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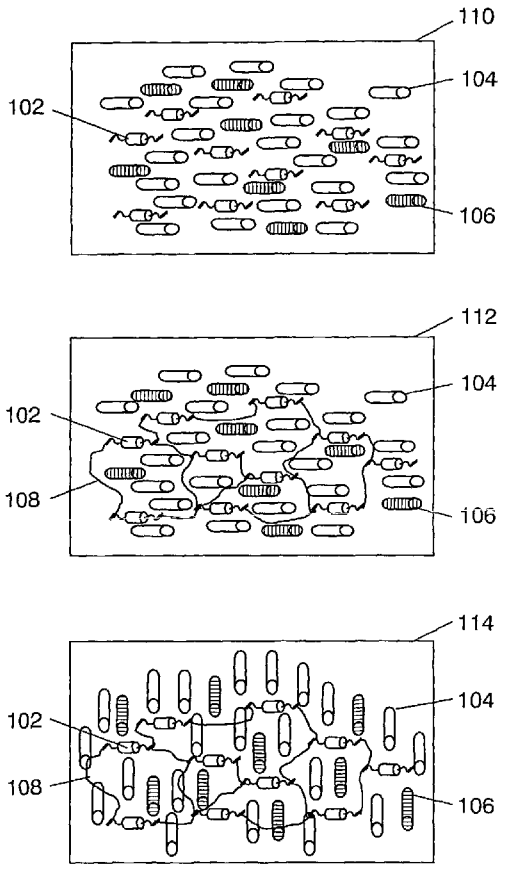
(54) Title: MULTI-LAYER OPTICAL STORAGE USING PRE-ORIENTATION IN A GLASS MATRIX



(57) Abstract: The invention relates to producing an optical memory which combines stability of written and non-written data with high writing speed and good sensitivity during writing, such an optical memory as well as a method of writing in such a memory. The optical memory has a liquid crystal (LC) layer with a first type of LC molecules (102) aligned in one direction, forming a polymer network (108), and a second type of LC molecules (104) oriented in a perpendicular direction, in which the orientation of said second type of LC molecules is meta-stable. By making use of a force, exerted on the second type of LC molecules (104), by the network of aligned crosslinked molecules, an increase in relaxation rate for the second type of molecules (104) from a meta-stable state of orientation, is achieved, which makes it possible to use said relaxation for writing data at an increased writing rate.

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