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Ampere turn balance in transformer

Ampere-turn Equilibtable Transformer Technical field This utility model refers to a kind of transformer, is specifically related to a kind of ampere-turn equilibtable transformer. Background technology The traditional transformer contains an iron core, one is set in a low voltage coil on the described iron core and is set in the Institute state high-voltage coil on the iron core. In order to realize the adjustment of the output voltage of the transformer, it will usually be on the high voltage coil At the minimum end of the tap are set specified terminals and the maximum end of the tap, described specified end is located at the minimum end of the tap and the maximum between the end tap. But when choosing to connect the minimum end of the tap or the specified end, due to the high-voltage coil tapping the end from the maximum coil to the minimum end of the tap or the designated end is in an unused state, causing the high-voltage coil can produce a degree of unbalanced problem circle. And the ampere-turn imbalance makes the escape flow distribution unbalanced, its width is an extra coerced field produced to produce additional shaft outward strength in the reel, the direction of these forces always makes the nesymmetry of these forces production increase. The axial force is the same as the internal force of the axially produced leaking field with normal width, makes the line cake bend into a vertical direction, and the pillow block of compressed lines cake part, in addition, these forces most partially or completely pass the iron core, make every effort to make it the leaves of the stem, occur that line cake deformation or flop phenomenon in the middle part of the winding. The content of the utility model Since it is necessary to provide one can effectively prevent the choice of connecting the minimum end of the tap or the specified end time to produce an ampere-turn unbalanced ampere-turn equilibable transformer. A type of ampere equilibly transformer, it contains an iron core, low voltage coils, high voltage coils and a lump around the wire; The described low voltage coils and the described high-voltage coil rotate around the position in the described iron core;Two of the described high voltage coils The end is the initiation terminal and the specified end and the position between the described initiation terminal and the described specified end arrange one minimum end of the tap;Described and described the specified end and winds on the described high voltage line from the described minimum end of the tap around the wire on the ring , should and should be at the end of the tap at a maximum of one end of the specified end described around the wire. This utility model provides an ampere-turn equilibrium transformer at least tap end and designated end and around in the lump around the wire, so that whatever high-voltage coil can reach the ampere-turn balance at which the tap, doing the escape flow distribution balance, will not produce additional shaft out force in the coil. The accompanying explanation of drawing 1 is a structural representation of the equilibtable transformer of ampere rotation described in the 2 is the design representation of the the coil in the equilibable ampere rotation transformer in Fig. 1. Detailed description of the invention In order to make the purpose of this utility model, technical scheme and benefits clearer, lower in conjunction with the accompanying drawing and embodiment, this utility model is further redesigned, it will be appreciated that described in this document a particular incarnation, just to explain this utility model, is not used to limit this utility model. As shown in Figure 1-2, this utility model provides a sort of ampere-turn balance transformer 100, and it is used for high voltage power transmission to change the voltage in the power transmission connection in the mains. The described ampere-turn equilibable transformer 100 includes an iron core of 10, a low-voltage coil of 20, one high-voltage coil of 30 and a lump around wire 40. Described low voltage coil 20 and described high-voltage coil 30 rotate around placed on the described iron core 10.Described low pressure coil 20 is reel on low voltage coil 20 near the described iron core 10, described high-voltage coil 30; Described high pressure Mutually isolated between coils 30 and described low voltage coils 20. The two ends of the described high-tension coil 30 with terminal 31 and the specified end of 32, described by the initiating terminal 31 With the same side as described by the specified end 32, are located on the described high-tension vessel. It is located at the described trigger terminal 31 and the specified position described between the end 32 arranges the minimum end of the tap 33.The described minimum end of tap 33 is close to the specified end 32 described above and is placed in the position described by the high-tension coil 30, is mixed from the inner layer into the coil of the outer layer. Described and identical to the wire in the described high-voltage coil 30 around wire 40.Described and around wire 40 of the Institute of State minimum tap end 33 to the described end of 32 and to be reeled on the described high-voltage coil 30, be someone turn to do and around the wire 40 It's maximum tap end 41 near one end of the described end 32. This utility model provides an ampere-turn equilibrium transformer at least tap end and designated end and around in the lump around the wire, so that whatever high-voltage coil can reach the ampere-turn balance at which the tap, doing the escape flow distribution balance, will not produce additional shaft out force in the coil. The above only favours the embodiment of the current utility model, not in order to limit this utility model, all in the spirit of the current utility model and principle, any change, equivalent compensation and improvement, etc., all should be wrapped up in being covered by the protection of the current utility model. FIELD OF INVENTION This invention concerns multi-second transformers, in particular the new tertiary winding of a multisecondary transformer in which tertiary winding is separated, for example to axially spaced parts which cooperate with separate relevant primary and secondary winding parts of the transformer. PRIOR ART High voltage transformers with multiple output viability often experience the disadvantages of overhandling between certain loads. For example, if one transformer is used to supply a large light or other voltage sensitive load from one secondary winding and engine load with a significant crossed starting induction motor from another winding, and if a large part of the transformer impedance were common to the victim's windings, the flickering of light in the lighting load could become intolerable. This interaction is manifested mainly in 12-phase rectifier transformers, which is the embodiment chosen here to illustrate an invention in which tertiary science is applied to the transformer in a new way. Twelve-phase rectifiers can be considered as consisting of two six-phase systems displaced 30° apart. In highpower semiconductor 12-phase rectifiers, there is generally found two 30° displaced secondary coams, each feeding a three-phase rectifier bridge. These bridges are generally connected in parallel on the DC side through an interphase transformer. If the two secondaries are closely related, most of the leak flow between them and the primary winding is common to both secondaries, and only a relatively small amount of leak flow links only one secondary winding, so the ratio of common-to-total leakage flow is large. It is well known that if the ratio of joint-to-total flow leakage is large, a severe imbalance between the two halves of the rectifier will be experienced if corrective measures are taken, such as a series of linear or self-saturation controlled reactors in the lead to a bridge that would otherwise carry the heaviest load. To overcome this problem in the past, the primary blame was divided axially into two relatively distant parts connected in parallel, each half of which was associated with secondary guilt, respectively. In this way, the common escape flow is kept to a minimum and the imbalance is practically eliminated. While this method is economically feasible, when the primary voltage is 15 kv. or lower, it becomes extremely difficult and costly to use at higher primary voltages, such as 69 kV. A large amount of additional insulation is required and it is much more difficult to obtain its own surge protection. A single-series primary winding with two axially displaced secondarys would be the most incorcriminate arrangement in terms of isolation; but the commute response of each secondary would be four to 12 times greater than if both halves of the rectifier were commuting simultaneously as in six-state operation. Therefore, a decrease in DC voltage from no load to full load would increase significantly; whereas, with the shortening of both secondary encodings, the overall response to winding geometry and short-circuit current would increase significantly. The high impedance of each secondary to the overall primary creates a high balancing voltage tending to force the same currents at any moment in two secondaries. This is contrary to the requirements of two independent loads of any type, and in particular the phase of displaced six-phase rectifier systems of the twelve-phase rectifier. SUMMARY OF INVENTION The above problems have been resolved in accordance with the current invention by establishing a tertiary winding, which has axially spaced parts that cooperate with the respective primary and secondary zigzag parts of the transformer. This means that problems with the insulation of high-voltage parallel-connected primary coamed parts is eliminated; the individual reaction of each secondary blame to the primary winding is held to small; the total reaction rate of the transformer as a percentage is maintained substantially the same as that of the individual secondaries; and the ratio of the common flow of leakage is small to avoid imbalance between the two halves of the 12-phase rectifier. A BRIEF DESCRIPTION OF THE DRAWINGS FIG. 2 schematically illustrates the arrangement of the winding of the transformer FIG. 3 schematically illustrates the way in which tertiary winding of one phase or multiphase system can be used as an electrostatic shield between high voltage primary and secondary. OBR. 4 illustrates the way the ground connection to the tertiary coil for wye-attached high voltage coil. OBR. 5 illustrates tertiary winding as having a reverse wound part where high voltage or primary winding is delta-attached winding. Fig. 6a shows the output currents of the secondary FIGS fault connected to Delta 1 and 2. Fig. 6b shows the output and coil currents of the secondary reel FIGS. 1 and 2 connected wye. Fig. 7 shows the secondary coil current in the secondary winding figs. 1 and 2 connected deltas. FIG. 8a shows ampere bends wye and delta secondary guilty figs. 1 and 2 overlaps on each other. Fig. 8b shows the total secondary ampere speed and the primary coil current for the coil figs 1 and 2. OBR. 9 shows the ampere rotation of the tertiary coil required to balance the ampere speed of the transformer in each part. OBR. 10 illustrates the physical location of the blamed on the magnetic core for the arrangement of the type displayed on figs. 1 and 2. OBR. 11 illustrates one stage of arrangement in accordance with the invention, in which the primary winding can be switched between serial and parallel arrangement, where the primary zigzag part is carved together in series. FIG. 12 is transformer, as in OBR. Referring first to FIG. 1, there is an illustrated 12-phase rectifier, which consists of a rectifier transformer20 that has primary coil 21, delta-connected secondary coil 22, wye-attached secondary coil 23 and, according to the invention, tertiary science 24. Secondary reeds 22 and 23 are associated with six-state full-wave bridge rectifiers 25 and 26 in the usual way. The positive exit terminals of bridges 25 and 26 are interconnected and with the common terminal or bus 27, while their negative terminals are interconnected by an interphase transformer 28. Negative terminal 29 is connected to the central band of the interphase transformer 28. The primary winding of 21 transformers 20 in the OBR. Delta-connected secondary blame 22 has marked guilty of D1, D3 and D5 and wye-connected secondary blame 23 has three blames identified as guilty of Y2, Y4 and Y6. The output currents of the winding transformer 22 are marked as S1, S3 and S5, while the output currents blame 23 are marked S2, S4 and S6. When choosing different labels for OBR. Tertiary windings 24 is wye-connected windings, which carries circulating currents T1, T2 and T3, where it should be noted that tertiary windings are illustrated as each of the two axially separate segments. The T1, T2 and T3 display cases therefore consist of axially separated reemit 40-41, 42-43 and 44-45. Fig transformer configuration. 1 is schematically repeated on OBR. Note that physically, the reelings of 60, 40 and D1 are centrifumatic and 61, 41 and Y1 are centrifumatic. Thus, blame P1, T1, D1 and S2 are all wounds on the common leg. Note that fig. 10 also illustrates the physical disposition of the OBR's reel. Fig 10 shows the typical magnetic core of the 50 core transformer with three legs 51, 52 and 53 connected by the upper and lower yokes 54 and 55. The various viches are then placed on the base legs 51, 52 and 53, as shown in the figure. In accordance with the invention and as shown in figs. 1, 2 and 3, the primary windings are made of two series of arranged sections, such as the series of sections 60-61, 62-63 and 64-65, which are staged adjacent to the respective halves of tertiary winding 24. This means that winding sections 60 to 65 are discarded tertiary zigzag sections 40 to 45. Similarly, the relevant part of each primary coil and each tertiary science interacts with one of the coils of either delta secondary vi coil 22 or wye-linked secondary coil 23. So, in FIGS. 2 and 10, delta-connected coils D1, D3, and D5 cooperate with primary coils of 60, 62 and 64, respectively, tertiary coils 40, 42 and 44, respectively. In a similar way, secondary vigneers Y2, Y4, and Y6 cooperate with primary coils 61, 63 and 65, respectively, and tertiary vigneers 41, 43, and 45, respectively. It should be noted that the sequence of placements of different reeds in relation to each other can be different without deviating from the scope of this invention. This means that the primary winding could be wound adving to the base leg and the other windings could be disposed of on the outwards. While the cooperating groups of zigzag devices of the primary, secondary and tertiary sections are shown arranged in a focused way, they could also be disposed of side by side axially, as is commonly done on shell transformers. The different speed ratios for the blamed will, of course, be adjusted depending on the required voltage ratios and the selected specific circuit. In the case of FIG. (2) the primary winding parts have the same number of revolutions of 1/2N; the tertiary winding part has an equal speed of 1/2N; secondary winding 22 connected by delta has several n speeds; and secondary wye-attached coming 23 has several turns equal to it should be noted that delta and wye secondary coam are illustrated here because it was desirable to get a 30° displacement for the rectifier arrangement. Obviously, the same results could be obtained with symmetrical secondary winding zigzag, polygon or pinwheel configurations, while primary winding similarly can be delta, wye or any other configuration. In addition, it can be demonstrated that the current new arrangement of tertiary winding and secondary winding can be applied to both single-way and two-way (bridge) connected rectifiers, provided that the diametrically opposite winding on each leg is closely linked. FIGS. 6a to 9 show the way tertiary winding and arrangement of OBRS. 1, 2 and 10 operate, FIG. 6a shows the output currents S1, S3 and S5 winding connected to delta 22, while FIG. 6b shows the output currents S2, S4 and S6 wye-connected reed 23. Obviously, wye-connected blaming will carry the same current as that delivered to bridge 26. Figure 7 shows the current in the secondary blame delta 22. All current wave shapes are displayed as adjusted by commutation currents. However, the RMS values shown are calculated on the basis of rectangular currents without commutating effects in accordance with United States and international standards. FIG. 8a shows how the ampere rotates the current in delta-connected winding 22 (FIG. 7) and current in wye blames (FIG. 6b) combine to produce the primary winding current that is displayed on fig. 8b. It is important to remember that the primary winding current is not a replica of one of the two secondary currents. Therefore, the equilibrium of ampere rotations cannot be between either coamed 22 and 23 and their associated halves of primary guilt when the two secondary viability is not closely linked. Since two bridges 25 and 26 do not occur at the same time, commuting the impedance of each rectifier section, without the presence of tertiary reeds 24, would be the impedance of each secondary reed 22 or 23 against the entire primary reed. Due to the axial imbalance of ampere-turns, this impedance is very high. Currents induced in tertiary winding 24 deliver the necessary ampere speed, which produce radial and axial equilibrium in accordance with the invention, this current is shown on fig. 9. It should be noted that the instantaneous values and directions of the tertiary current fig., while the net flow between each part of the tertiary winding and its adjacent secondary winding is each moment proportional to the current in this secondary winding. An important feature of the invention is that tertiary reeling can be further used as a static shield between primary and secondary reeling, where this static shield becomes necessary at higher voltages to control the capacitor connection between the primary and secondary remnant, which could produce extremely high voltage spikes on the secondary reeling at the moment when the high voltage circuit breaker or switch is closed. As shown in OBR. Tertiary winding 83 is then found in the illustrated phase, where polarity markings are again displayed as darkened circles and are characterized by an arrangement of OBR. In accordance with the invention, tertiary science 83 is grounded on earth 85 and then serves the purpose of the desired static shield. The grounded end of the tertiary winding should be adjacent to the end of the high voltage winding line exposed to the highest voltage. So, in fig. 4, where the primary coil 90 is a wye-attached coil that is grounded at its bottom, as shown, a tertiary ground connection should be made at the top of tertiary coil 83, near the terminal line primary winding. For primary delta connections, as in FIGS. 2 and 5, both ends of the primary windings are equally exposed to overvoltage. Accordingly, and in order to reduce problems with surge voltage, high voltage primary winding 100 of fig. 5 can cooperate with tertiary science, which includes reverse wound sections. That is, tertiary vinie fig. The ground connection is then made on ground 103, which is 100 against terminals 104 and 105 high voltage primary. It can be demonstrated that tertiary winding used in accordance with the invention will have a total kva. rating, which is about 52 percent of the evaluation of one secondary blame. The equivalent of a two-fault kva. transformer has therefore increased by about 13 percent. However, this compares favourably in costs with the parallel part of the primary winding with a static shield for operation at or above 69 kv. The invention can also be used advantageously in connection with a transformer arrangement, in which the primary coam consists of several parts, which can be arranged in a series-parallel arrangement. For example, in the case of a twelve-stage rectifier to be used for traction purposes, the unit was required to operate from either the 69 k. primary system or the primary system 34,5 Kv. In line with the current invention, the transformer would be manufactured as shown in figs. 11 and 12 for one phase of the transformer. Figure 11 illustrates the transformer as having two primary reeled parts 110 and 111 interconnected in a series of 69 kv. entry into primary blaming. The tertiary wound then consists of reverse wound axially spaced sections 112 and 113 that work with delta-linked secondary coil 114 and wye-linked secondary coil 115. The transformer is then available with sufficient insulation between the two primary winding parts 110 and 111 for 34,5 kv. Services. This insulation is schematically shown on fig. 11 as isolation 116. For the operation of the transformer of 34,5 coamed 110 and 111 are connected in parallel, as shown in obr. impression through insulation 116. As an additional advantage of the current invention can be used tertiary winding, including reeling 40 to 45 in the OBR. This is done, for example, by providing suitable terminals on the tops of the guilty 40, 42 and 44 FIG. 2. As another feature of invention, it should be understood that three pairs in parallel connected sections 40-41, 42-43 and 44-45 FIG. 2 could be connected in the delta instead of in wye if the tertiary vitie is not to be used as a static shield. Connecting tertiary windings in the delta could be useful, for example, in a twelve-state single-state rectifier transformer with a wye-connected primary and two displacement sets of secondary zigzag-attached windings. Delta-connected tertiary would then serve as a leveling amp-turns and also stabilize neutral. Neutral.