

1) Family number: 42232318 (US2008240796 AA)

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Title:	ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS, DEVELOPING APPARATUS, AND COUPLING MEMBER					
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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 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 PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class

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International class

(IPC 1-7):

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CPC:

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US class:

1/1 399/111 399/119 399/167 399/227 399/262 399/279 399/279P

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Forward Citations:

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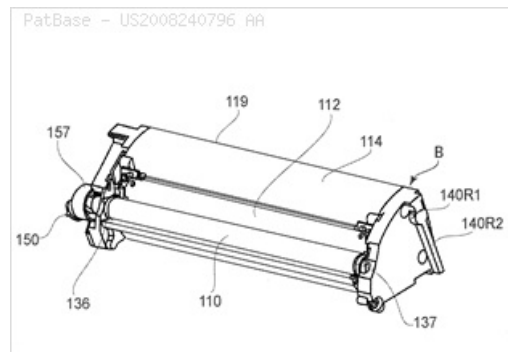
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Abstract:

A developing device usable with an electrophotographic image forming apparatus includes a driving shaft having a rotating force applying portion, and a movable member. The developing device is mounted to the moving member and includes a developing roller, and a coupling member that includes a rotating force receiving portion and a rotating force applying portion. The coupling member is capable of taking (i) a rotational force transmitting angular position for transmitting the rotational force to the developing roller, (ii) a pre-engagement angular position taken before the coupling member is engaged with the rotating force applying portion, in which the coupling member is inclined away from the rotational force transmitting angular position, and (iii) a disengaging angular position, which enables the coupling member to disengage from the driving shaft, and inclines the coupling member away from the rotational force transmitting angular position, in a direction opposite to the pre-engagement angular position.



2) Family number: 50170838 (US2011311254 AA)

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Title: IMAGE FORMING APPARATUS

Priority: JP20100140911 20100621

Family:	Publication number	Publication date	Application number	Application date
	CN102289175 A	20111221	CN201110167286	20110621
	CN102289175 B	20140806	CN201110167286	20110621
	JP2012003204 A2	20120105	JP20100140911	20100621
	JP5539057 B2	20140702	JP20100140911	20100621
	US2011311254 AA	20111222	US20110155981	20110608
	US9098005 BB	20150804	US20110155981	20110608

Probable Assignee: CANON INC

Assignee(s):(std): CANON KK ; KANAZAWA TAKAYUKI ; KAWAGUCHI YUJI ; KAWATA KENTARO ; KITAMURA TAKUYA

Assignee(s): CANON INC ; CANON KABUSHIKI KAISHA

Inventor(s):(std): KANAZAWA TAKAYUKI ; KAWADA KENTARO ; KAWAGUCHI YUJI ; KAWATA KENTARO ; KENTARO KAWATA ; KITAMURA TAKUYA ; KANAZAWA TAKAYUKI ; TAKAYUKI KANAZAWA ; TAKUYA KITAMURA ; YUJI KAWAGUCHI

Agent(s): CANON USA INC IP DIVISION

International class G03G15/00 G03G15/01 G03G15/02 G03G15/06 G03G15/08

(IPC 8-9):

CPC: G03G15/0173 G03G15/065

US class: 1/1 399/227 399/227S 399/46 399/46P 399/50 399/50S 399/55 399/55S

[Classification Explorer](#)

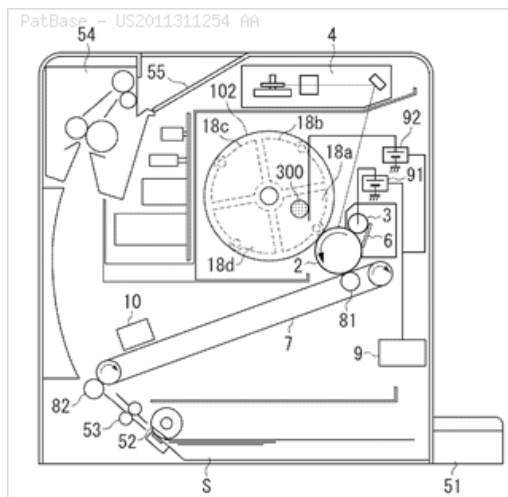
Cited documents: US2011150513 AA, US2013243454 AA, US2002031360 AA, US2008080884 AA, US2009317143 AA, US2009304414 AA, US2009297222 AA, US2005141938 AA, US5835825 A, US7292800 BB, US2010303488 AA, US2009110445 AA, US2002061203 AA, JP2010079282, JP2010054863, JP2007248963, JP2001281950, JP9106152, JP4063375, JP8305159, JP2010079282 A2, JP2007248963 A2, JP4063375 A2, JP2001281950 A2, JP9106152 A2, JP2010054863 A2, JP8305159 A2, JP2005148319 A2, CN101419420 A, US2006039720 AA,

Forward Citations: US10642216 BB, US9989915 BB, US9551957 BB, US8923731 BB, US2013322930 AA,

Abstract:

An image forming apparatus includes a rotatable image bearing member configured to bear an electrostatic latent image, a plurality of development devices including a developer bearing member configured to bear a developer for developing the electrostatic latent image, a rotatable development device supporting member configured to support the plurality of development devices. In the image forming apparatus, the developer bearing member is configured to execute development while contacting the image bearing member at a development position via the developer, rotating in the same direction as rotating direction of the image bearing member at the development position, and rotating at a speed faster than a surface speed of the image bearing member. In addition, the development device supporting member is configured to rotate in the same direction of a rotating direction of the image bearing member at a position where the development device supporting member and the image bearing member are facing each other, and change a developer bearing member existing at the development position to another developer bearing member by rotating. Furthermore, a relative speed of a surface moving speed of the developer bearing member with respect to a surface moving speed of the image bearing member when the developer bearing member abuts on or separates from the image bearing member due to the rotation of the development device supporting member becomes higher than a relative speed of the surface moving speed of the developer bearing member with respect to the surface moving speed of

the surface of the image bearing member when the electrostatic latent image is developed, and a control unit configured to control a first potential difference, which is a potential difference between a potential of a bias applied to the developer bearing member when the developer bearing member abuts on or separates from the image bearing member and a potential of the image bearing member at the development position becomes higher than a second potential difference, which is a potential difference between the potential of the bias applied to the image bearing member and a potential of a non-imaging portion of the image bearing member at the development position.



3) Family number: 30007977 (US6256467 BA)

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Title: SIDE COVER OF DEVELOPING CARTRIDGE, MOUNTING METHOD THEREOF AND DEVELOPING CARTRIDGE

Priority: JP19970195027 19970703 JP19980186144 19980701

Family:	Publication number	Publication date	Application number	Application date
	AU199874057 A1	19990114	AU19980074057	19980702
	AU723347 B2	20000824	AU19980074057	19980702
	CN1099621 C	20030122	CN19981017412	19980703
	CN1205460 A	19990120	CN19981017412	19980703
	DE69820537 D1	20040129	DE19986020537T	19980703
	DE69820537 T2	20040930	DE19986020537T	19980703
	EP0889375 A2	19990107	EP19980305329	19980703
	EP0889375 A3	19990908	EP19980305329	19980703
	EP0889375 B1	20031217	EP19980305329	19980703
	JP11073009 A2	19990316	JP19980186144	19980701
	JP3728104 B2	20051221	JP19980186144	19980701
	US6256467 BA	20010703	US19980109716	19980702

Probable Assignee: CANON INC

Assignee(s):(std): CANON K K ; CANON KABUSHIKI KAISHA

Assignee(s): CANON INC

Inventor(s):(std): ICHIIHIKO KANNO ; KANNO KAZUHIKO ; MIKIKOTO YOKOMORI ; NITTANI SUSUMU ; SHINTANI SUSUMU ; SUGANO KAZUHIKO ; SUSUMI SHINKO ; YOKOMORI KANJI

Inventor(s): KANJI YOKOMORI ; KANNO ICHIIHIKO ; KAZUHIKO KANNO ; SHINKO SUSUMI ; SUSUMU NITTANI ; YOKOMORI MIKIKOTO

Agent(s): ASPEN PHARMA PTY LTD; FITZPATRICK CELLA HARPER AND SCINTO; SPRUSON AND FERGUSON

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

International class (IPC 8-9): G03G15/01 G03G15/08 G03G21/16

International class (IPC 1-7): G03G1/508 G03G15/01 G03G15/08 G03G2/116 G03G21/16 G03G21/18

CPC: G03G15/0126 G03G15/0896 G03G2215/0177

US class: 399/119 399/262

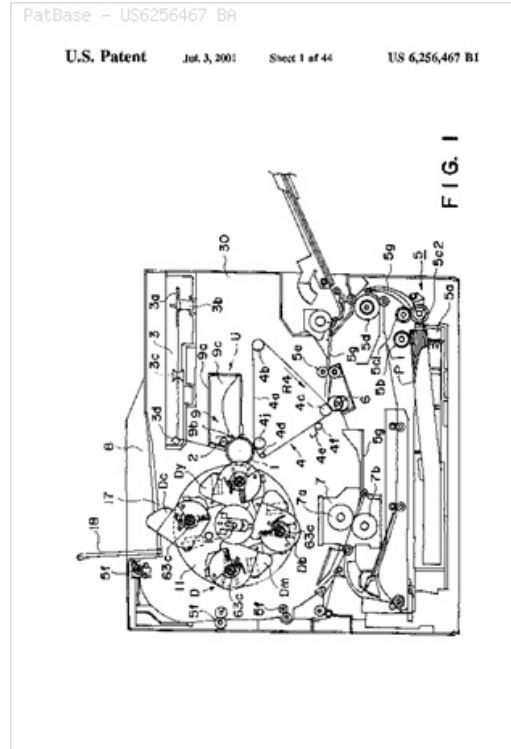
[Classification Explorer](#)

Cited documents: US5648838 A, US5640229 A, JP6317962, JP8016072, US5646721 A, US4713673 A, EP0889378 A2, EP0889374 A2, EP0794471 A1, EP0613060 A2, US5740500 A,

Forward Citations: US10845756 BB, US10642216 BB, US10627778 BB, US10282721 BB, US9989915 BB, US9964891 BB, US9671751 BB, US9658592 BB, US9658593 BB, US9594343 BB, US9551957 BB, US9519254 BB, US9477201 BB, US9377755 BB, US9348303 BB, US9285712 BB, US2011091239 AA, US8676090 BA, US8532533 BB, US8452210 BB, US8295734 BB, US8688004 BB, US8369744 BB, US2008240796 AA, US2008260428 AA, US9176468 BB, US2008025766 AA, US8682215 BA, US8630564 BB, US8280278 BB, US8275286 BB, US2007122176 AA, US2006291895 AA, US2005153160 AA, US2005135842 AA, US2005008392 AA, US2002191981 AA, US8923731 BB, US2014072328 AA, US2013322930 AA, US8688008 BB, US7526225 BB, US7242893 BB, US7599640 BB, US6934488 BB, US7292802 BB, US10816931 BB, US10795312 BB, US10788790 BB, US10788789 BB, US10712709 BB, US10712710 BB, US10671018 BB, US10620582 BB, US10585391 BB, US10551793 BB, US10545450 BB, US10539923 BB, US10539924 BB, US10520887 BB, US10429794 BB, US10209670 BB, US10095179 BB, US9939776 BB, US9886002 BB, US9874846 BB, US9874854 BB, US9869960 BB, US9864331 BB, US9864333 BB, US9857764 BB, US9857765 BB, US9857766 BB, US9851685 BB, US9851688 BB, US9846408 BB, US9841727 BB, US9841728 BB, US9841724 BB, US9841729 BB, US9836021 BB, US9836015 BB, US9817333 BB, US9772602 BB, US9746826 BB, US9733614 BB, US9703257 BB, US9678471 BB, US8437669 BB, US8401442 BB, JP6529282 B2, JP2016161619 A2, JP2004125893 A2, JP3542588 B2, JP2002328584 A2, JP3840063 B2, JP4089864 B2, JP2003057928 A2, US6934485 BB, WO18166586 A1, EP0984337 A3, US6381430 BA, EP0984337 A2, CN100451861 C, CN100394320 C, CN108762030 A,

Abstract:

A developing cartridge side cover, which is detachably mountable to a main assembly of an electrophotographic image forming apparatus, has an opening for exposing a drive force receiving member for rotating a developing member with a driving force from the main assembly. The side cover further has a developing bias contact mounting for receiving a developing bias to be applied to the developing member from the main assembly.

**4) Family number: 44129425 (US2009317131 AA)**

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Title: PROCESS CARTRIDGE AND ELECTROGRAPHIC PHOTOSENSITIVE DRUM UNIT
Priority: JP20080161531 20080620 WO2009JP61672 20090619 CN200980122339 20090619
EP20090766759 20090619

Family:	Publication number	Publication date	Application number	Application date
	CN102067045 A	20110518	CN200980122339	20090619
	CN102067045 B	20130612	CN200980122339	20090619
	CN103279021 A	20130904	CN201310185173	20090619
	CN103279021 B	20160629	CN201310185173	20090619
	CN103217886 A	20130724	CN201310185773	20090619
	CN103217886 B	20161228	CN201310185773	20090619
	DE112009001274 B4	20190321	DE200911001274T	20090619
	DE112009001274 T5	20110428	DE200911001274T	20090619
	DE602009039028 D1	20160714	DE200960039028T	20090619
	EP2291713 A1	20110309	EP20090766759	20090619
	EP2291713 B1	20160601	EP20090766759	20090619
	JP2010002690 A2	20100107	JP20080161531	20080620
	JP5283986 B2	20130904	JP20080161531	20080620
	TW201011479 A	20100316	TW20090120783	20090619
	TWI417686 B	20131201	TW20090120783	20090619
	TW201403268 A	20140116	TW20130135054	20090619
	TWI541618 B	20160711	TW20130135054	20090619
	TW201636518 A	20161016	TW20160109698	20090619
	TWI567310 B	20170121	TW20160109698	20090619
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	US8270876 BB	20120918	US20090488168	20090619
	WO09154311 A1	20091223	WO2009JP61672	20090619

Probable Assignee: CANON INC
Assignee(s):(std): ASANUMA NAOYA ; CANON KK ; HISANO MASATO ; MORIOKA MASANARI ; NAKAZAWA RYOSUKE ; SASAKI TERUHIKO
Assignee(s): CANON INC ; CANON KABUSHIKI KAISHA
Inventor(s):(std): ASANUMA NAOYA ; HISANO MASATO ; KUNO MASATO ; MASANARI MORIOKA ; MASATO HISANO ; MORIOKA MASANARI ; MORIOKA MASAYA ; NAKAZAWA RYOSUKE ; NAKAZAWA YOSHIKI ; NAOYA ASANUMA ; RYOSUKE NAKAZAWA ; SASAKI TERUHIKO ; TERUHIKO SASAKI
Agent(s): FITZPATRICK CELLA HARPER AND SCINTO; TBK; TBK PATENT; YAMADA RYUICHI
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 TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
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(IPC 8-9):

CPC: G03G21/1853 G03G21/186
US class: 399/111 399/117 399/117P 399/167

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Cited documents: WO08078836 A1, JPS60249729, US6178302 B1, US6137973 A, US6137971 A, US5920753 A, US2007229005 AA, US6327448 BA, US6963706 BB, US7127192 BB, US6141508 A, US7418225 BB, US6937832 BB, US7079787 BB, US6901229 BB, US6898399 BB, US7200349 BB, US7194220 BB, US6714749 BB, US6714746 BB, US6704522 BB, US6178302 BA, US2008304865 AA, US2007110478 AA, US2006222405 AA, US6011942 A, US2004179862 AA, US2005191092 AA, US2010034561 AA, US2011182619 AA, US2010221036 AA, US2008260428 AA, US05903803, US04829335, CN1346077, JP2008233867, JP2002048148, JP2007147881, JP2007052185, JP2008233867 A2, JP2002048148 A2, JP2007147881 A2, JP2007052185 A2, JP2004456603 A2, US4829335 A, US5903803 A, JP60249729 A2, JP2006072160 A2, EP1791034 A1, EP1178370 A2, US4065941 A,

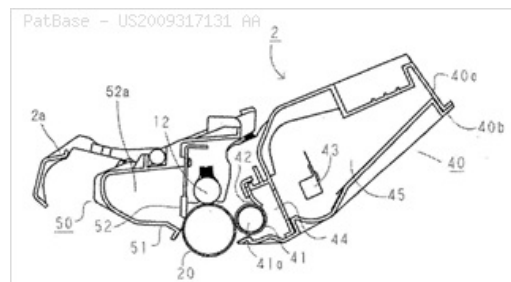
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Forward Citations: EP2291715 B1, EP2291715 A1, US10705481 BB, US10642216 BB, US10228635 BB, US10037000 BB, US9989915 BB, USRE46863 E, USRE46847 E, US9857730 BB, USD796574 S1, US9551957 BB, US9501031 BB, US9488951 BB, US9377714 BB, TWI536128 B, US9285765 BB, US9274499 BB, US9256161 BB, US9213306 BB, WO15119854 A3, US2015050050 AA, US9098048 BB, US9091994 BB, US9091995 BB, US2015153701 AA, US9025998 BB, US2015050049 AA, US8923731 BB, US8855534 BB, US2013322930 AA, US2013164035 AA, EP3045979 B1, RU2727791 C1, US10671015 BB, AU2017271569 BB, US10627769 BB, EP3467593 A4, RU2712933 C1, US10545450 BB, US10539923 BB, CN105531632 B, KR20180107312 A, JP2019015978 A2, KR102045168 B1, RU2692107 C2, CN105531632 A, US10203652 BB, US10203647 BB, US10191436 BB, JP6415198 B2, RU2670580 C2, JP2015079243 A2, US10095179 BB, KR101902662 B1, US9851688 BB, US9851685 BB, US9817333 BB, US9791825 BB, US2017185030 AA, EP3045979 A4, US2017102634 AA, US2017090403 AA, US9594343 BB, US9477201 BB, US9348303 BB, US8369744 BB, US8892004 BB, US9141069 BB, US8644732 BB, US2012294649 AA, US8995880 BB, US8688004 BB, US8644733 BB, US8494411 BB, US8433219 BB, US2009317135 AA, KR20190117817 A, KR102163324 B1, US10663911 BB, KR20170044013 A, KR102062425 B1, JP5944019 B2, US10394182 BB, US9851679 BB, WO15190159 A1, JP2015092274 A2, WO15076276 A1, CN108020999 A, CN105960610 A, CN106200297 B, CN106200297 A,

Abstract:

A process cartridge usable with an electrophotographic image forming apparatus, the process cartridge includes i) an electrophotographic photosensitive drum rotatable about an axis and having a photosensitive layer at its peripheral surface; ii) process means actable on the drum; iii) a coupling member for receiving an external force for rotating the drum, wherein the coupling member is capable of taking a first angular position for transmitting the external force to the drum, a second angular position inclined away from the axis of the drum from the first angular position, and a third angular position away from the axis of the drum from the first angle position; and iv) a regulating portion for regulating an inclination angle of the coupling member such that downward inclination angle of the coupling member is smaller than an inclination angle of the coupling member when the coupling member is at the second angular position.



5) Family number: 44950111 (JP2010079284 A2)

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Title: DEVELOPING CARTRIDGE AND ROTATIONAL FORCE TRANSMITTING PART
Priority: JP20080218466 20080827 JP20090191190 20090820

Family:	Publication number	Publication date	Application number	Application date
	JP2010079284 A2	20100408	JP20090191190	20090820
	JP5495671 B2	20140521	JP20090191190	20090820

Probable Assignee: CANON INC
Assignee(s):(std): CANON KK
Assignee(s): CANON INC ; CANON KABUSHIKI KAISHA
Inventor(s):(std): MIYABE SHIGEO ; TAKASAKA ATSUYUKI ; UENO TAKAHITO
International class G03G21/18
(IPC 8-9):

[Classification Explorer](#)

Cited documents: JP2010197893, JP2010079282, JP2010026501, JP2009300516, JP2008268927, JP2008233868, JP2008233867, JP2008170961, JP2007052185, JP2003202793, JP2010197893 A2, JP2010079282 A2, JP2010026501 A2, JP2009300516 A2, JP2008268927 A2, JP2008233868 A2, JP2008233867 A2, JP2008170961 A2, JP2007052185 A2, JP2003202793 A2,

Forward Citations: US10635045 BB, US10642216 BB, JP5649366 B2, JP6516815 B2, EP3029527 B1, JP2018022197 A2, US9989915 BB, JP6127917 B2, US9551957 BB, JP2015087585 A2, JP2012042592 A2, WO15043339 A1, US8923731 BB,

Abstract:

PROBLEM TO BE SOLVED: To provide a developing cartridge having a coupling mountable and demountable from a direction perpendicular to an axial direction of a driving shaft in response to movement of a rotary, and to provide a rotational force transmitting part. SOLUTION: The developing device includes a coupling member capable of taking an angular position for transmitting rotational force and a pre-engagement angular position in which the coupling member is inclined away from the rotational force transmitting angular position, and a regulating member including a permitting portion for permitting the coupling member to incline away from the pre-engagement angular position to an angular position for transmitting the rotational force, and a regulating portion for regulating the coupling member at the pre-engagement angular position.

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RU2014146572 A	20160610	RU20140146572	20141119
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RU2016127560 A	20180112	RU20160127560	20160708
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SG185962 A1	20121228	SG20120081998	20090827
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TWI620040 B	20180401	TW20160120556	20090827
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US8874004 BB	20141028	US20090547790	20090826
VN16444 A1	20170225	VN20110000787	20090827
WO10024457 A1	20100304	WO2009JP65375	20090827

Probable Assignee: CANON INC

Assignee(s):(std): CANON KK ; KENON KK ; MIYABE SHIGEO ; TAKASAKA ATSUSHI ; UENO TAKAHITO

Assignee(s): CANON INC ; CANON KABUSHIKI KAISHA ; CANON KABUSHIKI KAISHAJP ; KEHNON KABUSIKI KAJSSA ; KENON KABUSIKI KAJSYA

Inventor(s):(std): ATSUSHI TAKASAKA ; MIJABE SIGEO ; MIYABE SHIGEO ; MIYABE SIGEO ; SHIGEO MIYABE ; TAKAHITO UENO ; TAKASAKA ATSUSHI ; TAKASAKA ATSUSI ; TAKASAKA ATSUYUKI ; UENO TAKAHITO ; UENO TAKAKHITO

Agent(s): CANON EUROPE LTD; DEACONS; DERHAM CASSANDRA VIRGINIE; DREW AND NAPIER LLC; FITZPATRICK CELLA HARPER AND SCINTO; HITCHING PETER MATTHEW; OOO YURIDICHESKAYA GORODISSKIJ I PARTNERY FA; RIDOUT AND MAYBEE LLP; SPRUSON AND FERGUSON; YAMADA RYUICHI

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 TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8-9): F16D F16D1/00 F16D1/10 F16D3/205 G03G G03G15/00 G03G15/01 G03G15/04 G03G15/06 G03G15/08 G03G15/14 G03G21/00 G03G21/16 G03G21/18

International class (IPC 1-7): F16D1/10 G03G15/01

CPC: F16D1/10 F16D3/2052 G03G15/0121 G03G15/0152 G03G15/0173 G03G21/00 G03G21/1857 G03G2215/0177 G03G2221/1657

US class: 399/119 399/227 399/286 399/286P

[Classification Explorer](#)

Cited documents: JP11015265, WO08117878 A1, WO08081966 A1, WO08078836 A1, JP2008002671 A2, JP2006139230 A2, JP2004353807 A2, US2006240896 AA, US5809380 A, US6574446 BB, US2007122188 AA, US4743938 A, US7340197 BB, US6868245 BB, US6011942 A, US2008240796 AA, JP2002341658 A2, US2007071481 AA, US6876821 BB, EP1821160 A1, EP1768001 A2, US2008152388, US6032002, RU2289835 C2, KR100418163, KR100418163 B1, JP2007052185, JP2002048148, JP2002031153, JP5341589, JP2002048148 A2, JP2007052185 A2, JP5341589 A2, JP2002031153 A2, EP09788055, JP11015265 A2, JP2003202727 A2, EP2159645 A1, US2003147671 AA,

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Forward Citations: EP3702848 A1, EP3045979 B1, EP3686691 A1, US10671015 BB, KR20170091586 A, KR102079856 B1, EP3226078 B1, US10459402 BB, CN107111273 A, WO19124661 A1, US10203652 BB, EP3226078 A4, US9791825 BB, EP3045979 A4, US10831150 BB, US10761479 BB, US10739721 BB, US10579012 BB, US10558165 BB, US10474096 BB, US10416606 BB, US2019004472 AA, US10268156 BB, US10845756 BB, US10816931 BB, US10795312 BB, US10788790 BB, US10788789 BB, US10782647 BB, US10712709 BB, US10712710 BB, US10671018 BB, US10663915 BB, CN107407898 B, US10642216 BB, US10627778 BB, US10627769 BB, US10620582 BB, US10585391 BB, US10551793 BB, US10545450 BB, US10539923 BB, US10539924 BB, EP3444681 A4, US10520887 BB, AU2018202445 BB, AU2018202448 BB, AU2018202452 BB, AU2018202447 BB, AU2018202453 BB, US10429794 BB, US10394182 BB, US10345733 BB, US10248076 BB, US10209670 BB, US10191436 BB, CN107407898 A, US10095179 BB, US9989915 BB, US9964919 BB, US9939776 BB, US9886002 BB, US9874854 BB, US9874846 BB, US2017293255 AA, US9869960 BB, US9864331 BB, US9864333 BB, US9857766 BB, US9857764 BB, US9857765 BB, US9851688 BB, US9851685 BB, US2017090412 AA, US9846408 BB, US9841729 BB, US9841727 BB, US9841724 BB, US9841728 BB, US9836015 BB, US9836021 BB, US9817333 BB, US2017185033 AA, US2017227919 AA, US2017227927 AA, US2017185031 AA, US2017185030 AA, US9772602 BB, US2017227920 AA, US2017176915 AA, US2017227925 AA, US2017185027 AA, US2017192384 AA, US2017192386 AA, US9746826 BB, US9733614 BB, US9703257 BB, US9678471 BB, US9671751 BB, US9658592 BB, US9658593 BB, US9594343 BB, US9551957 BB, US8521060 BB, US9477201 BB, US9377755 BB, US9348303 BB, US2011103832 AA, US2011103823 AA, US2011103827 AA, US2010054806 AA, US8369744 BB, US9182733 BB, US9176468 BB, US8892004 BB, US9141069 BB, US8644732 BB, US2012294649 AA, US9134652 BB, US2014165761 AA, US8995880 BB, US8953981 BB, US8923731 BB, US2013322930 AA, US8798501 BB, US8688008 BB, US8688004 BB, US8670688 BB, US8644733 BB, US2013045030 AA, US2013028635 AA, US8494411 BB, US8483589 BB, US8433219 BB, US8422914 BB, US8369748 BB, US2009317135 AA, US10795311 BB, RU2716169 C1, US10452016 BB, RU2692943 C1, US10663911 BB, US10635045 BB, US10585387 BB, JP2016170396 A2, JP6516815 B2, KR20160114489 A, JP2018022197 A2, KR101907942 B1, US9684278 BB, CN107272374 A, CN103676561 B, CN103513534 B, CN102722094 A, CN103676561 A, CN103513534 A, WO15010538 A1,

Abstract:
A developing device is usable with an electrophotographic image forming apparatus including a shaft and a rotary unit mounting the device. When mounted, the device is movable perpendicular to a shaft axial direction in response to movement of the rotary unit and the shaft is not movable in that direction. The device includes a developing roller that contacts and separates from a drum in response to movement of the rotary unit, and a coupler transmitting a rotating force to the roller. The coupler includes a portion engaging the shaft to receive a rotating force and a portion transmitting the received rotating force to the roller. The coupler takes a first position for transmitting the rotational force to the roller, a position before the coupler engages the shaft and is inclined away from the first position, and a position for the disengagement of the coupler and the shaft.

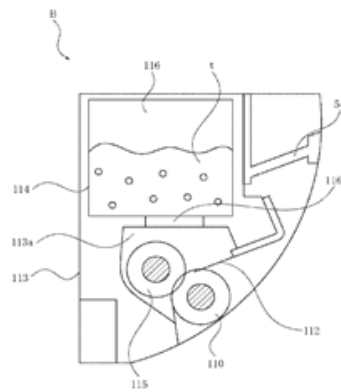


Fig. 1

7) Family number: 63365466 (US2016252847 AA)

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Title: CARTRIDGE, ROTARY UNIT, AND IMAGE FORMING APPARATUS

Priority: JP20150039424 20150227 KR20160021691 20160224 US20160052259 20160224
 US20170590782 20170509 US20180150047 20181002 KR20190058520 20190520
 JP20190135732 20190723 US20190567179 20190911 KR20190126788 20191014

Family:	Publication number	Publication date	Application number	Application date
	JP2016161716 A2	20160905	JP20150039424	20150227
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	KR20160105317 A	20160906	KR20160021691	20160224
	KR102034989 B1	20191021	KR20190058520	20190520
	KR20190057248 A	20190528	KR20190058520	20190520
	KR102172814 B1	20201102	KR20190126788	20191014
	KR20190119019 A	20191021	KR20190126788	20191014
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	US10120332 BB	20181106	US20170590782	20170509
	US2017242393 AA	20170824	US20170590782	20170509
	US10444702 BB	20191015	US20180150047	20181002
	US2019033778 AA	20190131	US20180150047	20181002
	US2020004199 AA	20200102	US20190567179	20190911

Probable Assignee: CANON INC**Assignee(s):(std):** CANON INC ; CANON KK**Assignee(s):** CANON KABUSHIKI KAISHA**Inventor(s):(std):** FUJINO TOSHIKI ; FUJINO TOSHITERU ; SATO KENSUKE ; UNEME TETSUJI ; UNEME TETSUSHI**Agent(s):** CANON USA INC IP DIVISION; VENABLE LLP**International class (IPC 8-9):** F16D1/10 G03G15/00 G03G15/01 G03G15/08 G03G21/16 G03G21/18**CPC:** F16D1/101 G03G15/0121 G03G15/0891 G03G15/757 G03G21/1647 G03G21/1671 G03G21/181 G03G21/1825 G03G21/1842 G03G21/186 G03G2221/1657**US class:** 1/1 399/167[Classification Explorer](#)

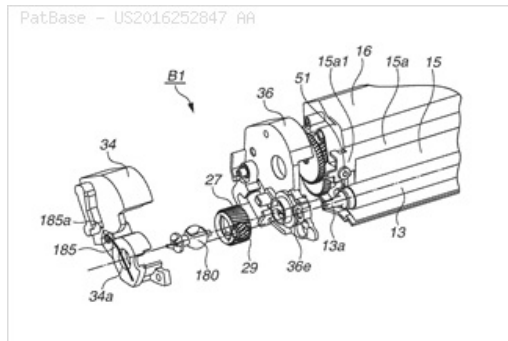
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Forward Citations: US10120332 BB, US2017242393 AA, US10175629 BB, US2017168446 AA, KR20190119019 A, KR102172814 B1,

Abstract:

A cartridge includes a coupling member, a transmitted member, and a rotary member. The transmitted member includes an accommodating portion configured to accommodate the coupling member, and a protruded portion integrally formed with an inner wall of the accommodating portion and protruding from the inner wall toward an inside of the accommodating portion. The coupling member includes a free end portion having a rotational force receiving portion that receives a rotational force, a connected portion connected to the transmitted member in such a manner that at least a part of the connected portion can be accommodated in the accommodating portion, and a recessed portion provided at the connected portion so that the protruded portion can enter. An inclination angle of a rotation axis of the coupling member relative to a rotation axis of the transmitted

member is variable.



8) Family number: 62537603 (US2017261926 AA)

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Title: CARTRIDGE AND ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS

Priority: JP20140242586 20141128 WO2015JP84223 20151130 AU20150354571 20151130
CA20152971802 20151130 EP20150863854 20151130 JP20150234282 20151130
RU20170122526 20151130 RU20190124002 20151130 US20170605167 20170525
AU20180250500 20181019 JP20180233901 20181213 JP20180233900 20181213
US20190274409 20190213 AU20200244588 20201002

Family:	Publication number	Publication date	Application number	Application date
	AU2015354571 AA	20170601	AU20150354571	20151130
	AU2015354571 BB	20180719	AU20150354571	20151130
	AU2018250500 AA	20181115	AU20180250500	20181019
	AU2018250500 BB	20200702	AU20180250500	20181019
	AU2020244588 AA	20201105	AU20200244588	20201002
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	CO20180014409 A2	20190118	CO20180014409	20170524
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US10782647 BB	20200922	US20190274409	20190213
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WO16084986 A1	20160602	WO2015JP84223	20151130

Probable Assignee: CANON INC

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

Assignee(s): KASHIIDE YOSUKE ; KENON KABUSIKI KAJSYA ; MUNETSUGU HIROYUKI ; SATO MASAACKI

Inventor(s):(std): HIROYUKI MUNETSUGU ; KASHIIDE YOSUKE ; MASAACKI SATO ; MUNETSUGU HIROYUKI ; MUNETSUGU HIROYUKI ; SATO MASAACKI ; YOSUKE KASHIIDE

Inventor(s): KASHIIDE ESUKI ; MUNETSUGU KHIROYUKI

Agent(s): DEACONS; DORA AMBADAR SPST; DURAN CORRETTIER SLP; ESTUDIO VILLASECA Y CIA; HUMBERTO RUBIO CAMACHO; NUEKHET SERRA CORAL; RIDOUT AND MAYBEE LLP; SPRUSON AND FERGUSON; TBK; VENABLE LLP; YAMADA RYUICHI; YURIDICHESKAYA GORODISSKIY I PARTNERY OOO FA

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 EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR 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 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

International class (IPC 8-9): G03G G03G15/00 G03G15/06 G03G15/08 G03G21/16 G03G21/18

International class (IPC 1-7): G03G21/18

CPC: G03G21/18 G03G21/1814 G03G21/1821 G03G21/1842 G03G21/1853 G03G21/186 G03G21/1864

US class: 1/1 399/111

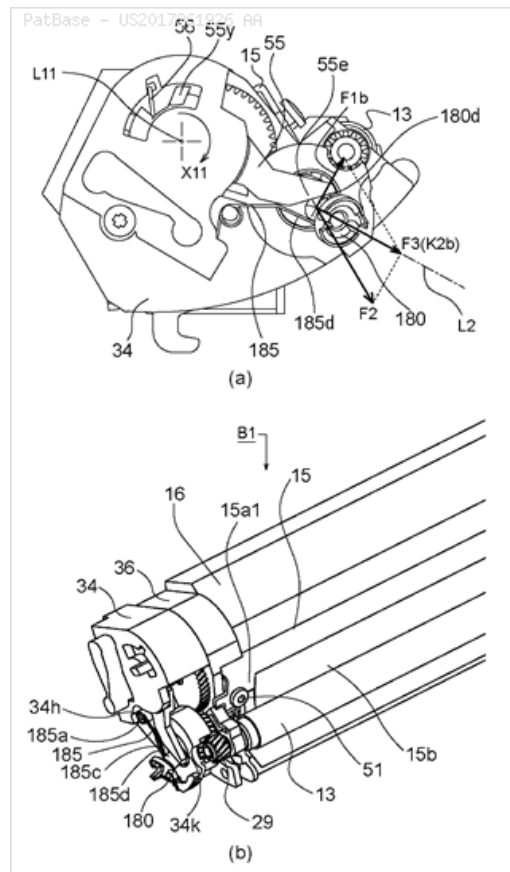
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Abstract:

In a cartridge structure employing an inclinable coupling member engaging with a rotational force transmitting portion of an electrophotographic image forming apparatus, the coupling member is unable to engage with the rotational force transmitting portion of the electrophotographic image forming apparatus when the mounting and dismounting direction and the developing/spacing direction relative to the electrophotographic image forming apparatus of different from each other. under the circumstances, a coupling lever **55** contacting and retracting relative to the coupling member **180** in interrelation with the mounting and dismounting operation of a developing cartridge **B1**, and a coupling spring **56** for the coupling lever **55** to apply an urging force to the coupling member **180** are provided



Title: ROTATIONAL FORCE TRANSMITTING PARTS

Priority:

JP20060346191	20061222	JP20070042666	20070222	JP20070330304	20071221
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Family:

Publication number	Publication date	Application number	Application date
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Designated states:

AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI 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 PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG UZ VC VN ZA ZM ZW

International class
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International class
(IPC 1-7):

G03G15/00 G03G21/16 G03G21/18

CPC:

G03G15/02 G03G15/751 G03G15/757 G03G21/16 G03G21/1671 G03G21/18 G03G21/1853 G03G21/1857 G03G21/186 G03G2221/1657

US class:

1/1 399/111 399/117 399/167 399/167P

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EP3156853 B1, CN105589318 A, RU2671929 C1, RU2637370 C2, KR101779754 B1, KR101746368 B1, EP3045979 A4, EP3156853 A1, KR20160104744 A, KR101709998 B1, KR20140106623 A, KR101653333 B1, EP2790065 A4, US8874004 BB, CN102109806 A, WO09153890 A1, USRE48047 E, US9723705 BB, US9681531 BB, US2014094638 AA, US9316988 BB, US2014212174 AA, US2020033799 AA, US2020033797 AA, US2020033798 AA, US2020033796 AA, US2020033792 AA, US2020033791 AA, US2020033794 AA, US2020033795 AA, US2020033793 AA, US2020041954 AA, US2020041953 AA, US9952555 BB, US9588478 BA, US8909102 BB, US2014119778 AA, RU2691137 C2, RU2667311 C1, US2018284686 AA, US10571850 BB,

DE102014114266 B4

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DE102015113481 A1

DE102015104038 A1

DE102014114266 A1

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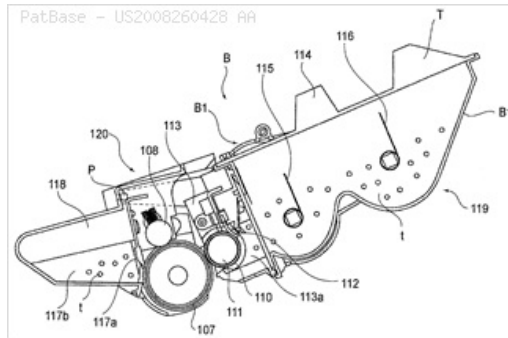
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Abstract:

A rotating force transmitting part for an electrophotographic photosensitive drum for a main assembly of the electrophotographic image forming apparatus, wherein the main assembly of the electrophotographic image forming apparatus includes a driving shaft, to be driven by a motor, having the rotating force applying portion, and wherein the electrophotographic photosensitive drum is dismountable from the main assembly of the electrophotographic image forming apparatus in a direction substantial perpendicular with an axial direction of the driving shaft, the rotating force transmitting part includes a coupling member engageable with the rotational force applying portion to receive a rotational force for rotating the electrophotographic photosensitive drum in the state in which electrophotographic photosensitive drum is mounted to the main assembly of the electrophotographic image forming apparatus, wherein the coupling member being capable of taking a rotational force transmitting angular position for transmitting the rotational force for rotating the electrophotographic photosensitive drum to the electrophotographic photosensitive drum and a disengaging angular position in which the coupling member is inclined away from the axis of the electrophotographic photosensitive drum from the rotational force transmitting angular position, wherein when the process cartridge is dismounted from the main assembly of the electrophotographic image forming apparatus in a direction substantially perpendicular to the axis of the electrophotographic photosensitive drum, the coupling member moves from the rotational force transmitting angular position to the disengaging angular position.



10) Family number: 27507927 (US240796 A)

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Title: PROCESS OF AND APPARATUS FOR MANUFACTURING GRAPE-SUGAR

Family:	Publication number	Publication date	Application number	Application date
	US240796 A	18810426		00000000

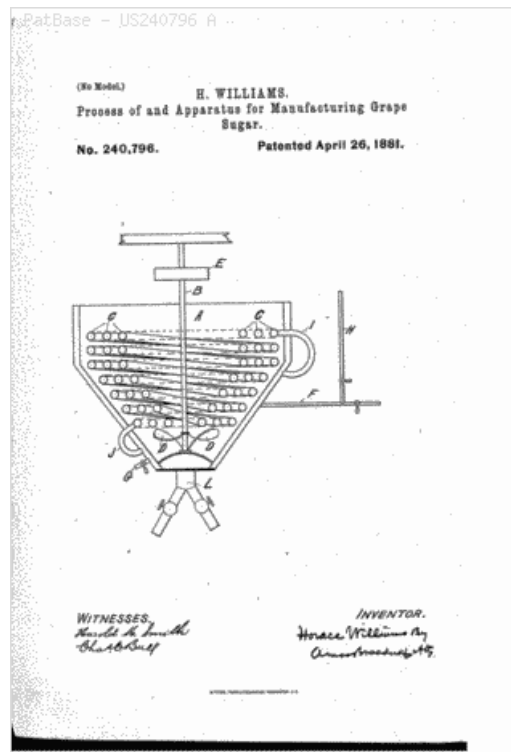
Inventor(s): HORACE WILLIAMS

CPC: C13K1/10

US class: 127/15 127/60

[Classification Explorer](#)

Forward Citations: US2018253055 AA,



11) Family number: 32384237 (US2005244188 AA)

© PatBase

Title: ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS

Priority: JP20040134624 20040428

Family:	Publication number	Publication date	Application number	Application date
	CN100478807 C	20090415	CN200510066598	20050428
	CN1690887 A	20051102	CN200510066598	20050428
	JP2005316192 A2	20051110	JP20040134624	20040428
	US2005244188 AA	20051103	US20040960227	20041008
	US7155141 BB	20061226	US20040960227	20041008

Probable Assignee: CANON INC

Assignee(s):(std): CANON KK

Assignee(s): CANON INC ; CANON KABUSHIKI KAISHA

Inventor(s):(std): HIDEKI KOTSUKA ; KOTSUKA HIDEKI ; MASAACKI SATO ; MIYABE SHIGEO ; SATO MASAACKI ; SHIGEO MIYABE ; TAKATSUKA HIDEKI

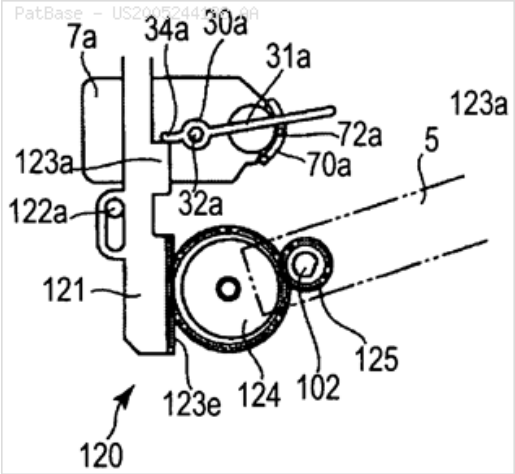
Agent(s): FITZPATRICK CELLA HARPER AND SCINTO
International class (IPC 8-9): G03G15/00 G03G15/01 G03G21/16 G03G21/18
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CPC: G03G21/1832 G03G2215/0119 G03G2221/1609 G03G2221/1884
US class: 399/114 399/114P

[Classification Explorer](#)

Cited documents: US7046942 BA, US6968142 BA, US6795666 BA, US6714749 BA, US6678488 BA, US6640066 BA, US6173140 B1, JP2003241620 A2, JP2002148910 A2, US2002191981 AA, US5585889 A, US6968142 BB, US6317572 BA, US5839028 A, US6640066 BB, US2002159787 AA, US6128452 A, US5974288 A, US5966566 A, US6795666 BB, US2002131790 AA, US5950047 A, US5452056 A, US2003156856 AA, US6282390 BA, US5946531 A, US5943529 A, US5940658 A, US5926666 A, US5331373 A, US6075957 A, US5911096 A, US7046942 BB, US6064843 A, US6215969 BA, US6714749 BB, US5878309 A, US6351620 BA, US6185390 BA, US6029031 A, US5873012 A, US6678488 BB, US6173140 BA, JP7230197 A2, JP2001142378 A2,

Forward Citations: US10845756 BB, US10824110 BB, US10816931 BB, US10795312 BB, US10788790 BB, US10788789 BB, US10761476 BA, US10712709 BB, US10712710 BB, US10712708 BB, US10705480 BB, US10698363 BA, US10671018 BB, US10649399 BA, US10649389 BA, US10642216 BB, US10627778 BB, US10620582 BB, US10591868 BB, US10585391 BB, US10551793 BB, US10545450 BB, US10539924 BB, US10539923 BB, US10534313 BB, US10520887 BB, US10429794 BB, US10401788 BB, US10386786 BB, US10353339 BB, US10228652 BB, US10209670 BB, US10168664 BB, US10139777 BB, US10095179 BB, US9989915 BB, US9939776 BB, US9885974 BB, US9886002 BB, US9874854 BB, US9874846 BB, US9869960 BB, US9864331 BB, US9864333 BB, US9857766 BB, US9857765 BB, US9857764 BB, US9851688 BB, US9851685 BB, US9846408 BB, US9841729 BB, US9841727 BB, US9841728 BB, US9841724 BB, US9836021 BB, US9836015 BB, US9836020 BB, US9817333 BB, US9804560 BB, US9772602 BB, US9746826 BB, US9733614 BB, US9703257 BB, US9678471 BB, US9671751 BB, US9658592 BB, US9658593 BB, US9632451 BB, US9594343 BB, US9563169 BA, US9551957 BB, US7983589 BB, US8401442 BB, US9529298 BB, US9523947 BB, US9477201 BB, US9429877 BB, US9429906 BB, US9377755 BB, US9348303 BB, US2011103827 AA, US2011091239 AA, US2010124432 AA, US2011020031 AA, US8676090 BA, US8532533 BB, US8452210 BB, US8295734 BB, US2009317128 AA, US2009317134 AA, US2010054807 AA, US2010054806 AA, US2010054805 AA, US2010081112 AA, US8688004 BB, US8369744 BB, US2014356016 AA, US2008310882 AA, US2008181678 AA, US2008260428 AA, US9176468 BB, US2008138107 AA, US2008112726 AA, US8682215 BA, US8630564 BB, US8280278 BB, US8275286 BB, US2007071496 AA, US9134696 BB, US2006151934 AA, US9104141 BB, US8923731 BB, US2014212161 AA, US2013322930 AA, US8688008 BB, US8521060 BB, US8494411 BB, US8483589 BB, US8437669 BB, US8433219 BB, US8417152 BB, US8391748 BB, US8369748 BB, US8326176 BB, US8270879 BB, US8233821 BB, US8107854 BB, US7934357 BB, US7796916 BB, US7729636 BB, US7725051 BB, US7711287 BB, US7660550 BB, US9383709 BB, US2010054800 AA, US2009074454 AA, US2008240773 AA, US2006285878 AA, US2006008289 AA, US2005169664 AA, US2005169665 AA, US8862023 BB, US2013121723 AA, US8185015 BB, US2010272466 AA, US7139508 BB, US7689146 BB, US7283766 BB, US7499663 BB, US7155140 BB, JP2019025655 A2, JP2008292671 A2, JP2010256486 A2, CN101872138 A,

Abstract:
A plurality of process cartridges are detachably mountable to an electrophotographic image forming apparatus along a substantially vertical line. The cartridges each have an electrophotographic photosensitive drum, process means actable on the drum, and a drum shutter movable between first and second positions. The apparatus includes mounting portions for detachably mounting the cartridges, an opening for permitting passage of the cartridges into the apparatus, a covering member for covering the opening, and a pressing member for moving the shutter to the second position thereof when the covering member moves from an open position to a closed position. An angle of rotation of the shutter rotated from the first to the second position in the bottommost cartridge is larger than an angle of rotation of the shutter rotated from the first position to the second position in another one of said process cartridges.



12) Family number: 62989737 (US2016216637 AA) © PatBase

Title: GEAR UNIT, DEVELOPING DEVICE, AND MANUFACTURING METHOD THEREFOR
Priority: JP20150012708 20150126
Family:

Publication number	Publication date	Application number	Application date
JP2016138943 A2	20160804	JP20150012708	20150126
JP6494304 B2	20190403	JP20150012708	20150126
US10101688 BB	20181016	US20160005462	20160125
US2016216637 AA	20160728	US20160005462	20160125

Probable Assignee: CANON INC
Assignee(s):(std): CANON KK
Assignee(s): CANON INC

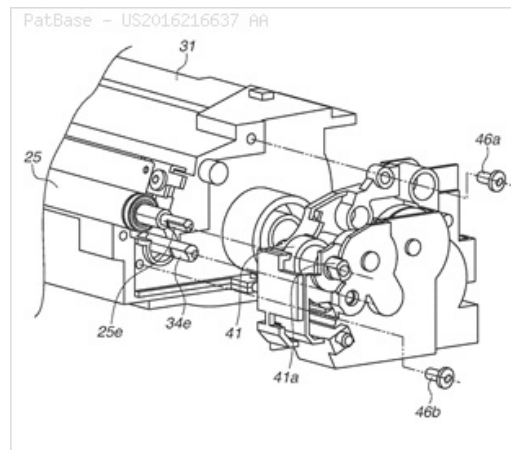
Inventor(s):(std): GOFUKU SHUICHI ; MAEJIMA HIDEKI ; MAESHIMA HIDEKI ; SHIMIZU HIROKI
Agent(s): CANON USA INC IP DIVISION
International class (IPC 8-9): B23P15/14 F16H1/06 F16H1/20 F16H57/00 G03G15/08 G03G21/16 G03G21/18
CPC: F16H1/06 F16H1/20 G03G15/0806 G03G15/0896 G03G21/1647 G03G2221/1657
US class: 1/1 399/279

[Classification Explorer](#)

Cited documents: US2016124347 AA, US2015277370 AA, US2015277367 AA, US2015205226 AA, US2015185662 AA, US2015117879 AA, US2015090060 AA, US2015071684 AA, US2015003868 AA, US2013209137 AA, US2013170845 AA, US20111318052 AA, US2011280621 AA, US2005115043 AA, US5294968 A, JP2001159450, JP5019613, JP2015069108, WO14092208, JP2008174362, JP2014106442, JP6222625, JP9311517, JP2009288286, JP2014016497, US2008199212, US2008199212 AA, JP2001159450 A2, JP5019613 A2, JP2015069108 A2, WO14092208 A1, JP2008174362 A2, JP2014106442 A2, JP6222625 A2, JP9311517 A2, JP2009288286 A2, JP2014016497 A2,

Abstract:

A gear unit includes a bearing configured to rotatably support a developer bearing member for developing an electrostatic image, a developing gear configured to include an engaging portion that engages with a shaft of the developer bearing member, at least one drive transmission gear configured to be engaged with the developing gear in such a manner that drive force is transmitted between the gears, and a cover member configured to be attached to the bearing so as to sandwich the developing gear between the bearing and the cover member, wherein the cover member supports the developing gear until the developing gear is engaged with the developer bearing member.



13) Family number: 46712092 (US2010221036 AA)

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Title: CARTRIDGE AND ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS
Priority: JP20090045057 20090227

Family:	Publication number	Publication date	Application number	Application date
	CN101819400 A	20100901	CN201010126084	20100226
	CN101819400 B	20120919	CN201010126084	20100226
	JP2010197893 A2	20100909	JP20090045057	20090227
	JP5344580 B2	20131120	JP20090045057	20090227
	US2010221036 AA	20100902	US20100708787	20100219
	US8478166 BB	20130702	US20100708787	20100219

Probable Assignee: CANON INC
Assignee(s):(std): CANON KK ; HARA NOBUYOSHI ; MORIOKA MASANARI
Assignee(s): CANON INC ; CANON KABUSHIKI KAISHA
Inventor(s):(std): HARA NOBUYOSHI ; MASANARI MORIOKA ; MORIOKA MASANARI ; MORIOKA MASAYA ; NOBUYOSHI HARA
Agent(s): FITZPATRICK CELLA HARPER AND SCINTO
International class (IPC 8-9): G03G15/00 G03G15/02 G03G21/18
CPC: G03G21/1853 G03G21/186 G03G21/1864
US class: 399/110 399/110P 399/167

[Classification Explorer](#)

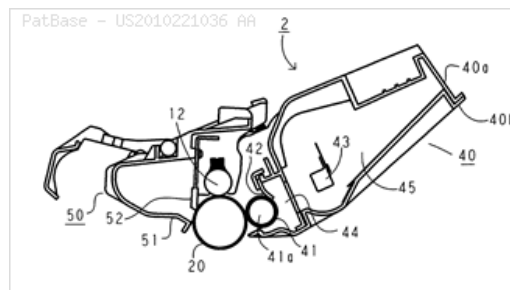
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Forward Citations: US10635047 BB, US9494906 BB, EP3168692 B1, US2018341214 AA, US10671015 BB, US10635045 BB, US10585387 BB, US2018046133 AA, EP3141965 A4, WO17202352 A1, USD796574 S1, US2017075300 AA, EP3168692 A1, EP3021168 A4, US2009317131 AA, US8270876 BB, US10782647 BB, KR20170091586 A, KR102079856 B1, KR20170044013 A, KR102062425 B1, JP5495671 B2, JP6299446 B2, JP2015215580 A2, US9690248 BB, JP5791315 B2, US9400484 BB, JP5943716 B2, JP2013250518 A2, US9268303 BB, WO15005446 A1, WO14157113 A1, JP2012194210 A2, JP2010079284 A2, CN108427257 A, CN109116707 A, EP3029527 B1, CN105652617 B, CN104516224 B, CN105359041 B, US9996050 BB, CN105652617 A, CN105093871 B, US9846409 BB, CN104516224 A, CN105359041 A, CN105093871 A, WO15169205 A1, WO15043339 A1,

Abstract:

A cartridge mountable and dismountable by moving in the direction crossing with an axial direction of the drive shaft of a main assembly of the apparatus, includes a rotatable member rotatable by receiving a rotational force from the apparatus; a coupling engageable with the rotational force applying portion to receive a force for rotating said rotatable member, said coupling including

a coupling member rotatable about an axis, a first rotational force receiving portion, provided at one end portion of said coupling member, for receiving the rotational force from the driving shaft, a rotational force transmission member engaged with the other end portion of said coupling member and having opposite ends projected out in a crossing wherein said coupling member is pivotable between a transmitting angular position for transmitting the rotational force from the driving shaft to said rotatable member and a mounting-and-dismounting angular position which is inclined relative to the axis of said rotatable member; a flange mounted to said rotatable member and rotatable about an axis, said flange including an opening accommodating said transmission member with a gap, a regulating portion, provided in said opening, for regulating movement of said transmission member in the crossing direction when said coupling takes the transmitting angular position, a second rotational force receiving portion for being abutted by said transmission member to receive the rotational force from said coupling, an opposing portion opposing to said second receiving portion, wherein in a state that said coupling is in the transmitting angular position and that one end of said transmission member contacts to said regulating portion to be confined in movement, when said coupling inclines relative to said flange such that a side in which a projection distance of said rotational force transmission member is relatively smaller moves away from said first receiving portion, an engagement depth between said side of said transmission member and said second receiving portion and an engagement depth between said side of said transmission member and said opposing portion are larger than zero.



14) Family number: 42109621 (US2008197914 AA)

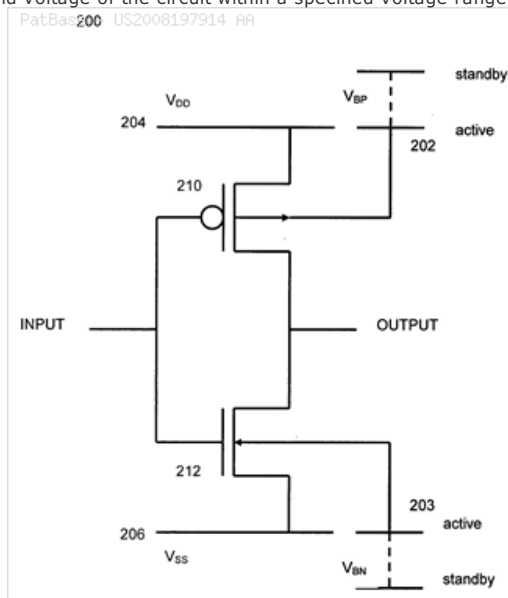
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Title:	DYNAMIC LEAKAGE CONTROL USING SELECTIVE BACK-BIASING																																																																
Priority:	US20070707602 20070215		WO2008US53890 20080213		US20110159052 20110613																																																												
Family:	<table><thead><tr><th>Publication number</th><th>Publication date</th><th>Application number</th><th>Application date</th><th></th></tr></thead><tbody><tr><td>CN101689856 A</td><td>20100331</td><td>CN200880012112</td><td>20080213</td><td></td></tr><tr><td>EP2127083 A1</td><td>20091202</td><td>EP20080729798</td><td>20080213</td><td></td></tr><tr><td>IN05925DN2009 A</td><td>20100611</td><td>IN2009DN05925</td><td>20090915</td><td></td></tr><tr><td>IN288731 B</td><td>20171027</td><td>IN2009DN05925</td><td>20090915</td><td></td></tr><tr><td>JP2010519612 T2</td><td>20100603</td><td>JP20090549706T</td><td>20080213</td><td></td></tr><tr><td>KR101537792 B1</td><td>20150720</td><td>KR20097019302</td><td>20080213</td><td></td></tr><tr><td>KR20090119911 A</td><td>20091120</td><td>KR20097019302</td><td>20080213</td><td></td></tr><tr><td>US2008197914 AA</td><td>20080821</td><td>US20070707602</td><td>20070215</td><td></td></tr><tr><td>US2011279938 AA</td><td>20111117</td><td>US20110159052</td><td>20110613</td><td></td></tr><tr><td>US8314647 BB</td><td>20121120</td><td>US20110159052</td><td>20110613</td><td></td></tr><tr><td>WO08101036 A1</td><td>20080821</td><td>WO2008US53890</td><td>20080213</td><td></td></tr></tbody></table>					Publication number	Publication date	Application number	Application date		CN101689856 A	20100331	CN200880012112	20080213		EP2127083 A1	20091202	EP20080729798	20080213		IN05925DN2009 A	20100611	IN2009DN05925	20090915		IN288731 B	20171027	IN2009DN05925	20090915		JP2010519612 T2	20100603	JP20090549706T	20080213		KR101537792 B1	20150720	KR20097019302	20080213		KR20090119911 A	20091120	KR20097019302	20080213		US2008197914 AA	20080821	US20070707602	20070215		US2011279938 AA	20111117	US20110159052	20110613		US8314647 BB	20121120	US20110159052	20110613		WO08101036 A1	20080821	WO2008US53890	20080213	
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Assignee(s):	ADVANCED MICRO DEVICES INCORPORATED																																																																
Inventor(s):(std):	CHEN QI ; DANIEL SHIMIZU ; DAVID WANG ; QI CHEN ; SHIMIZU DANIEL ; WANG CHI SHUNG DAVID ; WANG DAVID																																																																
Agent(s):	COURTNEY BARBARA B ET AL; COURTNEY STANIFORD AND GREGORY LLP; REEVE ANNA ELIZABETH; VOLPE AND KOENIG PC																																																																
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CPC:	H03K19/0013 H03K2217/0018																																																																
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Abstract:

Embodiments of a dynamic leakage control circuit for use with graphics processor circuitry are described. The dynamic leakage control circuit selectively enables back biasing of the transistors comprising the graphics processor circuits during particular modes of operation. The back biasing levels are controlled by two separate power rails. A first power rail is coupled to an existing power supply and the second power rail is coupled to a separate adjustable voltage regulator. A separate voltage regulator may also be provided for the first power rail. A hardware-based state machine or software process is programmed to detect the occurrence of one or more modes of operation and adjust the voltage regulators for the first and second power rails to either

enable or disable the back biasing state of the circuit, or alter the threshold voltage of the circuit within a specified voltage range.



15) Family number: 44149550 (US2009317134 AA)

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Title: CARTRIDGE, ASSEMBLING METHOD FOR CARTRIDGE, AND DISASSEMBLING METHOD FOR CARTRIDGE

Priority: JP20080161117 20080620 JP20090116175 20090513 JP20090116176 20090513
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Assignee(s): CANON INC ; CANON KABUSHIKI KAISHA
Inventor(s):(std): ATSUSHI TAKASAKA ; MIYABE SHIGEO ; SHIGEO MIYABE ; TAKAHITO UENO ; TAKASAKA ATSUSHI ; TAKASAKA ATSUYUKI ; UENO TAKAHITO
Agent(s): FITZPATRICK CELLA HARPER AND SCINTO; VENABLE LLP
International class (IPC 8-9): F16D1/10 F16D1/108 G03G15/01 G03G15/04 G03G15/08 G03G21/16 G03G21/18
CPC: G03G15/08 G03G15/0806 G03G21/1647 G03G21/1814 G03G21/186
US class: 1/1 399/109 399/119 399/119P 399/262 399/286

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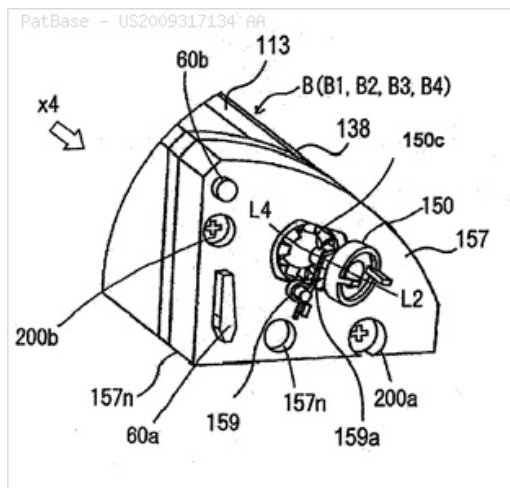
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Forward Citations:

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Abstract:

A cartridge detachably mountable to a main assembly of an electrophotographic image forming apparatus, includes a developer accommodating portion for accommodating a developer; a developing roller for developing an electrostatic latent image formed on an electrophotographic photosensitive drum with the developer accommodated in the developer accommodating portion; a cartridge frame extended in a longitudinal direction of the developing roller; a bearing member, provided at one longitudinal end portion of the cartridge frame, for supporting a developing roller shaft portion at one longitudinal end portion of the developing roller; a rotational force receiving member for receiving, from the main assembly, a rotational force for rotating the developing roller, in a state in which the cartridge is mounted to the main assembly; a side cover provided outside the bearing member with respect to a longitudinal direction of the cartridge frame; a first fastening member fastening the bearing member to the cartridge frame to mount the bearing member to the cartridge frame; and a second fastening member fastening the side cover to the cartridge frame to mount the side cover to the cartridge frame.



16) Family number: 67015709 (US2018081298 AA)

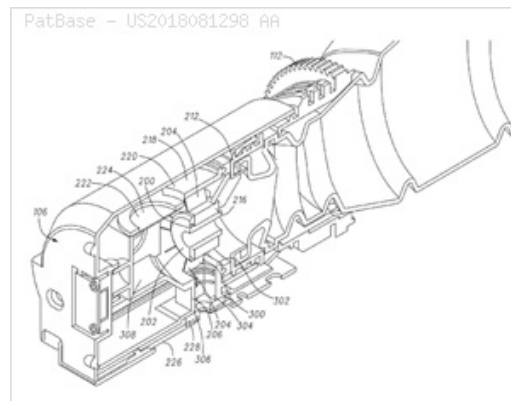
© PatBase

Title: SPINDLE DISPENSING TONER CARTRIDGE**Priority:** WO2016US22674 20160316 US20160531704 20160316

Publication number	Publication date	Application number	Application date
EP3430477 A1	20190123	EP20160894746	20160316
EP3430477 A4	20190327	EP20160894746	20160316
US10228634 BB	20190312	US20160531704	20160316
US10261440 BB	20190416	US20160531704	20160316
US2018081298 AA	20180322	US20160531704	20160316
WO17160287 A1	20170921	WO2016US22674	20160316

Probable Assignee: KATUN CORP**Assignee(s):(std):** KATUN CORP**Inventor(s):(std):** AMBERG JOSEPH ALLEN ; BAYLISS RYAN ; BAYLSS RYAN ; ERCKSON TERRY DEAN ; ERICKSON TERRY DEAN**Agent(s):** GOULD JAMES R ET AL; SCHWEGMAN LUNDBERG AND WOESSNER PA; SCHWEGMAN LUNDBERG WOESSNER LTD**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 EG ES FI FR GA GB GD GE GH GM 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**International class** G03G15/00 G03G15/06 G03G15/08**(IPC 8-9):****CPC:** G03G15/0872 G03G15/0886 G03G15/0889 G03G2215/0678**US class:** 1/1 399/260[Classification Explorer](#)**Cited documents:** US5918095 A, US7398038 BB, US7702262 BB, US7706699 BB, US7720416 BB, US7720417 BB, US7747202 BB, US7822371 BB, US7835675 BB, US7840167 BB, US7853183 BB, US7853184 BB, US8025796 BB, US8050597 BB, US8290378 BB, US8311447 BB, US8532542 BB, US8923734 BB, US2005169672 AA, US2013322930 AA, US2014079440 AA, US2014079438 AA, US2007172252 AA, US2012183333 AA,**Forward Citations:** USD832338 S1, USD831738 S1,**Abstract:**

A cartridge for use with an image forming apparatus. The cartridge includes a container configured for storing a volume of particulate image forming material and a dispensing port in communication with the container. The dispensing port includes a perimeter lip extending around a delivery passage. A dispensing spindle is rotatable relative to at least the dispensing port. The dispensing spindle includes a spindle core a plurality of arms extending from the spindle core. Each of the arms includes a sweeping face configured to sweep across the perimeter lip to convey a quantity of the particulate image forming material to the dispensing port.

**17) Family number: 48847755** (US2011103812 AA)

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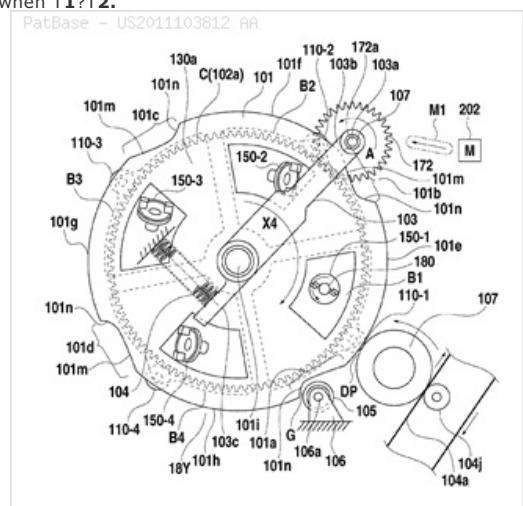
Title: IMAGE FORMING APPARATUS**Priority:** JP20090250819 20091030

Publication number	Publication date	Application number	Application date
CN102053528 A	20110511	CN201010519912	20101026
CN102053528 B	20130529	CN201010519912	20101026
JP2011095603 A2	20110512	JP20090250819	20091030
JP5523061 B2	20140618	JP20090250819	20091030
US2011103812 AA	20110505	US20100914768	20101028
US8369722 BB	20130205	US20100914768	20101028

Probable Assignee: CANON INC**Assignee(s):(std):** AOKI DAISUKE ; CANON KK ; MIYABE SHIGEO ; TAKASAKA ATSUSHI**Assignee(s):** CANON INC ; CANON KABUSHIKI KAISHA**Inventor(s):(std):** AOKI DAISUKE ; ATSUSHI TAKASAKA ; DAISUKE AOKI ; MIYABE SHIGEO ; SHIGEO MIYABE ; TAKASAKA ATSUSHI ; TAKASAKA ATSUYUKI

Agent(s): CANON USA INC IP DIVISION
International class (IPC 8-9): G03G15/00 G03G15/01 G03G15/08
CPC: G03G15/0121 G03G15/0806 G03G21/1647 G03G21/1676 G03G2215/0177 G03G2221/1657 G03G2221/1815
US class: 399/227 399/227S 399/44 399/44P
[Classification Explorer](#)
Cited documents: CA2671325 AA, EP2137577 A1, AU2008230339 AA, US5724634 A, US2007098461 AA, JP2008268927, JP2005300947, JP2004286929, JP11174826, JP3215192, JP2008058513, JP2004093608, JP2008058513 A2, JP2004093608 A2, JP2008268927 A2, JP3215192 A2, JP11174826 A2, JP2005300947 A2, JP2004286929 A2, JP2006208939 A2, US2008240796 AA,
Forward Citations: US10606207 BB, WO15119854 A3, US10642216 BB, US10627769 BB, US10545450 BB, CN105531632 B, WO15119854 A2, CN105531632 A, US10191436 BB, TWI640844 B, US10095179 BB, US9989915 BB, EP3102981 A4, TWI581074 B, US9594343 BB, US9551957 BB, US9477201 BB, US9348303 BB, US9329559 BB, US2009219706 AA, US8369744 BB, US9141069 BB, US8644732 BB, US2012294649 AA, US8923731 BB, US2013322930 AA, US2014041476 AA, US8688004 BB, US2012301199 AA, US8644733 BB, US8494411 BB, US8433219 BB, US2012251175 AA, US2009317135 AA, US8036587 BB, EP3045979 B1, RU2727791 C1, US10671015 BB, RU2712933 C1, KR20180107312 A, JP2019015978 A2, KR102045168 B1, RU2692107 C2, US10203652 BB, CN107390485 A, JP6415198 B2, RU2670580 C2, JP2015079243 A2, KR101902662 B1, US9791825 BB, WO15037744 A1, CN105960610 A, EP3029527 B1, WO15043339 A1,

Abstract:
An image forming apparatus includes a development device including a development roller and a driving force receiving member, a movable member configured to move the development device between a development position and a retracting position, a first driving force transmission member configured to transmit a driving force to the movable member, a second driving force transmission member configured to engage with the driving force receiving member and transmit the driving force to the driving force receiving member, and a controller configured to perform drive control for the first driving force transmission member based on a temperature detected by a sensor. If $a1$ represents acceleration of the development device in a case where the temperature is $T1$ and the driving force receiving member disengages from the second driving force transmission member and $a2$ represents acceleration of the development device in a case where the temperature is $T2$ and the driving force receiving member disengages from the second driving force transmission member, the controller performs the drive control for the first driving force transmission member so as to satisfy a relationship $a1 \geq a2$ when $T1 \geq T2$.



18) Family number: 44129424 (US2009317132 AA)

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Title: PROCESS CARTRIDGE, ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS AND ELECTROGRAPHIC PHOTSENSITIVE DRUM UNIT
Priority: JP20080161530 20080620 WO2009JP61673 20090619 AU20090261109 20090619
CN200980122336 20090619 EP20090766760 20090619 US20090488193 20090619
HK20110107589 20110721 US20120358811 20120126 US20120724099 20121221
AU20130202177 20130328 US20130088996 20131125 AU20140277817 20141219
AU20170210609 20170804 AU20190210524 20190730

Family:	Publication number	Publication date	Application number	Application date
	AU2009261109 AA	20091223	AU20090261109	20090619
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	AU2014277817 AA	20150122	AU20140277817	20141219
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	AU2017210609 AA	20170824	AU20170210609	20170804
	AU2017210609 BB	20190502	AU20170210609	20170804
	AU2019210524 AA	20190815	AU20190210524	20190730
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VN16453 A1	20170225	VN20130002559	20090619
VN19306 A1	20180625	VN20150002899	20090619
WO09154312 A1	20091223	WO2009JP61673	20090619

Probable Assignee: CANON INC

Assignee(s):(std): ASANUMA NAOYA ; CANON KK ; HISANO MASATO ; KENON KK ; MORIOKA MASANARI ; NAKAZAWA RYOSUKE ; SASAKI TERUHIKO

Assignee(s): CANON INC ; CANON KABUSHIKI KAISHA ; KEHNON KABUSIKI KAJSSA ; KENON KABUSIKI KAJSSYA

Inventor(s):(std): ASANUMA NAOJA ; ASANUMA NAOYA ; HISANO MASATO ; KHISANO MASATO ; KUNO MASATO ; MASANARI MORIOKA ; MASATO HISANO ; MORIOKA MASANARI ; MORIOKA MASAYA ; NAKAZAWA RIOSUKE ; NAKAZAWA RYOSUKE ; NAKAZAWA YOSHIAKI ; NAOYA ASANUMA ; RYOSUKE NAKAZAWA ; SASAKI TERUHIKO ; SASAKI TERUKHIKO ; TERUHIKO SASAKI

Inventor(s): MORIOKA MASANORI

Agent(s): DEACONS; DREW AND NAPIER LLC; FITZPATRICK CELLA HARPER AND SCINTO; OOO YURIDICHESKAYA GORODISSKIJ I PARTNER Y FA; RIDOUT AND MAYBEE LLP; SPRUSON AND FERGUSON; TBK; TBK PATENT; YAMADA RYUICHI; YURIDICHESKAYA GORODISSKIJ I PARTNER Y OOO FA

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 TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8-9): F16D3/16 G03G G03G15/00 G03G15/14 G03G21/00 G03G21/16 G03G21/18

International class (IPC 1-7): G03G21/18

CPC: G03G21/1647 G03G21/18 G03G21/1814 G03G21/1839 G03G21/1853 G03G21/186

US class: 399/110 399/111 399/111P 399/117 399/117P 399/119 399/167 399/262

[Classification Explorer](#)

Cited documents: US6808980 BB, US4065841 A, WO08078836, JP1628165, US6175705 B1, US6173140 B1, US7209682 BB, US7184690 BB, US7174122 BB, US7164875 BB, US7158736 BB, US7155141 BB, US7149457 BB, US7139502 BB, US7136604 BB, US7121205 BB, US7092658 BB, US7062200 BB, US7003247 BB, US6978099 BB, US6970668 BB, US6968146 BA, US6954601 BB, US6954600 BB, US6931226 BB, US6912365 BB, US6898391 BB, US6836629 BB, US6834175 BB, US6829455 BB, US6823153 BB, US6795666 BB, US6714752 BB, US6678488 BB, US6608980 BB, US6603939 BA, US6574446 BB, US6549736 BB, US6546220 BA, US6542706 BB, US6519431 BA, US6517439 BA, US6473580 BA, US6415121 BA, US6385416 BA, US6366748 BA, US6351620 BA, US6349191 BA, US6336017 BA, US6301458 BA, US6282390 BA, US6256467 BA, US6249663 BA, US6215969 BA, US6175705 BA,

US6173140 BA, US6167219 A, US6154623 A, US6128452 A, US6115569 A, US6072968 A, US6064843 A, US6029031 A, US5993101 A, US5966567 A, US5950047 A, US5946531 A, US5943529 A, US5926666 A, US5903803 A, US5878310 A, US5878309 A, US5839028 A, US5640650 A, US5585889 A, US5463446 A, US5452056 A, US5331373 A, US5168319 A, US4439257 A, US2011103812 AA, US2011091239 AA, US2010054823 AA, US2010054778 AA, US2009317134 AA, US2009317131 AA, US2009317129 AA, US2008240796 AA, WO08072757, JP2009104101, JP2007240007, JP2007218403, JP2006072160, JP3728104, JP2004198822, JP2004085593, JP2003202727, JP2003162137, JP2002250435, JP1199610, JP2004045603, JP2002048148, JP2000137360, JP2000120715, JP11325097, JP11015265, JP8328449, JP8030168, JP5341589, JP4240870, JP4119363, JP1164818, JP63004252, JP61092967, JP60249729, JP57153844, EP1791034, EP1628165, CN1346077, US2008025757 AA, US2007264048 AA, US2007196131 AA, US2007110478 AA, US2006269318 AA, US2006240896 AA, US2006228127 AA, US2006182465 AA, US2006051133 AA, US2006008289 AA, US2005191092 AA, US2005105936 AA, US2004086300 AA, US2003059233 AA, US2002057928 AA, US2002044794 AA, US7603059 BB, US7537410 BB, US7529507 BB, US7526228 BB, US7366452 BB, US7349657 BB, US7315710 BB, US7248810 BB, US7224925 BB, US7212768 BB, US6178302 B1, JP8328449 A2, JPS60249729, JPS634252, JP63004252 A2, EP1199610 A2, US2009196655 AA, US2011255900 AA, US2011026967 AA, US7885575 BB, US6327448 BA, US5583630 A, US6963706 BB, US6317572 BA, US2008260428 AA, US7127192 BB, US6141508 A, US6137973 A, US6137971 A, US7418225 BB, US6937832 BB, US6934485 BB, US7079787 BB, US6418296 BA, US5920753 A, US7062195 BB, US2006093398 AA, US6901229 BB, US6898399 BB, US6061535 A, US4829335 A, US7526278 BB, US7200349 BB, US7194220 BB, US6714749 BB, US6714746 BB, US6704522 BB, US2006034637 AA, US6032002 A, US6178302 BA, US4065941 A, US2006029418, JP200617785, TW200817850, RU2289835 C2, US2003138270, US2007122188, US2002025191, JP2006171785, US2003138270 AA, JP2006171785 A2, JP2008233867, JP2007052185, JP2002031153, JP2008233867 A2, JP2007052185 A2, JP2002031153 A2, JP1009631 B2, US2007122188 AA, US2002025191 AA, JP1604488, JP1604488 C3, JP1604488 B4, JP2875203 B2, JP60249729 A2, JP2006072160 A2, EP1791034 A1, EP1178370 A2,

DE112007003045 T5

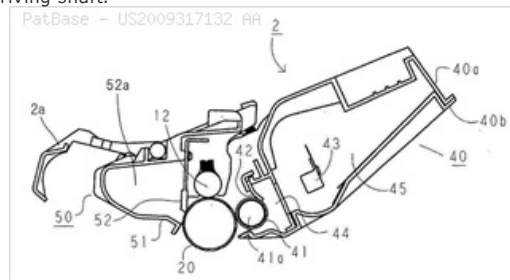
CN1971444 A, JP2004045603 A2, CN1346077 A, CN1188266 A, JP5341589 A2, CN1158583 C, CN1766764, US2008152388 AA, WO08078836 A1,

Forward Citations:

TWI709008 B, EP3088968 B1, US10551793 BB, US10203656 BB, US2018113417 AA, US2016274536 AA, EP3088968 A2, US9329517 BB, US10228635 BB, US10037000 BB, US9857730 BB, US9377714 BB, US9285765 BB, US9857766 BB, US2017090413 AA, US10642216 BB, US9989915 BB, US9551957 BB, US8923731 BB, US2013322930 AA, US10816931 BB, US10795312 BB, US10788790 BB, US10788789 BB, US10712710 BB, US10620582 BB, US10585391 BB, US10545450 BB, EP2362274 B1, US10095179 BB, US9996050 BB, US2017255160 AA, USD796574 S1, US9684278 BB, US9651915 BB, US9594343 BB, US9477201 BB, US2016259295 AA, US9429897 BB, US9395679 BB, US9395675 BB, EP3026503 A1, US9348303 BB, US2011188889 AA, US2011182623 AA, US8892004 BB, US2012294649 AA, US9122242 BB, US2014270845 AA, EP2362274 A3, US8995880 BB, TWI465867 B, US2014294499 AA, US2014153967 AA, CN102141767 A, US8644733 BB, US8494411 BB, US8433219 BB, US2012251175 AA, US2009317135 AA, RU2727791 C1, US10671015 BB, RU2712933 C1, RU2692107 C2, US10203652 BB, RU2670580 C2, TWI700563 B, US10635045 BB, US10627769 BB, JP6021620 B2, US10585387 BB, JP6020237 B2, JP5041014 B2, US10248076 BB, TWI640849 B, US10191436 BB, JP6246294 B2, JP2017021369 A2, US9823619 BB, JP6187552 B2, JP6187551 B2, JP2017044942 A2, JP2017044941 A2, JP4911228 B2, JP5738953 B2, JP2014157213 A2, JP2014112169 A2, US8644732 BB, WO11096587 A1, US9141069 BB, US8953981 BB, JP2014123102 A2, US8498553 BB, US8488996 BB, JP2011158587 A2, JP2011154326 A2, CN102749821 A, CN102749821 B,

Abstract:

A process cartridge is detachably mountable to a main assembly of an electrophotographic image forming apparatus including a driving shaft having a rotational force applying portion by moving in a direction substantially perpendicular to an axis of the driving shaft. The cartridge includes an electrophotographic photosensitive drum, a coupler engageable with the rotational force applying portion to receive a rotational force for rotating the drum and taking transmitting, pre-engagement, and disengaging positions, and a regulator regulating an inclination angle of the coupler. During cartridge mounting, the coupler moves from the pre-engagement to the transmitting position to oppose the driving shaft, and during cartridge dismounting, the coupler moves from the transmitting to the disengaging position to disengage from the driving shaft.



19) Family number: 69819135 (US2018143579 AA)

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Title: DRIVING DEVICE AND IMAGE FORMING APPARATUS

Priority: JP20160226695 20161122

Family:

Publication number	Publication date	Application number	Application date
CN108089421 A	20180529	CN201711153328	20171120
JP2018084266 A2	20180531	JP20160226695	20161122
JP6794231 B2	20201202	JP20160226695	20161122
US10496025 BB	20191203	US20170802942	20171103
US2018143579 AA	20180524	US20170802942	20171103

Probable Assignee: CANON INC

Assignee(s):(std): CANON KK

Assignee(s): CANON INC

Inventor(s):(std): KASE SHOTA

Agent(s): VENABLE LLP

International class (IPC 8-9): F16H57/023 G03G15/00 G03G15/16 G03G21/16

CPC: G03G15/00 G03G15/1615 G03G15/757 G03G15/758 G03G21/1633 G03G21/1647 G03G2221/1657

US class: 1/1 399/388

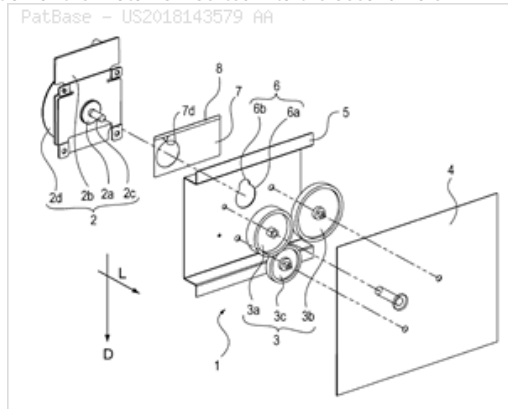
[Classification Explorer](#)

Cited documents: US2016257137 AA, US9778614 BB, US6885837 BB, US6036052 A, US5631726 A, JP61167739 A2, US2013322930 AA, US2008303364 AA, JP2012083505 A2, JP2003255638 A2, JP2000193047 A2, US2014133884 AA, US2003223779 AA, CN105769585 A, CN105283810 A, CN203558704 U, JP4736896 B2, CN103922166 A, CN103454883 A,

Forward Citations: US10837428 BB,

Abstract:

A driving device includes a motor including a shaft portion provided with a gear portion; a side plate provided with a first hole through which the motor engages with the side plate and a second hole connecting with the first hole; a gear configured to engage with the gear portion provided on the shaft portion when the motor is fixed in the first hole, so as to be rotatable through transmission of a driving force from the motor; and a flexible cover member configured to cover the second hole, wherein the cover member contacts the shaft portion of the motor when the shaft portion of the motor is inserted into the second hole.



20) Family number: 58180636 (US2017075300 AA)

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Title: PROCESSING CARTRIDGE AND DRIVING ASSEMBLY THEREOF
Priority: CN201410188674 20140506 CN201420229138U 20140506 CN201410321331 20140707
CN201420373097U 20140707 WO2015CN078260 20150505 WO2015CN78260 20150505
CN201610522242 20160705 US20160342916 20161103

Family:	Publication number	Publication date	Application number	Application date
	CN105093871 A	20151125	CN201410321331	20140707
	CN105093871 B	20171229	CN201410321331	20140707
	CN204009361 U	20141210	CN201420373097U	20140707
	EP3141965 A1	20170315	EP20150788964	20150505
	EP3141965 A4	20171227	EP20150788964	20150505
	US2017075300 AA	20170316	US20160342916	20161103
	US9846409 BB	20171219	US20160342916	20161103
	WO15169205 A1	20151112	WO2015CN078260	20150505

Probable Assignee: APEX TECHNOLOGY CO LTD

Assignee(s):(std): APEX TECH CO LTD ; APEX TECHNOLOGY CO LTD ; NINESTAR CORP ; SEINE TECHNOLOGY CO LTD ; ZHUHAI APEXMIC TECHNOLOGY CO LTD ; ZHUHAI SEINE TECHNOLOGY CO LTD

Assignee(s): APEX TECHNOLOGY CO ; ZHUHAI APEXMIC TECHNOLOGY CO ; ZHUHAI SEINE TECHNOLOGY CO

Inventor(s):(std): CAO JIANXIN ; HUA HAIDONG ; LIANG QIJIE

Agent(s): ANOVA LAW GROUP PLLC ; PATENTANWALTE RUFF WILHELM BEIER DAUSTER AND PARTNER MBB ; SHENZHEN BAIRUI PATENT AND TRADEMARK OFFICE

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 EG ES FI FR GA GB GD GE GH GM 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

International class F16D1/10 G03G15/00 G03G21/18
(IPC 8-9):

CPC: G03G21/1857 F16D1/10

US class: 1/1 399/167

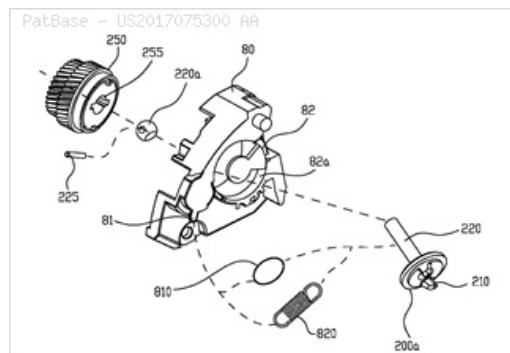
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Cited documents: CN204009372 U, CN203573085 U, CN103376683 A, CN101568887 A, US2012243905 AA, US2010221036 AA, US2010209144 AA, US2009317134 AA, CN204009361 U, US2013322930 AA, CN103279022 A, CN101819400 A, JP2004045603 A2, EP0833226 A2,

Forward Citations: WO17084412 A1, US10739722 BB, CN105093871 B, CN105093871 A,

Abstract:

A driving assembly is provided for a processing cartridge capable of being detachably installed in an electronic imaging device. The driving assembly includes a power receiving unit and a power transfer unit. The power receiving unit is configured for receiving a rotational driving force from a driving mechanism of the electronic imaging device; and the power transfer unit is coupled to the power receiving unit for receiving the rotational driving force from the power receiving unit. The power receiving unit remains constantly inclined with respect to a rotation axis of the power transfer unit, and has an initial position and a displaced position; the power receiving unit moves from the initial position to the displaced position when an external force is applied; and the receiving unit returns to the initial position from the displaced position when the external force is withdrawn.



21) Family number: 66151060 (US2017176915 AA)

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Title:

Priority:

Family:

Probable Assignee:

Assignee(s):(std):

Inventor(s):(std):

Agent(s):

Designated states:

International class (IPC 8-9):

CPC:

US class:

Classification Explorer

Cited documents:

SHIPPING CAP FOR DRUM ASSEMBLY

US20150269354P 20151218US20160372865 20161208WO2016US66840 20161215

Publication number	Publication date	Application number	Application date
CN108496118 A	20180904	CN201680074540	20161215
US2017176915 AA	20170622	US20160372865	20161208
US9964919 BB	20180508	US20160372865	20161208
WO17106451 A1	20170622	WO2016US66840	20161215

STATIC CONTROL COMPONENTS INC

STATIC CONTROL COMPONENTS INC

MARTIN JONATHAN W

MOORE CHARLES L

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 DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU
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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
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B41J2/01 G03G15/00 G03G15/08 G03G21/16 G03G21/18

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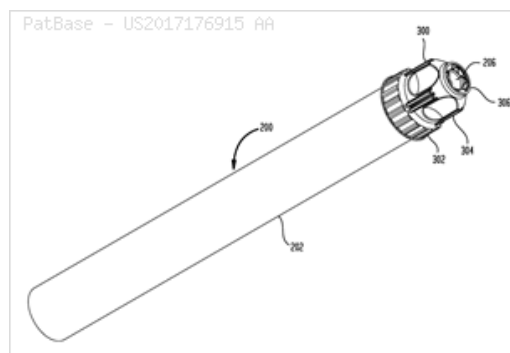
1/1 399/117

[Classification Explorer](#)

WO15067124 A1, CN101907858 A, US8995877 BB, US8644733 BB, US8135304 BB, JP2006154615 A2, US8923731 BB, US8892004 BB, US2014270845 AA, US2013078007 AA, US2010054823 AA, US2008152388 AA, US2006193654 AA, CN104049484 A, CN203561829 U, CN102067042 A, CN1636715 A,

Abstract:

A drive gear for a generally cylindrical imaging component. The drive gear includes a body for engaging the generally cylindrical imaging component; a cylindrical shaft attached to the body, the cylindrical shaft having an end surface; and three prongs extending longitudinally outward from the end surface.



22) Family number: 28196153 (US6185396 BA)

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Title:	COLOR IMAGE FORMING APPARATUS																																
Priority:	JP19960292918 19961105	US19970960871 19971031	US20000661389 20000913																														
	US20000661390 20000913	US20020046376 20020110																															
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Publication number	Publication date	Application number	Application date																														
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Probable Assignee: MATSUSHITA ELECTRIC INDUSTRIAL CO LTD

Assignee(s):(std): MATSUSHITA ELECTRIC IND CO LTD ; MATSUSHITA ELECTRIC INDUSTRIAL CO LTD

Assignee(s): MATSUSHITA ELECTRIC INDUSTRIAL CO

Inventor(s):(std): AIZAWA MASAHIRO ; ASAKURA KENJI ; KATAKABE NOBORU ; YOSHIKAWA MASANORI

Inventor(s): ALZAWA MASAHIRO ; KENJI ASAKURA ; MASAHIRO AIZAWA ; MASAHIRO ALZAWA ; MASANORI YOSHIKAWA ; NOBORU KATAKABE

Agent(s): MERCHANT AND GOULD PC

Designated states: AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

International class (IPC 8-9): G03G15/00 G03G15/01

International class (IPC 1-7): G03G1/500 G03G1/501 G03G1/516 G03G15/00 G03G15/01 G03G15/16

CPC: G03G15/0121 G03G15/0194 G03G2215/0116

US class: 399/111 399/116 399/121 399/167 399/227 399/302 399/302P

[Classification Explorer](#)

Cited documents: US5991589 A, US5701568 A, US5640645 A, JP9211999 A2, US5809380, US5787326, US5729809, US5669046, US5666596, US5652948, US5612771, US5610701, US5587783, US5587769, US5585911, US5565975, US5528343, US5515140, US5442428, US5325151, US5255063, US4743938, US4662739, JP8314286, JP8137171, JP8063057, JP7104540, JP7084430, JP7036246, JP63109462, JP62287264, JP4324881, JP2012271, US5809380 A, US5787326 A, US5729809 A, US5669046 A, US5666596 A, US5652948 A, US5612771 A, US5610701 A, US5587783 A, US5587769 A, US5585911 A, US5565975 A, US5528343 A, US5515140 A, US5442428 A, US5325151 A, US5255063 A, US4743938 A, JP8314286 A2, JP8137171 A2, JP8063057 A2, JP7104540 A2, JP7084430 A2, JP7036246 A2, JP63109462 A2, JP62287264 A2, JP4324881 A2, JP4245856 A2, JP2311864 A2, JP2012271 A2, US4662739 A, JP4245856, JP2311864,

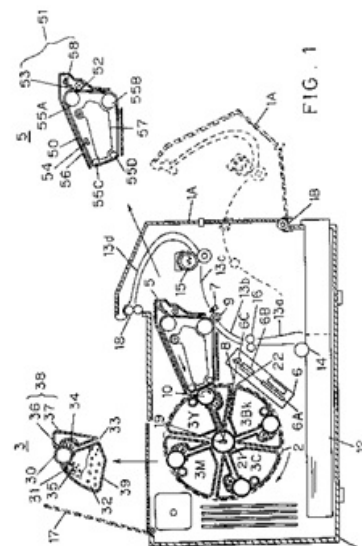
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DE112008000214 B4

KR20030000714 A, KR101293103 B1, JP2017107053 A2, JP2001277580 A2, JP2001154560 A2, US8467698 BB, US8064792 BB, US7720407 BB, EP1628167 A3, WO0106324 A1, US7280789 BB, EP1628167 A2, US6650855 BA,

Abstract:

A color image forming apparatus is provided, and includes a plurality of image forming units including a photosensitive drum, a charging device and a developing device; a carriage for retaining and rotating the plurality of image forming units so as to move the image forming units between an image forming position and a waiting position; an exposing device for exposing a surface of the photosensitive drum of the image forming unit located at the image forming position; an intermediate transfer belt for successive transfer and superposition of toner images of various colors from the photosensitive drum of the image forming units located at the image forming position so as to form a color toner image; a drive member for driving the photosensitive drum and the intermediate transfer belt; a position detector for detecting a reference position of the intermediate transfer belt when the intermediate transfer belt is driven, and outputting a reference position detection signal; a secondary transfer roller for transferring the color toner image on the intermediate transfer belt onto recording paper; and a controller for controlling the operation of the above structural elements. The controller determines an operation start time of the charging device and the developing device using a rotation command signal to the driving means as a reference, and an operation start time of the exposing device, the intermediate transfer belt and the secondary transfer roller using the reference position detection signal as a reference.

**23) Family number: 41931589** (US2008170880 AA)

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Title: DEVELOPING APPARATUS, PROCESS CARTRIDGE AND ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS

Priority: JP20060332790 20061211 JP20070297474 20071116 JP20090258686 20071116
 JP20120004853 20071116 US20070953231 20071210 WO2007JP74190 20071211
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 EP20070859844 20071211 IN2009CN03308 20071211 RU20090126551 20090710
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Family:

Publication number	Publication date	Application number	Application date
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Agent(s): DEACONS; FITZPATRICK CELLA HARPER AND SCINTO; RIDOUT AND MAYBEE LLP; SPRUSON AND FERGUSON; TBK; TBK-PATENT; YAMADA RYUICHI

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI 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 PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8-9): G03B27/10 G03B27/14 G03B27/32 G03G G03G13/06 G03G15/00 G03G15/06 G03G15/08 G03G21/00 G03G21/16 G03G21/18

International class (IPC 1-7): G03G21/18

CPC: G03G21/186 G03G21/1864 G03G2221/1654 G03G2221/1657

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Abstract:

A process cartridge is detachably mountable to a main assembly of the electrophotographic image forming apparatus. The main assembly includes first and second transmitters, a cartridge positioner, a movable member, and a lock. The cartridge includes a photosensitive drum, a developing roller, a drum coupler transmitting a first driving force to the drum of the mounted cartridge

and a shaft coupler, transmitting a second driving force from the second transmitter with a deviation permitted between axes of the second transmitter and the roller. The shaft coupler includes an engager engaging the second transmitter and receiving the second driving force for the mounted cartridge. When the cartridge is moved by the movable member, the engager is positioned to the lock and the distance between the engager and roller axes is smaller when the cartridge is positioned to the positioner than when the engager is positioned by a cartridge holding portion.

