CLAIMS

1. A method for producing a non-oriented silicon steel for driving motors of new energy vehicles, comprising: steel smelting, continuous casting, hot rolling, normalizing, acid washing, single stand cold rolling without pre-heating, annealing, cooling, coating, and finishing sequentially, to produce a non-oriented silicon steel with an arbitrary thickness in the range of 0.25 mm-0.35 mm, wherein the recrystallized grain size of the non-oriented silicon steel is 50 μm-80 μm;

in the continuous casting procedure, the continuously casted billet obtained has a chemical composition including, in percentages by weight, Si: 2.95%-3.15%, Al: 0.75%-0.95%, Si+2Al: 4.6%-4.9%, Mn: 0.5%-0.7%, Sn: 0.03%-0.04%, Cu≤0.03%, Cr≤0.03%, Ni≤0.03%, Cr+Ni+Cu≤0.07%, Nb≤0.004%, V≤0.004%, Ti≤0.004%, Nb+V+Ti≤0.008%, C≤0.0025%, P≤0.015%, S≤0.0015%, N≤0.004%, C+S+N≤0.007%, Mn/S≥380, and Al/N≥200, with the balance being Fe and inevitable impurities;

in the hot rolling procedure, the continuously casted billet obtained after the continuous casting procedure is subjected to heating, rough rolling, finish rolling, and cooling sequentially, to obtain a hot-rolled coiled plate; during the finish rolling, the rolling start temperature is 950±20℃, the rolling end temperature is 840±20℃, and the total rolling reduction rate is 94-95%; during the coiling, the coiling temperature is 620±20℃; and

in the normalizing procedure, the area proportion of the non-recrystallized structure is 5%-20%.

2. The method for producing a non-oriented silicon steel for driving motors

of new energy vehicles of claim 1, wherein in the hot rolling procedure, the continuously casted billet obtained after the continuous casting procedure is heated to 1080℃-1110℃ for 160 min-180 min.

3. The method for producing a non-oriented silicon steel for driving motors of new energy vehicles of claim 1, wherein in the normalizing procedure, the normalizing temperature is 840℃-860℃ for 180 s-200 s.

4. The method for producing a non-oriented silicon steel for driving motors of new energy vehicles of claim 1, wherein in the annealing procedure, the annealing temperature is 960℃-980℃ for 40 s - 45 s.

5. The method for producing a non-oriented silicon steel for driving motors of new energy vehicles of claim 1, wherein in the single stand cold rolling procedure, multi-pass rolling is carried out, the total rolling reduction rate is 85±3%, and the rolling reduction rates of other passes except the last pass are not less than 30%.

6. The method for producing a non-oriented silicon steel for driving motors of new energy vehicles of claim 1, wherein in the hot rolling procedure, the continuously casted billet with a thickness of 220 mm is rough rolled into an intermediate billet with a thickness of 35 mm-40 mm, and then finish rolled into a hot-rolled plate with a thickness of 2.00 mm-2.30 mm.

7. The method for producing a non-oriented silicon steel for driving motors of new energy vehicles of claim 6, wherein the non-oriented silicon steel is a

steel plate with a thickness of 0.25 mm, the intermediate billet has a thickness of 35mm, and the hot-rolled plate has a thickness of 2.00mm; or the non-oriented silicon steel is a steel plate with a thickness of 0.30 mm, the intermediate billet has a thickness of 37.5 mm, and the hot-rolled plate has a thickness of 2.15 mm; or the non-oriented silicon steel is a steel plate with a thickness of 0.35 mm, the intermediate billet has a thickness of 40 mm, and the hot-rolled plate has a thickness of 2.30 mm.

8. The method for producing a non-oriented silicon steel for driving motors of new energy vehicles of claim 1, wherein no alloying materials of Cu, Cr, Ni, Nb, V, Ti are added in the steel smelting procedure.

9. A non-oriented silicon steel for driving motors of new energy vehicles, produced by the production method of claim 1.

10. The non-oriented silicon steel of claim 9, wherein the recrystallized grain size of the non-oriented silicon steel is 50 μm-80 μm.

11. The non-oriented silicon steel of claim 9, wherein the non-oriented silicon steel has a yield strength of ≥ 460 Mpa, a tensile strength of ≥ 550 Mpa, an iron loss $P_{1.0/400}$ of ≤ 18.5 W/kg, and a magnetic induction strength B_{5000} of ≥ 1.67T.

12. The non-oriented silicon steel of claim 11, wherein the non-oriented silicon steel is a steel plate with a thickness of 0.25 mm and an iron loss $P_{1.0/400}$ of ≤ 17.5W/kg; a steel plate with a thickness of 0.30 mm and an iron loss $P_{1.0/400}$

of ≤ 18.0W/kg; or a steel plate with a thickness of 0.35mm and an iron loss $P_{1.0/400}$ of ≤ 18.5 W/kg.