Aug. 19, 1969 A. J. PAOLI 3,461,728

STAND FOR BASELESS CYLINDERS

Filed Oct. 1, 1965

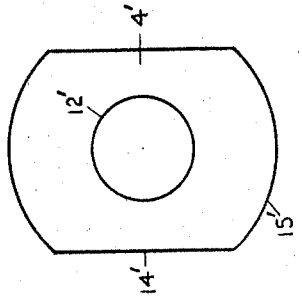


Fig. 6

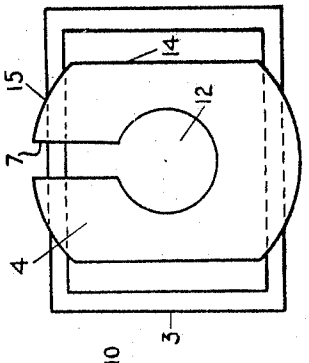


Fig. 5

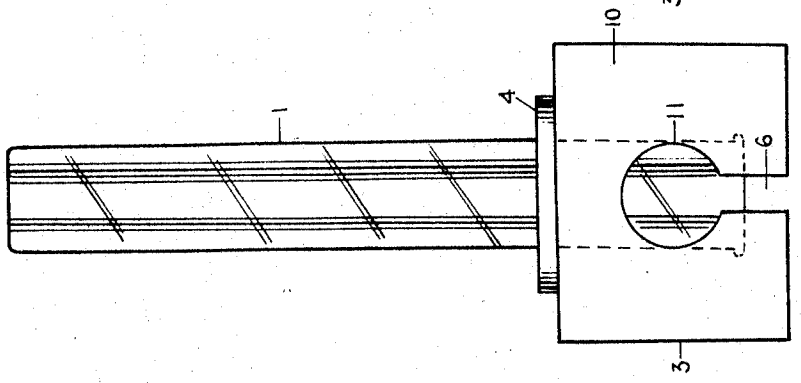


Fig. 4

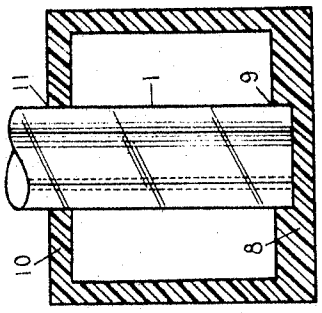


Fig. 3

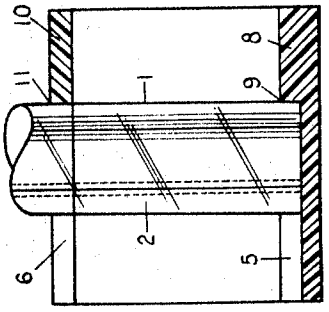


Fig. 2

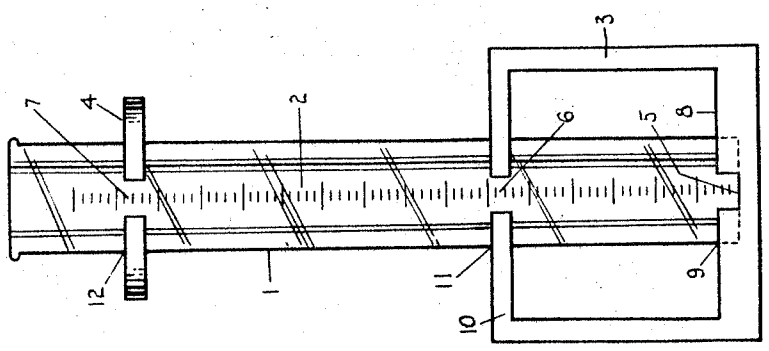


Fig. 1

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STAND FOR BASELESS CYLINDERS

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ABSTRACT OF THE DISCLOSURE

A combined means for supporting tubular glass cylinders including a base stand member and a separate slidable ring which is snugly fitted around the top of the glass cylinder. Both the ring and the stand may be slotted to easily view the graduations on the cylinder.

This invention relates to a combination of a cubical stand and a circular ring for cylindrical glass cylinders and graduates of the type used in clinical, research, school, pharmacy and industrial laboratories.

It is the object of this invention to provide a base as a support for all glass cylinders and graduates that are baseless, and to further provide a ring for protection of the pour out and walls while said cylinders and graduates are being used, cleaned or stored. A combination of the stand and ring as invented and proposed is also a vertical drying stand for baseless cylinders and graduates.

At the present time all conventional glass cylinders and graduates are in one unit. The glass bases are electrically welded to the cylinders and graduates. During normal use of the cylinders there is occasional chipping and cracking of the base and pour out due to accidental dropping of said product by persons engaged in this type of work. Also, during the washing and rinsing procedure the cylinders are placed alternately in hot and cold water causing contraction and expansion which eventually weakens the base where it is welded to the cylinder causing the base to break away from the cylinder. Therefore, the cylinder must be discarded as there is no longer a base for support.

Another object of this invention is, in the combination of the stand, the cylinder and the ring mounted on the cylinder above the graduations, to provide a vertical drying stand. The relative proportions of the stand and ring are so coordinated that when the cylinder is removed from the stand and the stand is tipped forward and placed flat with its open side up, the cylinder can be inverted with the top thereof placed within the opening of the stand so that the sides of the stand engage the ring thereby supporting the inverted cylinder for drying.

Another object of the present invention is to provide ease of washing and handling of the glass cylinder. There is no heavy glass base that needs extra consideration. Therefore, the time required for performing the washing procedure is substantially reduced.

Other objects of the invention are to provide a base which gives a cylinder greater stability and wall protection, which is of simple construction, has a minimum number of parts, is inexpensive to manufacture and efficient in operation.

For other objects and for a better understanding of the invention, references may be had to the following detailed description taken in conjunction with the accompanying drawings, in which:

FIGURE 1 shows a frontal view of the combination stand, ring and cylinder as it would be assembled for storage or use.

FIGURE 2 shows a side elevation of the stand and illustrates the means for viewing the graduations on a cylinder.

FIGURE 3 shows an alternate construction of the stand.

FIGURE 4 shows a frontal view of the combination stand, ring and cylinder as it would be utilized for a drying rack.

FIGURE 5 illustrates the construction and placement of the ring on the stand, and

FIGURE 6 illustrates an alternate construction of the ring.

Referring to FIGURE 1 which shows in combination a baseless cylinder **1** having graduations **2** thereon positioned vertically in a stand **3** and a protective ring **4** mounted intermediate the end extremities of the cylinder. The combination is provided with a grooved opening **5** in the base **8**, a slotted opening **6** in the top **10** and a slotted opening **7** in the ring **4** through which an operator can have an uninterrupted view of the graduations **2** for the entire length of the cylinder **1**.

The stand **3** gives the baseless cylinder **1** a substantial amount of stability and portability. The stand is difficult to tip and may be moved about freely. An operator may pick up the base with one or both hands. He may insert his fingers on either side of the cylinder **1** and lift upward against the bottom side of the top **10** or, if more than one combination is in use, he may place his thumb inside of one combination and his index finger inside of a second combination and draw the sides **13** together and move the two combinations from place to place.

During such movements or from accidental brushings, the cylinder **1** and stand **3** may be knocked over. Should this happen, the stand will protect the bottom portion of the cylinder and the ring **4** will prevent the top part of the cylinder from coming in contact with the floor or a counter top and act to take up the shock of the fall.

In FIGURE 4 the cylinder is shown in an inverted position. The stand **3** is placed on its side and the ring **4**, resting on the free edges of the top **10** and the bottom **8**, holds the cylinder in a vertical and inverted position for drying. FIGURE 5 serves to further illustrate the placement of the ring **4** on stand **3** when it is to be used for drying purposes.

The stand and ring should be made of resilient materials. Rubber, cork, and plastic materials such as Lucite or polyethylene may be considered. Injection moulding, casting, vulcanizing or the fabrication of stamped or cut components are suitable methods of manufacture.

The construction of the base according to the illustration in FIGURE 1 is shown in FIGURE 2. The bore **9** is extended partially into the base **8** and a groove **5** of an equal depth extends from the bore **9** to a free edge of the base **8**. A bore **11** extends through the top **10** and a slotted opening **6** connects this bore **11** with a free edge of the top **10**. The bores **9** and **11** and the groove **5** and the slot **6** are aligned so that the graduates on the cylinder **1** can be viewed as shown in FIGURE 1. The bores **9** and **11** should be of a diameter substantially the same as the diameter of the cylinder **1**. It is preferred to make the bore **9** about one thousandth of an inch over-size and the bore **11** slightly under-size. This allows for ease in inserting the cylinder into the base of the stand and, as the edges of an under-size bore **11** will grasp the cylinder sidewalls quite firmly, the combination is more rigid and more easily handled.

FIGURE 3 illustrates an alternate means for making the stand **3**. When it is not necessary for viewing the graduations **2**, the groove **5** and the slot **6** may be dispensed with and the cylinder **1** may be inserted through the bore **11** and seated in the bore **9**.

FIGURE 5 illustrates the preferred construction of the ring **4**. The ring **4** should be made flat as shown in FIGURES 1 and 4. The center bore **12** of the ring should fit snugly about the cylinder **1**. An important part of the construction of the ring is the alternating straight **14** and curved **15** outer edge surfaces. This type of perimeter contouring will prevent the cylinder from rolling when

it has been placed, or is accidently knocked into, a horizontal position. The ring 4 may be provided with a slotted opening 7, as shown in FIGURE 5 if viewing the graduations 2 is desired. When it is not required that the graduates be viewed, the slot 7 may be omitted as shown in FIGURE 6. The ring 4 may obviously be made in a rectangular, square or hexagonal shape if desired.

Various changes may be made in the construction and in the design of stand and ring combination.

I claim:

1. The combination of a baseless cylinder, a ring having a flat side and made of resilient material mounted on said cylinder intermediate the ends thereof, and a stand made of resilient material and comprised of a bottom having a center bore extended into the top side thereof, a top having a center bore therethrough, two sides connecting two of the respective sides of said top and said bottom thereby forming at least two even and free edges on opposite sides of said stand, said sides spaced apart more than the diameter of said cylinder but less than the diameter of said ring, said bores being aligned and substantially the same diameter as the diameter of said cylinder whereby said cylinder can be supported in a vertical and upright position by engaging the sidewalls thereof with the free edges of said bores and supported in a vertical and inverted position by engaging a flat surface of said ring with said even and free edges on one side of said stand.

2. The combination of a baseless cylinder; a flat ring made of resilient material having a center bore, alternating straight and curved edge portions about its outer perimeter and a slotted opening extending from said center bore to said outer perimeter, said ring mounted on said cylinder intermediate the extremities thereof; and a stand made of like resilient material comprised of a base having a centrally located bore extending from the top thereof and extending partially through said base and a groove equal in depth to said bore and extended therefrom to a free edge of said base, a top having a centrally located bore therethrough and a slotted opening extending from said bore to a free edge of said top, two sides connecting two of the respective edges of said base and said top and spacing them apart a distance greater than the diameter of said cylinder but less than the diameter of said ring thereby forming at least two even and free edges on opposite sides of said stand, the bores in said base and said top being substantially the same diameter as the diameter of said cylinder whereby said cylinder is supportable in a vertical and upright position engaging the sidewalls thereof with the free edges of said bores and supportable in a vertical and inverted position by engaging a flat surface of said ring with said even and free edges on one side of said stand.

3. In combination a baseless cylinder having graduations thereon and a stand made of resilient material, said stand comprised of a base with a centrally located bore extending partially into its top side and a groove of an equal depth extended from said bore to one of its free edges, a top with a centrally located bore therethrough and a slotted opening extended from said bore to one of its free edges, and two sides connecting two respective edges of said top and said base spacing them apart and forming at least two even and free edges on opposite sides of said stand, said bores being aligned vertically and substantially the same diameter as the diameter of said cylinder, said groove and slot vertically aligned and said cylinder supported in a vertical and upright position by engagement of the sidewalls thereof with the free edges of said bores and positioned in a manner whereby the said graduates are visible through said groove and said slot.

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U.S. Cl. X.R.

23—292; 211—74