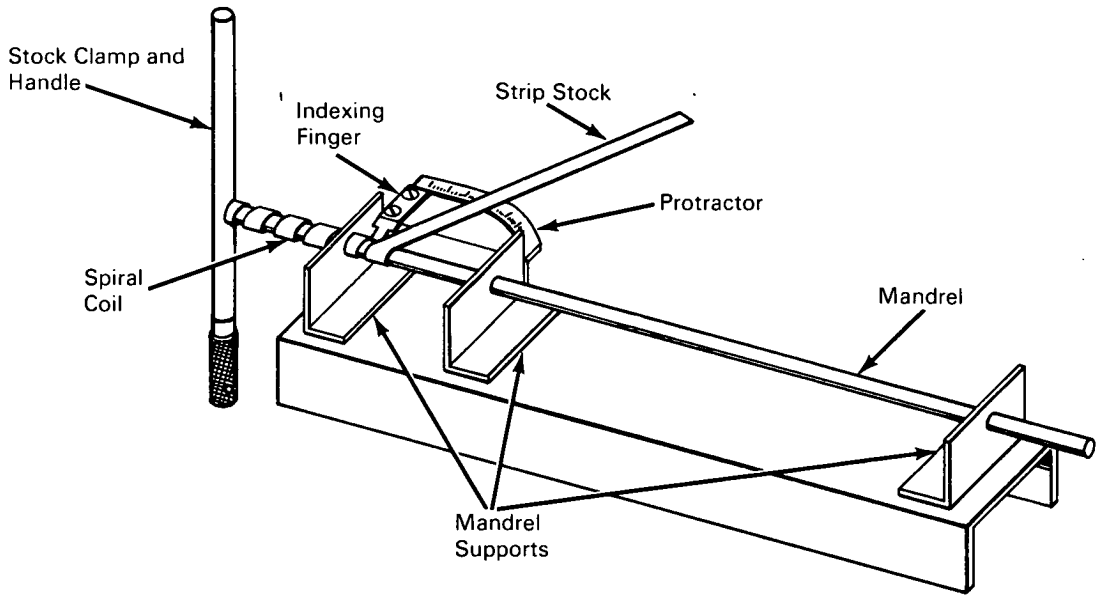
NASA TECH BRIEF

Spiral Heater Coils Hand-Formed with Fixture



The problem: To form small diameter spiral heater coils of appreciable length. In a lathe application, the small mandrel diameter requires a "follower" rest and the length of the coil is limited to lathe carriage travel. Also, the pitch of the coil is limited to available gear selections.

The solution: A bench model jig and fixture was made by which spiral coils can be hand fabricated from flat strip stock. Length of the spiral is limited only by the length of the feed stock..

How it's done: The device consists of three supports in which the mandrel rides, a stock clamp and handle, a protractor, and an indexing finger. The desired spiral pitch is set on the protractor and one or two turns made at the end of the mandrel. The stock clamp and handle are then attached to the mandrel and the indexing finger is placed in contact with the side of the last turn made, and the operation is begun. As the mandrel is rotated by the handle, the side of the spiral coil presses against the indexing finger and is moved forward with the mandrel a distance per revolution equivalent to the preset pitch.

Notes:

1. This fixture has been successfully used to wind heater coils 4-feet long by 1/4 inch in diameter from 1/4-inch wide michrome stock.
2. This innovation would be useful in making special springs or coils to custom lengths.

(continued overleaf)

3. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer
Lewis Research Center
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Reference: B65-10192

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

Source: John H. Chattin
(Lewis-208)