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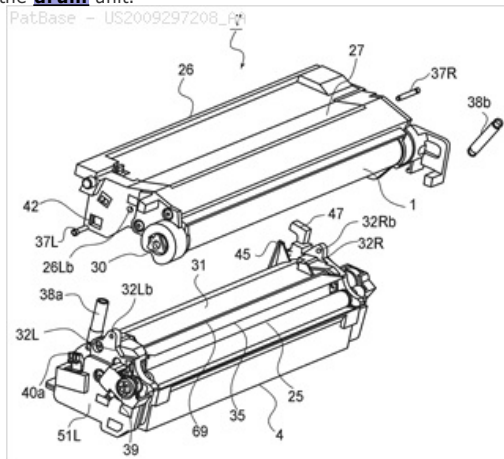
Search 1: IC=(G03G15) (Results 328895)
Search 2: 1 and drum (Results 75160)
Search 3: 2 and electrophotographic (Results 32423)
Search 4: 3 and photosensitive (Results 21016)
Search 5: 4 and (snap-fit or (snap 2w fit)) (Results 212)
Search 6: 5 and (coupl* near member) (Results 81)
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Title: PROCESS CARTRIDGE AND ASSEMBLING, DISASSEMBLING REMANUFACTURING METHOD THEREFOR

Abstract: An assembling method for a process cartridge the assembling method includes a step of preparing a **drum** unit supporting a **electrophotographic photosensitive drum**; a step of preparing a developing unit supporting a developing roller for developing an electrostatic latent image formed on the **electrophotographic photosensitive drum**; a developer supplying roller for supplying a developer to the developing roller and a developer accommodating portion having a developer supply opening; a unit coupling process of coupling the **drum** unit and the developing unit with each other; a first-end developing-device spacing member mounting step after the unit coupling process of engaging with an opening provided at a first end portion of the **drum** unit a first-end developing-device spacing member provided rotatably about a shaft at a first end portion of the developing unit to regulate rotation of the developing unit relative to the **drum** unit; and a second-end developing-device spacing member mounting step of engaging, with a projection provided at a second end portion of the **drum** unit, a second-end developing-device spacing member provided rotatably about a shaft at a second end portion of the developing unit to regulate rotation of the developing unit relative to the **drum** unit.

Classifications:

International (IPC 8-9): G03G15/00 G03G15/08 G03G21/00
G03G21/16 G03G21/18 (Advanced/Invention);
G03G15/00 G03G15/08 G03G21/00 G03G21/18 (Core/Invention)
CPC: G03G21/1825
European: G03G21/18C4S
US: 399/109 399/109P 399/110 399/111 399/111P 399/113



Family:

Publication number	Publication date	Application number	Application date
CN101592908 A	20091202	CN200810175006	20081024
CN101592908 B	20120111	CN200810175006	20081024
JP2009288286 A2	20091210	JP20080137769	20080527
JP5344538 B2	20131120	JP20080137769	20080527
US2009297208 AA	20091203	US20080196726	20080822
US2012170953 AA	20120705	US20120342405	20120103
US8401424 BB	20130319	US20120342405	20120103
US8503906 BB	20130806	US20080196726	20080822

Priority:

JP20080137769 20080527 US20080196726 20080822 US20120342405 20120103

Probable Assignee: CANON INC

Assignee(s): (std): CANON KK ; CHADANI KAZUO ; SUZUKI TATSUYA

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

Inventor(s): (std): TATSUYA SUZUKI ; SUZUKI TATSUYA ; KAZUO CHADANI ; CHATANI KAZUO ; CHADANI KAZUO

Agent(s): FITZPATRICK CELLA HARPER AND SCINTO

Title: Remanufacturing method for process cartridge

Abstract: A remanufacturing method for a process cartridge detachably mountable to a main assembly of an **electrophotographic** image forming apparatus includes the steps of separating first and second units of the cartridge, dismounting from the second unit a developing blade mounted to the second unit, filling developer into a developer accommodating portion of the second unit through a developer supply opening for supplying a developer roller of the second unit from the developer accommodating portion, mounting the dismounted developing blade to the second unit with a facing orientation opposite from a facing orientation before the developing blade dismounting step, and coupling the first and second units.

Classifications:

International (IPC 8-9): G03G15/08 G03G21/10

G03G21/18 (Advanced/Invention);

G03G21/18 (Advanced/Non-invention);

G03G15/08 G03G21/10 G03G21/18 (Core/Invention)

International (IPC 1-7): G03G15/00 G03G15/04 G03G15/08

G03G21/10 G03G21/16 G03G21/18

CPC: G03G21/181 G03G21/1825 G03G2215/00987

European: G03G21/18C2 G03G21/18C4S S03G215/00R

US: 399/109 399/111 399/113 399/115 399/274 399/284

PatBase - US2002028087_AA

Patent Application Publication Mar. 7, 2002 Sheet 1 of 33 US 2002/0028087 A1

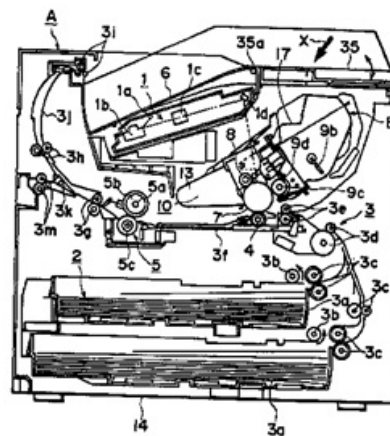


FIG. 1

Family:

Publication number	Publication date	Application number	Application date
CN1154887 C	20040623	CN20011024895	20010628
CN1333483 A	20020130	CN20011024895	20010628
EP1168109 A2	20020102	EP20010305577	20010627
EP1168109 A3	20070307	EP20010305577	20010627
JP2002014593 A2	20020118	JP20000194585	20000628
JP3283500 B2	20020520	JP20000194585	20000628
KR100408619 B1	20031206	KR20010037337	20010628
KR20020001649 A	20020109	KR20010037337	20010628
US2002028087 AA	20020307	US20010888402	20010626
US6519430 BB	20030211	US20010888402	20010626

Priority:

JP20000194585 20000628

Probable Assignee: CANON INC

Assignee(s): (std): CANON KK ; HIGETA AKIRA ; KAKUMI YOSHIYUKI ; YASUDA SATOSHI

Assignee(s): CANON INC ; CANON K K ; CANON KABUSHIKI KAISHA ; CANON KABUSHIKI KAISHA AB

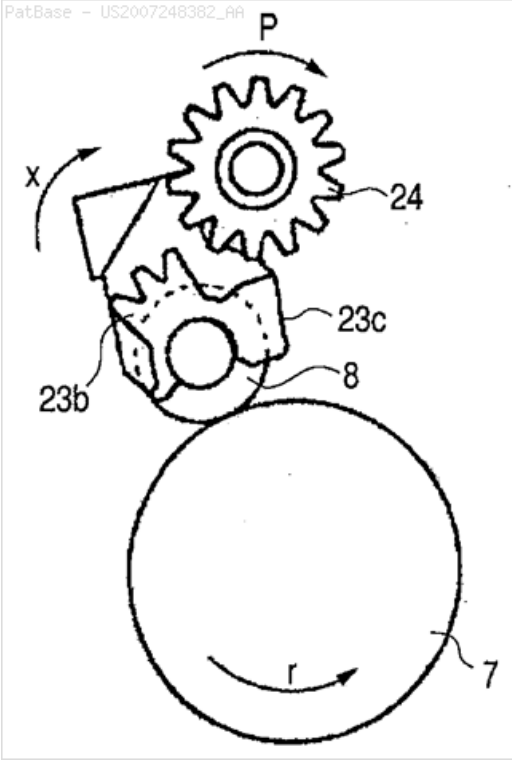
Inventor(s): (std): AKIRA ANTA ; ANTA AKIRA ; HIGETA AKIRA ; KAKAI SHASUKE ; KAKUMI YOSHIYUKI ; KUSAKA TAAKI ; SHASUKE KAKAI ; TAAKI KUSAKA ; YASUDA SATOSHI ; KADOUMI SHOSUKE

Designated states: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR

Title: PROCESS CARTRIDGE, ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS, METHOD OF MANUFACTURING A PROCESS CARTRIDGE, AND METHOD OF REMANUFACTURING A PROCESS CARTRIDGE

Abstract: A process cartridge has an electrophotographic photosensitive drum, a charging roller for charging the drum, a spacer movable between a separation position for separating the roller from the drum and a contact position for contacting the roller to the drum, a rotatable receiving gear for receiving a driving force produced by rotation of the drum to move the spacer from the separation position to the contact position, and a rotatable transmission gear engaged with the receiving gear and the spacer to transmit the force from the receiving gear to the spacer to move the spacer from the separation position to the contact position, wherein play is provide in the engagement portion between the receiving gear and the transmission gear so that they can be freely rotated relative to each other by a predetermined angle, whereby the drum is not reversely rotated when the roller is separated from the drum.

Classifications:
International (IPC 8-9): G03G15/00 G03G15/02
G03G21/18 (Advanced/Invention);
G03G15/00 G03G15/02 G03G21/18 (Core/Invention)
CPC: G03G15/0216 G03G21/1814 G03G21/1864 G03G2221/1657
European: G03G15/02A1 G03G21/18C3 G03G21/18H2P
S03G221/16K2
US: 399/167 399/167P 399/168 399/176 399/176S



Family:

Publication number	Publication date	Application number	Application date
JP2007286455 A2	20071101	JP20060115169	20060419
JP4804212 B2	20111102	JP20060115169	20060419
US2007248382 AA	20071025	US20060613521	20061220
US7865115 BB	20110104	US20060613521	20061220

Priority:
JP20060115169 20060419

Probable Assignee: CANON INC

Assignee(s): (std): CANON KK

Assignee(s): CANON INC ; CANON KABUSHIKI KAISHA

Inventor(s): (std): NISHIDA SHINICHI ; NONAKA FUMITO ; OGUMA TORU

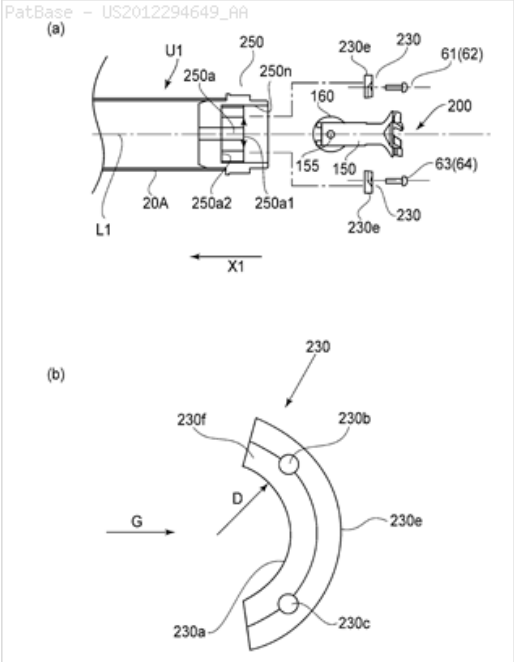
Agent(s): FITZPATRICK CELLA HARPER AND SCINTO

Title: **PHOTOSENSITIVE DRUM** UNIT, ASSEMBLING METHOD THEREFOR, AND DISASSEMBLING METHOD THEREFOR

Abstract: A **photosensitive drum** unit to which a **coupling member** 200 is easily mounted is provided. A **drum flange** 250 is fixed to one end portion of a cylinder 20A having a **photosensitive** layer at a peripheral surface. The **coupling member** 200 is inserted into the **drum** flange 250. Finally, a closing member 230 is mounted to the **drum** flange 250.

Classifications:

International (ipc 8-9): B23P11/00 B23P19/00 G03G13/02
G03G15/00 G03G15/22 G03G21/00 G03G21/16
G03G21/18 (Advanced/Invention);
G03G13/02 G03G15/22 G03G21/16 (Core/Non-invention)
CPC: G03G15/751 G03G15/757 G03G21/186 G03G2221/1657
Y10T29/49815 Y10T29/49826
European: G03G15/75F G03G21/18H2C S03G221/16K2
US: 1/1 29/426.1 29/428 399/117



Family:

Publication number	Publication date	Application number	Application date
JP2011180578 A2	20110915	JP20110000440	20110105
JP2015092274 A2	20150514	JP20150002233	20150108
JP5683281 B2	20150311	JP20110000440	20110105
JP5944019 B2	20160705	JP20150002233	20150108
TW2011140257 A	20111116	TW20110104066	20110201
TWI465867 B	20141221	TW20110104066	20110201
US2012294649 AA	20121122	US20120563044	20120731
US2014105639 AA	20140417	US20130134513	20131219
US2015378302 AA	20151231	US20150842964	20150902
US2017371289 AA	20171228	US20170696528	20170906
US8644732 BB	20140204	US20120563044	20120731
US9141069 BB	20150922	US20130134513	20131219
US10191436 BB	20190129	US20170696528	20170906
WO11096587 A1	20110811	WO2011JP52679	20110202

Priority:

JP20100021126 20100202 JP20110000440 20110105 WO2011JP52679 20110202
US20120563044 20120731 US20130134513 20131219 JP20150002233 20150108
US20150842964 20150902 US20170696528 20170906

Probable Assignee: CANON INC

Assignee(s): (std): BATORI YOSHIYUKI ; CANON KK ; KIKUCHI KEN

Assignee(s): CANON INC ; CANON KABUSHIKI KAISHA

Inventor(s): (std): KIKUCHI KEN ; BATORI YOSHIYUKI ; KIKUCHI TAKESHI ; UMATORI YOSHIYUKI

Agent(s): FITZPATRICK CELLA HARPER AND SCINTO; VENABLE LLP; 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 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: PROCESS CARTRIDGE AND IMAGE FORMING APPARATUS

Abstract: A process cartridge comprising: (i) a **photosensitive drum**; (ii) a rotatable developing roller for developing an electrostatic latent image formed on the **photosensitive drum**; (iii) a developer supplying roller, provided in contact with the developing roller, for supplying a developer to the developing roller; (iv) a driving force receiving portion for receiving a driving force, wherein the driving force receiving portion is provided at a shaft end portion of the developer supplying roller and is movable in a direction crossing a shaft of the developer supplying roller; (v) a first driving force transmitting portion for transmitting the driving force, received by the driving force receiving portion, to the developing roller, wherein the first driving force transmitting portion is provided on the developer supplying roller; and (vi) a second driving force transmitting portion, provided on the developing roller, for transmitting the driving force by engaging with the driving force transmitting portion. A rotational direction of the developing roller is an opposite direction to a rotational direction of the developer supplying roller, and a surface speed of the developer supplying roller is larger than a surface speed of one developing roller.

Classifications:

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

G03G21/18 G03G21/185 (Advanced/Invention);

G03G15/08 (Advanced/Non-invention);

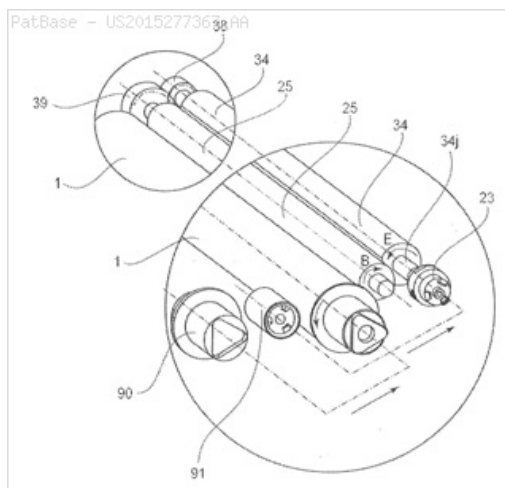
G03G (Subclass/Invention)

CPC: G03G15/0806 G03G15/0808 G03G21/1825 G03G21/185

G03G2221/1657 G03G21/186 G03G21/1857 G03G21/1803

G03G15/08

US: 399/111 399/167 399/279 399/281

**Family:**

Publication number	Publication date	Application number	Application date
BR112015013940 A2	20170711	BR20151113940	20131213
CA2894397 AA	20150612	CA20132894397	20131213
CN104919374 A	20150916	CN201380070338	20131213
EP2933685 A1	20151021	EP20130862540	20131213
EP2933685 A4	20160720	EP20130862540	20131213
EP3379339 A1	20180926	EP20180166572	20131213
HK1209851 A1	20160408	HK20150110641	20151028
IN04086CN2015 A	20160701	IN2015CN04086	20150709
IN201848038784 A	20181026	IN201848038784	20181012
IN305974 B	20190125	IN2015CN04086	20150709
JP2014134787 A2	20140724	JP20130256647	20131212
JP2018025820 A2	20180215	JP20170200118	20171016
JP2018173669 A2	20181108	JP20180153905	20180820
JP6242201 B2	20171206	JP20130256647	20131212
JP6395916 B2	20180926	JP20170200118	20171016
RU2015128304 A	20170119	RU20150128304	20131213
RU2608318 C1	20170117	RU20150128304	20131213
RU2650781 C1	20180417	RU20160152189	20131213
US2015277367 AA	20151001	US20150737680	20150612
US2017068210 AA	20170309	US20160357175	20161121
US2017242396 AA	20170824	US20170591554	20170510
US2018239302 AA	20180823	US20180960750	20180424
US9519264 BB	20161213	US20150737680	20150612
US9696684 BB	20170704	US20160357175	20161121
US9964921 BB	20180508	US20170591554	20170510
WO14092208 A1	20140619	WO2013JP84174	20131213

Priority:

JP20120273204	20121214	JP20130256647	20131212	JP20170200118	20131212
EP20130862540	20131213	IN2015CN04086	20131213	WO2013JP84174	20131213
US20150737680	20150612	US20160357175	20161121	US20170591554	20170510
JP20170200118	20171016	US20180960750	20180424	JP20180153905	20180820

Probable Assignee: CANON INC

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

Assignee(s): KENON KABUSIKI KAJSYA ; CANON INC ; GOFUKU SHUICHI ; HIRUKAWA KUNIAKI ; MAESHIMA HIDEKI ; MITSUI YOSHIHIRO

Inventor(s): (std): GOFUKU SHUICHI ; HIRUKAWA KUNIAKI ; HIRUKAWA KUNIO ; MAEJIMA HIDEKI ; MAESHIMA HIDEKI ; MITSUI YOSHIHIRO ; YOSHIHIRO MITSUI ; SHUICHI GOFUKU ; MITSUI JOSIKHIRO ; MAESIMA KHIKHI ; KUNIAKI HIRUKAWA ; KHIRUKAWA KUNIAKI ; HIDEKI MAESHIMA ; GOFUKU SUITI

Agent(s): RIDOUT AND MAYBEE LLP; TBK; DEACONS; OOO YURIDICHESKAYA GORODISSKIY I PARTNERLY FA; FITZPATRICK CELLA HARPER AND SCINTO; YAMADA RYUICHI

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

Title: SEALING MEMBER, TONER SUPPLY CONTAINER, AND TONER SUPPLY SYSTEM

Abstract: A sealing member for permitting mounting in a toner supplyable state, release from a toner supply state, and a retraction to a container removal position with respect to a developer supply container and for sealing a toner discharge opening of the developer supply container detachably mountable to an image forming apparatus is provided. The sealing member includes a snap hook portion provided with an engagement projection which is snap hook-engageable with an engagement member of the image forming apparatus; and a release projection, provided to the snap hook portion, for receiving a force for moving the engagement projection inward. The force is applied from a hollow open/close control member (release) member provided in the image forming apparatus to the release projection. In this state, when the sealing member is moved relative to the image forming apparatus, the sealing member further includes an engagement (regulation) portion for regulating an inclination thereof by contact with a regulation member of the image forming apparatus.

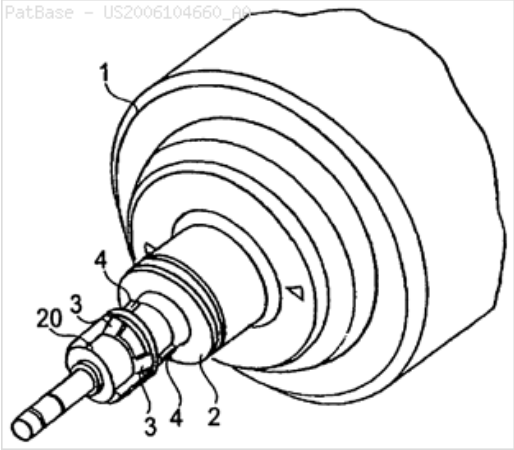
Classifications:

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

CPC: G03G15/0872 G03G15/0868 G03G15/0881 G03G2215/0668
G03G2215/0678

European: G03G15/08H3B S03G215/06C1A1 S03G215/06C1D

US: 399/102 399/105 399/106 399/112 399/113 399/120 399/258



Family:

Publication number	Publication date	Application number	Application date
JP2006139141 A2	20060601	JP20040329611	20041112
JP4681854 B2	20110511	JP20040329611	20041112
US2006104660 AA	20060518	US20050269754	20051109
US7474866 BB	20090106	US20050269754	20051109

Priority:

JP20040329611 20041112

Probable Assignee: CANON INC

Assignee(s): (std): CANON KK

Assignee(s): CANON INC ; CANON KABUSHIKI KAISHA

Inventor(s): (std): DOI SHIGEO ; KAWAGUCHI DAISUKE ; TAMURA MASASHIGE

Agent(s): FITZPATRICK CELLA HARPER AND SCINTO

Abstract: A developer supply container detachably mountable to an image forming apparatus, the container includes a container body for accommodating the developer; drive connection member, provided substantially at a rotation center of the developer supply container, for driving engagement with a driving member provided in the image forming apparatus, wherein the drive connection member has a drive transmitting portion for transmitting a rotational force received from the driving member to the container body, wherein the drive transmitting portion is disposed so as to be idly rotatable for a sufficient time after start of rotation of the drive transmitting portion and before engagement with the container body.

US: 222/DIG.1 399/167 399/258 399/258P 399/262



Publication number	Publication date	Application number	Application date
CN100401205 C	20080709	CN200410039071	20040129
CN1517813 A	20040804	CN200410039071	20040129
DE602004046808 D1	20150430	DE200460046808T	20040122
EP1460487 A2	20040922	EP20040001351	20040122
EP1460487 A3	20041006	EP20040001351	20040122
EP1460487 B1	20150318	EP20040001351	20040122
JP2004226659 A2	20040812	JP20030014010	20030122
JP4323818 B2	20090902	JP20030014010	20030122
KR100742028 B1	20070723	KR20040004186	20040120
KR20040068002 A	20040730	KR20040004186	20040120
US2004190945 AA	20040930	US20040761316	20040122
US2006029434 AA	20060209	US20050247287	20051012
US6993273 BB	20060131	US20040761316	20040122
US7209686 BB	20070424	US20050247287	20051012

JP20030014010 20030122 EP20040001351 20040122 US20040761316 20040122
US20050247287 20051012

Designated states: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

Title: DEVELOPER SUPPLY CONTAINER

Abstract: A developer supply container detachably mountable to an image forming apparatus, the developer supply container comprising a discharge opening for permitting discharging of a developer; a container body for accommodating the developer; a snap hook member having an engaging projection for snap-hook engagement with an engageable member of the image forming apparatus; a feeding portion for feeding the developer from the container toward the discharge opening by a rotating force received by the engaging projection from the engageable member; wherein snap hook member has a bending modulus of 1400-20000MPa.

Classifications:

International (IPC 8-9): B65D83/00 B65D83/06 G03G15/06

G03G15/08 G03G21/16 (Advanced/Invention);

B65D83/00 G03G15/06 (Advanced/Non-invention);

B65D83/00 B65D83/06 G03G15/06 G03G15/08

G03G21/16 (Core/Invention)

International (IPC 1-7): B65D83/00 B65D83/06 G03G15/06

G03G15/08 G03G21/16

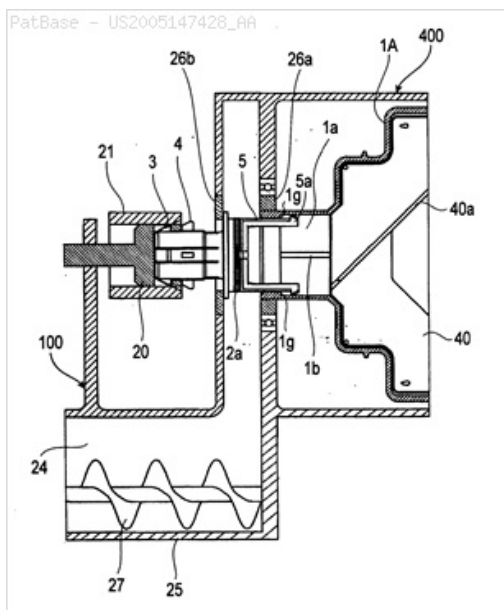
CPC: G03G21/1647 G03G21/1676 G03G15/0896 G03G2221/163

G03G2221/1654 G03G15/0868 G03G15/0886

European: G03G15/08 G03G15/08H3B G03G15/08S G03G21/16

S03G221/16D S03G221/16K1

US: 399/106 399/258 399/262



Family:

Publication number	Publication date	Application number	Application date
CN100380245 C	20080409	CN200410101770	20041222
CN1637646 A	20050713	CN200410101770	20041222
DE602004047356 D1	20150730	DE200460047356T	20041221
EP1548517 A1	20050629	EP20040030263	20041221
EP1548517 B1	20150617	EP20040030263	20041221
JP2005208598 A2	20050804	JP20040361451	20041214
KR100704813 B1	20070410	KR20040109235	20041221
KR20050063705 A	20050628	KR20040109235	20041221
US2005147428 AA	20050707	US20040012175	20041216
US7155138 BB	20061226	US20040012175	20041216

Priority:

JP20030425721 20031222 JP20040361451 20041214 EP20040030263 20041221

Probable Assignee: CANON INC

Assignee(s): (std): CANON KK

Assignee(s): CANON INC ; CANON KABUSHIKI KAISHA

Inventor(s): (std): YAMADA YUSUKE ; YUSUKE YAMADA

Agent(s): TBK; FITZPATRICK CELLA HARPER AND SCINTO

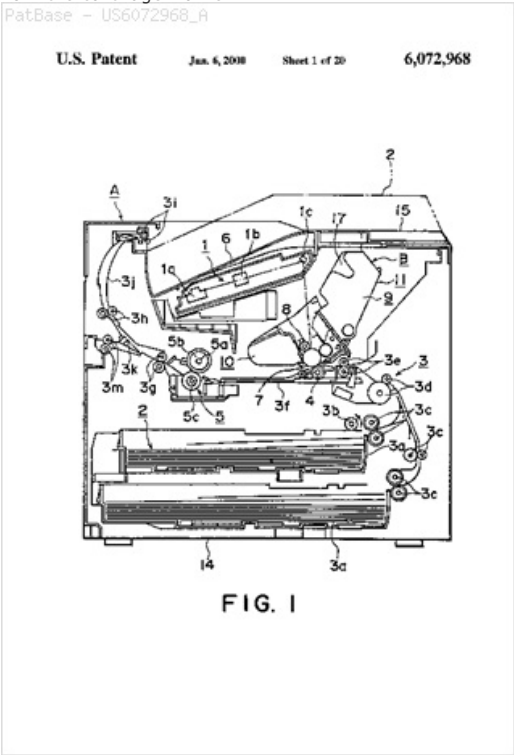
Designated states: DE FR GB IT

Title: Process cartridge, assembling method for process cartridge and **electrophotographic** image forming apparatus

Abstract: A process cartridge detachably mountable to a main assembly of an **electrophotographic** image forming apparatus, includes a cartridge frame; an **electrophotographic photosensitive drum** having a cylinder and a **photosensitive** layer thereon; a process mechanism actable on the **photosensitive drum**; a **drum** shaft for rotatably supporting the **photosensitive drum** on the cartridge frame, the **drum** shaft extending through the **photosensitive drum** and having a length enough to be supported by the cartridge frame at one end thereof and at the other end thereof; and a preventing member for preventing the **drum** shaft from disengaging from the cartridge frame.

Classifications:

International (IPC 8-9): G03G15/08 G03G21/00
G03G21/18 (Advanced/Invention);
G03G15/08 G03G21/00 G03G21/18 (Core/Invention)
International (IPC 1-7): G03G15/00 G03G15/08 G03G21/00
G03G21/18
CPC: G03G21/181 G03G21/1857 G03G2221/1606 G03G2221/1657
European: G03G21/18C2 G03G21/18H2 S03G221/16B
S03G221/16K2
US: 399/113 399/117



Family:

Publication number	Publication date	Application number	Application date
CN1101945 C	20030219	CN19961011057	19960613
CN1165325 A	19971119	CN19961011057	19960613
DE69624627 D1	20021212	DE19966024627	19960612
DE69624627 T2	20030703	DE19966024627T	19960612
EP0749053 A2	19961218	EP19960304403	19960612
EP0749053 A3	19990602	EP19960304403	19960612
EP0749053 B1	20021106	EP19960304403	19960612
HK1012067 A1	20030411	HK19980113310	19981214
JP3315560 B2	20020819	JP19950145971	19950613
JP8339155 A2	19961224	JP19950145971	19950613
US6072968 A	20000606	US19960662121	19960612

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Title: Process cartridge, assembling method for process cartridge and grounding member

Abstract: A process cartridge detachably mountable to a main assembly of an **electrophotographic** image forming apparatus, includes a cartridge frame; an **electrophotographic photosensitive drum** having a cylinder and a **photosensitive** layer thereon; process device actable on the **photosensitive drum**; a **drum** shaft for rotatably supporting the **photosensitive drum** on the cartridge frame, the **drum** shaft extending through the **photosensitive drum**; a grounding member for electrically grounding the **photosensitive drum**, the grounding member having a cylinder contacting portion contacted to an inside of the cylinder and a **drum** shaft contact portion having an inclined portion for contact with the **drum** shaft in a direction of insertion of the **drum** shaft into the **photosensitive drum**.

Classifications:

International (IPC 8-9): G03G15/00 G03G21/00

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