Feb. 17, 1959 V. H. ORTEGREN 2,873,850

VIAL HOLDER

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FIG. 1.

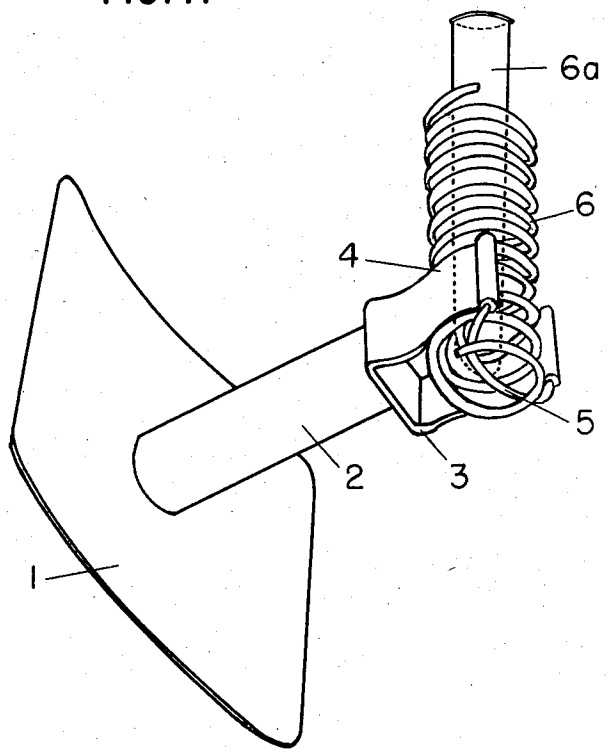
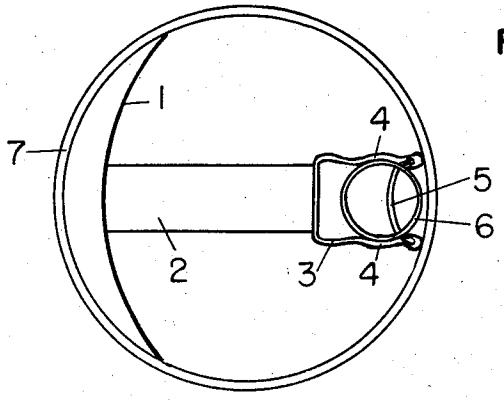


FIG. 2.



Victor H. Ortegren

INVENTOR.

BY

L. P. Siegrist

ATTORNEY

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VIAL HOLDER

Victor H. Ortegren, Pleasant Hill, Calif., assignor to the United States of America as represented by the Secretary of Agriculture

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6 Claims. (Cl. 206—1)

(Granted under Title 35, U. S. Code (1952), sec. 266)

A non-exclusive, irrevocable, royalty-free license in the invention herein described, for all governmental purposes, throughout the world, with the power to grant sublicenses for such purposes, is hereby granted to the Government of the United States of America.

This invention relates to a holding device which is particularly adapted for positioning a vial, ampoule, thermometer, test tube, centrifuge tube, or the like within a vessel of larger size. The holder of this invention has many advantages over prior art devices in that it is easily and inexpensively fabricated and permits easy adjustment of its position relative to the larger vessel. Further objects and advantages of the invention will be evident from the following description taken in connection with the attached drawing.

In the drawing, Fig. 1 represents a three-dimensional view of the holder and Fig. 2 is a plan view of the holder in place in a vacuum flask.

In laboratory experimentation it is often desired to position a vial, test tube, or other object within a larger vessel. A common instance is where a vial is to be positioned within a vacuum flask containing a freezing mixture thus to maintain the contents of the vial at a low temperature. To achieve such an end, experimenters commonly employ equipment such as ring stands, extension clamps and the like. Such equipment serves the purpose but is generally cumbersome, expensive, and inefficient. The equipment is not adapted for situations where the vial must be maintained below the mouth of the larger vessel.

The device of this invention surmounts all the disadvantages enumerated above as will be evident from the following description.

Referring to Fig. 1, the holder includes a plate of springy sheet material, such as spring plate 1 of thin spring metal, on which is mounted arm 2 which extends generally normal to the surface of spring plate 1.

At the end of arm 2 is fastened a generally U-shaped member 3 the arms 4 of which are arcuate. A bridging member, in the form of a wire loop 5, extends between arms 4 of said U-shaped member 3.

An object-receiving receptacle in the form of a cylindrical coil 6 made of spring wire is mounted within said U-shaped member, being positioned between arms 4 thereof. The size of coil 6 is so chosen relative to the distance between arms 4 that it snugly fits therebetween. In placing the coil within the U-shaped member 3, the coil is rotated so that wire of which the coil is formed threads past loop 5 which thereby forms a bottom abutment for the coil. This threading arrangement permits rotation of the coil for adjusting the length of the coil extending above the U-shaped member.

In using the holder, a vial 6a or other container is placed within coil 6 so that the bottom of the vial rests on loop 5, which by acting as the bottom abutment, prevents the vial from dropping through the coil. Coil 6 can be rotated clockwise or counterclockwise so that its length above U-shaped member 3 will approximate the length of the vial received within the coil.

The spring plate 1 is squeezed between the fingers to compress the edges of the plate toward one another. The device is then inserted within the vessel which is to contain the holder and vial and maintains a vertically-slidable snug fit position therein by the pressure of the edges of the plate against the inner walls of the vessel.

In Fig. 2 is shown the holder in place within vacuum flask 7. It is evident from this figure that the holder is kept in place by the pressure of the edges of spring plate 1 pressing against the sides of the flask 7. The holder maintains a sliding fit within flask 7 so that it can be moved with the fingers in a vertical direction without need for compressing the edges of plate 1. Thus the holder may be adjusted to any desired level within the flask. For example, as the level of coolant within flask 7 drops due to evaporation, it is a simple matter to push the holder further down into the flask. To remove the holder it is only necessary to slide it up and out of the flask.

The simple construction of the holder of this invention makes it very easy to clean.

Having thus described the invention, I claim:

1. A device for holding an object within a vessel comprising a plate of springy sheet material adapted to be compressed for insertion into a vessel and being further adapted to expand upon release of the pressure and exert pressure against the inner wall of the vessel, an arm mounted on said plate and extending generally normal to the surface thereof, a generally U-shaped member on said arm having its end adapted to bear tightly against that part of the inner wall of the vessel which lies substantially directly opposite to the portion of the inner wall against which the said springy plate exerts pressure when inserted into the vessel, and an object-receiving receptacle mounted within said U-shaped member, said device being adapted to be received within a vessel and to maintain its position therein by the pressure of the plate against the inner wall of the vessel while the end of the said U-shaped member simultaneously bears tightly against the substantially directly opposite inner wall of the vessel.

2. A device for holding an object within a vessel comprising a plate of springy sheet material having edges adapted to be compressed for insertion into a vessel and being further adapted to expand upon release of the pressure and exert pressure against the inner wall of the vessel, an arm mounted on said plate and extending generally normal to the surface thereof, a generally U-shaped member, at the end of said arm, having its end adapted to bear tightly against that part of the inner wall of the vessel which lies substantially directly opposite to the portion of the inner wall against which the said springy plate exerts pressure when inserted into the vessel, a cylindrical coil mounted within said U-shaped member for receiving an object, and a bridging member extending between the arms of said U-shaped member adapted to form a bottom abutment for said coil, said device being adapted to be received within a vessel and to maintain its position therein by the pressure of the edges of the plate against the inner wall of the vessel while the end of the said U-shaped member simultaneously bears tightly against the substantially directly opposite inner wall of the vessel.

3. A device for holding an object within a vessel comprising a plate of springy sheet material having edges adapted to be compressed for insertion into a vessel and being further adapted to expand upon release of the pressure and exert pressure against the inner wall of the vessel, an arm mounted on said plate and extending generally normal to the surface thereof, a generally U-shaped member, at the end of said arm, having its end adapted to bear tightly against that part of the inner wall of the vessel which lies substantially directly opposite to the

portion of the inner wall against which the said springy plate exerts pressure when inserted into the vessel, a cylindrical coil of wire mounted between the arms of said U-shaped member, said coil being adapted to receive an object, and a wire loop extending between the arms of said U-shaped member and threaded through said coil to form a bottom abutment for said coil, said threading arrangement permitting rotation of said coil to adjust the length of the coil extending above said U-shaped member, said device being adapted to be received within a vessel and to maintain its position therein by pressure of the edges of the plate against the inner wall of the vessel while the end of the said U-shaped member simultaneously bears tightly against the substantially directly opposite inner wall of the vessel.

4. An apparatus comprising a vessel and an object-holding device removably mounted therein, said device comprising a plate of compressed springy sheet material engaging the inner wall of said vessel, an arm mounted on said plate and extending generally normal to the surface thereof, a generally U-shaped member on said arm having its end bearing tightly against that part of the inner wall of the vessel which lies substantially directly opposite to the portion of the inner wall which is engaged by the said compressed springy plate, and an object-receiving receptacle mounted within said U-shaped member, said device maintaining its position within the vessel by the pressure exerted by the said compressed plate against the inner wall of the vessel which it is engaging while the end of the said U-shaped member simultaneously bears tightly against the substantially directly opposite inner wall of the vessel.

5. An apparatus comprising a vessel and an object-holding device removably mounted therein, said device comprising a plate having edges of compressed springy sheet material engaging the inner wall of said vessel, an arm mounted on said plate and extending generally normal to the surface thereof, a generally U-shaped member, at the end of said arm, having its end bearing tightly against that part of the inner wall of the vessel which lies substantially directly opposite to the portion of the inner wall which is engaged by the said compressed edges of the springy plate, a cylindrical coil mounted within said U-shaped member for receiving an object, and a bridging

member extending between the arms of said U-shaped member forming a bottom abutment for said coil, said device maintaining its position with the vessel by the pressure exerted by the compressed edges of the plate against the inner wall which they are engaging while the end of the said U-shaped member simultaneously bears tightly against the substantially directly opposite inner wall of the vessel.

6. An apparatus comprising a vessel and an object-holding device removably mounted therein, said device comprising a plate having edges of compressed springy sheet material engaging the inner wall of said vessel, an arm mounted on said plate and extending generally normal to the surface thereof, a generally U-shaped member, at the end of said arm, having its end bearing tightly against that part of the inner wall of the vessel which lies substantially directly opposite to the portion of the inner wall which is engaged by the said compressed edges of the springy plate, a cylindrical coil of wire mounted between the arms of said U-shaped member for receiving an object, and a wire loop extending between the arms of said U-shaped member and threaded through said coil forming a bottom abutment for said coil, said threading arrangement permitting rotation of the coil to adjust the length of the coil extending above said U-shaped member, said device maintaining its position within the vessel by the pressure exerted by the compressed edges of the plate against the inner wall which they are engaging while the end of said U-shaped member simultaneously bears tightly against the substantially directly opposite inner wall of the vessel.

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