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R. L. PELL

3,282,114

SAMPLER

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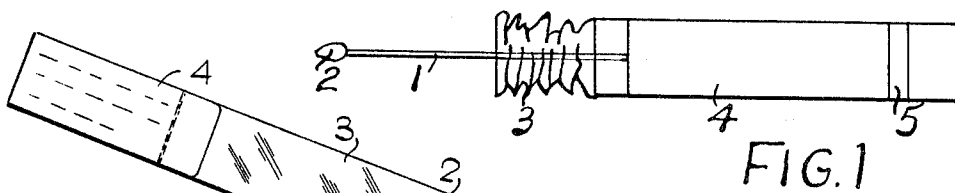


FIG. 2.

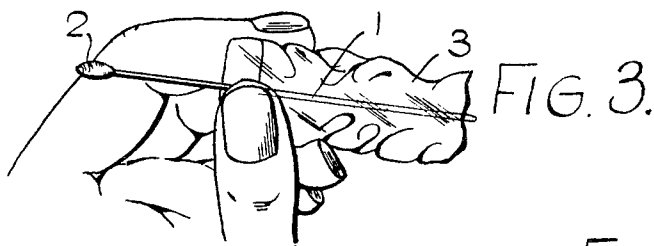


FIG. 4.

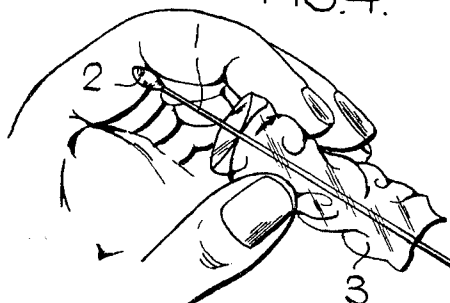


FIG. 5.

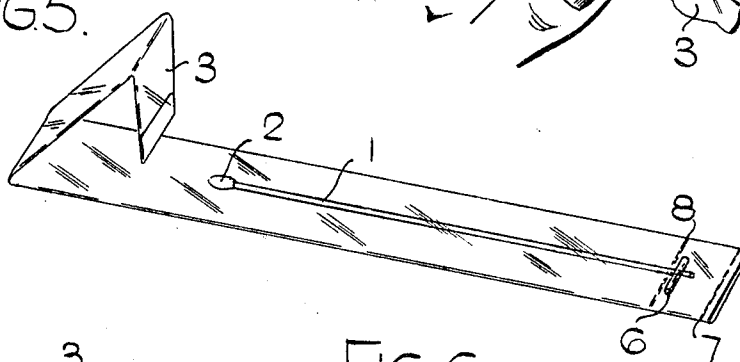
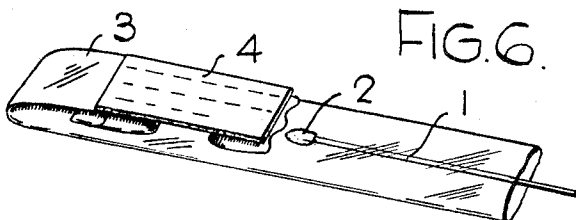


FIG. 6.



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14,143/63

8 Claims. (Cl. 73—425)

The invention relates to a sampler such as a swab, spatula, or pair of tweezers or forceps suitable for example, for medical, biological, zoological or archaeological use or for a needle for taking blood samples. The inventive idea is to provide such a sampler with a flexible sheath or bag which may be held back while the sampler is in use and is replaceable after use to provide protection for the sample. Such a device may be sold sterilized, need not be fingered as the sample is taken, and may then be resealed for preservation.

The invention provides a device for taking samples which comprises a sampler sealed inside and attached to a bag of flexible sheet material. The flexible sheet should be of a thickness and quality such that it can be easily manipulated and yet resist the stresses of sterilization, storage, transport (possibly postage) and handling before and during examination. Advertising and/or instructional matter may be printed on or otherwise applied to the bag. The bag near the operative end of the sampler may be provided with means such as a contact adhesive for assisting in its replacement over the sampler. Such means may operate in conjunction with a folding of the bag and/or a separate adhesive cover in such a way as to retain the bag in a folded closed position. A sampler according to the invention may be provided with an integral label for the recording for example of details of the sample or such a label may be applied to the bag by the user. A label is preferably attached to the bag at the same place and/or in the same way as the sampler itself so as to facilitate assembly. A label may co-operate with the bag to assist in its replacement over the sampler by being provided with an adhesive to which the film may stick, possibly only at a part treated with a self-adhesive which is exposed to the label only after folding the bag.

A preferred device according to the invention comprises a sampler sealed inside and attached to a bag of flexible sheet material with a label attached to the sampler and the bag, the label and/or the bag being so treated with a self-adhesive near the distal end of the sampler that the bag may be sealed over the sampler after use.

The invention is particularly applicable to swabs which can be cheaply mass produced prepacked and presterilized without limitation as to the nature of the swab stick which may be the conventional wooden article or of a smooth surfaced synthetic substance or tightly rolled paper or rubber or plastic coated metal or wood which may be flexible enough to prevent damage by bending and will not splinter; or as to the shape or nature of the swab head which may be of the conventional wool or of a medium for the support of the bacterial growth.

The invention is illustrated by way of example in the accompanying drawings which show devices according to the invention comprising bacteriological swabs.

The device shown in FIGURE 1 comprises a swab having a wooden stick 1 and a head 2 and attached to a bag of thin polyethylene film and to a label 4. The bag 3 is shown held back as when the swab is in use. When extended the bag 3 goes well beyond the head 2, and initially the end is sealed. The label 4 has a strip 5 of self-adhesive which will adhere near the distal end of

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the bag 3 on the side facing into the paper. The label 4 is printed on the reverse side and marked with spaces for a patient's name, the date and other notes. The near side of the label 4 is for trademark use since it can be seen through the sealed bag and because of the bag cannot be written on when the bag has been resealed.

The user cuts off the end of the bag 3 and draws it back to the position shown in the drawing for use. After use the bag 3 is again extended over the swab, closed by folding so as to bring the strip of adhesive on the bag 3 into register with that (5) on the label 4, and sealed by pressing the two strips together. Notes may then be written on the reverse on the label 4.

FIGURES 2 to 6 illustrate a modified device comprising a bacteriological swab, which in the best embodiment of the invention known to us and its use. The reference numerals used thereon indicate the same parts as in FIGURE 1. The swab stick 1 is of tightly rolled paper. The stick 1 is attached to the bag 3 by means of a toggle 6, comprising a short tube of comparatively rigid polyethylene force fitted near the end of the stick 1, retained between a heat seal 7 comprising the end of the bag 3 and an interrupted heat seal 8 between the sides of the bag 3. The label 4 is made of paper having a self-adhesive coating by which the label adheres near the distal end of the bag 3 (unlike FIGURE 1 in which the label is initially attached near the proximal end). The majority of the self-adhesive is initially covered with a layer of waxed protective paper.

FIGURES 2 to 6 demonstrate a sequence of operations by which the swab may be used. FIGURE 2 shows where the label 4 may be cut off to open the bag 3. FIGURE 3 shows the bag 3 being drawn back to expose the sampler head 2. The sample is then taken and FIGURE 4 shows the bag 3 being pinched and replaced over the head 2. The end of the bag 3 is then folded over twice as shown in FIGURE 5 and stuck down by the label 4 (FIGURE 6) from which the protective paper is removed.

I claim:

1. A sampling device for specimens comprising an elongated sampler including an end having means for collecting a specimen, a bag of flexible sheet material longer than said sampler enclosing said sampler, said bag having a closed end and an opening adjacent the opposite end to permit a sample-collecting end of said sampler to be directed through the opening and exposed to enable a specimen to be collected while a portion of said sampler is still retained in said bag, said bag having an end portion which is foldable over the opening of said bag, and means on said bag for securing the folded-over portion of said bag over the opening to re-close the bag.

2. A sampling device according to claim 1, wherein said sampler is secured to said bag at an end remote from the opening.

3. A sampler according to claim 1, wherein said bag is a tube of flexible synthetic plastics material, said bag being closed at the end remote from said opening.

4. A sampler according to claim 1, wherein said means for securing said fold-over portion of the bag includes adhesive.

5. A sampler according to claim 4, including a label portion defined on said folded-over portion, at least part of the adhesive being carried by said label portion.

6. A sampling device according to claim 1, wherein said sampler is a surgical swab.

7. A sampler according to claim 2, wherein said sampler includes a wider inner end portion, said bag being heat sealed across a portion of said bag to confine the inner end portion of said sampler within the bag adjacent the closed end.

8. A sampling device for specimens comprising an elongated sampler including an end having means for collecting a specimen, a bag of flexible sheet material enclosing said sampler and having an opening to permit the sample-collecting end to be exposed and to enable a specimen to be collected, said bag having a portion adjacent the opening for closing the opening after the sampler is repositioned within said bag.

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