EP 1364442 and US 7414347 describe in a simplified form stator segments formed of multiple laminar segments. Each of said laminar segments has a contour analogous to a T-shape wherein a substantially horizontal portion further comprises a side recess and a side protrusion, both oppositely disposed to form self-coupling "male-female" members and specially intended to join the stator segments.

With regard to JP 2010141942 and US 7471025 describe examples of geometries of laminar segments. In addition, such documents also teach blade matrices, from which said laminar segments are removed (using stamping processes).

US 7821175 and CN 201008100 in turn disclose segmented stators formed by physical association of stator segments. In both documents, it is also common to see that physical association of stator segments provides for the use of external structures, such as, for example, ring-shaped structures.

Although the above-mentioned documents only illustrate examples of embodiments pertaining to the state of the art, it can be clearly noted that most of the currently existing segmented stators include fundamental aspects disclosed in such examples. From this observation the main drawbacks referring to these examples and, consequently, presented in most of currently existing segmented stators are easily verified.

The first drawback refers to a constructive point of view. As disclosed in JP 2010141942 and US 7471025, it is observed that the current blade matrices in function of the geometry of the laminar segments generate high amount of metal scrap. This is due to the fact that said geometry of the laminar segments aims at generating higher functional efficiency to the stator and not a smaller amount of scrap.

The second drawback refers to stator assembly and/or arrangement. US 7821175 and CN 201008100 teach that the stator assembly requires the use of external structures which add dimensions to said stator.

~~The present invention has been developed based on this scenario.~~

~~Objects of the invention~~

~~Hence, an object~~ Embodiments of the present invention ~~is~~ seek to provide a laminar segment for electric motor segmented stator having geometry that may be capable of reducing the amount of scrap (raw material optimization) without impairing electric efficiency of said motor. ~~Another object~~ Embodiments of the present invention ~~is~~ also seek to provide a laminar segment for electric motor segmented stator that ~~has~~ may have the ability to use aluminum thread in the composition of its coil.

Summary of the Invention

According to an aspect of the present invention, there is provided laminar segment for electric motor segmented stator, comprising as least an external segment (11) and at least a tooth (13), said laminar segment comprising: two side ends (12) projected from the external

ends (12) projected from the external segment (11); two side ends (14) projected from a perpendicular segment of the tooth (13); the side ends (12) and side ends (14) comprise right faces (FD) substantially parallel therebetween; and the side ends (12) and side ends (14) comprise left faces (FE) substantially parallel therebetween; said laminar segment wherein: the right face (FD) and the left face (FE) of side ends (12) comprise rectilinear chamfers defined in an opposite angular direction therebetween and disposed between the superior extension (11A) of the external segment (11) and fitting borders (12D, 12E); and the right face (FD) and the left face (FE) of side ends (14) projecting from said perpendicular segment of the tooth (13) and comprising rectilinear chamfers defined in an opposite angular direction therebetween, wherein said perpendicular segment of the tooth (13) projects perpendicularly from a inner central portion of the external segment (11).

~~These and other objects of the present invention are achieved by means of~~There is diclosed a laminar segment for electric motor segmented stator, which comprises at least an external segment and at least a perpendicular segment called tooth, in addition to containing two side

ends projected from each of the side ends of the external segment (that after joining said segments in the assembly is named crown), and two side ends projected from each of said lower ends of the tooth. Said side ends have right faces substantially parallel therebetween and left faces also substantially parallel therebetween. Preferably, one of said side ends further comprises a coupling projection while the other side end comprises a coupling recess.

In accordance with the principles and ~~objects~~ embodiments of the present invention, the right faces have an angular inclination complementary to the angular inclination of the left faces. It should be pointed out that, in accordance with embodiments of the present invention, said electric motor having a segmented stator comprises electric coils made of aluminum.

Brief Description of Drawings

The present invention will be described in detail based on the figures listed below, wherein:

Fig. 1 illustrates a second laminar segment for the electric motor segmented stator in accordance with the present invention;

Fig. 2 illustrates laminar segments for the electric motor segmented stator in the blade matrix disposed at the blade matrix in accordance with the present invention; and

Figure 3 illustrates laminar segments for the segmented stator in the stator package itself.

Detailed Description of the Invention

As previously mentioned, one of the main objects of the present invention is to provide laminar segments (that in conjunction form segments for electric motor segmented stators) which can be obtained/made of an optimized amount of raw material (metal blades and/or sheets).

In this sense, and in accordance with the present invention, a laminar segment 1 that is depicted in Figure 1 in an amplified form is disclosed.

Said laminar segment 1 that has geometry essentially analogous to letter T is essentially constituted by an external segment 11 and a tooth 13, wherein said external segment 11 corresponds to the horizontal portion of the T-shaped geometry; and said tooth 13 corresponds to the vertical portion of said T-shaped geometry. Attention should be drawn to the fact that laminar segments having T-shaped geometry are widely known by those skilled in the art.

Nevertheless, and unlike the laminar segments pertaining to the current state of the art, the presently disclosed laminar segment 1 is shown to have two end sides 12 projected from each of the side ends of the external segment 11 and two side ends 14 projected from each of said lower side ends of tooth 13.

As can be seen from Fig. 1, it is essentially required that said side end 12 and said side end 14 of opposite sides of one same laminar segment 1 have substantially parallel

CLAIMS

1. Laminar segment for electric motor segmented stator, comprising as least an external segment (11) and at least a tooth (13), said laminar segment comprising:

two side ends (12) projected from the external segment (11);

two side ends (14) projected from a perpendicular segment of the tooth (13);

the side ends (12) and side ends (14) comprise right faces (FD) substantially parallel therebetween; and

the side ends (12) and side ends (14) comprise left faces (FE) substantially parallel therebetween; said laminar segment ~~characterized in that~~ wherein:

the right face (FD) and the left face (FE) of side ends (12) comprise rectilinear chamfers defined in an opposite angular direction therebetween and disposed between the superior extension (11A) of the external segment (11) and fitting borders (12D, 12E); and

the right face (FD) and the left face (FE) of side ends (14) projecting from said perpendicular segment of the tooth (13) and comprising rectilinear chamfers defined in an opposite angular direction therebetween, wherein said perpendicular segment of the tooth (13) projects perpendicularly from a inner central portion of the external segment (11).

2. Laminar segment, in accordance with claim 1, ~~characterized in that~~ wherein the right face (FD) of side ends (12, 14) comprise a chamfer angular inclination supplementary to the chamfer angular inclination of the respective right face (FD) of side ends (14, 12); and

the left face (FE) of side ends (12, 14) comprise a chamfer angular inclination supplementary to the chamfer angular inclination of the respective right face (FD) of side ends (14, 12).

3. Laminar segment, in accordance with claim 1, ~~characterized in that~~ wherein each laminar segment (1) comprises a circular face (5) disposed between the side ends (14).

4. Laminar segment, in accordance with claim 1, ~~characterized in that~~ wherein said external segment (11) further comprises a through-hole (111).

5. Laminar segment, in accordance with claim 1, ~~characterized in that~~ wherein one of said side ends (12) further comprises a coupling projection (121) on its fitting border (12E).

6. Laminar segment, in accordance with claim 1, ~~characterized in that~~ wherein one of said side ends (12) futher comprises a coupling recess (122) on its fitting border (12D).

7. Laminar segment, in accordance with claim 1, ~~characterized in that~~ wherein it comprises electric coils (5) made of aluminum.