United States Patent

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[54] METHOD AND APPARATUS FOR OBTAINING BACTERIOLOGICAL INFORMATION

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Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 744,279, June 10, 1968, abandoned.

[52] **U.S. Cl.** .....**128/2 R,** 206/63.2
[51] **Int. Cl.**.....**B65d 79/00,** A61b 10/00
[58] **Field of Search**.....128/2, 269; 206/63.2; 229/28

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Primary Examiner—Aldrich F. Medbery
Attorney—John H. Crowe

[57] **ABSTRACT**

A kit which permits bacterial cultures to be quickly and easily obtained from urine samples and transmitted to a clinical laboratory for bacteriological examination. The main component of the kit is a specimen sampler molded from clear plastic in the form of a jointed strip. The strip has symmetrical, longitudinal half-segments integral with a central joint segment through which the half-segments are movable relative to one another. The half-segments have two bowllike indentations with outwardly bulging walls which serve as deposit areas for beds of congealed culture medium. Melded to the bottoms of the bowllike indentations are four shallow cups with flaring rims, around which the beds of congealed culture medium are formed and which serve to anchor the beds in place, and hold them intact, during usage of the specimen sampler. The sampler is designed so that its two half-segments can be folded together until the bottoms of their bowllike indentations touch and their open fronts face outwardly in opposite directions. The sampler has a pair of finger grip indentations either side of its joint segment. The kit includes, in addition to the specimen sampler, a narrow, sealable container into which the folded sampler snugly fits. When the sampler is ready for use, it is pulled from the container by means of the finger grip indentations, then held by these indentations and dipped into a sample of urine until its culture bed areas are immersed. The sampler is then removed from the urine and sealed in the container for transmittal to a clinical laboratory for examination.

13 Claims, 14 Drawing Figures

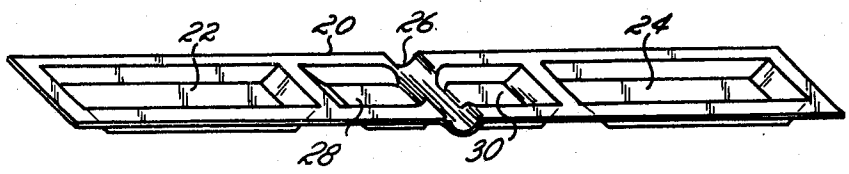


Fig. 1

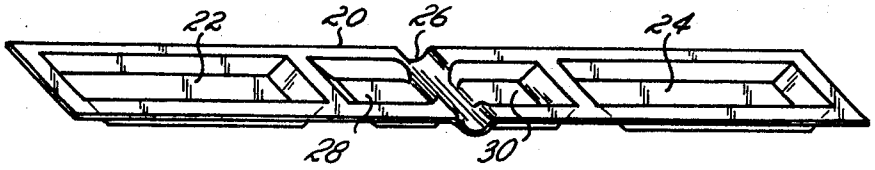
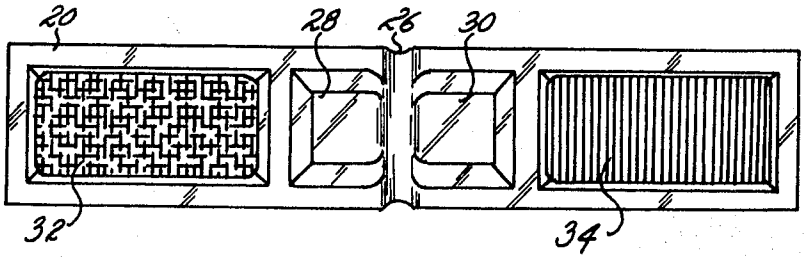


Fig. 2



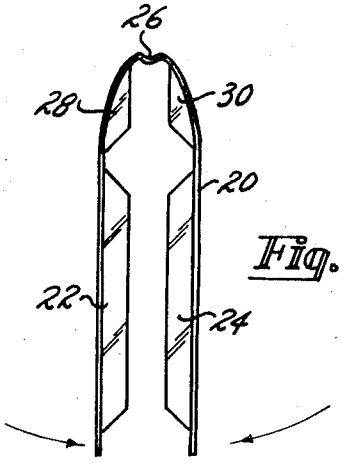


Fig. 3

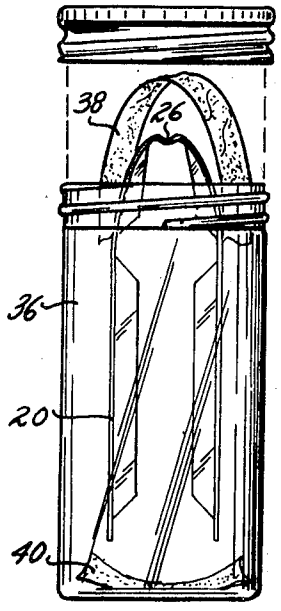


Fig. 4

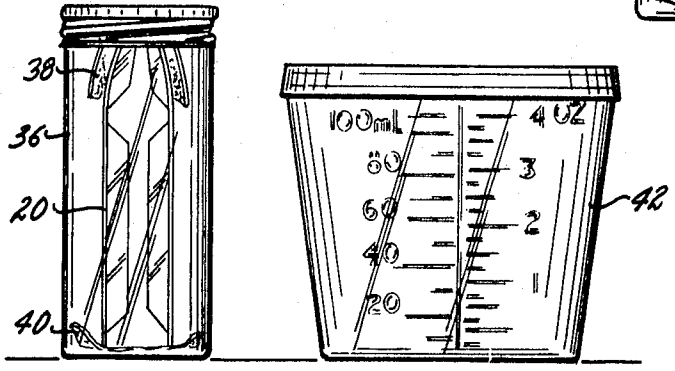


Fig. 5

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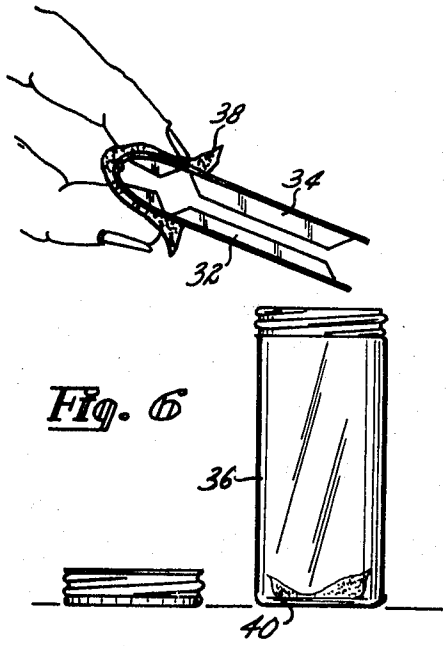


Fig. 6

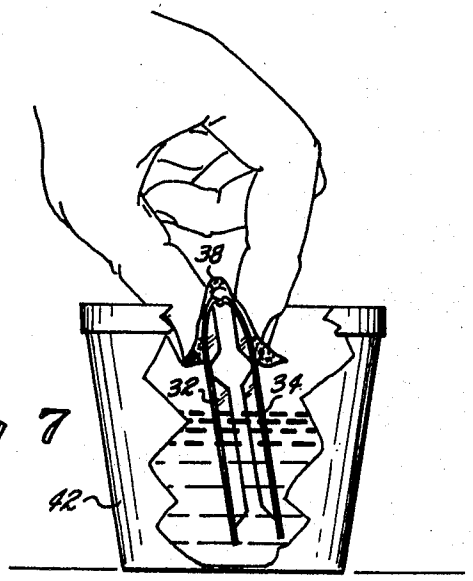


Fig 7

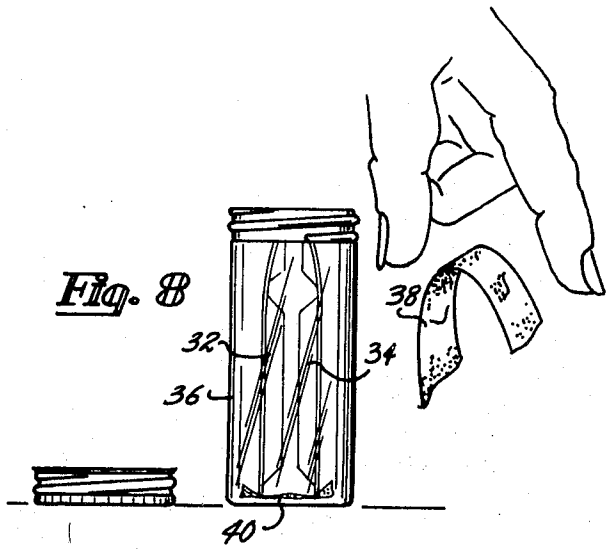


Fig. 8

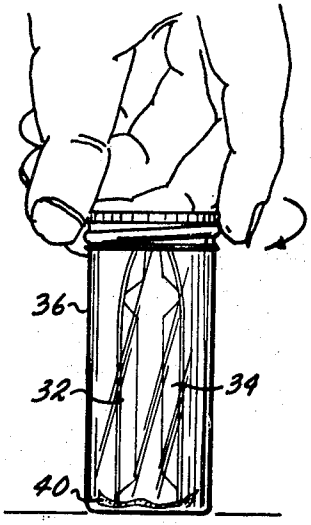


Fig. 9

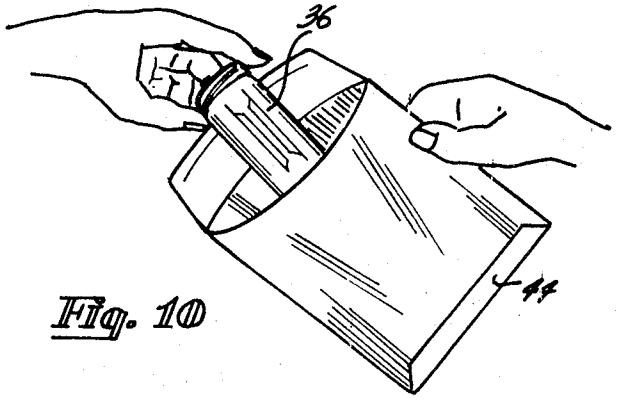
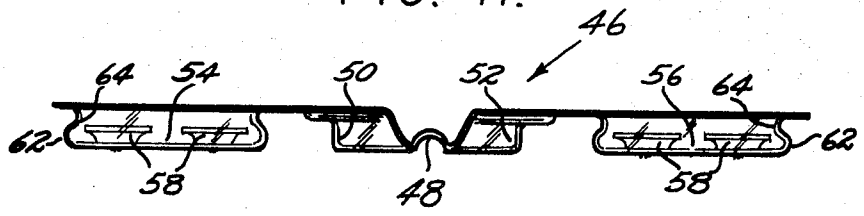


Fig. 10

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FIG. 11.



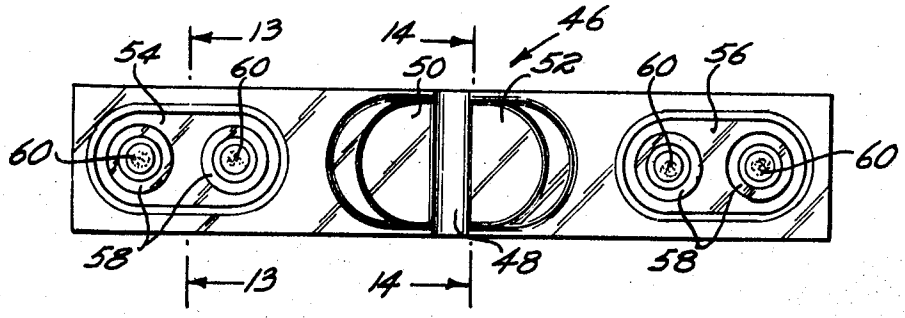


FIG. 12.

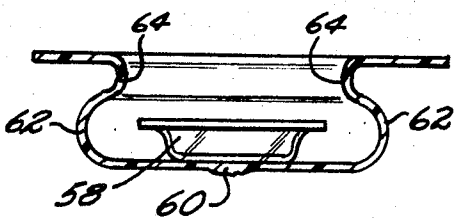


FIG. 13.

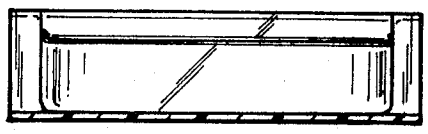


FIG. 14.

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METHOD AND APPARATUS FOR OBTAINING BACTERIOLOGICAL INFORMATION

CROSS-REFERENCE TO RELATED APPLICATION

This application is a continuation-in-part of my copending U.S. application Ser. No. 744,279, filed June 10, 1968 and now abandoned.

BACKGROUND OF THE INVENTION

This invention relates generally to means for obtaining bacterial cultures from liquids to be bacteriologically examined, and more particularly to such means for obtaining bacterial cultures from urine.

The bacteriological examination of urine specimens is a medically useful procedure for obtaining clinical information about patients, physical examinees, etc. Presently conventional methods of obtaining urine specimens for such examination require the donors to get the specimens into the hands of clinical specialists in reasonably fresh condition to minimize the effect of bacterial multiplication therein. As soon as such a sample is received in the laboratory, some of it is transferred, by means of swab, paper, or the like, to one or more culture plates, after which the plates are subjected to known processing techniques, not necessary to describe here. If it is impossible to immediately transfer urine from the specimen to a culture medium, the specimen must be refrigerated to inhibit germ growth in the liquid until it is ready for testing.

The above-described way of obtaining urine specimens, and preparing bacterial cultures therefrom, is inconvenient, and frequently embarrassing, for donors; requires refrigeration facilities for specimens which cannot be tested immediately; has the inherent risk of too much time delay between the obtaining of specimens and delivery thereof to laboratory personnel; requires skilled medical personnel for the preparation of the culture plates; and is a generally inefficient and time-consuming way of achieving the desired results. All of these shortcomings of presently conventional procedures for bacteriologically examining urine would be eliminated if a simple means of permitting the donor to prepare his own urine culture plate, or plates, in the privacy of his home, or elsewhere, for transmittal to a clinical laboratory (and means whereby such transmittal could be easily effected, as by mail) were provided. To the present, no such means has been made available to the medical profession, or the public in general, at least insofar as I am aware.

SUMMARY OF THE INVENTION

The urine-testing kit of this invention is designed to permit a patient, or other inexperienced person, to quickly and easily prepare bacterial cultures from his own urine and transmit the cultures to a clinical laboratory for examination without any necessity of refrigerating the urine, for the inhibition of bacterial multiplication, at any stage of the proceedings. The principal component of the kit is s flexible, lightweight specimen sampler, preferably with two culture medium bed sites (which can be loaded with culture media of differing nutritive content), designed for dipping into a sample of urine to expose the culture media to bacteria therein. The sampler is preferably of transparent plastic construction, and thin, striplike form, with a jointed segment at its longitudinal center, by means of which the two halves of the sampler can be folded together.

The aforesaid sampler, in its preferred form, is of molded sheet plastic construction, and each of its halves has a bowllike indentation with a generally flat bottom and bulging sidewalls converging to a beaded rim around its top opening, the indentations being so positioned that folding of the sampler in the above-indicated fashion brings the bottoms of the indentations together so that their open top sides face outwardly, away from each other.

Fixedly secured to the flat bottom of each of the bowllike indentations of the sampler is a pair of shallow, cuplike members with flaring brims. These members are preferably of clear plastic, and melded, open side up, to the bottoms of the indentations. These indentations, or hollows, serve as areas of confinement for beds of agar culture medium which is poured into the hollows as a liquid and left to jell, or congeal, therein. The liquid culture medium flows around, and into, the cuplike members, and when it congeals, is confined against movement or deformation by the anchoring effect of these members and the restrictive effect of the beadlike rims defining the openings of the bowllike indentations. The exposed surfaces of the congealed beds of culture media encircled by these rims serve as culture plates for bacteria, and particularly urine bacteria, growth.

Flanking the two edges of the laterally extending hinge segment of the specimen sampler are two finger grip indentations sized to permit easy handling of the sampler with the thumb and forefinger of either hand. Other parts of the specimen sampler kit, in its preferred form, include a narrow vial, or container, preferably, but not necessarily, made of clear plastic, with a sealing cap by means of which its contents can be protected against contamination. This vial or container is sized to snugly receive the sampler, in its doubled position, with its folded end up. Preferably, there is a piece of sterile soft tissue in the bottom of the container for the sampler to rest on, and a piece of similar material is placed over its folded end. The kit can include, in addition to the above-mentioned parts, a jar for the collection of a urine sample, and a plastic bag in which the sampler-containing vial can be packaged for mailing, or other means of transmittal, to a clinical laboratory for testing.

The parts of the urine-testing kit of this invention can be easily assembled and mailed from a doctor's office, clinical laboratory, or the like, to a patient, or physical examinee, for use in his own home. Immediately after a urine sample is collected by the patient in the sampler jar, he can open the vial containing the specimen sampler; remove the sampler, keeping the sterile soft tissue at the folded end of the sampler between his fingers and the body of the sampler; dip the two outwardly facing culture plates into the urine in the sample jar; then remove the sampler from the urine, and replace it in the vial in which it arrived. He can then discard the protective soft tissue covering the finger grip indentations of the sampler, and seal the vial for return to the doctor or laboratory. He can do all this in a matter of minutes, and thereby eliminate the time-consuming, and often embarrassing, necessity of carrying a sample bottle of urine from his home to a place of analysis and turning it over to someone for processing. Furthermore, the culture plates of the sampler are exposed to the urine immediately after a sample has been collected, and before any significant bacterial multiplication has taken place therein.

Different types of culture media can be employed for the two culture plates on the specimen sampler, and since the sampler remains folded at all times during its use and return to the laboratory, and the culture plates face outwardly, in opposite directions from each other, there is no chance for contamination between the plates. Furthermore, and this is an advantage of great significance, the culture plates have exposed areas of predetermined size, which means that the plate areas, and the amounts of liquid that can be picked up thereby, are standardized. This, of course, permits quantitative bacterial determinations to be made with the specimen sampler.

It is thus a principal object of this invention to provide an inexpensive urine sampler of simple construction which can be easily sent through the mail for use by one inexperienced in medical testing procedures for the preparation of urine culture plates from fresh urine.

It is another object of the invention to provide such a sampler which can be easily mailed, after use in the home, to a clinical laboratory for testing without undue risk of contamination.

It is still another object of the invention to provide such a sampler, and cooperating means, which serve to eliminate any necessity for the refrigeration of urine samples to inhibit bacterial growth therein.

Another object of the invention is to provide such a sampler designed to permit *quantitative* bacterial examinations of urine samples.

Still another object of the invention is to provide such a sampler by means of which culture plates of differing character can be simultaneously exposed to urine by a simple dipping procedure without any risk of contamination between the plates.

Other objects, features and advantages of the invention will become apparent in the light of disclosures to follow herein.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a generalized form of a specimen sampler in accordance with this invention.

FIG. 2 is a top view of the FIG. 1 specimen sampler.

FIG. 3 is a side view of the FIG. 1 sampler bent double through movement of its two halves in the directions indicated by the curved arrows.

FIG. 4 is a side view of the specimen sampler, a piece of protective sterile tissue therefor, and a sealable vial or container adapted to snugly receive the sampler, the view being partially exploded to show the manner in which the sampler fits into the vial.

FIG. 5 is a view of the vial, with the specimen sampler sealed therein, drawn to a reduced scale, and a urine sample jar intended for use in conjunction therewith.

FIG. 6 is a side view of the vial and specimen sampler, showing the sampler in the process of removal from the vial for use in a sample of urine.

FIG. 7 is a side view of the urine sample jar, with its wall partially broken away, showing, additionally, the specimen sampler being dipped in a sample of urine in the jar to illustrate its manner of use.

FIG. 8 is a view showing the specimen sampler being replaced in the FIG. 6 vial after it has been removed from the urine sample of FIG. 7, and showing, additionally, discard of a piece of sterile soft tissue by means of which the urine sampler was held in FIGS. 6 and 7.

FIG. 9 shows the specimen sampler vial (loaded with the sampler) in side elevation, with its top in the process of being fastened to seal it for return to a clinical laboratory for testing.

FIG. 10 shows the sealed vial, and specimen sampler, drawn to a reduced scale, being inserted in an envelope for return to the aforesaid laboratory for testing.

FIG. 11 shows a side elevation of a preferred embodiment of a specimen sampler in accordance with this invention.

FIG. 12 shows a top view of the FIG. 11 specimen sampler.

FIG. 13 is an enlarged cross-sectional view of the specimen sampler, taken along line 13—13 of FIG. 12.

FIG. 14 is another enlarged cross-sectional view of the specimen sampler, this time taken along line 14—14 of FIG. 12.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Considering now the drawings in greater detail, with emphasis first on FIGS. 1–10, there is shown generally at 20 a plastic specimen sampler in accordance with this invention. Specimen sampler 20 is not intended to illustrate a preferred embodiment of such a sampler, but merely to represent a generalized version of the sampler. Specimen sampler 20 is molded from sheet plastic, preferably, but not necessarily, of a transparent character. As FIGS. 1 and 2 best show, the specimen sampler has a central hinged segment 26, separating two structurally symmetrical halves which can be bent double, through the hinged segment, in the manner illustrated in FIG. 3. Hinged segment 26 is simply a laterally extending deformation, of arcuate cross section, in the sampler, which permits bending of its two halves, in the above-indicated manner, without undue risk of bending or cracking of the plastic from which it is made.

The two halves of the sampler have corresponding indentations or depressions 22 and 24, respectively, which serve as trays for beds of congealed bacterial culture media. Typically, the culture media in the beds will be of conventional agar type, but of differing nutrient value to permit two separate urine screen tests with the same sampler. FIG. 2 shows two such beds of culture media 32 and 34 in the depressions 22 and 24, respectively. In addition to their traylike depressions, the two halves of specimen sampler 20 have corresponding finger grip indentations 28 and 30, respectively, disposed either side of the hinged segment 26.

A typically representative urine-testing kit in accordance with this invention will preferably include, besides a specimen sampler, a capped vial or container, such as shown at 36, into which the doubled sampler can be sealed; a disposable specimen jar or cup, such as shown at 42, which can be used to collect a sample of urine; and a sealable bag, such as shown at 44 in FIG. 10, by means of which the specimen sampler can be returned to a clinical laboratory for testing after its culture beds have been exposed to a urine sample as taught herein. Additionally, the kit will preferably include a piece of sterile soft tissue 40, positioned in the bottom of container 36, and a second piece of such tissue 38, positioned over the finger grip indentations of the specimen sampler, in the manner best illustrated in FIG. 4, to permit removal of the sampler from container 36, and handling of the sampler, with minimal risk of contaminating its sensitive culture bed areas.

The urine-testing kit of this invention is intended primarily for use by a patient, or physical examinee, to permit him to obtain cultures of a fresh sample of urine for transmittal to a clinical laboratory for testing. Use of the kit requires no medical skill, and all the patient needs to do is follow a few simple instructions to get the desired results. The kit can be easily mailed, or otherwise sent, to the patient, for use in the privacy of his home, or elsewhere, and as easily returned, after such use, to a laboratory for examination. To prepare the kit for mailing to a patient, it is only necessary to place the piece of sterile soft tissue 40 in the bottom of the vial or container 36; bend specimen sampler 20 into its doubled form (shown in FIG. 3), and insert it, bent end up, into container 36 (while making sure that the piece of sterile soft tissue 38 is in place over the bent end of the specimen sampler); and then seal container 36 with its cap. Container 36, with the specimen sampler sealed inside; urine sample cup 42 and the sealable sampler return bag 44, can then be mailed (or otherwise transmitted) to the patient.

When the patient is ready to use the kit, he collects a sample of urine in the sample cup 42, and then unseals container 36, after which he removes the doubled specimen sampler from the container, utilizing the piece of sterile soft tissue 38 to prevent contact of his fingers with the sampler, as illustrated in FIG. 6. He then dips the lower portion of the doubled specimen sampler into the urine in cup 42, in the manner illustrated in FIG. 7. Preferably, the urine sample should be of sufficient depth to permit complete immersion of the culture beds 32 and 34 in the liquid. After he has dipped the sampler in the urine, the patient then permits it to drain, and returns it to container 36, with its lower part resting on the sterile soft tissue 40 in the bottom of that container. He then discards the sterile soft tissue 38, as illustrated in FIG. 8, recaps the container in the manner shown in FIG. 9, and seals the container into the sampler return bag 44, in the manner indicated in FIG. 10. It is then necessary only to return the sampler return bag to the laboratory, after which the bacterial cultures from the urine sample can be examined by conventional techniques not necessary to describe here.

As will be apparent to those familiar with bacterial determination techniques, the use of a kit such as that described and illustrated herein provides for quantitative bacterial determination since the surface areas of the culture media beds on the specimen sampler are, as previously indicated, of a standardized size. The specimen sampler is designed to fold in the above-described manner so that two types of cultures can be prepared simultaneously. The container 36 is a means of preserving the sterility of the agar after it has been exposed to

urine. The unique design of my novel specimen sampler makes possible the preparation of urine culture plates without the need of a skilled technician to swab, or otherwise plate, the culture bed surfaces with urine, and eliminates any necessity of refrigerating urine samples so long as used in accordance with present teachings.

All of the above-described components of my urine sampler kit, except the specimen sampler itself, are, or can be, of conventional type. For example, the specimen sampler container **36** can be a clear plastic vial, or container, of known type, with a conventional cap by means of which it can be easily sealed. Likewise, the specimen sample cup **42** can be a capped container of known type, and the pieces of sterile soft tissue **38** and **40** can be any known material suitable for the purpose. The specimen sampler, however, was particularly designed for purposes of the present invention, and has a unique configuration and functionality unmatched by any presently available part or component of urine testing, or other, apparatus or equipment of which I am aware. While specimen sampler **20** is adequate to illustrate the general features, structural and functional, of my unique specimen sampler, it does not, as previously indicated, represent a preferred, or refined, version of the sampler. This is not to say, however, that specimen sampler **20** is completely inoperative, but it is a fact, as I have experimentally discovered, that a specimen sampler of that type is ineffective in retaining certain culture media intact in its traylike depressions **22** and **24**. More specifically, I have found it desirable to modify the design of specimen sampler **20** so as to improve its retentivity of congealed culture media and render it more universally capable of retaining beds of culture media intact through all phases of use and functioning thereof. An improved specimen sampler of such modified design is shown at **46** in FIGS. **11–14**.

Specimen sampler **46**, similarly to sampler **20**, has two symmetrical halves which are flexibly movable about a central joint or hinge segment **48** to permit doubling of the sampler for insertion in a vial or container such as container **36**, in the same way as specimen sampler **20** is doubled for insertion in that container. Flanking either side of hinge segment **48** are a pair of finger grip depressions **50** and **52**, respectively. Sampler **46**, like specimen sampler **20**, is molded from clear sheet plastic, except for certain appendages soon to be described, and, as FIG. **11** best shows, its hinge segment **48** is a lateral warp or ridge separating the bottoms of the finger grip depressions **50** and **52**. The principal areas of difference between specimen sampler **46** and sampler **20** reside in the shape and character of its culture medium bed-receiving areas, these comprising bowllike indentations or depressions (shown at **54** and **56**, respectively), rather than the traylike depressions (**22** and **24**) of specimen sampler **20**. Additionally, the culture medium bed-receiving areas of specimen sampler **46** include anchoring means for the culture medium attached to the bottoms of the depressions **54** and **56**. Specifically, these anchoring means are shallow, cuplike members **58** around, and into, which the culture medium flows when it is introduced into the bowllike depressions. When the culture medium jells, or congeals, it tightly embraces these cuplike anchoring means, which, in turn, help to hold the culture medium beds in place, and intact, during usage of the specimen sampler.

The cuplike members **48** are made of the same clear plastic as the main body of specimen sampler **46**, and are melded to the bottoms of the bowllike depressions **54** and **56**, two in each depression, by a heating, or other suitable, procedure by means of which "spot welds," such as shown at **60** in FIG. **12**, are produced. There are various types of plastic which lend themselves to such melding, and the selection of a suitable one for purposes of this invention can be easily made by one skilled in the art, in the light of present teachings. The bowllike depressions **54** and **56** have relatively flat bottoms and bulging sidewalls, as best illustrated at **62** in FIG. **13**, which shows the cross-sectional configuration of the sidewalls of depression **54**. The bulging sidewalls curve inwardly at the top and merge into beaded rims **64** forming inturned lips around the openings of the bowllike depressions.

It will be evident from the foregoing that specimen sampler **46** is bendable, usable and functions in the same way as sampler **20**, except that it is much more effective than the latter in maintaining culture media beds positionally intact during usage of the sampler.

To briefly summarize some of its principal advantages, the unique specimen sampler of this invention makes it possible for an inexperienced person, such as the average medical patient, to plate cultures with urine without the use of an intermediate transfer device, such as a swab, as well as eliminating any necessity for the patient to provide a laboratory with a urine specimen for ordinary bacteriological examination purposes. By making it unnecessary for the patient to deliver a urine specimen to a testing laboratory, my specimen sampler, of course, does away with any need for refrigerating such a specimen. Furthermore, my specimen sampler provides a means of obtaining quantitative bacterial determinations where such would be impossible if the patient were forced to deliver a urine sample from his home to a laboratory, the reason being that bacteria would grow or multiply in the sample while it was on its way to the laboratory and thereby prevent the preparation of quantitative bacterial cultures as currently defined in medical technology. Since my unique specimen sampler will sample a standardized quantity of urine and the number of colonies of bacteria growing on a culture surface can easily be counted, the sampler provides a means for preparing quantitative urine cultures without requiring the patient to turn over a fresh specimen of urine to the laboratory.

While the specimen sampler (and/or sampler kit) of this invention has been herein described and illustrated primarily in terms of reference to its usefulness in the urine analysis field, its potential field of usefulness extends far beyond this narrowly defined area. More specifically, the specimen sampler can be employed for any purpose for which its unique capabilities suit it, such as for the quantitative bacteriological examination of any liquid or substance in which bacteria multiplication can occur between the time a sample of the liquid is obtained and the time it is put on a culture medium for bacteriological culture.

While the novel specimen sampler and sampler kit of this invention have been herein described and illustrated in what are considered to be preferred embodiments, it will be understood by those skilled in the art that departures may be made therefrom within the scope of the invention. Certain of these departures have already been mentioned, and others will occur to those skilled in the art in the light of present teachings. In summary, the scope of the present invention extends to all variant forms thereof encompassed by the language of the following claims.

I claim:

1. Sampler means having at least one bacterial culture plate suitable for dipping in a liquid to be bacteriologically examined, said sampler means comprising a body having at least one segment of generally flattened character and appearance shaped to include an open-topped depressed area of confinement for a bed of congealed culture medium which serves as said culture plate, said body having two segments of generally flattened character and appearance, each shaped to define an open-topped area of confinement for a bed of congealed culture medium, and an intermediate hinge joint segment interconnecting said two segments.

2. Sampler means in accordance with claim **1** in which each of said areas of confinement for beds of congealed culture medium is of shallow, bowllike configuration with a beadlike rim defining its top opening, a generally flat bottom and outwardly bulging sidewalls contiguous with said bottom and said rim, and which has at least one cup-shaped culture medium anchoring member with a flaring rim fixedly secured to said bottom, said cup-shaped anchoring member being so oriented and sized that congealed culture medium in said area of confinement surrounds and fills it when said sampler means is ready for dipping in said liquid.

3. Sampler means in accordance with claim **2** of generally striplike character and molded plastic construction, in which:

said two segments are longitudinally symmetrical about said joint segment;

the plastic from which said sampler is formed is sheet plastic; and

said joint segment comprises a lateral ridge, of arcuate cross section, between a pair of relatively sharp and generally parallel bends, by means of which said sampler means is flexibly movable between a position in which said two segments are aligned in generally coplanar relationship and a position of extreme bend, in which the bowllike areas of confinement for the beds of congealed culture medium are in bottom-to-bottom contact;

whereby said sampler means can be folded to fit into a relatively narrow container for handling, and other, purposes.

4. Sampler means in accordance with claim 3 particularly adaptable for use in the bacteriological examination of urine samples in which:

a pair of finger grip indentations are provided in said two segments in flanking adjacency to said lateral ridge to permit easy gripping, and manipulation, of said sampler means for handling and use thereof.

5. Sampler means in accordance with claim 4 in which said plastic is a transparent plastic, each of said congealed culture medium-confining areas comprises an oval bowl-shaped indentation; and

each of the bowl-shaped indentations has two of said cup-shaped anchoring members affixed to its bottom in spaced relationship.

6. Specimen sampler kit means particularly adapted to permit the plating of a pair of bacterial culture plates with a freshly obtained sample of urine comprising sampler means in accordance with claim 5; and

a sealable container adapted to receive the folded specimen sampler in snug-fitting relationship;

whereby two beds of suitable culture medium can be congealed in the bowl-shaped indentations in said sampler means, after which the sampler means can be bent double, inserted in said container and sealed therein until ready for use through exposure of said culture medium to said urine.

7. Specimen sampler kit means in accordance with claim 6 which includes a piece of sterile soft tissue for use in removing said sampler means from said container without contamination of the sampler means, and subsequent handling of said sampler means in exposing culture medium in its bowl-shaped indentations to urine;

said container being sized to receive said sampler means with its bent ends down, and said finger grip indentations up; and

said piece of sterile soft tissue being sized to fit over said finger grip indentations when the sampler means is in said container to permit easy grasping and handling of said sampler means with the soft tissue in place while said sampler means is removed from the container for use, and at all times during such use.

8. Specimen sampler kit means in accordance with claim 7, including a piece of sterile soft tissue sized to fit in the bottom of said container for said sampler means to rest on, a specimen cup for the collection of a sample of urine sized to permit dipping of the bent sampler means in said sample for exposure of culture medium in each of its bowl-shaped indentations to the urine, and a sealable bag sized to receive said sealable container for transmittal of the dipped sampler means, in the container, to a clinical laboratory for testing.

9. A method of exposing several bacterial culture plates of known surface areas to a bacteria-containing liquid to obtain quantitative bacterial determinations, comprising the steps of:

(a) storing the culture plates of known surface areas out of contact, and in back-to-back relationship; (b) providing a remotely located finger grasping means for holding and supporting the plates; (c) dipping the plates in a body of said liquid while they are supported; (d) removing the plates from said liquid; (e) and inserting and maintaining the dipped plates in their relative position of support in an enclosure means until they are ready for clinical examination.

10. Sampler means having at least one culture plate suitable for dipping in a liquid to be bacteriologically examined, said sampler means comprising a body having at least one segment of generally flattened character and appearance shaped to include an open-topped depressed area of confinement for a bed of congealed culture medium which serves as said culture plate;

said depressed area of confinement for the bed of congealed culture medium being relatively shallow and having culture medium retaining means overlying at least part of its bottom in spaced-apart relationship therewith, whereby a portion of the congealed culture medium forming said bed is sandwiched between said retaining means and said bottom to help maintain said bed positionally intact in said depressed area during usage of said sampler means.

11. Sampler means having at least one bacterial culture plate suitable for dipping in a liquid to be bacteriologically examined, said sampler means comprising a body having at least one segment of generally flattened character and appearance shaped to include an open-topped depressed area of confinement for a bed of congealed culture medium which serves as said culture plate;

said depressed area of confinement for the bed of congealed culture medium being of shallow, bowllike configuration with a beadlike rim defining its top opening, a generally flattened bottom and outwardly bulging sidewalls contiguous with said bottom and said rim, and which has at least one cup-shaped culture medium anchoring member, with a flaring rim, fixedly secured, open side up, to said bottom, said cup-shaped anchoring member being so oriented and sized that congealed culture medium in said area of confinement surrounds the fills it when said sampler means is ready for dipping in said liquid.

12. Sampler means in accordance with claim 11 in which said depressed area of confinement for a bed of congealed culture medium is of oval periphery and said at least one cup-shaped anchoring member consists of two such anchoring members in spaced-apart relationship.

13. Sampler means in accordance with claim 12 of generally striplike character and molded plastic construction.

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