

SCIENCE

7 February 1958

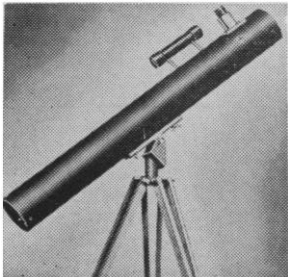
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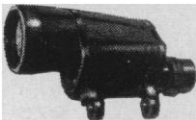
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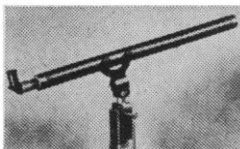
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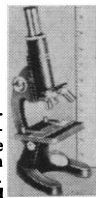
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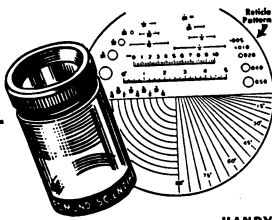
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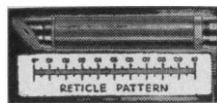
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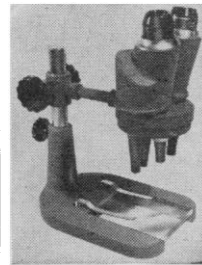


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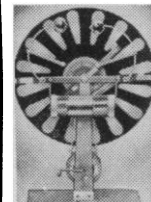
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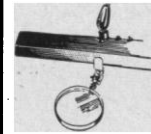
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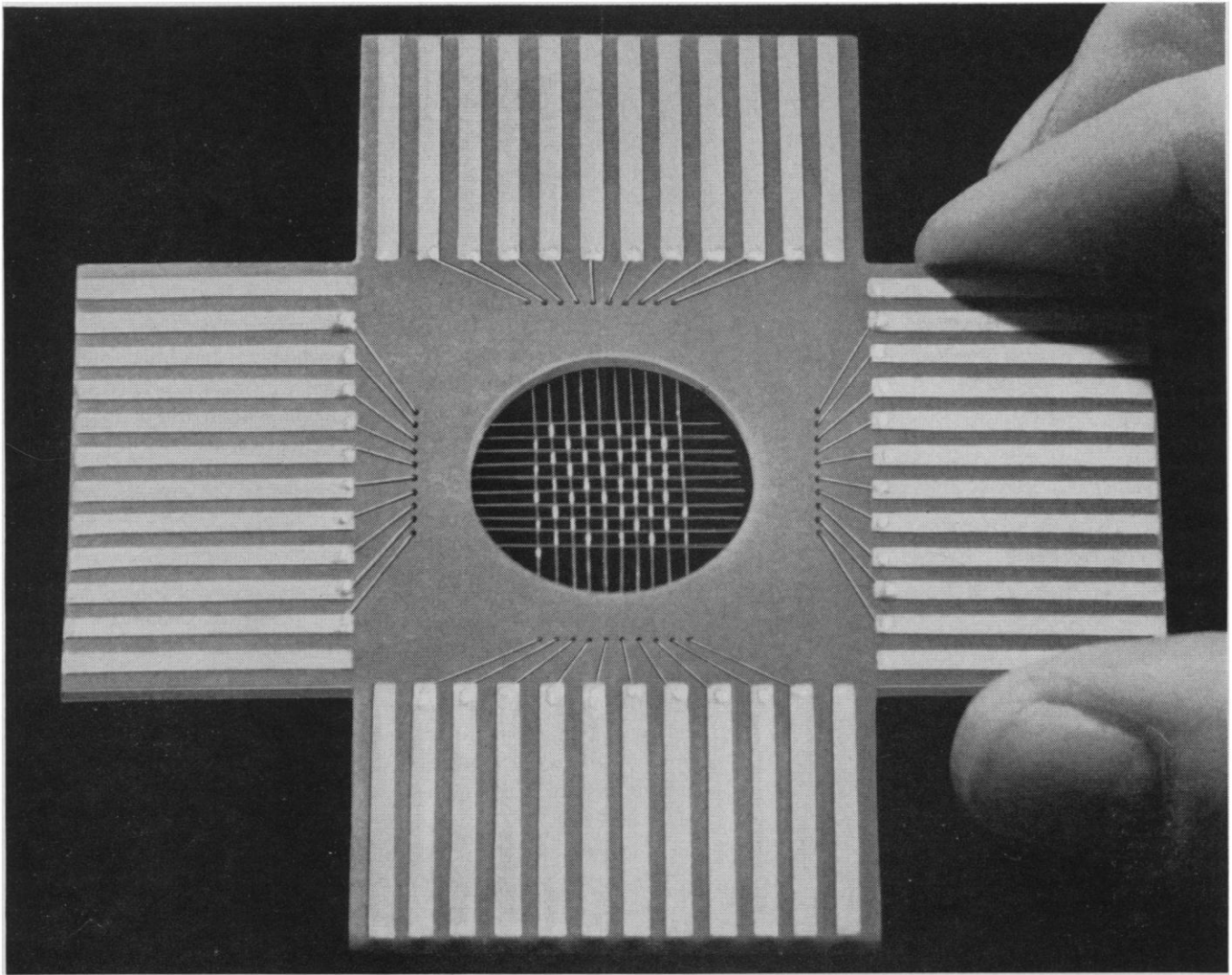
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Model (simplified) illustrates basic structure of magnetic "Twistor" memory—magnetic and copper wires interwoven as in a window screen. Twisted condition of the magnetic wire shifts preferred direction of magnetization from a longitudinal to a helical path. One inch of twisted wire, thinner than a hair, can store as much information as ten ferrite rings. "Twistor" was invented at Bell Laboratories by Andrew Bobeck, M.S. in E.E. from Purdue University.

New twist in memory devices

An ingenious new kind of magnetic memory has been developed by Bell Laboratories scientists for the storage of digital information. Known as the "Twistor," it consists basically of copper wires interwoven with magnetic wires to form a grid.

"Twistor" gets its name from a characteristic of wire made of magnetic material. Torsion applied to such a wire shifts the preferred direction of magnetization from a longitudinal to a helical path. This helical magnetization has been applied to produce a magnetic storage device of unprecedented capacity for its size.

In a magnetic memory, information is stored by

magnetizing a storage element. In conventional memories the storage elements consist of rings of ferrite. In the "Twistor," they consist of tiny segments of hair-thin magnetic wire. At each intersection of the grid, one such segment is capable of storing a binary digit.

The "Twistor" is simple and economical to fabricate, and its minute energy requirements are easily supplied by transistor circuits. Bell Laboratories engineers see important uses for it in future telephone systems which demand the compact storage of much information, as well as in digital computers for civilian and military applications.

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