April 11, 1961 E. B. PATTERSON 2,979,210

TEST TUBE RACK

Filed April 19, 1960

Fig. 1

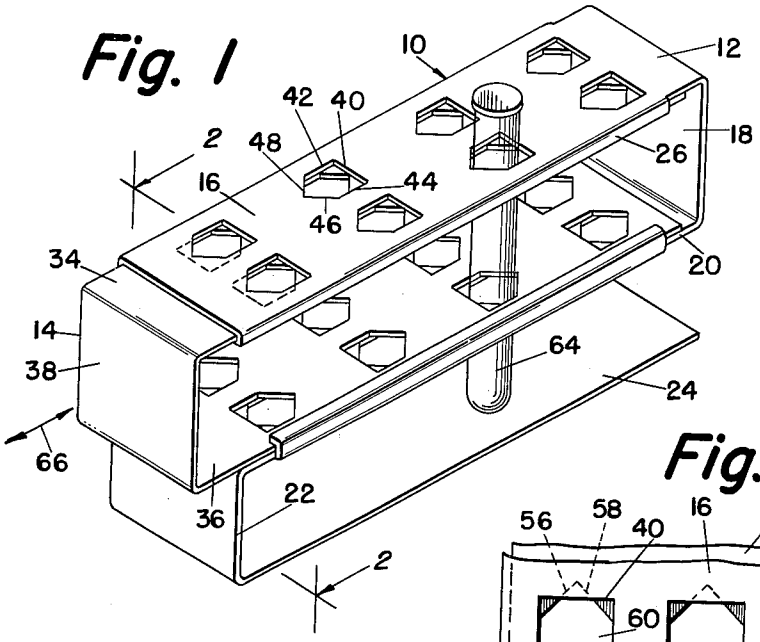


Fig. 3

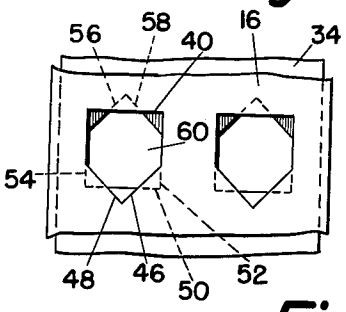


Fig. 2

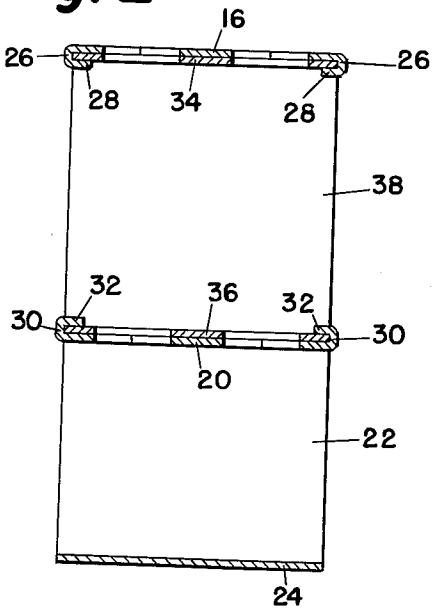
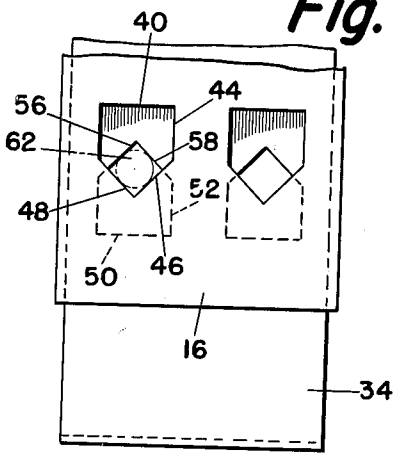


Fig. 4



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United States Patent Office 2,979,210 Patented Apr. 11, 1961

2,979,210

TEST TUBE RACK

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Filed Apr. 19, 1960, Ser. No. 23,278

5 Claims. (Cl. 211—74)

This invention relates to laboratory equipment, and more particularly to a test tube rack.

In a large laboratory, there is always the ever present problem in having on hand the correct size of test tube rack. A test tube rack that has its openings too large will not properly hold small test tubes. Conversely, if the test tube rack has openings too small, it will not accommodate large size test tubes. Thus, there is a need for a universal test tube rack which can support a wide variety of test tubes.

It is an object of this invention to provide a novel test tube rack.

It is another object of the invention to provide a novel test tube rack which will accommodate a wide variety of test tubes.

It is a further object of this invention to provide a test tube rack which is easily adjustable so as to accommodate various sized test tubes.

It is a still further object of this invention to provide a test tube rack which is simple, easily adjustable and inexpensive to manufacture.

Other objects will appear hereinafter.

For the purpose of illustrating the invention there is shown in the drawing a form which is presently preferred; it being understood, however, that this invention is not limited to the precise arrangements and instrumentalities shown.

Figure 1 is a perspective view of the test tube rack of this invention.

Figure 2 is a cross-sectional view taken along the lines 2—2 of Figure 1.

Figure 3 is a partial plan view of the test tube rack in Figure 1 in one of its adjusted positions.

Figure 4 is a partial plan view of the test tube rack of Figure 1 in another of its adjusted positions.

Referring to the drawing in detail, wherein like numerals indicate like elements, there is shown in Figure 1 a perspective view of a test tube rack 10.

The test tube rack 10 comprises a S-shaped body 12 and a C-shaped slide 14.

The S-shaped body 12 comprises top wall 16, depending wall 18, middle wall 20, depending wall 22, and bottom wall 24. The walls 16 through 24 are structurally inter-related in the manner as shown in Figure 1 so as to form the S-shaped body 12. As seen more clearly in Figure 1, the body 12 is made from a single sheet of material and the walls 16 through 24 are formed by bending the sheet of material forming the S-shaped body 12. As shown more clearly in Figures 1 and 2, the top wall 16 is provided with a depending flange 26 on each side thereof. The depending flanges 26 are provided with inturned tabs 28. The tabs 28 are spaced from and parallel to the top wall 16. Thus, the flanges 26 and the tabs 28 cooperate with the top wall 16 to form a track on the inner surface of the top wall 16. As shown more clearly in Figure 1, the flanges 26 and tabs 28 are smaller in length than the length of top wall 16.

The middle wall 20 of the S-shaped body 12 is provided with substantially upright flanges 30 on its sides. The flanges 30 are provided with in-turned tabs 32. The tabs 32 are spaced from the middle wall 20 and are parallel thereto. The flanges 30 and the tabs 32 cooperate with the middle wall 20 to provide a track on the upper surface of the middle wall 20. The flanges 30 and the tabs 32 extend along the length of the middle wall 20 for a distance less than the length of middle wall 20. The track on the inner surface of the top wall 16 is parallel to and spaced from the track on the upper surface of the middle wall 20.

The C-shaped slide 14 comprises a top wall 34, a bottom wall 36, and an end wall 38 which connects the top and bottom walls 34 and 36. The top wall 34 and the bottom wall 36 are parallel to one another and are of a width slightly less than the width of top wall 16 and middle wall 20 of the S-shaped body 12. The top wall 34 of the slide 14 reciprocates in the track on the inner surface of top wall 16. The bottom wall 36 of the C-shaped slide 14 reciprocates in the track on the upper surface of the middle wall 20.

The top wall 16, the middle wall 20, the top wall 34, and the bottom wall 36 are each provided with a plurality of multi-sided holes which can be aligned by adjustment of the slide 14 relative to the body 12. Since each of the multi-sided holes in the top wall 16 and the middle wall 20 of the S-shaped body 12 are identical, only one hole need be described in detail.

As shown more clearly in Figures 1, 3 and 4, the top wall 16 of the S-shaped body 12 is provided with a multi-sided hole having the shape of a pentagon. The multi-sided hole in the top wall 16 comprises a hole defined by edge 40, parallel side edges 42 and 44, and converging edges 46 and 48. The side edges 42 and 44 are perpendicular to the adjacent edge 40. The converging edges 46 and 48 on each of the multi-sided holes in the top wall 16 and the middle wall 20 extend in the same direction.

The top wall 34 and the bottom wall 36 of the C-shaped slide 14 are provided with a plurality of multi-sided holes which can be aligned with the multi-sided holes in the top wall 16 and the middle wall 20 by reciprocation of the C-shaped slide 14 relative to the S-shaped body 12. As shown more clearly in Figures 3 and 4, the walls 34 and 36 of the C-shaped slide are provided with a multi-sided hole which is identical with the shape of the multi-sided hole in the top wall 16 and the middle wall 20. The multi-sided hole in the top wall 34 is defined by edge 50, parallel side edges 52 and 54, and converging edges 56 and 58. The side edges 52 and 54 are perpendicular to the adjacent edge 50. The converging edges 56 and 58 extend in a direction away from end wall 38 on the C-shaped slide 14. Thus, it will be seen that the converging walls of the multi-sided holes in the C-shaped slide extend in a direction opposite to the direction of the converging edges on the multi-sided holes on the S-shaped body 12. Thus, in one adjusted position of the test tube rack, the multi-sided holes on the C-shaped slide 14 cooperate with the multi-sided holes on the S-shaped body 12 to define an opening 60. As shown in Figure 3, the opening 60 is in the shape of a hexagon. The opening 60 can support a test tube having an outer diameter smaller than the distance between parallel edges 52 and 54. As shown more clearly in Figure 4, the adjustment of the C-shaped slide 14 relative to the S-shaped body 12 can result in an opening 62 which is smaller than the opening 60. The opening 62 is in the shape of a square. The opening 62, as shown in Figure 4, is defined by the edges 46, 48, 56 and 58. Opening 62 will accommodate a test tube having an outer diameter which is smaller than the distance across edges 46 and 56.

The test tube rack of the present invention is operated in the following manner:

The C-shaped slide **14** is adjusted relative to the S-shaped body **12** by movement of the end wall **38** in the direction of the arrow **66** in Figure 1. The C-shaped slide **14** reciprocates in the tracks on the top wall **16** and the middle wall **20** to vary the size of the opening defined by multi-sided holes on the top wall **16** and the middle wall **20** which are juxtaposed to multi-sided holes in the top wall **34** and the bottom wall **36**. As shown in Figure 1, the test tube **64** extends through the opening defined by the multi-sided holes on the S-shaped body **12** and the C-shaped slide **14**. The bottom of the test tube rests on the bottom wall **24** of the S-shaped body **12**. As end wall **38** is moved further away from depending wall **18**, the size of the opening defined by the multi-sided holes decreases so that smaller diameter test tubes may be accommodated on the test tube rack **10**.

The C-shaped slide **14** and the S-shaped body **12** are preferably made from light weight, sheet metal or plastic. While the multi-sided holes have been shown as being in the shape of a pentagon, it is contemplated that other shaped holes may be substituted therefor.

The C-shaped slide **14** is capable of being reciprocated with the use of only one hand. Thus, an operator may adjust the position of the C-shaped slide **14** while holding a test tube in his other hand above the multi-sided holes so as to be able to quickly and accurately ascertain the desired position of the C-shaped slide **14**. If desired, indicia may be provided on the upper surface of the top wall **34** which will indicate the size of test tubes which may be accommodated in any of the extended positions of the C-shaped slide **14**.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof and, accordingly, reference should be made to the appended claims, rather than to the foregoing specification as indicating the scope of the invention.

I claim:

1. A test tube rack comprising an S-shaped body, a multi-sided hole in the top and middle walls of said body, said holes being axially aligned, an adjustable slide having top and bottom spaced walls disposed between said top and middle walls on said body, an axially aligned multi-sided hole in each of the spaced walls of said slide selectively positionable in alignment with the multi-sided hole in the top and middle walls of said body whereby movement of said slide varies the opening through said holes so that various sized tubular elements may be accommodated on said body.

2. In a device as set forth in claim 1 wherein said multi-sided holes in said top and middle walls of said body include five sides, two of said sides being parallel to each other and perpendicular to an adjacent side, the remaining two sides converging to a point, the multi-sided holes in said slide being of substantially the same configuration as the holes in said top and middle walls, the converging sides on the holes in said slide being directed in a direction opposite to the direction of the converging sides on the holes in said top and middle walls of said body.

3. In a device as set forth in claim 1 including a track on the undersurface of said top wall and said slide top wall being reciprocally disposed in said track.

4. In a device as set forth in claim 3 including a second track on said middle wall, said slide bottom wall being reciprocally disposed in said second track, said tracks being flanges integral with the top and middle walls and positioned in horizontal parallel planes.

5. In a device as set forth in claim 1 wherein said walls of the S-shaped body and slide are each provided with a plurality of multi-sided holes so that a plurality of tubular elements may be accommodated on said body.

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