Sept. 21, 1965 H. I. BERMAN 3,207,489

STIRRER BLADE

Filed Dec. 12, 1961

Fig. 1

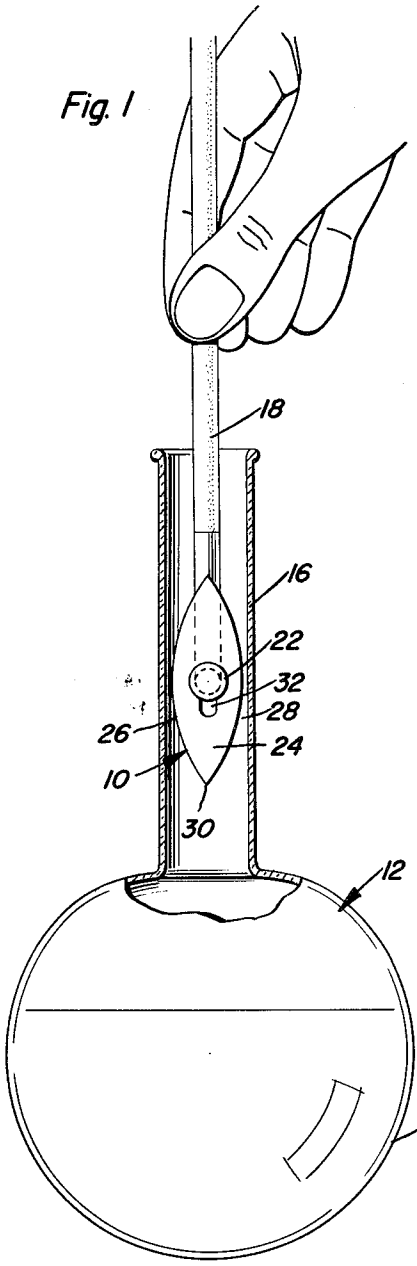


Fig. 2

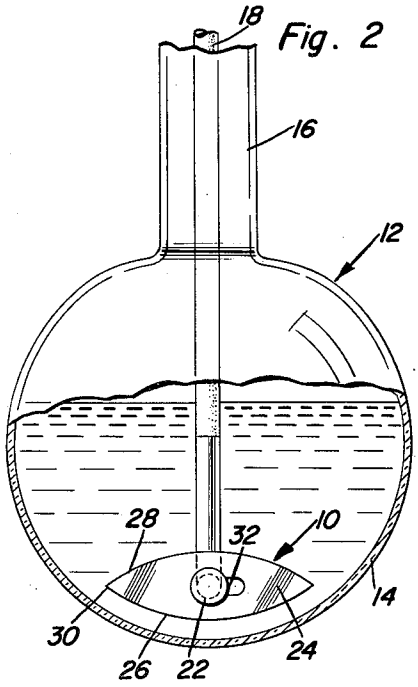


Fig. 3

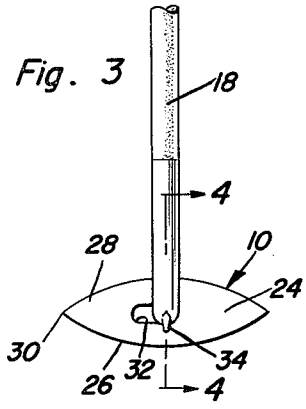


Fig. 4

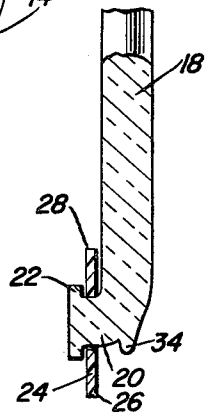
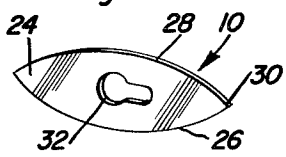


Fig. 5



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STIRRER BLADE

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The present invention generally relates to a stirrer blade and more particularly such a blade for use in conjunction with round bottom flasks such as those employed in most chemical laboratories, the blade adapted to be mounted onto a conventional stirrer shaft and supported at the bottom of the shaft.

Present-day practice incorporates a stirrer blade used in conjunction with laboratory flasks in which the blades have a straight or flat top edge and a rounded bottom edge generally to conform to the curvature of the bottom of the flask. The blade is curved to more closely associate itself with the flask for stirring the material therein. In the proper position of conventional stirring blades, the curved bottom edge is down and fits the curvature of the flask with the flat edge up. However, considerable difficulties arise when installing the conventional stirring blade since the blade quite often becomes inverted. When this occurs, the flat edge is disposed downwardly and it is necessary to disassemble the apparatus and correct this condition. This condition generally occurs as a result of the method of installing the stirring assembly which is accomplished by turning the blade so that its long axis parallels that of the rod or shaft. Then, after installing the blade and the shaft through the narrow neck of the flask, the blade must then be rotated through 90° to the proper position. Many times the blade turns in the wrong direction thereby causing the inversion.

Accordingly, it is the primary object of the present invention to provide an improved and novel stirrer blade having a curved top and bottom edge so that regardless of the direction the blade turns when inserted into the flask, no problem is encountered and the blade may be used regardless of whether the top or bottom edge falls into position adjacent the interior surface of the flask since both edges of the blade are curved to conform to the curvature of the flask. Another advantage derived from this construction is that a reduction in the area of the blade may be employed thereby realizing a saving in material cost.

The most essential feature of the present invention relates to a symmetrically constructed stirrer blade which conforms to the curvature of the round bottom laboratory flask on either the top or bottom edge of the blade thus eliminating the present problems encountered with existing blades.

Still another object of the present invention is to provide a stirring blade preferably made of a material such as "Teflon" (tetrafluoroethylene), glass, metal or the like which is simple in construction, efficient in operation, easy to use and relatively inexpensive to manufacture.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 illustrates a round bottomed laboratory flask with the stirrer blade and shaft being inserted through the narrow neck;

FIGURE 2 is a view similar to FIGURE 1 but with the stirrer blade positioned adjacent the bottom surface of the flask;

FIGURE 3 is a detailed view of the stirrer blade and shaft;

FIGURE 4 is a detailed sectional view taken substantially upon a plane passing along section line 4—4 of FIGURE 1 illustrating the manner in which the stirrer blade is carried by the shaft; and

FIGURE 5 is a perspective view of the stirrer blade of the present invention.

Referring now specifically to the drawings, the numeral **10** generally designates the stirrer blade of the present invention which is adapted for use in combination with a laboratory flask **12** having a round bottom or spherical bottom **14** and a reduced neck **16**. The stirrer blade **10** of the present invention is adapted to be used with a shaft or glass rod **18** having a laterally extending lower end portion **20** terminating in a circular vertical flange **22** adapted to extend through the stirrer blade for connection of the shaft thereto in a known manner. The particular construction of the shaft **18** and the particular construction of the flask **12** forms no critical part of the present invention but are related to the stirrer blades **10** in a novel manner.

The stirrer blade **10** includes a flat plate-like member **24** having a curved lower edge **26** and a curved upper edge **28** with the upper and lower edges **26** and **28** meeting in substantially pointed ends **30** thereby defining a generally oval-shaped member in which the curvature of the edges **26** and **28** generally conforms with the curvature of the rounded bottom **14** of the flask **12**. Thus, regardless of whether the bottom edge **26** or the top edge **28** is disposed downwardly when the major axis of the plate-like member **24** is horizontal, the edge of the blade will conform with the interior surface of the rounded bottom **14** of the flask **12** as illustrated particularly in FIGURE 2. Therefore, when the blade **10** is disposed with the major axis thereof in a vertical position as illustrated in FIGURE 1 for inserting it through the neck, no particular care need be given to the manner in which the blade **10** pivots after it enters the bottom portion of the flask.

The plate **24** has a keyhole shaped opening **32** therein which enables the plate **24** to be assembled in relation to the shaft or rod **18** with the keyhole opening enabling a projecting member **34** on the bottom end of the shaft **18** to pass through the keyhole opening when the blade is moved downwardly on the shaft into engagement with the flange **22**.

The stirrer blade is preferably constructed of a plastic material such as "Teflon" but may also be constructed of glass, metal or other plastics. The dimensions of the blade may vary depending upon the particular size of flask with which the blade is to be used. The glass stirring rod is usually attached to an electrically power stirring motor and the material from which the blades are preferably constructed is firm but not brittle, resistant to breakage and will not scratch the bottom of the flask.

By using the particular shape designated, the advantages of operation are obtained and also, the shape enables a greater percentage of material cut from a square stock such as a square yard of plastic to be utilized thereby saving the cost of materials.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to falling within the scope of the invention as claimed.

What is claimed as new is as follows:

In combination with a stirring shaft having a laterally extending lower end and a terminal flange, a stirrer blade pivotally mounted on the laterally extending end of the shaft and being retained thereon by the flange, said pivotal connection of the blade enabling the blade to be

orientated in longitudinal alignment with the shaft during insertion into a narrow neck of a round bottom laboratory flask and subsequently enabling the blade to be disposed transversely of the shaft for rotation about the longitudinal axis of the shaft thereby stirring the contents of the flask, said blade being substantially flat and provided with rounded upper and lower edges meeting in substantially pointed ends and defining an oval-shaped member having edge surfaces generally conforming to the interior curvature of the round bottom flask thereby enabling the edge of the blade disposed adjacent the flask to generally conform to such curvature, said blade being provided with a keyhole slot for assembly with the shaft, said keyhole slot having the major axis paralleling the major axis of the oval-shaped plate.

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