May 31, 1955 H. FORWALD 2,709,737

HIGH TENSION CIRCUIT BREAKER

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Fig.1

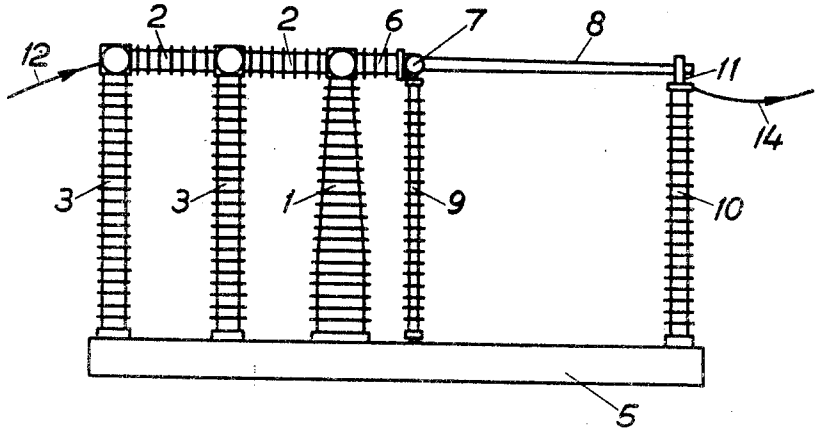
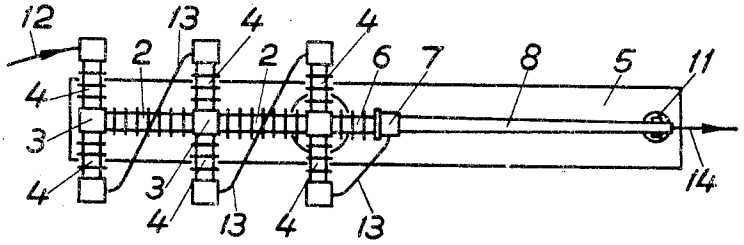


Fig.2



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HIGH TENSION CIRCUIT BREAKER

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3 Claims. (Cl. 200—148)

It has before been proposed in high tension air blast circuit breakers to arrange the breaking gaps in pairs in horizontal insulators which have been attached on the top of high pillar insulators and to arrange the series-connected circuit breakers so that the horizontal insulators have been in alignment with each other. This arrangement is, however, very disadvantageous, because the ground-frame for the breakers will be very long.

The present invention concerns an arrangement for high tension circuit breakers by which much less space is required. The invention is based upon the fact that in multiphase plants the distance between the different phases is considerable, so that ample space is available for arranging the pillar insulators in a row after each other, but so that the horizontal insulators carried by them and containing the extinguishing chambers will be parallel to each other but directed perpendicularly to the said row of pillar insulators. The length of the whole circuit breaker will thus be considerably shorter than in hitherto known circuit breakers of this kind but at the same time not broader than that the space between line parts of an adjacent phase will be sufficient.

According to the invention the said pillar insulators are staggered against each other by means of horizontal insulators. According to one form of the invention one of these pillar insulators may be considerably stronger than the other ones, which form is especially applicable in the case that the circuit breaker shall be provided with a disconnecting switch.

On the accompanying drawing Figs. 1 and 2 schematically show a form of a circuit breaker with disconnecting switch. In the figures, 1 designates a strong pillar insulator and 3 two weak insulators. These pillar insulators are at their upper end joined with each other by means of horizontal insulators 2 and further on the top of the insulators horizontal insulators 4 are attached, which enclose the extinguishing chambers of the breaker. 5 designates the bottom case of the circuit breaker, which

may contain the compressed air containers and operating members for the circuit breaker. 6 designates a horizontal insulator attached to the pillar 1, which horizontal insulator at the free end carries the mechanism 7 for the disconnecting switch arm 8. The disconnecting switch is operated from operating members in the bottom case 5 by means of an insulating shaft 9 preferably made of porcelain. 10 designates a pillar insulator which also is attached on the bottom case 5 and at the upper end carries the countercontact 11 of the disconnecting switch. The incoming line 12 is connected with one of the extinguishing chambers, whereas the other extinguishing chambers are connected with each other by means of conductors 13 and the outgoing line 14 is connected with the countercontact 11 of the disconnecting switch.

In spite of the fact that on the drawing the insulators comprising the extinguishing chambers are shown to be horizontal, they may of course also form an angle with the horizontal, for instance so that they form a V on the top of the pillar insulators. Further the insulator carrying the mechanism for the disconnecting switch arm need not be horizontal, but instead the mechanism 7 may be arranged on the top of the insulator 1 and above the mechanism 7 the insulator 6 carrying the insulators 4 may be arranged.

I claim as my invention:

1. Air blast circuit breaker comprising a plurality of pillar insulators arranged on the ground in a straight line, breaking elements enclosed in insulating cylinders arranged pairwise and attached to the tops of said pillar insulators perpendicularly to said straight line, and horizontal insulators joined with and extending between the tops of said pillar insulators.

2. An air blast circuit breaker comprising upright insulating pillars arranged in one straight line, horizontally arranged insulators extending between and attaching the upper extremities of said pillars, a plurality of pairs of cylinders each extending outwardly from a pillar perpendicularly to said straight line, means connecting the cylinders of each pair with each other and with the upper extremity of a pillar, and a breaking element enclosed in each of said insulating cylinders.

3. An air blast circuit breaker according to claim 2, comprising means connecting the said breaking elements in series with each other.

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