

Search history

Search pn=CO16088043 (Results 1)

1:

Search [SP]: 1. a cartridge mountable to a main assembly of an electrophotographic image forming apparatus, said coupling member comprising a pivotable coupling member, wherein the main assembly including a rotatable engaging portion for engaging with said coupling member, and a coupling guide, positioned downstream of a rotational axis of the engaging portion with respect to a mounting direction of said cartridge, for being contacted by said coupling member pivoted relative to the rotational axis of the engaging portion to guide said coupling member to be parallel with the rotational axis of the engaging portion, said cartridge being mountable to the main assembly in the mounting direction substantially perpendicular to the rotational axis of the engaging portion, said cartridge comprising: a frame rotatable member for carrying a developer and a rotatable force receiving member for receiving a rotational force to be transmitted to said rotatable membersaid coupling member including a free end portion having a receiving portion for receiving the rotational force from the engaging portion and a connecting portion having a transmitting portion for transmitting the rotational force received by said receiving portion to said force receiving member,said frame including,a hole portion for exposing said free end portion to an outside of said frame, and a receiving portion, provided in a downstream of said hole portion with respect to the mounting direction, for receiving said coupling member when said coupling member is inclined toward a downstream side with respect to the mounting direction and for receiving said coupling guide in place of said coupling member with engagement of said coupling member with the engaging portion. 2-188. (canceled) (Results 0)

Search [SP]: 1. a cartridge mountable to a main assembly of an electrophotographic image forming apparatus, said coupling member comprising a pivotable coupling member, wherein the main assembly including a rotatable engaging portion for engaging with said coupling member, and a coupling guide, positioned downstream of a rotational axis of the engaging portion with respect to a mounting direction of said cartridge, for being contacted by said coupling member pivoted relative to the rotational axis of the engaging portion to guide said coupling member to be parallel with the rotational axis of the engaging portion, said cartridge being mountable to the main assembly in the mounting direction substantially perpendicular to the rotational axis of the engaging portion, said cartridge comprising: a frame rotatable member for carrying a developer and a rotatable force receiving member for receiving a rotational force to be transmitted to said rotatable membersaid coupling member including a free end portion having a receiving portion for receiving the rotational force from the engaging portion and a connecting portion having a transmitting portion for transmitting the rotational force received by said receiving portion to said force receiving member,said frame including,a hole portion for exposing said free end portion to an outside of said frame, and a receiving portion, provided in a downstream of said hole portion with respect to the mounting direction, for receiving said coupling member when said coupling member is inclined toward a downstream side with respect to the mounting direction and for receiving said coupling guide in place of said coupling member with engagement of said coupling member with the engaging portion. 2-188. (canceled) (Results 0)

Search [SP]: technical field[0001] the present invention relates to a cartridge and a drum unit usable for an electrophotographic type image forming apparatus such as a laser beam printer.background art[0002] in the field of the electrophotographic type image forming apparatus, the structure is known in which elements such as a photosensitive drum and a developing roller as rotatable members contributable for image formation are unified as a cartridge which is detachably mountable to a main assembly of the image forming apparatus (main assembly). here, in order to rotate the photosensitive drum in the cartridge, it is desirable to transmit a driving force thereto from the main assembly. it is known, for this purpose, to transmit the driving force through engagement between a coupling member of the cartridge and a driving force transmitting portion such as a drive pin of the main assembly side of the apparatus.[0003] in some types of image forming apparatuses, a cartridge is demountable in a predetermined direction substantial perpendicular to a rotational axis of the photosensitive drum. in a known main assembly, the drive pin of the main assembly is moved in the rotational axis direction by an opening and closing operation of a cover of the main assembly. more particularly, a patent specification 1 discloses a structure in which a coupling member provided at an end portion of the photosensitive drum is pivotably relative to the rotational axis of the photosensitive drum. with this structure, the coupling member provided on the cartridge is engaged with the drive pin provided in the main assembly, by which the driving force is capable of being transmitted from the main assembly to the cartridge, as is known. [prior art reference] japanese laid-open patent application 2008-233867.summary of the invention[0004] the present invention provides a further improvement of the above-described prior-art.[0005] according to an aspect of the present invention, there is provided a cartridge mountable to a main assembly of an electrophotographic image forming apparatus, said coupling member comprising a pivotable coupling member, wherein the main assembly including a rotatable engaging portion for engaging with said coupling member, and a coupling guide, positioned downstream of a rotational axis of the engaging portion with respect to a mounting direction of said cartridge, for being contacted by said coupling member pivoted relative to the rotational axis of the engaging portion to guide said coupling member to be parallel with the rotational axis of the engaging portion, said cartridge being mountable to the main assembly in the mounting direction substantially perpendicular to the rotational axis of the engaging portion, said cartridge comprising a frame rotatable member for carrying a developer and a rotatable force receiving member for receiving a rotational force to be transmitted to said rotatable member said coupling member including a free end portion having a receiving portion for receiving the rotational force from the engaging portion and a connecting portion having a transmitting portion for transmitting the rotational force received by said receiving portion to said force receiving member, said frame including a hole portion for exposing said free end portion to an outside of said frame, and a receiving portion, provided in a downstream of said hole portion with respect to the mounting direction, for receiving said coupling member when said coupling member is inclined toward a downstream side with respect to the mounting direction and for receiving said coupling guide in place of said coupling member with engagement of said coupling member with the engaging portion.[0006] according to another aspect of the present invention, there is provided a drum unit dismountable from a main assembly of an electrophotographic image forming apparatus by moving in a predetermined direction substantially perpendicular to a rotational axis of an engaging portion rotatably provided in the main assembly, wherein a rotatable coupling member is mountable to said drum unit, the coupling including a free end portion having a receiving portion for receiving a rotational force from said engaging portion, and a connecting portion having a transmitting portion for transmitting the rotational force received by said receiving portion, said connecting portion being provided with a through-hole, wherein said coupling member is mountable to said drum unit by holding opposite end portions of a shaft penetrating the through-hole, said drum unit comprising a cylinder having a photosensitive layer and a flange mounted to an end portion of said cylinder, said flange being provided with an accommodating portion capable of accommodating the connecting portion and capable of pivotably holding coupling member, an annular groove portion in said accommodating portion outside with respect to a radial direction of said cylinder, and a holding portion for holding the opposite end portions of the shaft penetrating said through-hole, wherein said groove portion and said holding portion overlap along a rotational axis direction of said cylinder.brief description of the drawings[0007] fig. 1 is a sectional view of a main assembly of the image forming apparatus and a cartridge, according to an embodiment of the present invention.[0008] fig. 2 is a sectional view of the cartridge according to the embodiment of the present invention.[0009] fig. 3 is an exploded perspective view of the cartridge according to the embodiment.[0010] fig. 4 is an illustration of behavior in the mounting and demounting of the cartridge relative to the main assembly, according to the embodiment of the present invention.[0011] fig. 5 is an illustrations of behavior in the mounting and demounting of the cartridge relative to the main assembly with a pivoting action of the coupling member, according to the embodiment of the present invention.[0012] fig. 6 is an illustration of the coupling member according to the embodiment.[0013] fig. 7 is an illustration of a clearance space of the coupling member according to this embodiment.[0014] fig. 8 is an illustration of a drum unit according to the embodiment of the present invention.[0015] fig. 9 is an illustration of behavior in assembling of the drum unit into a cleaning unit.[0016] fig. 10 is there exploded view of the driving side flange unit according to the embodiment of the present invention.[0017] fig. 11 is a perspective view and a sectional view of a driving side flange unit according to the embodiment.[0018] fig. 12 is an illustration of an assembling method of the driving side flange unit, according to the embodiment.[0019] fig. 13 is an illustration of a bearing member, according to the embodiment.[0020] fig. 14 is an illustration of a bearing member, according to the embodiment.[0021] fig. 15 is an illustration of a behavior of the pivoting of the coupling member relative to an axis I1, in this embodiment.[0022] fig. 16 is a perspective view of a driving portion of a main assembly according to the embodiment of the present invention.[0023] fig. 17 is an exploded view of the driving portion of the main assembly according to the embodiment of the present invention.[0024] fig. 18 is an illustration of a driving portion of the main assembly according to the embodiment of the present invention.[0025] fig. 19 is an illustration illustrating the state in the process of mounting the cartridge to the main assembly according to the embodiment of the present invention.[0026] fig. 20 is an illustration illustrating the state in the process of mounting the cartridge to the main assembly according to the embodiment of the present invention.[0027] fig. 21 is an illustration illustrating the state in which the mounting of the cartridge to the main assembly of the apparatus has completed, in the embodiment of the present invention.[0028] fig. 22 is an illustration of a coupling guide in the embodiment of the present invention.[0029] fig. 23 is an illustration of dismounting of the cartridge from the main assembly in the embodiment of the present invention.[0030] fig. 24 is an illustration of dismounting of the cartridge from the main assembly in the embodiment of the present invention.[0031] fig. 25 is an illustration illustrating the state in the process of mounting the cartridge to the main assembly according to the embodiment of the present invention.[0032] fig. 26 illustrates the coupling member and an engaging portion of a main assembly side in the embodiment of the present invention.[0033] fig. 27 is an illustration of release operations between the coupling member and the main assembly side engaging portion when the cartridge according to the embodiment of the present invention is mounted to and dismounted from the main assembly.

[0034] fig. 28 is an illustration of a coupling guide according to the embodiment of the present invention.[0035] fig. 29 illustrates a coupling member and a drive pin in the embodiment of the present invention.[0036] fig. 30 is an illustration of the cartridge and the coupling guide in the embodiment of the present invention.[0037] fig. 31 is an illustration of a bearing member, according to an embodiment.[0038] fig. 32 is an illustration of a bearing member, according to an embodiment.[0039] fig. 33 is an illustration of a bearing member, according to an embodiment.embodiments for carrying out the invention[0040] referring to the accompanying drawings, the embodiments of the present invention will be described. (Results 44)

Search 4 and inclination (Results 17)

5:

Search 5 and angle (Results 16)

6:

Search 6 and (coupling OR coupler) (Results 16)

7:

Search 7 and (bore OR perforated OR drill OR drilling OR perforating) (Results 0)

8:

Search 7 and (bore OR perforated OR drill OR drilling OR perforation) (Results 0)

9:

Search 9 and (ribbed OR corrugated) (Results 0)

10:

Search 7 and (ribbed OR corrugated) (Results 0)

11:

Search 11 and (impulsion OR impulse) (Results 0)

12:

Search 7 and guide (Results 16)

13:

Search 13 and conical (Results 10)

14:

Title: PROCESS CARTRIDGE, ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS, AND ELECTROPHOTOGRAPHIC PHOTSENSITIVE DRUM UNIT

Abstract: Source: US2008152388A A process cartridge for use with a main assembly of an electrophotographic image forming apparatus, the main assembly including a driving shaft, to be driven by a motor, having a rotational force applying portion, wherein the process cartridge is dismountable from the main assembly in a direction substantially perpendicular to an axial direction of the driving shaft, the process cartridge includes i) an electrophotographic photosensitive drum having a photosensitive layer at a peripheral surface thereof, the electrophotographic photosensitive drum being rotatable about an axis thereof; ii) process means actable on the electrophotographic photosensitive drum; iii) a **coupling** member engageable with the rotational force applying portion to receive a rotational force for rotating the electrophotographic photosensitive drum, 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.

Classifications:

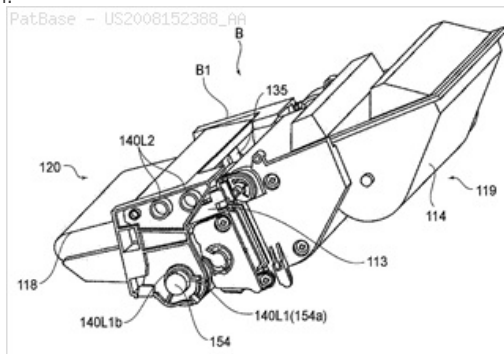
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International (IPC 1-7): G03G21/16 G03G21/18

IPC: G03G21/1803 G03G15/757 G03G2221/1657 G03G21/1647 G03G21/1857 G03G21/186 G03G21/1817 G03G21/1814 G03G21/18 G03G21/16 G03G21/1821 G03G21/185 G03G21/1853 G03G21/1842 G03G15/751

European: G03G15/75F G03G21/18H1V G03G21/18H2C S03G221/16K2

US: 399/111 399/111P 399/117 399/119 399/167 399/167P



Family:

Publication number	Publication date	Application number	Application date
AU2007339163 AA	20080703	AU20070339163	20071225
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Priority:

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Probable Assignee: CANON KK

Assignee(s): (std): CANON KK ; HISANO MASATO ; UENO TAKAHITO ; MIYABE SHIGEO ; MORIOKA MASANARI ; KENON KK

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Agent(s): SPRUSON AND FERGUSON; RIDOUT AND MAYBEE LLP; TBK; TBK PATENT; DURAN CARLOS; DREW AND NAPIER LLC; NUEKHET SERRA CORAL; CANAN OEZTUERKER; FITZPATRICK CELLA HARPER AND SCINTO; 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

Title: ROTATIONAL FORCE TRANSMITTING PARTS

Abstract: Source: US2008260428A 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.

Classifications:

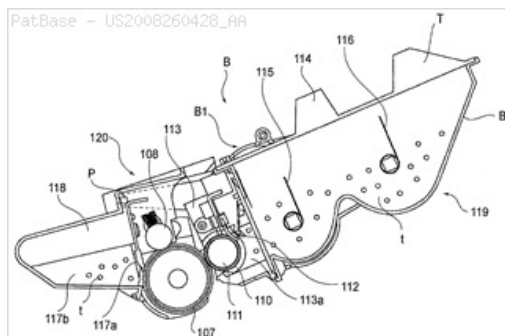
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International (IPC 1-7): G03G15/00 G03G21/16 G03G21/18

CPC: G03G21/1857 G03G15/751 G03G15/757 G03G21/1853 G03G21/186 G03G2221/1657 G03G21/18

European: G03G15/00H3 G03G15/75F G03G21/18H1V G03G21/18H2C S03G221/16K2

US: 1/1 399/111 399/117 399/167 399/167P

**Family:**

Publication number	Publication date	Application number	Application date
AU2007340402 AA	20080710	AU20070340402	20071225
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Priority:

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JP20140115298	20140603	JP20150105905	20150525	US20150728722	20150602
JP20150105905	20071221	JP20160244825	20161216	US20170704421	20170914

Probable Assignee: CANON KK

Assignee(s): (std): CANON KK ; HISANO MASATO ; UENO TAKAHITO ; MIYABE SHIGEO ; MORIOKA MASANARI ; KENON KK

Assignee(s): KENON KABUSIKI KAJSYA ; KEHNON KABUSIKI KAJSJA ; CANNON KK ; CANON INC ; CANON KABUSHIKI KAISHA ; CANON KABUSHIKI KAISHAJP

Inventor(s): (std): KHISANO MASATO ; KUNO MASATO ; MASANARI MORIOKA ; MASATO HISANO ; MIJABE SIGEO ; MIYABE SHIGEO ; MIYABE SIGEO ; HISANO MASATO ; MORIOKA MASANARI ; MORIOKA MASAYA ; SHIGEO MIYABE ; TAKAHITO UENO ; UENO TAKAHITO ; UENO TAKAKHITO

Agent(s): SPRUSON AND FERGUSON; RIDOUT AND MAYBEE LLP; TBK-PATENT; DREW AND NAPIER LLC; FITZPATRICK CELLA HARPER AND SCINTO; 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

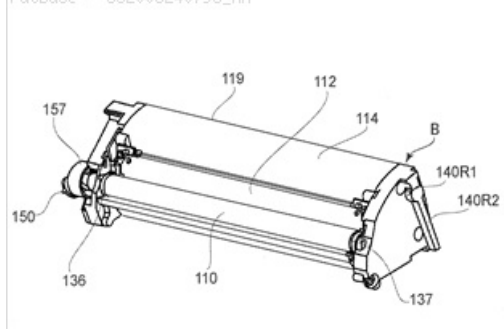
Title: ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS, DEVELOPING APPARATUS, AND **COUPLING** MEMBER

Abstract: Source: US2008240796A 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.

Classifications:

International (IPC 8-9): F16D1/10 F16D3/04 F16D3/16 F16D3/46 G03G15/00 G03G15/01 G03G15/06 G03G15/08 G03G21/00 G03G21/16 G03G21/18 (Advanced/Invention); G03G15/00 G03G15/06 (Advanced/Non-invention); F16D1/00 F16D3/02 F16D3/16 G03G15/00 G03G15/01 G03G15/06 G03G15/08 (Core/Invention); F16D G03G (Subclass/Invention)
International (IPC 1-7): F16D1/10 F16D3/04 G03G15/01 G03G15/08
CPC: G03G15/0173 F16D1/10 F16D3/04 G03G15/0121 G03G15/0896 G03G2215/0177 G03G2221/1657 G03G15/0865 G03G15/0815 F16D1/101 G03G15/08 G03G21/1676 G03G15/081 G03G21/186 G03G21/1647
European: F16D1/10 F16D3/04 G03G15/01S1 G03G15/08S S03G215/01S2A S03G221/16K2
US: 399/111 399/119 399/167 399/227 399/262 399/279 399/279P

PatBase - US2008240796_AA



Family:

Publication number	Publication date	Application number	Application date
AU2008230339 AA	20081002	AU20080230339	20080324
AU2008230339 BB	20120405	AU20080230339	20080324
AU2012200941 AA	20120308	AU20120200941	20120217
AU2012200941 BB	20150319	AU20120200941	20120217
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Priority:

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Probable Assignee: CANON KK

Assignee(s): (std): CANON KK ; MIYABE SHIGEO ; MORIOKA MASANARI ; UENO TAKAHITO

Assignee(s): KEHNON KABUSIKI KAJSA ; CANON INC ; CANON K K ; CANON KABUSHIKI KAISHA

Inventor(s): (std): MASANARI MORIOKA ; MIJABE SIGEO ; MIYABE SHIGEO ; NORIOKA MASANARI ; SHIGEO MIYABE ; TAKAHITO UENO ; UENO TAKAHITO ; UENO TAKAKHITO ; MORIOKA MASANARI ; MORIOKA MASAYA

Inventor(s): MORIOKA, Masanari ; UENO, Takahito ; MIYABE, Shigeo

Agent(s): SPRUSON AND FERGUSON; RIDOUT AND MAYBEE LLP; TBK; TBK PATENT; DURAN CARLOS; DREW AND NAPIER LLC; NAZLI TUGBA KORKUT OEZSOY; FITZPATRICK CELLA HARPER AND SCINTO; 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 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

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

Abstract: Source: US2009317134A 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.

Classifications:

International (IPC 8-9): G03G15/04 G03G15/08 G03G21/16

G03G21/18 (Advanced/Invention);

G03G15/08 (Advanced/Non-invention);

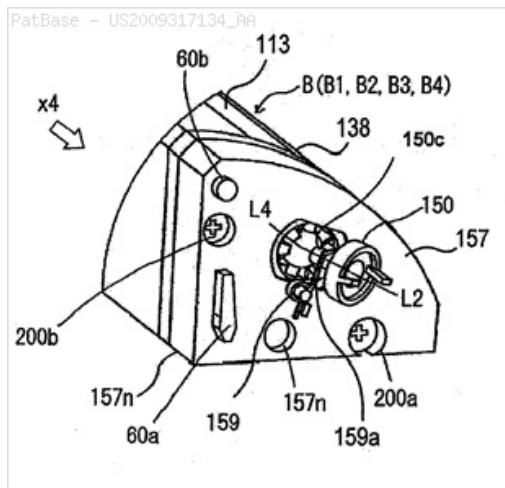
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CPC: G03G15/08 G03G21/186 G03G15/0806 G03G21/1814

G03G21/1647

European: G03G21/18H2C

US: 1/1 399/109 399/119 399/119P 399/286



Family:

Publication number	Publication date	Application number	Application date
CN101609298 A	20091223	CN200910150304	20090619
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CN101609299 A	20091223	CN200910150307	20090619
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CN102323730 A	20120118	CN201110267924	20090619
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JP2010026500 A2	20100204	JP20090116175	20090513
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JP2013178590 A2	20130909	JP20130134661	20130627
JP2014098935 A2	20140529	JP20140035116	20140226
JP2016027419 A2	20160218	JP20150186528	20150924
JP2016189022 A2	20161104	JP20160132193	20160704
JP2017187794 A2	20171012	JP20170118421	20170616
JP4558083 B2	20101006	JP20090116176	20090513
JP5306050 B2	20131002	JP20090116175	20090513
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US2009317134 AA	20091224	US20090486175	20090617
US2009317135 AA	20091224	US20090486199	20090617
US2012195635 AA	20120802	US20120363788	20120201
US2013094882 AA	20130418	US20120692225	20121203
US2013279938 AA	20131024	US20130923523	20130621
US2016246249 AA	20160825	US20160146025	20160504
US2017139349 AA	20170518	US20170419262	20170130
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US9594343 BB	20170314	US20160146025	20160504

Priority:

JP20080161117	20080620	JP20090116175	20090513	JP20090116176	20090513
JP20130134661	20130627	JP20130134661	20090513	JP20140035116	20090513
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US20170419262	20170130				

Probable Assignee: CANON KK

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

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

Title: PROCESS CARTRIDGE AND ELECTROGRAPHIC PHOTOSENSITIVE DRUM UNIT

Abstract: Source: US2009317131A 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.

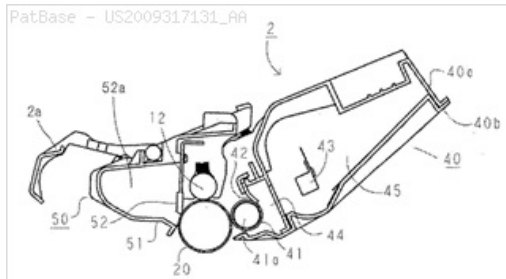
Classifications:

International (IPC 8-9): F16C17/04 F16D1/06 F16D1/10 G03G15/00 G03G15/02 G03G21/00 G03G21/16 G03G21/18 (Advanced/Invention); G03G15/00 G03G21/00 G03G21/18 (Core/Invention)

CPC: G03G21/1853 G03G21/186

European: G03G21/18H1V G03G21/18H2C

US: 399/111 399/117 399/117P 399/167

**Family:**

Publication number	Publication date	Application number	Application date
CN102067045 A	20110518	CN200980122339	20090619
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CN103279021 A	20130904	CN201310185173	20090619
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DE112009001274 T5	20110428	DE200911001274T	20090619
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EP2291713 A1	20110309	EP20090766759	20090619
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JP2010002690 A2	20100107	JP20080161531	20080620
JP5283986 B2	20130904	JP20080161531	20080620
TW2010111479 A	20100316	TW20090120783	20090619
TW201403268 A	20140116	TW20130135054	20090619
TW201636518 A	20161016	TW20160109698	20090619
TWI417686 B	20131201	TW20090120783	20090619
TWI541618 B	20160711	TW20130135054	20090619
TWI567310 B	20170121	TW20160109698	20090619
US2009317131 AA	20091224	US20090488168	20090619
US8270876 BB	20120918	US20090488168	20090619
WO09154311 A1	20091223	WO2009JP61672	20090619

Priority:

CN200980122339 20090619 EP20090766759 20090619 JP20080161531 20080620
WO2009JP61672 20090619

Probable Assignee: CANON KK

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

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

Inventor(s): (std): ASANUMA NAOYA ; HISANO MASATO ; KUNO MASATO ; MASANARI MORIOKA ; MASATO HISANO ; MORIOKA MASANARI ; MORIOKA MASAYA ; NAOYA ASANUMA ; RYOSUKE NAKAZAWA ; SASAKI TERUHIKO ; NAKAZAWA RYOSUKE ; NAKAZAWA YOSHIKI ; TERUHIKO SASAKI

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

Title: DEVELOPING DEVICE, DEVELOPING CARTRIDGE, ROTATIONAL FORCE TRANSMITTING PART AND ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS

Abstract: Source: US2010054823A 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.

Classifications:

International (IPC 8-9): F16D1/10 F16D3/205 G03G15/00

G03G15/01 G03G15/04 G03G15/06 G03G15/08 G03G15/14

G03G21/00 G03G21/16 (Advanced/Invention);

F16D1/10 G03G15/01 G03G15/14 (Advanced/Non-invention);

F16D1/00 G03G15/01 G03G15/08 G03G21/16 (Core/Invention);

G03G15/01 G03G15/08 (Core/Non-invention);

F16D G03G (Subclass/Invention)

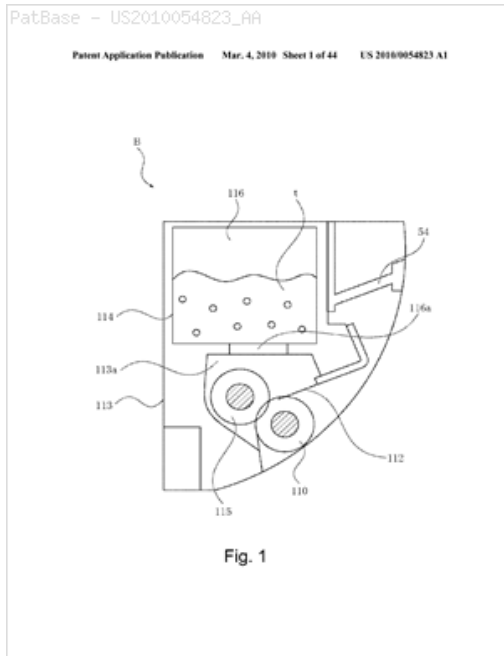
International (IPC 1-7): F16D1/10 G03G15/01

CPC: G03G15/0152 F16D3/2052 G03G2215/0177 G03G15/0121

G03G15/0173 F16D1/10 G03G21/00

European: F16D1/10 F16D3/205B G03G15/01S1B S03G215/01S2A

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



Family:

Publication number	Publication date	Application number	Application date
AU2009284873 AA	20100304	AU20090284873	20090827
AU2013202125 AA	20130502	AU20130202125	20130328
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CA2728942 AA	20100304	CA20092728942	20090827
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CN102132219 B	20151125	CN200980132510	20090827
CN105116702 A	20151202	CN201510626305	20090827
DE112009001827 T5	20110630	DE200911001827T	20090827
EP2324396 A1	20110525	EP20090788055	20090827
HK1156707 A1	20160729	HK20110110814	20111012
HK1156707 A3	20120615	HK20110110814	20111012
HK1213643 A1	20160708	HK20160101522	20111012
IN01965CN2011 A	20111202	IN2011CN01965	20110321
IN201748027989 A	20170818	IN201748027989	20170807
JP2010079283 A2	20100408	JP20090191189	20090820
JP5371627 B2	20131218	JP20090191189	20090820
KR101411779 B1	20140624	KR20117003785	20090827
KR20110031502 A	20110328	KR20117003785	20090827
MX2011000466 A1	20110224	MX20110000466	20090827
MX336447 B	20160119	MX20110000466	20090827
RU2011111541 A	20121010	RU20110111541	20090827
RU2013129844 A	20150110	RU20130129844	20130628
RU2014146572 A	20160610	RU20140146572	20141119
RU2016127560 A	20180112	RU20160127560	20160708
RU2016127560 A3	20180112	RU20160127560	20160708
RU2497171 C2	20131027	RU20110111541	20090827
RU2540091 C1	20150127	RU20130129844	20130628
RU2593417 C2	20160810	RU20140146572	20141119
SG185962 A1	20121228	SG20120081998	20090827
TW201028807 A	20100801	TW20090128857	20090827
TW201426210 A	20140701	TW20140110654	20090827
TW201640233 A	20161116	TW20160120556	20090827

TWI439824 B	20140601	TW20090128857	20090827
TWI551960 B	20161001	TW20140110654	20090827
US2010054823 AA	20100304	US20090547790	20090826
US8874004 BB	20141028	US20090547790	20090826
VN16444 A1	20170225	VN20110000787	20090827
WO10024457 A1	20100304	WO2009JP65375	20090827

Priority:

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CA20092728942	20090827	AU20160201011	20160218	AU20170236008	20170929
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CN200980132510	20090827	IN2011CN01965	20090827	RU20160127560	20160708

Probable Assignee: CANON KK

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

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

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

Agent(s): SPRUSON AND FERGUSON; RIDOUT AND MAYBEE LLP; DERHAM CASSANDRA VIRGINIE; DREW AND NAPIER LLC; FITZPATRICK CELLA HARPER AND SCINTO; 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

Title: CARTRIDGE AND ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS

Abstract: Source: US2010221036A 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.

Classifications:

International (IPC 8-9): G03G15/00 G03G15/02

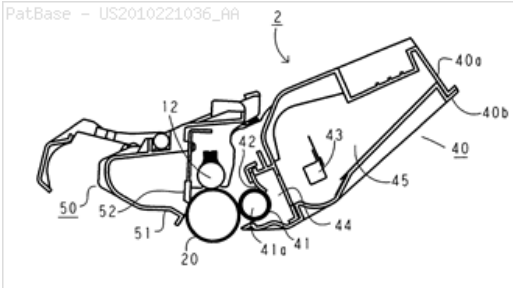
G03G21/18 (Advanced/Invention);

G03G15/00 G03G21/18 (Core/Invention)

CPC: G03G21/1853 G03G21/186 G03G21/1864

European: G03G21/18H1V G03G21/18H2C G03G21/18H2P

US: 399/110 399/110P 399/167



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

Priority:

JP20090045057 20090227

Probable Assignee: CANON KK

Assignee(s): (std): CANON KK ; HARA NOBUYOSHI ; MORIOKA MASANARI

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

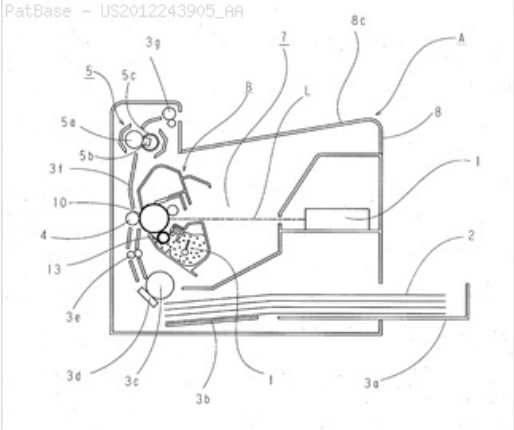
Inventor(s): (std): HARA NOBUYOSHI ; MASANARI MORIOKA ; MORIOKA MASANARI ; MORIOKA MASAYA ; NOBUYOSHI HARA

Agent(s): FITZPATRICK CELLA HARPER AND SCINTO

Title: PROCESS CARTRIDGE, PHOTOSENSITIVE DRUM UNIT, DEVELOPING UNIT AND ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS

Abstract: Source: US2012243905A A process cartridge usable with an electrophotographic image forming apparatus, a main assembly of which is not provided with a mechanism for moving a main assembly side engaging portion provided in the main assembly to transmit a rotational force to an image bearing member in the direction of the rotational axis of the image bearing member by an opening and closing operation of a cover member for the main assembly. The process cartridge can be mounted to the main assembly in a direction substantially perpendicular to the rotational axis of the image bearing member without deterioration of the usability performance. With the process cartridge, the electrophotographic image forming apparatus can be downsized. in accordance with the movement of the process cartridge when the process cartridge is dismounted from the main assembly of the electrophotographic image forming apparatus, a **coupling** member which is inclinable and translatable relative to a rotational axis of a rotational force transmitted member enters an inside of the recess of the main assembly side engaging portion to receive the rotational force from the main assembly engaging portion.

Classifications:
International (IPC 8-9): G03G15/08 G03G15/16 G03G21/00 G03G21/16 G03G21/18 (Advanced/Invention); G03G15/16 (Core/Non-invention)
CPC: G03G21/186 G03G21/1853
European: G03G21/18H1V G03G21/18H2C
US: 399/111 399/117



Family:

Publication number	Publication date	Application number	Application date
JP2011145670 A2	20110728	JP20100281063	20101216
JP5704911 B2	20150422	JP20100281063	20101216
TW201135379 A	20111016	TW20100144237	20101216
TWI442195 B	20140621	TW20100144237	20101216
US2012243905 AA	20120927	US20100514434	20101216
US8942592 BB	20150127	US20100514434	20101216
WO11074707 A1	20110623	WO2010JP73264	20101216

Priority:
JP20090285750 20091216 JP20100281063 20101216 WO2010JP73264 20101216

Probable Assignee: CANON KK
Assignee(s): (std): CANON KK ; KOMATSU NORIYUKI ; URATANI SHUNSUKE ; OGUMA TORU
Assignee(s): CANON INC ; CANON KABUSHIKI KAISHA
Inventor(s): (std): KOMATSU NORIYUKI ; OGUMA TORU ; URATANI SHUNSUKE
Agent(s): FITZPATRICK CELLA HARPER AND SCINTO; 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: CARTRIDGE DETACHABLY MOUNTABLE TO MAIN ASSEMBLY OF ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS, ASSEMBLING METHOD FOR DRIVE TRANSMITTING DEVICE FOR PHOTSENSITIVE DRUM, AND ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS

Abstract: Source: US2014270845A With a structure in which a **coupling** member includes a sphere providing a center of **inclination** (pivoting), a rotational force transmitted member has an opening have a diameter smaller than that of the sphere, and the **coupling** member is prevented from disengaging from rotational force transmitted member by contact of inner edge of the opening to the sphere, the inner edge of the opening may limit an inclinable (pivotable) **angle** range of the **coupling** member. In a state that a pin that is a shaft portion is inserted in a hole that is a through-hole provided in a **coupling** member, opposite end portions of the pin are supported by a driving side flange, which is a rotational force transmitted member. The **coupling** member, the driving side flange, and the pin are connected in this manner, and the pin contacts the inside of the hole without limiting the inclinable (pivotable) **angle** range, by which the **coupling** member is prevented from disengaging from the driving side flange.

Classifications:

International (IPC 8-9): F16D3/16 G03G15/00 G03G15/08

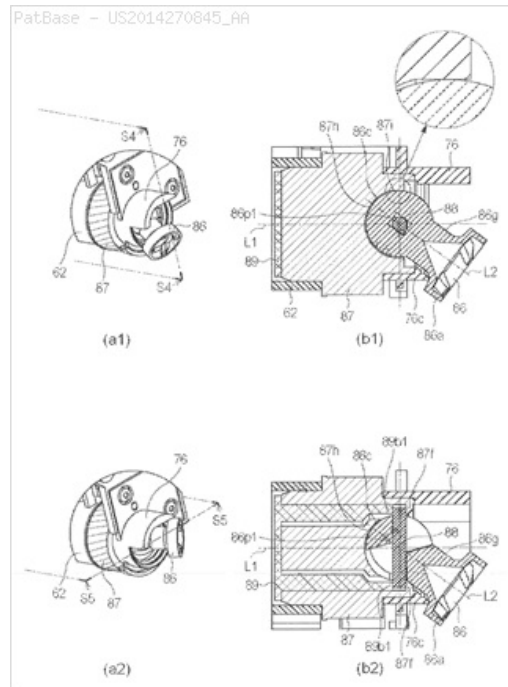
G03G21/12 G03G21/16 G03G21/18 (Advanced/Invention);

G03G (Subclass/Invention)

CPC: G03G21/186 Y10T29/49826 G03G21/1671 G03G21/1647

G03G21/18 F16D3/16

US: 1/1 29/428 399/110 399/116



Family:

Publication number	Publication date	Application number	Application date
CN104081291 A	20141001	CN201280068776	20121206
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KR20170021907 A	20170228	KR20177004597	20121206
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TW201337477 A	20130916	TW20120145980	20121206
TW201546579 A	20151216	TW20150110971	20121206
TW201736992 A	20171016	TW20170121120	20121206
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Priority:

JP20110266989	20111206	JP20120228108	20121015	JP20120242778	20121102
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WO2012JP82271	20121206	US20160189169	20160622		

Probable Assignee: CANON KK

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

Assignee(s): KENON KABUSIKI KAJSYA ; CANON KABUSHIKI KAISHA

Inventor(s): (std): ISAO KOISHI ; KAVAKAMI TAKUYA ; KAWAKAMI TAKUYA ; KOISHI ISAO ; KOISI ISAO ; KOMATSU NORIYUKI ; NORIYUKI KOMATSU ; SHIRAKATA SHO ; SHO SHIRAKATA ; SIRAKATA SO ; TAKUYA KAWAKAMI

Agent(s): TBK; OOO YURIDICHESKAYA GORODISSKIY I PARTNERY 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 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 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: CARTRIDGE AND DRUM UNIT FOR ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS

Abstract: Source: US2016246250A A cartridge mountable to a printer, said printer including a **coupling guide** contactable to a **coupling** of the cartridge to **guide** the **coupling** member. A case of the cartridge is provided with a hole for exposing a free end portion of the **coupling** to an outside of the cartridge, and a retracted portion provided in downstream of the hole with respect to the mounting direction of the cartridge. When the cartridge is mounted to a main assembly of the printer, the **coupling guide** enters the retracted portion from which the **coupling** member has retracted.

Classifications:

International (IPC 8-9): F16D1/10 F16D3/16 G03G G03G13/02

G03G15/00 G03G21/16 G03G21/18 (Advanced/Invention);

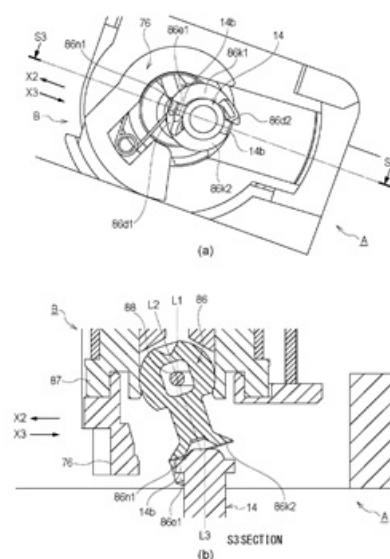
G03G (Subclass/Invention)

CPC: G03G15/757 G03G21/1642 G03G2221/1657 G03G2221/183

G03G21/1671 G03G21/1676 G03G21/1853

US: 399/167

PatBase - US2016246250_AA



Family:

Publication number	Publication date	Application number	Application date
AR099716 AA	20160810	AR2015P100726	20150311
AU2014319287 AA	20150319	AU20140319287	20140911
AU2017216445 AA	20170831	AU20170216445	20170814
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CL2016000526 A1	20170203	CL20160000526	20160308
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Priority:

AU20140319287 20140911	AU20170216445 20170814	JP20130188917 20130912
JP20140183708 20140909	EP20140844462 20140911	US20160052192 20160224
WO2014JP74754 20140911	US20170697610 20170907	

Probable Assignee: CANON KK

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Agent(s): SPRUSON AND FERGUSON; RIDOUT AND MAYBEE LLP; ESTUDIO FEDERICO VILLASECA Y CIA; HUMBERTO RUBIO CAMACHO; TBK; NADIA AM BADAR SH CS; FITZPATRICK CELLA HARPER AND SCINTO; YAMADA RYUICHI

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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