, said package comprising a light-proof container having a stack of said plates therein, said container having an opening at one end thereof, a light-proof closure for said open end of the container, said closure being removable to permit said open end of the container to register with the base when said container is mounted thereon, said closure having parts overlying the opposite sides of said container near said end thereof, and means for temporarily supporting said plates in stacked relation in said container when said closure is removed comprising a U-shaped member removably carried by said container and extending thereacross near said end thereof, said U-shaped member passing through opposed wall portions of said container and removably fastened to said container independently of the securement of said closure to the container whereby said closure can be removed without unfastening said U-shaped member.

7. A package of photographic plates constructed and arranged to be mounted on a base and to form therewith a plate-supply magazine in a photographic machine, said package comprising a light-proof container having a stack of said plates therein, said container having an opening at one end thereof, a light-proof closure for said open end of the container, said closure being removable to permit said open end of the container to register with the base when said container is mounted thereon, said closure having parts overlying the opposite sides of said container near said end thereof, and means for temporarily sup-

porting said plates in stacked relation in said container when said closure is removed comprising a member of sheet material removably carried by said container and extending thereacross near said end thereof.

8. A package of photographic plates constructed and arranged to be mounted on a base and to form therewith a plate-supply magazine in a photographic machine, said package comprising a light-proof container having a stack of said plates therein, said container having an opening at one end thereof, a light-proof closure for said open end of the container, said closure being removable to permit said open end of the container to register with the base when said container is mounted thereon, said closure having parts overlying the opposite sides of said container near said end thereof, and means for temporarily supporting said plates in stacked relation in said container when said closure is removed comprising a member of sheet material removably carried by said container and extending thereacross near said end thereof and terminating in end portions engaged by the inner surfaces, respectively, of said parts of the closure when the latter is attached to the container.

9. A package of photographic plates constructed and arranged to be mounted on a base and to form therewith a plate-supply magazine in a photographic machine, said package comprising a light-proof container having a stack of said plates therein, said container having an opening at one end thereof, shoulder-forming means carried by said container externally thereof near but spaced from said end of the container in position to engage said base for supporting the container thereon in vertical position, a light-proof closure for said end of the container secured thereto and removable therefrom preliminary to mounting said container on the base, removable means for temporarily supporting said plates in stacked relation in said container when said closure is removed, said temporary plate-supporting means comprising a removable U-shaped member carried by and extending across the container near said end thereof.

10. A package of photographic plates constructed and arranged to be mounted on a base and to form therewith a plate-supply magazine in a photographic machine, said package comprising a light-proof container having a stack of said plates therein, said container having an opening at one end thereof, shoulder-forming means carried by said container externally thereof near but spaced from said end of the container in position to engage said base for supporting the container thereon in vertical position, a light-proof closure for said end of the container secured thereto and removable therefrom preliminary to mounting said container on the base, removable means for temporarily supporting said plates in stacked relation in said container when said closure is removed, said temporary plate-supporting means comprising a removable U-shaped member carried by and extending across the container near said end thereof, said closure having side portions overlying the opposite ends, respectively, of said temporary supporting means.

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