

PatBase - Search results 15 September 2018

Search query (3): fn=(45934617 or 44125674 or 44125674 or 55305223 or 55627954 or 33378211 or 34342530 or 34342530 or 52582232 or 59937136 or 61817564 or 62537535 or 31732260 or 47723244 or 47723247 or 53124676 or 55627937 or 55627954 or 55587416 or 59085923 or 55587416 or 55627954 or 53124676 or 59085923 or 33378211 or 62537535 or 66936897 or 31716683 or 33548231 or 33616810 or 34342530 or 34350105 or 34364279 or 34552761 or 34855603 or 42861897 or 33616810 or 47723244 or 47723247 or 49578501 or 55305223 or 57373194 or 61996660 or 64520943 or 66936897 or 64164470 or 61817564 or 31716683 or 33378211 or 33548231 or 33378211 or 33378211 or 34350105 or 34342530 or 34552761 or 33616810 or 34855603 or 34364279 or 33616810 or 47723244 or 47723247 or 34364279 or 42861897 or 49578501 or 34364279 or 34364279 or 55305223 or 57373194 or 62729383 or 61996660 or 34364279 or 61996660 or 44125674 or 63365484 or 64520943 or 61996660 or 33339800 or 33429787 or 33592765 or 33592766 or 33972677 or 34341758 or 33378211 or 34855603 or 55627937 or 55627954 or 61817564 or 62537535 or 12442805 or 28137576 or 11808327 or 12442805 or 13990811 or 28137576 or 28137576 or 23392750 or 23892934 or 23892934 or 28721831 or 31732260 or 25272274 or 14618360 or 8443043 or 23892934 or 28721831 or 13157759 or 28191022 or 12602426 or 28721831 or 29773827)

Results: 53**Search history**

Search pn=(wo2016084951) (Results 1)

1:

Search fn=(28227369 or 29748839 or 33278875 or 42049731 or 43090394 or 41952324 or 31732260 or 33339196 or 30974429 or 50755033) (Results 2: 10)

Search fn=(45934617 or 44125674 or 44125674 or 55305223 or 55627954 or 33378211 or 34342530 or 34342530 or 52582232 or 59937136 or 61817564 or 62537535 or 31732260 or 47723244 or 47723247 or 53124676 or 55627937 or 55627954 or 55587416 or 59085923 or 55587416 or 55627954 or 53124676 or 59085923 or 33378211 or 62537535 or 66936897 or 31716683 or 33548231 or 33616810 or 34342530 or 34350105 or 34364279 or 34552761 or 34855603 or 42861897 or 33616810 or 47723244 or 47723247 or 49578501 or 55305223 or 57373194 or 61996660 or 64520943 or 66936897 or 64164470 or 61817564 or 31716683 or 33378211 or 33548231 or 33378211 or 33378211 or 34350105 or 34342530 or 34552761 or 33616810 or 34855603 or 34364279 or 33616810 or 47723244 or 47723247 or 34364279 or 42861897 or 49578501 or 34364279 or 34364279 or 55305223 or 57373194 or 62729383 or 61996660 or 34364279 or 61996660 or 44125674 or 63365484 or 64520943 or 61996660 or 33339800 or 33429787 or 33592765 or 33592766 or 33972677 or 34341758 or 33378211 or 34855603 or 55627937 or 55627954 or 61817564 or 62537535 or 12442805 or 28137576 or 11808327 or 12442805 or 13990811 or 28137576 or 28137576 or 23392750 or 23892934 or 23892934 or 28721831 or 31732260 or 25272274 or 14618360 or 8443043 or 23892934 or 28721831 or 13157759 or 28191022 or 12602426 or 28721831 or 29773827) (Results 53)

1) Family number: 25272274 (JP250310 A2)

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Classifications:**International (IPC 1-7):** A01N43/32**Family:**

Publication number	Publication date	Application number	Application date
JP250310 A2	00000000		00000000

2) Family number: 8443043 (JP61063871A)

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Title: IMAGE FORMING DEVICE

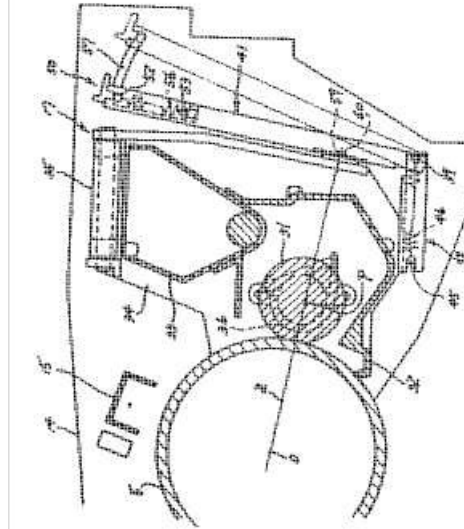
Abstract: PURPOSE:To prevent a developing roller from being contacted with a photosensitive roller by descending or ascending a developing device along a guide member in the state of a guide member is set up on a separated position to load/unload the developing device. CONSTITUTION:To load the developing device 17 to a drum unit, the drum unit is drawn out from a machine body, the developing device 17 is positioned on the upper part of the guide member 41 in the state of the member 41 is set up on the separated position, the device 17 is descended while holding a handle 35, the side lower end part of a side frame 34 is abutted upon the base board of the guide member 41, and the device 17 is descended moreover along the member 41. When the lower end part of the side frame 34 is abutted upon the base plate of a receiving member 38, the member 41 is rotated and moved from the separated position to the abutted position, so that the device 17 is moved to a photosensitive drum 5 and a supporting ring 36 of the developing roller 31 is engaged with the inside of the ring receiving part 42. Then, the member 41 is locked on an abutted position by a locking means 50 to hold the device 17 in the loaded state.

Classifications:**International (IPC 8-9):** G03G15/00 G03G15/08

G03G21/16 (Advanced/Invention);

G03G15/00 G03G15/08 G03G21/16 (Core/Invention)

International (IPC 1-7): G03G15/00 G03G15/08**CPC:** G03G21/1623 G03G15/0896 G03G2221/163 G03G2221/1654**European:** G03G15/08S G03G21/16 S03G221/16D S03G221/16K1

**Family:**

Publication number	Publication date	Application number	Application date
JP61063871 A2	19860402	JP19840186200	19840905

Priority:

JP19840186200 19840905

Probable Assignee: MITA INDUSTRIAL CO LTD**Assignee(s):** (std): MITA INDUSTRIAL CO LTD**Assignee(s):** MITA IND CO LTD**Inventor(s):** (std): AKIYAMA KAZUNORI**3) Family number: 14618360** (JP4343368A)

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Title: ELECTROPHOTOGRAPHIC DEVICE

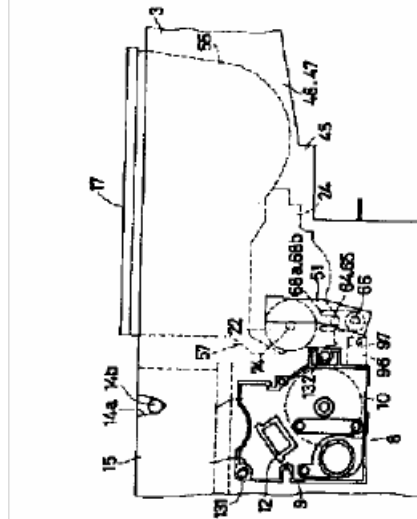
Abstract: PURPOSE:To provide a loading structure of a developing device where installation area can be greatly reduced and the reliability is improved. CONSTITUTION:When loading of the developing unit 17 to a frame 3 is in a completed state, a lever 51 has its angle varied and is positioned in a front surface side of a photosensitive unit 8, that is in the direction to pull out the photosensitive unit 8. Because of this, as long as the developing unit 17 is maintained in a loading completed state, the photosensitive unit 8 is prevented from falling out by the lever 51. On the other hand, when the photosensitive unit 8 is to be extracted, the developing unit 17 is separated from a photosensitive member 10 by returning the lever 51, and the unit can be extracted to the upper direction. At this time, the photosensitive unit 8 has the lever 51 released from the front surface side, and the photosensitive unit 8 and the developing unit 17 are separated. Extraction can be carried out without damaging these.

Classifications:

International (IPC 8-9): G03G15/00 G03G15/08 G03G15/22 G03G21/00
G03G21/16 (Advanced/Invention);

G03G15/00 G03G15/08 G03G21/00 G03G21/16 (Core/Invention)

International (IPC 1-7): G03G15/00 G03G15/08 G03G15/22 G03G21/00

**Family:**

Publication number	Publication date	Application number	Application date
JP4343368 A2	19921130	JP19910116053	19910521

Priority:

JP19910116053 19910521

Probable Assignee: BANDO CHEMICAL IND**Assignee(s):** (std): BANDO CHEMICAL IND**Assignee(s):** BANDO CHEMICAL INDUSTRIES LTD ; BANDO CHEM IND LTD**Inventor(s):** (std): DOI KOSUKE**4) Family number: 13157759 (US5650841A)**

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Title: PROCESS CARTRIDGE, IMAGE FORMING APPARATUS USABLE THEREWITH AND TONER SEAL MOUNTING METHOD FOR PROCESS CARTRIDGE

Abstract: A process cartridge detachably mountable to a main assembly of an image forming apparatus includes a frame; an image bearing member; a developing device; a toner accommodating device for accommodating toner to be supplied to said developing device; opening for supplying to said developing device the toner in said toner accommodating device; a toner seal removably mounted at said opening to close it; a gap in said frame to permit pulling of said toner seal; an elastic sealing member in contact with said toner seal to prevent leakage of the toner through the gap; wherein said toner seal is constructed such that said toner seal is out of contact with an end of said elastic sealing member upon pulling of said toner seal.

Classifications:

International (IPC 8-9): G03G15/00 G03G15/08
G03G21/18 (Advanced/Invention)

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

CPC: Y10S222/01 G03G15/0882 G03G21/1814 G03G2215/00987

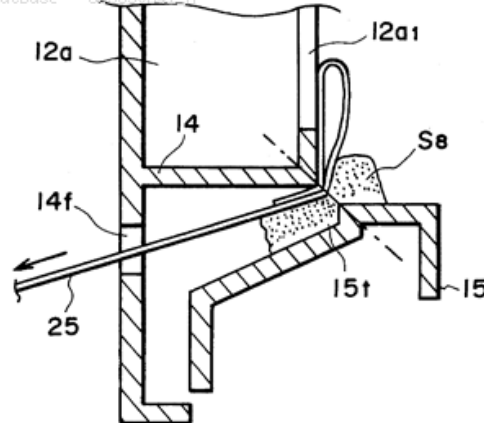
G03G2221/1633 G03G2221/1648 G03G2221/1853

European: G03G15/08H3P G03G21/18C3 S03G215/00R S03G221/16D1

S03G221/16J S03G221/18P3

US: 222/DIG.1 399/105 399/111 399/262

PatBase - US5650841_A

**Family:**

Publication number	Publication date	Application number	Application date
JP3236124 B2	20011210	JP19930123227	19930428
JP6314026 A2	19941108	JP19930123227	19930428
US5650841 A	19970722	US19960670231	19960620

Priority:

JP19930123227 19930428

US19940234563 19940428

US19960670231 19960620

Probable Assignee: CANON INC**Assignee(s):** (std): CANON KK**Assignee(s):** CANON INC ; CANON KABUSHIKI KAISHA**Inventor(s):** (std): KAWAGUCHI HIDEJI ; KAWAGUCHI HIDESHI ; MATSUDA KENJI ; MIYAKE HIROAKI ; NOMURA YOSHIYA ; SUGIURA YOSHINORI**5) Family number: 11808327** (JP10260566A)

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Title: ELECTROPHOTOGRAPHIC IMAGE FORMING DEVICE

Abstract: PROBLEM TO BE SOLVED: To enable a developing cartridge exchanging performance to be improved by disposing a simple mechanical brake, in the case of performing the rotary shifting method development for a plurality of developing cartridges. SOLUTION: This device is provided with the mechanical brake capable of making the rotary operation of a rotary 1 rotating while holding the plural developing cartridges, associating with the motion of the cover opened by a user for exchanging the developing cartridge D. The mechanical brake is consisting of three gears, among which the first gear 5 is always engaged with a rotary gear 1a, and the respective second and third gear 6 and 7 is always engaged with the first gear 5. Respective elastic materials provided with the larger coefficient of friction being fit on the same shaft with the second and third gear 6 and 7, is integrally composed with the respective gear. Two elastic materials is respectively attached with or detached from each other associating with the operation of the cover.

Classifications:**International (IPC 8-9):** G03G15/01 G03G15/08 G03G21/00

G03G21/16 (Advanced/Invention);

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

International (IPC 1-7): G03G15/01 G03G15/08 G03G21/00 G03G21/16

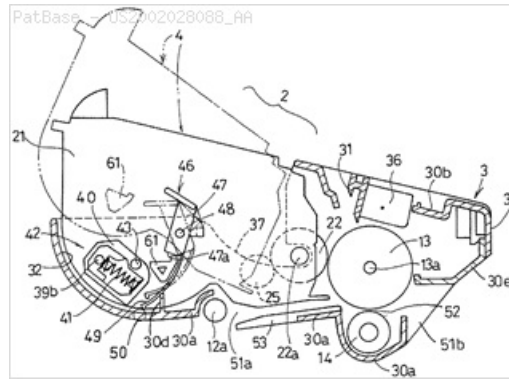
PatBase - JP10260566_A2

(6)

特開平10-260566

フューエルポンプ
ポンプ14はポンプ15に接続するポンプ管16
17、18、19、20、21、22、23、24、25、26、27、28、29、30、31、32、33、34、35、36、37、38、39、40、41、42、43、44、45、46、47、48、49、50、51、52、53、54、55、56、57、58、59、60、61、62、63、64、65、66、67、68、69、70、71、72、73、74、75、76、77、78、79、80、81、82、83、84、85、86、87、88、89、90、91、92、93、94、95、96、97、98、99、100、101、102、103、104、105、106、107、108、109、110、111、112、113、114、115、116、117、118、119、120、121、122、123、124、125、126、127、128、129、130、131、132、133、134、135、136、137、138、139、140、141、142、143、144、145、146、147、148、149、150、151、152、153、154、155、156、157、158、159、160、161、162、163、164、165、166、167、168、169、170、171、172、173、174、175、176、177、178、179、180、181、182、183、184、185、186、187、188、189、190、191、192、193、194、195、196、197、198、199、200、201、202、203、204、205、206、207、208、209、210、211、212、213、214、215、216、217、218、219、220、221、222、223、224、225、226、227、228、229、230、231、232、233、234、235、236、237、238、239、240、241、242、243、244、245、246、247、248、249、250、251、252、253、254、255、256、257、258、259、260、261、262、263、264、265、266、267、268、269、270、271、272、273、274、275、276、277、278、279、280、281、282、283、284、285、286、287、288、289、290、291、292、293、294、295、296、297、298、299、300、301、302、303、304、305、306、307、308、309、310、311、312、313、314、315、316、317、318、319、320、321、322、323、324、325、326、327、328、329、330、331、332、333、334、335、336、337、338、339、340、341、342、343、344、345、346、347、348、349、350、351、352、353、354、355、356、357、358、359、360、361、362、363、364、365、366、367、368、369、370、371、372、373、374、375、376、377、378、379、380、381、382、383、384、385、386、387、388、389、390、391、392、393、394、395、396、397、398、399、400、401、402、403、404、405、406、407、408、409、410、411、412、413、414、415、416、417、418、419、420、421、422、423、424、425、426、427、428、429、430、431、432、433、434、435、436、437、438、439、440、441、442、443、444、445、446、447、448、449、450、451、452、453、454、455、456、457、458、459、460、461、462、463、464、465、466、467、468、469、470、471、472、473、474、475、476、477、478、479、480、481、482、483、484、485、486、487、488、489、490、491、492、493、494、495、496、497、498、499、500、501、502、503、504、505、506、507、508、509、510、511、512、513、514、515、516、517、518、519、520、521、522、523、524、525、526、527、528、529、530、531、532、533、534、535、536、537、538、539、540、541、542、543、544、545、546、547、548、549、550、551、552、553、554、555、556、557、558、559、560、561、562、563、564、565、566、567、568、569、570、571、572、573、574、575、576、577、578、579、580、581、582、583、584、585、586、587、588、589、590、591、592、593、594、595、596、597、598、599、600、601、602、603、604、605、606、607、608、609、610、611、612、613、614、615、616、617、618、619、620、621、622、623、624、625、626、627、628、629、630、631、632、633、634、635、636、637、638、639、640、641、642、643、644、645、646、647、648、649、650、651、652、653、654、655、656、657、658、659、660、661、662、663、664、665、666、667、668、669、670、671、672、673、674、675、676、677、678、679、680、681、682、683、684、685、686、687、688、689、690、691、692、693、694、695、696、697、698、699、700、701、702、703、704、705、706、707、708、709、710、711、712、713、714、715、716、717、718、719、720、721、722、723、724、725、726、727、728、729、730、731、732、733、734、735、736、737、738、739、740、741、742、743、744、745、746、747、748、749、750、751、752、753、754、755、756、757、758、759、760、761、762、763、764、765、766、767、768、769、770、771、772、773、774、775、776、777、778、779、780、781、782、783、784、785、786、787、788、789、790、791、792、793、794、795、796、797、798、799、800、801、802、803、804、805、806、807、808、809、810、811、812、813、814、815、816、817、818、819、820、821、822、823、824、825、826、827、828、829、830、831、832、833、834、835、836、837、838、839、840、841、842、843、844、845、846、847、848、849、850、851、852、853、854、855、856、857、858、859、860、861、862、863、864、865、866、867、868、869、870、871、872、873、874、875、876、877、878、879、880、881、882、883、884、885、886、887、888、889、890、891、892、893、894、895、896、897、898、899、900、901、902、903、904、905、906、907、908、909、910、911、912、913、914、915、916、917、918、919、920、921、922、923、924、925、926、927、928、929、930、931、932、933、934、935、936、937、938、939、940、941、942、943、944、945、946、947、948、949、950、951、952、953、954、955、956、957、958、959、960、961、962、963、964、965、966、967、968、969、970、971、972、973、974、975、976、977、978、979、980、981、982、983、984、985、986、987、988、989、990、991、992、993、994、995、996、997、998、999、1000、1001、1002、1003、1004、1005、1006、1007、1008、1009、1010、1011、1012、1013、1014、1015、1016、1017、1018、1019、1020、1021、1022、1023、1024、1025、1026、1027、1028、1029、1030、1031、1032、1033、1034、1035、1036、1037、1038、1039、1040、1041、1042、1043、1044、1045、1046、1047、1048、1049、1050、1051、1052、1053、1054、1055、1056、1057、1058、1059、1060、1061、1062、1063、1064、1065、1066、1067、1068、1069、1070、1071、1072、1073、1074、1075、1076、1077、1078、1079、1080、1081、1082、1083、1084、1085、1086、1087、1088、1089、1090、1091、1092、1093、1094、1095、1096、1097、1098、1099、1100、1101、1102、1103、1104、1105、1106、1107、1108、1109、1110、1111、1112、1113、1114、1115、1116、1117、1118、1119、1120、1121、1122、1123、1124、1125、1126、1127、1128、1129、1130、1131、1132、1133、1134、1135、1136、1137、1138、1139、1140、1141、1142、1143、1144、1145、1146、1147、1148、1149、1150、1151、1152、1153、1154、1155、1156、1157、1158、1159、1160、1161、1162、1163、1164、1165、1166、1167、1168、1169、1170、1171、1172、1173、1174、1175、1176、1177、1178、1179、1180、1181、1182、1183、1184、1185、1186、1187、1188、1189、1190、1191、1192、1193、1194、1195、1196、1197、1198、1199、1200、1201、1202、1203、1204、1205、1206、1207、1208、1209、1210、1211、1212、1213、1214、1215、1216、1217、1218、1219、1220、1221、1222、1223、1224、1225、1226、1227、1228、1229、1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US2005135837 AA	20050623	US20050053846	20050210
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US2007264045 AA	20071115	US20070802215	20070521
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US2010296836 AA	20101125	US20100801688	20100621
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US6041203 A	20000321	US19990281948	19990331
US6330410 BA	20011211	US20000501659	20000210
US6411789 BA	20020625	US20010928514	20010814
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US7742720 BB	20100622	US20080289686	20081031
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US8121520 BB	20120221	US20110064687	20110408

Priority:

JP19990050232	19990226	JP19990075560	19990319	JP19990075562	19990319
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US20000501659	20000210	EP20000103908	20000224	EP20020005650	20000224
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Probable Assignee: BROTHER IND LTD

Assignee(s): (std): BROTHER IND LTD ; OKABE YASUSHI ; SATO SHOUGO ; SUZUKI TSUTOMU

Assignee(s): BROTHER INDUSTRIES LTD ; BROTHER KOGYO K K ; BROTHER KOGYO K K NAGOYA ; BROTHER KOGYO KABUSHIKI KAISHA ; BROTHER KOGYO KK

Inventor(s): (std): SATO SHOGO ; TSUTOMU OKABE YASUSHI SATO SHO ; YASUSHI OKABE ; TSUTOMU SUZUKI ; SUZUKI TSUTOMU BROTHER INDUSTR ; SUZUKI TSUTOMU ; SHOUGO SATO ; SHOGO SATO ; SATO SHUOGO ; SATO SHOUGO BROTHER INDUSTRIES ; SATO SHOUGO ; OSAMU OKABE ; OKABE YASUSHI BROTHER INDUSTRI ; OKABE YASUSHI ; SATO SHOUGO BROTHER IND ; OKABE OSAMU

Inventor(s): OKABE YASUSHI BROTHER IND LTD ; OKABE YASUSHI SATO SHOUGO SUZUKI TSUTOMU ; KU ; OKABE YASUSHI BROTHER INDUSTRIES LTD ; SATO SHOUGO BROTHER INDUSTRIES LTD ; SUZUKI TSUTOMU BROTHER INDUSTRIES LTD ; SATO SHOUGO BROTHER ; SATO SHOUGO BROTHER IND LTD ; SUZUKI TSUTOMU BROTHER IND LTD

Agent(s): HOFER DOROTHEA ET AL; PRUEFER AND PARTNER GBR EUROPEAN PATENT ATTORNEYS; PRUEFER AND PARTNER GBR EUROPEAN PATENT ATTORNEYS; OLIFF AND BERRIDGE PLC

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

7) Family number: 12442805 (US6101350A)

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Title: PHOTSENSITIVE MEMBER CARTRIDGE AND DEVELOPER CARTRIDGE FOR USE IN AN IMAGE-FORMING APPARATUS

Abstract: A photosensitive member cartridge, having a photosensitive drum, is provided with guide grooves formed in opposite side walls of the photosensitive member cartridge. The guide grooves extend in an accurate shape from an upwardly open accommodating portion to a vicinity of a shaft of the photosensitive drum. A shaft of a developing roller has protruded opposite end portions that protrude outward from opposite sides of a case of a developer cartridge. The protruded end portions of the developing roller shaft are provided with bearings. When the developer cartridge is inserted into the accommodating portion toward the photosensitive drum, the guide grooves support and guide the bearings on the end portions of the developing roller shaft, so that the developer cartridge becomes properly set in the accommodating portion. An inverted triangular-shaped action-receiving portion, protruding from the outer surface of one of the opposite sides of the developer cartridge, is restrained from above by a lower contact portion of a lock lever that is disposed in the accommodating portion.

Classifications:

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

G03G21/18 (Advanced/Invention);

G03G15/08 G03G21/16 G03G21/18 (Core/Invention)

International (IPC 1-7): G03G15/00 G03G15/04 G03G15/06 G03G15/08

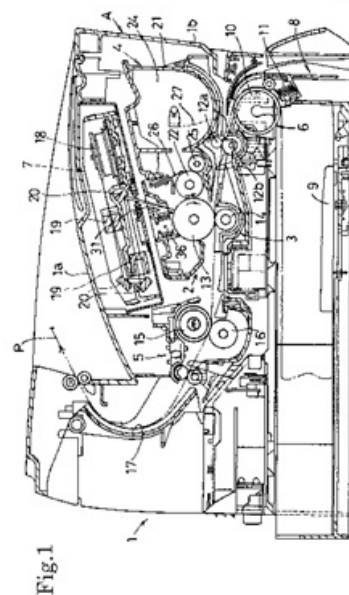
G03G15/08 G03G15/14 G03G21/16 G03G21/18

CPC: G03G21/1853 G03G15/0896 G03G21/1864 G03G2221/1853

European: G03G15/08S G03G21/16 G03G21/18H1V G03G21/18H2P

S03G221/18P3

US: 399/111 399/113 399/119

**Family:**

Publication number	Publication date	Application number	Application date
AT229192 E	20021215	AT19990117656T	19990907
CN100356277 C	20071219	CN200410078994	19991008
CN1174292 C	20041103	CN19991021002	19991008
CN1264854 A	20000830	CN19991021002	19991008
CN1591231 A	20050309	CN200410078994	19991008
DE69904287 D1	20030116	DE19996004287	19990907
DE69904287 T2	20030717	DE19996004287T	19990907
EP1031891 A1	20000830	EP19990117656	19990907
EP1031891 B1	20021204	EP19990117656	19990907
ES2189325 T3	20030701	ES19990117656T	19990907
HK1030658 A1	20050715	HK20010101423	20010227
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US6101350 A	20000808	US19990281947	19990331

Priority:

JP19990050231 19990226

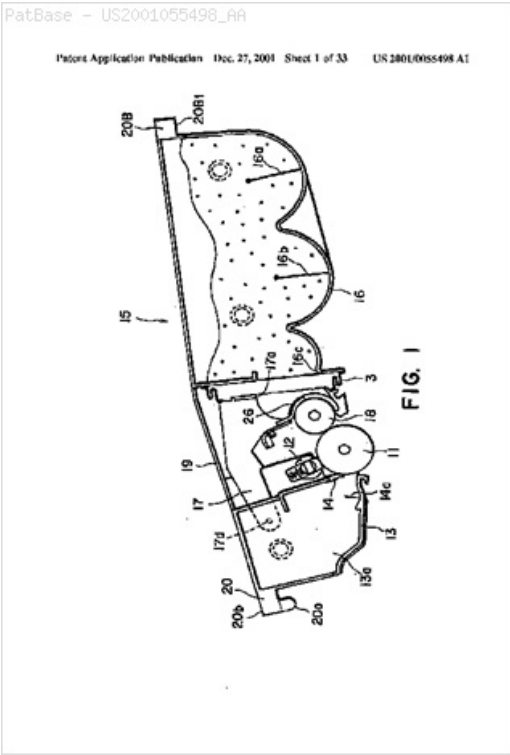
Probable Assignee: BROTHER IND LTD**Assignee(s):** (std): BROTHER IND LTD**Assignee(s):** BROTHER KOGYO K K ; BROTHER KOGYO K K NAGOYA ; BROTHER KOGYO KABUSHIKI KAISHA ; BROTHER KOGYO KK**Inventor(s):** (std): OKABE OSAMU ; OSAMU OKABE ; OSAMU SATO SHOGO SUZUKI TSUTOM ; SATO SHOGO ; SHOGO SATO ; TSUTOMU SUZUKI ; SUZUKI TSUTOMU ; SATO SHOUGO ; OKABE YASUSHI**Inventor(s):** YASUSHI OKABE ; SHOUGO SATO ; SATO SHOGO SUZUKI TSUTOMU OKABE OSAMU**Designated states:** AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE**8) Family number: 28137576 (US2001055498A)**

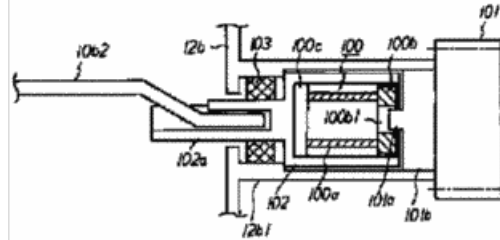
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Title: Process cartridge and image forming apparatus

Abstract: A process cartridge detachably mountable to a main assembly of an electrophotographic image forming apparatus includes an electrophotographic photosensitive member; a developing member for developing an electrostatic latent image formed on the electrophotographic photosensitive member; a developer accommodating portion for accommodating a developer to be usage by the developing member to develop the electrostatic latent image; a cartridge guide for being guided by a main assembly side guide provided in the main assembly of the apparatus; a first cartridge positioning portion; provided at one end portion in an axial direction of the electrophotographic photosensitive member, for engagement with a first main assembly side positioning portion, provided in the main assembly of the apparatus, in response to falling of a side of the process cartridge opposite from a side having the developer accommodating portion in the direction crossing with the axial direction of the electrophotographic photosensitive member by operation of a lever provided in the main assembly of the apparatus, a second cartridge positioning portion, provided at the other end portion in an axial direction of the electrophotographic photosensitive member, for engagement with a second main assembly side positioning portion, provided in the main assembly of the apparatus, in response to falling of a side of the process cartridge opposite from a side having the developer accommodating portion in the direction crossing with the axial direction of the electrophotographic photosensitive member by operation of a lever provided in the main assembly of the apparatus.

Classifications:
International (IPC 8-9): G03G21/18 (Advanced/Invention);
G03G21/18 (Core/Invention)
International (IPC 1-7): G03G21/16 G03G21/18
CPC: G03G21/185 G03G2215/021 G03G2221/1884
European: G03G21/18H1P S03G215/02A S03G221/18P4
US: 399/111



**Family:**

Publication number	Publication date	Application number	Application date
JP2001005268 A2	20010112	JP19990172528	19990618

Priority:

JP19990172528 19990618

Probable Assignee: CANON INC**Assignee(s):** (std): CANON KK**Assignee(s):** CANON INC ; CANON KABUSHIKI KAISHA**Inventor(s):** (std): SASAKO ETSUICHI**10) Family number: 12602426 (US6377765B)**

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Title: MEANS FOR INDEPENDENTLY CHANGING A LATENT IMAGE CARRIER UNIT AND A DEVELOPING UNIT IN AN IMAGE FORMING UNIT

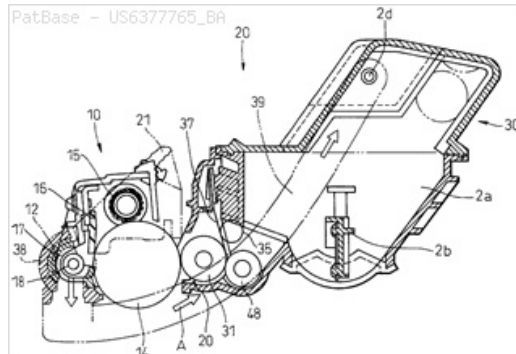
Abstract: Image forming unit has a photosensitive drum unit and a developing unit. The photosensitive drum unit has drum shafts extending outward from opposite sides thereof. The developing unit has a through-hole and a drum shaft mounting groove for receiving the drum shafts, and developing unit rotary shafts extending outward from opposite sides thereof. An engagement lever and a toner returning cylinder are provided in the photosensitive drum unit, and a shutter is provided in the developing unit. The toner returning cylinder and the shutter are disposed between the waste toner tank of the photosensitive drum unit and the toner returning pipe of the developing unit so that they are detachable and separable from each other. Further, a mechanism is provided for pressing the developing roller onto the photosensitive drum when the photosensitive drum unit is mounted to the developing unit or when the photosensitive roller is driven.

Classifications:**International (IPC 8-9):** G03G15/00 G03G15/08 G03G21/10

G03G21/18 (Advanced/Invention);

G03G15/00 (Advanced/Non-invention);

G03G15/00 G03G15/08 G03G21/10 (Core/Invention)

International (IPC 1-7): G03G15/00 G03G15/02 G03G15/08 G03G21/00 G03G21/10**CPC:** G03G21/12 Y10S222/01 G03G15/0896**European:** G03G15/08S G03G21/10**US:** 222/DIG.1 399/111 399/113 399/358 399/359**Family:**

Publication number	Publication date	Application number	Application date
CN1199088 C	20050427	CN20001019914	20000630
CN1303031 A	20010711	CN20001019914	20000630
DE10030631 A1	20010531	DE20001030631	20000628
DE10030631 B4	20160922	DE20001030631	20000628
JP2001117306 A2	20010427	JP19990297977	19991020

KR100730324 B1	20070619	KR20000036128	20000628
KR20010039690 A	20010515	KR20000036128	20000628
US6377765 BA	20020423	US20000589175	20000608

Priority:

JP19990297977 19991020

Probable Assignee: FUJI XEROX CO LTD

Assignee(s): (std): FUJI XEROX CO LTD ; FUJITSU LTD

Assignee(s): FUJITSU LTD KAWASAKI ; FUJITSU LIMITED ; FUJI XEROX CO

Inventor(s): (std): HIKITA TOSHIHIRO ; KUWABARA NOBUO ; NOBUO KUWAHARA ; SHISHIDO HISAO ; SHISHIDO TOSHIO ; TOMOKO HIKITA ; TOSHIO SHISHIDO ; HIKITA TOMOHIRO

Inventor(s): HIKITA TOMOKO ; KUWAHARA NOBUO

11) Family number: 23392750 (JP2002149037A)

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Title: IMAGE FORMING APPARATUS

Abstract: PROBLEM TO BE SOLVED: To provide an image forming apparatus in which a process cartridge and a main body of image forming apparatus are surely disengaged when a cover is opened and the cover in the opened state is surely locked. SOLUTION: By connecting a cover 19 and a disengaging means 100 by a link 121, when the cover 19 is opened, a photoreceptor drum 23 and a driving shaft (recessed coupling shaft 101) are disengaged and when the cover 19 is closed, they are engaged. Besides, a lock groove 121d is formed on the link 121 and when the cover 19 is opened, by engaging the lock groove 121d and a lever lock projection on the side of the main body of image forming apparatus, the cover 19 is locked while being opened.

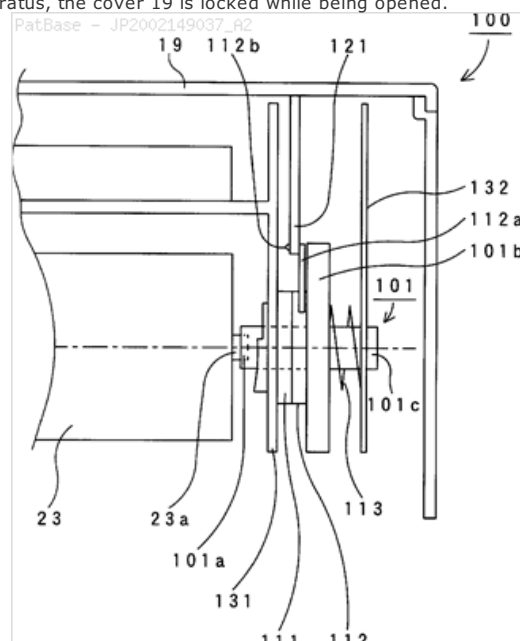
Classifications:

International (IPC 8-9): B41J29/13 G03G21/00

G03G21/16 (Advanced/Invention);

B41J29/12 G03G21/00 G03G21/16 (Core/Invention)

International (IPC 1-7): B41J29/13 G03G21/00 G03G21/16



Family:

Publication number	Publication date	Application number	Application date
JP2002149037 A2	20020522	JP20000345510	20001113
JP3671835 B2	20050713	JP20000345510	20001113

Priority:

JP20000345510 20001113

Probable Assignee: BROTHER IND LTD

Assignee(s): (std): BROTHER IND LTD

Assignee(s): BROTHER KOGYO KABUSHIKI KAISHA

Inventor(s): (std): MAKINO KAZUNORI

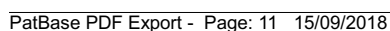
12) Family number: 29773827 (US2003228171A)

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

Abstract: A developing blade for use in a process cartridge for regulating an amount of developer on a peripheral surface of a developing roller, the process cartridge including: an electrophotographic photosensitive drum; a developing roller for developing an electrostatic latent image formed on the electrophotographic photosensitive drum; a developing frame that rotatably supports the developing roller; a drum frame that rotatably supports the electrophotographic photosensitive drum, and that is connected to the developing frame, wherein the developing frame and the drum frame are rockable with respect to each other; and a biasing member for biasing the developing roller toward the electrophotographic photosensitive drum, wherein the developing blade is supported by a supporting member and is attached to the developing frame, and wherein at least one end of the supporting member in a lengthwise direction of the developing roller is provided with an attachment portion to which the biasing member is

US: 399/111 399/113 399/284



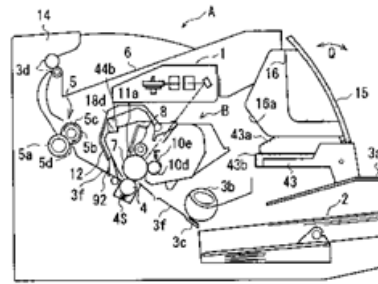


FIG. 1

Family:

Publication number	Publication date	Application number	Application date
■ CN1222848 C	20051012	CN20021019232	20020315
■ CN1383038 A	20021204	CN20021019232	20020315
■ DE60245464 D1	20131031	DE20026045464	20020315
■ EP1241536 A2	20020918	EP20020251886	20020315
■ EP1241536 A3	20060412	EP20020251886	20020315
■ EP1241536 B1	20130904	EP20020251886	20020315
■ JP2002278411 A2	20020927	JP20010075842	20010316
■ JP3625431 B2	20050302	JP20010075842	20010316
■ KR100465078 B1	20050106	KR20020014333	20020316
■ KR20020074083 A	20020928	KR20020014333	20020316
■ US2002181969 AA	20021205	US20020098289	20020318
■ US6917774 BB	20050712	US20020098289	20020318

Priority:

JP20010075842 20010316 EP20020251886 20020315

Probable Assignee: CANON INC**Assignee(s):** (std): CANON KK**Assignee(s):** CANON INC ; CANON K K ; CANON KABUSHIKI KAISHA ; CANON KABUSHIKI KAISHA AB**Inventor(s):** (std): ICHIRO TERATE ; NODA SHINYA ; SHINYA NODA ; TERADA ICHIRO ; TERATE ICHIRO**Inventor(s):** TERADA ICHIRO C O CANON KK ; NODA SHINYA C O CANON KK**Agent(s):** TBK; FITZPATRICK CELLA HARPER AND SCINTO**Designated states:** AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR**14) Family number: 28721831 (US2003049046A)**

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Title: IMAGE FORMING DEVICE AND PROCESS UNIT FOR USE THEREIN

Abstract: A developing unit is detachably mounted on a photosensitive unit to form a combined unit called process unit. In use, the process unit is loaded into an electrophotographic image forming device. A rotational shaft of the photosensitive drum projects out from the photosensitive unit. When the process unit is loaded into the image forming device from a top open space, both ends of the rotational shaft are engaged with a pair of guides formed in side walls of the image forming device and guided down along the guides. The process unit is accommodated in an accommodating section when both ends of the rotational shaft have brought into abutment with stops at the ends of the guides and a trailing end of the process unit is rotated downward about the rotational shaft.

Classifications:**International (IPC 8-9):** G03G15/04 G03G15/06 G03G15/08 G03G21/00

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

G03G15/08 G03G21/00 G03G21/16 G03G21/18 (Core/Invention);

G03G (Subclass/Invention)

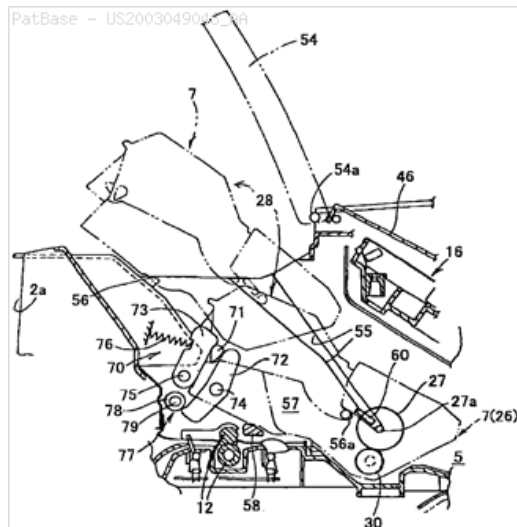
International (IPC 1-7): G03G15/00 G03G15/08 G03G21/00 G03G21/16

G03G21/18

CPC: G03G21/1864 G03G15/0896 G03G2221/1892 G03G2221/1884

G03G2221/1853 G03G2221/1846 G03G2221/1684 G03G2221/1654

G03G2221/163 G03G2221/1606 G03G21/1896 G03G21/1853
G03G21/1846 G03G21/1825 G03G21/1821
European: G03G15/08S G03G21/18C4C G03G21/18C4S G03G21/18H1H
G03G21/18H1V G03G21/18H2P G03G21/18H3 G03G21/18L2
S03G221/16B S03G221/16D S03G221/16K1 S03G221/16S2
S03G221/18P2 S03G221/18P3 S03G221/18P4 S03G221/18P5
US: 399/110 399/110P 399/111 399/111P 399/113 399/113P 399/113S
399/116 399/116P 399/119 399/119S D18/40 D18/43 D18/56



Family:

Publication number	Publication date	Application number	Application date
CA100388 S	20031030	CA20020100388F	20020821
CA100389 S	20031030	CA20020100389F	20020821
CN100451857 C	20090114	CN20021060644	20020913
CN1428666 A	20030709	CN20021060644	20020913
CN2627544 Y	20040721	CN20022092858U	20020913
EP1293848 A2	20030319	EP20020020654	20020913
EP1293848 A3	20121010	EP20020020654	20020913
HK1055803 A1	20090814	HK20030108145	20031111
JP2003084645 A2	20030319	JP20010277605	20010913
JP2003084647 A2	20030319	JP20010277604	20010913
JP2003084648 A2	20030319	JP20010277606	20010913
US2003049046 AA	20030313	US20020242953	20020913
US2004265000 AA	20041230	US20040851233	20040524
US2006285880 AA	20061221	US20060508303	20060823
US2008247776 AA	20081009	US20080081838	20080422
US2010296837 AA	20101125	US20100848552	20100802
US6751428 BB	20040615	US20020242953	20020913
US7174117 BB	20070206	US20040851233	20040524
US7369791 BB	20080506	US20060508303	20060823
US7792459 BB	20100907	US20080081838	20080422
US7925183 BB	20110412	US20100848552	20100802
USD471228 S1	20030304	US20020165451F	20020812
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Priority:

JP20010277604 20010913	JP20010277605 20010913	JP20010277606 20010913
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Probable Assignee: BROTHER IND LTD

Assignee(s): (std): BROTHER IND LTD ; BROTHER KOGYO KK

Assignee(s): BROTHER IND ; BROTHER INDUSTRIES ; BROTHER INDUSTRIES LTD ; BROTHER KOGYO K K ; BROTHER KOGYO K USHIKI KAISHA AB ; BROTHER KOGYO KABUSHIKI KAISHA

Inventor(s): (std): ISHII MAKOTO ; KATAYAMA SHIGEHARU ; OKABE YASUSHI ; YASUSHI OKABE ; OSAMU OKABE ; OKABE OSAMU

Inventor(s): OKABE YASUSHI C O BROTHER KOGYO KABUSHIKI KAISHA

Agent(s): ADE AND CO INC; BENNETT JONES LLP; HOFER DOROTHEA; OLIFF AND BERRIDGE PLC

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

15) Family number: 31732260 (US2005053394A)

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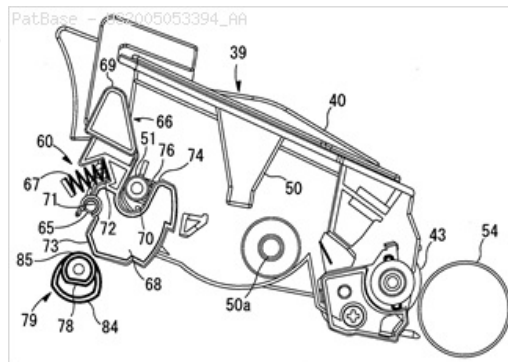
Title: DEVELOPING CARTRIDGE, PHOTSENSITIVE MEMBER CARTRIDGE, PROCESS UNIT, AND IMAGE FORMING APPARATUS

Abstract: A lever is provided in a photosensitive member frame of a photosensitive member cartridge that accommodates a developing cartridge in a cartridge accommodating portion. The lever is engaged with an engaging shaft of the developing cartridge, and is movable between a contact position and a separation position. When the lever is in the contact position, a developing roller and a photosensitive drum make contact with each other, and when the lever is in the separation position, the developing roller and the photosensitive drum are separated.

Classifications:

International (IPC 8-9): G03G15/00 G03G15/06 G03G15/08 G03G21/16
G03G21/18 G03G5/00 (Advanced/Invention);

G03G15/06 G03G21/18 (Advanced/Non-invention);
G03G15/06 G03G15/08 G03G21/16 G03G21/18 G03G5/00 (Core/Invention)
International (IPC 1-7): G03G15/00 G03G15/06 G03G15/08 G03G21/16
G03G21/18
CPC: G03G21/1821 G03G2221/1853 G03G21/181 G03G21/1817
G03G21/1857 G03G21/1867
European: G03G21/18C4C S03G221/18P3
US: 399/111



Family:

Publication number	Publication date	Application number	Application date
■ CN1580970 A	20050216	CN200410055795	20040730
■ CN1580970 B	20100505	CN200410055795	20040730
■ CN2791703 Y	20060628	CN200420074031U	20040730
■ DE602004041552 D1	20130529	DE200460041552T	20040729
■ EP1515198 A2	20050316	EP20040018052	20040729
■ EP1515198 A3	20050525	EP20040018052	20040729
■ EP1515198 B1	20130403	EP20040018052	20040729
■ JP2005049524 A2	20050224	JP20030204737	20030731
■ JP2005049525 A2	20050224	JP20030204738	20030731
■ JP2009187042 A2	20090820	JP20090130037	20090529
■ JP4344992 B2	20091014	JP20030204737	20030731
■ JP4344993 B2	20091014	JP20030204738	20030731
■ JP4719286 B2	20110706	JP20090130037	20090529
■ KR101023279 B1	20110318	KR20040060009	20040730
■ KR20050014729 A	20050207	KR20040060009	20040730
■ US2005053394 AA	20050310	US20040899145	20040727
■ US7190921 BB	20070313	US20040899145	20040727

Priority:

JP20030204737 20030731 JP20030204738 20030731 EP20040018052 20040729
JP20090130037 20090529 JP20030204737 20090529

Probable Assignee: BROTHER IND LTD

Assignee(s): (std): BROTHER IND LTD

Assignee(s): BROTHER INDUSTRIES LTD ; BROTHER KOGYO K K ; BROTHER KOGYO KABUSHIKI KAISHA ; BROTHER KOGYO KK

Inventor(s): (std): HIROTAKA MORI ; ISHII AKIRA ; ISHII MAKOTO ; KAZUKATSU MAKINO ; KAZUMASA MAKINO ; KI MORIUYA ; KISANE TAKENAK ; MAKINO KAZUNORI ; MAKOTO ISHII ; MORI HIROTAKA ; MAKINO KAZUMASA ; MORI NORITAKA ; RYO ISHII ; TAKAMI TAKEUCHI ; TAKEUCHI TAKAMI ; TAKEUCHI TAKASANE

Inventor(s): TAKEUCHI TAKAMI NAGOYA SHI AICHI KEN ; TAKENAK KISANE ; MORIUYA KI ; MAKINO KAZUMASA NAGOYA SHI AICHI KEN ; MORI HIROTAKA NAGOYA SHI AICHI KEN ; MAKINO KAZUKATSU ; ISHII MAKOTO NAGOYA SHI AICHI KEN ; ISHII RYO

Agent(s): KUHNEN AND WACKER PATENT U RECHTSANWALTSBUERO; KUHNEN AND WACKER; OLIFF AND BERRIDGE PLC

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

16) Family number: 31716683 (US2005047822A)

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Title: PROCESS CARTRIDGE AND ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS

Abstract: A process cartridge detachably mountable to a main assembly of an electrophotographic image forming apparatus, the image forming apparatus including a cam member movable between a first position and a second position away from the first position, the process includes an electrophotographic photosensitive drum; a developing roller, contacted to the electrophotographic photosensitive drum, for developing an electrostatic latent image formed on the drum; a first frame for supporting the drum; a second frame for supporting the developing roller, the second frame being connected with the first frame for relative rotation about a shaft which is disposed downstream of the developing roller with respect to a mounting direction in which the process cartridge is mounted to a main assembly of the apparatus; an entering portion, provided at one end portion of the second frame with respect to a longitudinal direction of the drum and disposed downstream of the shaft with respect to the mounting direction, for permitting at least a part of the cam member with respect to the longitudinal direction to enter when the process cartridge is mounted to the main assembly of the apparatus; and a cam engaging portion for engagement by the cam member to receive from the cam member a force for spacing the drum and the developing roller from each other, the cam engaging portion being disposed at the one longitudinal end portion of the second frame and downstream of the entering portion with respect to the mounting direction.

Classifications:

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

G03G21/18 (Advanced/Invention);

G03G21/18 (Advanced/Non-invention);

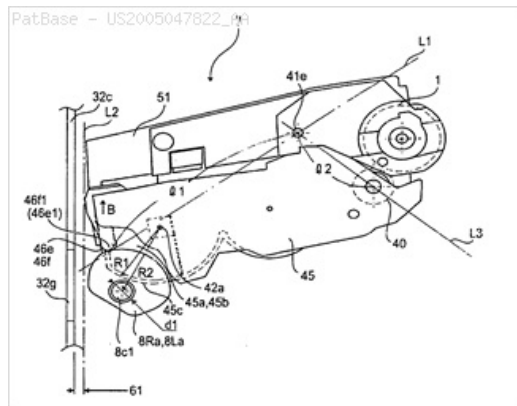
G03G15/00 G03G15/01 G03G21/18 (Core/Invention)

International (IPC 1-7): G03G15/00 G03G15/01 G03G21/18

CPC: G03G15/0121 G03G15/0194 G03G21/1825 G03G2215/0119

G03G2221/1861 G03G2221/1884

European: G03G15/01S2 G03G21/18C4S S03G215/01P3
S03G221/18P3A S03G221/18P4
US: 399/111 399/113



Family:

Publication number	Publication date	Application number	Application date
■ CN100390683 C	20080528	CN200410057092	20040830
■ CN1591236 A	20050309	CN200410057092	20040830
■ EP1510888 A1	20050302	EP20040020310	20040826
■ EP1510888 B1	20170531	EP20040020310	20040826
■ JP2005099691 A2	20050414	JP20040135535	20040430
■ JP2005338775 A2	20051208	JP20050078808	20050318
■ JP4280721 B2	20090617	JP20050078808	20050318
■ KR100650456 B1	20061129	KR20040067676	20040827
■ KR20050021343 A	20050307	KR20040067676	20040827
■ US2005047822 AA	20050303	US20040840263	20040507
■ US7058337 BB	20060606	US20040840263	20040507

Priority:

JP20030307907 20030829 JP20040135535 20040430 JP20050078808 20050318

Probable Assignee: CANON INC

Assignee(s): (std): CANON KK

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

Inventor(s): (std): HARADA KINYA ; HASHIMOTO KOJI ; KANNO KAZUHIKO ; KAZUHIKO KANNO ; KINYA HARADA ; KOJI HASHIMOTO ; SUGANO KAZUHIKO

Agent(s): TBK; SERA KAZUNOBU; KAWAGUCHI YOSHIYUKI; WAKUTA JUN ICHI; FITZPATRICK CELLA HARPER AND SCINTO

Designated states: DE FR GB IT

17) Family number: 33429787 (USD529541S)

© PatBase

Title: DEVELOPMENT CARTRIDGE

Abstract: The ornamental design for a development cartridge, as shown and described.

Classifications:

US: 160/300 D18/43

Locarno class: 16/03 16/04



Family:

Publication number	Publication date	Application number	Application date
■ CN3441059 D	20050420	CN200430081537F	20040909
■ CN3444525 D	20050504	CN200430081535F	20040909
■ CN3444526 D	20050504	CN200430081536F	20040909
■ CN3460787 D	20050713	CN200430081534F	20040909
■ USD529541 S1	20061003	US20040213014F	20040910

Priority:

JP20040007621F 20040315 JP20040007622F 20040315 JP20040007623F 20040315
JP20040007624F 20040315 US20040213014F 20040910

Probable Assignee: MURATA MACHINERY LTD

Assignee(s): (std): MURATA MACHINERY LTD
Assignee(s): MURATA KIKAI KABUSHIKI KAISHA ; MURATA KIKAI KK
Inventor(s): (std): KAWAI HIDEAKI
Agent(s): HOGAN AND HARTSON LLP

18) Family number: 34341758 (USD539335S)

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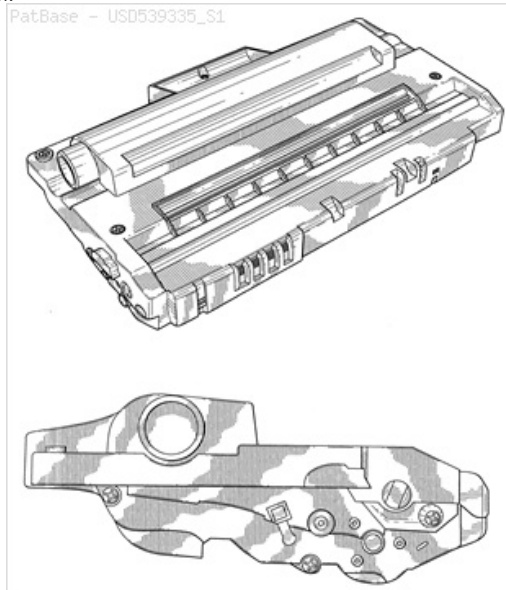
Title: TONER CARTRIDGE

Abstract: We claim the ornamental design for a toner cartridge, as shown.

Classifications:

US: D18/43

Locarno class: 16/03 18/02



Family:

Publication number	Publication date	Application number	Application date
■ CN3476914 D	20050921	CN200430120932F	20041230
■ USD539335 S1	20070327	US20050220665F	20050104

Priority:

KR20040021839F 20040719 US20050220665D 20050104

Probable Assignee: SAMSUNG ELECTRONICS CO LTD

Assignee(s): (std): SAMSUNG ELECTRONICS CO LTD

Assignee(s): S PRINTING SOLUTION CO LTD ; SAMSUNG ELECTRONICS CO

Inventor(s): (std): JEON NAM GON ; CHOI JAE IL

Agent(s): LEYDIG VOIT AND MAYER LTD

19) Family number: 33339800 (USD528148S)

© PatBase

Title: TONER CARTRIDGE

Abstract: Source: TWD109046S

Machine translation: [Goods use]This creation is about uses in the printer, the facsimile machine, the photogravure press, the telephone, or has the such function the compound electronic installation carbon face powder case. [Creation characteristic]This creation is one kind of carbon face powder case the new model, mainly has circular arc of surface a micro prominent crown, this circular arc surface is the smooth surface, gives the human to have the neat impression; Front end the carbon face powder case top inward supposes a long shape gap concavely, front end this gap forms a scoop channel, front end left side forms two inward to suppose the triangle section gap concavely in addition. Behind the carbon face powder case top is equipped with three blank rectangles, first right also is equipped with a blank rectangle, deep special exquisite image. Left side of the carbon face powder case, right flank the mask toothed wheel gearing group, with drives in the carbon face powder case the drum; The carbon face powder case base is equipped with the arrangement neat aperture, fourth the groups of apertures among in which nearness in addition forms the overlapping rib region in the terminal, deep systematic visual feeling. This creation modelling total perspective it, has its uniquely, the artistic effect.

Classifications:

US: 160/300 D18/43

Locarno class: 16/03 14/02 18/02

**Family:**

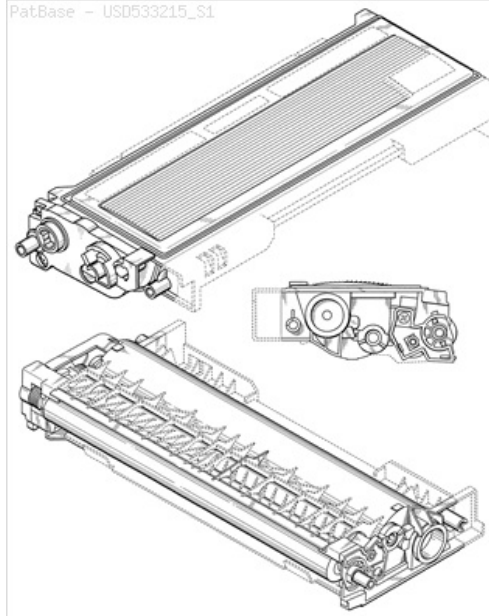
Publication number	Publication date	Application number	Application date
■ CN3484212 D	20051102	CN200530001822F	20050113
■ IL40126 S1	20061228	IL20040040126F	20041228
■ TWD109046 S1	20060201	TW20050300641F	20050202
■ USD528148 S1	20060912	US20050222158F	20050127

Priority:

JP20040024377F 20040813 US20050222158F 20050127

Probable Assignee: BROTHER IND LTD**Assignee(s):** (std): BROTHER IND LTD**Assignee(s):** BROTHER INDUSTRIES LTD ; BROTHER IND**Inventor(s):** (std): ISHII MAKOTO ; MORITA FUMIO ; SATO FUMIKAZU**Agent(s):** OLIFF AND BERRIDGE PLC**20) Family number: 33972677 (USD533215S)**

© PatBase

Title: TONER CARTRIDGE**Abstract:** The ornamental design for a toner cartridge, as shown and described.**Classifications:****US:** D18/43**Locarno class:** 16/03 14/02 18/02**Family:**

Publication number	Publication date	Application number	Application date
■ CN3486291 D	20051116	CN200530001819F	20050113
■ IL40124 S1	20061228	IL20040040124F	20041228
■ USD533215 S1	20061205	US20050222157F	20050127

Priority:

JP20040024374F 20040813 US20050222157F 20050127

Probable Assignee: BROTHER IND LTD
Assignee(s): (std): BROTHER IND LTD
Assignee(s): BROTHER INDUSTRIES LTD ; BROTHER IND
Inventor(s): (std): ISHII MAKOTO ; MORITA FUMIO ; SATO FUMIKAZU
Agent(s): OLIFF AND BERRIDGE PLC

21) Family number: 33592766 (USD531661S)

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Title: TONER CARTRIDGE

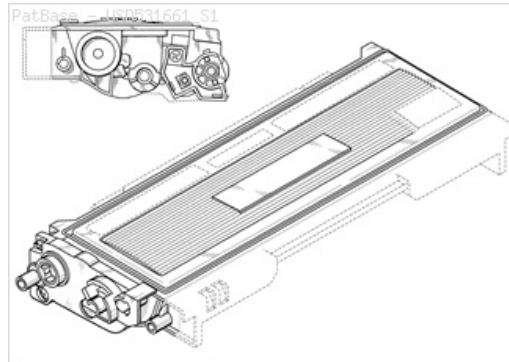
Abstract: Source: TWD109044S

Machine translation: [Goods use]This creation is about uses in the printer, the facsimile machine, the photogravure press, the telephone, or has the such function the compound electronic installation carbon face powder case. [Creation characteristic]This creation is one kind of carbon face powder case the new model, mainly has circular arc of surface a micro prominent crown, this circular arc surface is equipped with plural number to connect the parallel triangle section trough body, gives the human to have the arrangement neat impression; Front end the carbon face powder case top inward supposes a long shape gap concavely, front end this gap forms a scoop channel, front end left side forms two inward to suppose the triangle section gap concavely in addition. Behind the carbon face powder case top is equipped with three blank rectangles, its front right also is equipped with a blank rectangle, deep special exquisite image. Left side of the carbon face powder case, right flank the mask toothed wheel gearing group, with drives in the carbon face powder case the drum; The carbon face powder case base is equipped with the arrangement neat aperture, fourth the groups of apertures among in which nearness in addition forms the overlapping rib region in the terminal, deep systematic visual feeling. This creation modelling total perspective it, has its uniquely, the artistic effect.

Classifications:

US: D18/43

Locarno class: 16/03 14/02 18/02



Family:

Publication number	Publication date	Application number	Application date
■ CN3489028 D	20051130	CN200530001820F	20050113
■ IL40127 S1	20061228	IL20040040127F	20041228
■ TWD109044 S1	20060211	TW20050300639F	20050202
■ USD531661 S1	20061107	US20050222156F	20050127

Priority:

JP20040024375F 20040813 US20050222156F 20050127

Probable Assignee: BROTHER IND LTD
Assignee(s): (std): BROTHER IND LTD
Assignee(s): BROTHER INDUSTRIES LTD ; BROTHER IND
Inventor(s): (std): ISHII MAKOTO ; MORITA FUMIO ; SATO FUMIKAZU
Agent(s): OLIFF AND BERRIDGE PLC

22) Family number: 33378211 (US2006216061A)

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Title: PROCESS CARTRIDGE AND IMAGE FORMING APPARATUS

Abstract: A process cartridge detachably mountable to a main assembly of an electrophotographic image forming apparatus, includes an electrophotographic photosensitive drum; a developing roller for developing a latent image formed on the drum with a developer while being in contact with the drum; a drum unit for supporting the drum, wherein the drum unit is positioned relative to the main assembly when the process cartridge is set in the main assembly; a developing unit supporting the developing roller and movable together with the drum unit between a contact position in which the developing roller and the drum are in contact to each other to develop the is electrostatic latent image and a spaced position in which the developing roller and the drum are spaced away from each other; a drum driving force receiving portion, provided in the drum unit, for receiving, from the main assembly, a drum driving force for rotating the drum when the process cartridge is set in the main assembly; a movable member which is movable to move the developing unit between the contact position and the spaced position; and a movable member driving force receiving portion provided in the drum unit for receiving, from the main assembly, a movable member driving force for moving the movable member when the process cartridge is mounted in the main assembly.

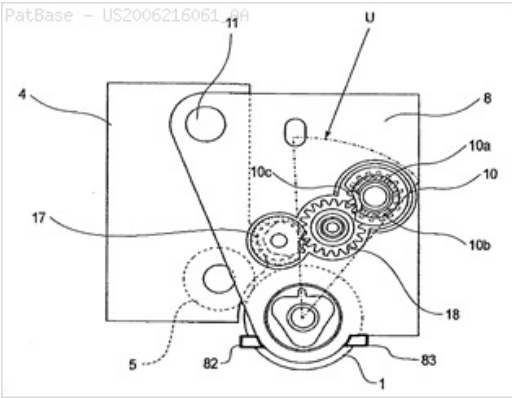
Classifications:

International (IPC 8-9): G03G15/00 G03G15/04 G03G15/06 G03G21/16
G03G21/18 (Advanced/Invention);

G03G15/00 G03G15/04 G03G21/16 G03G21/18 (Core/Invention)

International (IPC 1-7): G03G15/06 G03G21/18

CPC: G03G21/1825 G03G21/185 G03G21/1857 G03G2221/1853
G03G2221/1861
European: G03G21/18C4S G03G21/18H1P G03G21/18H2 S03G221/18P3
S03G221/18P3A
US: 399/111 399/111P 399/113 399/113S 399/126 399/167 399/167S



Family:

Publication number	Publication date	Application number	Application date
■ CN101147102 A	20080319	CN200580049247	20050427
■ CN101147102 B	20100512	CN200580049247	20050427
■ CN101782738 A	20100721	CN200910208395	20050427
■ CN101782738 B	20120711	CN200910208395	20050427
■ DE602005048704 D1	20160504	DE200560048704T	20050407
■ EP1705532 A1	20060927	EP20050007645	20050407
■ EP1705532 B1	20160323	EP20050007645	20050407
■ IN04736CN2007 A	20080328	IN2007CN04736	20071024
■ IN250974 B	20120217	IN2007CN04736	20071024
■ JP2006267602 A2	20061005	JP20050086041	20050324
■ JP4040636 B2	20080130	JP20050086041	20050324
■ KR100906264 B1	20090706	KR20077021869	20050427
■ KR20070116004 A	20071206	KR20077021869	20070921
■ RU2007139324 A	20090427	RU20070139324	20050427
■ RU2376620 C2	20091220	RU20070139324	20050427
■ TW200634452 A	20061001	TW20050114128	20050502
■ TWI272459 B	20070201	TW20050114128	20050502
■ US2006216061 AA	20060928	US20050094242	20050331
■ US2007098438 AA	20070503	US20060611974	20061218
■ US2008080892 AA	20080403	US20070944854	20071126
■ US7194225 BB	20070320	US20050094242	20050331
■ US7319834 BB	20080115	US20060611974	20061218
■ US7477865 BB	20090113	US20070944854	20071126
■ WO06100786 A1	20060928	WO2005JP08457	20050427

Priority:

JP20050086041 20050324 US20050094242 20050331 EP20050007645 20050407
WO2005JP08457 20050427 US20060611974 20061218 US20070944854 20071126

Probable Assignee: CANON INC

Assignee(s): (std): CANON KK

Assignee(s): KEHNON KABUSIKI KAJSSA ; CANNON MUSKEGON CORP ; CANON INC ; CANON K K ; CANON KABUSHIKI KAISHA

Inventor(s): (std): JAMAGUTI KODZI ; KOJI YAMAGUCHI ; YAMAGUCHI KOJI

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

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

23) Family number: 33548231 (US2006239711A)

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Title: PRINTING DEVICE CARTRIDGE HAVING POSITION IN WHICH ROLLERS ARE SEPARATED FROM PHOTOCONDUCTOR

Abstract: A cartridge for a printing device includes first and second portions coupled to one another and capable of moving relative to each other, one or more rollers situated at the first portion, a photoconductor situated at the second portion, and a lock mechanism. The rollers are in contact with the photoconductor in a first position of the first and the second portions. The lock mechanism maintains the first and the second portions in a second position in which the rollers are separated from the photoconductor.

Classifications:

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

G03G21/18 (Advanced/Invention);

G03G15/08 G03G21/16 G03G21/18 (Core/Invention)

CPC: G03G15/08 G03G21/16 G03G15/0813 G03G21/1821 G03G21/1825

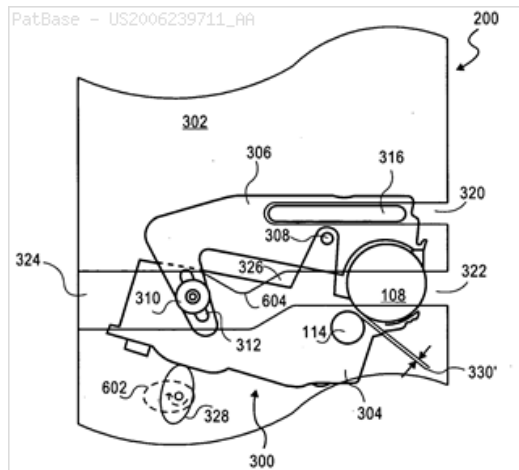
G03G2215/0634 G03G2215/0875 G03G2221/1654 G03G2221/1861

European: G03G15/08 G03G15/08F4 G03G21/16 G03G21/18C4C

G03G21/18C4S S03G215/06B S03G215/08C S03G221/16K1

S03G221/18P3A

US: 399/111 399/111P 399/113 399/114 399/262



Family:

Publication number	Publication date	Application number	Application date
DE112006000886 B4	20150409	DE200611000886T	20060420
DE112006000886 T5	20080327	DE200611000886T	20060420
GB200721963 A0	20071219	GB20070021963	20060420
GB2439904 A1	20080109	GB20070021963	20060420
GB2439904 B2	20080910	GB20070021963	20060420
US2006239711 AA	20061026	US20050113541	20050424
US7221888 BB	20070522	US20050113541	20050424
WO06116146 A1	20061102	WO2006US15188	20060420

Priority:

US20050113541 20050424 WO2006US15188 20060420

Probable Assignee: HEWLETT PACKARD DEVELOPMENT CO LP

Assignee(s): (std): DOUGHERTY PATRICK ; DOUGHERTY PATRICK S ; HYMAS SCOTT K ; HEWLETT PACKARD DEVELOPMENT CO ; MEYER BRENT L ; MEYER BRENTON L

Assignee(s): HEWLETT PACKARD DEVELOPMENT COMPANY L P ; HEWLETT PACKARD DEVELOPMENT CO LP

Inventor(s): (std): DOUGHERTY PATRICK ; HYMAS SCOTT K ; DOUGHERTY PATRICK S ; MEYER BRENT L ; MEYER BRENTON L

Inventor(s): PATRICK DOUGHERTY ; SCOTT K HYMAS ; MEYER BRENT ; HYMAS SCOTT ; BRENTON L MEYER

Agent(s): HEWLETT PACKARD COMPANY; HEWLETT PACKARD CO

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

24) Family number: 33592765 (USD531660S)

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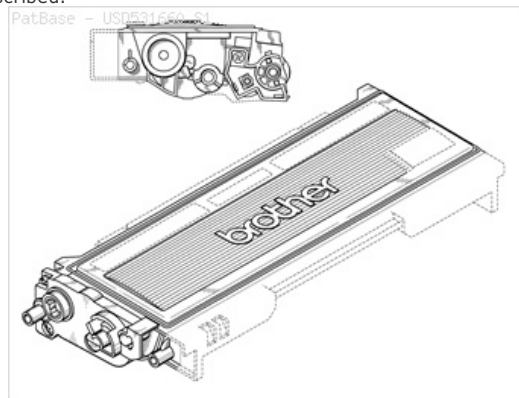
Title: TONER CARTRIDGE

Abstract: The ornamental design for a toner cartridge, as shown and described.

Classifications:

US: D18/43

Locarno class: 16/03



Family:

Publication number	Publication date	Application number	Application date
USD531660 S1	20061107	US20050222086F	20050127

Priority:

JP20040024373F 20040813 US20050222086F 20050127

Probable Assignee: BROTHER IND LTD

Assignee(s): (std): BROTHER IND LTD
Assignee(s): BROTHER INDUSTRIES LTD ; BROTHER IND
Inventor(s): (std): ISHII MAKOTO ; MORITA FUMIO ; SATO FUMIKAZU
Agent(s): OLIFF AND BERRIDGE PLC

25) Family number: 33616810 (US2006257163A)

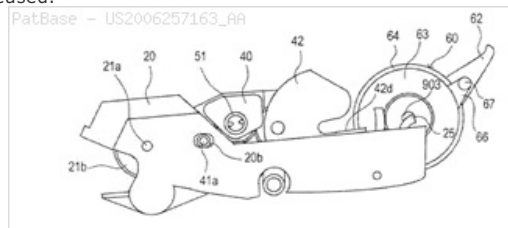
© PatBase

Title: PROCESS CARTRIDGE, MAIN BODY CARTRIDGE, IMAGE CARRIER BODY CARTRIDGE, DEVELOPING CARTRIDGE, TONER CARTRIDGE, AND IMAGE FORMING APPARATUS

Abstract: An image forming apparatus is provided which can be switched between states in which a developing roller is attached to an image carrier body by applying a pressing force to a developing cartridge and a state in which the developing roller can be released from attachment from the image carrier body. When an operation part of a toner cartridge is arranged at an installation position a pressing force can be applied to a developing cartridge by protruding parts fitting with spring parts, and a developing roller can be attached to a photoconductor drum by the applied pressure. When the operation part is arranged at a removal position, the fitting can be undone, causing the applied pressure to be released.

Classifications:

International (IPC 8-9): G03G15/00 G03G15/08 G03G21/16
G03G21/18 (Advanced/Invention);
G03G15/00 G03G15/08 G03G21/16 G03G21/18 (Core/Invention)
CPC: G03G15/087 G03G15/0872 G03G21/1821
European: G03G15/08H3C G03G21/18C4C
US: 399/111 399/113 399/113P



Family:

Publication number	Publication date	Application number	Application date
CN100501603 C	20090617	CN200610081949	20060511
CN1862416 A	20061115	CN200610081949	20060511
DE602006033160 D1	20130117	DE200660033160T	20060510
EP1722279 A1	20061115	EP20060009657	20060510
EP1722279 B1	20121121	EP20060009657	20060510
JP2006343359 A2	20061221	JP20050149750	20050523
JP2011022616 A2	20110203	JP20100243134	20101029
JP4701830 B2	20110615	JP20050149750	20050523
JP4798300 B2	20111019	JP20100243134	20101029
US2006257163 AA	20061116	US20060382579	20060510
US2010260516 AA	20101014	US20100823647	20100625
US7747192 BB	20100629	US20060382579	20060510
US8121518 BB	20120221	US20100823647	20100625

Priority:

JP20050138779 20050511 JP20050149750 20050523 EP20060009657 20060510
US20060382579 20060510 US20100823647 20100625 JP20100243134 20101029

Probable Assignee: BROTHER IND LTD

Assignee(s): (std): BROTHER IND LTD ; SATO SHOUGO

Assignee(s): BROTHER INDUSTRIES LTD ; BROTHER KOGYO KABUSHIKI KAISHA ; BROTHER KOGYO KK ; BROTHER KOGYO NAGOYA KK

Inventor(s): (std): SATO SHOGO ; SATO SHOUGO ; SHOUGO SATO

Agent(s): KUHNEN AND WACKER PATENT U RECHTSANWALTSBUERO; KUHNEN AND WACKER; BANNER AND WITCOFF LTD ATTORNEYS FOR CLIENT NOS 0166889 006760; BANNER AND WITCOFF LTD ATTORNEYS FOR CLIENT NO 016689; BANNER AND WITCOFF LTD

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU

26) Family number: 34342530 (US2007071481A)

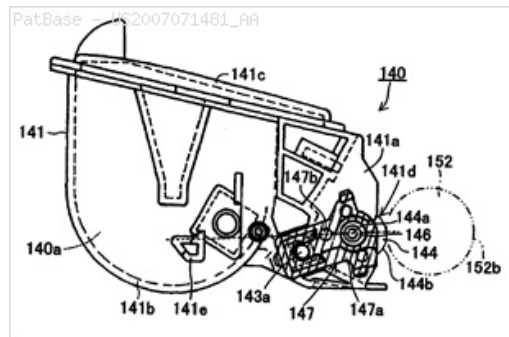
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Title: IMAGE-FORMING APPARATUS, PROCESS CARTRIDGE, AND DEVELOPING CARTRIDGE

Abstract: The pressed area mounted on the developer cartridge case is pressed towards a developer cartridge pressing direction. The developer roller and the photosensitive drum are in contact at a contact position. Power is supplied to the developer cartridge when the power supply protrusion connected electrically to the developer roller rotation drive axis and the power supply part mounted on the outside of the developer cartridge are pushed together in the power supply pressing direction. Here, the power supply pressing direction is semi-orthogonal to the pressing action line that connects the pressing position and the contact position. Furthermore, the power supply protrusion crosses the pressing action line.

Classifications:

International (IPC 8-9): G03G15/00 G03G15/04 G03G15/08
G03G21/18 (Advanced/Invention);
G03G15/00 G03G15/04 G03G15/08 G03G21/18 (Core/Invention)
CPC: G03G15/0865 G03G21/1867 G03G15/0896 G03G2215/066
G03G2221/163
European: G03G15/08S G03G21/18H3 S03G215/06C S03G221/16D
US: 399/111 399/112 399/113 399/119 399/90



Family:

Publication number	Publication date	Application number	Application date
■ CN1940756 A	20070404	CN200610139575	20060926
■ CN1940756 B	20100421	CN200610139575	20060926
■ DE602006044153 D1	20150212	DE200660044153T	20060926
■ EP1768001 A2	20070328	EP20060020117	20060926
■ EP1768001 A3	20080827	EP20060020117	20060926
■ EP1768001 B1	20141231	EP20060020117	20060926
■ JP2007114718 A2	20070510	JP20050376544	20051227
■ US2007071481 AA	20070329	US20060523632	20060920
■ US7689139 BB	20100330	US20060523632	20060920

Priority:

JP20050277470 20050926 JP20050376544 20051227 EP20060020117 20060926

Probable Assignee: BROTHER IND LTD

Assignee(s): (std): BROTHER IND LTD

Assignee(s): BROTHER KOGYO KABUSHIKI KAISHA ; BROTHER KOGYO KK ; BROTHER KOGYO NAGOYA SHI KK

Inventor(s): (std): KAMIMURA NAOYA ; NAOYA KAMIMURA

Inventor(s): KAMIMURA NAOYA NAGOYA SHI

Agent(s): KUHNEN AND WACKER PATENT U RECHTSANWALTSBUERO; KUHNEN AND WACKER; PROSPEC PATENT FIRM; BANNER AND WITCOFF LTD ATTORNEYS FOR CLIENT NOS 0166889 006760; BANNER AND WITCOFF LTD

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO RS SE SI SK TR YU

27) Family number: 34350105 (US2007071483A)

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

Abstract: Developing cartridges for use in image forming apparatuses having an image carrier, include: (a) a case; (b) a developer carrier supported by the case (for holding developer thereon); and (c) a conductive member engaged with or provided on the case and being electrically connected to the developer carrier. The case may be configured to allow the developer carrier to be pressed against the image carrier at a designated pressing position in a pressing direction, and the conductive member may be configured to be supplied with power while being pressed by a power supply member in a direction parallel to the pressing direction. Alternatively, in some structures, the conductive member may be configured to be supplied with power while being pressed by a power supply member in a direction parallel to a line extending from the designated pressing position to a developer carrier and image carrier contacting position.

Classifications:

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

G03G21/18 (Advanced/Invention);

G03G21/18 (Advanced/Non-invention);

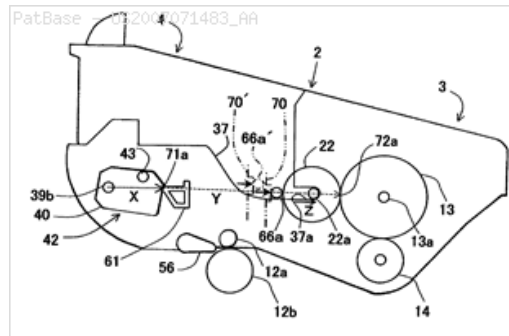
G03G15/00 G03G15/08 G03G21/16 G03G21/18 (Core/Invention);

G03G21/18 (Core/Non-invention)

CPC: G03G21/1871 G03G2221/1654 G03G2221/166 G03G2221/1853

European: G03G21/18H3P S03G221/16K1 S03G221/16K3 S03G221/18P3

US: 399/111 399/113 399/114 399/119 399/125 399/90



Family:

Publication number	Publication date	Application number	Application date
■ JP2007086600 A2	20070405	JP20050277471	20050926
■ US2007071483 AA	20070329	US20060530090	20060908
■ US7512363 BB	20090331	US20060530090	20060908

Priority:

JP20050277471 20050926

Probable Assignee: BROTHER IND LTD

Assignee(s): (std): BROTHER IND LTD
Assignee(s): BROTHER KOGYO KABUSHIKI KAISHA ; BROTHER KOGYO KK
Inventor(s): (std): KAMIMURA NAOYA
Agent(s): BANNER AND WITCOFF LTD ATTORNEYS FOR CLIENT NOS 0166889 006760; BANNER AND WITCOFF LTD

28) Family number: 34364279 (US2007077086A)

© PatBase

Title: IMAGE FORMING APPARATUS, PROCESS UNIT AND DEVELOPING CARTRIDGE

Abstract: An image forming apparatus includes a main body; a process unit configured to be attached to and removed from the main body, the process unit being configured to integrally hold a plurality of image carriers arranged in a first direction; a plurality of developing cartridges provided in corresponding association with the image carriers, the developing cartridges configured to be attached to and removed from the process unit, each of the developing cartridges including a corresponding developer carrier, each of the developing cartridges being configured to supply developer to a corresponding image carrier; and a pressing mechanism provided in the main body, the pressing mechanism configured to press the developing cartridges, when attached to the process unit, in a direction that the developer carriers contact the image carriers.

Classifications:

International (IPC 8-9): G03G15/00 G03G15/01 G03G15/08 G03G21/00 G03G21/16 G03G21/18 (Advanced/Invention);

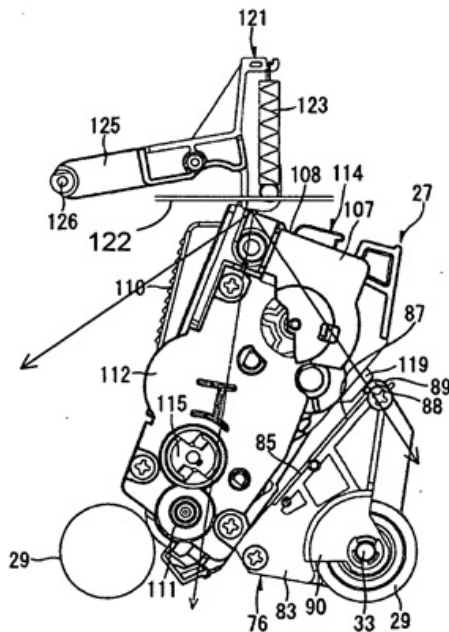
G03G15/00 G03G15/01 G03G15/08 G03G21/18 (Core/Invention)

CPC: G03G21/1676 G03G21/1647 G03G21/1853 G03G2221/1684 G03G2221/1815 G03G2221/1869

European: G03G21/18H1V S03G221/16S2 S03G221/18C S03G221/18P3B

US: 399/110 399/111 399/111P 399/113 399/113S 399/119 399/119P

PatBase - US2007077086_AA



Family:

Publication number	Publication date	Application number	Application date
JP2007101637 A2	20070419	JP20050288202	20050930
JP4661507 B2	20110330	JP20050288202	20050930
US2007077086 AA	20070405	US20060525940	20060925
US2012107014 AA	20120503	US20120344654	20120106
US2013188988 AA	20130725	US20130790384	20130308
US2014212171 AA	20140731	US20140182110	20140217
US2015248106 AA	20150903	US20150713693	20150515
US8099018 BB	20120117	US20060525940	20060925
US8396392 BB	20130312	US20120344654	20120106
US8781360 BB	20140715	US20130790384	20130308
US9037037 BB	20150519	US20140182110	20140217
US9625874 BB	20170418	US20150713693	20150515

Priority:

JP20050288202 20050930 US20060525940 20060925 US20120344654 20120106
US20130790384 20130308 US20140182110 20140217 US20150713693 20150515

Probable Assignee: BROTHER IND LTD

Assignee(s): (std): BROTHER KYOGO KK ; HAYAKAWA ATSUSHI ; TAKAKUWA YOSHIHITO ; TAKAKUWA YOSHITO ; TOMATSU YOSHIYA ; BROTHER IND LTD

Assignee(s): BROTHER KOGYO KABUSHIKI KAISHA ; BROTHER KOGYO KK

Inventor(s): (std): HAYAKAWA ATSUSHI ; TAKAKUWA YOSHIHITO ; TAKAKUWA YOSHITO ; TOMATSU YOSHIYA

Agent(s): BANNER AND WITCOFF LTD ATTORNEYS FOR CLIENT NOS 0166889 006760; BANNER AND WITCOFF LTD

29) Family number: 34552761 (US2007134036A)

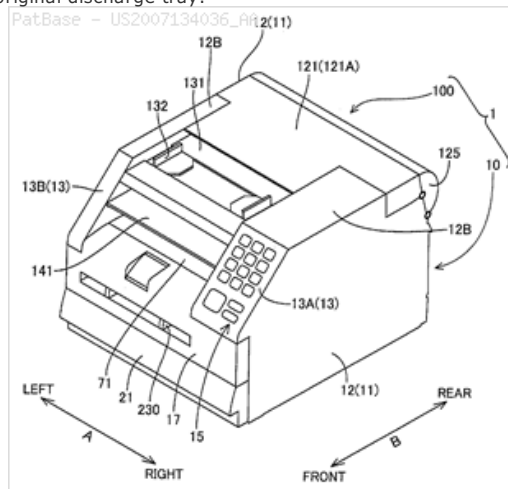
© PatBase

Title: IMAGE FORMING APPARATUS HAVING IMAGE READING FUNCTION

Abstract: An image forming apparatus includes an apparatus main body and an original reading device disposed on top of the apparatus main body. A sheet supply cassette, a sheet discharge tray, an original feed tray, and the original discharge tray are oriented such that their lengthwise directions are aligned with the first horizontal direction, and are arranged to overlap with one another in the vertical direction. A pair of side walls is disposed at both widthwise ends of the sheet supply cassette, the sheet discharge tray, the original feed tray, and the original discharge tray. The both widthwise ends of these components are formed as edge portions. The pair of side walls covers an entire length of each of the edge portions, thereby supporting all of the sheet supply cassette, the sheet discharge tray, the original feed tray, and the original discharge tray.

Classifications:

International (IPC 8-9): G03G15/00 G03G21/16 H04N1/00 H04N1/04 H04N1/12 (Advanced/Invention);
G03G15/00 G03G21/16 H04N1/00 H04N1/04 H04N1/12 (Core/Invention)
CPC: G03G21/1619 G03G2221/1678 G03G2221/1687
European: G03G21/16 S03G221/16S S03G221/16S3
US: 399/12 399/367 399/381



Family:

Publication number	Publication date	Application number	Application date
JP2007159022 A2	20070621	JP20050355022	20051208
JP4577202 B2	20101110	JP20050355022	20051208
US2007134036 AA	20070614	US20060555598	20061101
US7689158 BB	20100330	US20060555598	20061101

Priority:

JP20050355022 20051208

Probable Assignee: BROTHER IND LTD

Assignee(s): (std): BROTHER IND LTD

Assignee(s): BROTHER KOGYO KABUSHIKI KAISHA ; BROTHER KOGYO KK

Inventor(s): (std): HISADA HIDENORI ; KAMIMURA NAOYA ; KATAYAMA SHIGEHARU ; SATO SHOGO ; SATO SHOUGO

Agent(s): BAKER BOTTS LLP, C/O INTELLECTUAL PROPERTY DEPARTMENT; BAKER BOTTS LLP C O INTELLECTUAL PROPERTY DEPARTMENT; BAKER BOTTS LLP

30) Family number: 34855603 (US2007160386A)

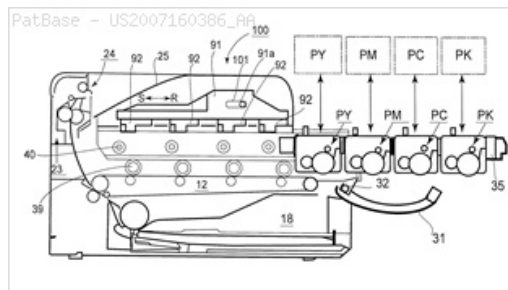
© PatBase

Title: ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS

Abstract: An electrophotographic image forming apparatus to which a plurality of process cartridge are detachably mountable, the cartridge including an electrophotographic photosensitive drum, a developing roller for developing, with a developer, an electrostatic latent image formed on the drum, a first frame supporting the drum, and a second frame supporting the developing roller which is movable between a contact position where the developing roller contacts the drum and a spacing position where the developing roller is spaced from the drum, the apparatus including a drawing member to which the plurality of cartridges are detachably mountable, the drawing member being movable substantially horizontal direction crossing with an axial direction of the drum between a mount position where the cartridges are mounted in a main assembly of the apparatus and a drawn position where the drawing member is drawn out of the main assembly; a spacer member movable between a retracted position where the drawing member is retracted from a movement path of the cartridge to permit movement of the cartridge mounted on the drawing member and an operating position where the drawing member is in the movement path to move the second frame between the contact position and the spacing position.

Classifications:

International (IPC 8-9): G03G15/00 G03G15/01 G03G15/02 G03G21/16 G03G21/18 (Advanced/Invention);
G03G15/02 G03G21/18 (Advanced/Non-invention);
G03G15/00 G03G15/01 G03G15/02 G03G21/16 G03G21/18 (Core/Invention);
G03G21/18 (Core/Non-invention)
CPC: G03G21/1623 G03G15/0194 G03G21/1853 G03G21/1825 G03G2221/1684 G03G2221/169 G03G2221/1861 G03G2221/1869
European: G03G15/01S2 G03G21/16 G03G21/18C4S G03G21/18H1V S03G221/16S2 S03G221/16S4 S03G221/18P3A S03G221/18P3B
US: 399/110 399/111 399/116



Family:

Publication number	Publication date	Application number	Application date
CN101361025 A	20090204	CN200780001811	20070111
CN101361025 B	20100901	CN200780001811	20070111

EP1977288 A1	20081008	EP20070706932	20070111
JP2007213024 A2	20070823	JP20060346205	20061222
JP4280769 B2	20090617	JP20060346205	20061222
KR100969725 B1	20100712	KR20087016760	20070111
KR20080075913 A	20080819	KR20087016760	20070111
US2007160386 AA	20070712	US20070622199	20070111
US7773911 BB	20100810	US20070622199	20070111
WO07081044 A1	20070719	WO2007JP50625	20070111

Priority:

JP20060004105 20060111 JP20060346205 20061222 WO2007JP50625 20070111

Probable Assignee: CANON INC

Assignee(s): (std): CANON KK ; KAWAMURA KOJI

Assignee(s): CANON INC ; CANON KABUSHIKI KAISHA

Inventor(s): (std): KOJI KAWAMURA ; KAWAMURA KOJI

Agent(s): TBK-PATENT; CHANG SOO KIL; SUNG JAE DONG; FITZPATRICK CELLA HARPER AND SCINTO

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR 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 MG MK ML MN MR 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

31) Family number: 42861897 (US2010040392A)

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Title: METHOD FOR CONTROLLING THE DISTANCE BETWEEN THE PHOTSENSITIVE MEMBER AND THE DEVELOPING MEMBER IN A TONER CARTRIDGE, AND THE DEVICE THEREOF

Abstract: The present invention discloses a method for controlling the distance between the photosensitive member and the developing member in a toner cartridge. In the present invention, the toner cartridge is provided with an elastic member for providing an elastic force to the developing member or to the photosensitive member, so as to force the developing member to move towards the photosensitive member, or to force the photosensitive member to move towards the developing member; the production accuracy requirement of the toner cartridge is reduced by the elasticity of the elastic member. The present invention further discloses a device for controlling the distance between the photosensitive member and the developing member in a toner cartridge. By using the method and the device thereof, the requirement of the manufacturing accuracy of a toner cartridge can be reduced, and the negative impact of the accuracy bias caused by the abrasion can be reduced, so, the product cost is saved, and the service life of the product is increased.

Classifications:

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

G03G21/18 (Advanced/Invention);

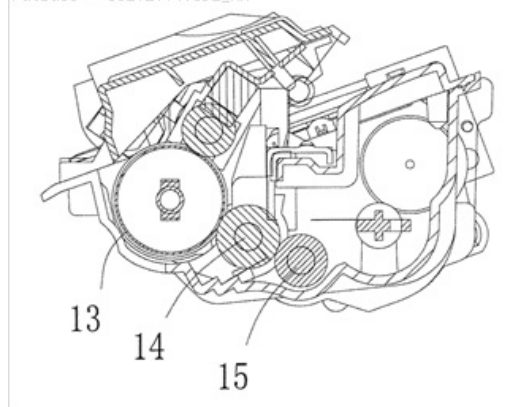
G03G15/08 G03G21/18 (Core/Invention)

CPC: G03G15/0813 G03G21/1821

European: G03G15/08F4 G03G21/18C4C

US: 399/111 399/119 399/53 399/53P

PatBase - US2010040392_AA



Family:

Publication number	Publication date	Application number	Application date
CN101344744 A	20090114	CN200810141943	20080815
CN101587323 A	20091125	CN200910147478	20090605
CN102608895 A	20120725	CN201210081727	20090605
DE602009025592 D1	20140904	DE200960025592T	20090810
EP2161628 A1	20100310	EP20090167570	20090810
EP2474869 A1	20120711	EP20110172102	20090810
EP2474869 B1	20140723	EP20110172102	20090810
EP2474869 B9	20141217	EP20110172102	20090810
JP2010092019 A2	20100422	JP20090186271	20090811
JP4797190 B2	20111019	JP20090186271	20090811
US2010040392 AA	20100218	US20090541921	20090815
US8626024 BB	20140107	US20090541921	20090815

Priority:

CN200810141943 20080815 CN200910147478 20090605 CN201210081727 20090605
EP20090167570 20090810 EP20110172102 20090810

Probable Assignee: NINESTAR CORP

Assignee(s): (std): CAO JIANXIN ; PENG QINGFEI ; ZHUHAI SAINA TECHNOLOGY CO LTD ; WU LIANJUN ; ZHUHAI SEINE TECHNOLOGY LTD ; ZHUHAI SEINE TECHNOLOGY CO LTD ; SEINE TECHNOLOGY CO LTD

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

LIMITED ; ZHUHAI SAINA TECHNOLOGY CO ; NINESTAR CORP

Inventor(s): (std): WU LIANJUN ; PENG QINGFEI ; CAO JIANXIN ; LIANJUN WU

Agent(s): HELLMICH WOLFGANG DIPL PHYSUNIV DR ING; STUTTARD GARRY PHILIP; HELLMICH WOLFGANG;
JACKSON INTELLECTUAL PROPERTY GROUP PLLC; JACKSON IPG PLLC

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO
RS SE SI SK SM TR

32) Family number: 44125674 (US2011038649A)

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Title: CARTRIDGE, AND ELECTROPHOTOGRAPHIC IMAGE FORMING APPARATUS WHICH USES CARTRIDGE

Abstract: A cartridge for use with a main assembly of an electrophotographic image forming apparatus, the main assembly including a driving shaft having a rotational force applying portion, wherein the cartridge is dismountable from the main assembly in a direction substantially perpendicular to an axial direction of the driving shaft, the cartridge including i) a developing roller for developing an electrostatic latent image formed on an electrophotographic photosensitive drum, the developing roller being rotatable about an axis thereof; and ii) a coupling member engageable with the rotational force applying portion to receive a rotational force for rotating the developing roller, the coupling member being capable of taking a rotational force transmitting angular position for transmitting the rotational force for rotating the developing roller to the developing roller and a disengaging angular position in which the coupling member is inclined away from the rotational force transmitting angular position, wherein when the cartridge is dismounted from the main assembly of the electrophotographic image forming apparatus in a direction substantially perpendicular to the axis of the developing roller, the coupling member moves from the rotational force transmitting angular position to the disengaging angular position.

Classifications:

International (IPC 8-9): G03G15/00 G03G15/06 G03G15/08 G03G21/00
G03G21/08 G03G21/16 G03G21/18 (Advanced/Invention);
G03G15/08 G03G21/16 G03G21/18 (Core/Invention);
G03G21/18 (Core/Non-invention);
G03G (Subclass/Invention)

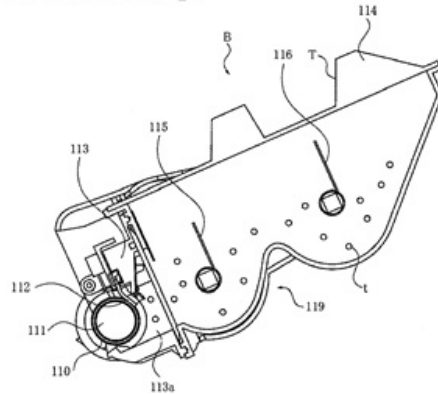
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CPC: G03G21/1821 G03G21/00 G03G21/186 G03G15/0808 G03G15/0896
G03G21/1853 G03G2221/1657

European: G03G15/08S G03G21/18H1V G03G21/18H2C S03G221/16K2

US: 399/119 399/119P

PatBase - US2011038649_AA



Family:

Publication number	Publication date	Application number	Application date
AU2009258530 AA	20091217	AU20090258530	20090609
AU2013200114 AA	20130131	AU20130200114	20130110
AU2015203439 AA	20150716	AU20150203439	20150622
AU2015203439 BB	20170615	AU20150203439	20150622
AU2017228653 AA	20171005	AU20170228653	20170914
BRPI0914886 A2	20151124	BR2009PI14886	20090609
CA2725120 AA	20091217	CA20092725120	20090609
CA2725120 C	20180605	CA20092725120	20090609
CA2946487 AA	20091217	CA20092946487	20090609
CA2946499 AA	20091217	CA20092946499	20090609
CN102057333 A	20110511	CN200980121411	20090609
CN102057333 B	20140716	CN200980121411	20090609
CN104007641 A	20140827	CN201410281437	20090609
CN104007641 B	20180202	CN201410281437	20090609
CN104155865 A	20141119	CN201410281836	20090609
CN104166325 A	20141126	CN201410281539	20090609
CN104166326 A	20141126	CN201410281825	20090609
CN104166327 A	20141126	CN201410282708	20090609
CN104166328 A	20141126	CN201410282711	20090609
CN104166329 A	20141126	CN201410282719	20090609
DE112009001406 T5	20120809	DE200911001406T	20090609
EP2288966 A1	20110302	EP20090762562	20090609
HK1152997 A1	20150116	HK20110106414	20110622
HK1198213 A1	20150313	HK20140111210	20110622
HK1199941 A1	20150724	HK20150100407	20150114
HK1199942 A1	20150724	HK20150100408	20150114
HK1199943 A1	20150724	HK20150100409	20150114
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JP2009300516 A2	20091224	JP20080151824	20080610
JP2013214116 A2	20131017	JP20130154326	20130725

JP2014206770 A2	20141030	JP20140162930	20140808
JP2016148865 A2	20160818	JP20160079558	20160412
JP2017083872 A2	20170518	JP20160252824	20161227
JP2018022195 A2	20180208	JP20170216701	20171109
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JP5889254 B2	20160322	JP20130154326	20130725
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RU2589393 C2	20160710	RU20140147192	20141124
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SG191624 A1	20130731	SG20130041488	20090609
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Priority:

JP20080151824	20080610	JP20130154326	20080610	JP20140162930	20080610
JP20160079558	20080610	JP20160252824	20080610	AU20090258530	20090609
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Probable Assignee: CANON INC

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

Inventor(s): MORIOKA MASANORI

Agent(s): SPRUSON AND FERGUSON; RIDOUT AND MAYBEE LLP; TBK PATENT; OOO YURIDICHESKAYA GORODISSKIJ I PARTNER Y FA; 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: PROCESS CARTRIDGE

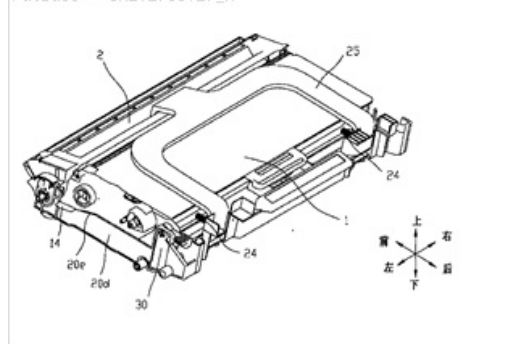
Abstract: The invention relates to a process cartridge comprising a shell and a forcing locking mechanism which forces a developing unit and a light-sensitive unit held in the shell to be close in interference fit, wherein the forcing locking mechanism comprises a gland and a butting element, and the butting element butts between the gland and the developing unit or the light-sensitive unit held in the shell when a locking part on the gland is buckled with the shell. Through the rotating and butting of the gland, the butting element generates pressure which forces the developing unit and the light-sensitive unit held in the shell to be close, and the forced pushing and locking are completed at the same time; when in disassembly, the forced pushing and locking are removed at the same time, and the operation is simpler and more convenient. Meanwhile, after the developing unit is arranged on the light-sensitive unit, the upper wall of the developing unit is locked, the developing unit does not vibrate in the light-sensitive unit and the working of the process cartridge is more stable.

Classifications:

International (IPC 8-9): G03G21/18 (Advanced/Invention);

G03G21/18 (Core/Invention)

PatBase - CN101763017_A

**Family:**

Publication number	Publication date	Application number	Application date
CN101763017 A	20100630	CN201010104850	20100116
CN101763017 B	20130619	CN201010104850	20100116
CN201725151 U	20110126	CN201020107076U	20100116

Priority:

CN201010104850 20100116 CN201020107076U 20100116

Probable Assignee: ZHUHAI SAINA SCIENCE AND TECHN

Assignee(s): (std): SEINE IMAGE INT L CO LTD ; ZHUHAI SAINA SCIENCE AND TECHN ; ZHUHAI SAINA SCIENCE AND TECHNOLOGY CO LTD ; SEINE IMAGE INT L CO

Assignee(s): ZHUHAI SAINA SCIENCE AND TECHNOLOGY CO ; SEINE IMAGE INT L CO

Inventor(s): (std): CAO JIANXIN ; JIANXIN CAO ; PENG QINGFEI ; QINGFEI PENG

Title: IMAGE FORMING DEVICE AND DETACHABLE PROCESS UNIT

Abstract: An image forming device includes a main casing, a cartridge accommodating portion, a detection unit and a determination unit. The cartridge accommodating portion is configured to detachably accommodate a first cartridge and a second cartridge that is able to be detachably combined with the first cartridge, the first cartridge being provided with a pressing member movable between a first position and a second position, the pressing member being in the first position when the second cartridge is removed from the first cartridge, the pressing member being in the second position when the second cartridge is combined with the first cartridge. The detection unit is provided on the main casing and is configured to perform non-contact position detection of the pressing member. The determination unit is configured not to start image forming operations until the detection unit detects that the pressing member is in the second position.

Classifications:

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

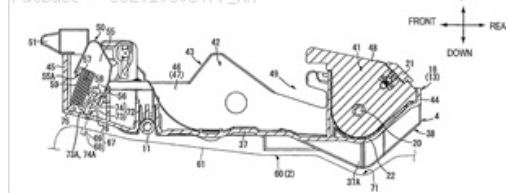
G03G21/18 (Advanced/Invention)

CPC: G03G15/55 G03G21/1842

European: G03G15/55 G03G21/18H1

US: 399/113 399/113S 399/13 399/13P

PatBase - US2010303477_AA

**Family:**

Publication number	Publication date	Application number	Application date
JP2010276962 A2	20101209	JP20090130903	20090529
JP4935857 B2	20120523	JP20090130903	20090529
US2010303477 AA	20101202	US20100749767	20100330
US8290379 BB	20121016	US20100749767	20100330

Priority:

JP20090130903 20090529

Probable Assignee: BROTHER IND LTD

Assignee(s): (std): BROTHER IND LTD ; ISHII SHUNSUKE ; NAKAJIMA KEIGO

Assignee(s): BROTHER KOGYO KABUSHIKI KAISHA ; BROTHER KOGYO KK

Inventor(s): (std): ISHII SHUNSUKE ; NAKAJIMA KEIGO

Agent(s): BANNER AND WITCOFF LTD ATTORNEYS FOR CLIENT NO 016689; BANNER AND WITCOFF LTD

35) Family number: 47723247 (US2010303478A)

PatBase

Title: IMAGE FORMING DEVICE AND DETACHABLE PROCESS UNIT

Abstract: An image forming device has a cartridge accommodating portion in which a combined unit of a first cartridge and a second cartridge can be loaded. The first cartridge is provided with a pressing member movable between a first position and a second position and is in the first position when the second cartridge is removed from the first cartridge, and in the second position when the second cartridge is perfectly combined with the first cartridge. A moving member is supported on the main casing of the image forming device to be movable between a third position and a fourth position, and is in the third position when the combined unit is unloaded from the main casing and in the fourth position when the combined unit is loaded in the main casing. The pressing member disposed in the second position presses the moving member to move to the fourth position. A position detector is provided on the main casing and is configured to perform position detection of the moving member. A determination unit is configured not to start image forming operations until the position detector detects that the moving member is in the fourth position.

Classifications:

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

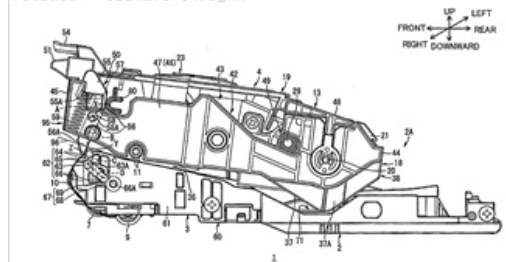
G03G21/18 (Advanced/Invention)

CPC: G03G21/1842 G03G15/55

European: G03G15/55 G03G21/18H1

US: 399/110 399/111 399/113 399/113S 399/13 399/13P

PatBase - US2010303478_AA



Family:

Publication number	Publication date	Application number	Application date
JP2010276963 A2	20101209	JP20090130904	20090529
JP4821885 B2	20111124	JP20090130904	20090529
US2010303478 AA	20101202	US20100749775	20100330
US8320780 BB	20121127	US20100749775	20100330

Priority:

JP20090130904 20090529

Probable Assignee: BROTHER IND LTD

Assignee(s): (std): BROTHER IND LTD ; ISHII SHUNSUKE ; NAKAJIMA KEIGO

Assignee(s): BROTHER KOGYO KABUSHIKI KAISHA ; BROTHER KOGYO KK

Inventor(s): (std): ISHII SHUNSUKE ; NAKAJIMA KEIGO

Agent(s): BANNER AND WITCOFF LTD ATTORNEYS FOR CLIENT NO 016689; BANNER AND WITCOFF LTD

36) Family number: 49578501 (US2011222881A)

PatBase

Title: FIXING DEVICE AND IMAGE FORMING APPARATUS INCLUDING SAME

Abstract: A fixing device for fixing a toner image on a recording medium includes a fixing roller to rotate in a predetermined direction of rotation, a pressing roller to rotate and contact an outer circumferential surface of the fixing roller to form a nip between the pressing roller and the fixing roller through which the recording medium bearing the toner image passes to fix the toner image by heat and pressure, a pressing lever to hold both lateral end portions of the pressing roller, and a cam disposed on a camshaft, to rotate the pressing lever to change the position of the pressing roller. Rotation of the cam in a first, pressing direction enables the pressing roller to pressingly contact the fixing roller. Rotation of the cam in a second direction opposite the pressing direction enables the pressing roller to separate from the fixing roller.

Classifications:

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

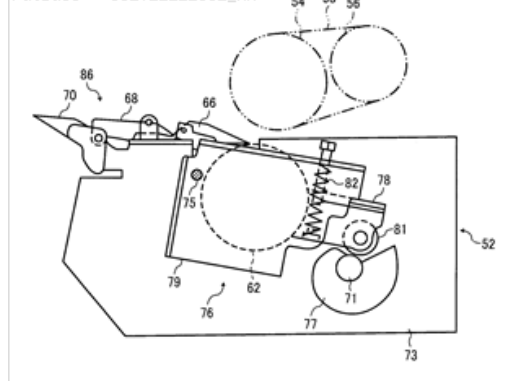
G03G15/20 (Advanced/Invention)

CPC: G03G15/2032 G03G15/20

European: G03G15/20H2P1

US: 399/122 399/122S 399/329 399/329S 399/45 399/45P

PatBase - US2011222881_AA



Family:

Publication number	Publication date	Application number	Application date
JP2011191572 A2	20110929	JP20100058517	20100315
JP2014219699 A2	20141120	JP20140170495	20140825
US2011222881 AA	20110915	US20110036562	20110228
US8630556 BB	20140114	US20110036562	20110228

Priority:

JP20100058517 20100315 JP20140170495 20140825

Probable Assignee: RICOH CO LTD

Assignee(s): (std): RICOH CO LTD ; RICOH KK ; YAMADA MASAMICHI

Assignee(s): RICOH COMPANY LTD

Inventor(s): (std): YAMADA MASAMICHI

Agent(s): OBLON SPIVAK MCCLELLAND MAIER AND NEUSTADT LLP

37) Family number: 52582232 (US2012320435A)

© PatBase

Title: ILLUMINATING APPARATUS, IMAGE READING APPARATUS, AND IMAGE FORMING APPARATUS

Abstract: In an illuminating apparatus including a plurality of rows of light source groups each having a plurality of light-emitting elements for irradiating light to an original that are arranged in a main scanning direction, the light-emitting elements in the plurality of rows of light source groups illuminate an irradiated face of the original at the same pitch within the same light source group and at different pitches from each other among the plurality of rows of light source groups.

Classifications:

International (IPC 8-9): F21V19/00 F21V21/00 G03B27/54 G03G15/00

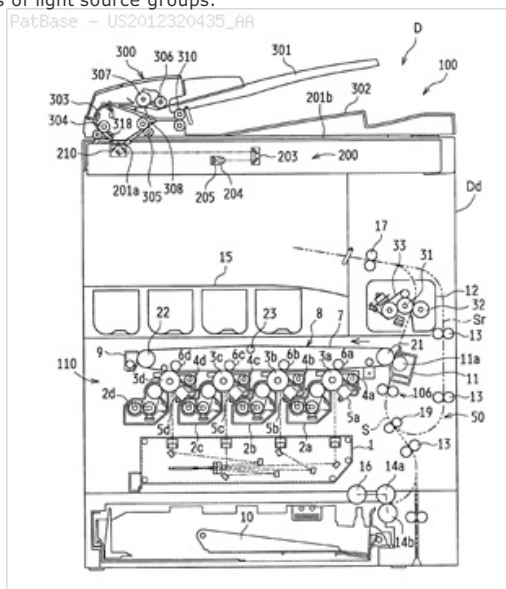
G03G15/043 H04N1/00 H04N1/028 H04N1/04

H04N1/40 (Advanced/Invention)

CPC: H04N1/02865 G03G15/043 H04N1/0288 H04N1/02885 H04N1/40056 H04N2201/0081

European: G03G15/043 H04N1/028E3F H04N1/028E5 H04N1/40K T04N1/028E4 T04N201/00J2

US: 358/474 358/475 358/496 358/497 362/249.01



Family:

Publication number	Publication date	Application number	Application date
CN102833446 A	20121219	CN201210200319	20120614
CN102833446 B	20150506	CN201210200319	20120614
EP2536121 A1	20121219	EP20120004456	20120613
JP2013005206 A2	20130107	JP20110133967	20110616
JP5349541 B2	20131120	JP20110133967	20110616
US2012320435 AA	20121220	US20120523963	20120615
US8730534 BB	20140520	US20120523963	20120615

Priority:

JP20110133967 20110616

Probable Assignee: SHARP KK

Assignee(s): (std): HORIUCHI TAKAO ; SHARP CORP ; SHARP KK

Assignee(s): SHARP K K ; SHARP KABUSHIKI KAISHA

Inventor(s): (std): HORIUCHI TAKAO ; TAKAO HORIUCHI

Agent(s): Müller - Hoffmann &, Partner; ARC PATENT ATTORNEYSOFFICE; BIRCH STEWART KOLASCH AND BIRCH LLP

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

38) Family number: 53124676 (US2013051851A)

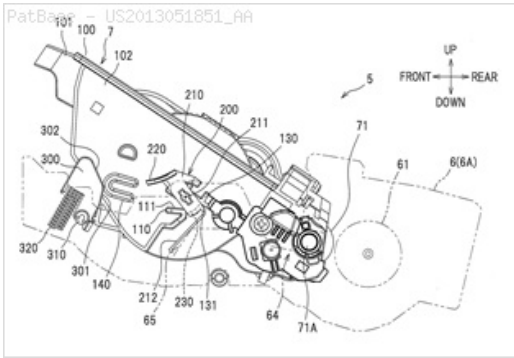
© PatBase

Title: PROCESS CARTRIDGE

Abstract: A process cartridge includes: a drum cartridge including a photoconductor; a development cartridge configured to be detachably attached to the drum cartridge and including a developer carrying member for supplying developer to the photoconductor; a locking member provided on the drum cartridge and configured to be switchable between a locking position in which the development cartridge attached to the drum cartridge is in a locked state and restrained from being moved in a removing direction in which the development cartridge is removed from the drum cartridge and a lifting position in which the locked state is released and the development cartridge is movable in the removing direction, and a retaining member configured to retain the development cartridge which has been moved from the locked state in the removing direction by switching the locking member from the locking position to the lifting position.

Classifications:

International (IPC 8-9): G03G15/08 G03G21/16
G03G21/18 (Advanced/Invention)
CPC: G03G21/1821 G03G21/1842 G03G15/0865 G03G15/0867
US: 1/1 399/113 399/262 399/263



Family:

Publication number	Publication date	Application number	Application date
JP2013050493 A2	20130314	JP20110186889	20110830
JP2016105207 A2	20160609	JP20160039732	20160302
JP5895400 B2	20160330	JP20110186889	20110830
JP6056999 B2	20170111	JP20160039732	20160302
US2013051851 AA	20130228	US20120597994	20120829
US2015104217 AA	20150416	US20140577576	20141219
US2016018783 AA	20160121	US20150867456	20150928
US8938187 BB	20150120	US20120597994	20120829
US9170529 BB	20151027	US20140577576	20141219
US9395688 BB	20160719	US20150867456	20150928

Priority:

JP20110186889 20110830 US20120597994 20120829 US20140577576 20141219
US20150867456 20150928 JP20160039732 20160302

Probable Assignee: BROTHER IND LTD
Assignee(s): (std): BROTHER IND LTD ; FUKAMACHI YASUO
Assignee(s): BROTHER KOGYO KABUSHIKI KAISHA ; BROTHER KOGYO KK
Inventor(s): (std): FUKAMACHI YASUO
Agent(s): BANNER AND WITCOFF LTD

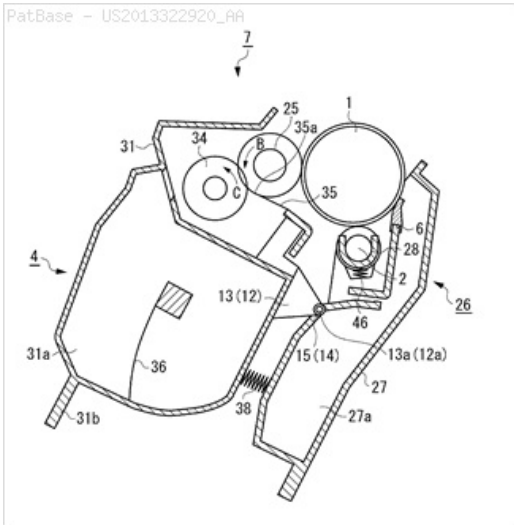
39) Family number: 55305223 (US2013322920A) © PatBase

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

Abstract: A developing device includes a frame configured to store developer, a developing roller arranged at an opening of the frame and configured to bear the developer and to form a developer image on an image bearing member, and a supply roller including a rotational shaft passing through a through-hole provided in the frame and configured to supply the developer to the developing roller, wherein the through-hole is formed so that the supply roller is insertable from an outside of the frame in an axial direction of the supply roller, and has such a size that the supply roller is insertable without rubbing an inner edge of the through-hole.

Classifications:

International (IPC 8-9): G03G15/00 G03G15/08 G03G21/16
G03G21/18 (Advanced/Invention)
CPC: G03G15/0808 G03G15/0894 G03G2215/0132 Y10T29/49547
US: 1/1 29/895.2 399/111 399/279



Family:

Publication number	Publication date	Application number	Application date
■ CN103454883 A	20131218	CN201310218195	20130604
■ CN103454883 B	20170912	CN201310218195	20130604
■ JP2013250515 A2	20131212	JP20120127136	20120604
■ JP6039247 B2	20161207	JP20120127136	20120604
■ US2013322920 AA	20131205	US20130906678	20130531
■ US9081323 BB	20150714	US20130906678	20130531

Priority:

JP20120127136 20120604

Probable Assignee: CANON INC**Assignee(s):** (std): CANON INC ; CANON KK**Inventor(s):** (std): FUKASAWA YU ; HIRUKAWA KUNIAKI ; MAEJIMA HIDEKI ; MAESHIMA HIDEKI**Agent(s):** CANON USA INC IP DIVISION**40) Family number: 55587416** (JP2014055991A)

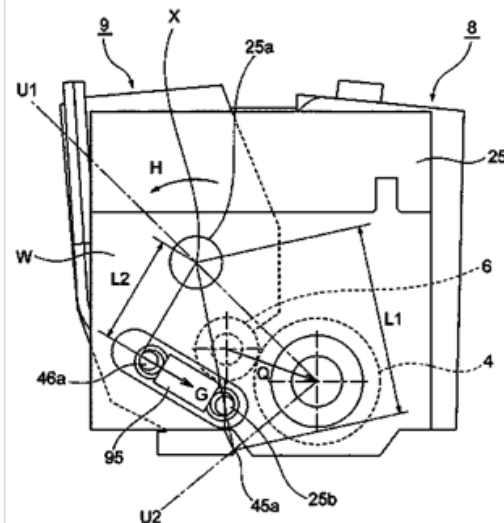
© PatBase

Title: PROCESS CARTRIDGE AND IMAGE FORMING DEVICE

Abstract: PROBLEM TO BE SOLVED: To accurately separate/bias a developing roller from a photoreceptor drum without reinforcing a developing unit for preventing deformation.SOLUTION: On a projection surface in an axial direction of a rotation shaft of an image carrier, a rotation shaft of a developer carrier and a biasing force applying part are arranged inside an area between a first straight line connecting the rotation shaft of the image carrier and a swing shaft and a second straight line connecting the rotation shaft of the image carrier and a power receiving part.

Classifications:**International (IPC 8-9):** G03G15/08 G03G21/18 (Advanced/Invention)

PatBase - JP2014055991_A2

**Family:**

Publication number	Publication date	Application number	Application date
■ JP2014055991 A2	20140327	JP20120199067	20120911
■ JP5362086 B1	20131211	JP20120199067	20120911

Priority:

JP20120199067 20120911

Probable Assignee: CANON INC**Assignee(s):** (std): CANON KK**Assignee(s):** CANON INC**Inventor(s):** (std): SUZUKI TATSUYA ; TOBA SHINJIRO ; YAMAGUCHI MASATOMO**41) Family number: 55627937** (WO14010111A1)

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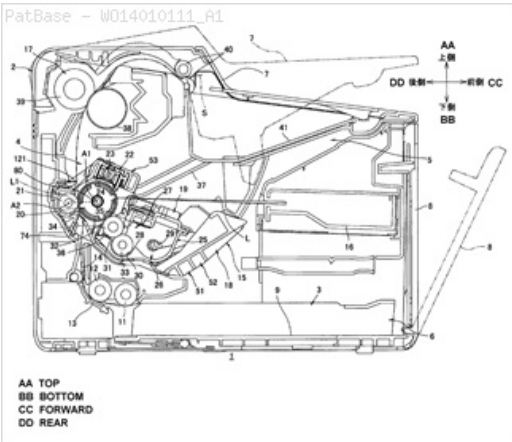
Title: IMAGE FORMATION DEVICE

Abstract: Provided is an image formation device capable of stably supplying a developing agent inside a developing cartridge to

a photosensitive body. A process cartridge (15) is mounted to a body casing (2), has both a drum cartridge (18) having a photosensitive drum (20), and a developing cartridge (19) having a developing roller (34) and capable of attachment/detachment to/from the drum cartridge (18), and is mounted in a manner such that the developing roller (34) is positioned lower in the vertical direction than a center-axis line (A1) of the photosensitive drum (20). A pressing member (66) on the drum cartridge (18) causes the developing cartridge (19) to be pressed toward the photosensitive drum (20) by a pressing force having a component from the bottom in the vertical direction. As a result, the developing roller (34) is guided to a guiding groove (59) in the drum cartridge (18), and contacts and presses the photosensitive drum (20) by the pressing force having a component from the bottom in the vertical direction.

Classifications:

International (IPC 8-9): G03G15/08 G03G15/16
G03G21/18 (Advanced/Invention)
CPC: G03G21/1821



Family:

Publication number	Publication date	Application number	Application date
CN204496163 U	20150722	CN201290001278U	20121129
JP2014016480 A2	20140130	JP20120154131	20120709
JP5949240 B2	20160706	JP20120154131	20120709
WO14010111 A1	20140116	WO2012JP80823	20121129

Priority:

JP20120154131 20120709 WO2012JP80823 20121129

Probable Assignee: BROTHER IND LTD

Assignee(s): (std): BROTHER IND LTD ; HANDA HIROSHI ; MORI HIROKI

Assignee(s): BROTHER KOGYO KK

Inventor(s): (std): HANDA HIROSHI ; MORI HIROKI ; HIROSHI HANDA ; HIROKI MORI

Agent(s): KITAZAWA KAZUHIRO ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE 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 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

42) Family number: 55627954 (WO14010129A1)

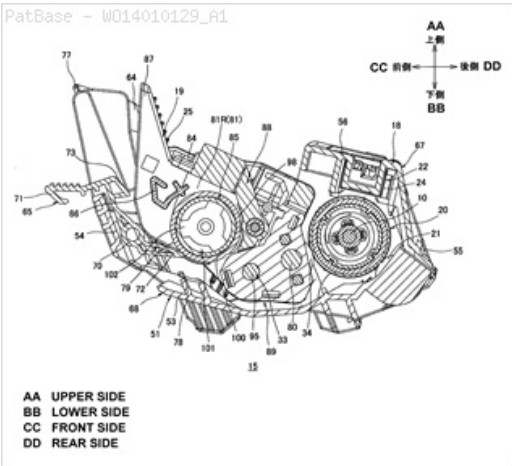
© PatBase

Title: PROCESS CARTRIDGE AND IMAGE-FORMING DEVICE

Abstract: A developing cartridge (19) that is attachable to and detachable from a drum cartridge (18) having a photosensitive drum (20) is provided with a filling part (85) for filling a toner, the filling part (85) being provided so as to protrude toward the right side. By pressing the filling part (85) with a lock lever (65) of the drum cartridge (18), the developing cartridge (19) is moved from an attached position in which same is attached to the drum cartridge (18) to a detachable position in which same is detachable from the drum cartridge (18).

Classifications:

International (IPC 8-9): G03G15/08 G03G21/18 (Advanced/Invention)
CPC: G03G21/1821 G03G21/1835 G03G21/1647 G03G21/1676



Family:

Publication number	Publication date	Application number	Application date
■ CN104412173 A	20150311	CN201280074389	20121129
■ JP2014016498 A2	20140130	JP20120154150	20120709
■ JP5861581 B2	20160216	JP20120154150	20120709
■ WO14010129 A1	20140116	WO2012JP80841	20121129

Priority:

JP20120154150 20120709 WO2012JP80841 20121129

Probable Assignee: BROTHER IND LTD

Assignee(s): (std): BROTHER IND LTD ; FUJII YASUMASA ; MORI HIROKI

Assignee(s): BROTHER KOGYO KK

Inventor(s): (std): FUJII YASUMASA ; MORI HIROKI

Agent(s): KITAZAWA KAZUHIRO ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE 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 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

43) Family number: 57373194 (US2015268625A)

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Title: IMAGE FORMING APPARATUS WITH STRUCTURAL CONNECTION FUNCTION

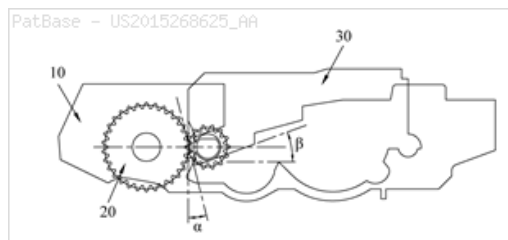
Abstract: The present disclosure illustrates an image forming apparatus with structural connection function. The image forming apparatus can be applied to a business machine, to solve the problem of bad quality of image caused by shaking of a developing module. The image forming apparatus is characterized in that the groove with the inclined angle is equal to the pressure angle of the gear to constrain the operation direction of the developing module, so as to prevent the developing module from shaking. The present disclosure just modifies the design of the guiding channel to constrain the developing module, so the cost of components can be reduced efficiently.

Classifications:

International (IPC 8-9): G03B27/16 G03G15/00 G03G15/08 G03G21/16 G03G21/18 (Advanced/Invention)

CPC: G03G21/1676 G03G21/1821

US: 1/1 399/119



Family:

Publication number	Publication date	Application number	Application date
■ CN104950630 A	20150930	CN201410187434	20140506
■ CN203838478 U	20140917	CN201420228704U	20140506
■ TWM486074 Y	20140911	TW20140204978U	20140324
■ US2015268625 AA	20150924	US20140337845	20140722
■ US9411305 BB	20160809	US20140337845	20140722

Priority:

TW20140204978U 20140324

Probable Assignee: AVISION INC

Assignee(s): (std): AVISION INC

Inventor(s): (std): GOTODA KATSUHIKO ; KATSUHIKO GOTODA

44) Family number: 59085923 (US2015117874A)

© PatBase

Title: IMAGE FORMING APPARATUS

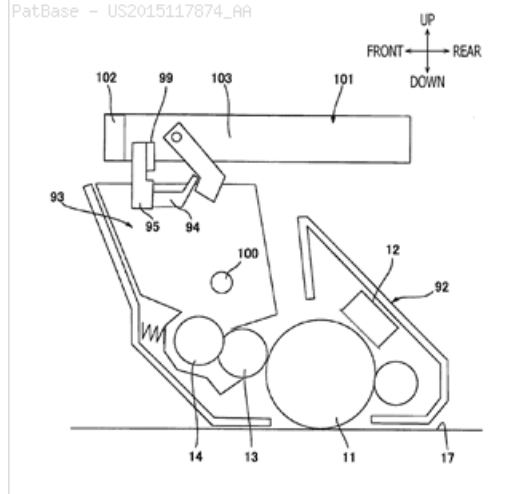
Abstract: An image forming apparatus, including a main body and a cartridge configured to be detachably attached to the main body, is provided. The cartridge includes a photosensitive member configured to carry an image formed in a developer agent thereon, a movable mechanism, and a developer roller configured to supply the developer agent to the photosensitive member. The movable mechanism is configured to shift between a first state, in which the developer roller is placed in a contact position to contact the photosensitive member, and a second state, in which the developer roller is placed in a separated position to be separated from the photosensitive member. The main body includes a detectable member configured to detect a state of the movable mechanism between the first state and the second state.

Classifications:

International (IPC 8-9): G03G15/00 G03G15/08 G03G21/16 G03G21/18 (Advanced/Invention)

CPC: G03G21/1676 G03G21/1896 G03G21/1821 G03G21/1842

US: 1/1 399/111 399/13

**Family:**

Publication number	Publication date	Application number	Application date
JP2015084013 A2	20150430	JP20130221800	20131025
JP6156056 B2	20170705	JP20130221800	20131025
US2015117874 AA	20150430	US20140522807	20141024
US9274494 BB	20160301	US20140522807	20141024

Priority:

JP20130221800 20131025

Probable Assignee:

BROTHER IND LTD

Assignee(s): (std):

BROTHER IND LTD

Assignee(s):

BROTHER KOGYO KK

Inventor(s): (std):

SHIRAKI MASATOSHI

Agent(s):

BANNER AND WITCOFF LTD

45) Family number: 59937136 (US2015212474A)

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Title: IMAGE FORMING APPARATUS

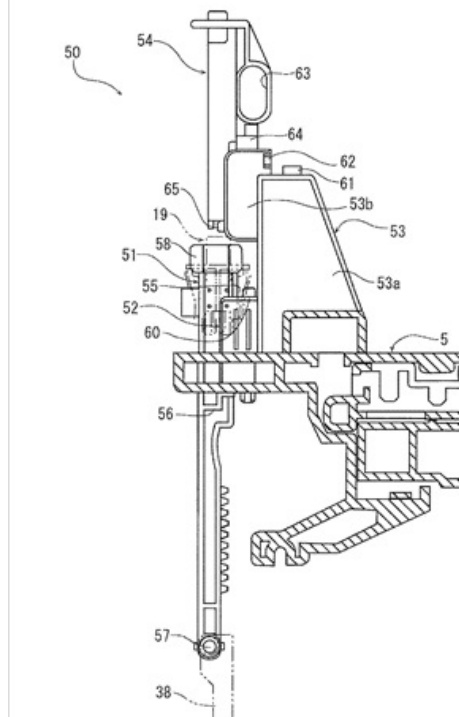
Abstract: An image forming apparatus includes an incorrect attachment or detachment preventing mechanism configured to prevent attachment and detachment of the image forming unit in the transmission state. The incorrect attachment and detachment preventing mechanism includes a locking member capable of moving to a restrict position where the locking member restricts movement of the image forming unit from the predetermined position and a permission position where the locking member permits movement of the image forming unit from the predetermined position. In the transmission state, the locking member is configured to engage with the first engaging part of the manual lever at the restrict position to prevent movement of the image forming unit. In the transmission release state, the locking member is configured to be moved to the permission position and then engaged with the second engaging part of the manual lever to permit movement of the image forming unit.

Classifications:

International (IPC 8-9): G03G15/00 G03G15/01 G03G21/16
G03G21/18 (Advanced/Invention)

CPC: G03G15/757 G03G21/1647 G03G21/1864 G03G2221/1654

US: 1/1 399/13 399/167

**Family:**

Publication number	Publication date	Application number	Application date
■ CN104808467 A	20150729	CN201510028673	20150120
■ DE602015000443 D1	20161201	DE201560000443T	20150120
■ EP2899596 A2	20150729	EP20150151753	20150120
■ EP2899596 A3	20151223	EP20150151753	20150120
■ EP2899596 B1	20161012	EP20150151753	20150120
■ JP2015138224 A2	20150730	JP20140011115	20140124
■ JP6035258 B2	20161130	JP20140011115	20140124
■ US2015212474 AA	20150730	US20150601325	20150121
■ US9229415 BB	20160105	US20150601325	20150121

Priority:

JP20140011115 20140124 EP20150151753 20150120

Probable Assignee: KYOCERA CORP**Assignee(s):** (std): KYOCERA CORP ; KYOCERA DOCUMENT SOLUTIONS INC**Assignee(s):** KYOCERA DOCUMENT SOLUTIONS INC OSAKA SHI**Inventor(s):** (std): UENO DAIJIRO**Agent(s):** BECKER KURIG STRAUS; STUDEBAKER AND BRACKETT PC**Designated states:** AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR**46) Family number: 61817564** (US2017300005A)

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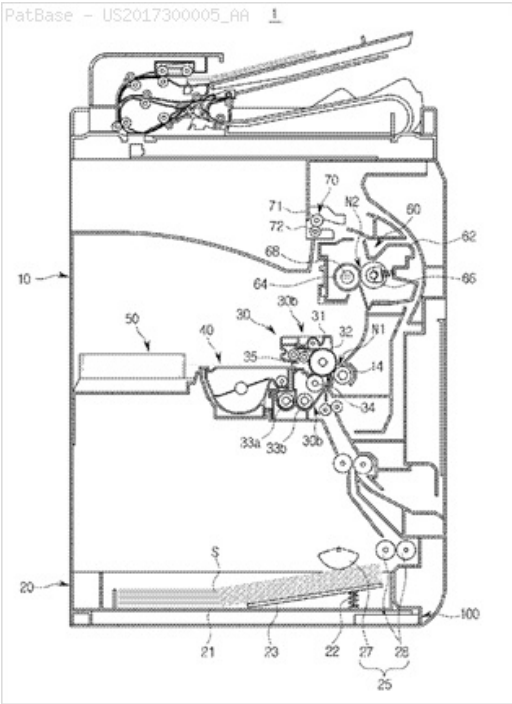
Title: IMAGE FORMING APPARATUS

Abstract: Disclosed herein is an image forming apparatus. The image forming apparatus includes a light scanning unit including a light source which generates light to form an electrostatic latent image by applying the light onto the photoreceptor, and a window through which the light generated by the light source is transmitted, a shutter unit which opens and closes the window, a plurality of pressing units which are provided to allow pressing the developing unit and the shutter unit for an operation of attaching or detaching the developing roller to or from the photoreceptor and an operation of opening and closing the shutter unit and are disposed and spaced in a longitudinal direction, and an operating unit movably provided between an operating position at which a pressing force of the plurality of pressing units is generated, and a standby position at which the pressing force is released. By this configuration, an operation of opening and closing the shutter unit is allowed to link with an operation of attaching or detaching the developing roller to or from the photoreceptor.

Classifications:

International (IPC 8-9): G03G15/04 G03G15/06 G03G15/08 G03G21/12
 G03G21/16 (Advanced/Invention);
 G03G15/08 (Advanced/Non-invention)

CPC: G03G21/1633 G03G21/1666 G03G21/12 G03G21/1647 G03G15/04
 G03G15/0806 G03G2221/169 G03G21/1619 G03G15/04072 G03G15/06
 G03G21/16 G03G15/0813



Family:

Publication number	Publication date	Application number	Application date
CN105388735 A	20160309	CN201510557956	20150902
EP3176640 A1	20170607	EP20150838867	20150423
EP3176640 A4	20180530	EP20150838867	20150423
KR20160028218 A	20160311	KR20140117001	20140903
US2017300005 AA	20171019	US20150508731	20150423
WO16035964 A1	20160310	WO2015KR04062	20150423

Priority:

KR20140117001 20140903 WO2015KR04062 20150423

Probable Assignee: S PRINTING SOLUTIONS CO LTD

Assignee(s): (std): S PRINTING SOLUTION CO LTD ; SAMSUNG ELECTRONICS CO LTD

Assignee(s): S PRINTING SOLUTION CO ; S PRINTING SOLUTIONS CO LTD ; SAMSUNG ELECTRONICS CO

Inventor(s): (std): CHOI MUN HYUB ; HAN JUN LEE ; LEE HAN JUN ; MUN HYUB CHOI

Agent(s): APPELYARD LEES IP LLP; SELIM INTELLECTUAL PROPERTY LAW FIRM

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 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

47) Family number: 61996660 (US2016089904A) © PatBase

Title: PRINTING APPARATUS

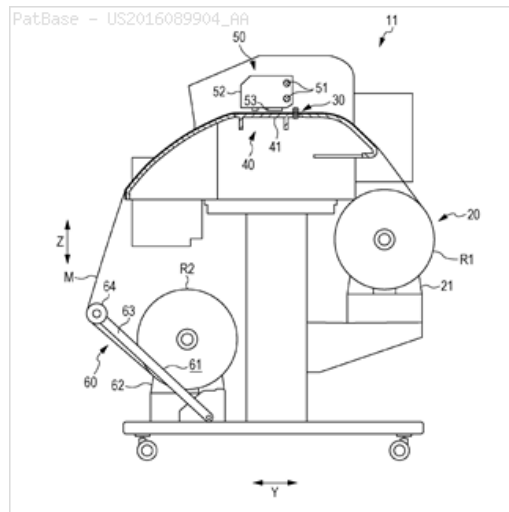
Abstract: A printing apparatus includes: a transport unit that transports a medium in a transport direction; a medium support that supports the medium; a medium pressing unit that has a first regulation section that regulates bending of an end portion of the medium from the medium support in a width direction intersecting with the transport direction and a second regulation section that regulates moving of the end portion of the medium to an outer side in the width direction; and a printing unit that performs printing on the medium supported on the medium support.

Classifications:

International (IPC 8-9): B41J11/00 B41J11/06 B41J13/26 B41J15/04 B41J2/01 (Advanced/Invention)

CPC: B41J2/01 B41J11/0005 B41J13/26 B41J11/0045

US: 347/104



Family:

Publication number	Publication date	Application number	Application date
JP2016068420 A2	20160509	JP20140200705	20140930
US2016089904 AA	20160331	US20150871340	20150930
US2017021642 AA	20170126	US20160288784	20161007
US2017225495 AA	20170810	US20170498705	20170427
US9487025 BB	20161108	US20150871340	20150930
US9662907 BB	20170530	US20160288784	20161007
US9956796 BB	20180501	US20170498705	20170427

Priority:

JP20140200705 20140930 US20150871340 20150930 US20160288784 20161007
US20170498705 20170427

Probable Assignee: SEIKO EPSON CORP

Assignee(s): (std): SEIKO EPSON CORP

Inventor(s): (std): KITAGISHI MIKIAKI ; KITAGISHI MIKIO

Agent(s): ONDA HIRONORI; ONDA MAKOTO; WORKMAN NYDEGGER

48) Family number: 62537535 (US2017261927A)

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Title: CARTRIDGE, MEMBER CONSTITUTING CARTRIDGE, AND IMAGE FORMING APPARATUS

Abstract: Movement and/or urging of a developer carrying member is carried out with high precision. A cartridge that is mountable to an apparatus main assembly of an image forming apparatus, the cartridge includes a developing roller; a frame supporting the developing roller; a movable part movably supported by the frame and movable to a first position and to a second position relative to the frame; and an elastic part provided between the frame and the movable part to urge the movable part. The movable part includes a first force receiving part that receives force from the apparatus main assembly, in a direction of moving from the first position to the second position, and a second force receiving part that receives force from the apparatus main assembly, in a direction of moving from the second position to the first position. When the movable part receives force from the apparatus main assembly at the first force receiving part and is at the second position, the movable part receives urging force from the elastic part in a direction of moving the movable part from the second position to the first position.

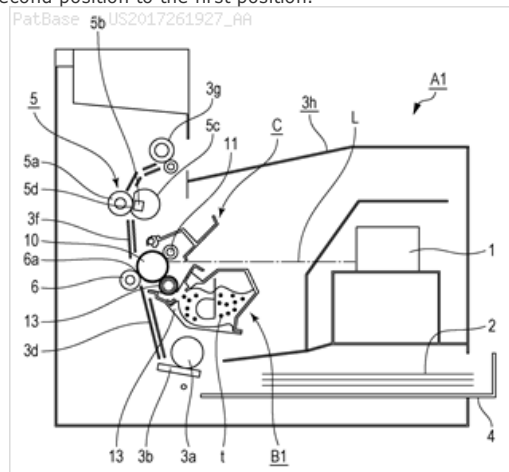
Classifications:

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

G03G21/18 (Advanced/Invention);

G03G21/16 (Core/Invention)

CPC: G03G21/1842 G03G21/1619 G03G21/18 G03G21/1817 G03G21/16
G03G21/1647 G03G21/1825 G03G21/1857



Family:

Publication number	Publication date	Application number	Application date
AU2015354534 AA	20160602	AU20150354534	20151127

BR112017011150 A2	20180123	BR20171111150	20151127
CA2969088 AA	20170525	CA20152969088	20151127
CL2017001330 A1	20180119	CL20170001330	20170524
CN107111269 A	20170829	CN201580073447	20151127
CO20170006223 A2	20171110	CO20170006223	20170623
DE112015005353 T5	20170817	DE201511005353T	20151127
EP3226076 A1	20171004	EP20150862416	20151127
EP3226076 A4	20180509	EP20150862416	20151127
GB201710248 A0	20170809	GB20170010248	20151127
GB2549026 A1	20171004	GB20170010248	20151127
ID201803767 A	20180413	ID2017P0004204	20151127
IN201747022093 A	20170707	IN201747022093	20170623
JP2016110122 A2	20160620	JP20150231356	20151127
KR20170094162 A	20170817	KR20177014522	20151127
MX2017006905 A1	20170815	MX20170006905	20151127
PH2017500985 A	20171211	PH20170500985	20170526
RU2663248 C1	20180803	RU20170122459	20151127
SG11201704295T A1	20170629	SG20171104295	20151127
TH173821 A	20180302	TH20171002955	20151127
TW201621483 A	20160616	TW20150139939	20151130
TW201736990 A	20171016	TW20170111172	20151130
TWI588627 B	20170621	TW20150139939	20151130
US2017261927 AA	20170914	US20170606070	20170526
WO16084951 A1	20160602	WO2015JP83463	20151127

Priority:

JP20140242577 20141128 JP20140242578 20141128 JP20140242602 20141128
JP20140242601 20141128 JP20150231356 20151127 WO2015JP83463 20151127

Probable Assignee: CANON INC

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

Assignee(s): KENON KABUSIKI KAJSYA ; WADA KOJI ; MUNETSUGU HIROYUKI ; SATO MASAOKI ; KUBO YUKIO

Inventor(s): (std): HIROYUKI MUNETSUGU ; KOJI WADA ; KUBO YUKIO ; MASAOKI SATO ; MUNETSUGU HIROYUKI ; MUNETSUGU HIROYUKI ; MUNETSUGU KHIROYUKI ; SATO MASAOKI ; WADA KODZI ; WADA KOJI ; YUKIO KUBO

Agent(s): SPRUSON AND FERGUSON; RIDOUT AND MAYBEE LLP; ESTUDIO VILLASECA Y CIA; HUMBERTO RUBIO CAMACHO; TBK; DORA AMBADAR SPSI; OOO YURIDICHESKAYA GORODISSKIY I PARTNERLY FA; ABE TAKUMA ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE 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

49) Family number: 62729383 (US2016179051A)

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Title: DEVELOPING CARTRIDGE AND IMAGE FORMING APPARATUS EMPLOYING THE SAME

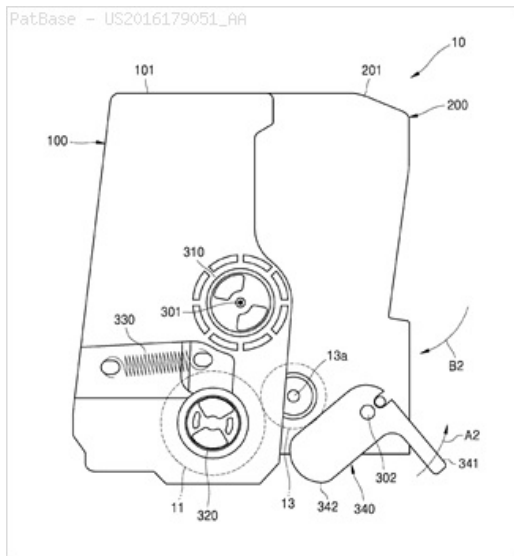
Abstract: Provided is a developing cartridge including a photosensitive unit and a developing unit connected to each other to rotate to a developing location and a non-developing location. An elastic member applies an elastic force to the developing unit and the photosensitive unit in a direction of rotating to the developing location. The developing cartridge includes a nip separating portion switched to a nip forming location where the developing unit is located at the developing location and to a nip separating location where the developing unit is located at the non-developing location, a manipulation portion for switching the nip separating portion to the nip forming location and to the nip separating location by a manual manipulation, and a nip forming unit for switching the nip separating portion from the nip separating location to the nip forming location as the photosensitive unit and the developing unit start to operate.

Classifications:

International (IPC 8-9): G03G15/06 G03G15/08 G03G21/16 G03G21/18 (Advanced/Invention)

CPC: G03G21/1676 G03G15/06 G03G15/065 Y10S430/102 G03G21/1821 G03G21/1825 G03G15/0808 G03G15/0813 G03G15/0896

US: 1/1 399/113



Family:

Publication number	Publication date	Application number	Application date
■ CN105717765 A	20160629	CN201510954933	20151217
■ EP3177967 A1	20170614	EP20150870186	20151007
■ EP3177967 A4	20171011	EP20150870186	20151007
■ KR20160074232 A	20160628	KR20140183300	20141218
■ US2016179051 AA	20160623	US20150874952	20151005
■ US9429902 BB	20160830	US20150874952	20151005
■ WO16099018 A1	20160623	WO2015KR10615	20151007

Priority:

KR20140183300 20141218 WO2015KR10615 20151007

Probable Assignee: S PRINTING SOLUTION CO LTD**Assignee(s):** (std): S PRINTING SOLUTION CO LTD ; SAMSUNG ELECTRONICS CO LTD**Assignee(s):** S PRINTING SOLUTION CO ; SAMSUNG ELECTRONICS CO**Inventor(s):** (std): HONG JIN HWA ; KIM JOON HEE ; SIM YUN KYU ; YANG SEONG WOONG**Agent(s):** APPELYARD LEES IP LLP; STAAS AND HALSEY LLP; YPLEE MOCK AND PARTNERS**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 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**50) Family number: 63365484 (US2016252877A)**

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Title: IMAGE FORMING APPARATUS, PROCESS CARTRIDGE, AND APPARATUS MAIN BODY FOR IMAGE FORMING APPARATUS

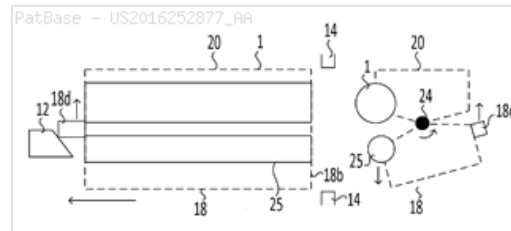
Abstract: An image forming apparatus in which an apparatus main body has: an insertion port through which a process cartridge cannot pass when an image bearing member and a developer bearing member are separated from each other and through which the process cartridge can pass when the image bearing member and the developer bearing member are in contact with each other; and guides that guide one of a first frame and a second frame when the process cartridge is inserted into the insertion port. The image forming apparatus has a separation mechanism that separates the image bearing member and the developer bearing member from each other when the process cartridge is further inserted after the other of the first frame and second frame has passed through the insertion port.

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

G03G21/18 (Advanced/Invention)

CPC: G03G21/1825 G03G21/1647 G03G21/1814 G03G21/1821

G03G15/0806 G03G21/1842

US: 399/111**Family:**

Publication number	Publication date	Application number	Application date
■ JP2016161723 A2	20160905	JP20150039588	20150227
■ US2016252877 AA	20160901	US20160050528	20160223
■ US2017248909 AA	20170831	US20170594721	20170515
■ US9684279 BB	20170620	US20160050528	20160223

Priority:

JP20150039588 20150227 US20160050528 20160223 US20170594721 20170515

Probable Assignee: CANON INC**Assignee(s):** (std): CANON KK**Assignee(s):** CANON INC**Inventor(s):** (std): HAYASHIDA MAKOTO ; NAKAMURA YUKI ; NAKAMURA YUUKI**Agent(s):** SERA KAZUNOBU; KAWAGUCHI YOSHIYUKI; WAKUTA JUN ICHI; FITZPATRICK CELLA HARPER AND SCINTO**51) Family number: 64164470 (US2016349699A)**

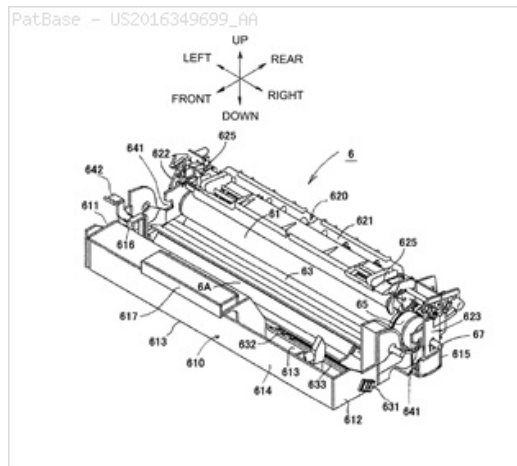
© PatBase

Title: PHOTOSENSITIVE MEMBER CARTRIDGE AND PROCESS CARTRIDGE

Abstract: A photosensitive member cartridge detachably mountable to a main assembly of an image forming apparatus for forming an image, includes a frame; a photosensitive drum on which and which is provided in the frame; a transfer member for transferring an image formed on the drum onto the sheet; a mounting portion for detachably mounting a developing cartridge including a developer carrying member onto the drum and a memory for storing information; a first electrical contact provided on the frame and electrically connectable with a main assembly electrical contact provided in the main assembly when the cartridge is mounted to the main assembly; and a second electrical contact provided on the frame for electrically connecting the memory and the first electrical contact portion with each other when the developing cartridge is mounted to the mounting portion.

Classifications:

International (IPC 8-9): G03G15/00 G03G15/08 G03G21/16
G03G21/18 (Advanced/Invention)
CPC: G03G21/1814 G03G21/1652 G03G15/0863 G03G21/1821
G03G21/1885
US: 399/90



Family:

Publication number	Publication date	Application number	Application date
JP2016224221 A2	20161228	JP20150109757	20150529
US2016349699 AA	20161201	US20160166316	20160527
US2017261923 AA	20170914	US20170610752	20170601
US9823621 BB	20171121	US20160166316	20160527

Priority:

JP20150109757 20150529 US20160166316 20160527 US20170610752 20170601

Probable Assignee: CANON INC

Assignee(s): (std): CANON KK

Assignee(s): CANON INC

Inventor(s): (std): KIKUCHI KEN ; KIKUCHI TAKESHI ; MATSUDA KENJI ; MIYAMOTO JUN ; MIYAZAKI JUN ; UYAMA MASAO

Agent(s): CHIKASHIMA KAZUO; FITZPATRICK CELLA HARPER AND SCINTO

52) Family number: 64520943 (US2016378018A)

© PatBase

Title: IMAGE FORMING APPARATUS

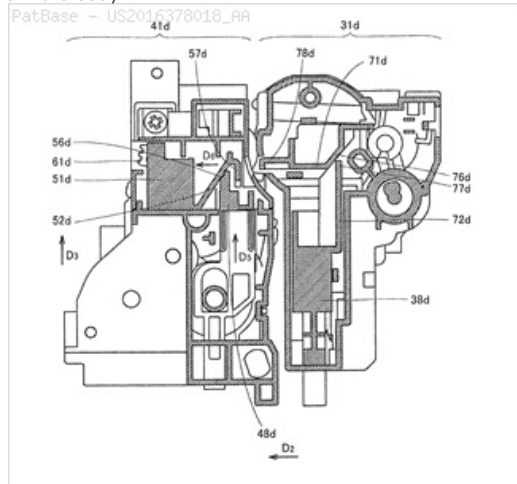
Abstract: An image forming apparatus includes a body, a photoreceptor unit, and a developing unit. The developing unit includes a first attaching/detaching lever that moves a developing sleeve from a first position to a second position by lifting the first attaching/detaching lever. The photoreceptor unit includes a second attaching/detaching lever that moves the developing sleeve from the first position to the second position by lifting the second attaching/detaching lever. The photoreceptor unit and the developing unit move the developing sleeve to the second position by lifting the first or second attaching/detaching lever so that the photoreceptor unit and the developing unit are individually detached from the body.

Classifications:

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

CPC: G03G15/0808 G03G15/0806 G03G21/1842 G03G2221/1654

US: 399/279



Family:

Publication number	Publication date	Application number	Application date
JP2017016091 A2	20170119	JP20160075612	20160405
US2016378018 AA	20161229	US20160190242	20160623
US9746797 BB	20170829	US20160190242	20160623

Priority:

JP20150129226 20150626 JP20160075612 20160405

Probable Assignee: KYOCERA CORP

Assignee(s): (std): KYOCERA CORP ; KYOCERA DOCUMENT SOLUTIONS INC
Inventor(s): (std): AIDA MITSUHIRO ; GODA MITSUHIRO ; HANANO SUSUMU

53) Family number: 66936897 (US2017261921A) PatBase

Title: IMAGE FORMING APPARATUS

Abstract: An image forming apparatus includes a mounting unit configured to mount a development unit including a developing member, a pressing member configured to press the development unit mounted on the mounting unit to separate the developing member from a photosensitive member or bring the developing member into contact with the photosensitive member, and an urging member configured to urge the pressing member, wherein, when mounting the development unit on the mounting unit, the development unit moves in a first direction from the pressing member toward the development unit, parallel to a direction in which the pressing member and the development unit are arranged side by side, wherein the pressing member is movable in the first direction, and wherein the urging member urges the pressing member to move the pressing member in the first direction.

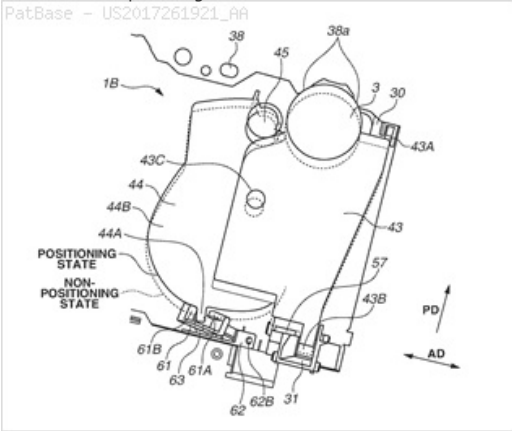
Classifications:

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

G03G21/18 (Advanced/Invention)

CPC: G03G21/1647 G03G21/1676 G03G21/1633 G03G21/1842

G03G21/185 G03G2215/0132 G03G2221/1684



Family:

Publication number	Publication date	Application number	Application date
JP2017167522 A2	20170921	JP20170025410	20170214
US2017261921 AA	20170914	US20170455015	20170309
US10073408 BB	20180911	US20170455015	20170309

Priority:

JP20160048858 20160311 JP20170025410 20170214

Probable Assignee: CANON INC

Assignee(s): (std): CANON KK

Assignee(s): CANON INC

Inventor(s): (std): ZENZAI SHOICHI ; ZENZAI SHOICHI ; YANO TAKASHI ; KAWAMURA TOMOFUMI

Agent(s): CANON USA INC IP DIVISION