

Title (en)  
DIELECTRIC-ELECTRODE LAMINATE

Publication  
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Application  
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Abstract (en)  
[origin: WO8200723A1] An electrostatic printing device in which an electrostatic latent image is formed on an imaging or dielectric roller (25), toned, and transferred by pressure to plain paper (35). A problem which is typically encountered in transferring a toner image solely by use of pressure is the existence of a residual toner image on the dielectric member after image transfer, due to inefficiencies in toner transfer. The residual toner particles require scraper blades or other removal devices, and accumulate over time at the various process stations associated with the dielectric member, including the apparatus for forming the latent electrostatic image. These toner accumulations decrease the reliability of the apparatus, necessitating service at intervals. Furthermore, inefficiencies in toner transfer may lead to mottling of the images formed on the image receptor sheets. These problems have not been overcome in the prior art through the use of extremely high pressures at the transfer nip. Toner transfer efficiency is improved in the device of the present invention by skewing dielectric roller (25) and pressure roller (37). In the printer, the latent image is formed by an ion generator (100) using two electrodes (102-1, 102-2) that are separated by a solid dielectric (101). A varying high frequency potential (103) is used to create an air gap breakdown in a region at a junction of one of the electrodes and the solid dielectric (101). The ion generator (100) is fabricated by laminating a metal foil (174, 175) to mica (171) using pressure sensitive adhesive (172, 173), and etching the foil to form electrodes. An alternative ion generator is formed using a dielectric-coated wire (197) and a series of transverse conductors (184, 186). A preferred method of fabricating the dielectric roller involves anodizing an aluminum cylinder (25), and impregnating the surface pores with a metallic salt of a fatty acid while maintaining the pores in a substantially moisture-free state.

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