

#### Search history

Search 1: SFT=(belt\* and separator and nozzle) (Results 6867)

Search 2: STAC=(belt\* and separator\* and nozzle\*) (Results 823)

Search 3: STAC=(belt\* and separator\* and nozzle\*) and FT=(electrod\* and triboelec\* and (gas or air)) (Results 2)

Search 4: STAC=(belt\* and separator\* and nozzle\*) and FT=(electro\* and (gas or air)) (Results 167)

Search 5: TI=(separat\* and \*belt\*) and STAC=(belt\* and separator\* and nozzle\*) and FT=(electro\* and (gas or air)) (Results 1)

Search 6: STAC=(belt\* and separator\*) and FT=(nozzle\* and electro\* and (gas or air)) (Results 346)

Search 7: STAC=(belt\* and separator\* and nozzle\*) and PD<20150213 (Results 699)

Search 8: STAC=(belt\* and separator\*) and FT=(nozzle\* and electro\* and (gas or air)) and PD<20150213 (Results 301)

Search 9: STAC=(belt\* and separator\*) and FT=(nozzle\* and (gas or air)) and PD<20150213 (Results 904)

Search 10: TI=(belt\* and separator\*) and FT=(nozzle\* and (gas or air)) and PD<20150213 (Results 15)

Search 11: STAC=(belt\* and separator\*) and FT=(nozzle\* and (gas or air) and (humid\* or moisture)) and PD<20150213 (Results 228)

Search 12: STAC=(belt\* and separator\*) and FT=(nozzle\* and (gas or air) and (humid\* or moisture) and temperature\*) and PD<20150213 (Results 166)

Search 13: STAC=(belt\* and separator\*) and FT=(nozzle\* and (gas or air) and (humid\* or moisture) and temperature\* and particulate\*) and PD<20150213 (Results 52)

Search 14: STAC=(belt\* and separator\*) and FT=(triboelec\* and (gas or air) and (humid\* or moisture) and temperature\*) and PD<20150213 (Results 3)

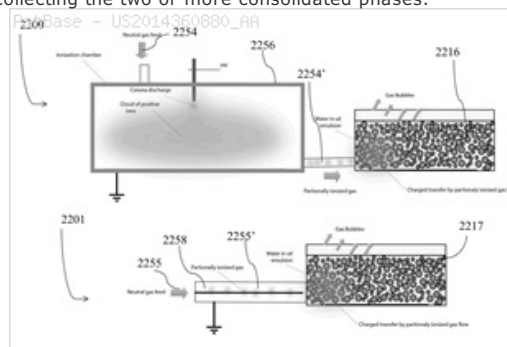
Search 15: STAC=(separator\*) and FT=(belt\* and triboelec\* and (gas or air) and (humid\* or moisture) and temperature\*) and PD<20150213 (Results 19)

**Title:** SYSTEMS AND METHODS FOR UNIPOLAR SEPARATION OF EMULSIONS AND OTHER MIXTURES

**Abstract:** Embodiments discussed herein relate to systems and methods for separating two or more phases of an emulsion or other mixture. The methods include providing the mixture with a net and unipolar charge (e.g., such that adjacent droplets therein acquire net and unipolar charges), thereby enhancing coalescence of like-phase droplets therein and producing, or enhancing the production of, two or more consolidated phases; and collecting the two or more consolidated phases.

**Classifications:**

**International (IPC 8-9):** B01D B01D17/04 B01D17/06 B03C B03C11/00 B03C5/00 B03C5/02 C02F1/461 C02F1/469 C07K1/14 C10G C10G33/02 C12N13/00 C12N15/10 (Advanced/Invention)  
**CPC:** C10G33/02 B03C5/026 B03C11/00 B01D17/047 C12N15/1003 C07K1/14 C12N13/00 B03C2201/02 B01D17/045 B01D17/06  
**US:** 1/1 204/563 204/564 204/573 204/660



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
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| CA2907486 AA       | 20150916         | CA20142907486      | 20140416         |
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| EP2986390 A1       | 20160224         | EP20140726272      | 20140416         |
| ID201704513 A      | 20170428         | ID2015P0007264     | 20140416         |
| IL241760 A0        | 20151231         | IL20140241760      | 20140416         |
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| JP2016518977 T2    | 20160630         | JP20160509086T     | 20140416         |
| KR20150143734 A    | 20151223         | KR20157032581      | 20140416         |
| MX2015014402 A1    | 20151207         | MX20150014402      | 20140416         |
| RU2015140734 A     | 20170517         | RU20150140734      | 20140416         |
| SG11201508458S A1  | 20151127         | SG20151108458      | 20140416         |
| US2014360880 AA    | 20141211         | US20140254863      | 20140416         |
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| WO14172504 A1      | 20141023         | WO2014US34432      | 20140416         |
| ZA201507048 A      | 20170927         | ZA20150007048      | 20150922         |

**Priority:**

US20130812700P 20130416      US20140254863 20140416      WO2014US34432 20140416  
 US20160220203 20160726

**Probable Assignee:** MASSACHUSETTS INST OF TECHNOLOGY

**Assignee(s):** (std): MASSACHUSETTS INST OF TECH ; MASSACHUSETTS INST TECHNOLOGY

**Assignee(s):** VARANASI KRIPA K ; MASSACHUSETTS INST OF TECHNOLOGY ; MAHMOUDI SEYED REZA

**Inventor(s):** (std): KRIPA K VARANASI ; MAHMOUDI SEYED REZA ; SEYED REZA MAHMOUDI ; VARANASI KRIPA K

**Inventor(s):** SEYED REZA MAHMOUD ; KRIPA K V ARANASI

**Agent(s):** PIZZEYS; PIZZEYS PATENT AND TRADE MARK ATTORNEYS PTY LTD; GOWLING LAFLEUR HENDERSON LLP; GOWLING WLG CANADA LLP; CARPMAELS AND RANSFORD LLP; ACHMAD FATCHY; CHOATE HALL AND STEWART LLP; ALEXANDER D; WILLIAM R; SHMIDT VERA A ET AL

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EF ES FI FR GA GB GD GE GH GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** TRANSPORTABLE PLASTICS RECOVERY SYSTEM

**Abstract:** A transportable system for separating materials in a waste stream. An arrangement of separation and grinding devices is mounted on a transportable platform. The devices are configured and arranged to produce three or more product streams from a plastic-rich feed mixture. One of the product streams is a coarse heavy stream, one stream is a ground plastic-rich product stream, and one stream is a ground light material stream. The system can be transported to a waste-goods location, operated to separate waste-goods, and relocated a new location.

**Classifications:**

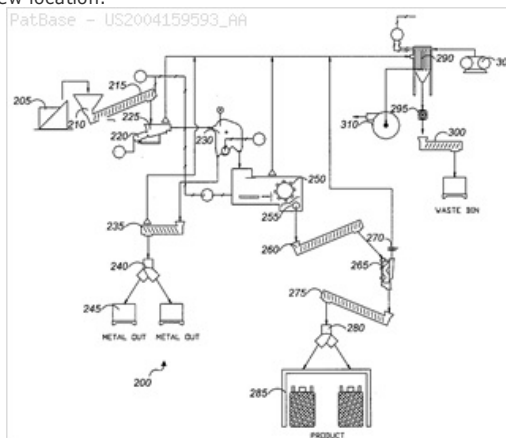
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**International (IPC 1-7):** B01D B01D1/00 B01F13/10 B02C18/14 B02C18/22 B02C18/44 B02C19/14 B02C21/02 B03B1/00 B03B5/30 B03B5/32 B03B5/34 B03B9/06 B03C B03C1/00 B03C1/14 B03C7/00 B03C7/02 B03C7/06 B04C7/00 B07B1/00 B07C5/36 B08B3/04 B09B3/00 B29B17/00 B29B17/02 B29B7/00 B29C44/04 B29C44/10 B29C45/16 B29C45/17 B29C47/00 B29C47/06 B29C47/10 B29C47/58 B65D5/42 B65D5/56 B65D81/107 B65D85/02 C08J11/06 C08J11/08 C08J11/10 C08K3/04 C08K3/22 C08K3/26 C08L101/00 C08L23/02 C08L25/08 C08L25/12 C08L55/02 C08L69/00

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**Family:**

| Publication number | Publication date | Application number | Application date |
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**Priority:**

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**Probable Assignee:** MBA POLYMERS INC

**Assignee(s):** (std): ALLEN PAUL C ; BIDDLE MICHAEL B ; MBA POLYMERS INC ; RIISE BRIAN L ; RAU RON C ; RIISE BRIAN ; ALLEN III LAURENCE E ; ALLEN LAURENCE E ; ALLEN LAURENCE E III

**Assignee(s):** ALLEN LAURENCE EIII ; MBA POLYMERS INC RICHMOND ; MBA POLYMERS INC 500 WEST OHIO AVENUE RICHMOND CA 94804 UNITED

**Inventor(s):** (std): ALLEN III LAURENCE E ; ALLEN LAURENCE ; ALLEN LAURENCE E ; ALLEN LAURENCE E III RIISE BRI ; ALLEN III LAURENCE ; RON C RAU ; PAUL C ALLEN ; LAURENCE E III ALLEN ; LAURENCE E ALLEN III ; LAURENCE E ; BRIAN RIISE ; BRIAN L RIISE ; BIDDLE MICHAEL B ; RAU RON ; RIISE BRIAN ; ALLEN LAURENCE E III ALLEN PAU ; RIISE BRIAN L ; RAU RON C ; BIDDLE MICHAEL ; BIDAR M B ; ALLEN PAUL C ; ALLEN PAUL ; ALLEN LAURENCE E III

**Inventor(s):** ALLEN ; MICHAEL B BIDDLE ; III LAURENCE E ; RIISE BRIAN L SAN RAMON ; ALLEN LAURENCE E III ALLEN PAUL C ; ALLEN LAURENCE E III RIISE BRIAN L ; ALLEN LAURENCE E III SAN RAFAEL ; ALLEN LAURENCE EIII ; ALLEN PAUL C EL CERRITO

**Agent(s):** EPPING HERMANN FISCHER PATENTANWALTSGESELLSCHAFT MBH; VOSSIUS AND PARTNER; EPPING HERMANN FISCHER; PETERREINS FRANK; CARVAJAL Y ISABEL; ECCLES AND LEE SUITE 2217 JARDINE HOUSE 1 CONNAUGHT PLACE CENTRAL HONG; ECCLES AND LEE; CHINA PATENT AGENT HK LTD; FISH AND RICHARDSON PC; FISH AND RICHARDSON P C

**Designated states:** AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NI NL NO NZ OM PG PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

**Title:** METHOD AND APPARATUS FOR SEPARATING MATERIAL

**Abstract:** An apparatus for sorting particles composed of a mixture of particles with differing physical and chemical characteristics. The apparatus includes a comminutor, a mechanism for removing particles from the inside of the comminutor which are intermediate in size between the feed to the comminutor and the product of comminution, a mechanism for either discharging particles taken from the comminutor to a reject stream or providing them to a size classification apparatus such as screening, a mechanism for returning the oversize particles to the comminutor or for discharging them to the reject stream, an electric mechanism for separating particles with an electrical force disposed adjacent to a magnet mechanism, a mechanism for providing the particles to the magnet mechanism and the electric mechanism and for providing **triboelectric** and capacitive charges to the particles, and a mechanism for returning one of the products of electric and magnetic separation to the comminutor while discharging the other to the reject stream. A method for sorting particles composed of a mixture of particles with differing physical and chemical characteristics.

**Classifications:**

**International (IPC 8-9):** B02C15/00 B02C15/04 B02C19/12

F23K1/00 (Advanced/Invention);

B02C15/00 (Advanced/Non-invention);

B02C15/00 F23K1/00 (Core/Invention)

**International (IPC 1-7):** B02C B02C11/08 B02C15/00 B02C15/04

B02C23/08 B02C23/24 B02C23/32

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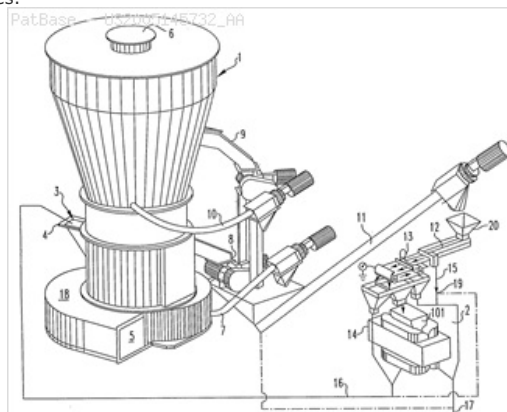
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**European:** B02C15/04 F23K1/00 L02C15/00C R23K201/10

R23K201/30

**US:** 241/119 241/18 241/186.3 241/24.24 241/24.31 241/57

241/79.1 241/791 241/80



**Family:**

| Publication number | Publication date | Application number | Application date |
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| AU2001241659 BB    | 20060427         | AU20010241659      | 20010222         |
| CA2400175 AA       | 20020812         | CA20012400175      | 20010222         |
| CA2400175 C        | 20091229         | CA20012400175      | 20010222         |
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| CA2769724 AA       | 20010830         | CA20012769724      | 20010222         |
| CA2769724 C        | 20140930         | CA20012769724      | 20010222         |
| CN101961667 A      | 20110202         | CN201010279611     | 20010222         |
| CN101961667 B      | 20140618         | CN201010279611     | 20010222         |
| CN1418131 A        | 20030514         | CN20018005592      | 20010222         |
| CN1418131 B        | 20101201         | CN20018005592      | 20010222         |
| EP1282467 A1       | 20030212         | EP20010912925      | 20010222         |
| EP1282467 A4       | 20030723         | EP20010912925      | 20010222         |
| US2005145732 AA    | 20050707         | US20040988367      | 20041112         |
| US6820829 BA       | 20041123         | US20000514048      | 20000225         |
| US7124968 BB       | 20061024         | US20040988367      | 20041112         |
| WO0162391 A1       | 20010830         | WO2001US05679      | 20010222         |
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**Priority:**

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| CA20012769724 20010222 | WO2001US05679 20010222 | US20040988367 20041112 |
| CA20122681859 20120313 |                        |                        |

**Probable Assignee:** ODER MARCIA R

**Assignee(s):** (std): EXPORTECH COMPANY INC ; JAMISON RUSSELL E ; ODER ROBIN R ; EXPORTECH CO INC

**Assignee(s):** EXPORTECH CO INC BUILDING 242 SCHREIBER INDUSTRIAL DISTRICT 12TH STREET, P.O. BOX 588 NEW KENSINGTON PA 15068-0588 US ; EXPORTECH CO ; ODER MARCIA R

**Inventor(s):** (std): RE JAMISON ; ROBIN R ODER ; RR ODER ; RUSSELL E JAMISON ; JAMISON R E ; JAMISON RUSSELL E ; JAMISON RUSSELL E ; ODER R R ; ODER ROBIN R

**Inventor(s):** R E JAMISON ; R R ODER ; RUSSELL E JAMISON ; ODER ROBIN RUS ; ODER ROBIN ; JAMISON RUSSELL EUS ; JAMISON RUSSELL

**Agent(s):** GRIFFITH HACK ; BORDEN LADNER GERVAIS LLP ; ANSEL M SCHWARTZ ; ANSEL M

**Designated states:** AT AU BE BR CA CH CN CY DE DK ES FI FR GB GR IE IN IT JP LU MC MX NL PT SE TR UA US ZA

**Title:** METHOD AND FACILITY FOR SORTING AND SEPARATING WASTE PLASTIC

**Abstract:** A facility for sorting and separating waste plastic includes: a crusher (11) for crushing waste plastic material into waste plastic fragments; a steam-cleaning device (13) for cleaning the waste plastic fragments; a primary wet specific-gravity sorter (14) and a secondary wet specific-gravity sorter (15) for separating the waste plastic fragments into floating or sinking specific-gravity-sorted fragments with a separating liquid having specific gravity which is the median of specific gravity of materials contained in the waste plastic fragments until the specific-gravity-sorted fragments contain three or less materials; and first to third electrostatic separation devices (16A to 16C) including frictional electrification devices for frictionally electrifying the specific-gravity-sorted fragments and electrostatic sorting devices for putting the frictionally electrified specific-gravity-sorted fragments into a static electric field and altering the falling directions of the specific-gravity-sorted fragments to be separated according to the type of material.

**Classifications:**

**International (IPC 8-9):** B02C7/00 B03B5/36 B03B9/06 B03C7/02 B03C7/06 B29B17/00 B29B17/04 (Advanced/Invention)

**CPC:** B29B2017/0286 B29K2105/065 B29B17/02 B03B5/28

B03B5/38 B03B9/061 B03C7/06 B03C7/12 B29B17/0412

B29B2017/0203 B29B2017/0244 B29B2017/0265 B29B2017/0289

B29K2023/06 B29K2023/12 B29K2025/06 B29K2027/06

B29K2027/18 B29K2055/02 Y02W30/521 Y02W30/524 Y02W30/527

Y02W30/622 Y02W30/625

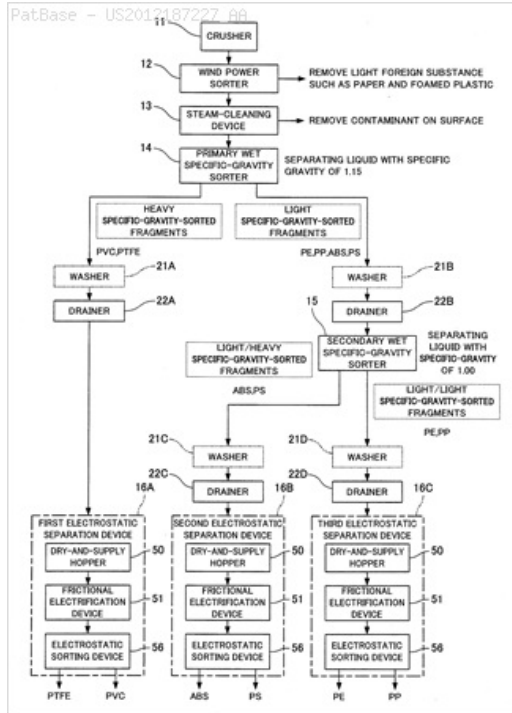
**European:** B03B5/28 B03B5/38 B03B9/06D B03C7/06 B03C7/12

B29B17/02 B29B17/04D L29B17/02B L29B17/02Z1F2 L29B17/02Z3A

L29B17/02Z8A L29K23/06 L29K23/12 L29K25/06 L29K27/06

L29K27/18 L29K55/02

**US:** 241/24.28 241/24.280P

**Family:**

| Publication number | Publication date | Application number | Application date |
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| CN102574304 A      | 20120711         | CN201080043642     | 20100924         |
| EP2484506 A1       | 20120808         | EP20100820435      | 20100924         |
| EP2484506 A4       | 20140219         | EP20100820435      | 20100924         |
| JP2011073408 A2    | 20110414         | JP20090230053      | 20091002         |
| JP5578826 B2       | 20140827         | JP20090230053      | 20091002         |
| US2012187227 AA    | 20120726         | US20100499305      | 20100924         |
| WO11040317 A1      | 20110407         | WO2010JP66481      | 20100924         |

**Priority:**

JP20090230053 20091002 WO2010JP66481 20100924

**Probable Assignee:** HITACHI ZOSEN CORP

**Assignee(s):** (std): ANDO KAZUO ; HITACHI SHIPBUILDING ENG CO ; HITACHI ZOSEN CORP ; INOUE TETSUYA ; NIWA TSUTOMU ; ITOGA TAKESHI ; KYOWA SANGYO CO LTD ; KYOWA SANGYO

**Assignee(s):** KYOWA SANGYO KK ; KYOWA SANGYO CO

**Inventor(s):** (std): TSUTOMU NIWA ; TETSUYA INOUE ; TAKESHI ITOGA ; NIWA TSUTOMU ; KAZUO ANDO ; ITOGA TAKESHI ; INOUE TETSUYA ; ANDO KAZUO

**Agent(s):** LE VRANG KLAUS; HARADA YOHEI

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Title:** COATING LIQUID FOR UNDERCOATING LAYER FORMATION, AND ELECTROPHOTOGRAPHIC PHOTORECEPTOR HAVING UNDERCOATING LAYER FORMED BY COATING OF SAID COATING LIQUID

**Abstract:** To provide a coating fluid for forming an undercoat layer having high stability, a high quality and long-life electrophotographic photoreceptor capable of forming a high quality image in various environments, with which image defects such as black spots or color spots hardly occur, an image forming apparatus using such a photoreceptor, and an electrophotographic cartridge using such a photoreceptor. A coating fluid for forming an undercoat layer of an electrophotographic photoreceptor containing titanium oxide particles and a binder resin, characterized in that titanium oxide agglomerated secondary particles in the coating fluid have a volume average particle size of at most 0.1  $\mu\text{m}$  and a cumulative 90 percent particle size of at most 0.3  $\mu\text{m}$ .

**Classifications:**

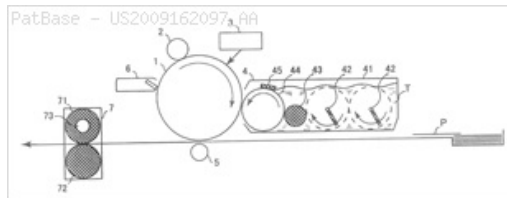
**International (IPC 8-9):** C08K3/22 G03G15/00 G03G15/02  
G03G15/22 G03G21/16 G03G21/18 G03G5/00 G03G5/04 G03G5/07  
G03G5/14 G03G5/153 (Advanced/Invention);  
G03G5/00 G03G5/14 (Advanced/Non-invention);  
G03G15/00 G03G15/02 G03G5/00 G03G5/04 G03G5/07  
G03G5/14 (Core/Invention)

**CPC:** G03G5/142 G03G5/144

**European:** G03G5/14B G03G5/14B2

**US:** 399/111 399/111P 399/116 399/130 399/130S 399/159

399/159P 400/65 430/56 430/56S 430/60 430/63 430/64 430/66 430/66S 430/69 430/69S 430/96 430/96S 524/430  
524/430S

**Family:**

| Publication number | Publication date | Application number | Application date |
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| CN100533280 C      | 20090826         | CN200580039854     | 20051003         |
| CN101061438 A      | 20071024         | CN200580039854     | 20051003         |
| CN101587309 A      | 20091125         | CN200910150387     | 20051003         |
| CN101587309 B      | 20120125         | CN200910150387     | 20051003         |
| CN101592878 A      | 20091202         | CN200910139846     | 20051003         |
| CN101592878 B      | 20111123         | CN200910139846     | 20051003         |
| CN101794091 A      | 20100804         | CN200910150392     | 20051003         |
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| DE602005042605 D1  | 20140227         | DE200560042605T    | 20051003         |
| DE602005043196 D1  | 20140515         | DE200560043196T    | 20051003         |
| EP1813991 A1       | 20070801         | EP20050788341      | 20051003         |
| EP1813991 A4       | 20091230         | EP20050788341      | 20051003         |
| EP1813991 B1       | 20130703         | EP20050788341      | 20051003         |
| EP2196859 A2       | 20100616         | EP20100003599      | 20051003         |
| EP2196859 A3       | 20110525         | EP20100003599      | 20051003         |
| EP2196859 B1       | 20140122         | EP20100003599      | 20051003         |
| EP2196860 A2       | 20100616         | EP20100003600      | 20051003         |
| EP2196860 A3       | 20110608         | EP20100003600      | 20051003         |
| EP2196860 B1       | 20140402         | EP20100003600      | 20051003         |
| JP2006171703 A2    | 20060629         | JP20050290568      | 20051003         |
| JP2010152406 A2    | 20100708         | JP20100085884      | 20100402         |
| JP2010160515 A2    | 20100722         | JP20100085883      | 20100402         |
| JP2010191455 A2    | 20100902         | JP20100085882      | 20100402         |
| JP4517996 B2       | 20100804         | JP20050290568      | 20051003         |
| JP4983951 B2       | 20120725         | JP20100085883      | 20100402         |
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| JP5041023 B2       | 20121003         | JP20100085882      | 20100402         |
| KR101256243 B1     | 20130417         | KR20077009761      | 20051003         |
| KR20070087553 A    | 20070828         | KR20077009761      | 20051003         |
| US2009162097 AA    | 20090625         | US20050719817      | 20051003         |
| US2010046985 AA    | 20100225         | US20090613023      | 20091105         |
| US2010054810 AA    | 20100304         | US20090612982      | 20091105         |
| US2011280622 AA    | 20111117         | US20110188743      | 20110722         |
| US8178264 BB       | 20120515         | US20050719817      | 20051003         |
| US8399165 BB       | 20130319         | US20090612982      | 20091105         |
| US8415079 BB       | 20130409         | US20090613023      | 20091105         |
| WO06054397 A1      | 20060526         | WO2005JP18308      | 20051003         |

**Priority:**

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| JP20040336424 | 20041119 | EP20050788341 | 20051003 | EP20100003599 | 20051003 |
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| US20050719817 | 20051003 | US20070719817 | 20070521 | US20090613023 | 20091105 |
| US20090612982 | 20091105 | JP20100085882 | 20100402 | JP20100085883 | 20100402 |
| JP20100085884 | 20100402 | US20110188743 | 20110722 |               |          |

**Probable Assignee:** MITSUBISHI CHEMICAL CORP

**Assignee(s):** (std): FUCHIGAMI HIROE ; MITSUBISHI CHEM CORP

**Assignee(s):** MITSUBISHI CHEMICAL CORP ; MITSUBISHI CHEMICALS CORP ; MITSUBISHI RAYON CO LTD

**Inventor(s):** (std): FUCHIGAMI HIROE ; HIROE FUCHIGAMI

**Inventor(s):** FUCHIGAMI HIROE MITSUBISHI CHEMICAL CORP

**Agent(s):** TER MEER STEINMEISTER AND PARTNER PATENTANWALTE MBB; TER MEER NICOLAUS; HOLLATZ CHRISTIAN; OBLON SPIVAK MCCLELLAND MAIER AND NEUSTADT PC; OBLON SPIVAK MCCLELLAND MAIER AND NEUSTADT LLP; OBLON SPIVAK MCCLELLAND MAIER AND NEUSTADT L L P

**Designated states:** AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT KE KG KM KP KR KZ LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US

UZ VC VN YU ZA ZM ZW

**Title:** SYSTEM AND METHOD FOR THE MANIPULATION, CLASSIFICATION SORTING, PURIFICATION, PLACEMENT, AND ALIGNMENT OF NANO FIBERS USING ELECTROSTATIC FORCES AND ELECTROGRAPHIC TECHNIQUES

**Abstract:** A system and method for the manipulation of nanofibers using electrostatic forces. The nanofibers may be provided in a liquid medium, and the nanofibers may be nano-scale (i.e. measured in nanometers). The process is sensitive to the charge properties of the nanofibers (charge could be inherent to material or the charge can be induced into the material through electrochemical means), and therefore may be used to sort or classify particles. The nanofibers may also be aligned according to electrical fields, and thus anisotropic effect exploited. Devices produced may be conductors, semiconductors, active electronic devices, electron emitters, and the like. The nanofibers may be modified after deposition, for example to remove charge-influencing coatings to further enhance their performance, to enhance their adhesion to polymers for use as composite materials or result in the adhesion of the material at the proper location on a variety of different surfaces.

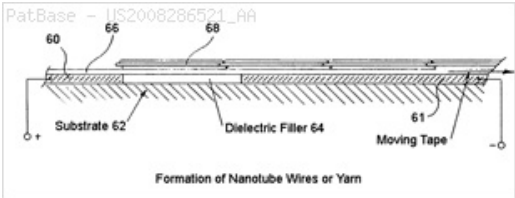
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**International (IPC 8-9):** B01D35/06 B01D59/44 B01D61/42  
B01J19/08 B32B5/12 C01B31/02 D01D1/06 G01N27/26 G03G13/32  
H01J49/00 (Advanced/Invention);  
B01D59/00 B32B5/12 D01D1/00 G01N27/26  
H01J49/00 (Core/Invention)

**CPC:** G03G13/32 G03G13/30 Y10S977/743 Y10S977/746  
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H01L2224/95085 H01L2224/95145 H01L2924/10253 D01F11/12  
B82Y10/00 D01F11/14 H01L51/0003 H01L51/0012 H01L51/0048  
H01L2924/1306 Y10T428/24132

**European:** B82Y10/00 D01F11/12 D01F11/14 G03G13/30 G03G13/32 T01L51/00A2B T01L51/00A2F T01L51/00M4D

**US:** 204/518 204/627 423/445.00B 423/445B 423/461 428/114 428/114P 430/114 430/124.1 430/49.1 977/743 977/746  
977/842 977/844 977/845 977/900



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| US2008286521 AA    | 20081120         | US20060423917      | 20060613         |
| US8066967 BB       | 20111129         | US20060423917      | 20060613         |
| US8304150 BA       | 20121106         | US20070752109      | 20070522         |
| WO06138263 A2      | 20061228         | WO2006US22916      | 20060613         |
| WO06138263 A3      | 20071018         | WO2006US22916      | 20060613         |
| WO06138263 C1      | 20070322         | WO2006US22916      | 20060613         |

**Priority:**

US20050689683P 20050613      US20060802344P 20060522      US20060423917 20060613  
US20070752109 20070522

**Probable Assignee:** ELECTROX CORP

**Assignee(s):** (std): DETIG ROBERT H ; EBERLEIN DIETMAR C ; ELECTROX CORP

**Inventor(s):** (std): DETIG ROBERT H ; EBERLEIN DIETMAR C

**Agent(s):** MILDE AND HOFFBERG LLP; OSTROLENK FABER LLP; STEVEN M

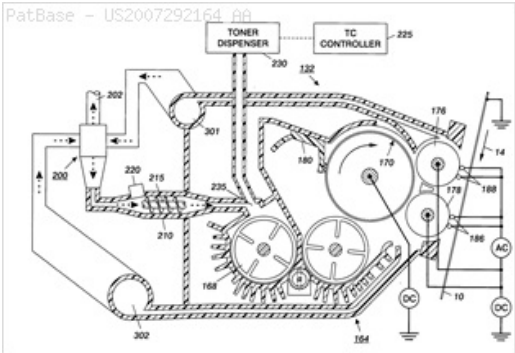
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KG KM KN KP KR KZ LC LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL  
NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA  
UG US UZ VC VN ZA ZM ZW

**Title:** DEVELOPMENT SUB-SYSTEM IN-LINE CLEANING SYSTEM

**Abstract:** An electrophotographic printing machine of the type in which an electrostatic latent image recorded on a charge retentive surface is developed with toner particles to form a visible image thereof, including: a housing having a supply of toner and developer therein; a donor member for transporting toner from the housing to a development zone; a first manifold, adjacent to the donor member, having an **air** stream for removing toner emission; a second manifold, adjacent to the donor member, having an **air** stream for removing toner emission; and a cyclone **separator** system, connected to the first manifold and the second manifold, for separating the toner from the **air** stream and returning toner particles of a predefined size back into the housing.

**Classifications:**

**International (IPC 8-9):** G03G15/08 G03G15/095 G03G21/20 (Advanced/Invention); G03G15/08 (Core/Invention)  
**CPC:** G03G15/0822 G03G15/0844 G03G15/0898 G03G2215/0602  
**European:** G03G15/08H G03G15/08H4 G03G15/08S1 S03G215/06A  
**US:** 399/253 399/253P 399/264 399/93 399/99



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| US2007292164 AA    | 20071220         | US20060455618      | 20060619         |
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**Priority:**

US20060455618 20060619

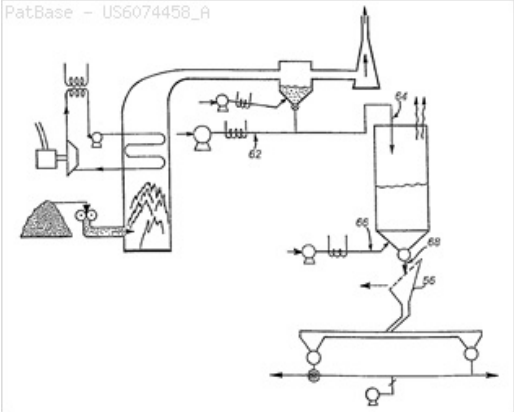
**Probable Assignee:** XEROX CORP  
**Assignee(s):** (std): XEROX CORP  
**Inventor(s):** (std): ZIRILLI FRANCISCO  
**Agent(s):** PATENT DOCUMENTATION CENTER; LLOYD F

**Title:** Method and apparatus for separation of unburned carbon from flyash

**Abstract:** Apparatus and method for separating carbon particles from flyash includes one of increasing a relative humidity of the flyash or decreasing the relative humidity of the flyash to within an optimum humidity range, and introducing the flyash within the optimum humidity range into a triboelectric separator so as to triboelectrically charge the carbon particles and the flyash and so as to electrostatically separate the charged carbon particles from the charged flyash.

**Classifications:**

**International (ipc 8-9):** B03B9/00 B03B9/04 B03C7/00 B03C7/02 B03C7/08 (Advanced/Invention); B03B9/00 (Advanced/Non-invention); B03B9/00 B03C7/00 (Core/Invention)  
**International (ipc 1-7):** B03B9/00 B03C3/014 B03C7/00 B03C7/02 B03C7/08  
**CPC:** B03B9/04 B03C7/006  
**European:** B03B9/04 B03C7/00D  
**US:** 110/216 110/345 209/127.2 209/127.4 95/60 95/65 95/66 95/71 95/72 96/17 96/52 96/57 96/74



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| AU199861800 A1     | 19980909         | AU19980061800      | 19980223         |
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| DE69806727 T2      | 20021205         | DE19986006727T     | 19980223         |
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| EP0961657 B1       | 20020724         | EP19980906625      | 19980223         |
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| IL131464 A1        | 20020210         | IL19980131464      | 19980223         |
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| TR9902048 T2       | 20001023         | TR19990002048T     | 19980223         |
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| ZA9801525 A        | 19980923         | ZA19980001525      | 19980224         |

**Priority:**

US19970805157 19970224 CZ19990002987 19980223 WO1998US03420 19980223

**Probable Assignee:** SEPARATION TECHNOLOGIES INC

**Assignee(s):** (std): SEPARATION TECHNOLOGIES ; SEPARATION TECHNOLOGIES INC ; SEPARATION TECHNOLOGIES LLC

**Assignee(s):** BITTNER JAMES D ; DUNN THOMAS M ; HRACH FRANK J JR ; SEPARATION TECHNOLOGIES INC NEEDHAM

**Inventor(s):** (std): BITTNER D ; BITTNER JAMES ; BITTNER JAMES D ; DUNN M ; DUNN THOMAS H ; DUNN THOMAS M ; HRACH FRANK I JR ; HRACH FRANK J ; HRACH FRANK J JR ; HRACH FRANK JJR ; HRACH J ; HRACH JR ; HRACH JR FRANK J ; JAMES D BITTNER ; FRANK J HRACH JR ; THOMAS H DUNN ; THOMAS M DUNN

**Inventor(s):** THOMAS MICHAEL DUNN ; FRANK JOSEPH HRACH JR ; JAMES DONALD BITTNER ; FRANK I HRACH JR ; FRANK J

**Agent(s):** PHILLIPS ORMONDE FITZPATRICK; SMART AND BIGGAR; REINHOLD COHN AND PARTNERS; SELIGSOHN GABRIELI AND CO

**Designated states:** AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CZ DE DK EE ES FI FR GA GB GE GH GM GN GR GW HU ID IE IL IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG UZ VN YU ZW

**Title:** PLASTIC MATERIAL HAVING ENHANCED MAGNETIC SUSCEPTIBILITY, METHOD OF MAKING AND METHOD OF SEPARATING

**Abstract:** The magnetic susceptibility of one or more plastic articles is enhanced to enable their separation from a waste stream using magnetic separators. An amount of paramagnetic material is added to the plastic formulation to influence magnetic susceptibility without affecting the properties associated with the function of the plastic article. The material is preferably selected from a group consisting of magnetite, ferro-silicon and ferromagnetic particles (e.g., iron filings). The amount or material can be varied in the range of between 0.05 percent and 5 percent by weight of the plastic formulation. The plastic with altered magnetic susceptibility and a method separating that plastic from a waste stream are also disclosed.

**Classifications:**

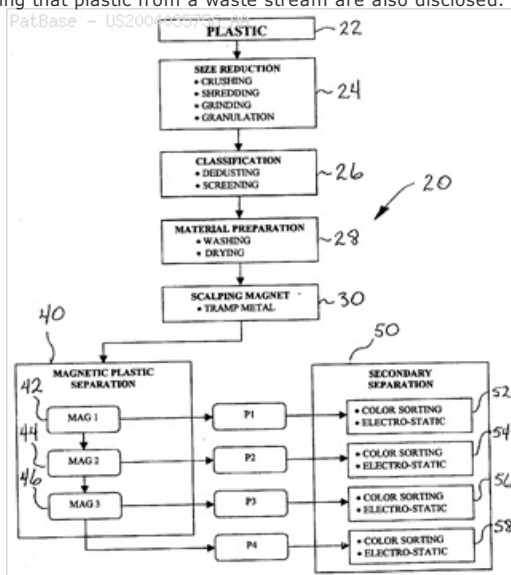
**International (IPC 8-9):** B03B1/00 B03C1/00 B03C1/01 B03D3/00 B07C5/344 B29B17/00 B29B17/02 B29B9/16 B29C31/00 C08J11/06 C08J3/20 C08K3/00 C08K3/22 C08L101/00 (Advanced/Invention); B03B1/00 B03C1/00 B03C1/005 B03D3/00 B07C5/34 B29B17/00 B29B17/02 B29B9/00 B29C31/00 C08J11/00 C08J3/20 C08K3/00 C08L101/00 (Core/Invention); B29C (Subclass/Invention)

**International (IPC 1-7):** B03B1/00 B03C1/01 B03D3/00 B29B17/00 B29B9/16 B29C0/00 B29C31/00 C08J11/06

**CPC:** Y02W30/622 Y02W30/701 B29B17/02 B29K2995/0008 C08J11/06

**European:** B29B17/02 C08J11/06 L29K995/00C8

**US:** 209/215 209/3 209/38 209/8 241/24.14



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
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| CA2495591 C        | 20081021         | CA20032495591      | 20030805         |
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| EP1575747 A3       | 20051102         | EP20030767245      | 00000000         |
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| WO04012920 A3      | 20050915         | WO2003US24602      | 20030805         |

**Priority:**

US20020213472 20020806 WO2003US24602 20030805

**Probable Assignee:** ERIEZ MAGNETICS

**Assignee(s):** (std): ERIEZ MAGNETICS

**Assignee(s):** LUTTRELL GERALD H ; MANCOSA MICHAEL J ; MANKOSA MICHAEL J

**Inventor(s):** (std): MANKOSA MICHAEL J ; MANCOSA MICHAEL J LUTTRELL GER ; MANCOSA MICHAEL J ; LUTTRELL GERALD H ; LUTRELL GERALD H

**Inventor(s):** GERALD H LUTTRELL ; GERALD H LUTRELL ; MICHAEL J MANCOSA

**Agent(s):** BLAKE DAWSON PATENT ATTORNEYS; ASHURST AUSTRALIA; OGILVY RENAULT LLP SENCRL SRL; KATO ASAMICHI; UCHIDA KIYOHITO; MIYAKE TOSHIO; THOMSON RICHARD K; RICHARD K

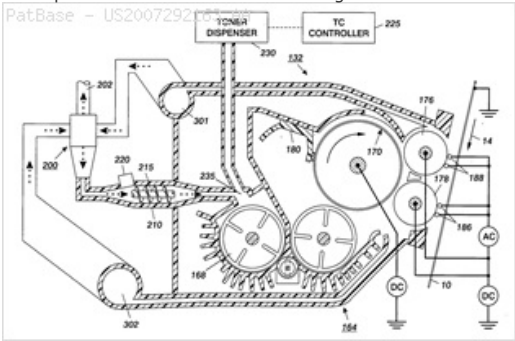
**Designated states:** AT AU BE BG BR CA CH CN CZ DE DK EE ES FI FR GB GR HU IE IT JP LI LU MC MX NL PT RO SE SI SK TR

**Title:** DEVELOPMENT SUB-SYSTEM IN-LINE CLEANING SYSTEM

**Abstract:** An electrophotographic printing machine of the type in which an electrostatic latent image recorded on a charge retentive surface is developed with toner particles to form a visible image thereof, including: a toner dispenser; a donor member for transporting toner from the housing to a development zone; and a cyclone separator system, connected to the toner dispenser, for separating the toner and supplying toner particles of a predefined size into the housing.

**Classifications:**

**International (IPC 8-9):** G03G15/08 (Advanced/Invention); G03G15/08 (Core/Invention)  
**CPC:** G03G15/0822 G03G15/0898 G03G2215/0602  
**European:** G03G15/08H G03G15/08S1 S03G215/06A  
**US:** 399/253 399/253P 399/254 399/255



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| US2007292163 AA    | 20071220         | US20060455530      | 20060619         |
| US7428398 BB       | 20080923         | US20060455530      | 20060619         |

**Priority:**

US20060455530 20060619

**Probable Assignee:** XEROX CORP  
**Assignee(s):** (std): XEROX CORP  
**Inventor(s):** (std): ZIRILLI FRANCISCO  
**Agent(s):** PATENT DOCUMENTATION CENTER; BEAN II LLOYD F; LLOYD F

**Title:** SEPARATION SYSTEM **BELT** CONSTRUCTION

**Abstract:** Improved **belt** for a charged particle separation system, the **belt** being an extruded article made from a host polymer and additive composition. The host polymer and additive are selected to yield a **belt** with tailored properties such as wear resistance, creep, coefficient of friction, and charging properties.

**Classifications:**

**International (IPC 8-9):** B03C7/08 B29C47/00 C08K5/34

C08K5/3492 C08L101/00 C08L23/00 C08L27/12 C08L5/16

C08L77/00 F16G1/14 (Advanced/Invention);

B29C47/00 C08L101/00 C08L23/00 C08L77/00 (Advanced/Non-invention);

B03C7/00 B29C47/00 C08K5/00 C08L101/00 C08L23/00 C08L27/00

C08L5/00 C08L77/00 F16G1/00 (Core/Invention)

**International (IPC 1-7):** B03C7/00 B03C7/08 B29C37/00 B29C47/00

C08K5/20 C08K5/34 C08L101/00 C08L23/00 C08L27/12 C08L5/16

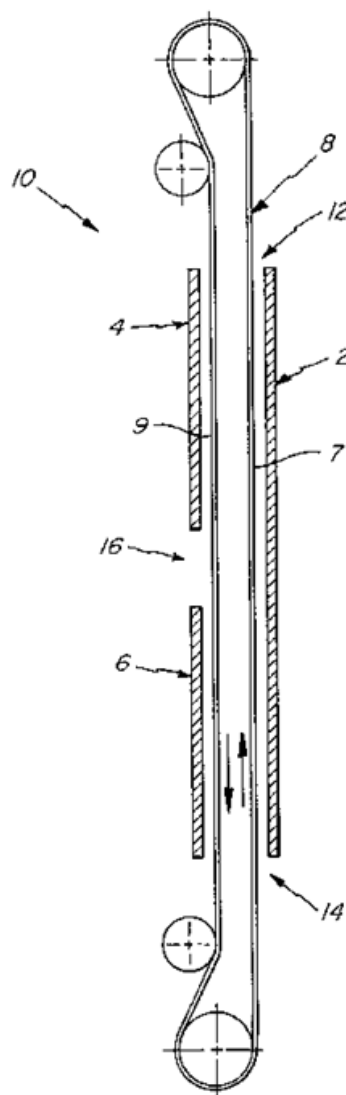
C08L77/00 F16G1/14

**CPC:** B03C7/00 C08K5/34928

**European:** C08K5/3492S

**US:** 209/127.1 209/128 425/375 524/229

PatBase - US5819946\_A

**Family:**

| Publication number | Publication date | Application number | Application date |
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|  WO9627635 A1 | 19960912 | WO1996US02723 | 19960229 |  |

**Priority:**

US19950399699 19950303 WO1996US02723 19960229

**Probable Assignee:** SEPARATION TECHNOLOGIES INC

**Assignee(s):** (std): SEPARATION TECHNOLOGIES ; SEPARATION TECHNOLOGIES INC ; SEPAREJSHN TEKNOLODZHIZ INK

**Assignee(s):** SEPARATION TECHNOLOGIES INC NEEDHAM ; SEPARATION TECHNOLOGIES LLC ; WHITLOCK DAVID R ; CANADA PHILIP S ; FLEET NATIONAL BANK ; RACICH JAMES L

**Inventor(s):** (std): CANADA S ; RACICH L ; WHITLOCK R ; WHITLOCK DAVID R ; WBITLOCK DAVID R ; RACICH JAMES L ; CANADA PHILIP S ; UITLOK DEHVID R ; REHKICH DZHEJMS L ; PHILIP S CANADA ; KEHNEHDA FILIP S ; JAMES L RACICH ; DAVID R WHITLOCK ; DAVID R WBITLOCK

**Agent(s):** PHILLIPS ORMONDE FITZPATRICK; SMART AND BIGGAR

**Designated states:** AL AM AT AU AZ BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CZ DE DK EE ES FI FR GA GB GE GN GR HU IE IS IT JP KE KG KP KR KZ LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NL NO NZ PL PT RO RU SD SE SG SI SK SZ TJ TM TR TT UA UG UZ VN

**Title:** METHOD AND APPARATUS FOR THE ELECTROSTATIC CHARGING OF A WEB OR FILM

**Abstract:** Method and apparatus for electrostatically charging a web or film by subjecting the web or film to an electric field generated between a single bar or wire electrode and the curved surface of a second electrode, and optionally sequentially subjecting the web or film to subsequent electric fields preferably in which the polarity of the field, relative to the web or film, is reversed.

**Classifications:**

**International (IPC 8-9):** B01D39/08 B01D39/14 B01D39/16 B01D39/18 B03C3/155 B03C3/28 B03C3/64 B29C59/10 B29C71/00 B29C71/04 C08L69/00 D04H1/42 D04H1/70 D04H1/74 D04H13/00 H01T19/04 H05F3/04 (Advanced/Invention); B01D39/14 B29C59/10 B29L7/00 C08L69/00 (Advanced/Non-invention); B01D39/08 B01D39/14 B01D39/16 B01D39/18 B03C3/00 B03C3/04 B29C71/00 C08L69/00 D04H1/42 D04H1/70 D04H13/00 H01T19/00 H05F3/00 (Core/Invention); B29C59/00 (Core/Non-invention)

**International (IPC 1-7):** B01D39/14 B01J15/00 B01J19/08 B01J19/12 B03C3/155 B03C3/28 B03C3/64 B29C71/00 B29C71/04 B29L7/00 B32B3/28 C08J3/28 C08L51/00 C08L69/00 D04H1/42 H01T19/04 H05F3/00

**CPC:** Y10S422/907 Y10T428/24686 Y10T428/24694 Y10T428/24727 Y10T442/633 Y10T442/636 B01D39/083 B01D2239/0435 B01D2239/1241 B01D2239/1291 D04H1/4291 D04H1/4382 B29C71/0081 B01D39/1615 B01D39/163 B01D39/18 B01D2239/0241 B01D2239/0622 B01D2239/065 B29C59/10 B29K2105/0854 D04H1/74 H01T19/04 H05F3/04 D04H1/4374 D04H1/54 D04H1/558 D04H1/559 D04H1/76 B03C3/28 D04H1/70

**European:** B01D39/08B B01D39/16B2 B01D39/16B4B B01D39/18 B03C3/28 B29C71/00F D04H1/42 D04H1/70 D04H1/74 D04H13/00B2 H01T19/04 H05F3/04 L01D239/02F L01D239/04F L01D239/06B31 L01D239/06F L01D239/12K L01D239/12Y L29C59/10 L29K105/08C

**US:** 204/164 204/165 264/22 264/484 361/225 361/229 361/230 361/233 422/186.05 422/907 428/181 428/182 428/186 442/357 442/360

PatBase - US5401446\_A

U.S. Patent

Mar. 28, 1995

Sheet 1 of 3

5,401,446

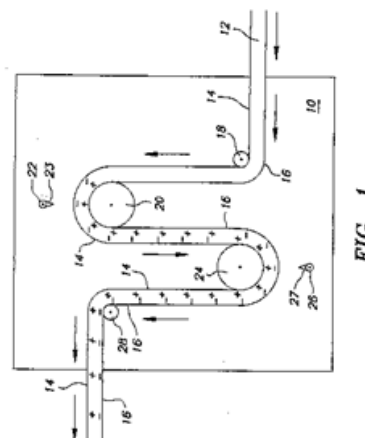


FIG. 1

**Family:**

| Publication number | Publication date | Application number | Application date |
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| AU199476837 A1     | 19950327         | AU19940076837      | 19940909         |
| AU689757 B2        | 19980409         | AU19940053546      | 19931006         |
| CA2146663 AA       | 19950407         | CA19932146663      | 19931006         |
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| JP8506061 T2       | 19960702         | JP19940510147T     | 19931006         |
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| US5401446 A        | 19950328         | US19920958958      | 19921009         |
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| US5955174 A        | 19990921         | US19950426031      | 19950421         |
| US6090469 A        | 20000718         | US19970888749      | 19970707         |
| US6153059 A        | 20001128         | US19990354892      | 19990716         |
| WO9408779 A1       | 19940428         | WO1993US09630      | 19931006         |
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**Priority:**

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| US19920958958 | 19921009 | US19930119358 | 19930910 | WO1993US09630 | 19931006 |
| WO1994US10076 | 19940909 | US19950411486 | 19950328 | US19950426031 | 19950421 |
| CA19952148196 | 19950428 | US19960426031 | 19960421 | US19970888749 | 19970707 |
| US19990354892 | 19990716 |               |          |               |          |

**Probable Assignee:** OF TENNESSEE RESEARCH CORP UNIV

**Assignee(s):** (std): OF TENNESSEE RESEARCH CORP UNIV ; TENNESSEE RESEARCH CORP UNIV ; UNIV TENNESSEE RES CORP ; UNIV TENNESSEE

**Assignee(s):** WADSWORTH LARRY C ; AIR FORCE UNITED STATES ; TSAI PETER PING YI ; OF TENNESSEE RESEARCH THE CORP UNIV ; OF TENNESSEE UNIV

**Inventor(s):** (std): ALEXEFF IGOR ; IGOR ALEXEFF ; JIRSAK OLDRICH ; LARRY C WADSWORTH ; LARRY WADSWORTH ; MARK S RADER ; PETER PING YI TSAI ; RADER MARK S ; TSAI PETER P ; TSAI PETER PING YI ; WADSWORTH LARRY ; WADSWORTH LARRY C

**Agent(s):** CALLINANS; FISHER ADAMS KELLY CALLINANS; SPRUSON AND FERGUSON; SMART AND BIGGAR

**Designated states:** AT AU BE CA CH CZ DE DK ES FR GB GR IE IT JP KR LI LU MC NL PT RU SE SK

**Title:** ELECTROSTATIC METHOD OF SEPARATING PARTICULATE MATERIALS

**Abstract:** A method of separating particulate materials of different properties has been developed. It consists of feeding a mixture of dry, powdered materials to one end of the surface of a planar electrode, which is vibrating to move the particles forward. At least one type of the particulate materials acquires a charge via conduction or **triboelectrification**. Those particles that acquire charges of the same sign as that of the planar electrode are lifted and collected at the V-shaped counter electrodes installed above. The new separation method is particularly useful for removing unburned carbons from fly ash and any other conducting materials from nonconducting ones.

**Classifications:**

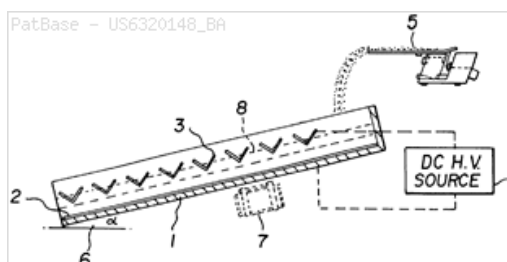
**International (IPC 8-9):** B03C7/00 B03C7/04 (Advanced/Invention); B03C7/00 (Core/Invention)

**International (IPC 1-7):** B03C7/00

**CPC:** Y10S209/92 B03C7/006 B03C7/04

**European:** B03C7/00D B03C7/04

**US:** 209/127.3 209/128 209/131 209/920



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| AU200050241 A1     | 20010305         | AU20000050241      | 20000517         |
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| US6320148 BA       | 20011120         | US19990368945      | 19990805         |
| WO0110559 A1       | 20010215         | WO2000US13551      | 20000517         |

**Priority:**

US19990368945 19990805 WO2000US13551 20000517

**Probable Assignee:** HAN OH HYUNG

**Assignee(s):** (std): HAN OH HYUNG ; YAN ERIC S ; YOON ROE HOAN ; PARK BYUNG WOOK

**Assignee(s):** ROE HOAN YOON ; OH HYUNG HAN ; BYUNG WOOK PARK ; ERIC S YAN

**Inventor(s):** (std): YOON ROE HOAN ; YAN ERIC S ; PARK BYUNG WOOK ; HAN OH HYUNG

**Inventor(s):** ROE HOAN YOON ; OH HYUNG HAN ; ERIC S YAN ; BYUNG WOOK PARK

**Designated states:** AM AT AU AZ BE BG BR BY CA CH CN CY DE DK ES FI FR GB GE GR HR HU IE IN IT JP KP KR KZ LT LU LV MC MK MN MX NL NO NZ PL PT RO RU SE SI SK TJ TM TR UA US UZ YU ZA ZW

**Title:** **Triboelectric** separation of differently composed material mixtures of non-conducting materials, especially plastics

**Abstract:** The method involves conditioning reprocessed qualitative and quantitative differently composed non-conducting materials. The conditioned non-conducting material particles are strongly charged by intensive contact with an electrically conducting surface, which has been brought to a determined external positive or negative potential. The material specific positive or negative charged non-conducting material particles can then be sorted in an electrostatic field of the charge.

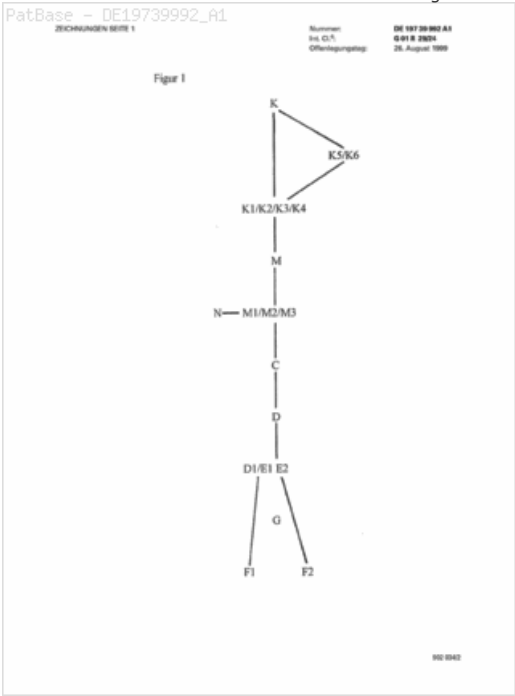
**Classifications:**

**International (IPC 8-9):** G01N27/60 (Advanced/Invention);  
G01N27/60 (Core/Invention)

**International (IPC 1-7):** G01N27/00 G01R29/24

**CPC:** G01N27/60

**European:** G01N27/60



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| DE19739992 A1      | 19990826         | DE19971039992      | 19970911         |

**Priority:**

DE19971039992 19970911

**Probable Assignee:** HAMOS GMBH RECYCLING UND SEPAR

**Assignee(s):** (std): HAMOS GMBH RECYCLING U SEPAR ; HAMOS GMBH RECYCLING UND SEPAR

**Assignee(s):** HAMOS GMBH RECYCLING UND SEPARATIONSTECHNIK

**Title:** Electrostatic separation of mixture of different nonconductive materials

**Abstract:** The method includes the steps of conditioning qualitatively and quantitatively differently mixed, nonconductive materials, charging the conditioned materials specifically positive or negative through intense contact with an electrically conducting surface area previously applied with a potential, and sorting the charged material particles in an electrostatic field according to their charge.

**Classifications:**

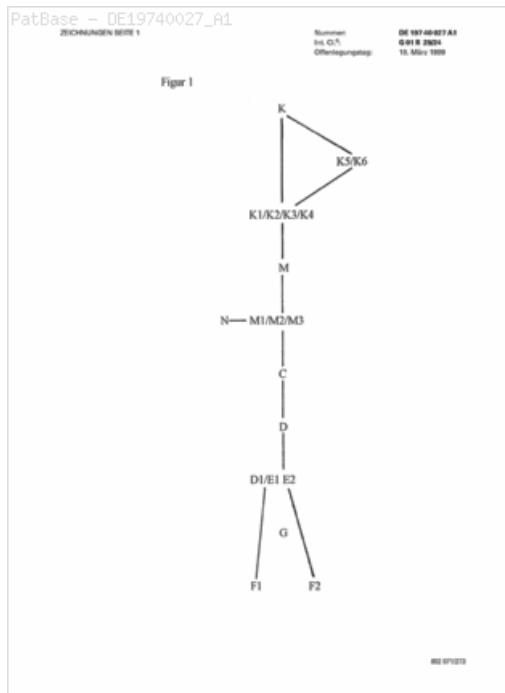
**International (ipc 8-9):** G01N27/60 G01R29/22 (Advanced/Invention);

G01N27/60 G01R29/00 (Core/Invention)

**International (ipc 1-7):** G01N27/00 G01R29/24

**CPC:** G01N27/60 G01R29/22

**European:** G01N27/60 G01R29/22



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| DE19740027 A1      | 19990318         | DE19971040027      | 19970911         |

**Priority:**

DE19971040027 19970911

**Probable Assignee:** HAMOS GMBH RECYCLING UND SEPAR

**Assignee(s):** (std): HAMOS GMBH RECYCLING U SEPAR ; HAMOS GMBH RECYCLING UND SEPAR

**Assignee(s):** HAMOS GMBH RECYCLING UND SEPARATIONSTECHNIK ; HAMOS GMBH RECYCLING UND SEPARATIONSTECHNIK 82377 ; HAMOS GMBH RECYCLING UND SEPARATIONSTECHNIK 82377 PENZBERG DE

**Title:** **Air** current classifier, process for preparing toner, and apparatus for preparing toner

**Abstract:** A **separator** for classifying powder with **air** current, comprises a powder feed pipe and a classifying chamber, provided in said **separator**; a guide chamber provided at the upper part of said classifying chamber to communicate with said powder feed pipe; a plurality of introducing louvers provided between said guide chamber and said classifying chamber, at which the powder is flowed in from said guide chamber to said classifying chamber through the openings between said introducing louvers together with carrying **air**; an inclined classifying plate raised at its central part, provided at the bottom of said classifying chamber; classifying louvers provided along the side wall of said classifying chamber, through the openings of which the **air** is flowed to produce a whirling stream by which said powder fed into said classifying chamber together with carrying **air** is centrifugally separated into fine powder and coarse powder; a discharge opening provide at the central part of said classifying plate and from which the classified fine powder is discharged; a fine powder discharge chute connected to said discharge opening; and a discharge opening formed along the periphery of said classifying plate and from which the classified coarse powder is discharged.

**Classifications:**

**International (IPC 8-9):** B07B11/06 B07B7/086 B07B9/02

G03G9/08 (Advanced/Invention)

**International (IPC 1-7):** B02C19/06 B02C23/08 B02C23/12

B07B11/06 B07B7/04 B07B7/08 B07B7/086 G03C9/10 G03G9/10

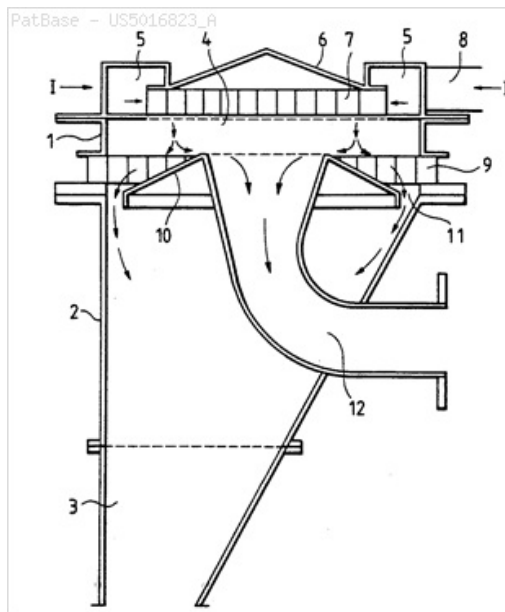
**CPC:** B02C19/06 B02C23/32 B07B7/086 B07B9/02 B07B7/0865

B07B11/06 G03G9/0817

**European:** B02C19/06 B02C23/32 B07B11/06 B07B7/086B

B07B9/02 G03G9/08B12

**US:** 209/143 241/29 241/39 241/5 241/79.1 241/80



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| DE3915641 A1       | 19901115         | DE19893915641      | 19890512         |
| DE3915641 C2       | 19950803         | DE19893915641      | 19890512         |
| DE3943733 C2       | 19990121         | DE19893943733      | 19890512         |
| FR2646791 A1       | 19901116         | FR19890006291      | 19890512         |
| FR2646791 B1       | 19910830         | FR19890006291      | 19890512         |
| US5016823 A        | 19910521         | US19890346635      | 19890503         |

**Priority:**

US19890346635 19890503

DE19893915641 19890512

DE19893943733 19890512

FR19890006291 19890512

**Probable Assignee:** CANON INC

**Assignee(s):** (std): CANON INC ; CANON KK

**Assignee(s):** CANON A CORP OF JAPAN KK ; CANON K K ; CANON K K TOKIO TOKYO JP ; CANON KABUSHIKI KAISHA

**Inventor(s):** (std): KATO MASAYOSHI ; KANDA HITOSHI

**Inventor(s):** KATO MASAYOSHI KAWASAKI KANAGAWA JP ; KANDA HITOSHI YOKOHAMA KANAGAWA JP

**Title:** HIGHLY SHAPE-CLASSIFIED OXIDIZED LOW CARBON HYPEREUTECTOID ELECTROSTATOGRAPHIC STEEL CARRIER PARTICLES

**Abstract:** An electrostatographic developer mixture comprising finely-divided toner particles electrostatically adhering to the surface of highly shape-classified low carbon hypereutectoid steel carrier particles, the steel carrier particles comprising carrier cores having a composition comprising about 95.0 to 99.0 parts iron, 0.1 to 2.0 parts carbon, 0.5 to 2.0 parts manganese, 0.5 to 2.0 parts silicon, 0.03 to 0.1 parts aluminum, 0.01 to 0.05 parts phosphorus, and 0.02 to 0.05 parts sulphur, said carrier cores having been heat treated to a tempered martensitic microstructure with an average hardness of 40-55 Rockwell C and then overcoated with a coating material capable of electrostatically releasing toner particles adhered thereto to an electrostatic latent image. Processes of employing said developer mixture in electrostatographic imaging systems are also disclosed.

**Classifications:**

**International (IPC 8-9):** G03G9/08 G03G9/10 G03G9/107 G03G9/113 (Advanced/Invention);  
G03G9/107 G03G9/113 (Core/Invention)

**International (IPC 1-7):** B44D1/094 G03G13/00 G03G13/08 G03G9/00 G03G9/02 G03G9/10 G03G9/14

**CPC:** G03G9/1133 G03G9/1075 G03G9/113 G03G9/1136 Y10T428/2991 Y10T428/2993

**European:** G03G9/107B G03G9/113 G03G9/113D2 G03G9/113D4B

**US:** 117/10.0M 252/62.1P 420/8 420/99 426/404 427/216 427/221 428/403 428/404 430/111.34 430/111.35 430/120 430/121 430/121.1 430/123.58 430/137.13 75/252 96/1SD

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| AT316987 B         | 19740812         | AT19700005540      | 19700619         |
| BE752230 A         | 19701221         |                    | 00000000         |
| BE752230 A1        | 19701221         | BE19700752230      | 19700619         |
| CA940360 A1        | 19740122         | CA19700081054      | 19700424         |
| CH548625 A         | 19740430         | CH19700009115      | 19700616         |
| DD95180 C          | 19730112         | DD19700154521      | 19700619         |
| DE2030083 A1       | 19701223         | DE19702030083      | 19700618         |
| DE2030083 B2       | 19771110         | DE19702030083      | 19700618         |
| DE2030083 C3       | 19780629         | DE19702030083      | 19700618         |
| ES380913 A1        | 19730401         | ES19700380913      | 19700618         |
| FR2052619 A5       | 19710409         | FR19700021985      | 19700616         |
| GB1312806 A        | 19730411         | GB19700028848      | 19700615         |
| HU168624 P         | 19760628         | HU1970EO00216      | 19700618         |
| JP48034190 B4      | 19731019         | JP19700035850      | 19700425         |
| NL168348 B         | 19811016         | NL19700009070      | 19700619         |
| NL168348 C         | 19820316         | NL19700009070      | 19700619         |
| NL7009070 A        | 19701222         | NL19700009070      | 19700619         |
| NO131364 B         | 19750203         | NO19700002321      | 19700616         |
| NO131364 C         | 19750514         | NO19700002321      | 19700616         |
| PL81013 P          | 19750830         | PL19700141268      | 19700612         |
| SE351058 B         | 19721113         | SE19700008283      | 19700615         |
| SU457235 D         | 19750115         | SU19701441551      | 19700612         |
| US3849182 A        | 19741119         | US19730369036      | 19730611         |
| US3923503 A        | 19751202         | US19740489631      | 19740718         |
| US3939086 A        | 19760217         | US19740489630      | 19740718         |

**Priority:**

US19690834862 19690619

US19730369036 19730611

US19740489631 19740718

US19740489630 19740718

**Probable Assignee:** XEROX CORP

**Assignee(s):** (std): XEROX CORP

**Assignee(s):** XEROX CORP ROCHESTER N Y V ST A ; XEROX CORP ROCHESTER NEW YORK 14603 E U A ; XEROX CORP US ; XEROX TE ROCHESTER NEW YORK VER ST V AM CORP ; XEROX CORP ROCHESTER NEW YORK 14603 EUA ; HAGENBACH ROBERT J

**Inventor(s):** (std): HAGENBACH R J ; HAGENBACH R ; HAGENBACH ROBERT J ; HAGENBACH R J

**Inventor(s):** HAGENBACH R US ; R J HAGENBACH ; RJ HAGENBACH ; HAGENBACH ROBERT J ROCHESTER N Y V ST A

**Title:** METHOD OF DEVELOPING ELECTROSTATIC IMAGES

**Abstract:** ABSTRACT OF THE DISCLOSURE Method and apparatus for fur brush development of electrostatic images on an insulating surface. Mechanical **separators** separate the fur brush fibers to present unmatted toner-carrying fur fibers for contact with an electroplate surface. Alternatively, the toner-carrying fur brush material may be elastically stretched over a mandrel through an angle sufficient to separate the fibers, to prevent matting, independent of **humidity** or wear conditions, to present unmatted fur fibers for contact with an electroplate surface.

**Classifications:**

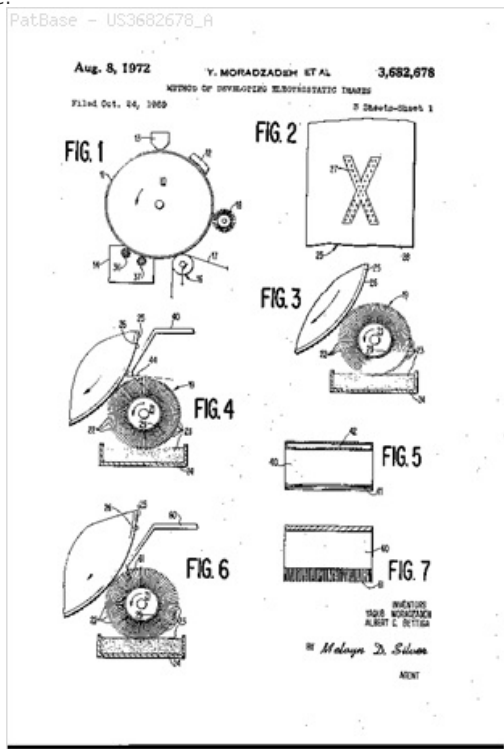
**International (IPC 8-9):** G03G15/08 (Advanced/Invention);  
G03G15/08 (Core/Invention)

**International (IPC 1-7):** G03G13/00 G03G13/08 G03G15/00  
G03G15/08

**CPC:** G03G15/0805

**European:** G03G15/08E

**US:** 117/175 399/287 427/429 430/123.1



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| AU197021055 A1     | 19720420         | AU19700021055      | 19701014         |
| AU207021055 A1     | 19720420         | AU19700021055      | 19701014         |
| CA947958 A1        | 19740528         | CA19730163597      | 19730213         |
| CA947958 A2        | 19740528         | CA19730163597      | 19730213         |
| CA948842 A1        | 19740611         | CA19700092737      | 19700910         |
| DE2052070 A1       | 19710429         | DE19702052070      | 19701023         |
| DE2052070 B2       | 19780727         | DE19702052070      | 19701023         |
| DE2052070 C3       | 19790329         | DE19702052070      | 19701023         |
| FR2065886 A5       | 19710806         | FR19700032155      | 19700824         |
| GB1315399 A        | 19730502         | GB19700047339      | 19701006         |
| JP49048135 B4      | 19741219         | JP19700089775      | 19701014         |
| NL7015198 A        | 19710427         | NL19700015198      | 19701016         |
| US3682678 A        | 19720808         | US19690869081      | 19691024         |

**Priority:**

US19690869081 19691024

CA19700092737 19700910

CA19730163597 19730213

**Probable Assignee:** IBM

**Assignee(s):** (std): IBM

**Assignee(s):** INT BUSINESS MACHINES CORP ARMONK N Y V ; INT BUSINESS MACHINES CORP ARMONK N Y V ST A ; INT BUSINESS MACHINES CORP ; INTERN BUSINESS MACHINES CORP ; MORADZADEH YAQUB ; BETTIGA ALBERT C ; FREI HANS R

**Inventor(s):** (std): BETTIGA ALBERT C ; BETTIGA ALBERT CLAIR ; MORADZADEH YAQUB ; FREI HANS R

**Inventor(s):** BETTIGA ALBERT CLAIR SAN JOSE ; ALBERT C BETTIGA ; YAQUB MORADZADEH AND ALBERT CLAIR BETTIGA ; YAQUB MORADZADEH ; MORADZADEH YAQUB SARATOGA

**Title:** METHOD OF SELECTIVELY SEPARATING SOLID PARTICLES BY ELECTROSTATIC SORTING IN FLUIDIZED BED

**Abstract:** 1,233,764. Electrostatic separation of solid particles. SOC. DE PRODUITS CHIMIQUES D'AUBY. 30 July, 1968 [8 Aug., 1967], No. 36353/68. Heading C1A. Solid mineral particles are separated by treating the particles with a cationic surfaceactive substance, fluidizing the treated particles and submitting the fluidized particles to the action of an electrostatic field-type **separator**. The cationic substance is an amine, a polyamine, an amine or polyamine derivative or a mixture of any of these. The cationic substances are incorporated in an amount between 20-100 grams per ton of solid material. Examples of amine derivatives which may be used are salts, amino acids, quaternary salts, oxyethylated amines and derivatives obtained by the condensation of a fatty acid and a short chained polyamine, the short chained polyamine being an amido amine or an imidazolone.

**Classifications:**

**International (IPC 8-9):** B03C7/00 (Advanced/Invention);  
B03C7/00 (Core/Invention)

**International (IPC 1-7):** B03B1/00 B03B1/04 B03C7/00 B03C7/02 B03C9/00

**CPC:** Y10T428/2991 B03C7/003

**European:** B03C7/00A

**US:** 209/127.1 209/9 427/216 428/403

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| DE1758756 A1       | 19710225         | DE19681758756      | 19680802         |
| ES356892 A1        | 19700216         | ES19680356892      | 19680803         |
| FR1539876 A        | 19680920         | FR19670117154      | 19670808         |
| GB1233764 A        | 19710526         |                    | 19680730         |
| NL6811079 A        | 19690211         | NL19680011079      | 19680805         |
| OA2861 A           | 19701215         | OA19680053333      | 19680724         |
| US3563375 A        | 19710216         | US19680747818      | 19680726         |

**Priority:**

FR19670117154 19670808

**Probable Assignee:** PROD CHIM D AUBY SOC D

**Assignee(s):** (std): AUBY PROD CHIM ; D AUBY SOC PROD CHIM ; D D AUB PROD CHIM SOC ; SOC D PRODUITS CHIMIQUES D AUB ; PRODUITS CHIMIQUES D AUBY SOC ; PROD CHIM D AUBY SOC D ; PROD SOC D

**Assignee(s):** STE DE D AUBY PROD CHIM ; STE DE PRODUITS CHIMIQUES D AUBY ; SOCIETE DE PRODUITS CHIMIQUES D AUBY ; DE D AUBY PROD CHIM SOC

**Inventor(s):** (std): ROBERT DOMINIQUE

**Inventor(s):** DOMINIQUE ROBERT