

Title (en)  
Corotron with counter electrode

Title (de)  
Korotron mit Gegenelektrode

Title (fr)  
Corona avec contre-electrode

Publication  
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Application  
**EP 04012249 A 19990903**

Priority  
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Abstract (en)

The printer or copier apparatus has two transfer belts (41,42) to transfer the toner images (44,45) on to both sides of the carrier (43) to be printed. A transfer corotron (47a) recharges the toner particles to reverse their polarity. The toner particles are transferred to the surfaces of the carrier (43) by an electrical field (F) at the transfer point. Both transfer belts (41,42) carry their toner particles towards the carrier (43) with the same polarity, either positive or negative. A discharge corotron (47a) is aligned at one belt (42) in front of the printing transfer point, to reverse the polarity of its carried toner particles. Two facing rollers (49a,49b) are at the transfer printing point, charged with DC to form the electrical field (F) at the transfer printing point to print the toner particles. One transfer roller (49a,49b) has a mass potential, and they have a symmetrical or asymmetrical potential against mass. The transfer belts (41,42) pass round the transfer rollers (49a,49b) by a defined angle. Two guides, as rollers or deflection stirrups, are in front of the transfer rollers (49a,49b) in the direction of carrier (43) travel, for the transfer belts (41,42) and the carrier (43) to pass between them. Two guides, with a mass potential, can flank the transfer belts and the carrier in front of the transfer printing point. The electrical field (F), to print the toner particles, is formed between one transfer roller (49b) and a diagonally opposed guide. The other transfer roller (49a) and the other guide have a floating potential. The transfer rollers have a metal core and an elastic core cladding of a material with a set electrical conductivity of  $0.5 \times 10^{-6}$  to  $5 \times 10^{-12}$  ohm/cm, and preferably  $0.5 \times 10^{-5}$  to  $5 \times 10^{-9}$  ohm/cm. The elastic core cladding has a Shore hardness of 10-90 Sh (A) and preferably 20-70 Sh(A). The core cladding has a thickness of 0.2-15.0 mm and preferably 0.5-2.0 mm. The elastic core cladding has an additional cladding of a plastics with a fluoro content, which is electrically insulated and in a max. thickness of 40  $\mu$ m and preferably 0.1-20.0  $\mu$ m. The core claddings contain conductive filling materials preferably of soot, a silicate and an oxide. The carrier material to be printed is a continuous length and preferably of paper, or separate paper sheets. Each transfer module at the printer/copier has a corotron system. An independent claim is also included for a corotron assembly with at least one corotron wire with one potential and at least one counter electrode with a second and different potential and at least one intermediate carrier between them. The counter electrode has electrically conductive projections, with their peaks towards the corotron wire, on a plane parallel to the corotron wire and the intermediate carrier. Preferred Features: The counter electrode projections are parallel to the longitudinal axis of the corotron wire, as separate pins or pointed projections. The counter electrode can be a blade, with its edge parallel to the longitudinal axis of the corotron wire. The blade edge is notched, with the tooth points aligned towards the corotron wire. The cross section of the counter electrode blade tapers towards the corotron wire. The counter electrode blade has a width of 0.02-0.5 mm and preferably 0.02-0.1 mm. The counter electrode can be a wire, parallel to the longitudinal axis of the corotron wire, where both are on a plane at right angles to the intermediate carrier. The intermediate carrier is a photo conductive belt or a transfer belt. The intermediate carrier path is at a gap from the counter electrode of 0.2-4.0 mm and preferably 0.2-1.0 mm. The intermediate carrier has a high electrical resistance of  $\geq 10^6$  ohm/cm. The corotron system is a polarity change, charge, printing transfer or deletion corotron.

Abstract (de)

Beschrieben wird ein Drucker oder Kopierer zum simultanen beidseitigen Bedrucken eines Trägermaterials. Zwei Übertragungsbänder (41, 42) übertragen Tonerbilder (44, 45) auf ein Trägermaterial (43). Ein Umladekorotron (47a) lädt die Tonerteilchen in ihrer Polarität um. Die Tonerteilchen werden an der Umdruckstelle durch ein elektrisches Feld (F) auf das Trägermaterial (43) übertragen. Ferner wird eine Korotroneinrichtung mit kleinflächiger Gegenelektrode beschrieben. <IMAGE>

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Citation (applicant)  
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