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Result: The hysteresis curve appropriate to the respective material appears on the screen.

Explanation: Since coil I and II fields cancel each other out, only that field produced by the iron or nickel remains. The curve will occur 50 times a second. The magnitude of the area enclosed by the curve provides a measurement for the energy required for the continuous magnetic reversal of the material, which is converted into heat. The magnetic reversal in transformer iron occurs practically without loss, with the result that in this case the curve becomes a straight line.

b) Instead of 50 Hz industrial AC voltage, perform the experiment with 1 Hz frequency from a sine-wave generator.

Result: The image point traverses the hysteresis curve once per second.

The illustrations depict various curves, e.g.

Fig. 10: Annealed iron sheet beyond saturation.

Fig. 11: Annealed iron sheet modulated to saturation limit only.

Fig. 12: Nickel sheet.

Fig. 13: Tripod leg (saturation not reached).

Fig. 14: Transformer iron, I-core.

Fig. 15: Steel knitting needle.

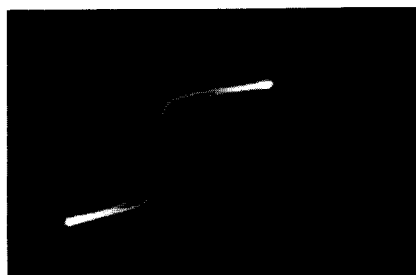


Fig. 10



Fig. 11



Fig. 12

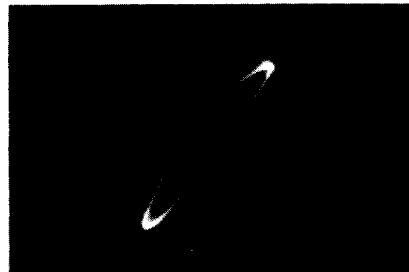


Fig. 13



Fig. 14



Fig. 15