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I. SILVERMAN

2,198,319

BIOPSY NEEDLE

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Fig. 1.

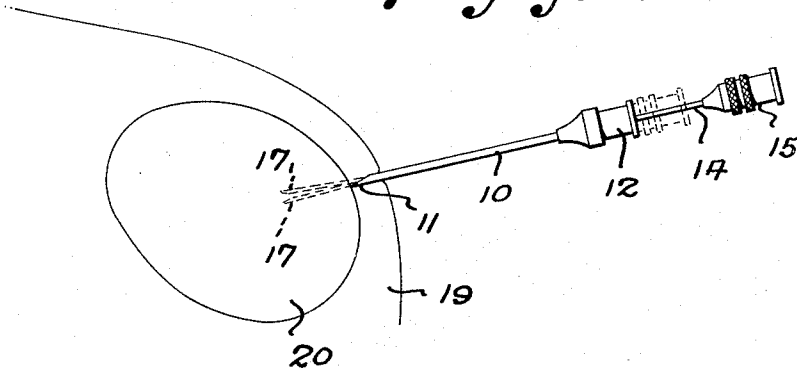


Fig. 2.

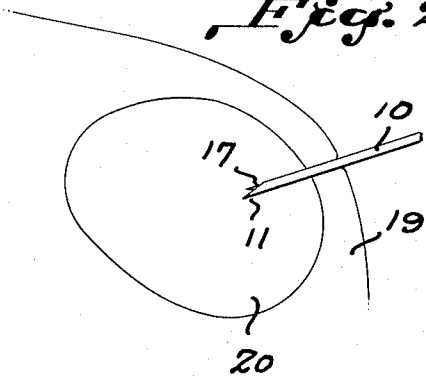


Fig. 3.

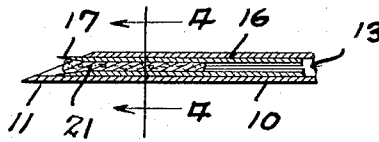


Fig. 4.

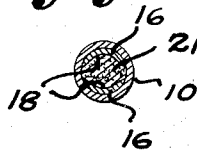
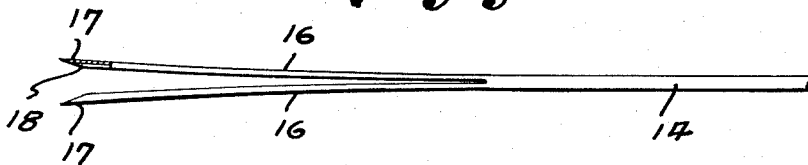


Fig. 5.



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BIOPSY NEEDLE

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2 Claims. (Cl. 120-2)

This invention relates to needles of that type generally known in the art as biopsy needles and has particular reference to the provision of a needle of this type which is certain in its action yet of comparatively simple construction.

An object of the present invention is to provide a needle of the type mentioned having means for severing a portion of the tissue of the human body, for instance as embodied in a tumor, whereby the same may be examined for pathological diagnosis.

Another object of the invention is the provision of a space within the needle for storing the selected tissue and protecting the same while it is being withdrawn from the body of a patient.

Other and further objects of the invention will become apparent from the following specification taken in conjunction with the drawing.

The invention is illustrated in the accompanying drawing, forming part of this specification, wherein

Figure 1 is a side view of a needle embodying the invention and illustrating the method of its use,

Figure 2 is a like view, partly broken away, illustrating a further step in the use of the instrument,

Figure 3 is an enlarged sectional view of one end of the needle,

Figure 4 is an enlarged sectional view taken along line 4-4 of Figure 3 and

Figure 5 is an enlarged view, partly broken away, of the biopsy needle.

Referring more particularly to the drawing, there is shown therein an instrument embodying my invention and including a hypodermic needle 10 having the customary pointed and beveled end 11 and the usual needle hub 12.

Rotatably and slidably mounted within the customary passage 13 of the needle 10 is an interior needle having a shank 14 adapted to snugly fit within the passage 13 and an operating hub 15 at its outer end. The inner end of the interior needle is split for a goodly portion of its length, i. e., from point to hub, as indicated at 16, the two portions thus formed having divergently pointed and beveled inner extremities 17. The split portions of the interior needle are hollowed on their inner faces, as shown at 18 in Figures 4 and 5.

For the purpose of illustrating the invention, there has been shown in the drawing a portion 19 of a human body having a tumor 20 therein and a specimen removed by this instrument is shown at 21 in Figures 3 and 4.

In operation, it will be seen that when a

physician desires to secure a specimen of the interior of a suspected portion of a human body, that, after first anesthetizing the skin with novocain or the like, he plunges the needle 10 into the suspected portion until it reaches, for example, the tumor 20. The next step is the insertion of the interior needle into the tumor itself in the manner indicated in dotted lines in Figure 1. This action causes the points 17, by reason of their beveled extremities, the bevels extending in opposite directions, to be spread apart, thus assuring the inclusion of a specimen of the tumor and the holding of such specimen therebetween. The next step is the further insertion of the needle 10 to a point where it encloses the interior needle. This action causes the split portions of the interior needle to be compressed together, thus firmly enclosing the desired specimen. Both outer and inner needles are then rotated together, thereby cutting away the lower end of the specimen. The needles are then withdrawn as a unit and the specimen 21 may be examined at will.

While but one form of the invention has been shown herein, it will be readily apparent to those skilled in the art that various minor modifications may be made without departing from the spirit of the invention or the scope of the appended claims.

What is claimed is:

1. A biopsy needle comprising two members, one slidable within the other, the inner member being split longitudinally with the split portions thereof substantially straight, and having their extremities pointed and beveled, the bevels extending in opposite directions, whereby the two split portions, constituting prongs, when inserted into the mass of tissue, take divergent paths and move from each other so as to readily engage and include between them a section of the mass, and, upon the advancement of the outer member over such inner member, become compressed, firmly grasping and maintaining the included section of tissue between them.

2. In a biopsy instrument, an elongated needle having a hub at one end, a shank, and two elongated and straight prong members having their free ends beveled, the bevels extending in opposite directions whereby said prong members when inserted into a mass of tissue, take divergent paths and move from each other thereby engaging and including between them a section of the mass into which they have been inserted.

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