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Declarations under Rule 4.17:

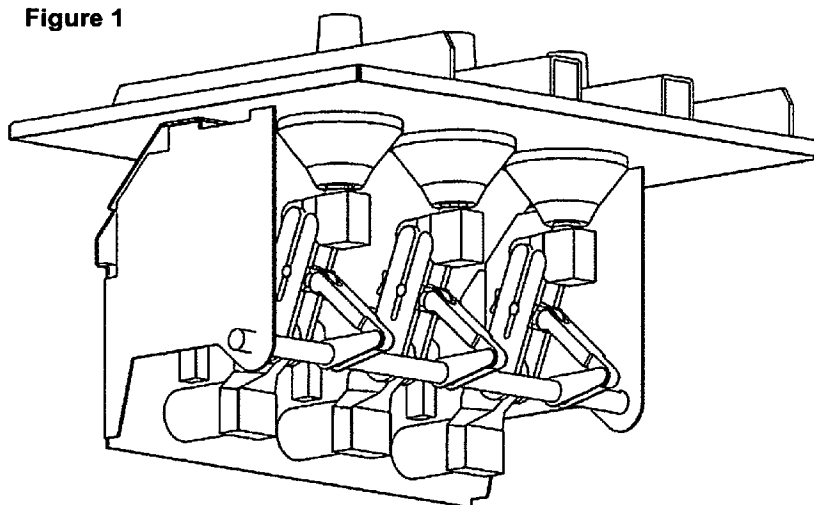
— of inventorship (Rule 4.17(iv))

Published:

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(54) Title: GAS INSULATED MEDIUM VOLTAGE SWITCHGEAR

Figure 1



(57) Abstract: The invention relates to a gas insulated medium voltage switchgear with a 3 position disconnecter device for 3 electric phases on one common rotatable driveshaft. In order to realize a common construction, the three position disconnecter device for three phases is arranged in one common functional unit, which has a base plate and a frame, and which can be mounted in a switchgear housing, in that way, that the baseplate and/or the frame is after the mounting a part of a gastight housing of the switchgear.

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Gas insulated medium voltage switchgear

15 The invention relates to a gas insulated medium voltage switchgear with a 3 position disconnecter device for 3 electric phases on one common rotatable driveshaft.

20 In well known gastight medium voltage switchgears three-position disconnecter devices are assembled in the housing, in that way, that different components of the device are fixed mechanically on different parts of the housing of the switchgear.

This guides to the following problems.

- 25 - The assembly is complicated and time consuming, as the accessibility is restricted by the available openings in the housing of the switchgear.
- 30 - The adjustment of the three-position disconnecter devices has to be done in the final assembly line.
- 35 - The functional test of the three-position disconnecter devices has to be done in the final assembly line.
- The external sourcing of the complete assembled disconnecter device from subsuppliers is not possible.

So it is an object of the invention, to overcome all these disadvantages with a compact construction, which is easy to adjust before mounting.

5 The basical features of the invention are, that the three position disconnecter device for three phases is arranged in one common functional unit, which has a base plate and a frame, and which can be mounted in a switchgear housing, in that way, that the baseplate and/or the frame is after the mounting a part of a gastight housing of the switchgear.

10 This reduces the assembling or mounting time because of a better accessibility. Furthermore, the preassembled unit is easier to adjust, before it will be mounted inot the switchgear housing.

15 A further advantageous embodiment is, that the fixed contacts of the disconnecter device are mounted on the base plate with integral bushings, which are furthermore connectable to the solid insulated busbars at the outside part of the housing of the switchgear.

20 Furthermore the frame is mounted on the base plate, and that the frame carries the fixation of the driveshaft.

Optionally, the earth contacts are fixed to the frame

25 A further very advantageous embodiment is, that the common functional unit closes the housing of the switchgear after mounting in a gastight way.

To realize this gastight closing of the housing, one possible solution is, to realiz it by welding after it is mounted in the housing, or to screw it by the use of a sealing element around the opening of the housing, in which the functional unit is placed.

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An embodiment of the invention is shown in the drawing.

The figure 1 shows a perspective view of a three phase disconnecter device in one common unit. The movable contacts are arranged operated by a turnable driveshaft. 35 The driveshaft is positioned and fixed on both side in a frame, which is mounted on a

base plate. In the base plate are fixed not movable contacts which are mounted on integral bushings. These bushings are connected to external bushbars.

5 So the common unit can be assembled and adjusted before it has to be mounted into the housing of the switchgear.

Furthermore the electric sourcing with external bushbars is easy and effective.

10 The figure 2 shows the housing of a medium voltage switchgear. The above mentioned base plate will be mounted on an opening on top of the housing. This base plate will be fixed in such a way, that the housing is gastightly closed by that. So only the baseplate with its external busbarsystem is visable in figure 2. The rest of the components which are mounted on the baseplate like shown in figure 1 extend into the inner part of the housing and is closed hermetically by the base plate.

15 This hermetically closing could be realized by a sealing of by welding the basplate into the opening of the housing.

Claims

- 5 1. Gasinsulated medium voltage switchgear with a three position disconnecter device for three electric phases, with a rotatable driveshaft,
characterized in,
that the three position disconnecter device for three phases is arranged in one common functional unit, which has a base plate and a frame, and which can be mounted in a switchgear housing, in that way, that the baseplate and/or the
10 frame is after the mounting a part of a gastight housing of the switchgear.
2. Gasinsulated medium voltage switchgear according to claim 1,
characterized in,
that the fixed contacts of the disconnecter device are mounted on the base
15 plate with integral bushings, which are furthermore connectable to the solid insulated busbars at the outside part of the housing of the switchgear.
3. Gasinsulated medium voltage switchgear according to claim 1 or 2,
characterized in,
20 that the frame is mounted on the base plate, and that the frame carries the fixation of the driveshaft.
4. Gasinsulated medium voltage switchgear according to one of the aforesaid claims,
25 **characterized in,**
that the earth contacts are fixed to the frame
5. Gasinsulated medium voltage switchgear according to one of the aforesaid claims,
30 **characterized in,**
that the common functional unit closes the housing of the switchgear after mounting in a gastight way.

- 5 6. Gasinsulated medium voltage switchgear according to claim 5,
 characterized in,
 that the gastight mounting is realized by welding
- 10 7. Gasinsulated medium voltage switchgear according to claim 5,
 characterized in,
 that the gastight mounting is realized by screwing and the use of a sealing
 element around the opening of the housing, in which the functional unit is
 placed.

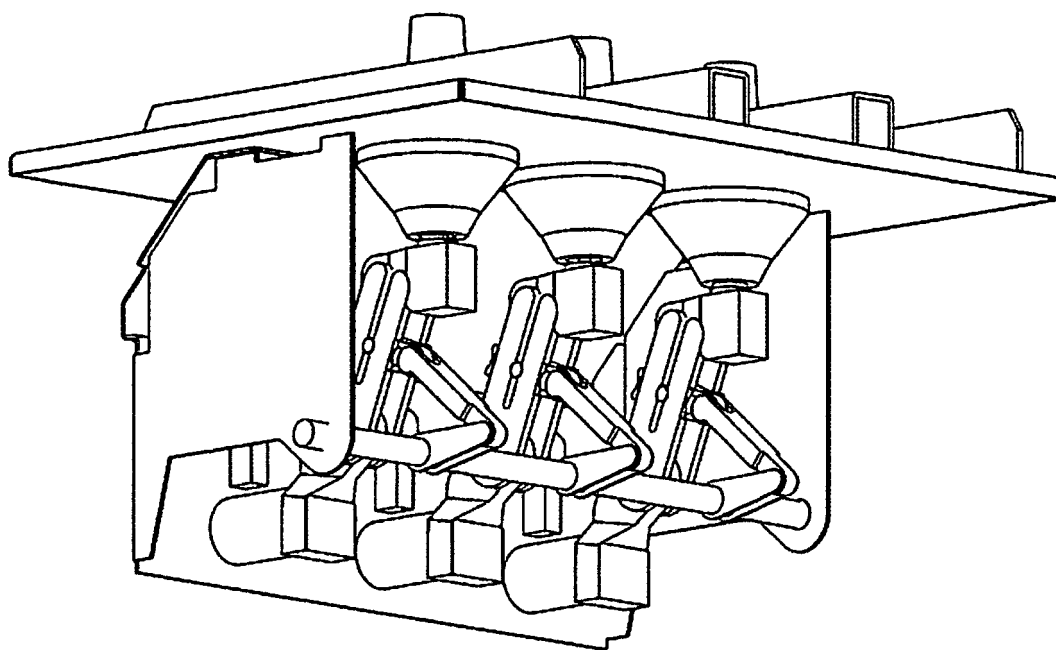


Figure 1

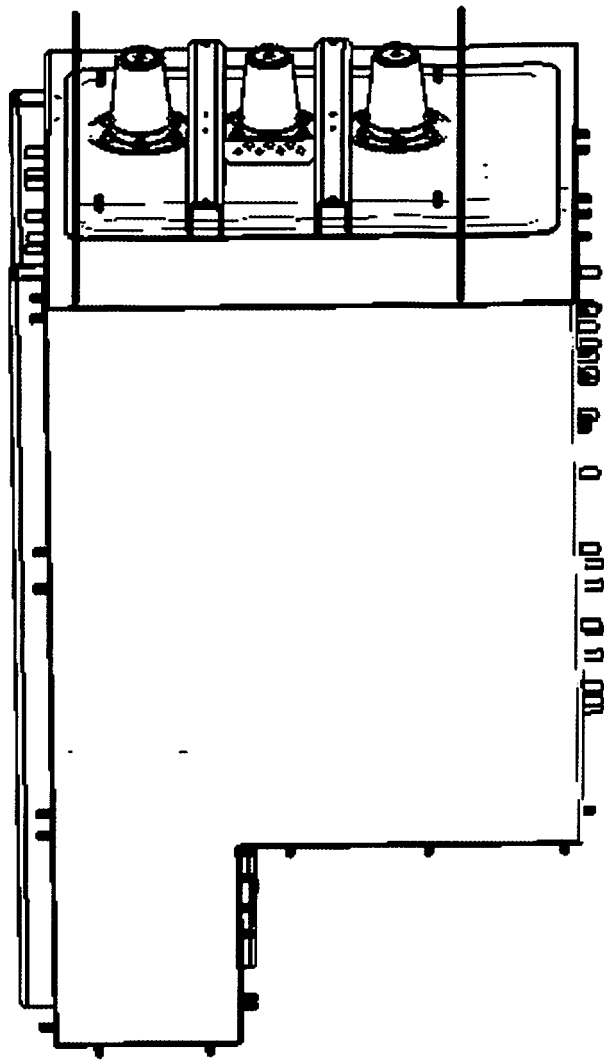


Figure 2

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2010/006260

A. CLASSIFICATION OF SUBJECT MATTER

INV. H01H31/00
ADD. H01H31/28 H02B13/035

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
H01H H02B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2004/054057 A (MITSUBISHI ELECTRIC CORP [JP]) 24 June 2004 (2004-06-24) * abstract; figure 1	1-7
X	US 2004/104201 A1 (SATO SHINJI [JP] ET AL) 3 June 2004 (2004-06-03) figures 3,4,7	1-7
X	US 2005/219804 A1 (ARIOKA MASAHIRO [JP]) 6 October 2005 (2005-10-06) claims 1-4; figures 1,2,6,7	1-7

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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- * & * document member of the same patent family

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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