Oct. 8, 1940. W. F. LANGELIER 2,216,886

HOLDER

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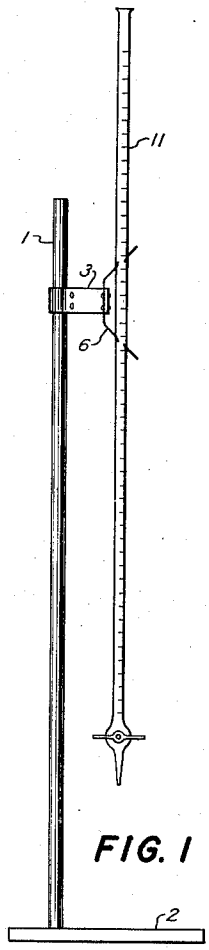



FIG. 1

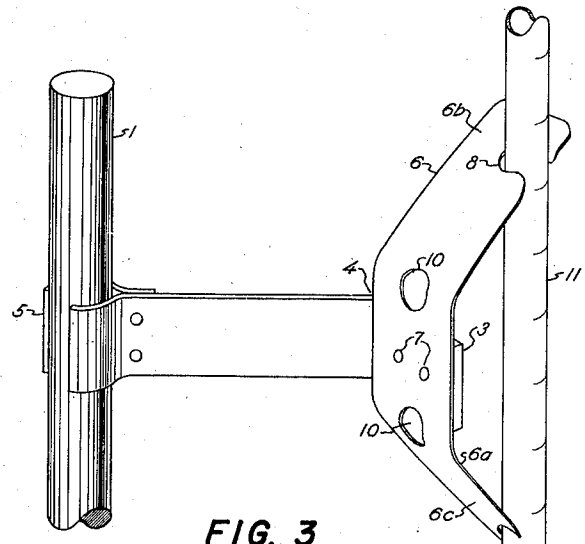



FIG. 3

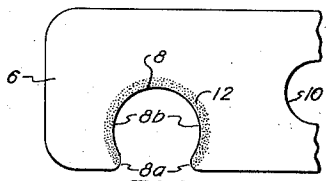



FIG. 4

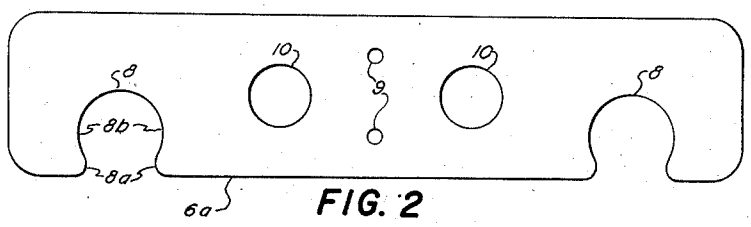



FIG. 2

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# UNITED STATES PATENT OFFICE

2,216,886

## HOLDER

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3 Claims. (Cl. 248—311)

This invention relates to devices for holding graduated transparent receptacles, such as burettes, manometers, and the like. It is particularly concerned with an improved holder for transparent receptacles wherein it is important that the level of the liquid contained therein be visible throughout the height of the receptacle.

It is an object of my invention to provide a simple and economical holder for elongated receptacles which is constructed of resilient sheet material, arranged in such a manner as to permit the receptacle to be engaged readily at any position along the length of the receptacle, e. g., at any desired height in the case of vertical receptacles, and which will not obscure any part of the front of the receptacle from the view of the observer. A further object is to provide a holder which will not obscure any part of the rear of the receptacle, so that all parts thereof may be observed from the front by transmitted light; such a construction is intended to permit the receptacle to be illuminated from the rear, or to permit it to be viewed from the front against a background of suitable color. It is a further object to provide a holder of the type described in which the receptacle can be rapidly and easily adjusted and removed from or secured in the holder and which will, in its operative position, firmly grasp the receptacle.

The invention will be understood from the following detailed description, reference being had to the drawing forming a part hereof, illustrating two preferred embodiments thereof, in which:

Figure 1 is a front elevation view of the holder as applied for holding a burette with the graduations facing the observer;

Figure 2 is a detail view of the resilient strip forming the holder prior to curving it to the shape shown in Figure 1;

Figure 3 is a perspective of the holder; and

Figure 4 is a fragmental view, similar to Figure 2, showing a modification wherein the notches of the holder are covered with a yielding material.

Referring to the drawing, and particularly to Figures 1, 2 and 3 wherein like reference numbers designate like elements, 1 is a vertical rod mounted on a base 2. A support 3, formed of a strip of rigid sheet metal and having a 45° bend at 4, is in frictional engagement with the rod 1 by means of a clamp 5, permitting a vertical adjustment along the rod. An elongated strip of resilient sheet material 6 forming the holder of the invention is fixed to the support 3 by means of screws 7.

The shape of the strip 6 prior to its curvature is shown in Figure 2. It may be stamped or cut out of a flat piece of sheet metal, such as spring metal, or other resilient material. It is provided with a pair of notches 8 located near the ends of the strip and on the forward edge 6*a* thereof (i. e., the edge nearest the observer when secured to the support 3). The notches are preferably placed at equal distances from the center of the strip. In the preferred embodiment the notches are enlarged inwardly from the edge 6*a* of the strip as shown, thereby providing protruding jaws 8*a* and engaging edges 8*b*. The engaging edges 8*b* may have any desired shape, and may be linear, but are preferably shaped as shown so as to conform to the surface of the receptacle when in engagement therewith in the position shown in Figure 3. The space between the jaws 8*a* is somewhat wider than the diameter of the receptacle to be engaged, as explained below. Holes 9 are provided at the center of the strip to receive the screws 7.

It is, further, desirable to reduce the effective width of the strip 6 at a point near the center, preferably at two points one on each side of the center, to improve the springing characteristics of the resilient strip, although this feature may in certain cases be omitted. It may be effected by cutting holes 10 into the strip as shown.

As shown in Figures 1 and 3, the strip 6 is fixed to the support 3 at its center. Its ends are curved away from the support 3 on either side thereof so as to provide an upwardly inclined limb 6*b* and a downwardly inclined limb 6*c* and to bring the notches 8 into vertical alignment. It is initially bent so as to cause the limbs 6*b* and 6*c* to assume natural positions of rest in which they are further apart than shown in Figures 1 and 3, such as half way between the vertical and the positions shown.

To engage a receptacle, such as the burette 11 in the holder, the ends of the limbs 6*z* and 6*c* are pulled together, deforming the resilient strip to a shape in which the ends are nearer together than shown in Figures 1 and 3. The burette is then inserted into the notches 8 and the ends of the limbs are released, permitting the holder to assume the shape shown in the drawing, the edges 8*b* of the notches bearing against the sides of the burette. In this position the jaws are usually slightly deformed as shown in Figures 1

and 3. These jaws serve as guards to prevent the receptacles from sliding out of the notches.

Apropos of the size of the notches, it should be noted that the distance between the engaging edges 8*b* must be small enough to engage both sides of the burette or other receptacle when the holder is in the operative position of Figures 1 and 3, and that the distance between the jaws 8*a* must be great enough to permit the burette to enter the notches by a lateral movement when the ends of the limbs are pulled together.

It should be noted that the strip 6 is mounted on the support 3 in such a way as to present only the edge 6*a* to the front, i. e., its surface forms a cylinder having the directrix shown in Figure 1 by the outline of the strip 6 and having a generatrix perpendicular to the axis of the burette, i. e., parallel to the line of sight of the observer. As a consequence horizontal rays of light may pass through the receptacle from the rear to the front at all levels. Moreover, by providing notches having openings in the edge 6*a* no part of the graduations on the burette are obstructed, and the burette can be secured in the holder by a simple rearward movement.

It is desirable to construct the holder of such a size that the ends of the limbs 6*b* and 6*c* can be grasped and brought nearer to one another with one hand, although the invention is not restricted to any particular size.

To prevent injury to glass receptacles it may be desirable to cover the edges of the notches with a yielding material, such as rubber. Referring to Figure 4, this may be effected by applying the yielding material in the form of a liquid at 12, the liquid having adhesive and drying properties as is known in the art and adapted to leave a layer of an elastic or yielding material on the edges to cushion the burette against the edges of the notches.

I claim as my invention:

1. A holder of the type described comprising an elongated strip of flat resilient material fixed at a point intermediate its ends to a support and curved away from the support on each side of said point, and a pair of notches in the strip, one on each side of said point, adapted to receive and to grip a receptacle.

2. A holder of the type described comprising an elongated strip of flat resilient material fixed at a point intermediate its ends to a support and curved away from the support on each side of said point, the effective width of said strip being reduced on at least one side of said point and in proximity thereto to improve the springing characteristics of the strip, and a pair of notches in the strip, one on each side of said point, adapted to receive and to grip a receptacle.

3. A holder of the type described comprising an elongated strip of flat resilient material fixed at a point intermediate its ends to a support and curved away from the support on each side of said point, and a pair of notches in the strip, one on each side of said point, adapted to receive and to grip a receptacle, said notches being enlarged inwardly from the edge of the strip so as to provide at least one jaw, whereby the receptacle is prevented from sliding out of the notches.

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