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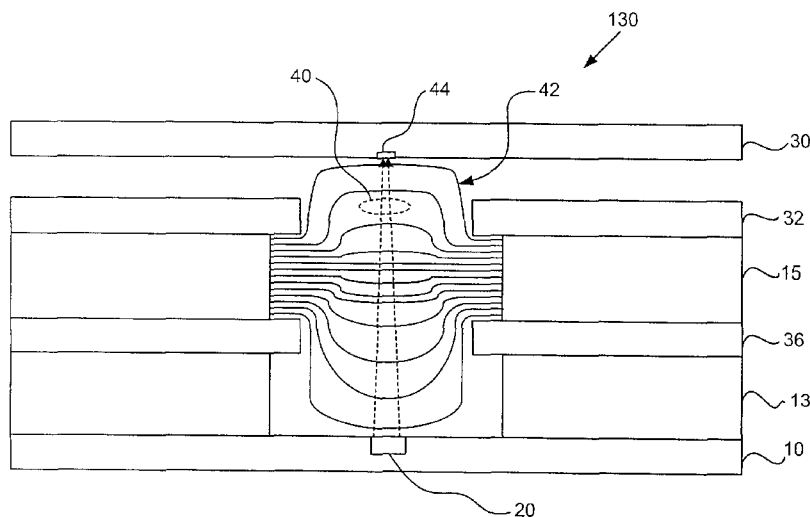
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(54) Title: FOCUSING LENS FOR ELECTRON EMITTER



(57) Abstract: An electron lens is used for focusing electrons from a cathode (10) to an anode (30). The lens includes a first conductive layer (36) with a first opening (38) at a first distance (48) from the cathode (10). The first conductive layer (36) is held at a first voltage. The lens also includes a second conductive layer (32) with a second opening (34) at a second distance (46) from the first conductive layer (36) and a third distance (24) from the anode (30). The second conductive layer (32) is held at a second voltage substantially equal to the voltage of the anode (30). The first (38) and second (34) openings are chosen based on the first voltage, the second voltage, the first distance (48), the second distance (46) and the third distance (24). The opening focuses the electrons emitted from the cathode (10) onto the anode (30) to a spot size preferably less than 40 nanometers. The force created between the cathode (10) and anode (30) is minimized by the structure of the lens.



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