

Search query (3): [SP]: claims 1. circuit breaker (1) comprising: - at least a first contact branch (ci) comprising at least a first contact element (pi) and at least a first support element (si) of the first contact element (pi), at least a first connection terminal (tl) electrically connected to, or integrated into, the first support element (si) - an actuating mechanism (15) of the first support element (si) adapted to move the latter so that the first contact element (pi) can be moved from a rest position to a working position and vice versa - a second contact branch (c2) comprising at least a second contact element (p2), adapted to be contacted by the first contact element (pi) when this is in the working position, at least a second support element (s2) of the second contact element (p2) and at least a second connection terminal (t2) electrically connected to, or integrated into, the second support element (s2) characterized in that the circuit breaker (1) further comprises an electrically insulating mobile barrier (60) adapted to be moved between: a first operating position wherein the mobile barrier (60) allows the second contact element (p2) to be contacted by the first contact element (pi) and a second operating position wherein the mobile barrier (60) is at least partially operatively interposed between the first contact element (pi) and the second contact element (p2) to interfere, in the passage of the first contact element (pi) from the working position to the rest position, with an electric arc that extends between said contact elements. 2. circuit breaker (1) according to claim 1, wherein the mobile barrier (60) is rotatable about an axis of rotation in order to be rotated from the first operating position to the second operating position and vice versa. 3. circuit breaker (1) according to claims 1 or 2, wherein the at least one first support element (si) is rotatable about an axis of rotation to rotate between two angularly spaced positions corresponding, respectively, to the working position and the rest position of the first contact element (pi). 4. circuit breaker (1) according to claims 2 and 3, wherein the axis of rotation of the mobile barrier (60) and the axis of rotation of the first support element (si) are parallel. 5. circuit breaker (1) according to any of the preceding claims, wherein the second support element (s2) comprises a movable arm (27) adapted to rotate about an axis of rotation and wherein the circuit breaker (1) further comprises at least one elastic element (26) acting on the movable arm (27) and configured to maintain, in a condition of regular operation of the circuit breaker (1), the second contact element (p2) as close as possible to the first contact element (pi) when the latter is in the working position. 6. circuit breaker (1) according to claim 5, wherein the mobile barrier (60) is adapted to be moved by the movable arm (27) to pass from the first to the second operating position and vice versa. 7. circuit breaker (1) according to claims 2, 5 and 6, wherein the axis of rotation of the mobile barrier (60) and the axis of rotation of the movable arm (27) are parallel. 8. circuit breaker (1) according to claim 6, wherein the movable arm (27) is adapted to interfere in abutment with the mobile barrier (60) to move the mobile barrier (60) from the first to the second operating position and vice versa. 9. circuit breaker (1) according to claim 6, wherein, in the first operating position, the mobile barrier (60) is arranged astride the movable arm (27). 10. circuit breaker (1) according to any of claims 1 to 4, wherein the mobile barrier (60) is adapted to be moved by the first support element (si). 11. circuit breaker (1) according to any of the preceding claims, wherein the mobile barrier (60) is made of an electrically insulating material with the addition of material adapted to release gas when said barrier (60) is subjected to a temperature increase caused by said electric arc. 12. circuit breaker (1) according to any of the preceding claims, comprising an arc extinguishing chamber (19) housing a deionizing cell (8a, 8b) and wherein in the second operating position, the mobile barrier (60) is adapted to interfere with said electric arc by interposing itself between the contact elements (pi, p2) to bring the electric arc towards the deionizing cell (8a, 8b). 13. circuit breaker (1) according to any of claims 1 to 11, wherein the circuit breaker (1) comprises a cell (65) made of electrically insulating material, and wherein, in the second operating position, the mobile barrier (60) is adapted to flank said cell (65) made of electrically insulating material to form a screen that isolates the first (pi) and the second (p2) contact element from each other. 14. circuit breaker (1) according to any of the preceding claims, wherein the circuit breaker (1) is a moulded case circuit breaker and comprises: - a first case (10) housing and supporting the first contact branch (ci) and the actuating mechanism (15) - a second case (20) coupled to the first case (10) housing and supporting the second contact branch (c2) - at least one fastening element (31, 32) adapted to couple and maintain the first (10) and the second (20) case integral to each other. 15. circuit breaker according to claim 14, wherein the second case (20) houses and supports the mobile barrier (60). 16. circuit breaker (1) according to any of the preceding claims, wherein the circuit breaker is multipolar and wherein: - said at least one first contact branch (ci) and the at least one second contact branch (c2) each comprise a plurality of contact branches, each associated to a respective electrical phase of the circuit breaker and the actuating mechanism (15) is common to the various branches and the circuit breaker (1) comprises a plurality of mobile barriers (60), each associated to a respective electrical phase of the circuit breaker.

Results: 8

Search history

Search PN=(WO2015170354) (Results 1)

1:

Search [SP]: circuit breaker with arc extinguishing barrier disjoncteur a barriere d'extinction d'arc a circuit breaker (1) is described, comprising: - at least a first contact branch (c1) comprising at least a first contact element (pi) and at least a first support element (s1) of the first contact element (p1), at least a first connection terminal (t1) electrically connected to, or integrated into, the first support element (s1) - an actuating mechanism (15) of the first support element (s1) adapted to move the latter so that the first contact element (p1) can be moved from a rest position to a working position and vice versa - a second contact branch (c2) comprising at least a second contact element (p2), adapted to be contacted by the first contact element (p1) when this is in the working position, at least a second support element (s2) of the second contact element (p2) and at least a second connection terminal (t2) electrically connected to, or integrated into, the second support element (s2) characterized in that the circuit breaker (1) further comprises an electrically insulating mobile barrier (60) adapted to be moved between: a first operating position wherein the mobile barrier (60) allows the second contact element (p2) to be contacted by the first contact element (p1) and a second operating position wherein the mobile barrier (60) is at least partially operatively interposed between the first contact element (p1) and the second contact element (p2) to interfere, in the passage of the first contact element (pi) from the working position to the rest position, with an electric arc that extends between said contact elements. l'invention decrit un disjoncteur (1), comprenant: - au moins une premiere branche de contact (c1) comprenant au moins un premier element de contact (p1) et au moins un premier element de support (s1) du premier element de contact (p1), au moins une premiere borne de connexion (t1) electriquement connectee a, ou integree dans, le premier element de support (s1) - un mecanisme d'actionnement (15) du premier element de support (s1) pouvant deplacer ce dernier de sorte que le premier element de contact (p1) puisse etre deplace d'une position de repos a une position de travail, et vice versa - une seconde branche de contact (c2) comprenant au moins un second element de contact (p2), pouvant etre mis en contact par le premier element de contact (p1) quand celui-ci est en position de travail, et au moins un second element de support (s2) du second element de contact (p2) et au moins une seconde borne de connexion (t2) electriquement connectee a, ou integree dans, le second element de support (s2) caracterise en ce que le disjoncteur (1) comprend en outre une barriere mobile (60) electriquement isolante pouvant etre deplacee entre: une premiere position de fonctionnement dans laquelle la barriere mobile (60) permet au second element de contact (p2) d'etre mis en contact avec le premier element de contact (p1) et une seconde position de fonctionnement dans laquelle la barriere mobile (60) est au moins partiellement intercalee fonctionnellement entre le premier element de contact (p1) et le second element de contact (p2) pour interfeurer, dans le passage du premier element de contact (p1) de la position de travail a la position de repos, avec un arc electrique qui s'etend entre lesdits elements de contact. (Results 0)

Search [SP]: claims 1. circuit breaker (1) comprising: - at least a first contact branch (ci) comprising at least a first contact element (pi) and at least a first support element (si) of the first contact element (pi), at least a first connection terminal (tl) electrically connected to, or integrated into, the first support element (si) - an actuating mechanism (15) of the first support element (si) adapted to move the latter so that the first contact element (pi) can be moved from a rest position to a working position and vice versa - a second contact branch (c2) comprising at least a second contact element (p2), adapted to be contacted by the first contact element (pi) when this is in the working position, at least a second support element (s2) of the second contact element (p2) and at least a second connection terminal (t2) electrically connected to, or integrated into, the second support element (s2) characterized in that the circuit breaker (1) further comprises an electrically insulating mobile barrier (60) adapted to be moved between: a first operating position wherein the mobile barrier (60) allows the second contact element (p2) to be contacted by the first contact element (pi) and a second operating position wherein the mobile barrier (60) is at least partially operatively interposed between the first contact element (pi) and the second contact element (p2) to interfere, in the passage of the first contact element (pi) from the working position to the rest position, with an electric arc that extends between said contact elements. 2. circuit breaker (1) according to claim 1, wherein the mobile barrier (60) is rotatable about an axis of rotation in order to be rotated from the first operating position to the second operating position and vice versa. 3. circuit breaker (1) according to claims 1 or 2, wherein the at least one first support element (si) is rotatable about an axis of rotation to rotate between two angularly spaced positions corresponding, respectively, to the working position and the rest position of the first contact element (pi). 4. circuit breaker (1) according to claims 2 and 3, wherein the axis of rotation of the mobile barrier (60) and the axis of rotation of the first support element (si) are parallel. 5. circuit breaker (1) according to any of the preceding claims, wherein the second support element (s2) comprises a movable arm (27) adapted to rotate about an axis of rotation and wherein the circuit breaker (1) further comprises at least one elastic element (26) acting on the movable arm (27) and configured to maintain, in a condition of regular operation of the circuit breaker (1), the second contact element (p2) as close as possible to the first contact element (pi) when the latter is in the working position. 6. circuit breaker (1) according to claim 5, wherein the mobile barrier (60) is adapted to be moved by the movable arm (27) to pass from the first to the second operating position and vice versa. 7. circuit breaker (1) according to claims 2, 5 and 6, wherein the axis of rotation of the mobile barrier (60) and the axis of rotation of the movable arm (27) are parallel. 8. circuit breaker (1) according to claim 6, wherein the movable arm (27) is adapted to interfere in abutment with the mobile barrier (60) to move the mobile barrier (60) from the first to the second operating position and vice versa. 9. circuit breaker (1) according to claim 6, wherein, in the first operating position, the mobile barrier (60) is arranged astride the movable arm (27). 10. circuit breaker (1) according to any of claims 1 to 4, wherein the mobile barrier (60) is adapted to be moved by the

first support element (si). 11. circuit breaker (1) according to any of the preceding claims, wherein the mobile barrier (60) is made of an electrically insulating material with the addition of material adapted to release gas when said barrier (60) is subjected to a temperature increase caused by said electric arc. 12. circuit breaker (1) according to any of the preceding claims, comprising an arc extinguishing chamber (19) housing a deionizing cell (8a, 8b) and wherein in the second operating position, the mobile barrier (60) is adapted to interfere with said electric arc by interposing itself between the contact elements (pi, p2) to bring the electric arc towards the deionizing cell (8a, 8b). 13. circuit breaker (1) according to any of claims 1 to 11, wherein the circuit breaker (1) comprises a cell (65) made of electrically insulating material, and wherein, in the second operating position, the mobile barrier (60) is adapted to flank said cell (65) made of electrically insulating material to form a screen that isolates the first (pi) and the second (p2) contact element from each other. 14. circuit breaker (1) according to any of the preceding claims, wherein the circuit breaker (1) is a moulded case circuit breaker and comprises: - a first case (10) housing and supporting the first contact branch (ci) and the actuating mechanism (15) - a second case (20) coupled to the first case (10) housing and supporting the second contact branch (c2) - at least one fastening element (31, 32) adapted to couple and maintain the first (10) and the second (20) case integral to each other. 15. circuit breaker according to claim 14, wherein the second case (20) houses and supports the mobile barrier (60). 16. circuit breaker (1) according to any of the preceding claims, wherein the circuit breaker is multipolar and wherein: - said at least one first contact branch (ci) and the at least one second contact branch (c2) each comprise a plurality of contact branches, each associated to a respective electrical phase of the circuit breaker and the actuating mechanism (15) is common to the various branches and the circuit breaker (1) comprises a plurality of mobile barriers (60), each associated to a respective electrical phase of the circuit breaker. (Results 8)

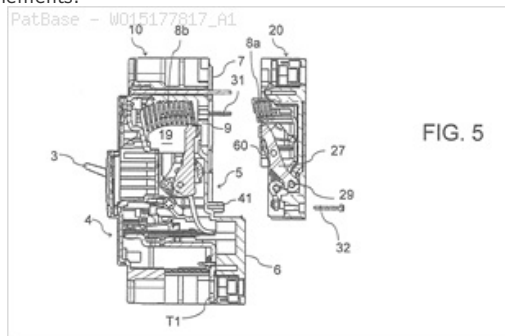
Title: CIRCUIT BREAKER WITH ARC EXTINGUISHING BARRIER

Abstract: A circuit breaker (1) is described, comprising: - at least a first contact branch (C1) comprising at least a first contact element (P1) and at least a first support element (S1) of the first contact element (P1), at least a first connection terminal (T1) electrically connected to, or integrated into, the first support element (S1); - an actuating mechanism (15) of the first support element (S1) adapted to move the latter so that the first contact element (P1) can be moved from a rest position to a working position and vice versa; - a second contact branch (C2) comprising at least a second contact element (P2), adapted to be contacted by the first contact element (P1) when this is in the working position, at least a second support element (S2) of the second contact element (P2) and at least a second connection terminal (T2) electrically connected to, or integrated into, the second support element (S2); characterized in that the circuit breaker (1) further comprises an electrically insulating mobile barrier (60) adapted to be moved between: a first operating position wherein the mobile barrier (60) allows the second contact element (P2) to be contacted by the first contact element (P1); and a second operating position wherein the mobile barrier (60) is at least partially operatively interposed between the first contact element (P1) and the second contact element (P2) to interfere, in the passage of the first contact element (P1) from the working position to the rest position, with an electric arc that extends between said contact elements.

Classifications:

International (IPC 8-9): H01H69/00 H01H71/02 H01H71/08
H01H73/18 H01H83/22 H01H9/32 (Advanced/Invention)

CPC: H01H71/0221 H01H83/226 H01H9/32

**Family:**

Publication number	Publication date	Application number	Application date
CL2016002813 A1	20170217	CL20160002813	20161107
CL2016002814 A1	20170224	CL20160002814	20161107
CN105097369 A	20151125	CN201510115338	20150316
CN105097376 A	20151125	CN201510114401	20150316
CO20160003728 A2	20170331	CO20160003728	20161101
CO20160003896 A2	20170331	CO20160003896	20161108
EP3140846 A1	20170315	EP20150736654	20150420
EP3140847 A1	20170315	EP20150736655	20150422
IN201617036579 A	20170324	IN201617036579	20161025
IN201617036906 A	20170331	IN201617036906	20161027
WO15170354 A1	20151112	WO2015IT00108	20150420
WO15177817 A1	20151126	WO2015IT00110	20150422

Priority:

IT2014RM00227 20140507 IT2014RM00318 20140616 WO2015IT00108 20150420
WO2015IT00110 20150422

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

Title: CIRCUIT BREAKER

Abstract: Source: JP2005235670A [EN] PROBLEM TO BE SOLVED: To provide a circuit breaker in which pressure increase by arc gas can be reduced quickly, and can further prevent the arc from largely leaking out of a container. SOLUTION: The circuit breaker comprises a fixed contactor 1 having a fixed contact 10; a movable contactor 2 having movable contact 11; a driving member 3 driving the movable contactor 2; an arc shielding member 4 intervening between the movable contact 11 and the fixed contact 10 in conjunction with the driving member 3; a switch/trip mechanism 5 driving the driving member 3; and the container 6. The container 6 is provided with an arc exhaust path 14 which communicates with the inside and outside of the container 6 and which partially engages with the tip of the arc shielding member 4 in the state that the movable contact 11 separates from the fixed contact 10, and the fixed contactor 1 at the position corresponding to the outside of the container 6 of the arc exhaust path 14 is provided with an arc commutation section 32.

Classifications:

International (IPC 8-9): H01H73/18 H01H9/32

H01H9/34 (Advanced/Invention);

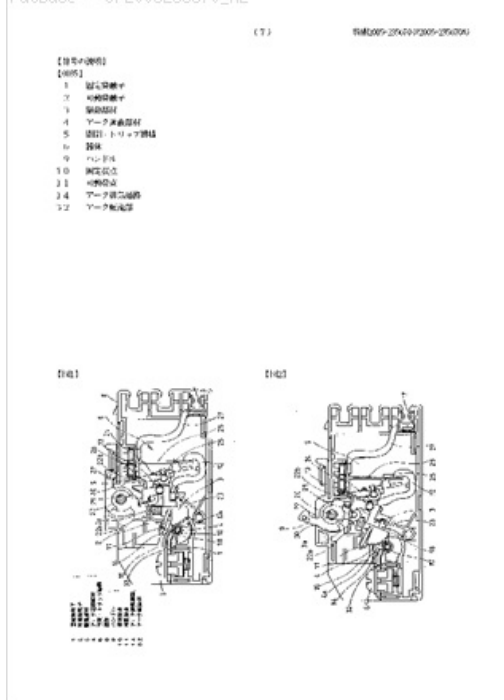
H01H73/00 H01H9/30 (Core/Invention)

International (IPC 1-7): H01H73/18 H01H9/32 H01H9/34

CPC: H01H9/32

European: H01H9/32

PatBase - JP2005235670_A2



Family:

Publication number	Publication date	Application number	Application date
JP2005235670 A2	20050902	JP20040045719	20040223
JP4251092 B2	20090408	JP20040045719	20040223

Priority:

JP20040045719 20040223

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Assignee(s): PANASONIC ELECTRIC WORKS CO LTD

Inventor(s): (std): MIZUNO HATSUO ; SHIMIZU KENICHIRO

Title: CIRCUIT BREAKER

Abstract: Source: US2006191873A [EN] A circuit breaker has a molded case with a main case, a middle cover and a top cover being dividable from one another. The main case contains contactor sections, each including a stationary contactor and a movable contactor for a pole corresponding to each phase in a polyphase circuit, an arc-extinguishing device, an overcurrent tripping device actuating a tripping mechanism by detecting an overcurrent, and a zero-phase current transformer detecting a leak current. The middle cover has a partitioned recess for containing a switching mechanism and the tripping mechanism. Interpole partitions, surrounding the contactor section and the arc-extinguishing device, are formed with the middle cover laid on the main case. A wall with gas outlets for an arc gas is provided on the back of the arc-extinguishing devices.

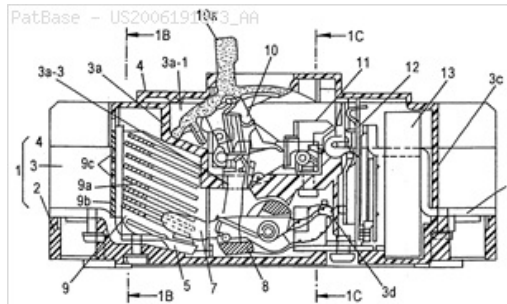
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H01H73/06 H01H73/18 H01H9/44 (Advanced/Invention);

H01H33/08 (Advanced/Non-invention);

H01H33/02 H01H33/04 H01H71/02 H01H73/00

H01H9/30 (Core/Invention)

International (IPC 1-7): H01H71/02 H01H73/06**CPC:** H01H71/0221 H01H71/025 H01H71/02 H01H9/342 H01H73/18**European:** H01H71/02 H01H9/34C T01H73/18**US:** 218/155 218/22 335/202 335/8**Family:**

Publication number	Publication date	Application number	Application date
■ CN100578711 C	20100106	CN200610009315	20060223
■ CN1835164 A	20060920	CN200610009315	20060223
■ FR2882610 A1	20060901	FR20060001542	20060222
■ FR2882610 B1	20150320	FR20060001542	20060222
■ JP2006236798 A2	20060907	JP20050050268	20050225
■ JP4650023 B2	20110316	JP20050050268	20050225
■ KR100963737 B1	20100614	KR20060014525	20060215
■ KR20060094871 A	20060830	KR20060014525	20060215
■ TW200632968 A	20060916	TW20060105662	20060220
■ TWI343070 B	20110601	TW20060105662	20060220
■ US2006191873 AA	20060831	US20050314531	20051222
■ US7154062 BB	20061226	US20050314531	20051222

Priority:

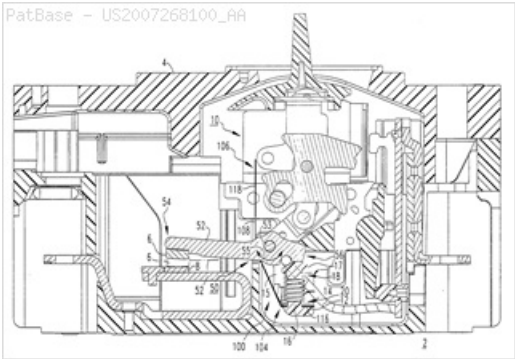
JP20050050268 20050225

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Title: ELECTRICAL SWITCHING APPARATUS, AND MOVABLE CONTACT ASSEMBLY AND SHIELD THEREFOR

Abstract: Source: US2007268100A [EN] A shield is provided for a circuit breaker including a housing, a movable contact, a stationary contact, and an operating mechanism for moving the movable contact into and out of electrical contact with the stationary contact. The operating mechanism includes a crossbar, a biasing member, and a movable contact assembly. The movable contact assembly has a movable contact arm pivotably coupled to the crossbar, and includes a first end carrying the movable contact, and a second end biased by the biasing member, thereby biasing the movable contact toward the stationary contact. The shield comprises an elongated barrier element having an opening which receives the movable contact arm. The elongated barrier element is coupled to the operating mechanism crossbar proximate the second end of the movable contact arm in order to shield at least the biasing member. A movable contact assembly, and electrical switching apparatus are also provided.

Classifications:
International (IPC 8-9): H01H71/00 H01H71/02 H01H71/10
H01H73/02 H01H73/04 H01H73/18 H01H9/00 H01H9/02 H01H9/30
H01H9/34 (Advanced/Invention);
H01H9/30 (Core/Invention)
International (IPC 1-7): H01H1/00
CPC: H01H9/34 H01H73/18 H01H2009/305
European: H01H73/18 H01H9/34 T01H9/30C
US: 335/201 335/201P



Family:

Publication number	Publication date	Application number	Application date
CA2589955 AA	20071118	CA20072589955	20070518
CN101083186 A	20071205	CN200710138879	20070518
EP1858041 A2	20071121	EP20070009977	20070518
EP1858041 A3	20080528	EP20070009977	20070518
IN00769KO2007 A	20071214	IN2007KO00769	20070518
US2007268100 AA	20071122	US20060436336	20060518

Priority:
CA20072589955 20070518 US20060436336 20060518

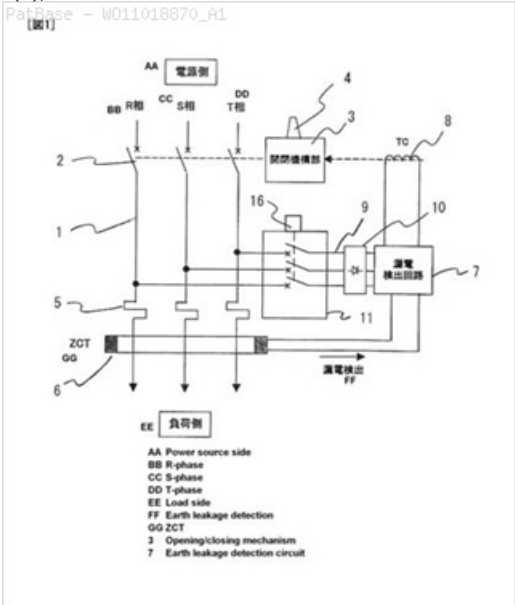
Probable Assignee: EATON CORP
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Assignee(s): IORFIDA GINO C ; JANUSEK MARK A ; KURTZ JOHN J ; SCHALTENBRAND BRIAN J ; MUELLER ROBERT W
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Inventor(s): ROBERT W MUELLER ; SCHALTENBRAND BRIAN ; MARK A JANUSEK ; MUELLER ROBERT ; JOHN J KURTZ ; KURTZ JOHN ; JANUSEK MARK ; BRIAN J SCHALTENBRAND ; GINO C IORFIDA ; IORFIDA GINO
Agent(s): BERESKIN AND PARR LLP SENCRL SRL; KLANG ALEXANDER H; MARTIN J MORAN ESQ EATON ELECTRICAL INC
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 PL PT RO RS SE SI SK TR YU

Title: CIRCUIT BREAKER

Abstract: Disclosed is a circuit breaker wherein the protective function of the breaker is able to be selectively switched, by means of a simple button operation, so that the circuit breaker can be operated as either a molded case circuit breaker or an earth leakage breaker, as needed. A circuit breaker is provided with overcurrent protection and ground fault protection functions, and a main case equipped with: a main circuit contact point (2), an opening/closing mechanism (3), an operating handle (4), an overcurrent trip device (5), a zero-phase current transformer (6), an earth leakage detection circuit (7) and a trip coil unit (8). The ground fault protection function can be selectively set to "on" or "off" by inserting and connecting a mode switching unit (11), by means of setting a button (16) in the wiring circuit of a power source line (9), which provides electricity from a main circuit (1) to the earth leakage detection circuit (7), to ON or OFF.

Classifications:

International (IPC 8-9): H01H71/74 H01H83/02 H01H83/04
H01H83/20 H01H83/22 (Advanced/Invention);
H01H83/02 H01H83/20 (Advanced/Non-invention)
CPC: H01H83/226 H01H71/74 H01H83/04 H01H2300/052
European: H01H83/22C T01H300/052 T01H71/74 T01H83/04



Family:

Publication number	Publication date	Application number	Application date
CN102232236 A	20111102	CN201080003399	20100609
CN102232236 B	20140716	CN201080003399	20100609
EP2466610 A1	20120620	EP20100808058	20100609
EP2466610 A4	20140319	EP20100808058	20100609
JP2011040274 A2	20110224	JP20090186550	20090811
JP5402378 B2	20140129	JP20090186550	20090811
KR101210736 B1	20121211	KR20117011637	20100609
KR20110073614 A	20110629	KR20117011637	20100609
WO11018870 A1	20110217	WO2010JP03839	20100609

Priority:

JP20090186550 20090811 WO2010JP03839 20100609

Probable Assignee: FUJI ELEC COMPONENTS AND SYS FA

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Agent(s): MERH IP MATIAS ERNY REICHL HOFFMANN; HIROSE HAJIME ET AL

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

Title: Protective switch

Abstract: Source: US4668926A [EN] The apparatus of the invention comprises a case housing a fixed contact and a mobile contact carried by a pivoting lever, with resilient return to the closure position, a rocking lever adapted for acting on the pivoting lever in the opening direction in response to an electric fault and a manual control member connected to the pivoting lever. A single spring exerts on the pivoting lever a first torque in the closure direction and on a drive piece blockable by the rocking lever a force adapted to generate on the lever a second torque antagonistic to and greater than the first one. With the manual control member a third torque antagonistic to and greater than the first one is exerted on the pivoting lever.

Classifications:

International (IPC 8-9): H01H71/50 (Advanced/Invention);

H01H71/10 (Core/Invention)

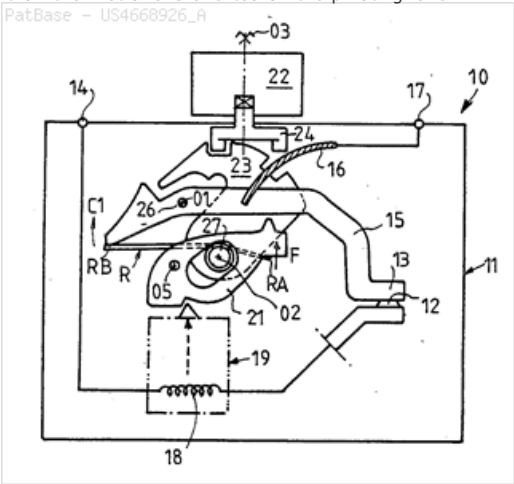
International (IPC 1-7): H01H71/12 H01H71/50 H01H73/36

H01H75/00

CPC: H01H9/32 H01H71/50

European: H01H71/50 H01H9/32

US: 335/191 335/21



Family:

Publication number	Publication date	Application number	Application date
DE3663422 D1	19890622	DE19863663422	19860205
EP0193440 A1	19860903	EP19860400239	19860205
EP0193440 B1	19890517	EP19860400239	19860205
FR2577712 A1	19860822	FR19850002119	19850214
FR2577712 B1	19880715	FR19850002119	19850214
JP61193325 A2	19860827	JP19860030613	19860214
US4668926 A	19870526	US19860828485	19860212

Priority:

FR19850002119 19850214

Probable Assignee: LA TELEMECANIQUE ELECTRIQUE A CORP OF FRANCE

Assignee(s): (std): TELEMECANIQUE ELECTRIQUE

Assignee(s): TELEMECANIQUE ELECTRIQUE LA ; LA TELEMECANIQUE ELECTRIQUE ; LA TELEMECANIQUE ELECTRIQUE A CORP OF FRANCE

Inventor(s): (std): INGURAN REIMONDO ; KONTOUWA PATORITSUKU ; MOROO RIYUTSUKU ; PAZUII SAAJI ; PAGGI SERGE ; MOREAU LUC ; INGRAIN RAYMOND ; COMTOIS PATRICK

Inventor(s): PATRICK COMTOIS RAYMOND INGRAIN LUC MOREAU ET SERG ; PATRICK COMTOIS RAYMOND INGRAIN LUC MOREAU ET...

Designated states: BE CH DE GB IT LI NL SE

Title: CIRCUIT BREAKER

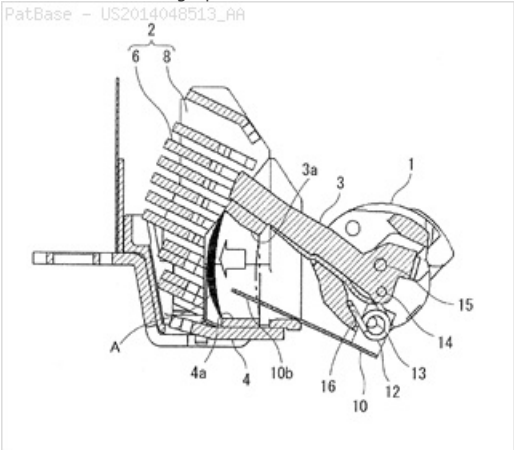
Abstract: Source: US2014048513A [EN] It is possible to extend an arc as far as an arc extinguishing chamber without increasing an opening distance of a movable contact, and to increase an arc voltage, thus improving the breaking performance, without changing a switching mechanism or increasing a size of the external form of a circuit breaker. A circuit breaker includes a breaking portion having a fixed contact and movable contact, and an arc extinguishing chamber disposed so as to enclose the breaking portion. An insulating arm made of an insulator is provided to be capable of advancing into and withdrawing from the space between contact points of the fixed contact and movable contact. Further, the insulating arm advances to a position between the contact points when the movable contact carries out an opening operation, and withdraws from the space between the contact points when the movable contact carries out a closing operation.

Classifications:

International (IPC 8-9): H01H33/06 H01H73/18 (Advanced/Invention)

CPC: H01H33/06 H01H9/32 H01H9/34 H01H73/18

US: 218/117



Family:

Publication number	Publication date	Application number	Application date
 CN103594297 A	20140219	CN201310296309	20130715
 JP2014038751 A2	20140227	JP20120179681	20120814
 US2014048513 AA	20140220	US20130933748	20130702

Priority:

JP20120179681 20120814

Probable Assignee: FUJI ELECTRIC COMPONENTS AND SYSTEMS CO LTD FA

Assignee(s): (std): FUJI ELEC COMPONENTS AND SYS FA ; FUJI ELEC FA COMPONENTS AND SYS

Assignee(s): FUJI ELECTRIC COMPONENTS AND SYSTEMS CO FA ; FUJI ELECTRIC COMPONENTS AND SYSTEMS CO LTD FA ; FUJI ELECTRIC FA COMPONENTS AND SYSTEMS CO LTD

Inventor(s): (std): AKIFUMI SATO ; YUTAKA SATO ; SATO YUTAKA ; SATO SUKETAKA ; SATO AKIFUMI

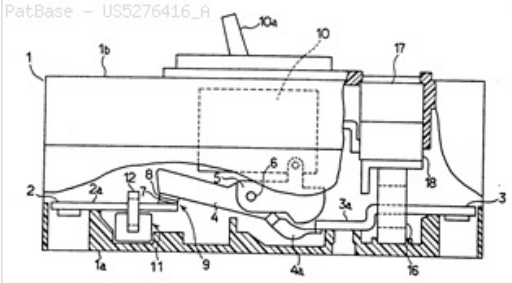
Agent(s): HIROSE HAJIME

Title: Circuit breaker

Abstract: Source: US5276416A [EN] A circuit breaker includes an insulative case and three first current transformers for detecting load currents. Each first current transformer has a U-shaped core with a gap and is disposed so that a movable contact arm is positioned in the gap. Three second current transformers for control power source are disposed between main contacts for opening and closing power feed path to loads and power-supply side terminals. An output of each second current transformer is supplied to a power source circuit of a control circuit. A zero-phase-sequence transformer for detection of an earth fault current is disposed between the movable contact arms and load side terminals in the case. A control circuit generates an overcurrent trip signal based on an detection output of each first current transformer and an earth leakage trip signal based on an detection output of the zero-phase-sequence current transformer. A tripping device opens main contacts in response to the overcurrent trip signal and the earth leakage trip signal. The control circuit and the tripping device are disposed in the space at the zero-phase-sequence current transformer side in the case.

Classifications:

International (IPC 8-9): H01H71/02 H01H73/36 H01H83/02 H01H83/22 H02H3/08 H02H3/347 (Advanced/Invention); H01H71/12 H02H1/06 (Advanced/Non-invention); H01H71/02 H01H73/00 H01H83/00 H02H3/08 H02H3/32 (Core/Invention); H01H71/12 H02H1/00 (Core/Non-invention)
International (IPC 1-7): H01H115/00 H01H71/02 H01H73/00 H01H73/36 H01H83/00 H01H83/02 H02H3/08 H02H3/347
CPC: H01H71/0207 H01H71/125 H01H83/226 H02H1/063
European: H01H71/02B H01H83/22C T01H71/12D2 T02H1/06B
US: 335/18 361/42



Family:

Publication number	Publication date	Application number	Application date
FR2681725 A1	19930326	FR19920011169	19920918
FR2681725 B1	19941230	FR19920011169	19920918
JP2809900 B2	19981015	JP19910240960	19910920
JP2809904 B2	19981015	JP19910249226	19910927
JP5082009 A2	19930402	JP19910240960	19910920
JP5082010 A2	19930402	JP19910240961	19910920
JP5089767 A2	19930409	JP19910249226	19910927
KR19930006779 A	19930421	KR19920017084	19920919
KR970007776 B1	19970516	KR19920017084	19920919
US5276416 A	19940104	US19920946769	19920917

Priority:

JP19910240960 19910920 JP19910240961 19910920 JP19910249226 19910927

Probable Assignee: KABUSHIKI KAISHA TOSHIBA

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Assignee(s): KABUSHIKI KAISHA TOSHIBA

Inventor(s): (std): MASASHI OZAKI ; OZAKI MASA ; OZAKI MASASHI

Search history

Search PN=(WO2015170354) (Results 1)

1:

Search [SP]: circuit breaker with arc extinguishing barrier disjoncteur a barriere d'extinction d'arc a circuit breaker (1) is described, comprising: - at least a first contact branch (c1) comprising at least a first contact element (pi) and at least a first support element (s1) of the first contact element (p1), at least a first connection terminal (t1) electrically connected to, or integrated into, the first support element (s1) - an actuating mechanism (15) of the first support element (s1) adapted to move the latter so that the first contact element (p1) can be moved from a rest position to a working position and vice versa - a second contact branch (c2) comprising at least a second contact element (p2), adapted to be contacted by the first contact element (p1) when this is in the working position, at least a second support element (s2) of the second contact element (p2) and at least a second connection terminal (t2) electrically connected to, or integrated into, the second support element (s2) characterized in that the circuit breaker (1) further comprises an electrically insulating mobile barrier (60) adapted to be moved between: a first operating position wherein the mobile barrier (60) allows the second contact element (p2) to be contacted by the first contact element (p1) and a second operating position wherein the mobile barrier (60) is at least partially operatively interposed between the first contact element (p1) and the second contact element (p2) to interfere, in the passage of the first contact element (pi) from the working position to the rest position, with an electric arc that extends between said contact elements. l'invention decrit un disjoncteur (1), comprenant: - au moins une premiere branche de contact (c1) comprenant au moins un premier element de contact (p1) et au moins un premier element de support (s1) du premier element de contact (p1), au moins une premiere borne de connexion (t1) electriquement connectee a, ou integree dans, le premier element de support (s1) - un mecanisme d'actionnement (15) du premier element de support (s1) pouvant deplacer ce dernier de sorte que le premier element de contact (p1) puisse etre deplace d'une position de repos a une position de travail, et vice versa - une seconde branche de contact (c2) comprenant au moins un second element de contact (p2), pouvant etre mis en contact par le premier element de contact (p1) quand celui-ci est en position de travail, et au moins un second element de support (s2) du second element de contact (p2) et au moins une seconde borne de connexion (t2) electriquement connectee a, ou integree dans, le second element de support (s2) caracterise en ce que le disjoncteur (1) comprend en outre une barriere mobile (60) electriquement isolante pouvant etre deplacee entre: une premiere position de fonctionnement dans laquelle la barriere mobile (60) permet au second element de contact (p2) d'etre mis en contact avec le premier element de contact (p1) et une seconde position de fonctionnement dans laquelle la barriere mobile (60) est au moins partiellement intercalee fonctionnellement entre le premier element de contact (p1) et le second element de contact (p2) pour interfeerer, dans le passage du premier element de contact (p1) de la position de travail a la position de repos, avec un arc electrique qui s'etend entre lesdits elements de contact. (Results 0)

Search [SP]: claims 1. circuit breaker (1) comprising: - at least a first contact branch (ci) comprising at least a first contact element (pi) and at least a first support element (si) of the first contact element (pi), at least a first connection terminal (ti) electrically connected to, or integrated into, the first support element (si) - an actuating mechanism (15) of the first support element (si) adapted to move the latter so that the first contact element (pi) can be moved from a rest position to a working position and vice versa - a second contact branch (c2) comprising at least a second contact element (p2), adapted to be contacted by the first contact element (pi) when this is in the working position, at least a second support element (s2) of the second contact element (p2) and at least a second connection terminal (t2) electrically connected to, or integrated into, the second support element (s2) characterized in that the circuit breaker (1) further comprises an electrically insulating mobile barrier (60) adapted to be moved between: a first operating position wherein the mobile barrier (60) allows the second contact element (p2) to be contacted by the first contact element (pi) and a second operating position wherein the mobile barrier (60) is at least partially operatively interposed between the first contact element (pi) and the second contact element (p2) to interfere, in the passage of the first contact element (pi) from the working position to the rest position, with an electric arc that extends between said contact elements. 2. circuit breaker (1) according to claim 1, wherein the mobile barrier (60) is rotatable about an axis of rotation in order to be rotated from the first operating position to the second operating position and vice versa. 3. circuit breaker (1) according to claims 1 or 2, wherein the at least one first support element (si) is rotatable about an axis of rotation to rotate between two angularly spaced positions corresponding, respectively, to the working position and the rest position of the first contact element (pi). 4. circuit breaker (1) according to claims 2 and 3, wherein the axis of rotation of the mobile barrier (60) and the axis of rotation of the first support element (si) are parallel. 5. circuit breaker (1) according to any of the preceding claims, wherein the second support element (s2) comprises a movable arm (27) adapted to rotate about an axis of rotation and wherein the circuit breaker (1) further comprises at least one elastic element (26) acting on the movable arm (27) and configured to maintain, in a condition of regular operation of the circuit breaker (1), the second contact element (p2) as close as possible to the first contact element (pi) when the latter is in the working position. 6. circuit breaker (1) according to claim 5, wherein the mobile barrier (60) is adapted to be moved by the movable arm (27) to pass from the first to the second operating position and vice versa. 7. circuit breaker (1) according to claims 2, 5 and 6, wherein the axis of rotation of the mobile barrier (60) and the axis of rotation of the movable arm (27) are parallel. 8. circuit breaker (1) according to claim 6, wherein the movable arm (27) is adapted to interfere in abutment with the mobile barrier (60) to move the mobile barrier (60) from the first to the second operating position and vice versa. 9. circuit breaker (1) according to claim 6, wherein, in the first operating position, the mobile barrier (60) is arranged astride the movable arm (27). 10. circuit breaker (1) according to any of claims 1 to 4, wherein the mobile barrier (60) is adapted to be moved by the first support element (si). 11. circuit breaker (1) according to any of the preceding claims, wherein the mobile barrier (60) is made of an electrically insulating material with the addition of material adapted to release gas when said barrier (60) is subjected to a temperature increase caused by said electric arc. 12. circuit breaker (1) according to any of the preceding claims, comprising an arc extinguishing chamber (19) housing a deionizing cell (8a, 8b) and wherein in the second operating position, the mobile barrier (60) is adapted to interfere with said electric arc by interposing itself between the contact elements (pi, p2) to bring the electric arc towards the deionizing cell (8a, 8b). 13. circuit breaker (1) according to any of claims 1 to 11, wherein the circuit breaker (1) comprises a cell (65) made of electrically insulating material, and wherein, in the second operating position, the mobile barrier (60) is adapted to flank said cell (65) made of electrically insulating material to form a screen that isolates the first (pi) and the second (p2) contact element from each other. 14. circuit breaker (1) according to any of the preceding claims, wherein the circuit breaker (1) is a moulded case circuit breaker and comprises: - a first case (10) housing and supporting the first contact branch (ci) and the actuating mechanism (15) - a second case (20) coupled to the first case (10) housing and supporting the second contact branch (c2) - at least one fastening element (31, 32) adapted to couple and maintain the first (10) and the second (20) case integral to each other. 15. circuit breaker according to claim 14, wherein the second case (20) houses and supports the mobile barrier (60). 16. circuit breaker (1) according to any of the preceding claims, wherein the circuit breaker is multipolar and wherein: - said at least one first contact branch (ci) and the at least one second contact branch (c2) each comprise a plurality of contact branches, each associated to a respective electrical phase of the circuit breaker and the actuating mechanism (15) is common to the various branches and the circuit breaker (1) comprises a plurality of mobile barriers (60), each associated to a respective electrical phase of the circuit breaker. (Results 8)

Search [SP]: circuit breaker with arc extinguishing barrier description the present disclosure refers to the technical field of electrical installations and, more particularly, regards a circuit breaker with arc extinguishing barrier. as is known, a circuit breaker includes an electrical circuit comprising at least two contact elements at least one of which is a movable contact that can be moved from an open position to a closed position and vice versa. in the open position, the two contact elements are spaced apart and the electric circuit of the circuit breaker is open. conversely, in the closed position, the two contact elements abut each other and the electric circuit of the circuit breaker is closed. in certain types of circuit breakers, such as moulded case circuit breakers, in order to facilitate the extinction of electric arcs that are triggered during the opening/closing of the electric circuit of the circuit breaker, there is typically provided a so-called deionizing cell housed in an internal chamber of the circuit breaker called arc extinguishing chamber. a parameter that characterizes the performance of a circuit breaker is the so-called breaking capacity, which is defined as the maximum short-circuit current that a circuit breaker can interrupt at the operating voltage for a maximum of three operations without it being damaged and its protection characteristics altered. the intensity of current at breaking capacity is significantly higher (by several orders of magnitude) than the maximum rated current of the circuit breaker. the latter is another characteristic parameter and is defined as the maximum current that can be supported by the circuit breaker for an unlimited time. the breaking capacity is a parameter dependent on the constructional characteristics of the circuit breaker, such as, for example, the size of the circuit breaker, the size of the deionizing cell and the extinguishing chamber and whether or not elements are present suitable to deflect the arc, such as, for example, the ferromagnetic elements described in european patent ep1998349 al. the object of the present disclosure is to provide a further solution that allows improving the performance of a circuit breaker in terms of breaking capacity. this object is achieved through a circuit breaker as generally defined in claim 1. preferred and advantageous embodiments of said circuit breaker are defined in the attached dependent claims. the invention will be better understood from the following detailed description of a particular embodiment, provided by way of example and, therefore, in no way limiting, in relation to the accompanying drawings, wherein: figure 1 is a three-dimensional view of an embodiment of a circuit breaker figure 2 is a side plan view of the circuit breaker of figure 1 showing a first and second case coupled together figure 3 is a three-dimensional view of the circuit breaker of figure 1, wherein is predominantly visible the upper face of the circuit breaker - figure 4 is a side sectional view of a first possible embodiment of the circuit breaker of figure 1 - figure 5 is a side sectional view of the circuit breaker of figure 4, wherein the two cases are shown uncoupled from each other - figure 6 is a three-

dimensional view of the first case of the circuit breaker of figure 1 - figure 7 is a three-dimensional view of the second case of the embodiment of the circuit breaker of figure 4, wherein are visible a plurality of mobile arc extinguishing barriers - figure 8 is a plan view showing, respectively, a first contact branch, a second contact branch and a mobile arc extinguishing barrier of the circuit breaker of figure 1 wherein the above-mentioned elements are in a first operating configuration - figure 9 is a plan view showing the first contact branch, second contact branch and mobile arc extinguishing barrier of figure 8 wherein the above-mentioned elements are in a second operating configuration - figure 10 is a plan view showing the first contact branch, second contact branch and mobile arc extinguishing barrier of figure 8 wherein the above-mentioned elements are in a third operating configuration - figure 11 is a three-dimensional view in partial section of the second contact branch and of the mobile arc extinguishing barrier of figures 8-10, wherein the second contact branch and the mobile barrier are in the configurations of figures 8 and 9 - figure 12 is a three-dimensional view of a first variant embodiment of the second case of figure 7, comprising a plurality of mobile arc extinguishing barriers wherein said barriers are shown in a first operating position - figure 13 is a three-dimensional view of the case of figure 7, wherein the mobile arc extinguishing barriers are shown in a second operating position and - figure 14 is a plan view of a second variant embodiment of the second case of figure 7, comprising a plurality of mobile arc extinguishing barriers wherein said barriers are shown in a first operating position - figure 15 is a plan view of the case of figure 14, wherein the mobile arc extinguishing barriers are shown in a second operating position. in the figures, equal or similar elements will be indicated by the same reference numbers. with reference to the attached figures, a non-limiting embodiment of a circuit breaker is shown, globally indicated with 1. in the particular embodiment of figure 1, the circuit breaker 1 is, for example, a moulded case circuit breaker. a moulded case circuit breaker, as opposed to an "open" circuit breaker has a housing made of insulating material that, in addition to providing protection against external agents, supports the internal circuits and mechanisms of the circuit breaker and terminals for connection to the external line and load circuits. currently, moulded case circuit breakers are generally used as protective devices in the fields of electrical distribution, industrial automation and advanced service fields to interrupt currents having, for example, a value up to 3200 A. some manufacturers in the industry provide the market different types of moulded case circuit breakers with different functions, since, for example, the market requires various types of moulded case circuit breakers, each of which can be equipped or not with an internal residual current protection device. one possible type of moulded case circuit breaker is represented, for example, by automatic circuit breakers with magnetothermal type trip system, which, in practice, comprises only electromechanical devices. another possible type of moulded case circuit breaker is, for example, an automatic circuit breaker with electronic type trip system, wherein the trip system is interlocked with an electronic control. in the particular example shown in the figures and which will be described below, the circuit breaker 1 is a multipolar circuit breaker and, in particular, a tripolar circuit breaker. according to a variant embodiment, the circuit breaker 1 is a four-pole circuit breaker. however, the teachings of this description also extend to circuit breakers having a different number of poles, for example unipolar or bipolar. from now on we will refer, without thereby introducing any limitation, to the case where in the circuit breaker 1 is, as in the example shown in the figures, a multipolar moulded case circuit breaker. with reference to figures 1 and 2, according to an advantageous and non-limiting embodiment, the circuit breaker 1 comprises a first case 10, made of an electrically insulating material such as, for example, a resin, and a second case 20 coupled to the first case 10, also made of an electrically insulating material such as a resin. the cases 10 and 20 are formed, for example, by injection moulding, in two pieces separate from each other. in the above-mentioned advantageous embodiment, with reference to figure 5, the circuit breaker 1 comprises at least one fastening element 31,32 adapted to couple and maintain the first case 10 and the second case 20 integral to each other. it is preferable to provide a plurality of fastening elements 31,32. according to an embodiment, the at least one fastening element 31,32 is adapted to removably couple the two cases 10,20, and, for example, is embodied by one or more screws 31,32 or in one or more pairs of screws 31,32. in an alternative embodiment, the at least one fixing element 31,32 is an irreversible fixing element and, for example, is embodied by at least one rivet. in the particular example shown in the figures, a plurality of fastening elements are provided in the form of screws or pairs of screws 31 that, passing through the first case 10, are inserted in suitable seats 42 of the second case 20 and in the form of screws or pairs screws 32 that, passing through first the second housing 20, are inserted in suitable seats 41 provided in the first housing 10. according to a possible embodiment, the first case 10 comprises a first case portion 11 and a second case portion 12 made in two separate pieces, for example by injection moulding, and coupled together. the second case portion 12 is operatively interposed between the first case portion 11 and the second case 20. preferably, the first case 10 comprises a lid 13 removably coupled to the first case portion 11. the lid 13 is, for example, coupled to the first case portion 11 by means of screws that, passing through the lid 13, are inserted in respective screwing seats provided in the first case portion 11. with reference to figure 6, according to an advantageous embodiment, the first case 10 comprises a front face 4 and a rear face 5 opposite to the front face and the second case 20 is coupled to the (Results 8)

Search Mould* and case* and circuit breaker* (Results 1172)

5:

Search 5 and contact branch (Results 2)

6:

Search 5 and contact* (Results 542)

7:

Search 7 and actuati* and mechanism* (Results 68)

8:

Title: CURRENT LIMITING **CIRCUIT BREAKER**

Abstract: Source: US3943316A [EN] A current limiting **circuit breaker** having for each pole, a pair of main **contacts** separable upon operation of a thermally and electromagnetically operable tripping device and a pair of auxiliary **contacts** for current limiting in series with the main **contacts** and in parallel with a transformable resistor having a positive temperature coefficient of resistance. The auxiliary **contacts** are separable when an electromagnet is energized by a fault current which simultaneously energizes a field magnet to produce a transverse magnetic field across the auxiliary **contacts** and the arc formed between them when separating. This simultaneous action of electromagnet and field magnet coacting for rapid **contact** separation and lengthening of the arc upon flow of a fault current serves to increase arc voltage almost instantaneously to that of the source, about which time the fault current is totally shunted into the resistor. One of the main **contacts** of each pole is carried by a movable **contact** blade. The **contact** blades have tapered mounting end portions which extend through an elongated molded plastic crossbar, the movable **contact** blade for each pole being mounted in spaced apart relation in the common crossbar. A metallic insert is embedded in the molded plastic crossbar, the metallic insert having spaced apart openings located to permit the tapered mounting end of the **contact** blades to extend therethrough.

Classifications:

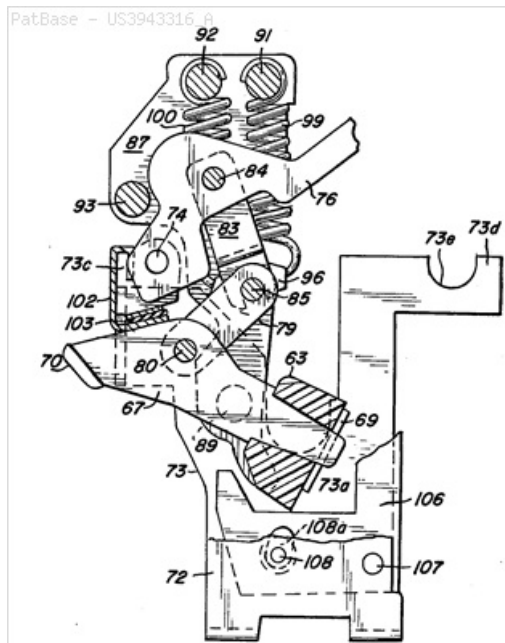
International (ipc 8-9): H01C3/00 H01H33/04 H01H33/08 H01H33/94 H01H51/06 H01H71/02 H01H71/40 H01H71/43 H01H73/36 H01H73/48 H01H77/06 H01H77/10 H01H9/30 H01H9/34 H01H9/42 H01H9/44 H02H9/02 (Advanced/Invention); H01H33/04 H01H33/88 H01H51/00 H01H71/02 H01H71/12 H01H73/00 H01H77/00 H01H9/30 H02H9/02 (Core/Invention)

International (ipc 1-7): H01C15/00 H01C3/00 H01C3/02 H01H1/12 H01H13/50 H01H21/18 H01H3/28 H01H3/46 H01H33/04 H01H33/08 H01H33/94 H01H50/44 H01H51/06 H01H51/60 H01H71/02 H01H71/16 H01H71/24 H01H71/38 H01H71/40 H01H71/43 H01H71/46 H01H73/18 H01H73/36 H01H73/48 H01H73/50 H01H73/56 H01H77/10 H01H9/30 H01H9/34 H01H9/38 H01H9/42 H01H9/44 H02H7/22 H02H9/00 H02H9/02

CPC: H01H77/10 Y10T74/20762 Y10T403/4671 H01H77/06 H01H9/42 H01H9/446

European: H01H77/06 H01H77/10 H01H9/42 H01H9/44C

US: 200/336 200/337 218/26 219/505 335/147 335/16 335/174 335/175 335/195 335/201 335/23 335/38 338/10 338/287 338/294 338/322 338/329 338/61 361/58 403/255 74/548

**Family:**

Publication number	Publication date	Application number	Application date
AU197580462 A1	19761028	AU19750080462	19750423
BE828516 A	19750818	BE19752054314	19750429
CA1043840 A1	19781205	CA19750225213	19750417
CA1048578 A1	19790213	CA19770291306	19771121
CA1048578 A2	19790213	CA19770291306	19771121
CA1051069 A1	19790320	CA19770291305	19771121
CA1051069 A2	19790320	CA19770291305	19771121
CA1085006 A1	19800902	CA19770269271	19770106
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DE2519092 A1	19751030	DE19752519092	19750429
DE2519092 C2	19820204	DE19752519092	19750429
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GB1511881 A	19780524	GB19750016721	19750423
GB1511882 A	19780524	GB19760043654	19750423
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JP1435500 C3	19880407	JP19750052453	19750430
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MX149001 A	19830805	MX19750181666	19750428
US3943316 A	19760309	US19740465398	19740429
US3943472 A	19760309	US19740465010	19740429

US3943473 A	19760309	US19740465012	19740429
US3944953 A	19760316	US19740465399	19740429
US3946346 A	19760323	US19740465011	19740429
US3956723 A	19760511	US19740465397	19740429
US4070641 A	19780124	US19760647823	19760109
US4178618 A	19791211	US19770824588	19770815
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ZA7700005 A	19770330	ZA19770000005	19750422
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Priority:

CA19750225213 19750417	CA19770269271 19770106	IE19750000910 19750423
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Probable Assignee: SQUARE D

Assignee(s): (std): SQUARE D ; SQUARE D CO

Assignee(s): SQUARE D COMPANY ; SQUARE D CY ; SQUARE D CO PARK RIDGE ILL US ; SQUARE D COM ; THARP JAMES A ; DICKENS RICHARD T ; KHALID JOSEPH M ; OSTER CLARK L

Inventor(s): (std): DICKENS R ; DICKENS RICHARD T ; DICKENS RICHARD TYLER ; KHALID J ; KHALID JOSEPH M ; KHALID JOSEPH MOHAMED ; MHALIO JOSEPH M ; OSTER C ; OSTER CLARK L ; OSTER CLARK LEWIS ; THARP J ; THARP JAMES A ; THARP JAMES AUBREY

Inventor(s): THARP JAMES AUBREY CEDAR RAPIDS IA ; THARP JAMES AUBREY CEDAR RAPIDS IA US ; TYLER DICKENS RICHARD ; RICHAAADO TAIRAA DEITSUKINZU ; RICHARD T DICKENS ; RICHARD TYLER DICKENS ; MOHAMED KHALID JOSEPH ; AUBREY THARP JAMES ; CLARK L OSTER ; CLARK LEWIS OSTER ; KURAAKU RUISU OSUTAA ; LEWIS OSTER CLARK ; DICKENS RICHARD TYLER IOWA IA ; DICKENS RICHARD TYLER IOWA IA US ; JAMES AUBREY THARP ; JEEMUZU OOBURI SAAPU ; JOSEFU MOHAMEDO KUJARIDO ; JOSEPH M KHALID ; JOSEPH M MHALIO ; JOSEPH MOHAMED KHALID

Agent(s): FETHERSTONHAUGH AND CO

Title: **CIRCUIT BREAKER** WITH SHORT CIRCUIT SELF-LOCKING FUNCTION

Abstract: Source: US2011089006A [EN] A **circuit breaker** with a short circuit self-locking function, a short circuit self-locking **mechanism** is disposed in the **circuit breaker**, and comprises a self-locking **mechanism** and a reset **mechanism**. As the **circuit breaker** is opened, it cannot be directly closed, whereby reminding an operator of a short circuit fault.

Classifications:

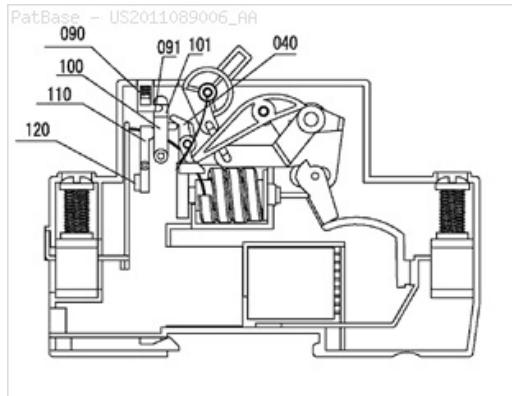
International (ipc 8-9): H01H71/04 H01H71/10 H01H71/24 H01H71/40 H01H71/52 H01H71/54 H01H71/58 H01H71/62 H01H73/36 H01H73/48 H01H75/00 H01H77/00 H01H83/00 H01H83/14 H01H9/00 H01H9/20 H02H3/32 (Advanced/Invention); H01H71/10 (Core/Invention); H01H (Subclass/Invention)

International (ipc 1-7): H01H71/10 H01H71/58 H01H71/62

CPC: H01H71/2445 H01H71/2463 H01H71/526 H01H71/04 H01H71/58

European: H01H1/20 H01H23/16C H01H3/40 H01H73/04B

US: 200/323 335/172 335/6



Family:

Publication number	Publication date	Application number	Application date
AU2009266231 AA	20100107	AU20090266231	20090317
BRPI0913668 A2	20161004	BR2009PI13668	20090317
CN101620957 A	20100106	CN200810048307	20080704
CN101620957 B	20130327	CN200810048307	20080704
CN101645375 A	20100210	CN200810146079	20080807
CN101645375 B	20120822	CN200810146079	20080807
CN101656180 A	20100224	CN200810048848	20080818
CN101656180 B	20120822	CN200810048848	20080818
CN101807498 A	20100818	CN200910060727	20090212
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CO6351834 A2	20111220	CO20110012473	20110203
EP2309528 A1	20110413	EP20090771914	20090317
EP2309528 A4	20141126	EP20090771914	20090317
IN01676MN2010 A	20101126	IN2010MN01676	20100805
JP2011526408 T2	20111006	JP20110515069T	20090317
JP5444336 B2	20140319	JP20110515069T	20090317
MX2011000148 A1	20110720	MX20110000148	20090317
RU2010134566 A	20120210	RU20100134566	20090317
RU2463680 C2	20121010	RU20100134566	20090317
US2011089006 AA	20110421	US20100845783	20100729
US8334739 BB	20121218	US20100845783	20100729
VN14614 A1	20151125	VN20110000347	20090317
WO10000144 A1	20100107	WO2009CN70833	20090317
ZA201100071 A	20111130	ZA20110000071	20110104

Priority:

CN200810048307 20080704 CN200810048848 20080818 CN200810146079 20080807
 WO2009CN70833 20090317 WO2009CN070833 20090317 CN200910060727 20090212

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Assignee(s): HUBEI SHENGJIA WIRING CO LTDJIASHENG WAN ; HUBEI SHENGJIA WIRING CO LTD Y JIASHENG WAN ; KHUBEHJ SHENGZDZIA UIRING KO ; HUBEI SHENGJIA WIRING CO ; HUBEI SHENGJIA ELECTRIC EQUIPMENT CO

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Agent(s): SCHOLL MATTHIAS MR; ANDREA TOBOS MATEUS; ZEUNER AND SUMMERER; MATTHIAS; MATTHIAS SCHOLL PC; WUHAN KAIYUAN PATENT AGENT LTD

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM 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: Two piece cradle latch, handle barrier locking insert and cover interlock for **circuit breaker**

Abstract: Source: US4973927A [EN] A molded **case circuit breaker** is provided with a two piece cradle assembly having a cradle portion and a heat-treated portion. The heat-treated portion forms the latch and reset surfaces. The cradle portion is integrally formed from a pair of spaced apart cradle-shaped arms joined together by a connecting portion. The heat treated portion is securely fastened to the connecting portion to form the two piece cradle assembly. A hold down slidably carries a handle barrier with respect to the cover and closes a centrally located aperture in the cover for all handle positions. The handle barrier prevents arc products resulting from a separation of the main **contacts** from escaping through the centrally located aperture in the cover. Stops are provided in one or both directions to prevent misalignment of the handle barrier with respect to the operating handle. A cover interlock is also provided to prevent the cover from being removed when the **circuit breaker** is in an "on" position. The cover interlock can either be molded separately or integrally molded with the handle barrier hold down.

Classifications:

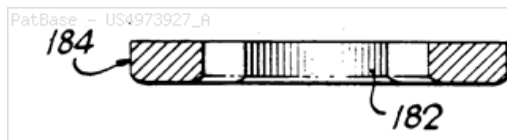
International (IPC 8-9): B01D21/24 B60S3/04 H01H21/04 H01H21/06 H01H23/00 H01H3/46 H01H71/00 H01H71/02 H01H71/10 H01H71/52 H01H71/62 H01H73/38 H01H75/00 H01H77/10 H01H83/00 H01H9/20 H01H9/22 H01H9/34 (Advanced/Invention); H01H73/02 (Advanced/Non-invention); B01D21/24 B60S3/04 H01H3/32 H01H71/02 H01H71/10 H01H9/20 H01H9/30 (Core/Invention); H01H (Subclass/Invention)

International (IPC 1-7): B01D29/00 B60S3/00 H01H21/04 H01H21/06 H01H23/00 H01H3/46 H01H71/00 H01H71/02 H01H71/10 H01H71/62 H01H73/38 H01H75/00 H01H83/00 H01H9/02 H01H9/20 H01H9/22 H01H9/34

CPC: H01H9/22 H01H71/521 H01H73/02 H01H71/02 H01H77/108 B60S3/04 B01D21/2444 Y10T137/7838 Y10T137/86019 Y10T137/86236

European: B01D21/24G B60S3/04 H01H71/02 H01H71/52A H01H77/10D2 T01H73/02 T01H9/22

US: 134/511 137/512 137/565 137/565.15 137/577 15/DIG.2 200/293 200/50.02 200/50.08 200/50A 210/136 210/167 210/167.01 210/238 210/416.1 335/10 335/16 335/202



Family:

Publication number	Publication date	Application number	Application date
AT111633 E	19940915	AT19900304308T	19900420
AU198942592 A1	19900426	AU19890042592	19891006
AU199215952 A1	19920709	AU19920015952	19920504
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AU642595 B2	19931021	AU19920015953	19920504
AU643382 B2	19931111	AU19920015952	19920504
BRPI9001862 A	19910618	BR1990PI01862	19900423
CA2013535 AA	19901025	CA19902013535	19900330
CN1022878 C	19931124	CN19901002350	19900424
CN1046811 A	19901107	CN19901002350	19900424
DE69012402 D1	19941020	DE19906012402	19900420
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EP0395326 A1	19901031	EP19900304308	19900420
EP0395326 B1	19940914	EP19900304308	19900420
ES2064625 T3	19950201	ES19900304308T	19900420
IE901108 L	19901025	IE19900001108	19900327
JP2301928 A2	19901214	JP19900111593	19900425
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KR19900017064 A	19901115	KR19900005762	19900424
MX166622 B	19930122	MX19900020435	19900424
NO901721 A	19901026	NO19900001721	19900419
NO901721 A0	19900419	NO19900001721	19900419
NZ233202 A	19930326	NZ19900233202	19900404
US4973927 A	19901127	US19890342820	19890425
US5004536 A	19910402	US19890343047	19890425
US5027096 A	19910625	US19890343037	19890425
ZA8908847 A	19910731	ZA19890008847	19891120
ZA9001045 A	19911030	ZA19900001045	19900212

Priority:

AU19890042592 19891006	CA19902013535 19900330	US19890256878 19891012
US19890343037 19890425	US19880256878 19881012	US19890342820 19890425
US19890343047 19890425		

Probable Assignee: EATON CORP

Assignee(s): (std): WESTINGHOUSE ELECTRIC CORP ; GEISLER EDWARD ; PARKE DAVIS PTY LTD ; WESTINGHOUSE ELECTRIC CO LLC ; EATON CORP

Assignee(s): EATON CORP CLEVELAND OHIO US ; EBERTS WILLIAM GEORGE ; CAROTHERS ARTHUR DALE ; PARKS DAVID ALLEN ; WHITE RICHARD EDWIN

Inventor(s): (std): WHITE RICHARD EDWIN ; WHITE RICHARD E ; UIRIAMU JIYOOJI EBAATSU ; RICHIAAADO EDOUIN HOWAITO ; RICHARD EDWIN WHITE ; PARKS DAVID ALLEN ; PARKS DAVID A ; MAIER ALFRED EUGENE ; MAIER ALFRED E ; GEISLER EDWARD ; EBERTS WILLIAM GEORGE ; EBERTS WILLIAM G ; DEBITSUDO AREN PAAKUSU ; DAVID ALLEN PARKS ; CARROTHERS ARTHUR D ; CAROTHERS ARTHUR DALE ; CAROTHERS ARTHUR D ; ARTHUR DALE CAROTHERS ; ALFRED EUGENE MAIER ; AASAA DEERU KIYAROSAAZU ; ARTHUR D CAROTHERS ; ARTHUR D CARROTHERS ; DAVID A PARKS ; RICHARD E WHITE ; WILLIAM G EBERTS ; WILLIAM GEORGE EBERTS

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Agent(s): PETER MAXWELL AND ASSOCIATES; RICHES MCKENZIE AND HERBERT LLP

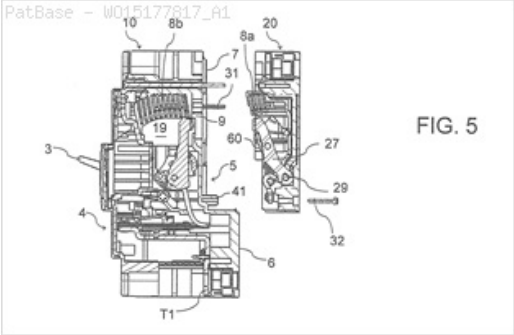
Designated states: AT BE CH DE ES FR GB IT LI SE

Title: **CIRCUIT BREAKER** WITH ARC EXTINGUISHING BARRIER

Abstract: A **circuit breaker** (1) is described, comprising: - at least a first **contact** branch (C1) comprising at least a first **contact** element (P1) and at least a first support element (S1) of the first **contact** element (P1), at least a first connection terminal (T1) electrically connected to, or integrated into, the first support element (S1); - an **actuating mechanism** (15) of the first support element (S1) adapted to move the latter so that the first **contact** element (P1) can be moved from a rest position to a working position and vice versa; - a second **contact** branch (C2) comprising at least a second **contact** element (P2), adapted to be **contacted** by the first **contact** element (P1) when this is in the working position, at least a second support element (S2) of the second **contact** element (P2) and at least a second connection terminal (T2) electrically connected to, or integrated into, the second support element (S2); characterized in that the **circuit breaker** (1) further comprises an electrically insulating mobile barrier (60) adapted to be moved between: a first operating position wherein the mobile barrier (60) allows the second **contact** element (P2) to be **contacted** by the first **contact** element (P1); and a second operating position wherein the mobile barrier (60) is at least partially operatively interposed between the first **contact** element (P1) and the second **contact** element (P2) to interfere, in the passage of the first **contact** element (P1) from the working position to the rest position, with an electric arc that extends between said **contact** elements.

Classifications:

International (IPC 8-9): H01H69/00 H01H71/02 H01H71/08
H01H73/18 H01H83/22 H01H9/32 (Advanced/Invention)
CPC: H01H71/0221 H01H83/226 H01H9/32



Family:

Publication number	Publication date	Application number	Application date
CL2016002813 A1	20170217	CL20160002813	20161107
CL2016002814 A1	20170224	CL20160002814	20161107
CN105097369 A	20151125	CN201510115338	20150316
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CO20160003728 A2	20170331	CO20160003728	20161101
CO20160003896 A2	20170331	CO20160003896	20161108
EP3140846 A1	20170315	EP20150736654	20150420
EP3140847 A1	20170315	EP20150736655	20150422
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IN201617036906 A	20170331	IN201617036906	20161027
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Priority:

IT2014RM00227 20140507 IT2014RM00318 20140616 WO2015IT00108 20150420
WO2015IT00110 20150422

Probable Assignee: BTICINO SPA

Assignee(s): (std): BTICINO SPA

Assignee(s): BTICINO S P A

Inventor(s): (std): BOFFELLI ROBERTO ; FABRIZI FABRIZIO ; FABRIZIO FABRIZI ; ROBERTO BOFFELLI

Agent(s): ALESSANDRI Y COMPANIA; LUZ HELENA ADARVE GOMEZ; CARANGELO PIERLUIGI; CARANGELO PIERUIGI 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 JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: Trip interlock design

Abstract: Source: US4963846A [EN] A trip interlock assembly trips a **circuit breaker** any time the **circuit breaker** is removed from its panel mounting. The trip assembly is adapted to be disposed about a load side terminal and cooperate with the **circuit breaker** tripping device. In one embodiment, the trip assembly includes a housing and a spring-loaded **actuation arm**, disposed generally perpendicular to the circuit panel surface. The **actuation arm** is formed with a cam surface which cooperates with a trip pin adapted to actuate said **circuit breaker** tripping device. The trip pin acts as a cam follower and rides along the cam surface formed in the **actuation arm**. When the **actuation arm** is in an inward position the trip pin is in a normal position. However, when the **circuit breaker** is removed from the panel, the **actuation arm** under the influence of a biasing spring moves outwardly. This causes the cam surface on the **actuation arm** to actuate the trip pin to trip the **circuit breaker**. In an alternative embodiment of the invention, the trip interlock assembly includes a bell crank with a reciprocally mounted plunger which actuates an armature in the tripping device directly, instead of by way of the trip pin, anytime the **circuit breaker** is removed from its panel housing.

Classifications:

International (IPC 8-9): H01H71/02 H01H71/12 H01H73/06

H01H9/22 (Advanced/Invention);

H01H71/02 (Advanced/Non-invention);

H01H71/02 H01H71/12 H01H73/00 (Core/Invention)

International (IPC 1-7): H01H69/00 H01H71/02 H01H71/04

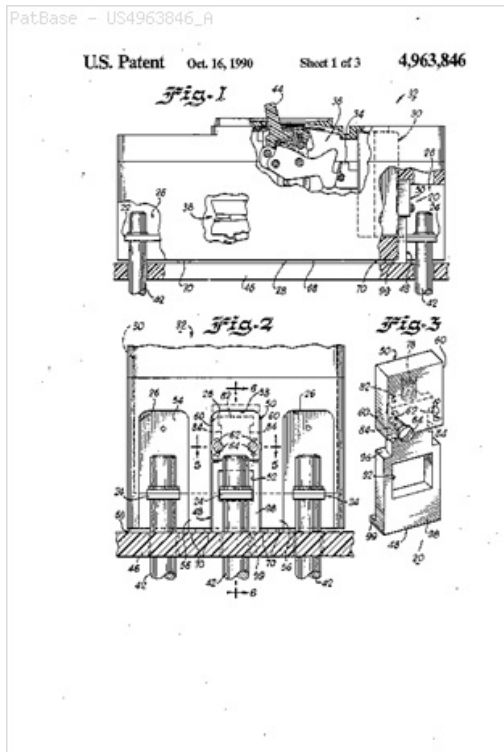
H01H71/10 H01H73/06 H01H73/08 H01H75/10 H01H77/02

H01H83/00 H01H9/20 H01H9/22 H02B11/133

CPC: H01H71/126

European: H01H71/12E

US: 335/172 335/42 361/342 361/614



Family:

Publication number	Publication date	Application number	Application date
AU199059038 A1	19910207	AU19900059038	19900717
AU638036 B2	19930617	AU19900059038	19900717
BRPI9003669 A	19910827	BR1990PI03669	19900727
CA2021699 AA	19910205	CA19902021699	19900720
CN1036881 C	19971231	CN19901006548	19900801
CN1049243 A	19910213	CN19901006548	19900801
DE69029689 D1	19970227	DE19906029689	19900730
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EP0411871 A2	19910206	EP19900308357	19900730
EP0411871 A3	19920408	EP19900308357	19900730
EP0411871 B1	19970115	EP19900308357	19900730
IE902520 A1	19910213	IE19900002520	19900711
JP3077231 A2	19910402	JP19900197597	19900725
KR19910005352 A	19910330	KR19900011922	19900803
MX167706 B	19930406	MX19900021802	19900801
NZ234571 A	19931026	NZ19900234571	19900719
US4963846 A	19901016	US19890389849	19890804
ZA9005779 A	19910529	ZA19900005779	19900723

Priority:

CA19902021699 19900720 US19890389849 19890804

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Inventor(s): KURT A GRUNERT ; WHIPPLE MICHAEL JEROME ROCHESTER PA 15074 US ; TEDESCO ROBERT JOSEPH CORAOPOLIS PA 15108 US ; MALONEY JAMES GERARD INDUSTRY PA 15052 US ; MALVIN ALLAN CARRODUS ; ROBERT J TEDESCO ; RONALD A CHESKI ; GRUNERT KURT ALBERT BEAVER PA 15009 US ; CHESKI RONALD ANDREW MCKEES ROCKS PA 15136 US ; CARRODUS MELVIN ALLAN BEAVER PA 15009 US

Agent(s): PETER MAXWELL AND ASSOCIATES; RICHES MCKENZIE AND HERBERT LLP

Designated states: DE FR GB IT

Title: **Circuit breaker** with double rate spring

Abstract: Source: US5910760A [EN] A **circuit breaker** includes a housing, an operating **mechanism** and separable main **contacts**, and a rotatable crossbar which rotates to open and close the **contacts**. The crossbar interacts by way of a protrusion thereon with a rotatable, positive off-link. A handle **mechanism** is disposed in the housing and has a handle protruding from the housing which is normally movable from a closed to open disposition. However, if the operating **mechanism** has reacted in such a way as to open the separable main **contacts** but, in fact, they have not opened because, for example, they are welded shut, the protrusion on the crossbar will interact with the positive off-link and prevent the handle **mechanism** from moving to the opened position thus warning personnel that the **contacts** have not opened. There is also provided in association with the crossbar a cam which is spring loaded from the bottom against a portion of a cavity in a crossbar which interacts with a movable portion of the movable **contact** in such a manner as to latch it open when it has independently moved to an opened position relative to the rotatable crossbar. The cam rider reacts in such a way that it seals off or protects the aforementioned spring from gaseous arc products during the opening operation. There is provided on the trip **mechanism** a double pitch spring. The double pitch being such as to expand the range of the adjustment characteristic of the tripping **mechanism**.

Classifications:

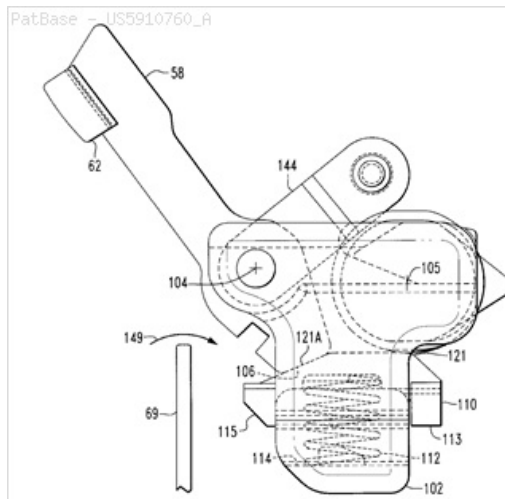
International (IPC 8-9): H01H3/04 H01H3/32 H01H50/02 H01H71/02 H01H71/08 H01H71/12 H01H71/50 H01H71/74 H01H77/10 H01H83/12 H01H9/02 H01H9/16 H01H9/22 (Advanced/Invention); H01H71/08 H01H83/12 (Advanced/Non-invention); H01H71/02 H01H71/12 (Core/Invention); H01H71/08 H01H83/00 (Core/Non-invention)

International (IPC 1-7): H01H3/04 H01H3/32 H01H33/00 H01H33/40 H01H5/00 H01H50/02 H01H7/08 H01H71/02 H01H71/04 H01H71/08 H01H71/10 H01H71/12 H01H71/24 H01H71/50 H01H71/74 H01H73/12 H01H73/18 H01H73/48 H01H75/00 H01H77/10 H01H9/02 H01H9/16 H01H9/20 H01H9/22

CPC: H01H71/501 H01H71/7463 H01H77/104 H01H77/108 H01H2009/305 H01H71/0228 H01H71/08 H01H71/126 H01H71/128 H01H83/12 H01H2001/5861

European: H01H71/02B3 H01H71/12E H01H71/12M H01H71/50B H01H71/74E H01H77/10C2 H01H77/10D2 T01H1/58F1 T01H71/08 T01H83/12 T01H9/30C

US: 200/401 218/32 335/14 335/167 335/172 335/202 361/730



Family:

Publication number	Publication date	Application number	Application date
AU199868049 A1	19981203	AU19980068049	19980522
AU753399 B2	20021017	AU19980068049	19980522
CA2238734 AA	19981128	CA19982238734	19980527
CA2238901 AA	19981128	CA19982238901	19980526
CN11110830 C	20030604	CN19981009333	19980527
CN1111887 C	20030618	CN19981009332	19980527
CN1211059 A	19990317	CN19981009333	19980527
CN1250943 A	20000419	CN19981009332	19980527
DE69833145 D1	20060406	DE19986033145	19980514
DE69833145 T2	20061026	DE19986033145T	19980514
EP0887829 A2	19981230	EP19980108829	19980514
EP0887829 A3	20000308	EP19980108829	19980514
EP0887831 A2	19981230	EP19980108830	19980514
EP0887831 A3	20000112	EP19980108830	19980514
EP0887831 B1	20060111	EP19980108830	19980514
ID20341 A	19981203	ID19980000786	19980528
ID20351 A	19981203	ID19980000783	19980528
SG67511 A1	19990921	SG19980001344	19980512
TW389923 B	20000511	TW19980107208	19980511
US5910760 A	19990608	US19980020513	19980209
US5927484 A	19990727	US19980020515	19980209
US6052047 A	20000418	US19980226099	19980330
US6232855 BA	20010515	US19980504602	19980330

Priority:

CA19982238734 19980527	CA19982238901 19980526	US19970864141 19970528
US19980020515 19980209	US19980020513 19980209	US19970864104 19970528
US19980226099 19980330	US19980504602 19980330	

Probable Assignee: EATON CORP

Assignee(s): (std): EATON CORP

Assignee(s): EATON CORP CLEVELAND ; FARROW WILLIAM C ; GULA LANCE ; HELMS ROGER W ; MALINGOWSKI RICHARD P ; MCKEE JERE L ; WHITAKER THOMAS A ; LATHROP TODD M ; SLEPIAN ROBERT M ; SKOUG KENNETH N ; CHANGLE JOSEPH F ; CHONTAS TRENT A

Inventor(s): (std): CHANGLE JOSEPH F ; CHANGLE JOSEPH FRANK ; CHANTOS TRENT ALLAN ; CHONTAS TRENT A ; CHONTAS TRENT A AND ; CHONTOS TRENT ALLAN ; FARROW WILLIAM C ; FARROW WILLIAM CHRISTOPHER ; GULA L ; GULA LANCE ; HELMS ROGER W ; HELMS ROGER WILLIAM ; LATHROP TODD M ; LATHROP TODD MATTHEW ; MAIKY J L ; MALANOSIC RICHARD P ; MALINGOWSKI RICHARD PAUL ; MALINGOWSKI RICHARD P ; MALINGOWSKI RICHARD PAUL ; MARANAUST R P ; MCKEE JERE L ; MCKEE JERE LEE ; MCKEE JERE LEE ; MELINGOWSKI RICHARD PAUL ; JOSEPH FRANK CHANGLE ; KENNETH NORDLY SKOUG ; LANCE GULA ; RICHARD PAUL MALINGOWSKI ; RICHARD PAUL MELINGOWSKI ; SHANGER JOSEPH F ; SKOUG KENNETH N ; SKOUG KENNETH NORDLY ; SLEPIAN ROBERT M ; SLEPIAN ROBERT MICHAEL ; TRENT ALLAN CHANTOS ; TRENT ALLAN CHONTOS ; WHITAKER THOMAS A ; WHITAKER THOMAS ALAN ; WILLIAM CHRISTOPHER FARROW ; MARANAUST RICHARD P ; MAIKY JERRY L ; GULA LANS ; ROGER WILLIAM HELMS

Inventor(s): RP MARANAUST ; RICHARD P MALANOSIC ; JOSEPH F SHANGER ; R P MARANAUST ; J L MAIKY ;
THOMAS A WHITAKER ; TODD M LATHROP ; RICHARDP MALANOSIC ; ROBERT M SLEPIAN ; LANS GULA
; L GULA ; JOSEPHF SHANGER ; RICHARD P MALINGOWSKI ; RICHARD P MARANAUST ; RICHARD PAUL
MALINGOWAKI ; JERE L MCKEE ; JERE LEE MEKEE ; JERRY L MAIKY ; JL MAIKY

Agent(s): PETER MAXWELL AND ASSOCIATES; BERESKIN AND PARR

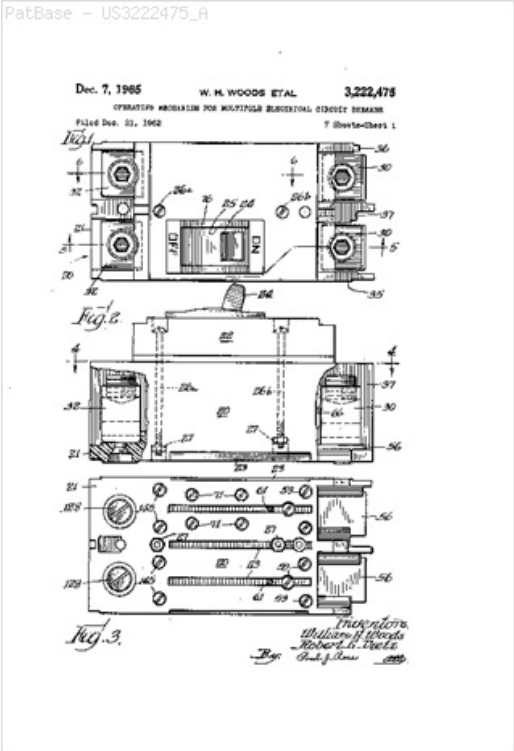
Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

Title: OPERATING **MECHANISM** FOR MULTIPOLE ELECTRICAL **CIRCUIT BREAKER**

Abstract: Source: GB1049889A [EN] 1,049,889. Automatic **circuit breakers**. SQUARE D CO. Nov. 6, 1963 [Dec. 21, 1962], No. 43760/63. Heading H2B. A two pole **circuit breaker** comprises two flat rigid **contact** arms 43a, 43b mounted for edgewise pivotal movement about a common axis 78, 118 and a metal crossbar 40 (Fig. 8, not shown) for conjoint operation of the two poles being attached to the first arm 43a (Fig. 9, not shown) by a pin 81 coupled with an overcentre operating **mechanism** and having a U-shaped portion attached to but insulated from the second arm 43b by an insulator 122. A spring 121 between the insulator 122 and cross-bar 40 allows for overtravel of the **contact** arms 43a, 43b. The operating **mechanism** (Fig. 9, not shown) includes a toggle linkage 87, 90; an overcentre spring 92; an **actuating** member 75 and a releasable support member 73 normally held set by a latch 104, itself latched by a pivoted trip bar 39, 99 which is movable to release the breaker upon overload by bimetals 147 or armatures 132 in each pole each acting through adjustable screws 139, 148. A further screw 135 adjusts the rest position of each armature 132 and supports its biasing spring 137. The arms 43a, 43b engage with fixed **contacts** 42 which are adjustable by screws 61. An operating handle 24 is mounted upon the **actuating** member 75 by a spring urged therefrom to seal an aperture 25 in the **moulded** casing of the breaker. Each pole is provided with a conducting plate arc shoot and in addition the second pole (Fig. 6, not shown) is provided with a flexible insulating varier 124.

Classifications:

International (IPC 8-9): H01H71/10 H01H71/24
H01H71/50 (Advanced/Invention);
H01H71/74 (Advanced/Non-invention);
H01H71/10 H01H71/12 (Core/Invention);
H01H71/00 (Core/Non-invention)
International (IPC 1-7): H01H71/74 H01H73/00
CPC: H01H71/1009 H01H71/2472 H01H71/501 H01H71/7463
H01H2009/305
European: H01H71/10B H01H71/24H H01H71/50B T01H71/74E
T01H9/30C
US: 335/35 335/42 335/9



Family:

Publication number	Publication date	Application number	Application date
GB1049889 A	19661130	GB19630043760	19631106
US3222475 A	19651207	US19620246522	19621221

Priority:

US19620246522 19621221

Probable Assignee: SQUARE D CO
Assignee(s): (std): SQUARE D CO
Assignee(s): SQUARE D COMPANY
Inventor(s): (std): DIETZ ROBERT E ; WOODS WILLIAM H

Title: Auxiliary switch retainer for **circuit breakers** and actuator member

Abstract: Source: US4926148A [EN] A **circuit breaker** having the generally rectangular **case** with an **actuating** switch handle on one edge and terminals at the opposite edge is provided with an auxiliary switch receptacle at the edge by the terminal. Retainer means is provided for holding the auxiliary switch in the receptacle and an access opening is provided through the edge wall for communication between the switch **actuating** member and a portion of the breaker **mechanism** moving in response to breaker **contact** opening and closing. A U-shaped retainer is preferably used to retain the switch in the receptacle by passing prongs thereof through the holes in the switch walls and the aligned switch holes. The actuator member may be in accordance with various types of **mechanisms**, either a compressible member or a rigid slide, and in either **case** is moved by the breaker **mechanism** into the **actuating** means of the switch. In the **case** of a rigid slide, the slide may be extended outside the switch retainer housing and provide coverage or exposure of a colored patch, indicating respectively open and closed breaker **contacts**.

Classifications:

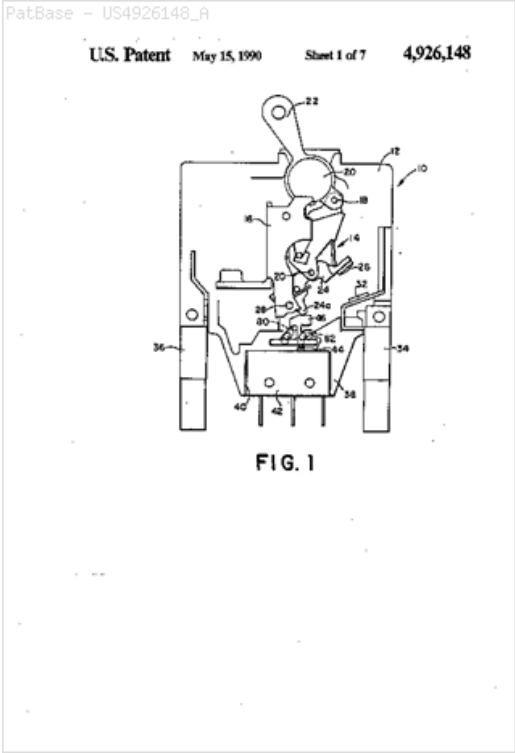
International (IPC 8-9): H01H71/46 H01H9/28 (Advanced/Invention); H01H71/04 (Advanced/Non-invention)

International (IPC 1-7): H01H71/46 H01H73/12 H01H9/28

CPC: H01H71/04 H01H71/465 H01H2221/064

European: H01H71/46C T01H221/064 T01H71/04

US: 200/303 335/13



Family:

Publication number	Publication date	Application number	Application date
CA2008256 AA	19910722	CA19902008256	19900122
CA2008256 C	19940315	CA19902008256	19900122
EP0439882 A1	19910807	EP19900300961	19900130
US4926148 A	19900515	US19880252814	19881003

Priority:

CA19902008256 19900122 EP19900300961 19900130 US19880252814 19881003

Probable Assignee: HEINEMANN ELECTRIC CO A CORP OF NEW JERSEY

Assignee(s): (std): CAMBRELENG PAUL S ; EATON CORP ; HEINEMANN ELECTRIC CO

Assignee(s): HEINEMANN ELECTRIC CO A CORP OF NEW JERSEY ; HEINEMANN ELECTRIC COMPANY

Inventor(s): (std): CAMBRELENG PAUL S

Agent(s): BORDEN LADNER GERVAIS LLP

Designated states: CH DE FR GB LI

Title: **Circuit breaker** with improved latch **mechanism**

Abstract: Source: US4123734A [EN] A three pole molded **case circuit breaker** including a push-to-trip button, a flux transfer shunt trip **mechanism**, an undervoltage trip **mechanism**, and an improved latch **mechanism**. The latch **mechanism** comprises a metal trip bar covered with insulating tubing and adapted for translational movement to actuate the latch **mechanism** and trip the **contacts**. **Contact** carrier movement during the tripping operation serves to reset the latch **mechanism**.

Classifications:

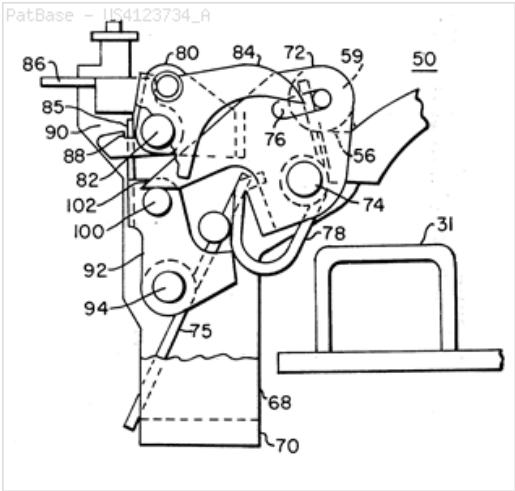
International (IPC 8-9): H01H71/10 H01H71/12 H01H71/50
H01H73/36 (Advanced/Invention);
H01H71/10 H01H71/12 (Advanced/Non-invention);
H01H71/10 H01H73/00 (Core/Invention);
H01H71/12 (Core/Non-invention)

International (IPC 1-7): H01H3/00 H01H71/02 H01H71/12
H01H71/24 H01H71/50 H01H71/62 H01H73/36 H01H77/06
H01H83/12 H01H9/20

CPC: H01H71/1072 H01H71/125 H01H71/501 H01H71/505
H01H2071/506 H01H2071/508

European: H01H71/50L T01H71/10E T01H71/12D2 T01H71/50B
T01H71/50L1 T01H71/50L3

US: 335/22 335/9 355/22



Family:

Publication number	Publication date	Application number	Application date
AU197729095 A1	19790405	AU19770029095	19770926
AU514825 B2	19810226	AU19770029095	19770926
CA1077550 A1	19800513	CA19770287201	19770921
ES231167 U	19780401	ES19770231167U	19771005
ES231167 Y	19790216	ES19770231167U	19771005
ES231167 Y1	19790314	ES19770231167U	19771005
GB1592291 A	19810701	GB19770041589	19771006
JP53051964 U1	19780502	JP19770133734U	19771006
JP55042365 Y1	19801003	JP19770133734U	19771006
JP55042365 Y2	19801003	JP19770133734U	19771006
NZ185322 A	19810529	NZ19770185322	19771003
US4123734 A	19781031	US19760730107	19761006
ZA7705596 A	19780726	ZA19770005596	19770919

Priority:

JP19770133734U 19771006 US19760730107 19761006

Probable Assignee: WESTINGHOUSE ELECTRIC CORP

Assignee(s): (std): DIDACSON S A ; WESTINGHOUSE ELECTRIC CO ; WEC ; WESTINGHOUSE ELECTRIC CORP

Assignee(s): HILL ROBERT H ; MAIER ALFRED E

Inventor(s): (std): HILL R ; HILL R H ; HILL ROBERT H ; HILL ROBERT HENRY ; MAIER A ; MAIER A E ; MAIER ALFRED E ; MAIER ALFRED EUGENE

Inventor(s): R H HILL ; ROBERT HENRY HILL ; MAIER A E AND HILL R H ; A E MAIER ; ALFRED EUGENE MAIER

Agent(s): SW

Title: Low voltage **circuit breaker** with improved breaking

Abstract: Source: US4672157A [EN] A **moulded case** low voltage **circuit breaker** for high currents has no arcing **contacts** and is equipped with arc blow-out means drawing the arc very quickly away from the **contacts**. An insulating shield associated with the moving **contact** forms an arc formation chamber of a small volume which is open in the direction of the arc chute. The moving and stationary **contacts** are fitted with arcing horns constituting a small divergent path in proximity to the **contacts** favoring rapid displacement of the arc, this divergent path leading to an area defined by a hump of the horn. In this area, the clearance of the arcing horns is smaller than the clearance between the **contacts** as soon as the latter separate to avoid any rearing on these **contacts**.

Classifications:

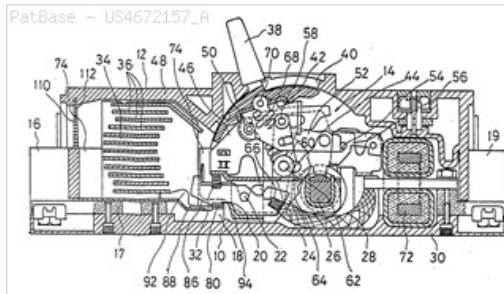
International (IPC 8-9): H01H1/22 H01H73/02 H01H73/18 H01H9/34 H01H9/46 (Advanced/Invention);
H01H1/22 (Advanced/Non-invention);
H01H73/00 H01H9/30 (Core/Invention);
H01H1/12 (Core/Non-invention)

International (IPC 1-7): H01H33/06 H01H33/08 H01H33/12 H01H73/00 H01H73/02 H01H73/18 H01H9/30 H01H9/34 H01H9/46

CPC: H01H1/226 H01H9/34 H01H9/342 H01H9/46 H01H2009/305 H01H2009/343

European: H01H9/34 H01H9/46 T01H1/22B4 T01H9/30C T01H9/34C T01H9/34C1

US: 200/144R 200/305 200/306 218/148 218/150



Family:

Publication number	Publication date	Application number	Application date
AT56305 E	19900915	AT19860401190T	19860603
AU198658539 A1	19861218	AU19860058539	19860611
AU576726 B2	19880901	AU19860058539	19860611
AU5853986 A1	19861218	AU19860058539D	19860611
CA1267671 A1	19900410	CA19860511163	19860609
DE3673887 D1	19901011	DE19863673887	19860603
EP0206882 A1	19861230	EP19860401190	19860603
EP0206882 B1	19900905	EP19860401190	19860603
ES555746 A0	19870501	ES19860555746	19860605
ES8705157 A1	19870501	ES19860555746	19860605
FR2583571 A1	19861219	FR19850009002	19850612
FR2583571 B1	19940218	FR19850009002	19850612
JP1992068 C3	19951122	JP19860133988	19860611
JP62071140 A2	19870401	JP19860133988	19860611
JP7019529 B4	19950306	JP19860133988	19860611
PT82756 A	19860701	PT19860082756	19860612
PT82756 B	19900629	PT19860082756	19860612
US4672157 A	19870609	US19860870527	19860604
ZA8604285 A	19870128	ZA19860004285	19860609

Priority:

CA19860511163 19860609 EP19860401190 19860603 EP19860401190 19860603
FR19850009002 19850612

Probable Assignee: MERLIN GERIN

Assignee(s): (std): MERLIN GERIN

Assignee(s): MERLIN GERIN RUE HENRI TARZE F ; MERLIN GERIN S A ; TRAHIN JEAN PIERRE ; NEEL JEAN PHILIPPE ; FA MERLIN GERIN GRENOBLE FR ; GERIN M ; MERLIN ET GERIN

Inventor(s): (std): JIJAN FUIRIPU NEERU ; JIJAN PIEERU TORAAAN ; NEEL JEAN PHILIPPE ; TRAHIN JEAN PIERRE

Inventor(s): TRAHIN JEAN PIERRE F 38050 GRENOBLE CEDEX FR ; JEAN PHILIPPE NEEL ; JEAN PHILIPPE NEEL ET JEAN PIERRE TRAHIN ; JEAN PIERRE TRAHIN

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; ROBIC

Designated states: AT BE CH DE GB IT LI SE

Title: Multipole **circuit breaker** with single-pole units

Abstract: Source: US5281776A [EN] A low voltage multipole **circuit breaker** having a double housing, each pole including a single-pole breaking unit having a parallelepipedic plastic box having two extended side faces. **Contacts** are further provided and are associated with an extinguishing chamber housed within the single-pole breaking unit. Several units are mounted side by side in the parallelepipedic box to form a multipole **circuit breaker**.

Classifications:

International (IPC 8-9): H01H33/00 H01H43/00 H01H71/10 H01H73/02 H01H73/04 H01H73/38 H01H9/26

H01H9/34 (Advanced/Invention);

H01H33/00 H01H73/02 H01H9/34 (Advanced/Non-invention);

H01H33/00 H01H71/10 H01H73/00 (Core/Invention);

H01H43/00 H01H9/30 (Core/Non-invention)

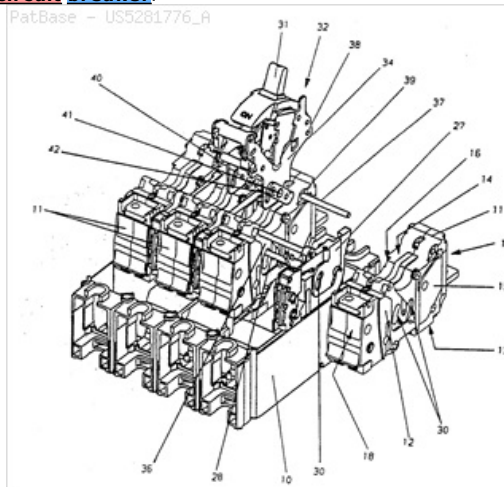
International (IPC 1-7): H01H33/00 H01H33/02 H01H41/04 H01H43/00 H01H71/02 H01H71/02000 H01H71/10 H01H71/10000 H01H73/04 H01H73/38 H01H77/00 H01H9/02 H01H9/26

CPC: H01H1/2058 H01H9/342 H01H71/1009 H01H73/02 H01H73/045 H01H2071/1036

European: H01H1/20D4 H01H71/10B H01H73/04B T01H71/10B3 T01H73/02 T01H9/34C

US: 200/144R 218/152

PatBase - US5281776_A



Family:

Publication number	Publication date	Application number	Application date
AT137058 E	19960515	AT19920420356T	19921009
AU199226397 A1	19930422	AU19920026397	19921014
AU659219 B2	19950511	AU19920026397	19921014
BRPI9203982 A	19930427	BR1992PI03982	19921014
CA2080063 AA	19930416	CA19922080063	19921007
CA2080063 C	20021210	CA19922080063	19921007
CN1028935 C	19950614	CN19921011529	19921014
CN1071785 A	19930505	CN19921011529	19921014
DE69209972 D1	19960523	DE19926009972	19921009
DE69209972 T2	19961031	DE19926009972T	19921009
EP0542636 A1	19930519	EP19920420356	19921009
EP0542636 B1	19960417	EP19920420356	19921009
ES2087493 T3	19960716	ES19920420356T	19921009
FR2682531 A1	19930416	FR19910012793	19911015
FR2682531 B1	19931126	FR19910012793	19911015
JP3392442 B2	20030331	JP19920276153	19921014
JP6028964 A2	19940204	JP19920276153	19921014
KR100299551 B1	20011022	KR19920018921	19921014
KR19930008897 A	19930522	KR19920018921	19921014
MX9205923 A1	19930401	MX19920005923	19921015
TW214013 B	19931001	TW19920107838	19921002
US5281776 A	19940125	US19920953026	19920929
ZA9207903 A	19930421	ZA19920007903	19921014

Priority:

CA19922080063 19921007 FR19910012793 19911015

Probable Assignee: SCHNEIDER ELECTRIC SA

Assignee(s): (std): MERLIN GERIN ; SCHNEIDER ELECTRIC SA

Assignee(s): SCHNEIDER ELECTRIC S A ; SCHNEIDER ELECTRIC S A BOULOGNE BILLANCOURT FR ; NEREAU JEAN PIERRE ; PERRIER PHILIPPE ; MERLIN GERINFR ; MOREL ROBERT ; NEBON JEAN PIERRE

Inventor(s): (std): FUJITSUPU PERIE ; JEAN PIERRE NEBON ; JEAN PIERRE NEREAU ; JIYANNPIERU NERO ; JIYANNPIERU NUBON ; MOREL ROBERT ; NEBON JEAN PIERRE ; NEREAU JEAN PIERRE ; PERRIER PHILIPPE ; PHILIPPE PERRIER ; PIERRE PHILIPPE ; ROBEERU MORERU ; ROBERT MOREL

Inventor(s): PHILIPPE PIERRE ; PERRIER PHILIPPE F 38050 GRENOBLE CEDEX 9 FR ; NEREAU JEAN PIERRE F 38050 GRENOBLE CEDEX 9 FR ; NEBON JEAN PIERRE F 38050 GRENOBLE CEDEX 9 FR ; MOREL ROBERT F 38050 GRENOBLE CEDEX 9 FR

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; ROBIC; SCHNEIDER ELECTRIC IND SAS

Designated states: AT BE CH DE ES GB IT LI NL PT SE

Title: Molded **case circuit breaker** with auxiliary **contacts**

Abstract: Source: US5440088A [EN] A molded **case circuit breaker** includes standard compartments each designed to accommodate a standard auxiliary indication or control unit. Each compartment is assigned to a predetermined function, the control device associated with this compartment being connected to the corresponding components of the **circuit breaker** supplying the information relating to this function. Customization of the **circuit breaker** can be performed by the distributor or fitter who fits a standard auxiliary unit in the compartment or compartments.

Classifications:

International (IPC 8-9): H01H31/02 H01H71/46

H01H73/06 (Advanced/Invention);

H01H71/02 (Advanced/Non-invention);

H01H31/00 H01H71/12 (Core/Invention);

H01H71/02 (Core/Non-invention)

International (IPC 1-7): H01H3/04 H01H31/02 H01H71/04

H01H71/04000 H01H71/10 H01H71/10000 H01H71/46 H01H73/06

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CPC: H01H1/2058 H01H71/0228 H01H71/465 H01H2071/086

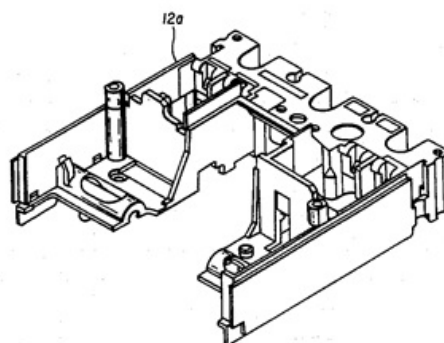
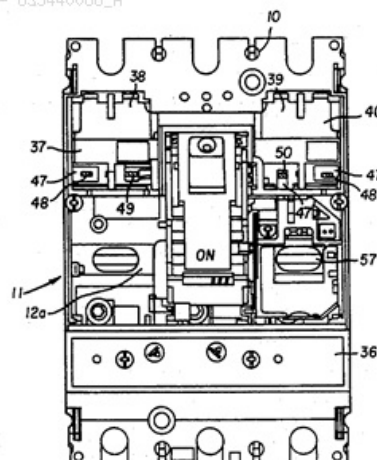
H01H2071/467

European: H01H71/46C T01H1/20D4 T01H71/02B3 T01H71/08D

T01H71/46D

US: 200/303

PatBase - US5440088_A



Family:

Publication number	Publication date	Application number	Application date
CA2106618 AA	19940330	CA19932106618	19930921
CA2106618 C	20040622	CA19932106618	19930921
DE69308712 D1	19970417	DE19936008712	19930924
DE69308712 T2	19970821	DE19936008712T	19930924
EP0591074 A1	19940406	EP19930420384	19930924
EP0591074 B1	19970312	EP19930420384	19930924
ES2100504 T3	19970616	ES19930420384T	19930924
FR2696276 A1	19940401	FR19920011730	19920929
FR2696276 B1	19941202	FR19920011730	19920929
JP6236720 A2	19940823	JP19930241557	19930928
US5440088 A	19950808	US19930120418	19930914

Priority:

CA19932106618 19930921 FR19920011730 19920929

Probable Assignee: MERLIN GERIN

Assignee(s): (std): MERLIN GERIN ; SCHNEIDER ELECTRIC SA

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Inventor(s): (std): FUIRITSUPU PURIEERU ; JEAN PIERRE NEREAU ; JIYANNPIEERU NEROO ; NEREAU JEAN PIERRE ; PATORITSUKU KUDEERU ; PATRICK COUDERT ; PERRIER PHILIPPE ; COUDERT PATRICK ; PHILIPPE PERRIER

Inventor(s): COUDERT PATRICK F 38050 GRENOBLE CEDEX 09 FR ; PERRIER PHILIPPE F 38050 GRENOBLE CEDEX 09 FR ; NEREAU JEAN PIERRE F 38050 GRENOBLE CEDEX 09 FR

Agent(s): ROBIC; SCHNEIDER ELECTRIC IND SAS

Designated states: BE DE ES GB IT SE

Title: ELECTRIC **CIRCUIT BREAKER** WITH IMPROVED OPERATING **MECHANISM**

Abstract: Source: GB1094377A [EN] 1,094,377. Automatic **circuit breakers**. SQUARE D CO. June 1, 1965 [June 16, 1964], No. 23201/65. Heading H2B. The subject matter of this Specification is identical with that of Specifications 1,094,378, 1,094,379 and 1,094,380 but the claims relate to the **actuating mechanism**. The **contact** arms are operated by a common bar 40 mounted by arms 92 on the **contact** pivot 82, the **contact** arms 43 being biased against it by springs 93. The arms 92 are coupled through a shaft 10 to one end of a toggle linkage which is operated between open and closed positions by a handle 24 and an overcentre tension spring 77. The other end of the toggle linkage is pivoted to a lever 96 normally latched by a pivoted blade 118 itself latched by a plate on the common trip bar 39. The shaft 109 is provided with a hexagonal head engaging in a hexagonal hole in one arm 92 and with an eccentric portion 111 engaging in a sleeve 108 carried by the lower links of the toggle. The shaft 109 can thus be inserted in any one of six positions allowing the relative positions the linkage and **contact** arms to be set to overcome manufacturing tolerances. The handle 24 is sealed to the casing by an insulating plate 28 slidable to a limited extent relative to the handle.

Classifications:

International (IPC 8-9): H01H71/16 H01H71/40 H01H71/52

H01H73/18 H01H9/34 (Advanced/Invention);

H01H71/10 H01H71/12 H01H73/00 H01H9/30 (Core/Invention)

International (IPC 1-7): H01H37/74 H01H71/02 H01H71/16

H01H73/00 H01H73/06 H01H73/18 H01H73/38

CPC: H01H9/342 H01H71/16 H01H71/40 H01H71/521 H01H71/522

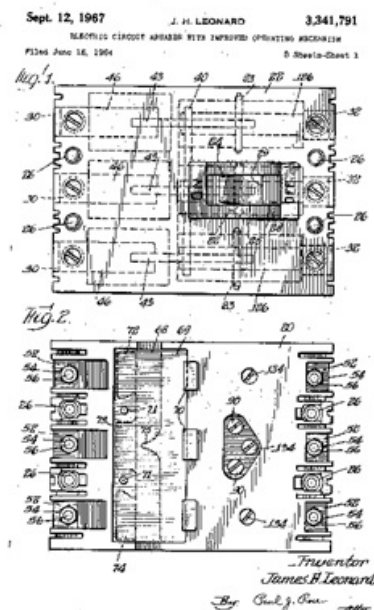
H01H71/525 H01H73/18

European: H01H71/16 H01H71/40 H01H71/52A H01H71/52B

H01H71/52B6 H01H73/18 H01H9/34C

US: 200/304 200/306 200/337 335/174 335/35 337/48 337/73

PatBase - US3341791_A



Family:

Publication number	Publication date	Application number	Application date
AU6009865 A1	19661215	AU19650060098	19650615
DE1513472 A1	19700813	DE1965S097623	19650615
DE1513472 B2	19710506	DE1965S097623	19650615
DE1513472 C3	19740725	DE1965S097623	19650615
DE1788098 B1	19720323	DE19651788098	19650615
FR1443514 A	19660624	FR19650021027	19650616
GB1094377 A	19671213	GB19650023201	19650601
GB1094378 A	19671213	GB19670018701	19650601
GB1094379 A	19671213	GB19670018702	19650601
GB1094380 A	19671213	GB19670018703	19650601
US3341791 A	19670912	US19640375571	19640616

Priority:

US19640375571 19640616

Probable Assignee: SQUARE D CO

Assignee(s): (std): SQUARE D CO

Assignee(s): SQUARE D CO PARK RIDGE ILL V ST A ; SQUARE D COMPANY ; SQUARED CO

Inventor(s): (std): HUGH LEONARD JAMES ; LEONARD JAMES H ; LEONARD JAMES HUGH

Inventor(s): LEONARD JAMES HUGH CEDAR RAPIDS IA V ST A ; JAMES HUGH LEONARD

Title: CROSSBAR ASSEMBLY

Abstract: Source: US5057806A [EN] A crossbar assembly is formed from an elongated metal bar. A pair of **contact** arm carriers are slid onto the metal bar and welded in place. Molded electrically insulated sleeves are sliding received at each of the crossbar. The insulated sleeves can be either molded directly on the crossbar or molded separately, in which **case**, the sleeves are glued with epoxy and pinned to the crossbar to prevent axial movement of the sleeves with respect to the crossbar. The insulated sleeves are formed with a pair of plates disposed at each end. A pair of oppositely disposed slots formed in the plates is used to receive the ends of a cam roll pin assembly. Since the crossbar in accordance with the present invention does not require wrapping with insulating paper, the possibility of dielectric failure due to cracking of the insulating paper is eliminated. Also, since the **contact** arm carriers are welded to the crossbar instead of being stapled, the possibility of axial movement of the **contact** arm carriers during overcurrent conditions due to loose staples is also eliminated.

Classifications:

International (IPC 8-9): H01H1/22 H01H3/02 H01H71/02 H01H71/10 H01H71/12 H01H71/54 H01H73/02 H01H73/04 H01H75/00

H01H75/10 H01H77/10 H01H83/00 H01H9/38 (Advanced/Invention);

H01H71/02 H01H9/38 (Advanced/Non-invention);

H01H1/12 H01H3/02 H01H71/02 H01H71/10 H01H71/12 H01H73/00

H01H75/00 H01H77/00 H01H83/00 (Core/Invention);

H01H9/30 (Core/Non-invention);

H01H H02B (Subclass/Invention)

International (IPC 1-7): H01H3/02 H01H3/32 H01H3/42 H01H71/00

H01H71/02 H01H71/06 H01H71/10 H01H71/12 H01H71/54

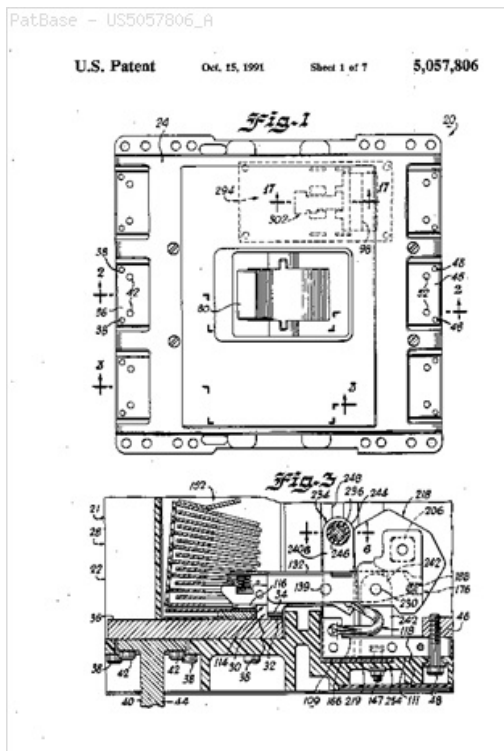
H01H73/02 H01H73/04 H01H73/36 H01H73/40 H01H75/00

H01H75/10 H01H77/10 H01H79/00 H01H83/00 H02B

CPC: H01H1/226 H01H9/383 H01H77/104 H01H2001/228

European: H01H1/22B4 H01H77/10C2 T01H1/22B4A T01H9/38B

US: 335/8 335/9

**Family:**

Publication number	Publication date	Application number	Application date
AU198937269 A1	19900201	AU19890037269	19890630
AU623410 B2	19920514	AU19890037269	19890630
BRPI8903776 A	19900320	BR1989PI03776	19890728
CA1332067 A1	19940920	CA19890605684	19890714
CN1021526 C	19930707	CN19891005484	19890731
CN1040112 A	19900228	CN19891005484	19890731
DE68925391 D1	19960222	DE19896025391	19890727
DE68925391 T2	19960515	DE19896025391T	19890727
EP0353940 A2	19900207	EP19890307612	19890727
EP0353940 A3	19910731	EP19890307612	19890727
EP0353940 B1	19960110	EP19890307612	19890727
IE73215 B	19970507	IE19890002173	19890706
IE892173 L	19900201	IE19890002173	19890706
IN172384 A	19930710	IN1989CA00542	19890711
JP2079316 A2	19900319	JP19890200139	19890801
KR0134632 B1	19980515	KR19890010954	19890801
KR19900003938 A	19900327	KR19890010954	19890801
MX165903 B	19921209	MX19890016984	19890731
NZ229872 A	19920526	NZ19890229872	19890707
US5057806 A	19911015	US19880226503	19880801
ZA8905152 A	19900425	ZA19890005152	19890706

Priority:

CA19890605684 19890714 IN1989CA00542 19890711 US19880226503 19880801

Probable Assignee: EATON CORP

Assignee(s): (std): JOE BLOGGS ; WESTINGHOUSE ELECTRIC CORP ; EATON CORP ; WESTINGHOUSE ELECTRIC CO LLC

Assignee(s): EATON CORP CLEVELAND OHIO US ; GULA LANCE ; MCKEE JERE LEE ; THOMAS GLENN ROBERT

Inventor(s): (std): GULA LANCE ; GULE LANCE ; MCKEE JERE L ; MCKEE JERE LEE ; MCKEE S JERE LEE ; RANSU GURA ; LANCE GULA ; JIEA RII MATSUKII ; JERE LEE MCKEE ; GUREN ROBAATO TOOMASU ; GLENN ROBERT THOMAS ; THOMAS GLENN R ; THOMAS GLENN ROBERT

Inventor(s): THOMAS GLENN ROBERT BEAVER PA 15009 US ; S JERE LEE MCKEE ; MCKEE JERE LEE NEW CASTLE PA 16101 US ; LANCE GULE ; GULA LANCE ALIQUIPPA PA 15001 US

Agent(s): PETER MAXWELL AND ASSOCIATES; RICHES MCKENZIE AND HERBERT LLP

Designated states: DE FR GB IT

Title: ELECTRIC **CIRCUIT BREAKERS**

Abstract: Source: GB905639A [EN] 905,639. Automatic **circuit-breakers**. CRABTREE and CO. Ltd., J. A. May 25, 1960 [June 16, 1959; Feb. 3, 1960], Nos. 20564/59 and 3772/60. Class 38 (5). A "moulded case" **circuit-breaker** comprises a pair of substantially flat casing members in recesses between which are housed **contacts** 29, 30 and an overload-responsive electromagnetically-tripped **mechanism** adapted to be reset automatically after a tripping operation and including a main spring 35 acting on a **contact** arm 17 connected to one end of a toggle 27, 28, the other end of which is connected to an operating handle 3, and a trip lever 24 loaded by a spring 31 and having releasable latching engagement with a catch plate 20. The trip lever 24 is released to break the toggle by the impact or impacts of an armature 15 on the plate 20 so that the force necessary to cause tripping is dependent only on the strength of the spring 31 and not that of the main spring 35 which provides adequate **contact** pressure. The armature 15 extends through a rectangular opening 20a in the bent end of the catch plate 20 and has an aperture which passes freely over the shank of a rivet 14 to provide a floating location for the armature on an L-shaped magnet frame 13. Extending through the frame 13 is a sealed tube 4 containing a ferrous plunger 6 and a spring 7 operating in a liquid. Under small overload conditions tripping is delayed until the plunger 6 has been moved against the bias of the spring 7 towards a polepiece 18, but under short circuit conditions the armature 15 is attracted without delay. A short ferrous sleeve 12 may surround the righthand end of the tube 4 to assist in completing the magnetic circuit. The main spring 35 in addition to providing the force necessary to open the **contacts** when tripping occurs, also provides **contact** pressure as the pivot 32 of the **contact** arm 17 is movable in slots 32x formed in the casing members. The **contact** chamber may be provided with deion plates 41. Specifications 905,640, 905,641 and 905,642 are referred to.

Classifications:**International (IPC 8-9):** H01H71/50 H01H73/18 (Advanced/Invention);

H01H71/02 H01H71/10 H01H71/34 H01H71/52 H01H71/74

H01H9/34 (Advanced/Non-invention);

H01H71/10 H01H73/00 (Core/Invention);

H01H71/00 H01H71/02 H01H71/12 H01H9/30 (Core/Non-invention)

CPC: H01H9/342 H01H71/0214 H01H71/1054 H01H71/1072

H01H71/345 H01H71/505 H01H71/528 H01H71/7463 H01H73/18

H01H2009/305

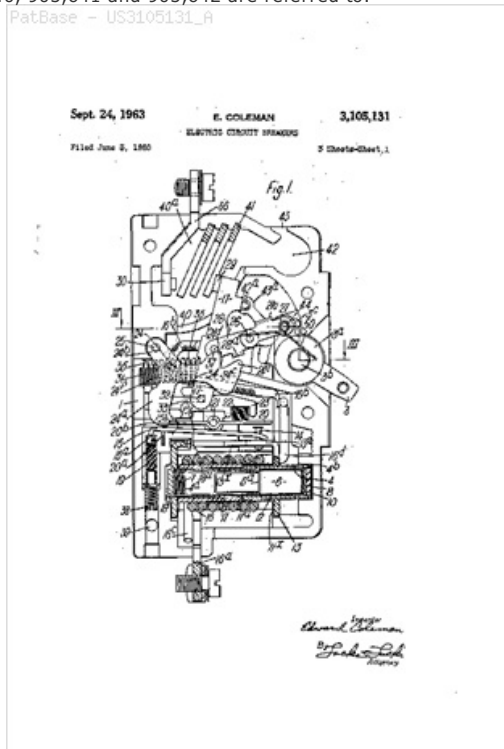
European: H01H71/50L H01H73/18 T01H71/02B1 T01H71/10D

T01H71/10E T01H71/34B T01H71/52E T01H71/74E T01H9/30C

T01H9/34C

US: 335/26 335/39

PatBase - US3105131_A

**Family:**

Publication number	Publication date	Application number	Application date
CH384686 A	19641130	CH19610004318	19610412
DE1141365 B	19621220	DE1960C021579	19600601
FR1259884 A	19610428	FR19600830215	19600616
GB905639 A	19620912	GB19590020564	19590616
US3105131 A	19630924	US19600033827	19600603

Priority:

FR19600830215 19600616 GB19590011727 19600402 GB19600003772 19600203
 GB19600011727 19600402 GB19590020564 19590616

Probable Assignee: CRABTREE AND CO LTD J A**Assignee(s):** (std): CRABTREE AND CO LTD J A ; J A CRABTREE AND CO LIMITED**Assignee(s):** J A CRABTREE AND CO LTD ; J A CRABTREE AND CO**Inventor(s):** (std): COLEMAN EDWARD ; EDWARD COLEMAN

Title: INSTANTANEOUS TRIP DEVICE OF A **CIRCUIT BREAKER**

Abstract: Source: US5103198A [EN] A limiting **circuit breaker** with a molded **case** comprises an overpressure actuator which, when an overpressure occurs in the arc extinguishing chamber due to the action of an arc drawn by the electrodynamic repulsion of the **contacts**, brings about **actuation** by a piston, subjected to this overpressure, of the **circuit breaker** trip bar. The overpressure actuator forms an almost leaktight assembly.

Classifications:

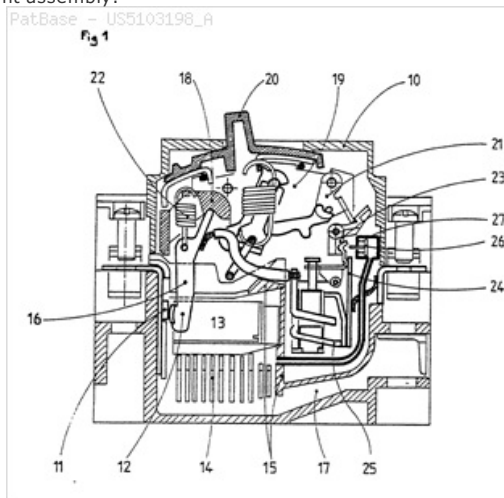
International (ipc 8-9): H01H33/30 H01H71/12 H01H73/00
H01H73/02 H01H73/18 H01H9/50 (Advanced/Invention);
H01H33/28 H01H71/12 H01H73/00 H01H9/00 (Core/Invention);
H01H73/00 (Core/Non-invention)

International (ipc 1-7): H01H33/02 H01H33/30 H01H71/12
H01H73/00 H01H73/02 H01H73/18 H01H75/00 H01H9/50 H02H

CPC: H01H9/342 H01H9/50 H01H71/12 H01H2071/2427
H01H2077/025

European: H01H71/12 H01H9/50 T01H71/24C1 T01H77/02B
T01H9/34C

US: 200/144R 218/149 218/156 335/35 335/6



Family:

Publication number	Publication date	Application number	Application date
BRPI9101760 A	19911217	BR1991PI01760	19910430
CA2040863 AA	19911105	CA19912040863	19910419
CA2040863 C	20000613	CA19912040863	19910419
CN1047256 C	19991208	CN19911002771	19910503
CN1056374 A	19911120	CN19911002771	19910503
DE69110540 D1	19950727	DE19916010540	19910415
DE69110540 T2	19960229	DE19916010540T	19910415
EP0455564 A1	19911106	EP19910420127	19910415
EP0455564 B1	19950621	EP19910420127	19910415
ES2075948 T3	19951016	ES19910420127T	19910415
FR2661776 A1	19911108	FR19900005870	19900504
FR2661776 B1	19960510	FR19900005870	19900504
HK1006890 A1	19990319	HK19980105884	19980622
JP3004387 B2	20000131	JP19910124979	19910426
JP4229524 A2	19920819	JP19910124979	19910426
PT97556 A	19930531	PT19910097556	19910503
PT97556 B	19990430	PT19910097556	19910503
TW208756 B	19930701	TW19910107883	19911007
US5103198 A	19920407	US19910685634	19910416
ZA9103343 A	19920226	ZA19910003343	19910503

Priority:

CA19912040863 19910419 CA19912040863 19910419 FR19900005870 19900504

Probable Assignee: SCHNEIDER ELECTRIC SA

Assignee(s): (std): MERLIN GERIN ; SCHNEIDER ELECTRIC SA

Assignee(s): SCHNEIDER ELECTRIC S A ; SCHNEIDER ELECTRIC S A BOULOGNE BILLANCOURT FR ; MOREL ROBERT ; RIVAL MARC ; GERIN MERLIN ; MERLIN GERINFR ; GERIN MERLIN 2 CHEMIN DES SOURCES F38240 MEYLAN FR ; GARCIA HUBERT

Inventor(s): (std): MOREL ROBERT ; RIVAL MARC ; MARC RIVAL ; MOREL ROBERT MERLIN GERIN ; MARUKU RIBARU ; GARCIA HUBERT ; GARCIA HUBERT MERLIN GERIN ; HUBERT GARCIA ; ROBERT MOREL ; RIVAL MARC MERLIN GERIN ; ROBEERU MORERU ; YUBEERU GARUSHIA

Inventor(s): RIVAL MARC MERLIN GERIN F 38050 GRENOBLE CEDEX FR ; GARCIA HUBERT MERLIN GERIN F 38050 GRENOBLE CEDEX ; GARCIA HUBERT MERLIN GERIN F 38050 GRENOBLE ; GARCIA HUBERT MERLIN GERIN F 38050 GRENOBLE CEDEX FR ; MOREL ROBERT MERLIN GERIN F 38050 GRENOBLE CEDEX F ; MOREL ROBERT MERLIN GERIN F 38050 GRENOBLE ; MOREL ROBERT MERLIN GERIN F 38050 GRENOBLE CEDEX FR

Agent(s): ROBIC ; SCHNEIDER ELECTRIC IND SAS

Designated states: BE CH DE ES GB IT LI SE

Title: AUTOMATIC ELECTRIC **CIRCUIT BREAKERS**

Abstract: Source: GB860784A [EN] 860,784. Automatic **circuit-breakers**; switch **cases**. HARGREAVES, B. Jan. 30, 1958 [Nov. 6, 1956], No. 33923/56. Class 38 (5). The moving **contact** 25 is normally held engaged with fixed **contacts** 23, 24 by interengaging parts 17, 18 which may be released on overload to allow the **contacts** to open, the part 17 being carried by a cover 11 which is movable manually to open the **contacts** without tripping. The **contact** 25 has an extension 26 secured by a bolt 27 to a bimetal strip 15 which is pivoted at 12 and biased clockwise, Figs. 1 and 3, by a spring 35 secured to the cover at one end. The bolt 27 carries a chamfered nut 18 which co-operates with a recess in a latch arm 17 of a latch 16 pivoted at 16a on the cover. The latch has an armature 20 which in the closed position, Fig. 1, is near a magnet 21 formed by a strap bent round conductor 22, so that with a short circuit, the armature is attracted to disengage parts 17, 18. With a prolonged overload, bimetal 15 deflects to the left, Fig. 4, to disengage these parts. In either event, the spring 35 separates the **contacts** and the parts take up the Fig. 3 position in which an arm 15a carrying the bimetal abuts a screw 31 on the base 10. The parts 17, 18 are reset by moving the cover outwards to the Fig. 5 position to an extent allowed by the movement of a slot 41 therein past the screw 31. The **contacts** are reclosed by returning the cover to the Fig. 1 position where the cover is held by a spring 32 on the base engaging a shoulder 34 on the cover. The **contacts** may be manually opened by moving the cover to the Fig. 5 position. The air gap between parts 20, 21 may be adjusted and the nut 18 may be adjusted along bolt 27. A number of breakers may be clipped side-by-side on to a common support-bar 1, Figs. 6, 7 (not shown). The latch 16 carries the word "TRIP" which becomes visible through a window 39 in the Fig. 3 position, and the base carries the word "ON" which is visible in the slot 41 in the positions of Figs. 1 and 3, but is invisible in the Fig. 5 position. Specification 860,785 is referred to.

Classifications:

International (IPC 8-9): H01H71/40 H01H71/60 (Advanced/Invention);
H01H71/10 H01H71/12 (Core/Invention)

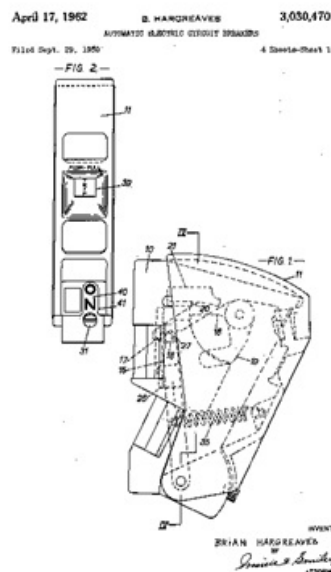
International (IPC 1-7): H01H71/12 H01H73/00 H01H73/34
H02B1/00

CPC: H01H71/40 H01H71/60

European: H01H71/40 H01H71/60

US: 200/50.15 335/27 335/35 335/43

PatBase - US3030470_A



Family:

Publication number	Publication date	Application number	Application date
DE1128011 B	19620419	DE1959H037518	19590924
DE1128011 C	19620419	DE1959H037518	19590924
FR1235232 A	19600701	FR19590805316	19590917
GB860784 A	19610208	GB19560033923	19561106
NL109188 C	00000000		00000000
NL243573 A	00000000		00000000
US3030470 A	19620417	US19590843233	19590929

Priority:

DE1959H037518 19590924 FR19590805316 19590917 GB19560033923 19561106
US19590843233 19590929

Probable Assignee:

BRIAN HARGREAVES

Assignee(s): (std):

BRIAN HARGREAVES

Inventor(s): (std):

BRIAN HARGREAVES ; HARGREAVES BRIAN

Title: OPERATING **MECHANISM** FOR A LOW VOLTAGE ELECTRICAL **CIRCUIT BREAKER**

Abstract: Source: US4740770A [EN] A **mechanism** for a **circuit breaker** includes a support lever insulated from a **contact** arm and a trip lever supported by a plate fitted with limited swivelling on a pivot. A mechanical link arranged between a toggle-joint and the **contact** arm includes a latching stop fixed on the plate. The stop is formed by a notch cooperating with a step of the trip lever to push the end of a toggle rod back to a retracted unlatched position, as soon as the trip lever is actuated to the tripped position. The support lever is equipped with a locking arm having a sloping part cooperating with a pawl of the handle to form a high-speed **contact** closing device.

Classifications:

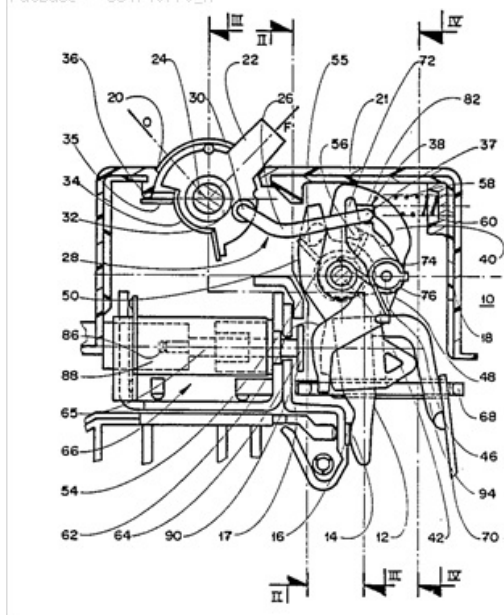
International (IPC 8-9): H01H71/52 H01H73/36 (Advanced/Invention);
H01H71/10 H01H73/00 (Core/Invention)

International (IPC 1-7): H01H3/46 H01H71/04 H01H71/10
H01H71/12 H01H71/40 H01H71/52 H01H73/00 H01H73/36 H01H9/20
CPC: H01H71/526 H01H2300/048

European: H01H71/52C T01H300/048

US: 335/123 335/15 335/171

PatBase - US4740770_A



Family:

Publication number	Publication date	Application number	Application date
AT64234 E	19910615	AT19860402267T	19861013
AU198664497 A1	19870507	AU19860064497	19861029
AU589856 B2	19891019	AU19860064497	19861029
CA1279356 A1	19910122	CA19860521027	19861021
CN1013816 B	19910904	CN19861007136	19861030
CN86107136 A	19870429	CN19861007136	19861030
DE3679639 D1	19910711	DE19863679639	19861013
EP0224396 A1	19870603	EP19860402267	19861013
EP0224396 B1	19910605	EP19860402267	19861013
ES2022814 B3	19911216	ES19860402267T	19861013
FR2589627 A1	19870507	FR19850016344	19851031
FR2589627 B1	19880826	FR19850016344	19851031
IN168773 A	19910601	IN1986MA00821	19861017
JP2637081 B2	19970806	JP19860258071	19861029
JP62105333 A2	19870515	JP19860258071	19861029
PT83627 A	19861101	PT19860083627	19861027
PT83627 B	19900629	PT19860083627	19861027
US4740770 A	19880426	US19860919637	19861016
ZA8607970 A	19870624	ZA19860007970	19861021

Priority:

CA19860521027 19861021
FR19850016344 19851031

EP19860402267 19861013

EP19860402267 19861013

Probable Assignee: MERLIN GERIN

Assignee(s): (std): MERLIN GERIN

Assignee(s): MERLIN ET GERIN ; MERURAN JERAN ; SCHNEIDER ELECTRIC SA ; LAZARETH MICHEL ; HERVOUET GERARD ; ROUSSET PATRICK ; BARTOLO WILLIAM ; FA MERLIN GERIN GRENOBLE FR ; GERIN M ; GERIN MERLIN ; GERIN MERLIN RUE HENRI TARZE F

Inventor(s): (std): AL ROUSSET PATRICK ET ; BARTOLO WILLIAM ; GERARD HERVOUET ; HERVOUET GERARD ; MICHAEL LAZARETH ; JIERAARU ERUBUE ; LAZARETH MICHEL ; MICHEL LAZERETH ; MISHIERU RAZARETO ; PATORIKU RUUSE ; PATRICK ROUSSET ; ROUSSET PATRICK ; UIRIAMU BARUTORO ; WILLIAM BARTOLO ; WILLIAM PARTOLO

Inventor(s): ROUSSET PATRICK F 38000 GRENOBLE FR ; HERVOUET GERARD F 38560 JARRIE FR ; BARTOLO WILLIAM F 38320 EYBENS FR ; ROUSSET PATRICK ET AL ; MISHIERU RAZARETO ; LAZERETH MICHEL ; MICHEL LAZARETH ; MICHEL LAZARETH WILLIAM BARTOLO PATRICK ROUSSET ET ; MICHEL LAZARETH WILLIAM BARTOLO PATRICK ROUSSET ET GERARD HERVOUET ; MICHEL LAZARETH WILLIAM BARTOLO PATRICK... ; JIERAARU ERUBUE

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; ROBIC ROBIC AND ASSOCIES ASSOCIATES

Designated states: AT BE CH DE ES FR GB IT LI SE

Title: **CIRCUIT BREAKER**

Abstract: Source: US2006191873A [EN] A **circuit breaker** has a molded **case** with a main **case**, a middle cover and a top cover being dividable from one another. The main **case** contains **contactor** sections, each including a stationary **contactor** and a movable **contactor** for a pole corresponding to each phase in a polyphase circuit, an arc-extinguishing device, an overcurrent tripping device **actuating** a tripping **mechanism** by detecting an overcurrent, and a zero-phase current transformer detecting a leak current. The middle cover has a partitioned recess for containing a switching **mechanism** and the tripping **mechanism**. Interpole partitions, surrounding the **contactor** section and the arc-extinguishing device, and a screen-like intermediate partition, isolating the **contactor** sections from the overcurrent tripping device, are formed with the middle cover laid on the main **case**. A wall with gas outlets for an arc gas is provided on the back of the arc-extinguishing devices.

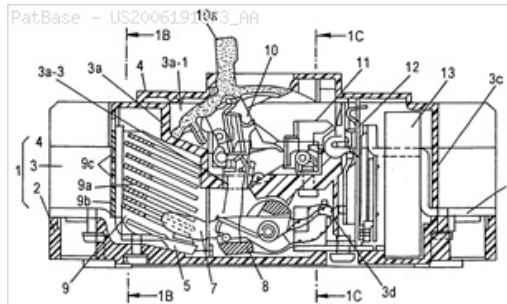
Classifications:**International (IPC 8-9):** H01H33/02 H01H33/08 H01H71/02

H01H73/06 H01H73/18 H01H9/44 (Advanced/Invention);

H01H33/08 (Advanced/Non-invention);

H01H33/02 H01H33/04 H01H71/02 H01H73/00

H01H9/30 (Core/Invention)

International (IPC 1-7): H01H71/02 H01H73/06**CPC:** H01H71/0221 H01H71/025 H01H71/02 H01H9/342 H01H73/18**European:** H01H71/02 H01H9/34C T01H73/18**US:** 218/155 218/22 335/202 335/8**Family:**

Publication number	Publication date	Application number	Application date
■ CN100578711 C	20100106	CN200610009315	20060223
■ CN1835164 A	20060920	CN200610009315	20060223
■ FR2882610 A1	20060901	FR20060001542	20060222
■ FR2882610 B1	20150320	FR20060001542	20060222
■ JP2006236798 A2	20060907	JP20050050268	20050225
■ JP4650023 B2	20110316	JP20050050268	20050225
■ KR100963737 B1	20100614	KR20060014525	20060215
■ KR20060094871 A	20060830	KR20060014525	20060215
■ TW200632968 A	20060916	TW20060105662	20060220
■ TWI343070 B	20110601	TW20060105662	20060220
■ US2006191873 AA	20060831	US20050314531	20051222
■ US7154062 BB	20061226	US20050314531	20051222

Priority:

JP20050050268 20050225

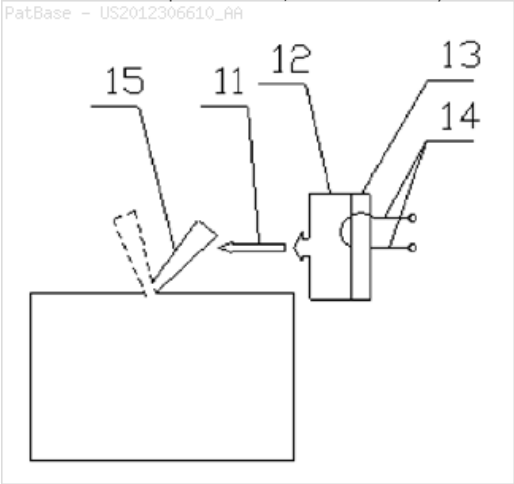
Probable Assignee: FUJI ELECTRIC COMPONENTS AND SYSTEMS CO LTD FA**Assignee(s):** (std): FUJI ELECTRIC COMPONENTS AND SYSTEMS CO LTD FA ; FUJI ELEC COMPONENTS AND SYS FA ; FUJI ELEC FA COMPONENTS AND SYS**Assignee(s):** FUJI ELECTRIC COMPONENTS AND SYSTEMS CO FA ; FUJI ELECTRIC COMPONENTS AND SYSTEMS CO LTD FA ; FUJI ELECTRIC FA COMPONENTS AND SYSTEMS CO ; FUJI ELECTRIC FA COMPONENTS AND SYSTEMS CO LTD ; FUJI ELECTRIC FA COMPONENTS AND SYSTEMS CO LTD**Inventor(s):** (std): AKIFUMI SATO ; ASAKAWA KOJI ; HISANOBU ASAKAWA KOJI MITSUSHI ; HISANOBU ASANO ; KOJI ASAKAWA ; MITSUHIRO MITSUSHIGE ; MITSUSHIGE MITSUHIRO ; ASANO HISANOBU ; SATO AKIFUMI ; TAKAHASHI YASUHIRO ; YASUHIRO TAKAHASHI ; SATOU AKIFUMI**Inventor(s):** ASAKAWA KOJI MITSUSHIGE MITSUHIRO TAKAHASHI... ; ASAKAWA KOJI MITSUSHIGE MITSUHIRO TAKAHASHI YASUHI ; ASAKAWA KOJI MITSUSHIGE MITSUHIRO TAKAHASHI YASUHIRO SATO AKIFUMI ASANO HISANOBU**Agent(s):** CABINET FLECHNER; CHOI DALL RYONG; KANESAKA BERNER AND PARTNERS LLP; MANABU

Title: **CIRCUIT BREAKER** CLOSING/ OPENING **ACTUATING MECHANISM** AND DRIVING DEVICE THEREOF

Abstract: Source: US2012306610A [EN] A **circuit breaker** closing/opening **actuating mechanism** and a driving device thereof, the driving device includes: an expansion body (12), and a heater (13), wherein the expansion body (12) is coupled to the force transmitting **mechanism** (11), when the heater (13) is powered on, the expansive matter (4) inside the shell (2) expands to motivate the force transmitting **mechanism** (11), so as to realize opening or closing a **circuit breaker**. The present invention has the following benefits of utilizing the expansion force and displacement generated by matter phase transforming when temperature changes to expand, for the **circuit breaker** to close or open, so as to realize remote controlling and automatic controlling of an electric switch. The present invention has simple structure, and acts reliably.

Classifications:

International (IPC 8-9): H01H3/22 H01H33/30 H01H37/36
H01H71/10 H01H71/14 H01H71/66 H01H73/02 (Advanced/Invention);
H01H71/66 (Advanced/Non-invention);
H01H3/00 H01H71/10 (Core/Invention)
CPC: H01H71/14 H01H2071/147 H01H2071/665
European: H01H71/14 T01H71/14D
US: 337/306



Family:

Publication number	Publication date	Application number	Application date
CN101840796 A	20100922	CN201010108869	20100211
CN101840796 B	20121219	CN201010108869	20100211
EP2535909 A1	20121219	EP20100845577	20101118
EP2535909 A4	20141105	EP20100845577	20101118
JP2013519212 T2	20130523	JP20120552234T	20101118
JP5582664 B2	20140903	JP20120552234T	20101118
US2012306610 AA	20121206	US20100578243	20101118
US8963678 BB	20150224	US20100578243	20101118
WO11097907 A1	20110818	WO2010CN078848	20101118

Priority:

CN201010108869 20100211 WO2010CN078848 20101118

Probable Assignee: FENG SHUO

Assignee(s): (std): FENG SHUO ; FENG YUNFU ; YUNFU FENG

Inventor(s): (std): YUNFU FENG ; FENG YUNFU ; FENG SHUO

Agent(s): GLAWE DELFS MOLL; SHANGHAI SANFANG PATENT LAW OFFICE

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

Title: Equipment protecting electrical **circuit breaker**

Abstract: Source: US4559510A [EN] PCT No. PCT/EP82/00224 Sec. 371 Date Mar. 2, 1984 Sec. 102(e) Date Mar. 2, 1985 PCT Filed Oct. 11, 1982 PCT Pub. No. WO84/01663 PCT Pub. Date Apr. 26, 1984. A compact equipment protecting electrical **circuit breaker** having a short-circuit and excess current tripping action as well as a signal change switch for **actuating** and protecting household appliances, office machines, manufacturing devices and the like, includes a breaker and tripping **mechanism** which is a combination of a cocking body (5) with an unlatching lever (4) supported therein, a tilting **contact** piece (6), and a cam lever (14) with the functional inclusion of several spring elements. The combination is mounted on a common axis in a central location below the operating **mechanism** (1-3) and between the hinged armature system (8) and a bimetal strip (10). The combination is further located or mounted above an arc quenching chamber (12) and above a signal change switch **contact** device (13) and above the various breaker terminals (15). The change switch has its own terminals for signalling the instantaneous operating condition of the **circuit breaker**.

Classifications:

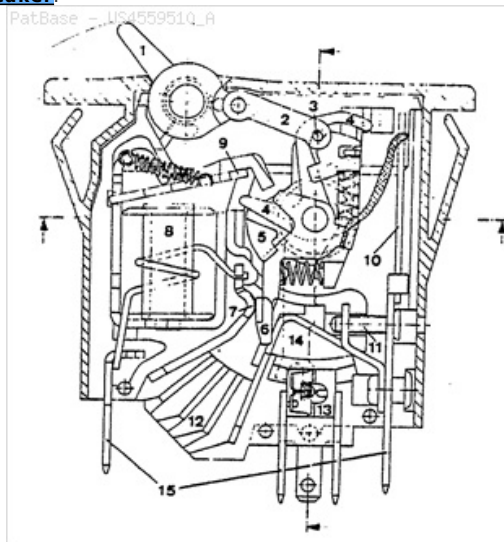
International (IPC 8-9): H01H71/02 H01H71/46 H01H71/52
H01H71/54 H01H73/52 H01H79/00 (Advanced/Invention);
H01H71/02 H01H71/10 H01H71/12 H01H73/00
H01H79/00 (Core/Invention)

International (IPC 1-7): H01H71/52 H01H71/54 H01H73/52
H01H75/00 H01H75/12 H01H79/00 H01H9/00 H01J17/00

CPC: H01H71/02 H01H71/0207 H01H71/46 H01H71/526

European: H01H71/02 H01H71/02B H01H71/46 H01H71/52C

US: 335/13 335/35



Family:

Publication number	Publication date	Application number	Application date
AT23236 E	19861115	AT19820903043T	19821011
CA1202653 A1	19860401	CA19830438319	19831004
DE3274034 D1	19861204	DE19823274034	19821011
EP0105945 A1	19840425	EP19820109364	19821011
EP0120836 A1	19841010	EP19820903043	19821011
EP0120836 B1	19861029	EP19820903043	19821011
ES526361 A0	19840801	ES19830526361	19831010
ES526361 A2	19840817	ES19830526361	19831010
ES8406790 A1	19840801	ES19830526361	19831010
JP3036264 B4	19910530	JP19820503079	19821011
JP59501884 T2	19841108	JP19820503079	19821011
US4559510 A	19851217	US19840595568	19840302
WO8401663 A1	19840426	WO1982EP00224	19821011

Priority:

EP19820109364 19821011 EP19820903043 19821011 WO1982EP00224 19821011

Probable Assignee: KOPP GMBH AND CO KG HEINRICH

Assignee(s): (std): KOPP GMBH AND CO HEINRICH KG ; KOPP GMBH AND CO KG HEINRICH

Assignee(s): HAINRITSUHI KOTSUPU GMBH UNTO CO KG ; HEINRICH KOPP GMBH ; HEINRICH KOPP GMBH AND CO KG

Inventor(s): (std): FRANZ HERBERT

Inventor(s): FURANTSU HERUBAATO

Designated states: AT CH DE FR GB IT JP LI SE US

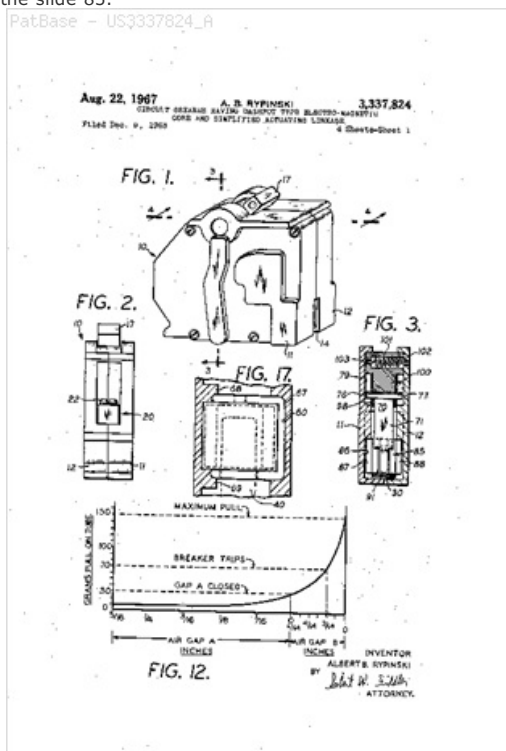
Abstract: Source: GB1180115A [EN] 1,180,115. Automatic **circuit breakers**. A. B. RYPINSKI. 8 May, 1967, No. 21203/67. Heading H1N. An electromagnetic tripping device in an automatic **circuit breaker** comprises a coil 25 mounted within a U-shaped magnetic core 60 and an armature comprising an aluminium tube 40 movable rectilinearly through one arm of the core 60 and containing a magnetic core 45 and a magnetic plug 50 biased apart in the tube by a spring 47. On overload, the core 45 and plug 50 first move together and then the armature moves as a whole to turn an L-shaped lever 70 about its pivot 76, releasing it from a slide 85 which is moved up grooves 86 by the bias in a **contact** blade 30, opening **contacts** 33, 35. As lever 70 turns the operating handle 17 is released from an overcentre position and moves to the off position by means of a coiled torsion spring 103; lever 70 is biased upwards by a spring 98. In reclosing, the handle first pivots lever 70 about 76 to bring its tip 75 into engagement with the armature and its other tip 73 into engagement with a tongue 90 on the slide 85. Further movement drives lever 70 and slide 85 downwards together to close the **contacts**. Lever 70 is resilient, allowing the armature to move before the necessary tripping force is achieved. The blade 30 is doubled over the end of wire 27 of the coil and soldered in place. All parts are held in place by projections from the inner surfaces of the two-part **moulded case**. For different current ratings different coils 25 are wound with the same external dimensions so that they can be supported by the same projections. The other end 26 of the coil is attached to a bus-bar terminal 16. In a modification (Fig. 13, not shown) spring 103 is omitted, the handle is released by an extension 130 on the slide 85.

International (IPC 8-9): F16J15/54 G11C19/32 H01H3/46 H01H71/32 H01H71/34 H01H71/44 H01H71/52 H01H73/38 (Advanced/Invention); F16J15/00 G11C19/00 H01H71/10 H01H71/12 (Core/Invention)

CPC: F16J15/545 G11C19/32 H01H71/34 H01H71/345 H01H71/52

H01H71/52

US: 335/190 335/38 335/61



Publication number	Publication date	Application number	Application date
AU2126467 A1	19681107	AU19670021264D	19670504
AU414622 B2	19710702	AU19670021264	19670504
BE700358 A	19671201		19670622
DE1588650 A1	19700521	DE19671588650	19670704
DE1588650 B2	19721019	DE19671588650	19670704
DE1588650 C3	19730503	DE1967R046396	19670704
DE1788112 A1	19720406	DE19671788112	19670704
FR1534815 A	19680802	FR19670111006	19670619
GB1180115 A	19700204	GB19670021203	19670508
NL6709319 A	19690107	NL19670009319	19670705
US3337824 A	19670822	US19630328899	19631209

AU19670021264	19670504	BE19670700358	19670622	DE19671788112	19670704
CA19670989283	19670501	DE1967R046396	19670704	FR19670111006	19670619
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US19630332889	19631209				

Assignee(s): (std): RYPINSKI A : RYPINSKI ALBERT B : RYPINSKI ALBERT BRIAN : RYPINSKI ALBERT BRYAN

Inventor(s): (std): BRIAN RYPINSKI ALBERT ; BRYAN RYPINSKI ALBERT ; RYPINSKI ALBERT B ; RYPINSKI ALBERT BRYAN

Inventor(s): ALBERT BRYAN KY PINSKI ; ALBERT BRYAN RYPINSKI

Title: Static trip unit for molded **case circuit breakers**

Abstract: Source: US4281359A [EN] A static trip unit is comprised of a current transformer module and an electronic programmer module physically and electrically mated together for incorporation in a molded **case industrial circuit breaker**. Current transformer modules and programmer modules are separately interchangeable to change breaker current ratings and functional capabilities. A trip interlock is included to prevent breaker closure in the absence of either the trip unit or the trip solenoid.

Classifications:

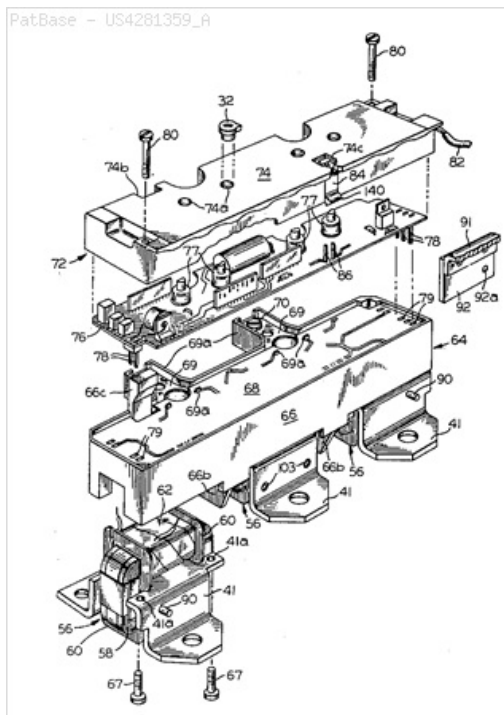
International (IPC 8-9): H01H71/10 H01H71/12 H01H71/74
H01H73/48 H01H83/00 H02B1/18 H02B11/26 (Advanced/Invention);
H01H71/12 (Advanced/Non-invention);
H01H71/00 H01H71/10 H01H71/12 H01H73/00
H02B11/00 (Core/Invention)

International (IPC 1-7): H01H71/10 H01H73/36 H01H73/38
H01H83/00 H02B1/18 H02H1/00 H02H3/00

CPC: H01H71/123 H01H71/126 H01H71/128 H01H71/7409
H01H2009/188 H02B11/26 H01H71/10 H01H71/125

European: H01H71/10 H01H71/12D H01H71/12D2 H01H71/74B
H02B11/26 T01H71/12E T01H71/12M T01H9/18G

US: 200/50.28 335/18 335/6 361/115 361/615 361/642 361/729



Family:

Publication number	Publication date	Application number	Application date
CA1144961 A1	19830419	CA19810372909	19810312
CA1147446 A1	19830531	CA19810372398	19810305
DE3049365 A1	19810924	DE19803049365	19801229
FR2478367 A1	19810918	FR19800027503	19801224
FR2478367 B1	19860321	FR19800027503	19801224
GB2071915 A1	19810923	GB19800040545	19801218
GB2071915 B2	19840426	GB19800040545	19801218
GB2091505 A1	19820728	GB19820000749	19801218
GB2091505 B2	19840523	GB19820000749	19801218
IT1134905 A	19860820	IT19800026975	19801224
IT8026975 A0	19801224	IT19800026975	19801224
JP56130048 A2	19811012	JP19800182163	19801224
US4281359 A	19810728	US19800130321	19800314
US4300110 A	19811110	US19800130320	19800314

Priority:

CA19810372398 19810305	CA19810372909 19810312	GB19800040545 19801218
US19800130320 19800314	US19800130320 19800314	US19800130321 19800314
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Probable Assignee: CALGON CORP

Assignee(s): (std): GEN ELECTRIC

Assignee(s): GENERAL ELECTRIC CO ; GENERAL ELECTRIC COMPANY ; GENERAL ELECTRIC CY ; PALMISANO EDWARD A ; BAYER ERIC W ; CALGON CORP ; GEC ; GEC US

Inventor(s): (std): AUGUST PALMISANO EDWARD ; BAYER ERIC W ; BAYER ERIC WOLFGANG ; BAYER ERICH WOLFGANG ; EDOWAADO OOGASUTO PARUMISANO ; ERICH WOLFGANG BAYER ET EDWARD AUGUST PALMISANO ; ERITSUKU UORUFUGANGU BEIYAA ; PALMISANO EDWARD A ; PALMISANO EDWARD AUGUST ; WOLFGANG BAYER ERIC

Inventor(s): PALMISANO EDWARD AUGUST SIMSBURY CONN ; BAYER ERIC WOLFGANG WOLCOTT CONN

Agent(s): ECKERSLEY RAYMOND A

Title: Limiting **circuit breaker** equipped with an electromagnetic effect **contact** fall delay device

Abstract: Source: US5029301A [EN] A limiting **circuit breaker** comprises an electrodynamic repulsion **contact** system, and an electromagnetic latch arranged in the vicinity of the **contact** system, and electrically insulated from the latter.

Actuation of the latch to the active position results from the action of the electromagnetic field due to a short-circuit current flowing in the pole, so as to temporarily keep the movable **contact** open after repulsion. The latch is equipped with a pair of ferromagnetic brackets, and with a spring blade to return to an inactive position.

Classifications:

International (IPC 8-9): H01H50/16 H01H75/00 H01H77/00

H01H77/10 (Advanced/Invention);

H01H73/04 (Advanced/Non-invention)

International (IPC 1-7): H01H33/46 H01H50/16 H01H7/00

H01H71/44 H01H75/00 H01H77/00 H01H77/10

CPC: H01H1/2041 H01H1/2058 H01H73/045 H01H77/104

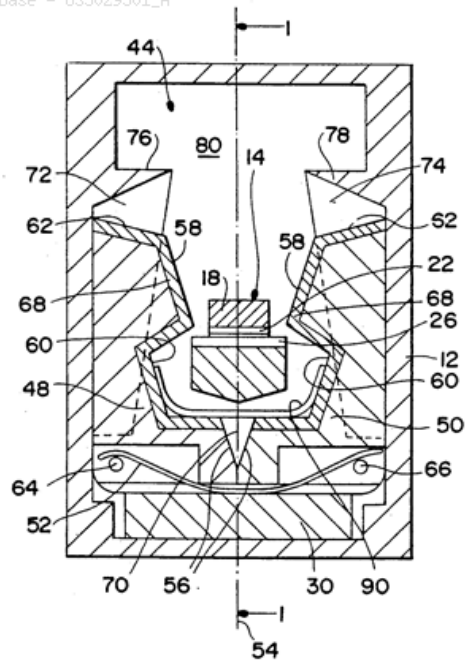
H01H2001/223

European: H01H1/20D H01H77/10C2 T01H1/20D4 T01H1/22B1

T01H73/04B

US: 200/144R 218/146 335/16 335/167 335/195

PatBase - US5029301_A



Family:

Publication number	Publication date	Application number	Application date
CA2019492 AA	19901226	CA19902019492	19900621
DE69016111 D1	19950302	DE19906016111	19900615
DE69016111 T2	19950810	DE19906016111T	19900615
EP0406130 A1	19910102	EP19900420285	19900615
EP0406130 B1	19950118	EP19900420285	19900615
ES2069721 T3	19950516	ES19900420285T	19900615
FR2648952 A1	19901228	FR19890008589	19890626
FR2648952 B1	19910913	FR19890008589	19890626
JP3037931 A2	19910219	JP19900166553	19900625
US5029301 A	19910702	US19900544417	19900627

Priority:

CA19902019492 19900621 FR19890008589 19890626

Probable Assignee: MERLIN GERIN

Assignee(s): (std): MERLIN GERIN

Assignee(s): MERLIN GERIN 2 ; MERLIN GERIN MEYLAN FR ; MOREL ROBERT ; NEBON JEAN PIERRE ; COUDERT PATRICK ; DUDON PASCAL

Inventor(s): (std): COUDERT PATRICK ; DUDON PASCAL ; JIYANNPIERU NUBON ; MOREL ROBERT ; NEBON JEAN PIERRE ; PASUKARU DEYUDON ; PATORITSUKU KUDEERU ; ROBEERU MORERU

Inventor(s): ROBERT MOREL ; PATRICK COUDERT ; NEBON JEAN PIERRE F 38050 GRENOBLE CEDEX FR ; PASCAL DUDON ; MOREL ROBERT F 38050 GRENOBLE CEDEX FR ; DUDON PASCAL F 38050 GRENOBLE CEDEX FR ; JEAN PIERRE NEBON ; COUDERT PATRICK F 38050 GRENOBLE CEDEX FR

Agent(s): ROBIC

Designated states: BE CH DE ES GB IT LI SE

Title: FRONT OPERATED ENCLOSED SWITCHING APPARATUS

Abstract: Source: GB905331A [EN] 905,331. Switch **cases**; locking switches. FEDERAL PACIFIC ELECTRIC CO. Oct. 14, 1958 [Oct. 14, 1957], No. 32839/58. Class 38 (5). The invention relates to a **circuit breaker** or switch having a **moulded case**; an enclosure 12 also being provided with an operable apertured front 14 interlocked with the handle and the Specification discloses many constructions of locking plates for effecting this object.

Classifications:

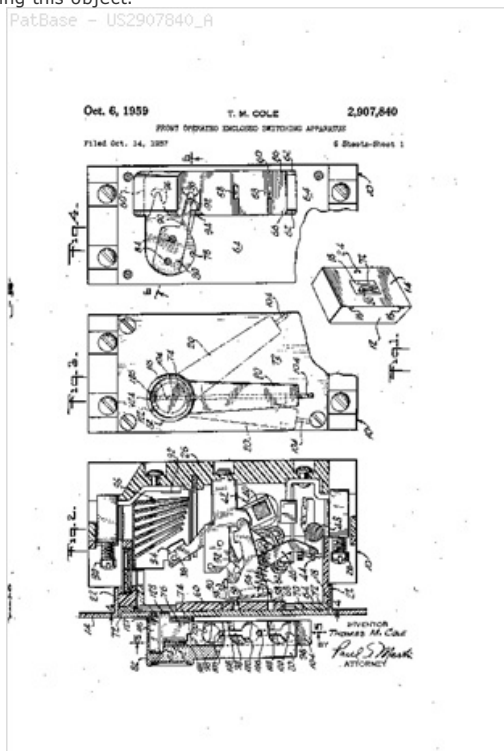
International (IPC 8-9): H01H71/56 H01H9/22 (Advanced/Invention);
H01H71/10 H01H9/20 (Core/Invention)

International (IPC 1-7): H01H73/00 H01H9/22 H02B1/00

CPC: H01H9/22 H01H71/56

European: H01H71/56 H01H9/22

US: 200/50.18



Family:

Publication number	Publication date	Application number	Application date
DE1223444 B	19660825	DE1958F026795	19581013
FR1249235 A	19601230	FR19580776659	19581014
GB905331 A	19620905	GB19580032839	19581014
US2907840 A	19591006	US19570689892	19571014

Priority:

US19570689892 19571014

Probable Assignee: FED PACIFIC ELECTRIC CO

Assignee(s): (std): FED PACIFIC ELECTRIC CO

Assignee(s): FEDERAL PACIFIC ELECTRIC CO ; FEDERAL PACIFIC ELECTRIC COMPANY

Inventor(s): (std): COLE THOMAS M

Title: MULTI-POLE **CIRCUIT BREAKER**

Abstract: Source: GB1058722A [EN] 1,058,722. Automatic **circuit breakers**. I-T-E. **CIRCUIT BREAKER** CO. April 3, 1964 [June 5, 1963], No. 13864/64. Heading H2B. An overload **circuit-breaker** contained in a **moulded** insulating **case** has a handle 21 extending through an aperture in one surface of the **case**, the line and load terminals 42, 52 of all phases extending through apertures in a second surface and mechanical mounting devices 40 extending from a third surface of the **case**. The **case** is formed with three compartments A, B, C, each housing the **contacts** and tripping **mechanism** of one phase and a fourth compartment D housing the common operating members. Each phase (Fig. 4, not shown) has a double-armed **contact** lever 45 resiliently mounted at 54 in a frame 63 and biased into engagement with a fixed **contact** 44 by spring 62 while its other end 76 is latched by a lever 67 also pivoted in the frame 63. The frame 63 also has portions 63A forming the poles of an electromagnet energized by the current through a bimetal 49 to attract an armature 199 on the lever 67; the bimetal also acts on lever 67 to release the latched end 76 of **contact** 46. The lever 67 also acts on an arm 103 of a common trip bar 100 to release the other phases. The **contacts** are reset by depressing the operating handle 21, cam surfaces 151 thereon engaging cam surfaces 152 on the **contact** levers 46. The trip bar 100 is provided with a fourth arm 104 (Fig. 8, not shown) located in the compartment D. In the closed condition it latches a lever 110 against anticlockwise movement by a spring 116 which also biases a second copivotal lever 125 clockwise against a stop 145 on lever 110. A leg 140 of handle 21 has a projection 122 engaging an arm 114 of lever 110 to limit the upward movement of handle 21 in the closed condition. When the breaker is tripped arm 104 releases lever 110 and permits handle 21 to rise under its biasing spring 38 to indicate the tripped condition. The breaker can be manually tripped by depressing handle 21 until a surface 142 thereon engages a projection 143 on lever 125 pivoting lever 110 until its nose 111 rotates the arm 104 of the trip bar 100; full depression of handle 21 is prevented by lever 110 striking part of the housing 22¹. When handle 21 is subsequently depressed to reset the breaker an abutment 161 on leg 140 engages a projection 149 on the 110 lever moving it clockwise into engagement with latching arm 104; the lever 125 is arrested early in its travel by the surface of leg 140 so that the tripping action cannot occur. A modified arrangement of the terminal structure is described (Figs. 19, 19A, not shown) enabling the breaker to be used with the panel board described in Specification 1,058,723.

Classifications:

International (IPC 8-9): H01H71/08 H01H71/58 (Advanced/Invention);
H01H71/08 H01H71/10 (Core/Invention)

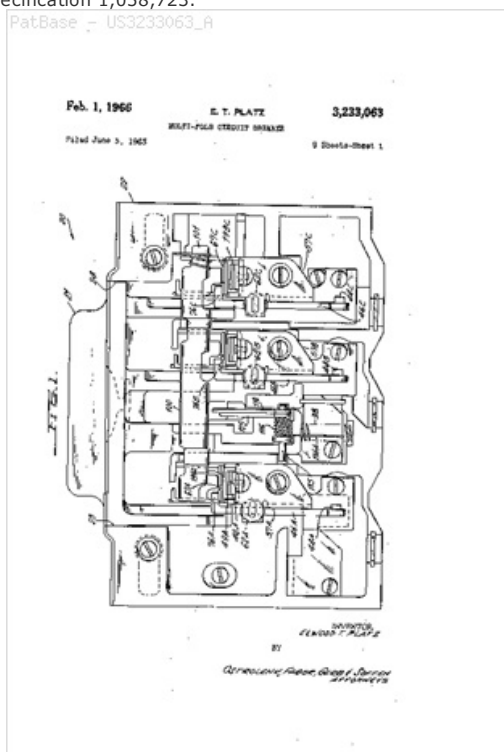
International (IPC 1-7): H01H21/12 H01H37/74 H01H71/10
H01H71/14 H01H71/40 H01H73/50 H01H73/56

CPC: H01H71/08 H01H71/58

European: H01H71/08 H01H71/58

US: 335/24 335/37 335/9

PatBase - US3233063_A

**Family:**

Publication number	Publication date	Application number	Application date
AU4242164 A1	19650930	AU19640042421	19640324
CH421253 A	19660930	CH19640007372	19640605
DE1463202 B1	19720105	DE19641463202	19640605
DE1788130 A1	19720803	DE19641788130	19640605
DE1788130 B2	19730823	DE19641788130	19640605
DE1788130 C3	19740314	DE19641788130	19640605
FR1471156 A	19670303	FR19640975132	19640520
GB1058722 A	19670215	GB19640013864	19640403
NL134085 C	00000000		00000000
NL6406365 A	19641207	NL19640006365	19640605
US3233063 A	19660201	US19630285681	19630605

Priority:

DE19641463202 19640605 FR19640975132 19640520 US19630285681 19630605

Probable Assignee: ITE CIRCUIT BREAKER LTD

Assignee(s): (std): CIRCUIT BREAKER CO ; ITE CIRCUIT BREAKER LTD

Assignee(s): SIEMENS ALLIS INC ; SIEMENS ALLIS INC A DE CORP ; I T E CIRCUIT BREAKER CO ; I T E CIRCUIT BREAKER CO PHILADELPHIA PA V ST A ; I T E CIRCUIT BREAKER COMPANY ; I T E CIRCUIT BREAKER CO

Inventor(s): (std): T PLATZ ELWOOD ; PLATZ ELWOOD T ; ELWOOD T PLATZ

Inventor(s): PLATZ ELWOOD T GROSSE POINTE FARMS MICH V ST A

Title: CURRENT LIMITING **CIRCUIT BREAKERS****Abstract:** Source: US3523261A [EN] ABSTRACT OF THE DISCLOSURE

A **circuit breaker** with high interruption capacity is j.-realized by utilizing an electromagnetic loop that expands instantly when high current develops, to part the **contacts** initially and to cause continued **contact**-opening motion to full fault-current interruption. Responsiveness to the electrodynamic force is preserved and adequately 20 large **contacts** are utilized without the corresponding consequence of **contact**-parting bounce at the instant of closing, by providing a gradual **contact**-closing operation that is completed with a short, sudden motion. In one form, the **contact** which is operated with minimum bounce 25 to close the **circuit breaker** is also the **contact** that is moved electrodynamicallly to open the breaker; and in this construction the electrodynamic force unlatches the breaker-opening **mechanism**. In the other form, one **contact** is actuated to close the **contacts** and the companion 30 **contact** is electrodynamicallly operable for opening the **circuit breaker**.

Classifications:**International (IPC 8-9):** H01H71/04 H01H73/18

H01H77/10 (Advanced/Invention);

H01H71/50 H01H71/52 (Advanced/Non-invention);

H01H71/04 H01H73/00 H01H77/00 (Core/Invention);

H01H71/10 (Core/Non-invention);

H01H (Subclass/Invention)

International (IPC 1-7): H01H1/52 H01H1/54 H01H71/40 H01H71/50

H01H73/04 H01H73/06 H01H73/52 H01H77/02 H01H77/10

H01H81/04

CPC: H01H71/04 H01H71/504 H01H71/522 H01H71/525 H01H73/18

H01H77/10 H01H77/104 H01H2071/046 H01H2071/2427

H01H2071/507 H01H2071/7481 H01H2300/046 H01H2300/048

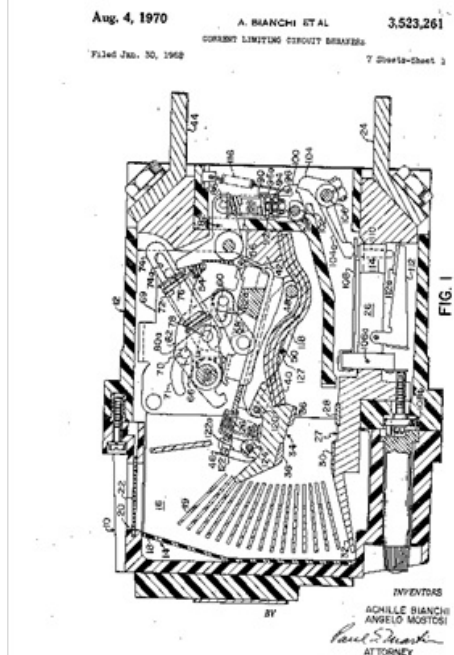
European: H01H71/04 H01H73/18 H01H77/10 T01H300/046

T01H300/048 T01H71/04D T01H71/24C1 T01H71/50D T01H71/50L2

T01H71/52B T01H71/52B6 T01H71/74G T01H77/10C2

US: 335/16

PatBase - US3523261_A

**Family:**

Publication number	Publication date	Application number	Application date
BE710116 A	19680530		19680130
CH484508 A	19700115	CH19680001381	19680130
DE1638114 A1	19710527	DE1968S113919	19680130
DE1638114 B2	19730301	DE1968S113919	19680130
DE1638114 C3	19790913	DE1968S113919	19680130
DE1788148 A1	19730524	DE19681788148	19680130
DE1788148 B2	19760129	DE19681788148	19680130
DE1788148 C3	19760909	DE19671788148	19680130
DK137556 B	19780320	DK19680000356	19680130
DK137556 C	19780904	DK19680000356	19680130
ES350269 A1	19690501	ES19680350269	19680130
FR1553328 A	19690110		19680130
GB1193222 A	19700528	GB19680004614	19680130
NL6801378 A	19680731	NL19680001378	19680130
NO129929 B	19740610	NO19680000379	19680130
SE348592 B	19720904	SE19680001202	19680130
US3523261 A	19700804	US19680701721	19680130

Priority:

IT19670012055 19670130 IT19670023307 19671129

Probable Assignee: PROVIDENT IND INC

Assignee(s): (std): C E COSTRUZ ELETTROMECCANI SPA ; C E COSTRUZIONI ELECTROM SPA ; C E S P A COSTRUZIONI ELECTROM ; C E S P A COSTRUZIONI ELETROME ; C E SA ; FEDERAL PACIFIC ELECTRIC CO ; SACE COSTRUZIONE ELETTROME SPA ; SACE SPA ; C E SPA COSTRUZ ELETTROMECCANI

Assignee(s): PROVIDENT IND INC ; S A C E S P A COSTRUZIONE ELETTROMECCANICHE BERGAMO ITALIEN ; S A C E S P A COSTRUZIONI ELETTROMECCANICHE ; S A C E S P A COSTRUZIONI ELETTROMECCANICHE ; SACE SPA COSTRUZIONI ELETTROMECCANICHE IT ; S A C E SPA COSTRUZ ELETTROMECCANICHE ; S A C E S P A COSTRUZIONI ELECTROMECCANICHE ; S A C E -S P A COSTRUZIONI ELETTROMECCANICHE BERGAMO (ITALIEN) ; SACE ; SACE COSTRUZIONE ELETTROMECCANICHE SPA ; CHALLENGER FUSE CORP ; CHALLENGER ACQUISITION CORP ; CHALLENGER LIC CORP ; CHALLENGER DPT CORP ; PROVIDENT IND ; S A C E S P A COSTRUZIONE ELETTROMECCANICHE

Inventor(s): (std): ACHILLE BIANCHI ; ANGELO MOSTOSI ; BIANCHI ACHILLE ; MOSTOSI ANGELO ; MOSTOSI A ; BIANCHI A

Inventor(s): BIANCHI A IT ; MOSTOSI A IT ; BERGAMO

Title: Multipole **circuit breaker** with modular assembly

Abstract: Source: US5479143A [EN] Each breaking module is formed by a parallelepipedic monoblock cartridge made of plastic material, housed in the corresponding compartment of the base plate, said cartridge housing at least a stationary **contact**, an arc extinguishing chamber, and a pair of connecting strips for connection to a terminal and to the trip module of the same pole. A mechanical **actuation** module constituted by the switching bar and **mechanism** assembly, is securedly united to the cover. The rotary trip bar is supported by clipping means, arranged on the bottom face of the cover. A plurality of recesses and cutouts are arranged in the spacers of the base plate to act as first bearing surfaces respectively for the switching bar and trip bar when the first sub-assembly A composed of the base plate with the set of breaking modules and trip modules, is adjoined with the second sub-assembly B formed by the cover on which the mechanical **actuation** module, trip bar and latch are fitted.

Classifications:

International (IPC 8-9): H01H31/00 H01H71/02 H01H71/10

H01H73/00 H01H73/02 H01H73/06 H01H73/48

H01H83/02 (Advanced/Invention);

H01H71/16 H01H71/24 H01H73/00 (Advanced/Non-invention);

H01H71/02 H01H71/10 H01H73/00 H01H83/00 (Core/Invention);

H01H31/00 H01H71/12 (Core/Non-invention)

International (IPC 1-7): H01H31/00 H01H71/00 H01H71/02

H01H71/10 H01H71/10000 H01H71/52 H01H71/52000 H01H73/00

H01H73/02 H01H73/06 H01H73/48 H01H83/02 H01H9/02

CPC: H01H71/0228 H01H71/1009 H01H71/16 H01H71/24

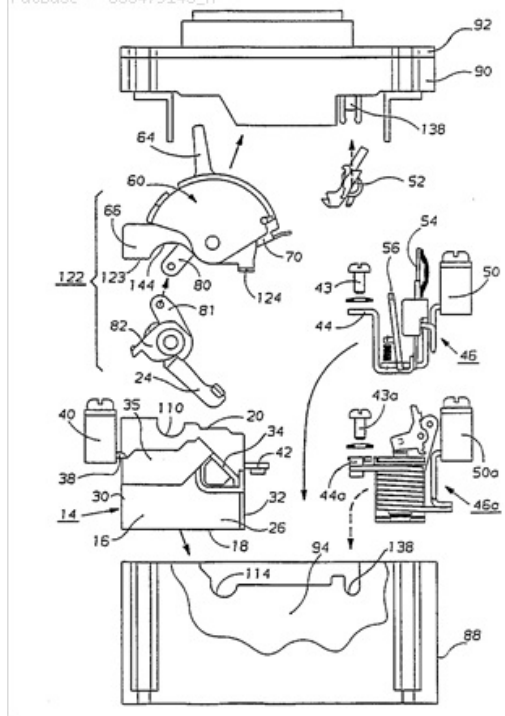
H01H2071/1036

European: H01H71/02B3 H01H71/10B T01H71/10B3 T01H71/16

T01H71/24

US: 335/16 335/202 335/8

PatBase - US5479143_A



Title: Improvements in machines for manufacturing hollow glassware

Abstract: Source: GB274917A [EN] Blowing ; gathering.-A machine for making glassware comprises a number of **mould** units which are brought in turn to a position at which a charge of glass is gathered by suction, and the **moulds** of each unit are so controlled that the unit can be set to perform a series of movements the timing of which is different from the timing of corresponding movements in the other units. Thus each unit of the machine can be set to make an article of different size and weight. General construction. The machine comprises a bedplate 1 carrying a hollow rotating ring 8 on which pairs of hollow columns 24 are mounted. The interior spaces of the columns are connected with the interior of the central boss of the bedplate by way of a port 23, formed in the ring 8, and the hollow radial arms 21 of the bedplate. The pairs of columns 24 form the supports for the **mould** units and they are bolted together at their upper ends by means of a spider 27 and bridge castings 26. Each unit comprises a finishing **mould mechanism** carried by a casting 28 which slides between the columns 24. The holders 32, 33, to which the halves of the **mould** are secured, are pivoted on the front end of the casting 28 and they are moved, to open or close the **mould**, by the piston rod of an air cylinder 38 which is also secured to the casting 28. An air cylinder 39, bolted to the ring 8 between the columns 24, raises or lowers the casting 28 and, therefore, the finishing **mould**. The **mould** bottom is carried by a bracket 52. The parison **moulds** 74a are supported by a casting 65 which slides between the columns 24 and is moved up and down by an air cylinder 80 adjustably secured to the bridge casting 26 by means of a screw 83. The whole of the parison **mould mechanism** may be adjusted vertically by turning the screw 83 by means of a handwheel 88, so that **moulds** of different length carried by the different units may be made to dip equal distances into the metal when making a gather. An air cylinder 67, carried by the casting 65, opens and closes the parison **mould** by means of toggle links 71 connecting the piston rod with the **mould** holders. A bracket 90, bolted to the columns 24, supports a transfer cylinder 91 and an air-feed cylinder 92. The piston rod 95 of the transfer cylinder carries a blowhead 99 and ring **mould mechanism**, and the blowhead is also connected to a pipe 98 which telescopes into the cylinder 92 and serves to connect the blowhead with supplies of air or to a vacuum tank. The blowhead contains the plug for forming the mouth of the article being made, and a small air cylinder for operating the plug. Application of suction when making a gather causes the mouth plug to be lowered into the ring **mould**, while the application of air to blow up the parison raises the plug out of the **mould**. The halves of the ring **mould** are supported on the underside of the blowhead and are opened and closed by a cam 114 which is turned by an air cylinder 117 through a rack 118 and a shaft 116. Air supply.-The spider 27 which connects the units has hollow radial arms which are connected with the hollow bridge-castings 26 and the cylinder 91, 92. The hub of the spider receives a stationary air chamber 125, and each arm of the spider is connected with this chamber through a groove 126 the length of which can be adjusted. The adjustment of this length varies the position in the rotation of the machine at which air is admitted, to the blowhead and the period during which air is admitted, and this setting can be different for each of the **mould** units. A slip ring 132, having compartments connected to the spider arms by pipes 133, rotates around a chamber 134 divided into two compartments one of which contains air for blowing the parisons while the other is connected to a vacuum pump. Air for operating the cylinders of the machine is supplied by a pipe 137 to a chamber 138 and thence through a compartmented slip ring 139 by radial pipes 141 to timing valves A, J. These valves are operated by adjustable stationary cams A, J, and, in conjunction with trip valves on the units, control the timing and the sequence of operation of the different cylinders. A **circuit breaker** may be provided to stop the electric motor which drives the machine if the pressure of the air supply should become reduced or stopped. Cooling **moulds**.-Air is directed on to the parison **mould** holders by means of cowls 77 supplied with air through pipes 78 from the hollow column 24. Dampers 79 control the quantity of air supplied. Air for cooling the finishing **moulds** is supplied from the interior of the columns 24 through pipes 50 to a barrel 58 and thence, by way of telescoping pipes 47, to cowls 42 secured on the **mould** holders 32, 33. Gathering.-The machine gathers a charge of metal into each parison **mould** by suction either from a rotating tank or from a forehearth 202. A skimming device is arranged between each **mould** unit to skim the surface of the metal before a **mould** dips into it to make a gather. This device consists of a hollow water-cooled member which is dipped into and raised out of the metal by an air cylinder 190, Fig. 2. A second cylinder 193 moves the skimmer radially, so that when the device is in the metal, it is moved outwards from the machine and pushes chilled metal out of the path of the following parison **mould**. Cutting-off excess metal.-A shearing device is carried on a bracket 54 bolted between the columns 24, and it comprises an air cylinder 55 to the piston rod of which a shear blade 58 and a hollow baffle plate 57 are secured. The baffle plate closes the bottom of the parison **mould** after the thread of metal has been cut off by the blade on completion of the gathering operation. In another construction, swinging shear blades are used, and a separate baffle plate, operated by its own air cylinder, is swung upwards against the bottom of the parison **mould** after the shears have opened. Removing formed articles.-An automatic takeout device, comprising fingers mounted on a hinged lever, is arranged to remove the finished ware from the machine. The device can be mounted on a semicircular track and carried round with the unit until the finished ware has been removed.

Classifications:

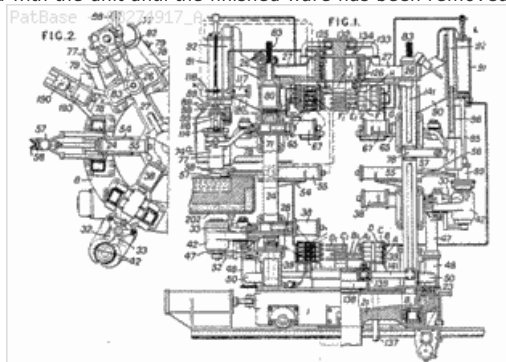
International (IPC 8-9): C03B9/22 (Advanced/Invention);

C03B9/00 (Core/Invention)

International (IPC 1-7): C03B9/22

CPC: C03B9/22

European: C03B9/22



Family:

Publication number	Publication date	Application number	Application date
GB274917 A	19270728	GB19260002568	19260128

Priority:

GB19260002568 19260128

Probable Assignee:

SIDNEY JAMES SELLAR

Assignee(s): (std):

SIDNEY JAMES SELLAR

Title: LOW VOLTAGE **CIRCUIT BREAKER**

Abstract: There is described a low voltage **circuit breaker** which comprises a **case** housing at least one fixed **contact** and a movable **contact** engageable with and disengageable from the fixed **contact**, an **actuating mechanism** operatively associated with said movable **contact**, at least a first and a second connection terminal electrically connected respectively to the fixed **contact** and to the movable **contact**, and an arc chamber. The arc chamber is positioned between the fixed **contact** and a conducting element having a first end electrically connected to the second connection terminal and a second end terminating with a bottom side. The arc chamber comprises a plurality of shaped conducting plates interposed between the fixed **contact** and the second end of the conducting element. Moreover, a body comprising a second insulating **case** which encloses an element made of ferromagnetic material is positioned adjacent to the plurality of shaped conducting plates, and defines a space for passage of the movable **contact** during movement thereof between the closed position and the open position.

Classifications:

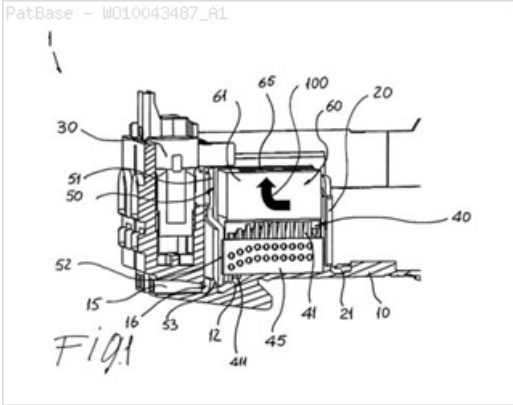
International (IPC 8-9): H01H9/34 H01H9/36

H01H9/44 (Advanced/Invention);

H01H9/30 (Core/Invention)

CPC: H01H9/346 H01H9/36 H01H9/446

European: H01H9/36 H01H9/44C T01H9/34E



Family:

Publication number	Publication date	Application number	Application date
CN102187416 A	20110914	CN200980140848	20090928
CN102187416 B	20140625	CN200980140848	20090928
DE602009039459 D1	20160811	DE200960039459T	20090928
EP2335260 A1	20110622	EP20090736164	20090928
EP2335260 B1	20160629	EP20090736164	20090928
IT1391125 B1	20111118	IT2008MI01826	20081015
ITMI20081826 A1	20100416	IT2008MI01826	20081015
RU2011119485 A	20121210	RU20110119485	20090928
RU2505876 C2	20140127	RU20110119485	20090928
WO10043487 A1	20100422	WO2009EP62558	20090928

Priority:

EP20090736164 20090928 IT2008MI01826 20081015 WO2009EP62558 20090928

Probable Assignee: ABB SPA

Assignee(s): (std): ABB S P A ; ABB SPA ; ANTONIAZZI ALBERTO ; CHIARAVALLI MATTEO ; TINELLI MARCO ; PALEARI IVAN ; ABBATTISTA TOMMASO ; VILLANI ANDREA

Inventor(s): (std): ABBATTISTA TOMMASO ; ABBATTISTA TOMMAZO ; ALBERTO ANTONIAZZI ; ANDREA VILLANI ; ANTONELLO PAOLO ; ANTONIATSTSI AL BERTO ; ANTONIAZZI ALBERTO ; CHIARAVALLI MATTEO ; IVAN PALEARI ; K JARAVALLI MATTEO ; MARCO TINELLI ; MATTEO CHIARAVALLI ; PALEARI IVAN ; TINELLI MARCO ; TINELLI MARKO ; TOMMASO ABBATTISTA ; VILLANI ANDREA

Agent(s): KUHNEN AND WACKER PATENT U RECHTSANWALTSBUERO; GIAVARINI FRANCESCO; DE BORTOLI EROS; GIAVARINI FRANCESCO ET AL

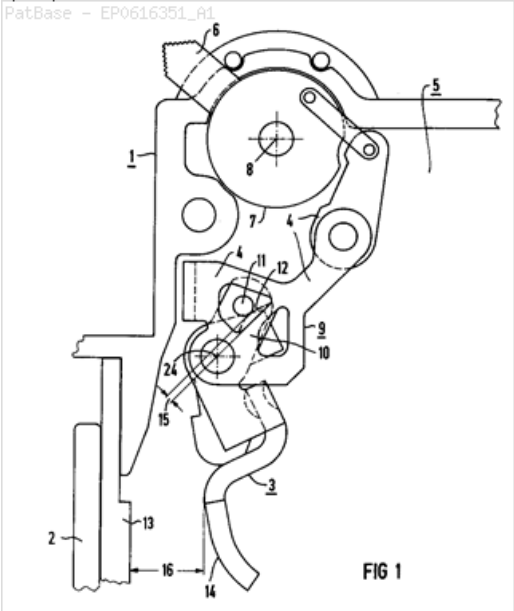
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Title: Switching device, in particular **circuit breaker**.

Abstract: A switching device, in particular a **circuit breaker**, such as a line protection **circuit breaker**, at least one of whose switching **contacts** (2, 3) is connected, as a moving **contact** (3) via a kinematic system (4) which may be part of a latching **mechanism** (5), to a manual operating device (6), and whose **contact** erosion can be compensated for by means of an adjustable excess movement. It is provided, that, in the kinematic system (4), one element interacts as a clamping lever (9) with the moving **contact** (3), in that the clamping lever (9) or moving **contact** (3) has, in a stiff basic structure (33, cf. FIG 9), a web which can bend out as an adjusting web (10) which rests, by means of an engagement body (11), on an associated bearing edge (12) when the **contacts** (2, 3) are in the open position.

Classifications:

International (IPC 8-9): H01H1/34 H01H73/04 (Advanced/Invention);
H01H1/12 H01H73/00 (Core/Invention)
International (IPC 1-7): H01H1/34 H01H7/10 H01H7/16 H01H73/04
H01H73/04 H02D
CPC: H01H1/34 H01H73/04 H01H2011/0075
European: H01H1/34 H01H73/04 T01H11/00F



Family:

Publication number	Publication date	Application number	Application date
AT138760 E	19960615	AT19930104531T	19930319
DE59302753 D1	19960704	DE19935002753	19930319
EP0616351 A1	19940921	EP19930104531	19930319
EP0616351 B1	19960529	EP19930104531	19930319
ES2088804 T3	19960916	ES19930104531T	19930319
IL108702 A0	19940530	IL19940108702	19940218
IL108702 A1	19980816	IL19940108702	19940218
IL108746 A0	19940530	IL19940108746	19940223
IL108746 A1	19970218	IL19940108746	19940223
TR27419 A	19950414	TR19940000159	19940215

Priority:

EP19930104531 19930319

Probable Assignee:

SIEMENS AG

Assignee(s): (std):

SIEMENS AG

Assignee(s):

SIEMENS AKTIENGESELLSCHAFT

Inventor(s): (std):

WEINZIERL CHRISTIAN DIPL ING

Agent(s):

REINHOLD COHN AND PARTNERS

Designated states:

AT BE CH DE ES FR GB IT LI PT

Title: Multipole **circuit breaker** with removable trip unit

Abstract: Source: US4468645A [EN] The present invention relates to a disconnectable connection between a trip unit and **circuit breaker**. The disconnectable connections between the removable trip unit and the **circuit breaker** unit include inclined connection lugs so as to provide access to the set-screws of the connections on the narrow side face of the **circuit breaker** casing.

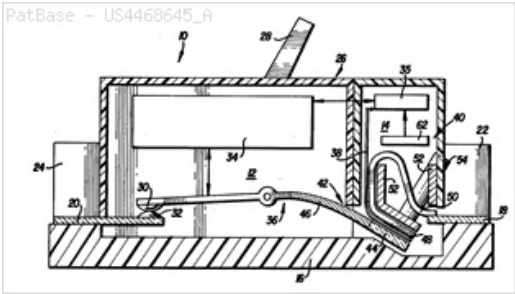
Classifications:

International (IPC 8-9): H01H71/02 H01H71/08 H01H71/74
H01H73/20 H01H73/48 H01H75/12 (Advanced/Invention);
H01H71/00 H01H71/02 H01H71/08 H01H73/00 (Core/Invention)
International (IPC 1-7): H01H71/02 H01H71/08 H01H71/12
H01H71/74 H01H73/06 H01H73/48 H01H75/12

CPC: H01H71/08 H01H71/7409

European: H01H71/08 H01H71/74B

US: 335/176 335/42



Family:

Publication number	Publication date	Application number	Application date
CA1169451 A1	19840619	CA19820411570	19820916
DE3263008 D1	19850515	DE19823263008	19820920
EP0076719 A1	19830413	EP19820401699	19820920
EP0076719 B1	19850410	EP19820401699	19820920
ES516082 A0	19830601	ES19820516082	19820929
ES8306424 A1	19830601	ES19820516082	19820929
FR2514195 A1	19830408	FR19810018840	19811005
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JP1026026 Y2	19890803	JP19880059795U	19880502
JP1812105 Y	19900914	JP19880059795U	19821004
JP58135542 A2	19830812	JP19820174433	19821004
JP63176252 U1	19881115	JP19880059795U	19880502
US4468645 A	19840828	US19820418422	19820915

Priority:

CA19820411570 19820916 FR19810018840 19811005

Probable Assignee: GERIN MERLIN RUE HENRI TARZE

Assignee(s): (std): MERLIN GERIN

Assignee(s): MERLIN GERIN S A ; MERLIN GERIN SA ; MOREL ROBERT ; GERBERT GAILLARD ALAIN ; GERIN MERLIN RUE HENRI TARZE ; MERLIN ET GERIN

Inventor(s): (std): ARAN JIERUBEERUUGAYAARU ; GERBERT GAILLARD ALAIN ; MOREL ROBERT ; ROBEERU MORERU

Inventor(s): ALAIN GERBERT GAILLARD ET ROBERT MOREL

Agent(s): ROBIC ROBIC AND ASSOCIES ASSOCIATES

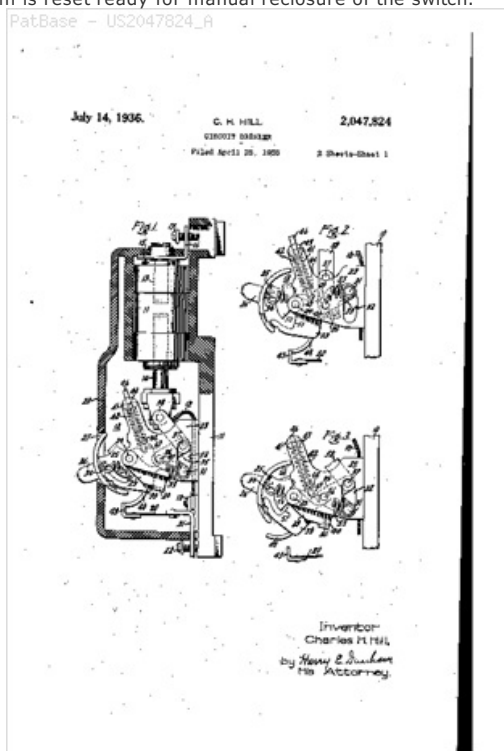
Designated states: BE CH DE GB IT LI NL SE

Title: **CIRCUIT BREAKER**

Abstract: Source: GB462790A [EN] [Class 38 (v)] Arc-rupturing devices; **cases.** -The base 10 of **moulded** insulation has side walls 11 and intermediate walls 12. . . 14 which extend to bearing blocks 15, the trip device 16, and lowermost end of the base, respectively, so as to form a number of compartments corresponding to the poles of the switch. A cross-wall 19 is also provided, Fig. 2. Extending between each terminal 20 and the cross-wall 19 is a conductor 22 and from each terminal 21 a conductor 25 extends to the cross-wall, this circuit including also conductors 27, 28 between which is a heater element 116 forming part of the trip device 16. The adjacent ends of bars 22, 25 have **contacts** 30 adapted to be bridged by **contacts** 32 of silver on a bridge 31, which is mounted within a carrier 33 and controlled by springs 36. A strip 38 carrying an arcing tip 37 is riveted in a slot in the carrier and connected to bar 25, to form a shunt to bridge 31. These are shunted by an arc-extinguishing device comprising a cylindrical compression chamber 41 with a fibre liner 45 surrounding fixed and movable **contacts** 46, 47. **Contact** 46 is connected to bar 22 by a bar 48, and is insulated from 41 by bushings 49, 50 and a washer 51 which, with a soft copper washer 55, make a gas-tight closure. A cap 56 with intervening gasket is threaded into the lower end of 41 to make a gas-tight closure for the movable **contact** 47, and a plug 58 with leather sealing washers 60 has a skirt 59 for directing such gases as escape along the **contact** 47 away from the bridge 31. In the open position, the sealing is aided by the shoulder 61 engaging the seat 62. An extension 63 on the **contact** 47 is connected to bar 25 and is slotted at 66 to receive a pin 65 on an operating lever 34 which carries the bridge 31, a spring 67 being provided for ensuring that **contacts** 46, 47 open after, and close before, the arcing tips 37. The levers 34 of all the poles are clamped at 69 to a common bar 68 for conjoint operation. Manual operation. The handle 74 is pivoted to a pin 72 in a U-frame 71 mounted on the bar 25 and has a pair of extensions 77 to which are pivoted the yokes 80 each carrying the rods 81 and plate 82. A U-member 79 pivoted to a pin 78, which engages in slots 86 in frame 71, serves as upper abutment to springs 83, Fig. 8. Pin 78 also engages a slot in a triangular plate 88 which is pivoted to frame 71 at 89 and to a link 87, which is pivoted to one of the levers 34. A further pair of levers 84 with cross-bar 85 are pivoted at 72 and carry the pin 78. When the handle 74 is moved downwards from the position shown in Fig. 2, the extensions 77 move the springs 83 and associated parts past the deadcentre position corresponding to pin 72, so moving the pin 78 in a direction to break the toggle 87, 88 and open the circuit. The reverse happens on reversely moving the handle, the toggle being extended to provide good **contactpressure**. Automatic tripping. The pin 72 carries a further lever 91, the free end of which carries a member 94 co-operating with a latch 93. Pivoted at 95 to lever 91 are a pair of pins 98 which are guided in the bar 25 and base 10 and surrounded by springs 92 bearing on surfaces 96 on the pins 98. When the latch 93 is deflected on overload, the springs 92 rotate lever 91 clockwise so that an arm 100 thereon bearing on the member 85 moves the levers 84 to open the circuit. Resetting is effected by lowering the handle so that a part 101 thereon engages a part 102 on lever 91 to restore it to the latched position, whereupon reverse movement of the handle recloses the switch. Electromagnetic and thermal trip devices. Latch 93 is carried on a member 104 pivoted at 105 and is adapted to be moved by impact from a surface 106a of a member 106 which is pivoted at 107, is under control of spring 121, and is held set by a part 114 thereon engaging a part 112a on a trip bar 112 controlled by springs 113 and common to all the poles. Bar 112 can be acted on either by the common armature 119 of U-shaped cores 118 partially surrounding the bars 28, or by means of insulating pins 117 moved by the flexure of bimetal elements 115 heated by the elements 116. When bar 91 is released, it releases a U-shaped, spring-urged reset member 108 which is pivoted at 109. Each limb of member 108 carries a pin 110 which engages a cam finger 111 on the member 106 to reset the latter behind the projecting part 112a. Thus, the latch system is reset ready for manual reclosure of the switch.

Classifications:**International (IPC 8-9):** H01H71/02 H01H71/52 (Advanced/Invention);

H01H71/02 H01H71/10 (Core/Invention)

International (IPC 1-7): H01H73/00 H01H73/22 H01H73/24 H01H9/40**CPC:** H01H71/0207 H01H71/52**European:** H01H71/02B H01H71/52**US:** 337/36 337/46 337/48 337/53 337/55 337/59 337/69 337/83**Family:**

Publication number	Publication date	Application number	Application date
DE723326 A	19420803	DE1936A079199	19360425
GB462790 A	19370316	GB19360011936	19360427
US2047816 A	19360714	US19350018138	19350425
US2047824 A	19360714	US19350018127	19350425

Priority:

US19350018127 19350425 US19350018138 19350425

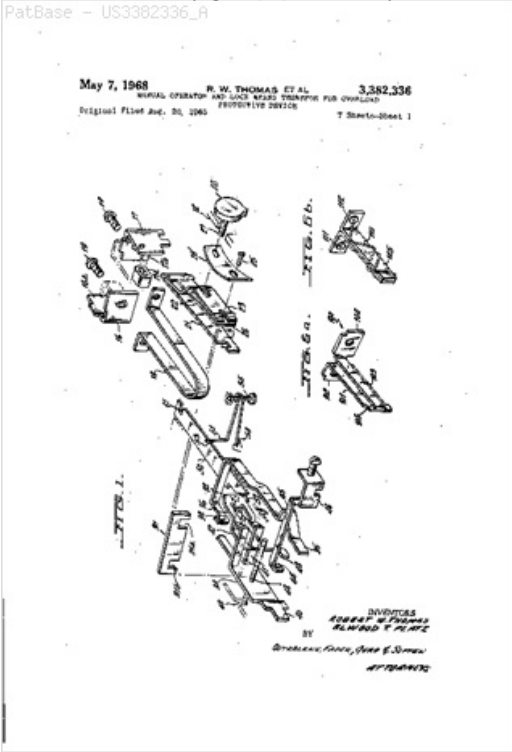
Probable Assignee: GEN ELECTRIC**Assignee(s):** (std): BRITISH THOMSON HOUSTON CO LTD ; GEN ELECTRIC ; AEG**Assignee(s):** ALLGEMEINE ELEKTRICITAETS GES ; ALLGEMEINE ELEKTRICITAETS GESELLSCHAFT ; GENERAL ELECTRIC CO ; GENERAL ELECTRIC COMPANY ; THE BRITISH THOMSON HOUSTON COMPANY LIMITED**Inventor(s):** (std): ATWOOD WINFIELD A ; HILL CHARLES H

Title: Manual operator and lock means therefor for overload protective device

Abstract: Source: GB1028634A [EN] 1,028,634. Thermal switches. I.T.E. **CIRCUIT BREAKER** CO. March 25, 1963 [Sept. 20, 1962], No. 11785/63. Heading H2B. A **moulded case** overload responsive thermal switch has a bimetal actuator 21 heated by a current carrying loop 18 and mounted at one end on a main support 22 attached to which is an auxiliary support 24 deformable with respect to 22 by a preset adjustment screw 25, the complete unit comprising bimetal and supports 22, 24 being pivotable about a bearing surface 29 of the housing by a knob 28 to set the operating temperature. The bimetal 21 acts through a slide 31 on a coil spring 47 to snap **contacts** 32, 33 open upon overload but the bimetal is insufficiently resilient to reclose the switch upon cooling, this being done by depressing a reset slide 50 against a bias spring (Figs. 1, 4, not shown). The slide 50 can be held down, by a latch 58 (Fig. 2, not shown) engaging a slot in the slide, when the switch becomes self reclosing. Substitution of a different slide 50a (Fig. 6, not shown) allows the switch to be opened manually as well. Alternative forms of the heater are described (Figs. 6a, 6b, not shown). Auxiliary signalling **contacts** 43, 44 are provided. Three overload switches 10 are pluggable into a base 150 mounted upon a **contactor** 200 (not described) and connections are made within the base to connect all the **contacts** 32, 33 in series with the **contactor** coil (Fig. 7a, 8, not shown).

Classifications:

International (IPC 8-9): H01H50/20 H01H71/10 H01H71/16
H01H71/74 H01H73/30 (Advanced/Invention);
H01H50/16 H01H71/00 H01H71/10 H01H71/12
H01H73/00 (Core/Invention)
International (IPC 1-7): H01H71/16 H01H71/74 H01H73/22
CPC: H01H50/20 H01H71/10 H01H71/16 H01H71/7436 H01H73/30
H01H2071/109
European: H01H50/20 H01H71/10 H01H71/16 H01H71/74D1
H01H73/30 T01H71/10G
US: 200/122 200/428 337/102 337/107 337/41 337/49 337/53
337/57



Family:

Publication number	Publication date	Application number	Application date
GB1028634 A	19660504	GB19630011785	19630325
US3226510 A	19651228	US19620225044	19620920
US3382336 A	19680507	US19670617714	19670221

Priority:

US19620225044 19620920 US19670617714 19670221

Probable Assignee: ITE CIRCUIT BREAKER LTD

Assignee(s): (std): ITE CIRCUIT BREAKER LTD

Assignee(s): SIEMENS ALLIS INC ; SIEMENS ALLIS INC A DE CORP ; I T E CIRCUIT BREAKER CO ; I T E CIRCUIT BREAKER COMPANY

Inventor(s): (std): PLATZ ELWOOD T ; THOMAS ROBERT W

Title: Multi-phase circuits incorporating electric **circuit breakers**

Abstract: Source: GB1018865A [EN] 1,018,865. Automatic **circuit breakers**; protective arrangements. DORMAN and SMITH Ltd. May 13,1964 [April 4,1963], No. 13315/63. Headings H2B and H2K. A **circuit breaker** associated with series fuses F1-F3 (Fig. 4, not shown), has a pair of undervoltage coils 44 connected between the phases on the load side of the fuses so that upon failure of a fuse, such as upon short-circuits very much above the rated current of the breaker, the breaker is tripped. The breaker is provided with the usual tripping devices, electromagnet 42 and-bimetal 43, in each phase, acting on a common trip bar 38 to release a latch 35, a further latch 31 and thus a retaining lever 30 to break a toggle linkage (not shown) to open **contacts** 16, 17. The breaker is reset by moving a handle 25 to the off position and thence to the closed position; a snap-action spring (not shown) is provided. The coils 44 are also mounted on the breaker housing and act, when de-energized, through rods 51 upon the common trip bar 38. A projection 50 on handle 25 acts on arms 49 attached to the armatures 45 of the undervoltage coils to reset them when the breaker is reset. In an alternative arrangement (Fig. 5, not shown) the fuses are on the load side of the breaker and the undervoltage coils can additionally be energized from the supply by a switch RS which must be closed while the breaker is reset.

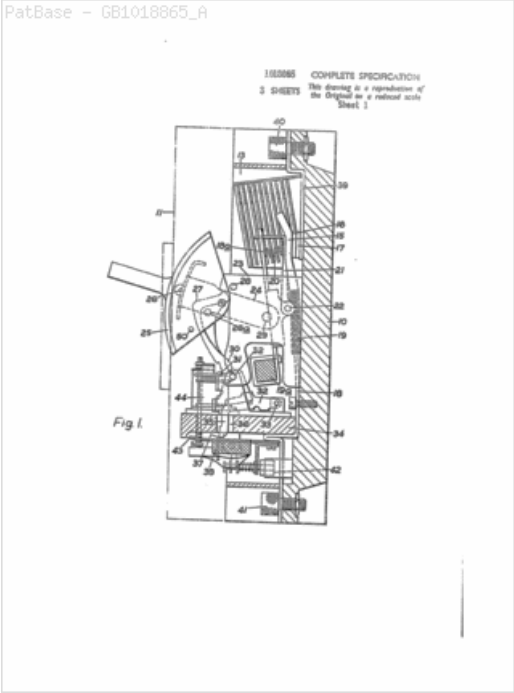
Classifications:

International (IPC 8-9): H01H9/10 (Advanced/Invention);
H01H9/00 (Core/Invention)

International (IPC 1-7): H01H71/18

CPC: H01H9/10

European: H01H9/10



Family:

Publication number	Publication date	Application number	Application date
GB1018865 A	19660202	GB19630013315	19630404

Priority:

GB19630013315 19630404

Probable Assignee:	DORMAN AND SMITH LTD
Assignee(s): (std):	DORMAN AND SMITH LTD
Assignee(s):	DORMAN AND SMITH LIMITED
Inventor(s): (std):	ATHERTON THOMAS GEOFFREY FENTO
Inventor(s):	ATHERTON THOMAS GEOFFREY FENTON

Title: High rating multipole **circuit breaker** formed by two adjoined molded **cases**

Abstract: Source: US4884047A [EN] The **circuit breaker** is formed by two adjoined standard multipole molded **cases**, resin being cold-cast between the opposite side walls, comprising reliefs, of the two **cases** in order to provide fixing. A spacer, secured by bolts to the side walls of the two **cases**, defines their distance apart and can be used to cooperate with a racking cam when the **circuit breaker** is drawn into a fixed frame. The **circuit breaker** comprises an electronic trip device, an operating **mechanism** and an operating bar of the poles common to all the poles. At least two adjacent poles are twinned, that is to say electrically connected in parallel.

Classifications:

International (IPC 8-9): H01H71/02 H01H73/06 H01H73/36

H02B1/46 (Advanced/Invention);

H02B1/04 (Advanced/Non-invention)

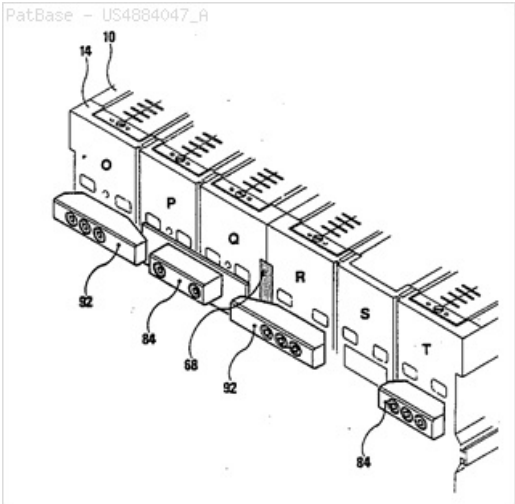
International (IPC 1-7): H01H71/02 H01H71/08 H01H73/06

H01H73/36 H01M75/00 H02B13/00 H02B13/04

CPC: H01H71/0271 H01H2071/1036 H02B1/041 H02B1/46

European: H01H71/02D1 H02B1/46 T01H71/10B3 T02B1/04B

US: 335/10 361/634



Family:

Publication number	Publication date	Application number	Application date
DE3878429 D1	19930325	DE19883878429	19881201
DE3878429 T2	19930902	DE19883878429T	19881201
EP0320412 A1	19890614	EP19880420403	19881201
EP0320412 B1	19930210	EP19880420403	19881201
FR2624649 A1	19890616	FR19870017447	19871210
FR2624649 B1	19900406	FR19870017447	19871210
JP1251531 A2	19891006	JP19880310979	19881208
JP2708511 B2	19980204	JP19880310979	19881208
US4884047 A	19891128	US19880279457	19881205

Priority:

FR19870017447 19871210

Probable Assignee: MERLIN GERIN

Assignee(s): (std): MERLIN GERIN

Assignee(s): MERLIN GERIN RUE HENRI TARZE F ; FA MERLIN GERIN GRENOBLE FR ; MERLIN ET GERIN

Inventor(s): (std): PIERRE BAGINSKI ; PIEERU BAJIYANSUKI ; MARUKU BIYUURU ; MARC BUR ; JIYANNPIERU NEBON ; JEAN PIERRE NEBON ; NEBON JEAN PIERRE ; BUR MARC ; BAGINSKI PIERRE

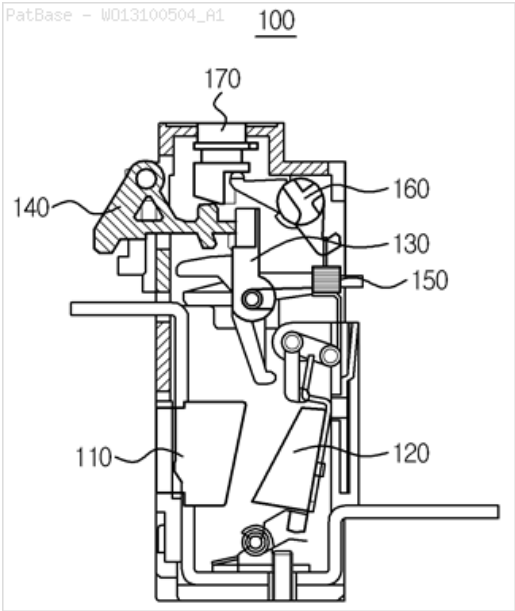
Inventor(s): BAGINSKI PIERRE F 38050 GRENOBLE CEDEX FR ; BUR MARC F 38050 GRENOBLE CEDEX FR ; NEBON JEAN PIERRE F 38050 GRENOBLE CEDEX FR

Designated states: DE GB IT

Title: INSTANT ADJUSTING DEVICE FOR MOLDED CASE CIRCUIT BREAKER

Abstract: A molded case circuit breaker of the disclosed technology is connected to a main circuit to allow current to flow through the circuit breaker. The molded case circuit breaker comprises a fixed contact, a movable contact, a switching device, a handle, a trip unit and an arc quenching unit. The trip unit includes a fixed magnet fixed at the main circuit and generates an electromagnetic force when an abnormal current flows through the main circuit; an armature, one end of which is spaced apart from the fixed magnet by a fixed spacing and the other end of which has a stepped tilt surface for enabling the other end to contact the fixed magnet during rotation; and an instant bar which contacts the stepped tilt surface of the armature and moves linearly in left and right directions to rotate the armature such that the spacing between the fixed magnet and the armature can be adjusted. The molded case circuit breaker of the present invention is configured such that the armature has the stepped tilt surface having a tilt angle and such that the instant bar rotates the armature through left and right linear motions, and thus can adjust the spacing between the fixed magnet and the armature and set the size of the abnormal current where a trip may occur.

Classifications:
International (IPC 8-9): H01H71/10 H01H73/04 (Advanced/Invention)
CPC: H01H71/7463 H01H2071/7481 H01H71/2472



Family:

Publication number	Publication date	Application number	Application date
DE602012023171 D1	20161027	DE201260023171T	20121223
EP2800122 A1	20141105	EP20120862436	20121223
EP2800122 A4	20150826	EP20120862436	20121223
EP2800122 B1	20160914	EP20120862436	20121223
KR101206540 B1	20121130	KR20110145064	20111228
RU2573642 C1	20160127	RU20140131050	20121223
TR201618497 T4	20170123	TR20160018497T	20121223
WO13100504 A1	20130704	WO2012KR11331	20121223

Priority:

EP20120862436 20121223 KR20110145064 20111228 WO2012KR11331 20121223

Probable Assignee: HYUN DAI HEAVY IND CO LTD

Assignee(s): (std): HYUN DAI HEAVY IND CO LTD ; KHEHNDEH KHEHVI INDASTRIZ KO LTD

Assignee(s): HYUNDAI HEAVY IND CO ; HYUNDAI HEAVY IND CO LTD ; HYUNDAI HEAVY INDUSTRIES CO LTD ; KHEHNDEH KHEHVI INDASTRIZ KO

Inventor(s): (std): DZUN YOUNG MIN ; JUN YOUNG MIN ; KIM SE JONG ; KIM SE YONG

Inventor(s): SE YONG KIM ; YOUNG MIN JUN

Agent(s): DELORME NICOLAS; FULYA SUEMERALP; JUNG BU YON

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 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 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

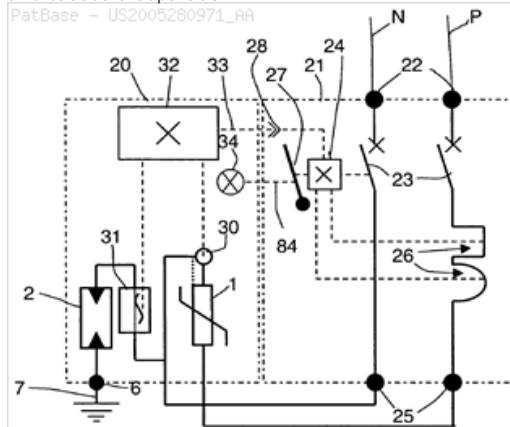
Abstract: Source: US200528091A [EN] The voltage surge protection device comprises at least one protection module designed to be connected to an electric switchgear apparatus. The protection module comprises at least one protective element for protection against voltage surges and separating means connected to at least one protective element to cause an electrical and/or mechanical separation representative of a fault of a protective element following an increase of temperature and/or electric current. The protection module comprises means for mechanical **actuation** connected to said separating means and comprising a mechanical control link. The electrical control link is placed in a tripped state representative of a fault of at least one protective element when said separating means have caused a separation.

International (PC 8-9): H01C7/10 H01H37/76 H01H83/10 H01T1/16
H02H1/00 H02H3/08 H02H3/20 H02H3/38
H02H9/04 (Advanced/Invention);
H01C7/10 H01H37/00 H01H83/00 H01T1/00 H02H1/00 H02H3/20
H02H3/38 H02H9/04 (Core/Invention)

International (IPC 1-7): H01H83/00 H01H83/10 H02H1/00 H02H3/08
H02H3/20 H02H3/38 H02H9/00 H02H9/04

European: H01H83/10 H02H9/04C

US: 361/111 361/125 361/131



Publication number	Publication date	Application number	Application date
AT353471 E	20070215	AT20050354018T	20050408
BRPI0502336 A	20060207	BR2005PI02336	20050615
BRPI0502336 B1	20161213	BR2005PI02336	20050615
CN100546145 C	20090930	CN200510078919	20050617
CN1710770 A	20051221	CN200510078919	20050617
DE602005000540 D1	20070322	DE200560000540T	20050408
DE602005000540 T2	20071108	DE200560000540T	20050408
EP1607995 A1	20051221	EP20050354018	20050408
EP1607995 B1	20070207	EP20050354018	20050408
ES2281065 T3	20070916	ES20050354018T	20050408
FR2871932 A1	20051223	FR20040006657	20040618
FR2871932 B1	20060804	FR20040006657	20040618
IN00728CH2005 A	20070727	IN2005CH00728	20050615
IN245771 B	20110204	IN2005CH00728	20050615
JP2006004950 A2	20060105	JP20050178737	20050620
JP4606952 B2	20110105	JP20050178737	20050620
US2005280971 AA	20051222	US20050148175	20050609
US7656640 BB	20100202	US20050148175	20050609

FR20040006657 20040618 FR20040406657 20040618

Assignee(s): (std): SCHNEIDER ELECTRIC IND S A S ; SCHNEIDER ELECTRIC IND SA ; SCHNEIDER ELECTRIC IND SAS ; SCHNEIDER ELECTRIC INDUSTRIES S A S

Assignee(s): SCHNEIDER ELECTRIC INDUSTRIES SAS ; SCHNEIDER ELECTRIC INDUSTRIES SAS SOCIETE PAR ACTI ; SCHNEIDER ELECTRIC INDUSTRIES SAS SOCIETE PAR ACTIONS SIMPLIFIEE ; SCHNEIDER ELECTRIC IND SAS SOC PAR ACTIONS SIMPLIF ; SCHNEIDER ELECTRIC IND

Inventor(s): (std): ALAIN DOMEJEAN ERIC FAGNOUL JO ; ALAIN VANDERMOTTEN ; DOMEJEAN ERIC ; FAGNOUL JOEL ; FAGNOUL JOUL ; JEAN BAPTISTE TALLIER ; JOEL FAGNOUL ; JOUL FAGNOUL ; ERIC DOMEJEAN ; TALLIER JEAN B ; TALLIER JEAN BAPTISTE ; VANDERMOTTEN ALAIN

Inventor(s): FAGNOUL JOEEL ; TALLIER JEAN ; DOMEJEAN ERIC FAGNOUL JOEL TALLIER JEAN B ; DOMEJEAN ERIC FAGNOUL JOEL TALLIER JEAN B VANDERMO

Agent(s): SCHNEIDER ELECTRIC IND SAS; STEPTOE AND JOHNSON LLP; STEPOE AND JOHNSON LLP

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

Title: Molded-**case** electric **circuit breaker**

Abstract: Source: GB1031971A [EN] 1,031,971. Automatic **circuit breakers**. D SQUARE CO. March 13, 1964, No. 10610/64. Heading H2B. The **circuit breaker** described in Specification 893,282 is rearranged for higher voltage, lower current rating so as to incorporate within a casing having the same overall dimensions an improved arc-chute 74, 75 and an electromagnetic tripping device of higher ampere turns. The tripping device comprises a core 54 (Fig. 12, not shown) upon which is pivoted an armature 44 carrying a latch plate 52. A bimetal 70 passes through the core 54 and acts upon a part 45 of the armature. About one arm of core 54 is wound a coil 66 connected between the line terminal 64 and the secured end of the bimetal 70. For maximum sensitivity the coil 66 can be of nickel chromium alloy acting as a heater for the bimetal. For reduced sensitivity coil 66 is reduced in turns until in the limit (Fig. 9, not shown) it comprises a simple strap 80 which together with bimetal 70 forms a single turn. Further reduction may be achieved by bending a tongue 82 on the core 54 which supports it in the housing thus increasing the air gap between the armature 44 and core 54. Conjoint **actuating** links and tripping bar can be inserted at 35, 50 respectively for multiple use.

Classifications:

International (IPC 8-9): H01H71/40 (Advanced/Invention);

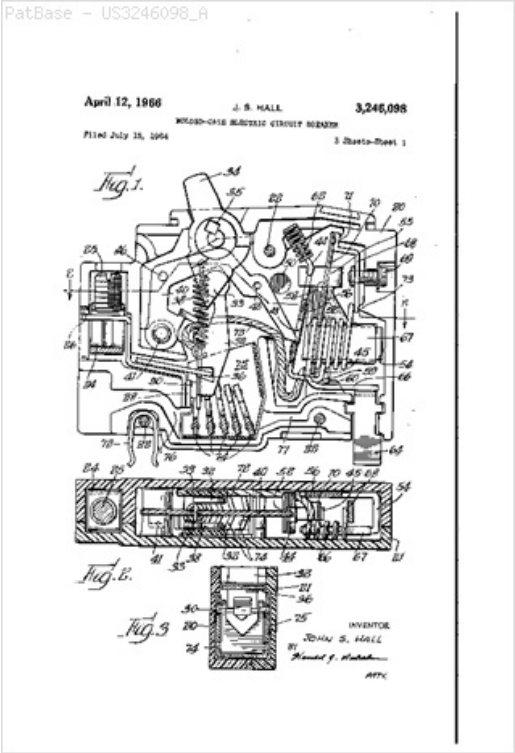
H01H71/12 (Core/Invention)

International (IPC 1-7): H01H71/74 H01H73/08 H01H73/52 H01H83/00

CPC: H01H71/40

European: H01H71/40

US: 335/35 335/41



Family:

Publication number	Publication date	Application number	Application date
AU5616065 A1	19660915	AU19650056160	19650310
DE1513442 A1	19690703	DE1965S095921	19650312
DE1513442 B2	19711209	DE1965S095921	19650312
FR1427417 A	19660204	FR19650009005	19650312
GB1031971 A	19660602	GB19640010610	19640313
US3246098 A	19660412	US19640382732	19640715

Priority:

GB19640010610 19640313 GB19640010610 19640313

Probable Assignee: SQUARE D CO

Assignee(s): (std): SQUARE CO D ; SQUARE COMPANY D ; SQUARE D CO

Assignee(s): SQUARED CO ; SQUARE D COMPANY ; D SQUARE CO ; D SQUARE COMPANY

Inventor(s): (std): HALL JOHN S ; SPENCER HALL JOHN ; HALL JOHN SPENCER

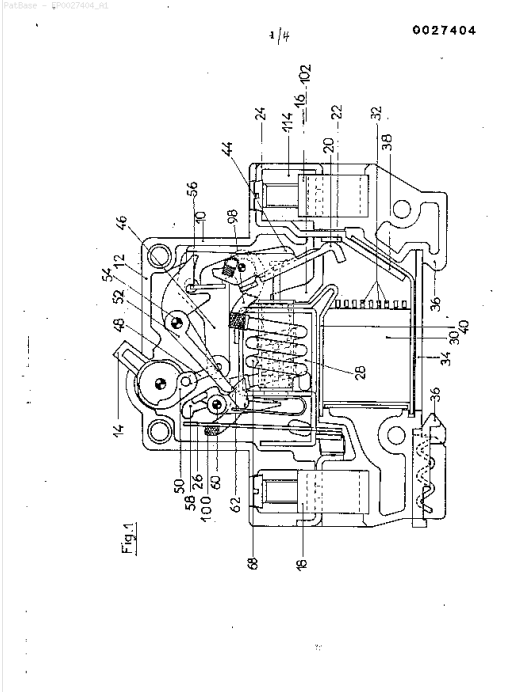
Inventor(s): JOHN SPENCER HALL

Title: Miniature electric **circuit breaker** in **moulded case**.

Abstract: 1. Miniature electric **circuit breaker** with **moulded** casing comprising: - a cut off chamber (30) enclosed by two electrodes (38, 40) to guide the arc, disposed to pick up an arc drawn between **contacts** (20, 22) when they get separated, - an electromagnetic trip device (28) having a coil (68) and a plunger (74) controlling a release latch (58) when a fault occurs to induce the automatic opening of said **contacts** (20, 22), - an **actuation** rod (80) coupled to the plunger (74) and acting on a rotating moving **contact** (20) to accelerate the shift of the moving **contact** (20) toward the opening position when the coil (68) of said trip device (28) is excited, - and a sleeve (70) to guide in translation the plunger (74), characterized in that said plunger (74) presents a general form of a barrel or a rib accommodating gaps for the compressed air passage by the piston effect generated when the plunger (74) moves quickly inside the sleeve (70) and allowing a limited motion of the plunger rotation inside the sleeve (70) during the opening travel of the rotating moving **contact** (20).

Classifications:

International (IPC 8-9): H01F7/16 H01H71/08
H01H71/24 (Advanced/Invention);
H01F7/08 H01H71/08 H01H71/12 (Core/Invention)
International (IPC 1-7): H01F7/16 H01H3/28 H01H71/08 H01H71/24
H01H73/52
CPC: H01F7/1607 H01F2007/083 H01H71/08 H01H71/2454
H01H71/2463 H01H2001/5861
European: H01F7/16A H01H71/08 H01H71/24G T01F7/08A2
T01H1/58F1 T01H71/24F



Family:

Publication number	Publication date	Application number	Application date
DE3068610 D1	19840823	DE19803068610	19801003
EP0027404 A1	19810422	EP19800401404	19801003
EP0027404 B1	19840718	EP19800401404	19801003
ES495920 A0	19810616	ES19800495920	19801014
ES8105890 A1	19810616	ES19800495920	19801014
FR2468202 A1	19810430	FR19790025859	19791016
FR2468202 B1	19860307	FR19790025859	19791016

Priority:

FR19790025859 19791016

Probable Assignee: MERLIN GERIN

Assignee(s): (std): MERLIN GERIN

Assignee(s): MERLIN GERIN S A ; MERLIN GERIN SA ; MERLIN ET GERIN

Inventor(s): (std): BARRAL BARON JEAN ; LAZARETH MICHEL ; REYNAUD FRANCOIS

Inventor(s): JEAN BARRAL BARON MICHEL LAZARETH ET FRANCOIS REYN ; JEAN BARRAL BARON MICHEL LAZARETH ET FRANCOIS...

Designated states: BE CH DE GB IT LI NL SE

Title: AN IMPROVED DOUBLE-BREAK LOW VOLTAGE **CIRCUIT BREAKER** CONSTRUCTION FOR HIGH CURRENT BREAKING

Abstract: Source: IN01045MU2014A [EN] An improved double-break low voltage **circuit breaker** construction for high current breaking is disclosed. The **circuit breaker** constitutes the electrical **contacts** 6 that provide a path to carry the electrical current in the network and other components that ensures the efficient current breaking during the fault conditions. A **moulded case circuit breakers** (MCCB) disclosed comprises of at least one pole assembly (1); at least one release assembly (2); at least one **mechanism** assembly (3); a termination (4); and at least one external periphery (5).

Classifications:

International (IPC 8-9): H01H71/24 H01H73/02 (Advanced/Invention)

Family:

Publication number	Publication date	Application number	Application date
IN01045MU2014 A	20151113	IN2014MU01045	20140326

Priority:

IN2014MU01045 20140326

Probable Assignee: LARSEN AND TOUBRO LTD

Assignee(s): LARSEN AND TOUBRO LTD

Inventor(s): BHANUSHALI NIKUNJ ; DASH DEBASMITA ; PUTHIYARAMBATH NEENA

Title: Reset only rocker guard for split case circuit breaker

Abstract: Source: US5486660A [EN] A split case magnetic circuit breaker has a bracket secured to the front of the breaker housing similar to that used to provide a rocker for operating the breaker manually and for resetting the breaker when tripped. The bracket is formed with a small access window so that the rocker can be reset, but cannot be manually switched off.

Classifications:

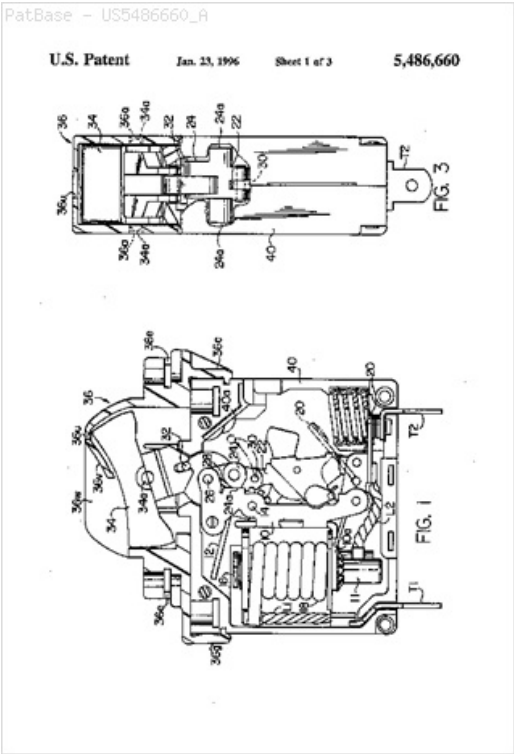
International (IPC 8-9): H01H71/10 H01H71/54 (Advanced/Invention);
H01H71/02 H01H71/52 H01H9/22 (Advanced/Non-invention);
H01H71/10 (Core/Invention);
H01H71/02 H01H9/20 (Core/Non-invention)

International (IPC 1-7): H01H71/02 H01H71/02 H01H71/54
H01H9/02 H01H9/02 H01H9/28

CPC: H01H9/223 H01H71/025 H01H71/1054 H01H71/528 H01H71/54
H01H2003/028

European: H01H71/10D H01H71/54 T01H3/02I T01H71/02C
T01H71/52E T01H9/22B

US: 200/303 200/401 200/43.16 200/43.19



Family:

Publication number	Publication date	Application number	Application date
DE69501647 D1	19980402	DE19956001647	19950614
DE69501647 T2	19980618	DE19956001647T	19950614
EP0694947 A1	19960131	EP19950304094	19950614
EP0694947 B1	19980225	EP19950304094	19950614
ES2116041 T3	19980701	ES19950304094T	19950614
GR3026241 T3	19980529	GR19980400351T	19980226
US5486660 A	19960123	US19940259864	19940615

Priority:

US19940259864 19940615 US19940259864 19940615

Probable Assignee: CARLING TECHNOLOGIES INC

Assignee(s): (std): CARLINGSWITCH INC

Assignee(s): CARLINGSWITCH INC PLAINVILLE CONN US ; CARLING TECHNOLOGIES INC

Inventor(s): (std): FASANO MICHAEL ; FASANO MICHAEL A ; SORENSON RICHARD W

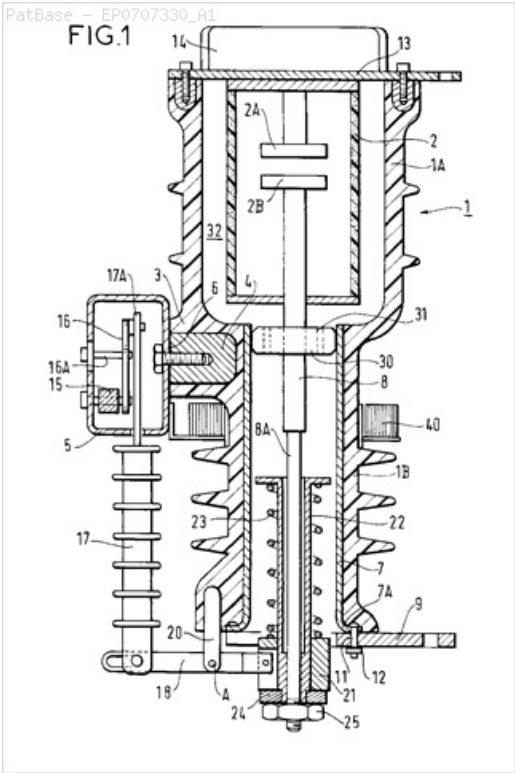
Designated states: CH DE ES FR GB GR IT LI PT SE

Title: Load break switch

Abstract: The **circuit breaker** includes the vacuum tube (2) which has **contact** breakers (2A,2B) and an **actuating** rod (8) which passes inside a lower tubular section (1B) with an inner metallic section (7). The two units are enclosed by a **moulded** synthetic resin section (1). The lower end of the tubular section allows passage of the **actuating** element rod extension (8A) and the outer metallic section clamps onto a fixing block (9). Movement of a side arm (17) effects the make/break circuit by moving the **actuating** element rod.

Classifications:

International (IPC 8-9): H01H33/66 H01H33/666 (Advanced/Invention); H01H1/00 H01H1/58 H01H9/52 (Advanced/Non-invention)
International (IPC 1-7): H01H33/42 H01H33/66
CPC: H01H1/0015 H01H1/5833 H01H9/52 H01H33/6606 H01H33/666 H01H2009/526 H01H2033/6613
European: H01H33/666 H01H33/66T T01H1/00C T01H1/58D T01H33/66T1 T01H9/52 T01H9/52B



Family:

Publication number	Publication date	Application number	Application date
AT204676 E	20010915	AT19950402257T	19951009
DE69522282 D1	20010927	DE19956022282	19951009
DE69522282 T2	20020516	DE19956022282T	19951009
EP0707330 A1	19960417	EP19950402257	19951009
EP0707330 B1	20010822	EP19950402257	19951009
EP0707330 B9	20020515	EP19950402257	19951009
ES2159612 T3	20011016	ES19950402257T	19951009
FR2725830 A1	19960419	FR19940012295	19941014
FR2725830 B1	19970103	FR19940012295	19941014

Priority:

FR19940012295 19941014

Probable Assignee: GEC ALSTHOM T AND D SA

Assignee(s): (std): GEC ALSTHOM T AND D SA

Assignee(s): GEC ALSTHOM T ET D S A ; GEC ALSTHOM T ET D S A PARIS ; GEC ALSTHOM T ET D SA

Inventor(s): (std): EYNAUD FLORENT ; SANNINO LUCIEN

Designated states: AT BE CH DE DK ES GB IT LI NL SE

Title: **Actuating mechanism** with isolating device for electrical **circuit breaker**.

Abstract: A rotary **actuating mechanism** for a **circuit-breaker** comprises an isolating device (13) having a mechanical link (14) reformable under the action of the operating force exerted on the knob (10) when the said force exceeds a predetermined threshold corresponding to the welding of the **contacts**. The knob (10) is then blocked by a stop (28) in an intermediate position situated between the open dead point (PMO) and the open position (O).

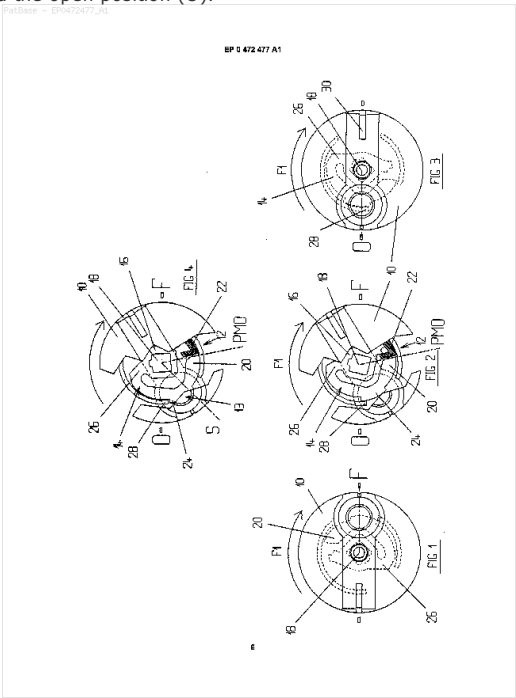
Classifications:

International (ipc 8-9): H01H71/50 (Advanced/Invention);
H01H71/56 (Advanced/Non-invention)

International (ipc 1-7): H01H71/10 H01H71/50

CPC: H01H71/501 H01H71/56 H01H2009/288

European: H01H71/50B T01H71/56 T01H9/28F



Family:

Publication number	Publication date	Application number	Application date
DE69113179 D1	19951026	DE19916013179	19910724
DE69113179 T2	19960418	DE19916013179T	19910724
EP0472477 A1	19920226	EP19910420274	19910724
EP0472477 B1	19950920	EP19910420274	19910724
ES2079615 T3	19960116	ES19910420274T	19910724
FR2666168 A1	19920228	FR19900010665	19900823
FR2666168 B1	19921030	FR19900010665	19900823

Priority:

FR19900010665 19900823

Probable Assignee: SCHNEIDER ELECTRIC SA

Assignee(s): (std): MERLIN GERIN ; SCHNEIDER ELECTRIC SA

Assignee(s): SCHNEIDER ELECTRIC S A ; SCHNEIDER ELECTRIC S A BOULOGNE BILLANCOURT FR

Inventor(s): (std): MARC SERPINET ; MARIN PACHE REYNALD ; REYNALD MARIN PACHE ; SERPINET MARC

Inventor(s): SERPINET MARC F 38050 GRENOBLE CEDEX FR ; MARIN PACHE REYNALD F 38050 GRENOBLE CEDEX FR

Designated states: BE CH DE ES GB IT LI SE

Title: Tightly joined wire mesh deionizing device for a current breaker

Abstract: Source: US5889249A [EN] The invention relates to a gas deionization device and an arc extinguishing chamber notably for a multipole low voltage **circuit breaker** with a molded **case**. A porous shield comprising one or more superposed metallic wire cloths. Each cloth is formed by a criss-crossing of straight wire yarns spaced apart from and parallel to one another with tight joined undulated wire yarns that extend appreciably perpendicular to the straight wire yarns, and pass alternately over and under at least one of the successive straight wire yarns. At least three superposed wire cloths have progressive mesh openings.

Classifications:

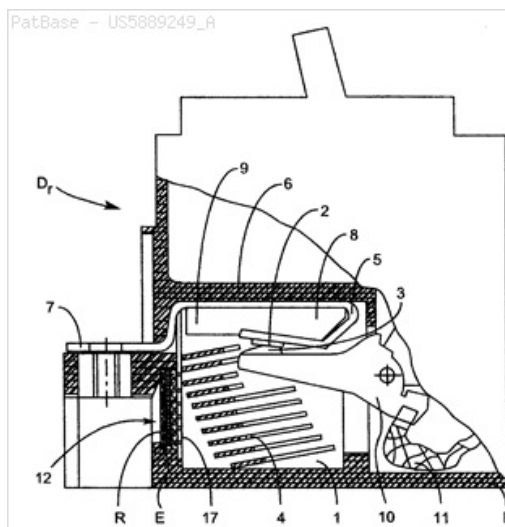
International (IPC 8-9): H01H9/34 (Advanced/Invention);
H01H9/30 (Core/Invention)

International (IPC 1-7): H01H33/04 H01H33/08 H01H33/10
H01H71/00 H01H73/18 H01H9/30 H01H9/34 H01H9/36

CPC: H01H9/342

European: H01H9/34C

US: 218/149 218/150 218/156 218/157



Family:

Publication number	Publication date	Application number	Application date
■ CN1072832 C	20011010	CN19971005586	19970619
■ CN1169581 A	19980107	CN19971005586	19970619
■ DE69712413 D1	20020613	DE19976012413	19970613
■ DE69712413 T2	20021121	DE19976012413T	19970613
■ EA000443 B1	19990826	EA19970000069	19970627
■ EA199700069 A1	19971230	EA19970000069	19970627
■ EP0817223 A1	19980107	EP19970410062	19970613
■ EP0817223 B1	20020508	EP19970410062	19970613
■ ES2176649 T3	20021201	ES19970410062T	19970613
■ FR2750531 A1	19980102	FR19960008301	19960628
■ FR2750531 B1	19980807	FR19960008301	19960628
■ KR100441805 B1	20041103	KR19970028202	19970627
■ KR19980005116 A	19980330	KR19970028202	19970627
■ US5889249 A	19990330	US19970869915	19970605

Priority:

FR19960008301 19960628

Probable Assignee: SQUARE D CO

Assignee(s): (std): SCHNEIDER ELECTRIC IND SA ; SCHNEIDER ELECTRIC IND SAS ; SCHNEIDER ELECTRIC SA

Assignee(s): SQUARE D CO ; SCHNEIDER ELECTRIC IND ; SCHNEIDER ELECTRIC INDUSTRIES S A RUEIL MALMAISON ; SCHNEIDER ELECTRIC INDUSTRIES SA ; SCHNEIDER ELECTRIC INDUSTRIES SAS ; SCHNEIDER ELECTRIC S A

Inventor(s): (std): CLERY YVES ; KILINDJIAN CHRISTIAN ; KILINDJIAN CHRISTOPHE ; RIVAL MARC ; BONENTE SERGE ; KILINDJIAN CHRISTOPHE

Inventor(s): YVES CLERY ; CHRISTOPHE KILINDJIAN ; MARC RIVAL

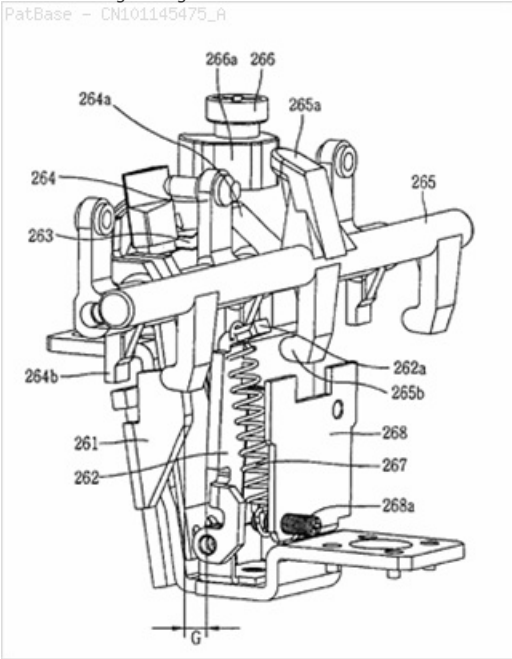
Designated states: BE DE ES GB IT

Title: **Moulded case** type **circuit breaker** instant tripping device

Abstract: Source: CN101145475A [EN] An instantaneous trip **mechanism** used in a tripping **mechanism** of a molded **case circuit breaker** is provided, which can easily regulate the sensitivity of tripping current for **actuating** the instantaneous trip operation and can provide a constant sensitivity of tripping current by using a control unit with simple structure and a product and produce molded **case circuit breakers** with reliable performance. The instantaneous trip **mechanism** for molded **case circuit breakers** comprises a fixed electromagnet for producing a magnetic force which can change along with the current flowing through the circuit; an armature being equipped oppositely to the fixed electromagnet and adapted to rotate to the tripping position of the molded **case circuit breaker** under the magnetic action of the fixed electromagnet when a current higher than the normal current flows through the circuit; a spring for elastically biasing the armature in the direction apart from the fixed electromagnet; a dial regulating member with a cam surface for regulating the space between the armature and the fixed electromagnet; and a regulating rod with one end in **contact** with the cam surface of the dial regulating member and the other end in **contact** with the armature and adapted to rotate to push the armature to change the space according to the position **contacting** with the cam surface of the dial regulating member.

Classifications:

International (IPC 8-9): H01H71/24 H01H71/74
H01H73/36 (Advanced/Invention);
H01H71/00 H01H71/12 H01H73/00 (Core/Invention)



Family:

Publication number	Publication date	Application number	Application date
 CN101145475 A	20080319	CN200610153675	20060912
 CN101145475 B	20110907	CN200610153675	20060912

Priority:

CN200610153675 20060912

Probable Assignee: LS ELECTROGENESISKABUSHIKI KAI

Assignee(s): (std): LS ELECTROGENESISKABUSHIKI KAI ; LS ELECTROGENESISKABUSHIKI KAISHA ; LS INDUSTRIAL SYSTEMS CO LTD

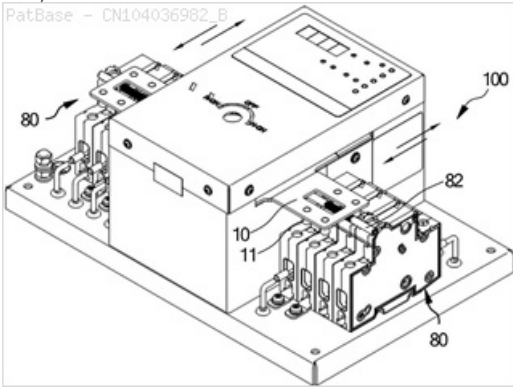
Inventor(s): (std): ZHONGQIAN SONG

Inventor(s): SONG ZHONGQIAN

Title: AUTOMATIC TRANSFER SWITCHING EQUIPMENT

Abstract: Source: IN00068DE2014A [EN] The present invention relates to automatic transfer switching equipment, comprising an **actuating mechanism** (10, 10'), wherein said **actuating mechanism** (10, 10') can perform rectilinear motion under an external force, when a miniature **circuit breaker** (80) is used by the automatic transfer switching equipment, at least two pairs of shifting blocks (11) are perpendicularly and symmetrically arranged on said **actuating mechanism** (10), and when a molded **case circuit breaker** (80') is used by the automatic transfer switching equipment, two shifting blocks (11') are perpendicularly and symmetrically arranged on said **actuating mechanism** (10'), and in these two **cases**, each of said shifting blocks (11, 11') is provided with an arc surface, and during the rectilinear motion of said **actuating mechanism** (10, 10'), said shifting block (11, 11') on one side is in **contact** with a handle (82, 82') of the **circuit breaker** (80, 80') through at least part of said arc surface, and drives said handle (82, 82') to switch off or switch on said **circuit breaker** (80, 80'). Since shifting blocks are perpendicularly arranged on the **actuating mechanism**, the introduction of other extra auxiliary parts can be avoided, thereby reducing the cost. Moreover, a shifting block which is at least provided with part of the arc surface performs rectilinear motion with the **actuating mechanism**, which can also greatly reduce the friction force between the shifting block and the handle, and the risk of failure in ATSE transfer is reduced.

Classifications:
International (IPC 8-9): H01H3/22 (Advanced/Invention);
H01H (Subclass/Invention)



Family:

Publication number	Publication date	Application number	Application date
■ CN104036982 A	20140910	CN201310073296	20130307
■ CN104036982 B	20160316	CN201310073296	20130307
■ IN00068DE2014 A	20150529	IN2014DE00068	20140109

Priority:

CN201310073296 20130307

Probable Assignee: SIEMENS AG

Assignee(s): (std): SIEMENS AG

Inventor(s): (std): BAO ZHANG YAO ; BAO ZHANGYAO ; CHEN JIA ; WU HONG FENG ; WU HONGFENG ; ZHOU GANG

Title: ELECTRIC **CIRCUIT BREAKERS**

Abstract: Source: GB1355035A [EN] 1355035 Automatic **circuit-breakers** EDWARD WILCOX and CO Ltd 27 May 1971 [27 Feb 1970] 9500/70 Heading H1N A **moulded case circuit-breaker** comprises a **contact** assembly incorporating a first armature 12 and a moving **contact** 11, a permanent magnet 13 normally attracting the armature 12 and holding the **contacts** 11, 17 closed. Tripping means 20 are operable to move a second armature 18 towards the magnet to divert some of the flux away from the first armature 12 so that a spring 16 is then able to move the first armature away from the magnet 13 to open the **contacts**. When this occurs, a spring 24 acting on the handle 23 breaks the toggle formed by the handle and a link 15, so that the handle moves to the off position and the magnet 13 is moved into **contact** with the armature 12, the armature 18 also returning to its initial position so that the **circuit breaker** is reset ready for reclosing.

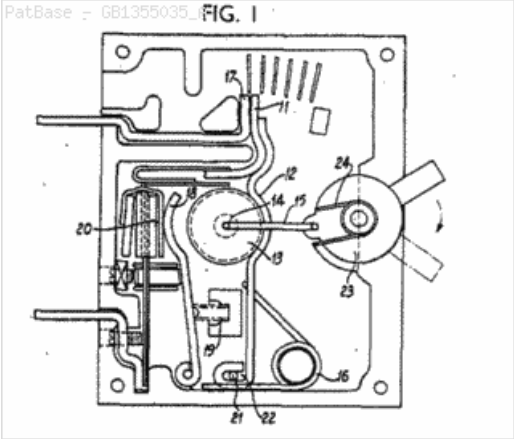
Classifications:

International (IPC 8-9): H01H71/32 H01H71/52 (Advanced/Invention);
H01H71/10 H01H71/12 (Core/Invention)

International (IPC 1-7): H01H71/12 H01H73/50

CPC: H01H71/32 H01H71/526

European: H01H71/32 H01H71/52C



Family:

Publication number	Publication date	Application number	Application date
GB1355035 A	19740605	GB19700009500	19700227

Priority:

GB19700009500 19700227

Probable Assignee:

WILCOX CO LTD EDWARD

Assignee(s): (std):

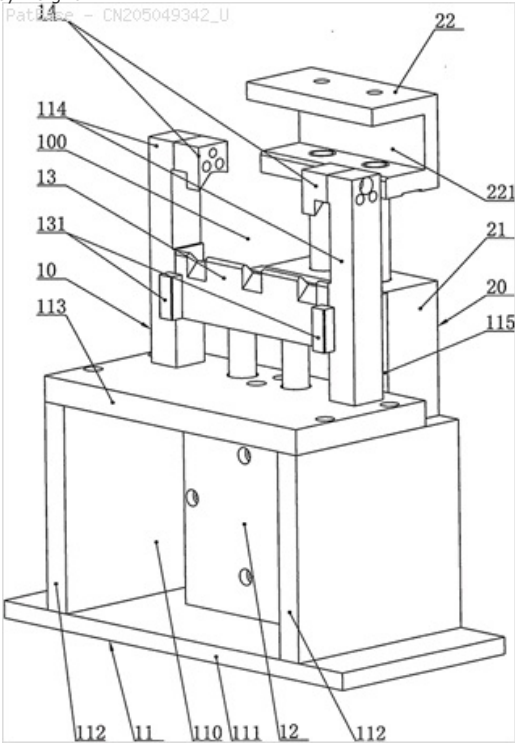
WILCOX CO LTD EDWARD

Title: **MOULDED CASE CIRCUIT BREAKER'S** PIVOT FATIGUE TEST DEVICE

Abstract: Source: CN205049342U [EN] The utility model relates to a **moulded case circuit breaker's** pivot fatigue test device, including fixture and operating device, fixture includes the mounting bracket, fix an **actuating mechanism** of the holding intracavity on the mounting bracket, the slide between two pillars on the mounting bracket clamps, set up two clamp splices in the upper end of two pillars respectively, it has a centre gripping chamber to constitute between two clamp splices and the slide, slide and **actuating mechanism** linkage set up, and the slide can press from both sides **moulded case circuit breaker's** pivot tightly at the centre gripping intracavity along with **actuating mechanism** action, operating device is including fixing the 2nd **actuating mechanism** on the mounting panel of mounting bracket, manipulation piece with the 2nd **actuating mechanism** linkage setting, be provided with a draw -in groove on one side of the manipulation epaxial moving **contact** of an orientation commentaries on classics group, the tip side of moving **contact** group clamps in the draw -in groove, moving **contact** group can be along with the upper and lower action about shaft rotation who controls the piece. The utility model has the advantages of simple structure, test efficiency height.

Classifications:

International (IPC 8-9): G01M13/00 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
 CN105241652 A	20160113	CN201510705366	20151024
 CN105241652 B	20171110	CN201510705366	20151024
 CN205049342 U	20160224	CN201520837419U	20151024

Priority:

CN201510705366 20151024

Probable Assignee: SHANGHAI YONGJI ELECTRICAL HOLDING CO LTD

Assignee(s): (std): SHANGHAI YONGJI ELECTRICAL HOLDING CO LTD

Assignee(s): SHANGHAI YONG ELECTRIC CO LTD ; SHANGHAI YONGJI ELECTRICAL HOLDING CO

Inventor(s): (std): ZHANG XIAOMIN ; ZHANG XIAOHAI ; WU QIANG ; TU JIANG ; JIN LEI ; HU YONGQIANG ; HU JIANSHUAI ; DING LINHUA ; DENG YINGSHANG

Title: Improvements in electric **circuit breakers**

Abstract: Source: GB905641A [EN] 905,641. Automatic **circuit-breakers**. CRABTREE and CO. Ltd., J. A. May 25, 1960 [June 16, 1959], No. 43427/61. Divided out of 905,639. Drawings to Specification. Class 38 (5). A **moulded case circuit-breaker** has electromagnetically-operated tripping means including an armature floatably located on a rivet projecting from a magnet frame. The circuitbreaker is that described in Specification 905,639. Specifications 905,640 and 905,642 also are referred to.

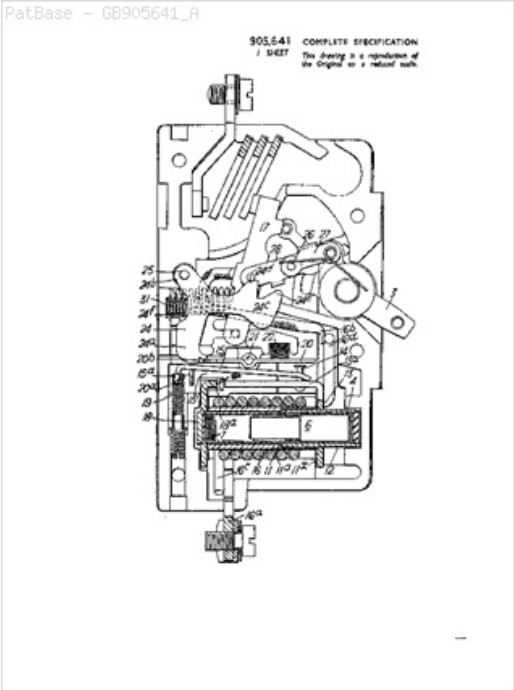
Classifications:

International (IPC 8-9): H01H71/34 H01H73/38 (Advanced/Invention);
H01H71/12 H01H73/00 (Core/Invention)

International (IPC 1-7): H01H73/40

CPC: H01H71/345 H01H73/38

European: H01H71/34B H01H73/38



Family:

Publication number	Publication date	Application number	Application date
GB905641 A	19620912	GB19610043427	19590616

Priority:

GB19610043427 19590616

Probable Assignee: CRABTREE AND CO LTD J A
Assignee(s): (std): CRABTREE AND CO LTD J A
Assignee(s): J A CRABTREE AND CO LIMITED
Inventor(s): (std): COLEMAN EDWARD

Title: AN IMPROVED DOUBLE BREAK LOW VOLTAGE MOULDED CASE CIRCUIT BREAKER

Abstract: Source: IN01037MU2014A [EN] Disclosed is an improved double break low voltage moulded case circuit breaker. In one implementation, the modular pole construction disclosed in current invention allows assembling one or multiple poles together to form a single or multi-pole breaker. This standardization simplifies assembly line/process and reduces the assembly cost and time. The pole modules (1) together with other modules, broadly mechanism module (27), chassis module (37), housing (38) forms the basic breaker (57). Now, depending upon whether Thermo-magnetic/electronic release breaker, the release unit/module (39) together with the basic breaker (57) to form full breaker (58).

Classifications:

International (IPC 8-9): H01H71/24 H01H73/02 (Advanced/Invention)

Family:

Publication number	Publication date	Application number	Application date
IN01037MU2014 A	20151002	IN2014MU01037	20140326

Priority:

IN2014MU01037 20140326

Probable Assignee: LARSEN AND TOUBRO LTD

Assignee(s): (std): LARSEN AND TOUBRO LTD

Inventor(s): (std): CHANDRAN SEENA ; MAHAJAN AMOL ; SUVARNA LAVANYA

Title: Device for adjusting a thermal tripping device for a **circuit breaker**

Abstract: The **circuit breaker** (10) includes a box (11), which houses the breaker components, and a drawer (12) **actuating** a lever which, in **case** of overheating, disconnects the mobile **contact** of the breaker. The drawer is mounted on a bimetal trigger (13) through a shoe embedded in the trigger. The trigger is provided with an adjustment device which includes an elastic rod (21) with its extremity articulated to a pivot (22). An adjustment screw (24) is housed in a recess provided in the box while its extremity rests on the elastic rod. The other extremity of the rod is attached to the trigger.

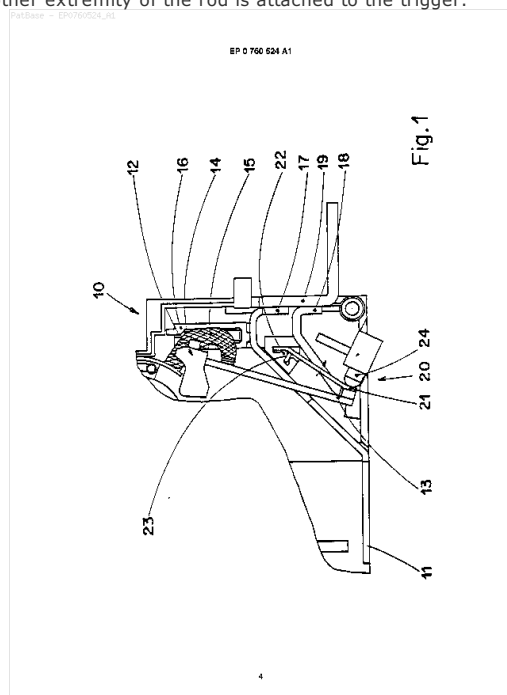
Classifications:

International (IPC 8-9): H01H37/22 H01H71/74 (Advanced/Invention);
H01H71/00 (Core/Invention);
H01H37/22 (Core/Non-invention)

International (IPC 1-7): H01H H01H37/22 H01H71/16 H01H71/74
H02H3/04

CPC: H01H71/7436

European: H01H71/74D1



Family:

Publication number	Publication date	Application number	Application date
■ CN1066846 C	20010606	CN19961010396	19960619
■ CN1142119 A	19970205	CN19961010396	19960619
■ DE69618873 D1	20020314	DE19966018873	19960610
■ EP0760524 A1	19970305	EP19960410070	19960610
■ EP0760524 B1	20020130	EP19960410070	19960610
■ FR2735614 A1	19961220	FR19950007459	19950619
■ FR2735614 B1	19970718	FR19950007459	19950619
■ HU9601552 A0	19960729	HU19960001552	19960606
■ HU9601552 AB	19970528	HU19960001552	19960606
■ HU9601552 AC	20001030	HU19960001552	19960606
■ TNSN96086 A1	19980319	TN1996SN00086	19960618
■ TNSN96086 A1	19981231	TN1996SN00086	19960618
■ TR9600518 A2	19970121	TR19960000518	19960619
■ TR970021 A2	19970121	TR19960000518	19960619
■ TW371771 B	19991011	TW19960107404	19960618

Priority:

FR19950007459 19950619

Probable Assignee: SCHNEIDER ELECTRIC INDUSTRIES SA

Assignee(s): (std): SCHNEIDER ELECTRIC IND SA ; SCHNEIDER ELECTRIC IND SAS ; SCHNEIDER ELECTRIC SA ; SCHNEIDER ELECTRIQUE SA

Assignee(s): SCHNEIDER ELECTRIC SA BOULOGNE BILLANCOURT ; SCHNEIDER ELECTRIC INDUSTRIES SASFR ; ELECTRIQUE SCHNEIDER S A ; ELECTRIQUE SCHNEIDER SA ; SCHNEIDER ELECTRIC INDUSTRIES SA ; SCHNEIDER ELECTRIC INDUSTRIES S A RUEIL MALMAISON

Inventor(s): (std): HERREROS JAVIER ; HORIROSS JAVEL ; JAVIER HERREROS

Inventor(s): XAVIER HERREROS ; JAVEL HORIROSS

Agent(s): SCHNEIDER ELECTRIC IND SAS

Designated states: BE DE ES GB GR IT

Title: Yarn delivery

Abstract: Source: US5451006A [EN] PCT No. PCT/GB92/00090 Sec. 371 Date Jul. 14, 1993 Sec. 102(e) Date Jul. 14, 1993 PCT Filed Jan. 16, 1992 PCT Pub. No. WO92/13123 PCT Pub. Date Aug. 6, 1992. A yarn delivery system including a trolley creel and a yarn guide apparatus. The trolley creel is made up of a plurality of independently moveable trolleys and each includes a set of rotatable yarn packages. When each trolley is moved into place, the yarn guide apparatus is vertically spaced therefrom. As yarns are drawn vertically from the creel, the yarn guide apparatus vertically guides them.

Classifications:

International (IPC 8-9): D02H1/00 H01H71/40 H01H71/52

H01H71/66 H01H73/50 H01H83/20 (Advanced/Invention);

H01H71/04 H01H71/10 H01H71/52 H01H83/12

H01H83/22 (Advanced/Non-invention);

D02H1/00 H01H71/10 H01H71/12 H01H73/00

H01H83/00 (Core/Invention);

H01H71/04 H01H71/10 (Core/Non-invention)

International (IPC 1-7): B65H51/00 D02H1/00 D03D49/00

H01H71/40 H01H71/52 H01H71/66 H01H73/50 H01H83/20

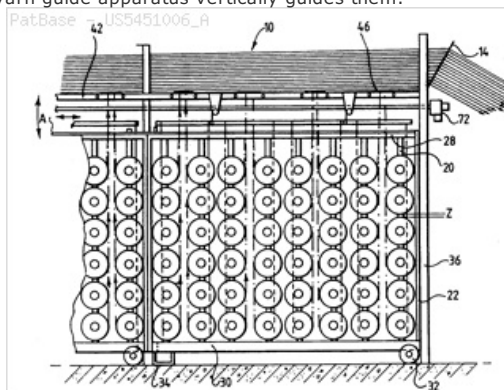
CPC: H01H71/04 H01H71/1072 H01H71/526 H01H83/12 H01H83/20

H01H83/22 H01H2071/0278 D02H1/00

European: D02H1/00 H01H83/20 T01H71/02D1B T01H71/04

T01H71/10E T01H71/52C T01H83/12 T01H83/22

US: 242/131.1 28/193



Family:

Publication number	Publication date	Application number	Application date
AU199211640 A1	19920827	AU19920011640	19920116
CN1021168 C	19930609	CN19891001031	19890303
CN1036862 A	19891101	CN19891001031	19890303
CN1036862 C	19971231	CN19921000968	19920116
CN1066899 A	19921209	CN19921000968	19920116
DE68907424 D1	19930812	DE19896007424	19890203
DE68907424 T2	19940203	DE19896007424T	19890203
DE69220477 D1	19970724	DE19926020477	19920116
DE69220477 T2	19980122	DE19926020477T	19920116
EP0331586 A1	19890906	EP19890420031	19890203
EP0331586 B1	19930707	EP19890420031	19890203
EP0567497 A1	19931103	EP19920902655	19920116
EP0567497 B1	19970618	EP19920902655	19920116
ES2104890 T3	19971016	ES19920902655T	19920116
FR2628262 A1	19890908	FR19880002907	19880304
FR2628262 B1	19950512	FR19880002907	19880304
GB9100954 A0	19910227	GB19910000954	19910116
JP2010622 A2	19900116	JP19890051817	19890303
JP2778974 B2	19980723	JP19890051817	19890303
MX9200187 A1	19920701	MX19920000187	19920116
US5451006 A	19950919	US19930087795	19930714
WO9213123 A1	19920806	WO1992GB00090	19920116
ZA8901136 A	19891025	ZA19890001136	19890214

Priority:

FR19880002907 19880304

GB19910000954 19910116

WO1992GB00090 19920116

Probable Assignee: MERLIN GERIN

Assignee(s): (std): MERLIN GERIN ; MERLIN GERIN MEYLAN ; SMITH COLIN P ; SMITH COLIN PHILIP

Assignee(s): SMITH COLIN PHILIP KNUTSFORD CHESHIRE GB ; COLIN PHILIP SMITH ; MERLIN ET GERIN ; MERLIN GERIN MEYLAN FR ; MERURAN JERAN

Inventor(s): (std): PATORITSUKU DE ROBERUTEI ; PATORITSUKU GIRON ; PATRICK DE ROBERTIS ; PATRICK GUILLON ; SMITH COLIN PHILIP ; SMITH COLIN P ; ROBERTIS PATRICK DE ; GUILLON PATRICK ; DE ROBERTIS PATRICK ; AL DE ROBERTIS PATRICK ET

Inventor(s): DE ROBERTIS PATRICK ET AL ; DE ROBERTIS PATRICK F 38050 GRENOBLE CEDEX FR ; GUILLON PATRICK F 38050 GRENOBLE CEDEX FR ; COLIN PHILIP SMITH ; SMITH COLIN PHILIP KNUTSFORD CHESHIRE GB

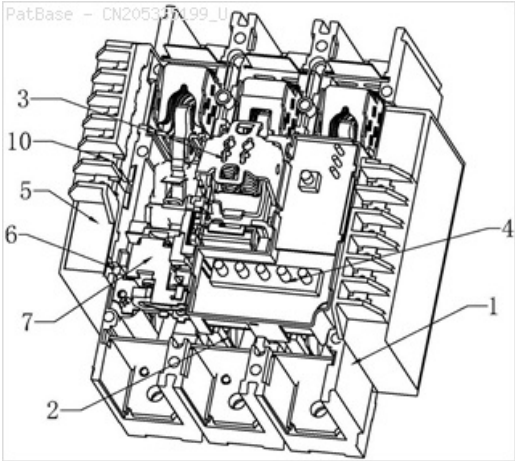
Designated states: AT AU BB BE BF BG BJ BR CA CF CG CH CI CM CS DE DK ES FI FR GA GB GN GR HU IT JP KP KR LI LK LU MC MG ML MN MR MW NL NO PL RO RU SD SE SN TD TG US

Title: SHUNT OPENING FORMULA COMMUNICATION TYPE INTELLIGENCE MOULDED CASE CIRCUIT BREAKER

Abstract: Source: CN205335199U [EN] The utility model discloses a shunt opening formula communication type intelligence moulded case circuit breaker. It includes the circuit breaker casing, installs the three -phase contact in the circuit breaker casing and installs the operating device in circuit breaker casing top, installs intelligent control ware and supplementary, warning contact in the circuit breaker casing, and the actuating mechanism of intelligent control ware can promote the operating device action, shunt release is installed to one side of circuit breaker casing, is provided with the trough on the circuit breaker casing, and the lead wire of intelligent control ware passes through the trough and connects shunt release. After adopting foretell structure, reasonable compact supplementary, warning contact and the shunt release of making of its structural configuration can both install concentratedly on the circuit breaker casing, and reasonable overall arrangement also makes the connection between each part also reliable, simultaneously, is provided with the trough on the circuit breaker casing, has also saved installation space greatly, makes from this that the circuit breaker assembly is supplementary, still realizes the shunt opening function behind the warning contact, has satisfied on - the -spot operation requirement.

Classifications:

International (IPC 8-9): H01H71/02 H01H71/10 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
■ CN205335199 U	20160622	CN201521104093U	20151225

Priority:

CN201521104093U 20151225

Probable Assignee: JIANGSU DAQO KAIFAN ELECTRICAL APPLIANCE CO LTD

Assignee(s): (std): JIANGSU DAQO KAIFAN ELECTRICAL APPLIANCE CO LTD ; JIANGSU DAQO KFINE ELECTRIC CO LTD

Assignee(s): JIANGSU DAQO KAIFAN ELECTRICAL APPLIANCE CO

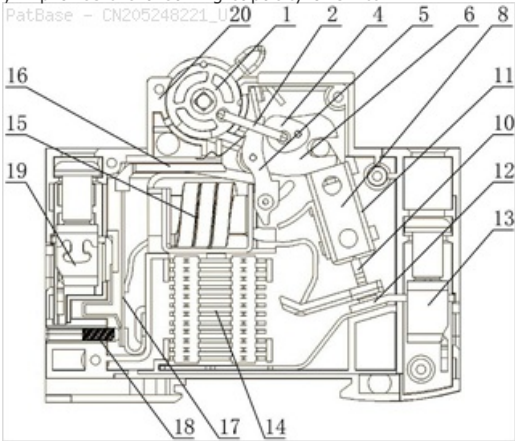
Inventor(s): (std): PAN YALI ; WANG ZHIWEI ; ZHU XIA

Title: CONTACT DIRECT ACTION TYPE MOULDED CASE CIRCUIT BREAKER

Abstract: Source: CN205248221U [EN] The utility model provides a contact direct action type moulded case circuit breaker, include the casing and be located input terminal, output terminal, static contact, moving contact, magnetism tripping device and hot tripping device etc. In the casing, the static contact with the input terminal is connected, the handle is connected with moving contact actuating mechanism, the moving contact with moving contact actuating mechanism connects, and passes through magnetism tripping device, hot tripping device are connected with output terminal, magnetism tripping device and hot tripping device with moving contact actuating mechanism cooperates use, its characterized in that be equipped with the slide on the moving contact actuating mechanism, the straight line can be followed to the moving contact the slide motion, the static contact is located on the extension line of slide. The beneficial effects of the utility model are that: the moving contact becomes linear motion's mode by rotatory wobbling motion mode, and the moving contact is attacked directly and is makeed electric arc direct motion in the direction of the piece of putting off arc that produces, can improve arc extinguishing efficiency greatly, improves the breaking capacity of switch.

Classifications:

International (IPC 8-9): H01H71/10 H01H73/04 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN205248221 U	20160518	CN201521069190U	20151221

Priority:

CN201521069190U 20151221

Probable Assignee: TIANJIN JIAMEITE ELECTRIC EQUIPMENT CO LTD

Assignee(s): (std): TIANJIN JIAMEITE ELECTRIC EQUIPMENT CO LTD

Assignee(s): TIANJIN ELECTRIC EQUIPMENT CO LTD US SPECIAL PLUS ; TIANJIN JIAMEITE ELECTRIC EQUIPMENT CO

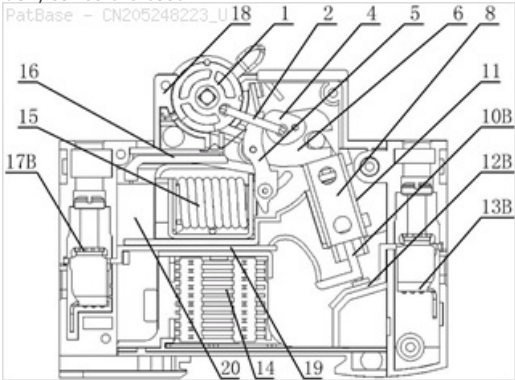
Inventor(s): (std): WANG KECHENG

Title: CONTACT DIRECT ACTION TYPE DPN MOULDED CASE CIRCUIT BREAKER

Abstract: Source: CN205248223U [EN] The utility model provides a contact direct action type DPN moulded case circuit breaker, its characterized in that includes casing moving contact actuating mechanism, magnetism tripping device and hot tripping device etc, the handle is connected with moving contact actuating mechanism, the zero line moving contact pass through the wire with the zero line conducting bridge is connected, the zero line conducting bridge with zero line output terminal connects, the live wire moving contact with moving contact actuating mechanism connects, and passes through magnetism tripping device, hot tripping device are connected with live wire output terminal, be equipped with sharp slide on the moving contact actuating mechanism, zero line moving contact and live wire moving contact all are located in the slide to can follow the motion of slide direction. Beneficial effect does: the moving contact becomes linear motion's mode by rotatory wobbling motion mode, and the moving contact is attacked directly and is makeed electric arc direct motion in the direction of the piece of putting off arc that produces, can improve arc extinguishing efficiency greatly. The control of zero line, live wire can be realized to a circuit breaker, convenient operation, saves the cost.

Classifications:

International (IPC 8-9): H01H73/04 H01H73/48 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN205248223 U	20160518	CN201521076621U	20151221

Priority:

CN201521076621U 20151221

Probable Assignee: TIANJIN JIAMEITE ELECTRIC EQUIPMENT CO LTD

Assignee(s): (std): TIANJIN JIAMEITE ELECTRIC EQUIPMENT CO LTD

Assignee(s): TIANJIN ELECTRIC EQUIPMENT CO LTD US SPECIAL PLUS ; TIANJIN JIAMEITE ELECTRIC EQUIPMENT CO

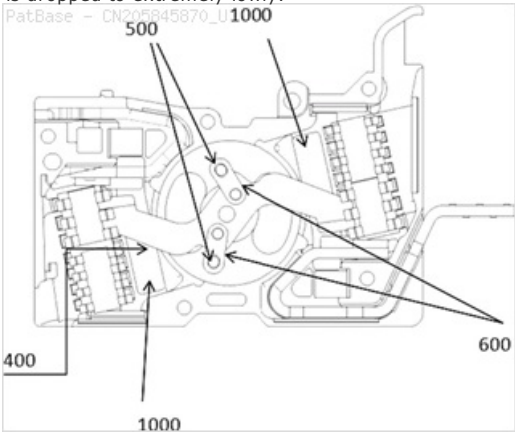
Inventor(s): (std): WANG KECHENG

Title: DISCONNECTED LOW -VOLTAGE MOULDED CASE CIRCUIT BREAKER PIVOT MECHANISM OF CURRENT -LIMITING TYPE HIGH SCORE

Abstract: Source: CN205845870U [EN] The utility model relates to a disconnected low -voltage moulded case circuit breaker pivot mechanism of current -limiting type high score, include: first static contact, the direct carrier that bears torsion, second static contact, link member, first arc extinguishing bars piece, second arc extinguishing bars piece, carrier, gasification material, elastic material, drive outside actuating mechanism for the direct carrier that bears the weight of torsion rotates, and it is rotatory to drive a link mechanism, up to a link mechanism and first static contact, second static contact dead contact, for the closure state of pivot mechanism. When the breaking current reached prospective current, double break point contact was opened with the static contact bullet under the effect of node electromotive force ability to two contact carrier flex points turn over the kinematic axis, form two contact carrier and die with the motion shaft lock, and under the effect of air -blowing, the drive of energy release lever actuating mechanism thread off simultaneously. Low -voltage moulded case circuit breaker has no progeny through high electric current branch, the effectual protection circuit of ability, and probably the power sum current value of trouble is dropped to extremely lowly.

Classifications:

International (IPC 8-9): H01H73/04 H01H73/18 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
■ CN205845870 U	20161228	CN201620658739U	20160628

Priority:

CN201620658739U 20160628

Probable Assignee: SHANGHAI GENERAL GUANGDIAN ELECTRIC ELEMENT CO LTD

Assignee(s): (std): AEG ENTERPEISE DEV SHANGHAI CO LTD ; SHANGHAI GENERAL GUANGDIAN ELECTRIC ELEMENT CO LTD ; SHANGHAI SGEG GROUP CO LTD

Assignee(s): SHANGHAI SGEG GROUP CO ; SHANGHAI GENERAL GUANGDIAN ELECTRIC ELEMENT CO ; SHANGHAI SVA ELECTRIC GROUP CO LTD ; AEG ENTERPEISE DEVELOPMENT SHANGHAI CO ; ENTERPRISE DEVELOPMENT CO LTD ON HAI ANYI POLE ; SHANGHAI ELECTRIC GROUP CO LTD SVA ; SHANGHAI GM RADIO POWER COMPONENTS LTD

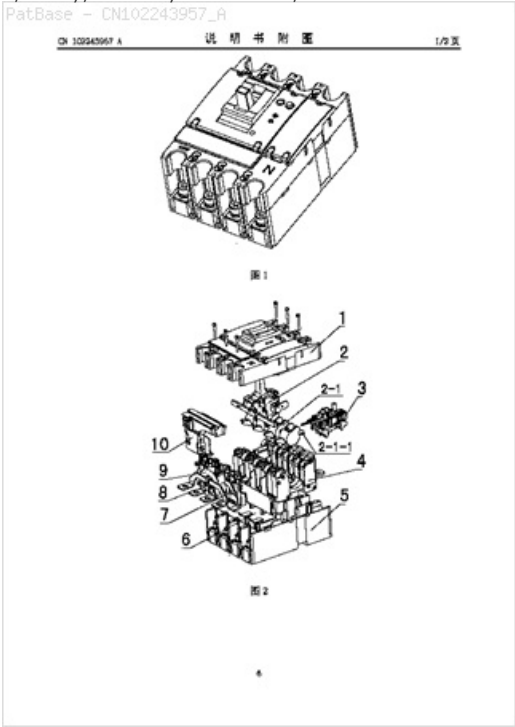
Inventor(s): (std): ZHANG WENLONG ; ZHOU XUDONG ; ZHU XIAOGE

Title: **MOULDED CASE CIRCUIT BREAKER** WITH RESIDUAL CURRENT PROTECTION

Abstract: Source: CN102243957A [EN] The invention relates to a **moulded case circuit breaker** with residual current protection. The **circuit breaker** comprises a base, a **contact** arc extinguish module set, an operation **mechanism**, a residual current release device, a cover assembly, a clapboard, a thermal magnetic release device set, an insulation piece, a zero sequence current mutual inductor and an electric leakage control assembly, wherein the **contact** arc extinguish module set is fixed on the base; the operation **mechanism** is fixed on the base and the **contact** arc extinguish module set; the residual current release device is installed on the **contact** arc extinguish module, and is connected with the electric leakage control assembly through a lead wire; all phases of the thermal magnetic release device set are arranged on the **contact** arc extinguish module set and the base through the zero sequence current mutual inductor; the electric leakage control assembly is arranged between the thermal magnetic release device set and the zero sequence current mutual inductor; the electricity taking lead wires of the electric leakage control assembly are respectively connected with three phases of the thermal magnetic release device set; and the cover assembly is installed on the base. Compared with the prior art, the **circuit breaker** has the advantages of reasonable structure, compact volume, safety, reliability and the like, is convenient to install.

Classifications:

International (IPC 8-9): H01H71/02 H01H71/40
H01H83/14 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
 CN102243957 A	20111116	CN201010172817	20100513
 CN102243957 B	20131127	CN201010172817	20100513
 CN201725755 U	20110126	CN201020191539U	20100513

Priority:

CN201010172817 20100513 CN201020191539U 20100513

Probable Assignee: SHANGHAI RENMIN ELECTRICAL APPARATUS WORKS CHINA

Assignee(s): (std): SHANGHAI RENMIN ELECTRICAL APPARATUS WORKS CHINA ; SHANGHAI RENMIN ELECTRICAL APPARATUS WORKS OF CHINA

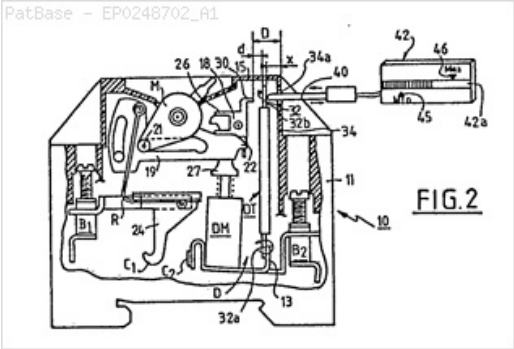
Inventor(s): (std): FENG XIANHUI ; GUO XIAOGANG ; GUORONG ZHANG ; XIANHUI FENG ; XIAOGANG GUO ; YILEI ZHAO ; ZHANG GUORONG ; ZHAO YILEI

Title: Process and device for regulating the thermal current of a thermal bimetal release part for a protective switch.

Abstract: Source: EP0248702A1 [EN] The invention relates to a method for the factory regulation of a bimetal for a protective switch, and the device for its implementation. The regulating method consists in detecting the relative position of the bimetal (32) in relation to an external side wall (34) of the box serving as zero reference and which is separated by a given fixed distance from a unit (30) which is to meet up with the bimetal in order to trigger the switch, and in mechanically deforming the bimetal (32) by twisting so as to adjust the distance separating it from the reference wall (34). The invention applies in particular to protective switches of the **circuit-breaker** type.

Classifications:

International (IPC 8-9): H01H11/00 H01H69/01
H01H71/16 (Advanced/Invention);
H01H11/00 H01H69/00 H01H71/12 (Core/Invention)
International (IPC 1-7): H01H69/01 H01H71/04 H01H71/16
CPC: H01H11/0062 H01H69/01
European: H01H11/00E H01H69/01



Family:

Publication number	Publication date	Application number	Application date
AT65002 E	19910715	AT19870401124T	19870520
DE3771129 D1	19910808	DE19873771129	19870520
EP0248702 A1	19871209	EP19870401124	19870520
EP0248702 B1	19910703	EP19870401124	19870520
FR2599552 A1	19871204	FR19860007623	19860528
FR2599552 B1	19930416	FR19860007623	19860528
KR19870011649 A	19871224	KR19870005216	19870526
KR900003801 B1	19900531	KR19870005216	19870526

Priority:

EP19870401124 19870520 EP19870401124 19870520 FR19860007623 19860528

Probable Assignee: TELEMECANIQUE

Assignee(s): (std): TELEMECANIQUE ; TELEMECANIQUE ELECTRIQUE

Assignee(s): TELEMECANIQUE RUEIL MALMAISON HAUTS DE SEINE FR ; LA TELEMECANIQUE ELECTRIQUE

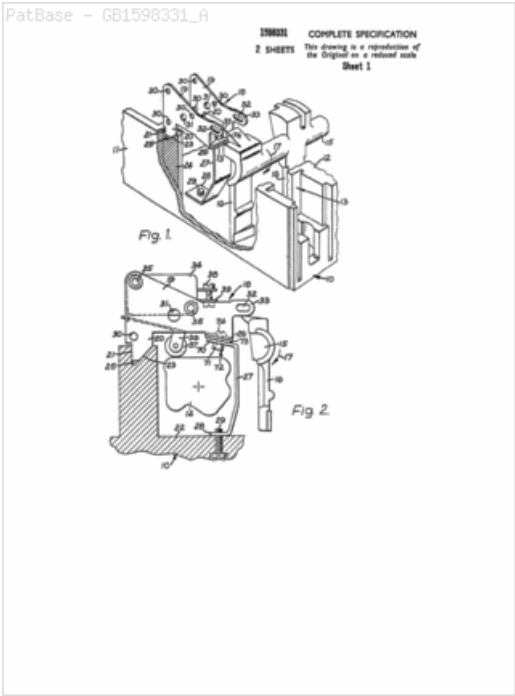
Inventor(s): (std): PATRICK ROGER ; SAUTHIER LUCIEN ; ROGER PATRICK ; BEURDELEY DOMINIQUE

Inventor(s): ROGER PATRICK F 21130 AUXONNE FR ; SAUTHIER LUCIEN F 39290 MOISSEY FR ; BEURDELEY DOMINIQUE F 21000 DIJON FR ; DOMINIQUE BEURDELEY LUCIEN SAUTHIER ET PATRICK ROG ; DOMINIQUE BEURDELEY LUCIEN SAUTHIER ET PATRICK...

Designated states: AT BE CH DE GB IT LI SE

Title: MOUNTING OF AUXILIARY EQUIPMENT WITHIN AN ELECTRIC **CIRCUIT BREAKER**

Classifications:
International (IPC 8-9): H01H71/46 H01H83/20 (Advanced/Invention);
H01H71/12 H01H83/00 (Core/Invention)
International (IPC 1-7): H01H71/02 H01H71/46 H01H83/12
CPC: H01H71/46 H01H83/20
European: H01H71/46 H01H83/20



Family:

Publication number	Publication date	Application number	Application date
GB1598331 A	19810916	GB19770048882	19771124

Priority:
GB19770048882 19771124

Probable Assignee: DORMAN SMITH SWITCHGEAR LTD
Assignee(s): (std): DORMAN SMITH SWITCHGEAR LTD

Title: DISJONCTEUR DE FUITE A LA TERRE

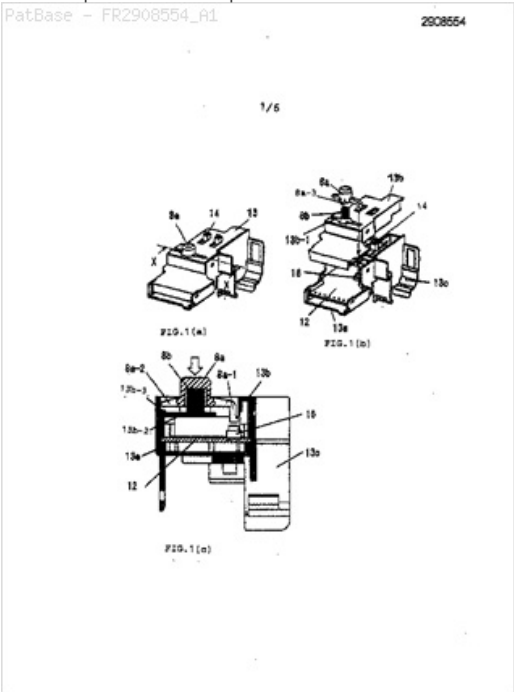
Abstract: The breaker has a main circuit **contact**, an electric current transformer, a triggering device and a ground fault detecting circuit mounted in an enclosure. A ground fault testing circuit has a push-button switch (16) mounted on a printed circuit board (12). A resin molded testing button (8a) is arranged so that an upper part of the button is projected from an upper surface of the **case**. The button has a flexible **actuating** arm (8a-1) laterally extending from a base part of the button, where ends of the arm are arranged in opposite direction and above a push rod of the push-button switch.

Classifications:

International (IPC 8-9): H01H71/02 H01H71/10 H01H83/02
H01H83/04 H01H83/06 H01H83/20 (Advanced/Invention);
H01H71/02 H01H71/10 H01H83/00 (Core/Invention)

CPC: H01H83/04 H02H3/334 H02H3/347

European: H01H83/04



Family:

Publication number	Publication date	Application number	Application date
■ CN101183627 A	20080521	CN200710181966	20071017
■ CN101183627 B	20111123	CN200710181966	20071017
■ FR2908554 A1	20080516	FR20070006764	20070927
■ FR2908554 B1	20150320	FR20070006764	20070927
■ JP2008103083 A2	20080501	JP20060282092	20061017
■ KR100923622 B1	20091023	KR20070097240	20070927
■ KR20080034767 A	20080422	KR20070097240	20070927

Priority:

JP20060282092 20061017

Probable Assignee: FUJI ELEC COMPONENTS AND SYS FA

Assignee(s): (std): FUJI ELEC COMPONENTS AND SYS FA ; FUJI ELEC FA COMPONENTS AND SYS ; FUJI ELECTRIC COMPONENTS AND SYSTEMS CO LTD FA

Assignee(s): FUJI ELECTRIC FA COMPONENTS AND SYSTEMS CO ; FUJI ELECTRIC FA COMPONENTS AND SYSTEMS CO LTD ; FUJI ELECTRIC COMPONENTS AND SYSTEMS CO FA

Inventor(s): (std): ASANO HISANOBU ; HISANOBU ASANO ; TAKAHASHI YASUHIRO ; YASUHIRO TAKAHASHI

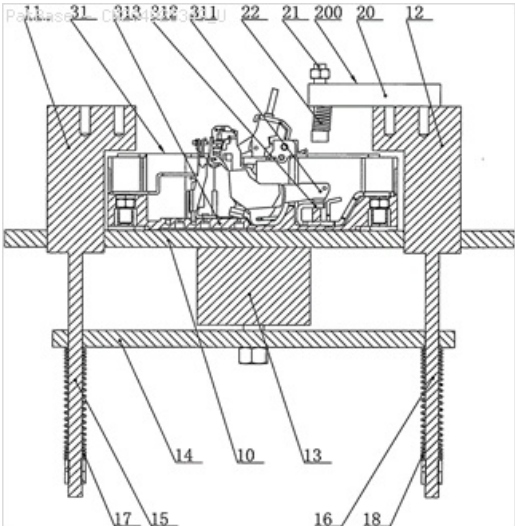
Agent(s): CABINET FLECHNER

Title: **MOULDED CASE CIRCUIT BREAKER'S** BIG CURRENT TEST DEVICE

Abstract: Source: CN204925349U [EN] The utility model relates to a **moulded case circuit breaker's** big current test device, comprising a base plate, a plurality of left chucks, a plurality of right chucks, **actuating mechanism**, the push pedal, it has the centre gripping space that is used for centre gripping **moulded case circuit breaker** to constitute between each left chuck and each the right chuck, the lower extreme of each left chuck all is provided with zola's pole, lower the serving of each right chuck all is provided with a right pull rod, the both ends difference suit of push pedal is on each zola's pole and each right pull rod, locate all to overlap to be equipped with one the 1st reset spring between the lower terminal surface that corresponds the bottom plate on each zola's pole and the lower extreme of zola's pole, locate all to overlap to be equipped with one the 2nd reset spring between the lower terminal surface that corresponds the bottom plate on each right pull rod and the lower extreme of right pull rod, all be provided with a **contact** locking body on the up end of each right chuck, **contact** locking body can contradict on **moulded case circuit breaker's** moving **contact** and can keep moving **contact** and static **contact** at the closure state along with the downward action of push pedal. The utility model has the advantages of simple structure, low in production cost.

Classifications:

International (IPC 8-9): G01R31/327 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
 CN204925349 U	20151230	CN201520713317U	20150910

Priority:

CN201520713317U 20150910

Probable Assignee: SHANGHAI YONGJI ELECTRICAL HOLDING CO LTD

Assignee(s): (std): SHANGHAI YONGJI ELECTRICAL HOLDING CO LTD

Assignee(s): SHANGHAI YONG ELECTRIC CO LTD ; SHANGHAI YONGJI ELECTRICAL HOLDING CO

Inventor(s): (std): DING LINHUA ; HU YONGQIANG ; JIN LEI ; TU JIANG ; WU QIANG ; WU ZHENHUA ; ZHANG MINHAI ; ZHANG XIAOMIN

Title: Bipolar automatic cutout.

Abstract: The invention relates to a bipolar automatic cutout (10), whose switch pins (12, 13) and their switching planes are arranged side by side. Since a switching **mechanism** (14, 15) with a **contact** carrier (11) is associated with each switch pin (12, 13), and a single trip device (16) is used to operate them, a bridge element (24) is provided which transmits the load from the impact armature (22) of the trip device (16) (which is arranged in one half of the housing in the switching plane of a switch pin (12, 13)) onto the **contact** carriers (11) and onto the switching **mechanisms** (14, 15) with which it is mechanically engaged.

Classifications:

International (IPC 8-9): H01H71/10 (Advanced/Invention);

H01H71/00 H01H71/24 (Advanced/Non-invention)

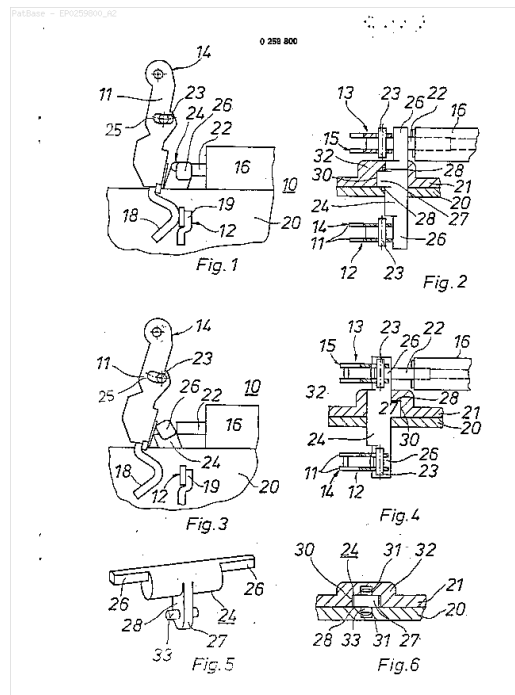
International (IPC 1-7): H01H71/08 H01H71/10

CPC: H01H71/002 H01H71/1009 H01H71/1045 H01H71/2409

H01H71/2463

European: H01H71/10B T01H71/00B T01H71/10C T01H71/24B

T01H71/24G



Family:

Publication number	Publication date	Application number	Application date
AT72361 E	19920215	AT19870112970T	19870904
DE3630643 A1	19880317	DE19863630643	19860909
DE3776468 D1	19920312	DE19873776468	19870904
EP0259800 A2	19880316	EP19870112970	19870904
EP0259800 A3	19880928	EP19870112970	19870904
EP0259800 B1	19920129	EP19870112970	19870904

Priority:

DE19863630643 19860909 DE19873776468 19870904 EP19870112970 19870904
EP19870112970 19870904

Probable Assignee: ASEA BROWN BOVERI AKTIENGESSELLSCHAFT

Assignee(s): (std): ASEA BROWN BOVERI ; BBC BROWN BOVERI AKTIENGESSELLS ; BBC BROWN BOVERI AND CIE

Assignee(s): BBC BROWN BOVERI AKTIENGESSELLSCHAFT ; ASEA BROWN BOVERI AG 6800 MANNHEIM DE ; ASEA BROWN BOVERI AKTIENGESSELLSCHAFT ; BBC BROWN BOVERI AG

Inventor(s): (std): GOEHLE ROLF ; SCHMITT VOLKER

Inventor(s): SCHMITT VOLKER W 6901 BAMMENTAL DE ; GOEHLE ROLF W 6906 LEIMEN DE

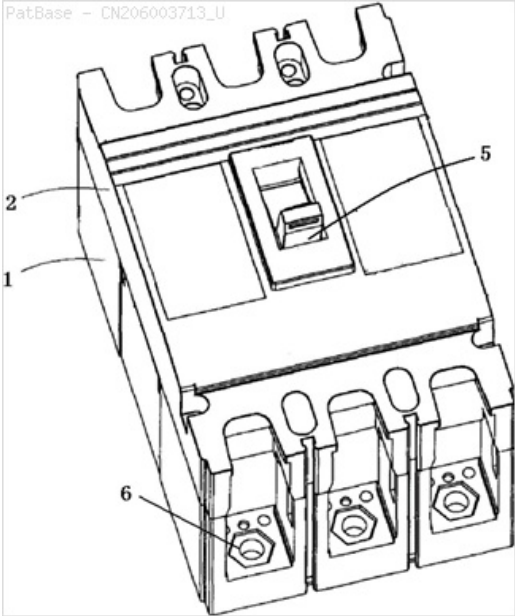
Designated states: AT BE CH DE FR GB IT LI

Title: NOVEL MOULDED CASE CIRCUIT BREAKER

Abstract: Source: CN206003713U [EN] The utility model provides a novel moulded case circuit breaker, includes shaped as frame body and upper cover, the outside extension in both sides of shaped as frame body is equipped with binding post, the upper cover lid fits the shaped as frame body in order to form the accommodation space, be equipped with current mutual -inductor device, trip gear, contact mechanism and operating device in the accommodation space, be equipped with the mounting groove into installation current mutual -inductor device and trip gear in the shaped as frame body, current mutual -inductor device includes three current transformer, places three current transformer's base and with base matched with lid, trip gear includes plastic base and electromagnetism dropout component, electromagnetism dropout component includes metal support, solenoid, moves the iron core, actuating strut, pivot and torsional spring, therefore, the utility model discloses a moulded case circuit breaker easy operation is swift, can satisfy the demand that the user is different, is suitable for more extensively.

Classifications:

International (IPC 8-9): H01H71/02 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN206003713 U	20170308	CN201621029482U	20160831

Priority:

CN201621029482U 20160831

Probable Assignee: SHANGHAI JINGYI SWITCH FACTORY CO LTD

Assignee(s): (std): SHANGHAI JINGYI SWITCH FACTORY CO LTD

Assignee(s): SHANGHAI LEAN SWITCH FACTORY CO LTD ; SHANGHAI JINGYI SWITCH FACTORY CO

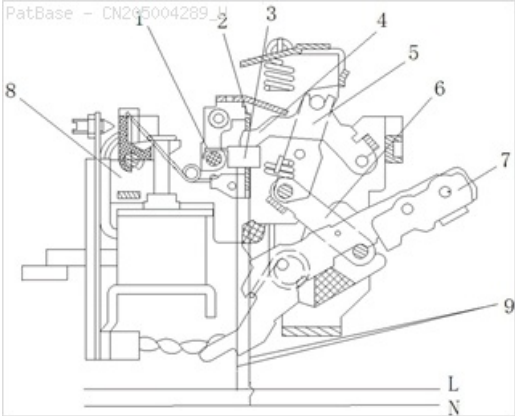
Inventor(s): (std): HU PEI ; ZHU MINGLONG

Title: LOW -VOLTAGE MOULDED CASE CIRCUIT BREAKER

Abstract: Source: CN205004289U [EN] The utility model discloses a low -voltage moulded case circuit breaker, detain, go up connecting rod, lower connecting rod, moving contact, lead wire including release lever, release and hasp, jump, the hasp with jump and detain the cooperation use, jump to detain and link to each other with last connecting rod, upward connecting rod and lower connecting rod link to each other, the moving contact is connected to the connecting rod down, release connection lead, set up porosely on the hasp, jogged joint that the release lever passed the hasp is on the hasp and follow expose on the two sides of hasp, the release bottom sets up porosely, set up porosely in the middle of the cheek, hole that the release passes through the bottom with cooperate and fix in hole in the middle of the splint on the cheek. This novel release lever need not pass through the high temperature embedding but realize its dropout actuating mechanism function with the mode of grafting fixed connection hasp, can reduce cost when having simplified the manufacture craft, and comparatively equitable circuit breaker structure, be fit for production.

Classifications:

International (IPC 8-9): H01H71/12 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
CN205004289 U	20160127	CN201520698827U	20150910

Priority:

CN201520698827U 20150910

Probable Assignee: TIANJIN CLP HUALI ELECTRICAL SCIENCE AND TECH GROUP CO LTD

Assignee(s): (std): TIANJIN CLP HUALI ELECTRICAL SCIENCE AND TECH GROUP CO LTD ; TIANJIN CLP HUALI ELECTRICAL SCIENCE AND TECHNOLOGY ; TIANJIN CLP HUALI ELECTRICAL SCIENCE AND TECHNOLOGY GROUP CO LTD

Assignee(s): TIANJIN HUALI ELECTRIC POWER TECHNOLOGY HOLDINGS LTD ; TIANJIN CLP HUALI ELECTRICAL SCIENCE AND TECHNOLOGY GROUP CO

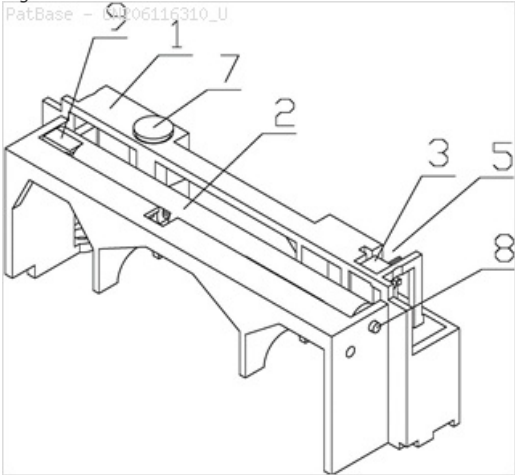
Inventor(s): (std): FAN JINLIANG ; FAN JINSHAN ; FAN JINWEI ; WANG JINLAN

Title: **MOULDED CASE CIRCUIT BREAKER** TRANSMISSION THAT HEAT OVERLOAD WAS REPORTED TO POLICE AND IS NOT THREADED OFF

Abstract: Source: CN206116310U [EN] The utility model discloses a **moulded case circuit breaker** transmission that heat overload was reported to police and is not threaded off, including a set of or multiunit bimetallic strip, install locating support on the **circuit breaker**, install traction lever rotatable on the locating support, be equipped with micro -gap switch on the locating support, micro -gap switch and alarm **mechanism** are connected, be equipped with the shifting block that one or more stirred micro -gap switch on the traction lever, be equipped with the recess that is used for placing micro -gap switch on the locating support. The utility model discloses a thermostat metal piece is worked as the thermostat metal piece and is exported its signal because of an overload current heat altered shape bending promotion traction lever **contacts** to change to micro -gap switch as **actuating** device, combines outside alarm device to report to the police, has improved the heat overload warning security performance of product greatly, further, be used for placing micro -gap switch's recess on the locating support to using bolt fastening micro -gap switch, can preventing effectively that the displacement from causing the mistake to move or be failure to actuate, the security performance is high.

Classifications:

International (IPC 8-9): H01H71/04 H01H71/16 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
 CN206116310 U	20170419	CN201621026442U	20160831

Priority:

CN201621026442U 20160831

Probable Assignee: GUANGDONG NANGUAN ELECTRICAL CO LTD

Assignee(s): (std): GUANGDONG NANGUAN ELECTRICAL CO LTD

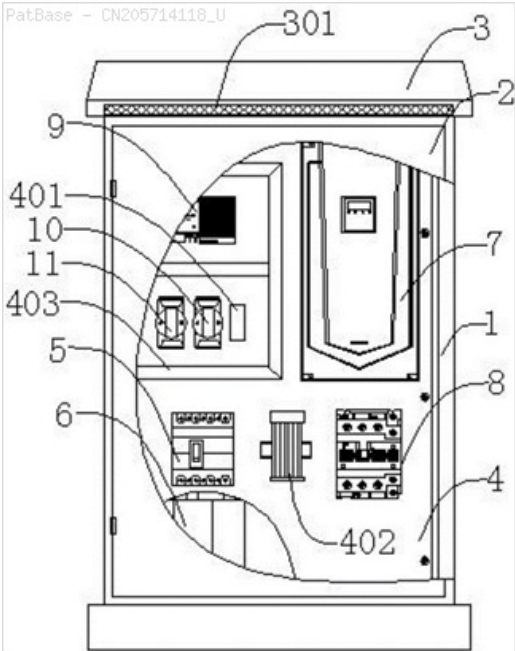
Assignee(s): GUANGDONG ELECTRIC CO SOUTHERN CROWN ; GUANGDONG NANGUAN ELECTRICAL CO

Inventor(s): (std): LI XIAOMING ; LI YONGDI ; LIANG KEBIAO ; MO BIAOXIONG ; OU YAORONG ; TANG ZIJIAN ; WU LINGYU ; XIE ZENGDE ; XU XINGCAN ; YU QIGANG

Title: FLEXIBLE CONTROLLING MEANS OF FLOW

Abstract: Source: CN205714118U [EN] The utility model discloses a flexible controlling means of flow, the intelligent cabinet temperature adjusting device comprises a cabinet body, the qianmen, rain -proof cap, the riser, **moulded case circuit breaker**, the reactor, a frequency converter, a motor, a crankshaft position sensor, a switching power supply and a digital frequency meter, provided is a **contactor**, flexible controller, the RTU module, the electric quantity gauge module, in operation, the RTU module is gathered the interior fluid flow data of oil well and is fed back to flexible controller, work is carried out according to computation result control converter at 0 to 60 hertz within range to the operation of flexible controller, make beam -pumping unit in best operating point work, the electric quantity gauge module can the real -time supervision power consumption condition, temperature sensor is used for the internal temperature of real -time supervision cabinet, when this temperature is less than the settlement temperature, heater work is heated the cabinet body. The device simple structure can adjust the **actuating mechanism** operating point according to the flow condition in real time to the energy saving reduces power consumption.

Classifications:
International (IPC 8-9): E21B43/00 G01D21/02
G05D23/19 (Advanced/Invention)



Family:

Publication number	Publication date	Application number	Application date
 CN205714118 U	20161123	CN201620387682U	20160428

Priority:

CN201620387682U 20160428

Probable Assignee: ANHUI FIRSTCON INSTR CO LTD

Assignee(s): (std): ANHUI FIRSTCON INSTR CO LTD ; ANHUI FIRSTCON INSTRUMENT CO LTD

Assignee(s): ANHUI FIRSTCON INSTRUMENT CO

Inventor(s): (std): FENG PING