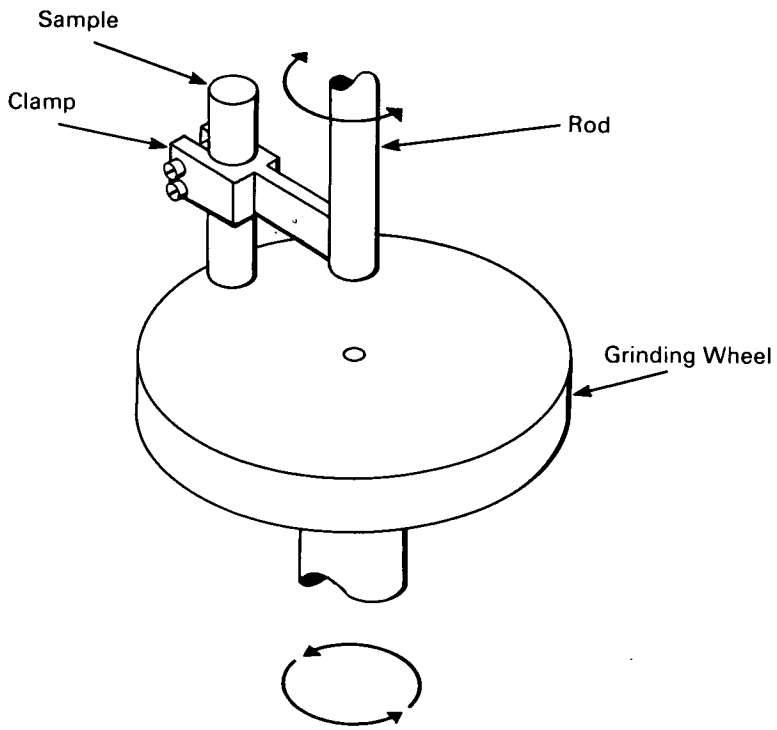
NASA TECH BRIEF

Rotating Holder Permits Accurate Grinding of Metallurgical Microsamples



The problem: To accurately grind or polish a level, flat surface on metallurgical microsamples. Previous methods held the sample in a fixed position and moved it in a straight line across a rotating grinding wheel. This resulted in finished surfaces with a slight slope (not exactly perpendicular to the center axis of the mounted specimen).

The solution: A fixture that rotates the sample approximately 180° with each pass across the grinding wheel. This rotation minimizes any sloping of the sample surface by irregularities in the grinding wheel.

How it's done: The sample is mounted rigidly in the holder and the holder is soldered to a rod that mates by a sliding fit to a mounting frame. The rod is free to rotate in the mounting frame and, as the sample passes across the rotating grinding wheel, the holder and sample turn approximately 180° in the mounting frame. The direction of grinding on one side of the wheel is reversed as the sample moves to the opposite side of the wheel. The weight of

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holder and rod applies the necessary pressure for grinding.

Notes:

1. This device could be modified to grind a number of samples simultaneously.
2. Inquiries concerning this innovation may be directed to:

   Technology Utilization Officer
   Lewis Research Center
   21000 Brookpark Road
   Cleveland, Ohio, 44135
   Reference: B65-10262

Patent status: NASA encourages commercial use of this innovation. No patent action is contemplated by NASA.

Source: Donald L. Cramer
(Lewis-131)