

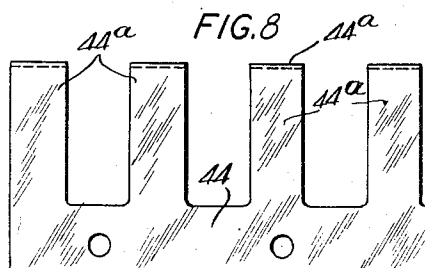
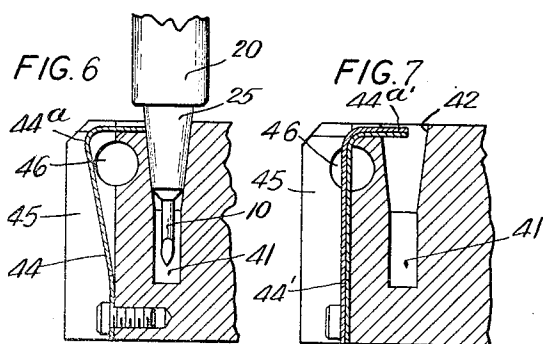
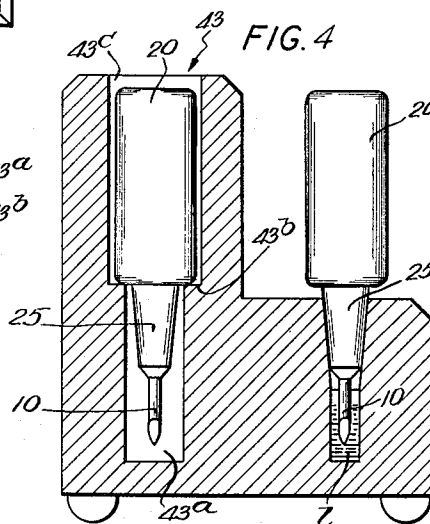
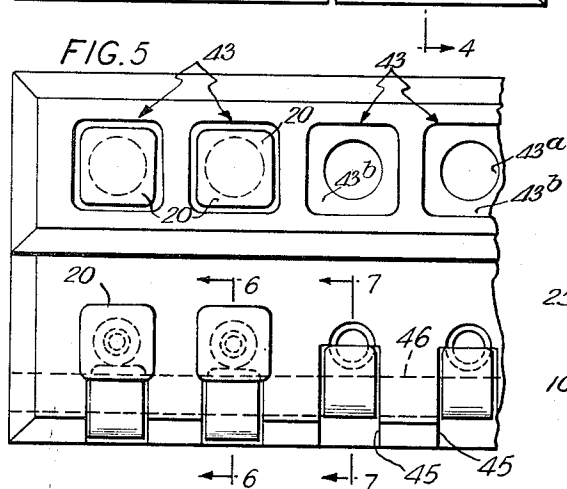
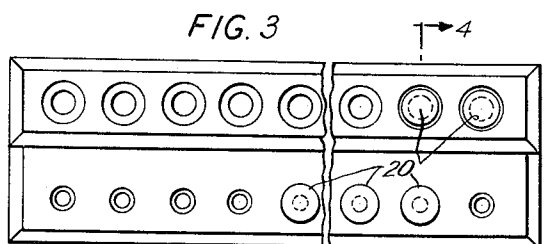
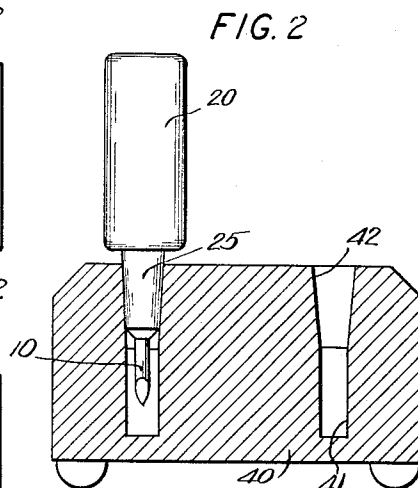
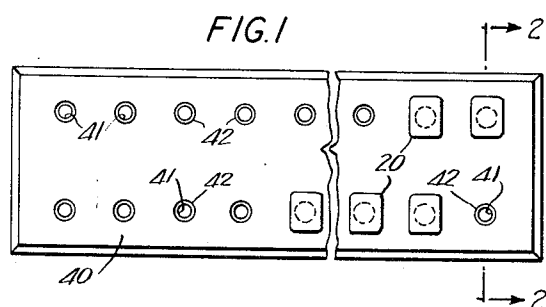
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LANCET READING AND STORING DEVICE

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LANCET READYING AND STORING DEVICE

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4 Claims. (Cl. 21-105)

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My present invention while susceptible of use in various fields has application generally to blood handling equipment and especially to lancets such as adapted for obtaining blood samples from donors. It relates more particularly to a new and improved apparatus for use in the readying and storing of such lancets. The invention will be more fully understood by reference to the following description taken in conjunction with the accompanying illustrative drawing, in which:

Fig. 1 shows in top plan a storing rack and set of lancets ready for use, as in a hospital, blood banking station or other blood collecting or typing location;

Fig. 2 is an enlarged cross section as on the line 2-2 of Fig. 1;

Fig. 3 is a top plan of a modified form of the rack;

Fig. 4 is an enlarged vertical cross section along the line 4-4 of Fig. 3;

Fig. 5 is a top plan of a rack similar to that of Fig. 3 with additional safety closure means;

Fig. 6 is a sectional view taken along the line 6-6 of Fig. 5, with the closure means in lancet receiving position;

Fig. 7 is a section along the line 7-7 of Fig. 5, and illustrating a variant form of the safety closure means shown in lancet blocking position; and

Fig. 8 is a side view of the safety closure of Fig. 6.

Lancets of the class herein concerned are illustrated in Figs. 1 to 6 of the drawing and there shown to comprise generally a knife-edge tip presenting rod or body element 10, an intermediate tapered conical hub or shoulder portion 25, and an enlarged holding element, grip or handle 20, which may be of round (Fig. 3) or non-round (Figs. 1 and 5) configuration. The rod, handle and hub 10, 20, 25 may be of integral metallic construction; alternatively and preferably the handle and hub 20, 25 are fashioned from a plastic such as nylon of desired toughness and flexibility and characterized by impermeable non-wettable surfaces. The blood letting lancets herein concerned are thus of a rugged integral construction and susceptible of repeated sterilization in a technically acceptable manner (as by exposure to wet steam at 250° F. for thirty minutes) without deterioration.

The invention provides novel means for desired sealed storage of sterile unused lancets and also ready disposal and storage of non-sterile used lancets. As illustrated in Figs. 1 to 6, my

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novel storage means comprises generally a tray or rack 40, which may be fashioned of hard rubber, nylon, aluminium or the like material resistant to sterilizing temperatures and affording surfaces having desired sealing characteristics. The rack 40 is characterized in its several embodiments by a plurality of lancet receiving pockets or cavities 41 having upper conical-wall portions 42 sized and tapered conformant to the hubs 25 of the grip-equipped lancets 10, 20, whereby a sealed seating of the same is had. It will be understood that the lancets may be sterilized while supported in the described hub receiving cavities 41-42. For such purpose a small quantity of distilled water or other liquid is deposited in each cavity as at 1, Fig. 4, and the described or other acceptable steam sterilizing procedure is then followed. Thus in the employment of the form illustrated in Figs. 1 and 2 the lancets may be placed for sterilization in say the lower of the two rows indicated, and deposited for convenient storage after use in another or upper row.

In the preferred forms of Figs. 3 to 6, my novel rack 40 additionally provides a second form of cavity or socket specially adapted for storage of the used lancets. The used lancet cavities are shown at 43, and are seen to be sized and arranged for reception and enclosure of the entire lancet assembly including the grip 20, so that a used lancet deposited therein is relatively inaccessible and cannot be picked up by mistake. Sockets 43 are formed more particularly with a lower portion 43a proportioned to receive the lancet bar 10 and tapered hub 25, an intermediate step 43b proportioned and arranged to support the lancet at the handle shoulder with the cutting tip spaced from the socket bottom wall, and an upper portion 43c extending at least to the top level of and preferably somewhat above the lancet grip 20. Such upper portion 43c may be round as in Figs. 3 and 4 or it may have a non-circular configuration conformant variously to the lancet grips of Figs. 1 and 5, the latter differing, as already described, according as they are molded or cast or are machined. It is noted also that where two different forms of socket are provided for the fresh and the used lancets, convenience in handling is served and a saving in weight and material is had by fashioning the rack with a step intermediate the sterile and non-sterile socket rows, as clearly shown in Figs. 3 to 5.

Further characterizing the preferred embodi-

ment of the rack is a safety closure device for the sockets 41, positively preventing inadvertent return of the non-sterile used lancets thereto. As illustrated in Figs. 5 to 8, the safety closure may comprise a serrated strip 44 of spring material provided with right-angular spring fingers 44a, and rigidly mounted at a base portion to have vertical portions of said fingers reciprocable in transverse rack recesses 45 paralleling the sockets 41 and normally athwart axial bore 46 indicated in Figs. 5 to 7 as intersecting the said recesses 45. The spring fingers 44a are seen further to have lateral or horizontal portions normally closing off the sterile sockets 41. When the lancets are to be assembled in the rack for sterilization the fingers 44a all may readily be withdrawn by the insertion of a pointed rod in axial bore or aperture 46, camming the cavity blocking parts to non-interferent or lancet receiving position as in Fig. 15. Desired withdrawal of the spring closure may be had alternatively by fashioning the serrated strip of bimetallic material as indicated at 44', Fig. 7, whereby the spring fingers 44a' retract and the lancets 19-20 drop into place automatically when the assembly is heat sterilized.

Whatever the form of the closure or block-off means, the lancets are withdrawn for use from sterile cavities 41 and deposited after use in non-sterile cavities 43, from which they cannot be readily or unconsciously retrieved, as a consequence of the described swallowing capacity of the cavity upper portion 43c.

It will be appreciated that my novel lancet holder 49 is adapted to a simple and economical operating technique. When the supply of sterile lancets is exhausted, the used lancets may be removed from cavities 43 by inverting the rack. The lancets are then washed and reinserted in the cavities 41 to be sterilized over again. Thus the rack affords a convenient means for hermetically sealed storage of a multiple set of lancets. By the provision of the described safety features the patient is protected from possible infection by reuse of a used and non-sterile lancet.

It will be understood that my invention, either as to structure or method, is not limited to the exemplary embodiments or steps herein illustrated or described, and I set forth its scope in my following claims.

I claim:

1. A lancet storing kit comprising a set of lancets characterized at one end by a knife edge cutting tip and at the other by an enlarged grip-forming handle, the tip and handle merging at an intermediate hub, and a multiple lancet storage rack including a support means, a first set of support cavities receiving the tips and formed at their mouths with a seat for the hubs of said lancets, whereby they may be readied for use in desired tip sealing and handle exposing manner, and a second set of support cavities proportioned snugly to enclose both the tips and handles and formed with an interior seat for the hubs of said lancets, whereby they may be stored after use in desired inaccessible condition, and

retractible detent means constructed and arranged on said support means normally to close said first set of cavities and thereby to prevent inadvertent disposal of used lancets therein.

2. A kit for readying unused and storing used lancets comprising a set of lancets having each at one end a knife edge cutting tip and at the other an enlarged grip-forming handle, the tip and handle merging at an intermediate hub, and in combination therewith a rack presenting lower and upper levels, the lower level having a set of cavities shaped and formed interiorly to receive the tips and peripherally to seat the hubs of the lancets and supporting said set in desired tip sealing and handle exposing ready condition, and the upper level having a set of cavities shaped and formed snugly to enclose both the tips and handles of said lancets, whereby they may be conveniently stored after use in desired inaccessible condition, and retractible detent means on said rack operable automatically upon removal of said ready lancets to close said lower level cavities against inadvertent disposal of used lancets therein.

3. A multiple lancet storage device according to claim 2 wherein said retractible detent means comprises a bimetallic formation constructed and arranged automatically to withdraw it from cavity closing position upon subjection of the device and contents to sterilizing heat.

4. A lancet storing kit comprising a set of lancets characterized at one end by a knife edge cutting tip and at the other by an enlarged grip-forming handle, the tip and handle merging at an intermediate hub, and a multiple lancet storage rack having a stepped upper surface presenting a longitudinally extending lower stepped surface and a longitudinally extending upper stepped surface, the lower stepped surface having a first set of support cavities receiving the tips and formed at their mouths with a seat for the hubs of said lancets, whereby they may be readied for use in desired tip sealing and handle exposing manner, and the upper stepped surface having a second set of support cavities proportioned snugly to enclose both the tips and handles and formed with an interior seat for the hubs of said lancets, whereby they may be stored after use in desired inaccessible condition, the distance between the upper and the lower stepped surfaces being substantially the length of a lancet handle.

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