Feb. 14, 1961 T. J. CARSKI 2,971,892

PETRI DISH

Filed June 16, 1958

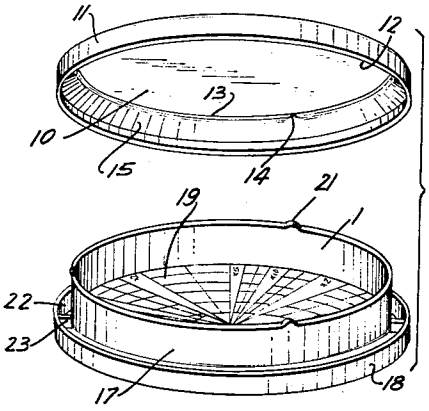


FIG. 1

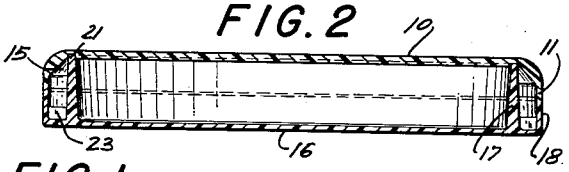


FIG. 2

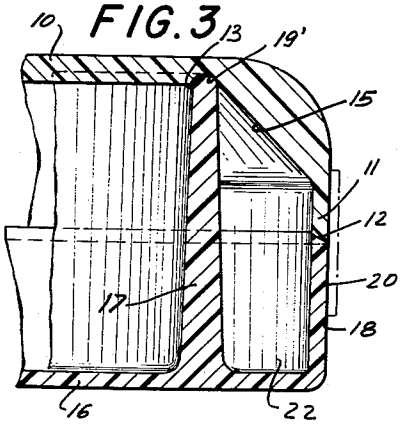


FIG. 3

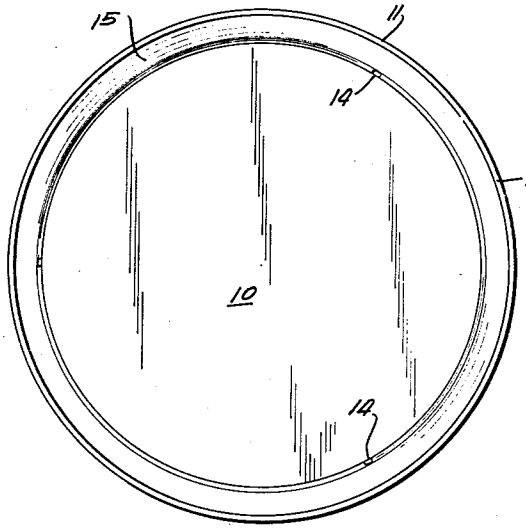


FIG. 4

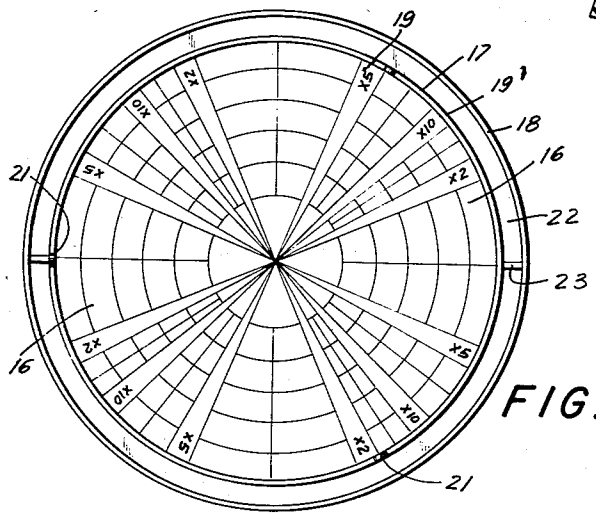


FIG. 5

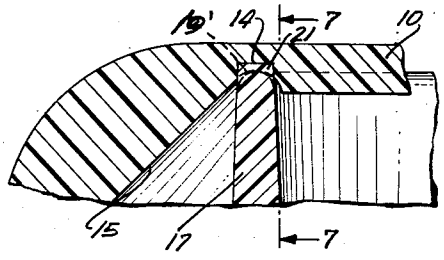


FIG. 6

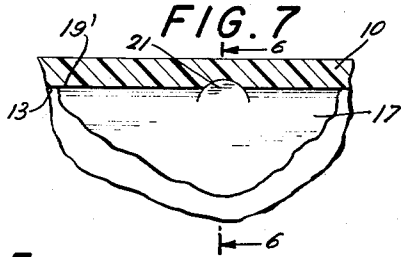


FIG. 7

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United States Patent Office 2,971,892
Patented Feb. 14, 1961

2,971,892

PETRI DISH

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Filed June 16, 1958, Ser. No. 742,357

2 Claims. (Cl. 195—139)

This invention relates to a structurally and functionally improved Petri dish.

By means of the present teachings an assembly is furnished in which evaporation is prevented. Also, it may be transported without disturbing the seal established by its components or the material contained within the dish.

The parts of the dish assembly, when applied one to the other, will assure the establishment of an adequate seal. The dish may accommodate constant-humidity preparations or material which will absorb gases. Reactive agents useful in this connection may be maintained in segregated condition until the user, by suitable manipulation of the assembly, intermixes those agents.

A Petri dish assembly as herein disclosed may with propriety be disposed of after a single use. The parts thereof can be readily and economically manufactured; the dish being capable of proper use even by persons having in effect no mechanical aptitude.

With these and other objects in mind, reference is had to the attached sheet of drawings illustrating one practical embodiment of the invention and in which:

Fig. 1 is a perspective view of the components providing the Petri dish assembly and illustrating them in separation condition;

Fig. 2 is a sectional side view of the complete assembly;

Fig. 3 is a fragmentary transverse sectional view in enlarged scale of a detail of the parts as illustrated in Fig. 2;

Fig. 4 is a bottom plan view of the cover unit;

Fig. 5 is a top plan view of the dish or receptacle unit;

Fig. 6 is a fragmentary sectional view taken along the line 6—6 in the direction of the arrows as indicated in Fig. 7; and

Fig. 7 is a sectional and elevational view taken along the line 7—7 in the direction of the arrows as indicated in Fig 6

Referring primarily to Figs. 1, 3 and 4 and with particular reference to the cover unit of the assembly, it will be seen that its body **10** includes a preferably flat section from the edge of which a skirt or flange **11** depends. The edge of this flange, as indicated at **12**, is preferably inclined in an outwardly and downwardly extending direction. The inner surface of the cover adjacent the zone of juncture of skirt **11** and body **10** is thickened to embody therein maximum rigidity. The surface of this zone, as indicated at **15**, provides an upwardly and inwardly extending guiding face. A groove **13** is furnished adjacent the inner edge of face **15** and extends throughout the entire circumference of the cover. Preferably this groove furnishes, at points spaced 120° apart, recesses **14**.

The body of the dish includes a base **16** formed with a first annular wall **17** at a point spaced from its side edge. A second wall **18** is provided preferably in line with that edge. The face of base **16** may be furnished

with indicia **19** of any desired character providing counting chart or grid markings in accordance with conventional techniques. Both the cover and the base of the assembly are conveniently formed of polystyrene, and the indicia may be applied thereto by screen marking.

As illustrated especially in Figs. 2 and 3, wall **17** is conveniently tapered and terminates in a rounded edge portion **19'** having a radius substantially equal to that of groove **13**. Wall **18** may be of constant thickness and terminates in an edge mating with edge **12**. The parts are so proportioned in height that when the edges of flange or skirt **11** and wall **18** are in engagement, the rounded edge portion **19'** of wall **17** bears against the base of groove **13**. Preferably the outer faces of the skirt **11** and wall **18** are flat and in line, so that a pressure-sealing tape **20** may be applied thereto, as indicated in dot-and-dash lines, to prevent accidental separation of the cover from the base of the dish.

Extending upwardly from the edge **19'** of wall **17** are projections **21**. These are spaced 120° apart and are of an area such that they may be received within the recesses or depressions **14** in the base of the cover groove **13**. Intervening walls **17** and **18** is a trough portion **22**. This trough portion is subdivided by ribs **23** extending upwardly from its base, conveniently at diametrically opposite points, as illustrated. The height of these ribs may conveniently be less than the depth of the trough portion **22**.

With a Petri dish assembly of this type it will be understood that a disposable structure is provided. The parts should be designed so that they will remain rigid, with no distortion of shape, in a temperature range between the high and low points encountered in techniques involving their use. After manufacture of the parts, they will be sterilized and may be filled with culture medium and sealed with tape, as indicated at **20**, or in any other suitable manner. Of course, prior to such sealing, the edge portions of either or both of walls **17** and **18** will have applied to them a light coating of a material such as Vaseline. Therefore, with the cover applied to the bottom, an adequate seal is furnished to prevent evaporation.

Obviously, the dish assembly may be incubated employing this or a similar seal. Also, an air lock is thus provided between walls **17** and **18**. Thus, all air currents are prevented from moving inwardly or outwardly of this space. Also, foreign material such as dust will not enter if the assembly is incubated in an inverted position. In the application of the cover to the bottom plate, the parts will be self-centered. This will be due to the guiding surface **15** cooperating with the rounded upper edge **19'** of wall **17**. Moreover, the adjacent edge surfaces of flange **11** and wall **18** will cooperate as the parts are applied to each other.

The trough **22** may be used to accommodate constant-humidity preparations. These would involve, for example, sulfuric acid solutions of selected density resulting in the following factors:

Density 1.50=70.4% relative humidity
Density 1.50=18.8% relative humidity

Likewise, various salts may be used to produce an atmosphere of constant humidity, including calcium chloride and ammonium chloride. Functionally equivalent substances and agents could likewise be employed.

In the event it is desired to absorb gases, the well or trough portion may be employed to remove oxygen from the entrapped air by means of pyrogallo and sodium hydroxide. To effectively obtain this result, the dividing walls or ribs **23** should—as shown—be of less height than the depth of the trough or well. This will permit separation of the active agents, which are mixed subse-

quently to the application of the cover to the bottom plate, and with the Vaseline or equivalent seal applied only to the adjacent opposed surfaces of flange **11** and wall **18**. Likewise, carbonates and acids could be disposed in the segregated areas of the well or trough portion and subsequently mixed, to produce suitable concentrations of carbon dioxide to promote the growth of certain microorganisms.

Thus, among others, the several objects of the invention as specifically aforenoted are achieved. Obviously, numerous changes in construction and rearrangements of the parts might be resorted to without departing from the spirit of the invention as defined by the claims.

I claim:

1. A Petri dish assembly including in combination a body comprising a base, a pair of walls of limited height extending upwardly from said base, said walls being disposed one within and spaced from the other to furnish a trough portion between them, the inner wall having a height greater than that of the outer wall and together with said base, defining a shallow receptacle, a cover, a skirt depending therefrom, said cover providing adjacent said skirt an inwardly and upwardly inclined surface engaging with the edge of the inner wall to guide the skirt into sealing engagement with the edge of the outer wall as said cover is applied to said base, said cover being formed with a groove in its face, said groove being spaced from said skirt a distance equal to the spacing of said walls from each other to cause said groove to receive the edge zone of the inner wall as said cover is applied to said base, the surface of said groove and the edge zone of said inner wall being both transversely rounded, said groove being formed with recessed portions, and projections extending upwardly of said inner wall into said recessed portions.

2. A Petri dish assembly including in combination a body comprising a base, a pair of walls of limited height extending upwardly from said base, said walls being disposed one within and spaced from the other to furnish a trough portion between them and with the inner wall defining a shallow receptacle, a cover body, a skirt depending therefrom, said cover being disposed above said base and being formed with a groove receiving the edge zone of said inner wall as said skirt sealingly engages said outer wall, said groove being formed with recessed portions, and projections extending outwardly from said inner wall into said recessed portions.

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