

Palmer

Memorandum M-2316

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Digital Computer Laboratory
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SUBJECT: PROPOSED SENSE WINDING FOR A 64 x 64 MEMORY PLANE

To: W. N. Papian

From: W. J. Canty

Date: July 23, 1953

Investigation of the optimum sense winding geometry of a 64 x 64 memory plane indicates the following:

1. If a single sense winding per plane is to be used the present MTC type geometry should be used.
2. If multiple sense windings are to be used, the best geometry is one in which an equal number of cores in each sense loop is distributed along each of the X and Y coordinate lines.

To enumerate on the second conclusion:

A multiple sense winding geometry has been proposed which consists of dividing the memory plane into four equal parts as shown in Fig. 1.

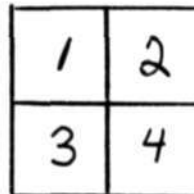


Fig. 1

The MTC type sense winding is to be wound into each section. An analysis of this type of geometry indicates that the expected delta noise in the sense winding containing the addressed core will be 1/2 of that expected from a plane using a single sense winding.

If the memory sense winding was divided into 2 sections per plane as shown in Fig. 2 it is seen that the expected delta noise in the sense winding containing the addressed core will be 1/2 of that from a plane using a single sense winding.

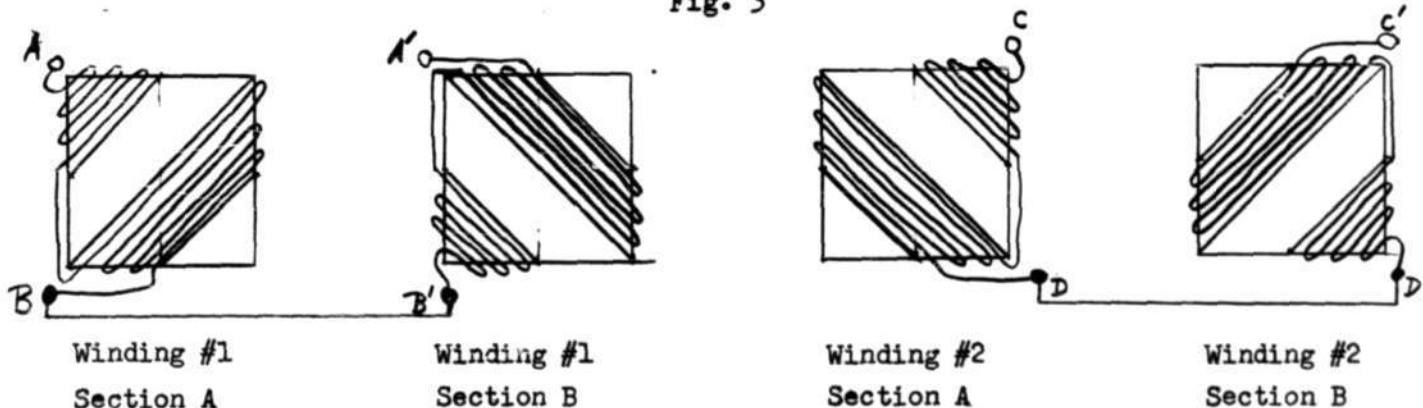


Fig. 2

Thus by using a sense geometry as shown in Fig. 2 only two sense amplifiers per plane would be required whereas four sense amplifiers per plane would be required with the geometry of Fig. 1 and yet the expected delta noise would be the same from both.

The proposed method of winding the sense winding is shown in Fig. 3. This type of winding has the air-flux-pickup cancelling qualities of the MTC Type array.

Fig. 3



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