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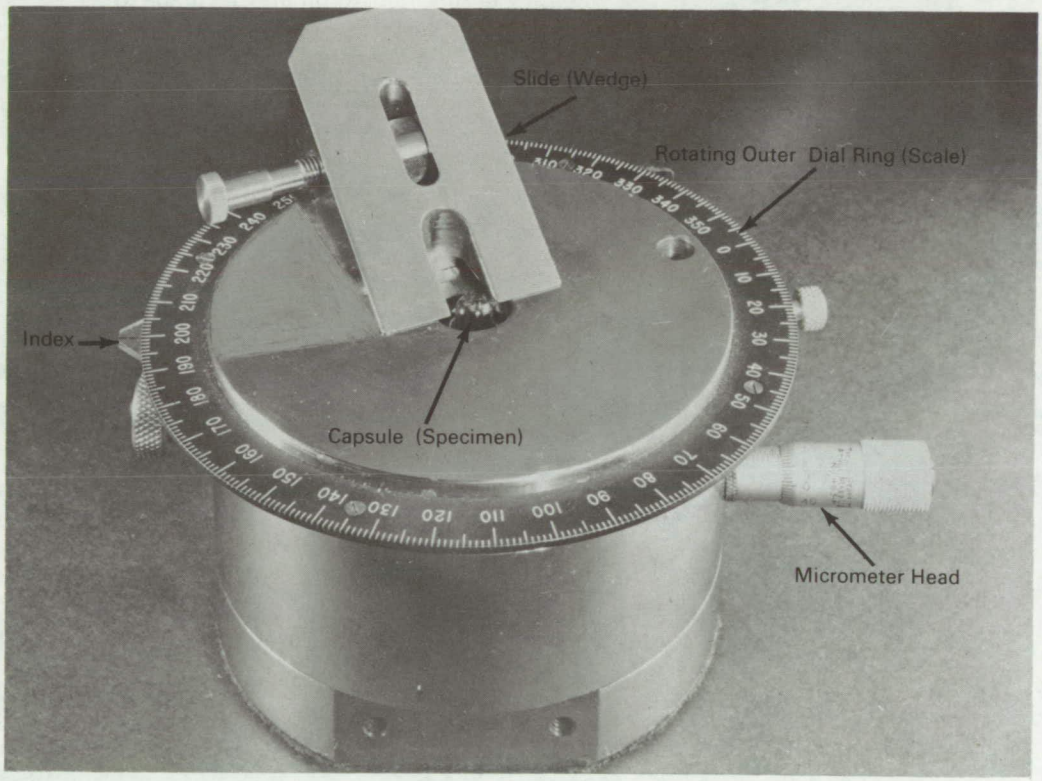
Precision Trimmer Aids in Preparing Biomedical Specimen Blocks for Ultrathin Sectioning



The problem:

To precisely trim biomedical specimen blocks for ultrathin sectioning. Before sectioning a block, any excess imbedding material must be trimmed from around the specimen. In the present method, the block is held in a device and trimmed freehand with a single-edged razor blade. An experienced technician is required to obtain a neat trim and avoid ruining the specimen block.

The solution:

A precision trimmer, which neatly trims specimen blocks for ultrathin sectioning, also eliminates the risk of human error. The trimmer, 4 inches in diameter and 3 inches in height, supports the block and serves as a support for a cutting tool. The trimmer can be adjusted in three dimensions so that precise, neat, pyramidal blocks can be fashioned.

(continued overleaf)

How it's done:

The trimmer consists of a wedge, a scale, a micrometer head, a top disk, and a base.

The specimen, imbedded in the usual capsular form, is secured in a holder in a central well. The wedge, which tapers toward the capsule on a 30° plane, serves as a support for a cutting tool and determines the angle of the sides of the block. The wedge and an underlying disk marked in degrees to measure angles can be rotated together around the specimen capsule and locked at any position. Thus, opposing sides which are exactly parallel can be formed on the block face by 180° rotation. The wedge can also be moved independently back and forth, permitting variation in the site and be adjusted by a micrometer screw calibrated in 2μ steps and locked in position with a thumbscrew. When the sliding wedge is moved out of the way, the capsule holder is lowered and the face of the block can be trimmed by guiding the cutting tool along the horizontal surface of the instrument.

A right-angle surface mirrored prism is used to transmit light through the long axis of the capsule to aid in locating and selecting specimens.

Notes:

1. This information should be of interest to cytologists, microscopists, and university and industrial research laboratories.
2. Inquiries concerning this innovation may be directed to:

   Office of Industrial Cooperation
   Argonne National Laboratory
   9700 South Cass Avenue
   Argonne, Illinois 60439
   Reference: B67-10541

   Source: T. N. Tahmisian
   Biological and Medical Research Division
   (ARG-242)

Patent status:

Inquiries about obtaining rights for commercial use of this innovation may be made to:

Mr. George H. Lee, Chief
Chicago Patent Group
U.S. Atomic Energy Commission
Chicago Operations Office
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