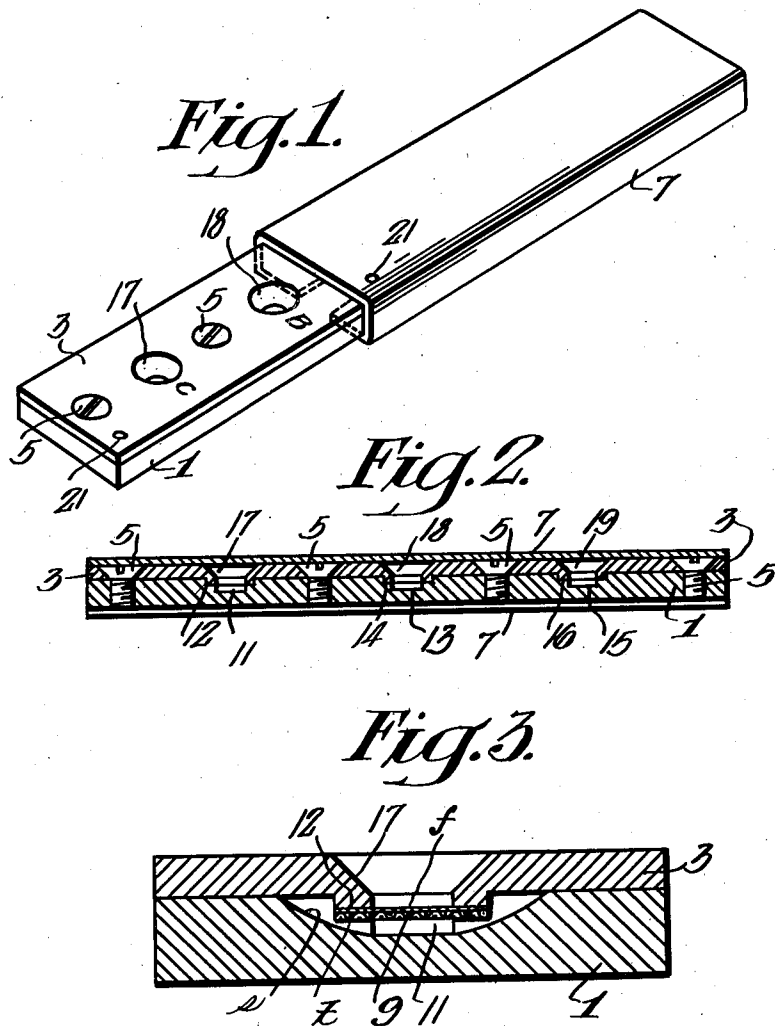


Aug. 4, 1942.

L. MARTON
SHIPPING CONTAINER
Filed Dec. 28, 1940

2,292,279



Inventor
Ladislav Marton
By *J. J. Huff* Attorney

UNITED STATES PATENT OFFICE

2,292,279

SHIPPING CONTAINER

Ladislaus Marton, Collingswood, N. J., assignor
to Radio Corporation of America, a corporation
of Delaware

Application December 28, 1940, Serial No. 372,071

3 Claims. (Cl. 266—1)

This invention relates to shipping and storage containers for microscope specimen holders or slides.

While the invention will be described as embodied in a shipping container for a specimen holder of the type comprising a nitro-cellulose film supported upon a foraminous metal base and designed for use in an electron microscope, it will be understood that the disclosure in this respect is merely illustrative for purposes of explaining the inventive concept and that the invention is likewise applicable to containers for glass and other fragile slides, for use in either light microscopes or electron microscopes.

One form of slide heretofore used with success in the art of electron microscopy comprises an invisible nitro-cellulose film (say, 100 Å. U. thick) stretched over one surface of a fine mesh (say, 400 mesh per inch) wire (say, "stainless steel") cloth. The specimen or object to be examined is deposited, preferably in distilled water, upon the exposed surface of the nitro-cellulose film and the water subsequently evaporated, whereupon the specimen adheres to the film and is ready for examination, storage or shipment.

Obviously, a film less than one-millionth of an inch thick is extremely susceptible of being punctured or otherwise damaged in handling or, when subjected to mailing or shipping hazards.

It is accordingly an object of the present invention to provide a container for a slide, or other specimen holder which shall afford ample protection for the holder or holders and for the specimen or specimens mounted thereon, when subjected to shipping hazards.

Another and important object of the present invention is to provide an improved container for microscope specimen holders and one wherein a specimen may be mounted upon the holder without removing or otherwise handling the holder per se.

Still another object of the invention is to provide a simple and inexpensive yet rugged container for microscope slides and one wherein the slide or slides may be inserted and removed with the least possible danger of puncture or breakage.

Other objects and advantages together with certain details of construction will be apparent and the invention itself will be best understood by reference to the following specification and to the accompanying drawing wherein

Figure 1 is a view in perspective, with the lid

drawn back, of a shipping and storage container for microscope specimen-holders,

Figure 2 is a longitudinal sectional view, with the lid closed, of the container of Fig. 1, and

Figure 3 is an enlarged cross-sectional view through one of the storage compartments of the container of Figs. 1 and 2 and showing a specimen-holder mounted therein.

In the drawing, wherein like reference characters designate the same or corresponding parts in all figures, there is shown a container comprising a base or bottom plate 1, a top plate 3 which is removably secured to the base 1 as by means of spaced screws 5, and a slidable cover or lid 7. These several parts are preferably constituted of aluminum or other metal though they may be constituted in whole or in part of suitable thermoplastic or thermosetting materials. The particular container which has been selected for illustration is designed to hold three specimen holders or slides which, as previously set forth, and as shown in Fig. 3, may comprise a piece of metal screen 9 having a thin film *f* of nitrocellulose on one surface thereof. The bottom plate 1 is provided with three stepped recesses 11, 13 and 15, respectively, upon the shoulders or treads *t* of which the screens 9 or other slides are adapted to be seated. When thus seated the film coated upper surface *f* of the slides should lie beneath the plane of the top surface of the base plate 1, and should preferably reside in a plane intermediate the said surface and the bottom surface of the recess. As shown in Fig. 3, access may be had (as with a pair of tweezers, not shown) to the under surface of the slide 9 to facilitate the seating and unseating of the slides upon the tread *t* through a slot *s* which extends inwardly from opposite points on the surface of the base plate 1, through the tread *t* to the bottom surface of the recess.

The top plate 3 is provided on its under surface with three spaced, dependent annuli, 12, 14 and 16, which are positioned to register, respectively, with the top treads or shoulders *t* of the recesses 11, 13 and 15 and serve to apply a clamping force to the specimen holders 9 about the peripheries thereof when the said plate 3 is screwed down upon the base plate 1. In order that the clamping force may be evenly applied to all of the specimen holders or slides the screws 5 are preferably located one at each end of the device and in the space between the adjacent recesses 11, 13 and 15. Obviously, clamping means other than screws may be em-

played if desired for holding the top plate 3 on the base 1.

Tapered holes 17, 18 and 19 which are provided in the top plate 3 in line with the stepped recesses 11, 13 and 15, respectively, make the specimen holders seated therein accessible from above when the cover or lid 7 is drawn back or removed. A specimen (not shown) may thus be applied to the upper surface of the film *f* of the holder or holders 9 without unscrewing or removing the top plate 3.

Perhaps the best way to mount a specimen is to suspend it in distilled water and deposit a small drop of the suspension on the film *f* through the tapered holes in the top plate 3. The most convenient way of practicing this method is that used in bacteriology, i. e., with a platinum wire loop (not shown) of about 2 mm. in diameter, which will hold the correct amount of water. The platinum should not touch the foil when depositing the drop. The water is then permitted to evaporate whereupon the specimen adheres to the slide and the container is ready for shipment.

As previously set forth when the screws are unscrewed and the top plate 3 is removed the specimen holder 9 may be removed from the tread upon which it rests simply by grasping the holder with a pair of tweezers (not shown) in which case one tong of the pincers may be inserted beneath the holder through the slot *s*.

The films *f* may be replaced, if desired, by washing the wire cloth carefully with acetone in order to dissolve a previously applied film, and then stretching a new one over the wire cloth. To this end, take one part in fifty, by weight, of nitrocellulose in amyl acetate and deposit a drop, as with an eye-dropper, on a distilled water surface. This drop will ordinarily spread out to an area of about 20 cm. in diameter. Allow the amyl acetate to evaporate, after which the film may be applied to the wire cloth by placing the cloth disc in the water beneath the film, bringing it up, and lifting the film with the disc.

Where, as in the instant case, the container is designed to hold several slides the top plate 3 may be stamped or otherwise marked with suitable reference characters (B and C, Fig. 1) adjacent the several recesses or compartments.

It need scarcely be pointed out that when the described container for microscope specimen holders is employed for shipping bacteria and other pathogenic organisms through the United States mails the container must be wrapped and packed in agreement with the provisions of section 589, paragraph 3, of postal laws and regulations. If desired, a hole 21 which extends through the bottom and top plates and through the cover 7 may be provided for the reception of a conventional wire seal (not shown).

Various modifications of the invention will suggest themselves to those skilled in the art. It is to be understood therefore that the foregoing description of a preferred embodiment of the invention is to be construed as illustrative and not in a limiting sense except as required by the prior art and by the spirit of the appended claims.

What is claimed is:

1. A shipping container for microscope slides comprising a base having a recess therein, said recess being of stepped construction and having a circumferential tread upon which a slide is adapted to be seated, a top plate having an annulus on its lower surface in register with said tread and adapted to contact the upper surface of said slide about the periphery thereof, and means for applying a clamping force to said slide through said annulus.

2. The invention as set forth in claim 3 and wherein that portion of said top plate which lies adjacent the center of said annulus is provided with a bore which communicates with the interior of said recess whereby access may be had to the unclamped portion of the upper surface of said slide for the purpose of depositing a specimen thereon.

3. The invention as set forth in claim 3 and wherein said base is provided with a slot which extends from a point adjacent the bottom of said recess to a point beyond said tread whereby access may be had to the under surface of said slide to facilitate the seating and unseating of said slide upon said tread.

LADISLAUS MARTON.