

Oct. 28, 1969

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3,474,913

RACK FOR TEST TUBES

Filed May 16, 1966

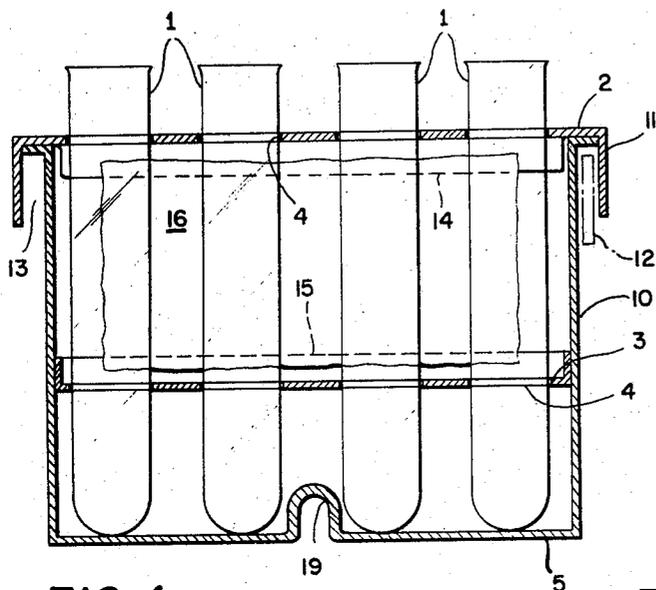


FIG. 1

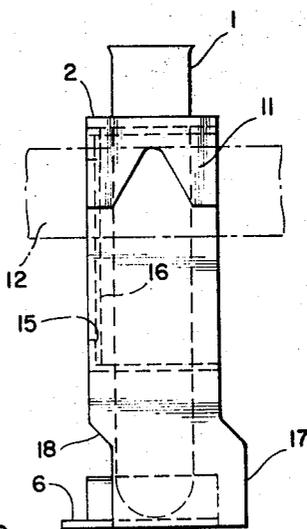


FIG. 2

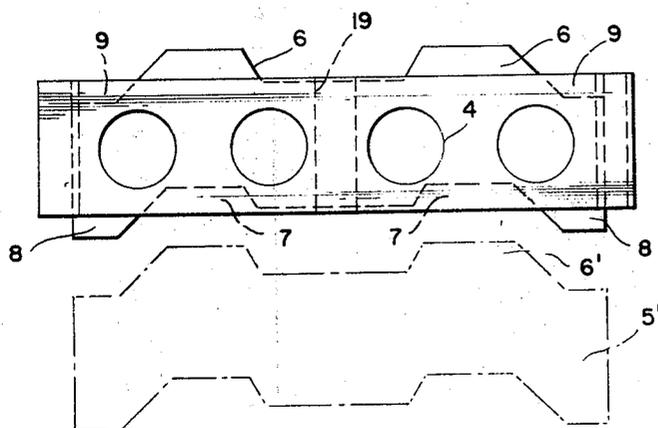


FIG. 3

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3,474,913

RACK FOR TEST TUBES

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Filed May 16, 1966, Ser. No. 550,265

Claims priority, application Sweden, May 17, 1965, 6,439/65

Int. Cl. A47b 73/00; B65d 21/02

U.S. Cl. 211—74

3 Claims 10

ABSTRACT OF THE DISCLOSURE

A rack for holding test tubes of the type including vertically spaced horizontal members having holes therein for accommodating the tubes includes a series of projections and indentations formed on a horizontal bottom member and portions of the side walls. The projections and indentations engage corresponding indentations and projections on adjacent racks and provide for convenient handling of the racks.

The present invention relates to a rack for test tubes, reagent tubes or the like, particularly for use in an analyzing machine which is adapted for automatically performing a number of analyses on the contents of test tubes supplied to the machine. The test tubes are placed in racks which are preferably large enough to hold six test tubes.

In a machine of this type, it is of importance to know positively to which test tube a certain analysis applies, even if there is supplied to the machine a large number of test tubes distributed on a large number of racks.

This problem is solved by the present invention, according to which a test tube rack comprising a number of parallel boards, all of which with the exception of the bottom one are provided with holes for a number of test tubes, and one of the boards, preferably the bottom one having projections on one side and corresponding indentations on the other side, the location being such as to make the projections of one rack register with the indentations of the adjacent rack when a number of racks are put together. This reduces the chances of a rack being introduced in the machine in the wrong position. The following description of an embodiment of the invention deals with additional measures for avoiding confusion between the difference test tubes.

In the drawing, FIGS. 1, 2 and 3 show a rack in three different projections and in partial section. 1 designates a number of test tubes inserted in a rack comprising an upper board 2 and an intermediate board 3 provided with holes 4 for guiding the test tubes and having a bottom board 5. In the embodiment shown on the drawing, the bottom board is provided with projections 6 on one side, corresponding to which there are provided on the other side indentations 7 of similar shape. As is apparent from FIG. 3, in which the bottom board 5' of an adjacent rack is indicated in dash-dot lines, the projections 6' of the board 5' fit into the indentations 7.

In order to improve the stability of the rack when standing, the bottom board 5 is preferably provided with projections 8 also on the other side, corresponding to which there are also indentations 9. In this manner, the rack has projections extending substantially equal distances on both sides of the centre of gravity thereof.

As is apparent particularly from FIG. 2, projections 17 and indentations 18 are provided also on the lowermost parts of the lateral walls 10 corresponding to and having

the same function as the projections 6 and 8 and the indentations 7.

In addition to the guiding of the individual racks obtained when a number of racks are put together to form a group, there is the advantage of a saving in material in the manufacture of the racks, since each projection on one rack corresponds to an indentation on an adjacent rack.

The bottom board 5 may be shaped with a channel 19 to facilitate the guiding of the racks when grouping them together.

The upper board 2 having holes for the test tubes preferably extends laterally of the side walls 10 joining the boards together, the extension 11 thus formed being turned downwardly. With the aid of a bar 12 indicated on the drawing, which engages in the space 13 thus formed, a large number of racks can be carried in simple manner when they are to be inserted in the machine or moved between different parts of the machine or to be taken out of the same.

On the boards 2 and 3 having holes for the test tubes provided therein there are provided on one side facing flanges 14 and 15 forming a support for an identification plate 16 to be inserted therein and which may carry information about the contents of the test tubes in the rack or list normal values or the test results from other series of tests. As shown on the drawing, these facing flanges 14 and 15 are provided only on one side of the rack, this being an additional safety measure for preventing the inadvertent turning of one of the racks so as to make it face the wrong way and thereby confuse the results of the analysis.

We claim:

1. A rack for holding test tubes comprising a horizontal bottom member, spaced vertical side walls and at least one further horizontal member connecting the side walls and having openings therein for accommodating a plurality of test tubes, lower portions of said side walls including projections formed on one edge thereof and reciprocally shaped indentations formed on an opposing edge thereof, and said bottom member including projections formed on one edge thereof and reciprocally shaped indentations formed on an opposing edge thereof, such that where a pair of such racks are placed adjacent one another the projections of one rack engage the indentations of the adjacent rack.

2. A rack as claimed in claim 1 wherein said bottom member includes projections formed on both of said edges for serving as a support for the rack.

3. A rack as claimed in claim 1 further comprising a pair of flanges located exclusively on a predetermined surface of said rack for supporting an identification plate to ensure proper orientation of the rack.

References Cited

UNITED STATES PATENTS

2,917,183	12/1959	Seelye	211—74
3,142,385	7/1964	Kahlenberg	211—74
3,175,695	3/1965	Goodman et al.	211—74
3,184,071	5/1965	Delaire	211—74
3,233,804	2/1966	Dahm	211—74 X

FOREIGN PATENTS

1,354,277	1/1964	France.
1,363,467	5/1964	France.
1,376,633	9/1964	France.

ROY D. FRAZIER, Primary Examiner

U.S. Cl. X.R.

220—23.4, 23.83