CLAIMS

1. An alloy having the following composition, by weight:

16.5% ≤ Cr ≤ 25.0%

11.0% ≤ Mo ≤ 18.0%

2.0% ≤ W ≤ 7.0%

Fe ≤ 1.0%

Mo+W ≤ - 0.5 x (Cr+Fe) + 30%

Mo+W ≥ - 0.5 x (Cr+Fe) + 25%

Ti+Ta ≤ 0.80%

0.01% ≤ Si ≤ 0.75%

0.01% ≤ Al ≤ 0.35%

0.01% ≤ Mn ≤ 0.35%

Ca ≤ 0.005%

Mg ≤ 0.005%

Nb ≤ 0.01%

0.001% ≤ C ≤ 0.05%

0.001% ≤ N ≤ 0.05%

S ≤ 0.003%

P ≤ 0.005%

optionally, 0.0010% ≤ rare earths ≤ 0.015%, the silicon content being less than or equal to 0.25% in the presence of rare earths at a content comprised between 0.0010% and 0.015%,

the rest being nickel and unavoidable impurities resulting from the manufacturing, the nickel content being greater than or equal to 54%.

2. The alloy according to claim 1, wherein the iron content is less than or equal to 0.5%.

3. The alloy according to claim 1 or 2, wherein the rare earths are chosen from yttrium, cerium and lanthanum and mixtures thereof.

4. The alloy according to claim 3, wherein the rare earths are chosen from yttrium or a mixture of cerium and lanthanum.

5. A coated part (26) comprising a substrate (28) made of a base material and a coating (30) made of an alloy according to any of claims 1 to 4, the base material being a metallic material, preferably carbon steel, and for example an X56, X60, X65, X70 steel.

6. The coated part according to claim 5, wherein the coated part (26) is a tube section (7).

7. A filler wire made of an alloy having a composition according to any of claims 1 to 4.

8. The manufacturing method of a filler wire according to claim 7, the method comprising the following steps:

- providing a semi-finished product made of an alloy according to any of claims 1 to 4;
- hot transformation of the semi-finished product, for forming an intermediate wire; and
- transformation of the intermediate wire into a filler wire, with a diameter smaller than that of the intermediate wire, said transformation comprising a drawing step.

9. A method for producing a welded assembly (1; 7; 20), the method comprising welding together two portions of parts (3; 12, 7) by means of the filler wire according to claim 7, each portion of part (3, 12, 7) being made of a base material, wherein the base material is selected from an iron-nickel alloy such as Fe-9Ni, a nickel alloy such as C-276, C-4 or 22 and a carbon steel, for example an X56, X60, X65 or X70 steel.

10. The method according to claim 9, wherein the welding is an arc welding.

11. The method of producing a welded assembly (7) according to claim 9 or 10, wherein said welded assembly forms a tube section (7) comprising a sheet metal bent into the shape of a tube, the longitudinal edges (12) of which form the portions of parts (3) joined to each other by the weld bead (15), wherein the welding step is a step of welding together the longitudinal edges (12) of the sheet metal (9).

12. The method according to claim 11, wherein the weld is a longitudinal butt weld.

13. The method according to claim 11 or claim 12, wherein the tube section (7) is provided with a coating (30) made of the alloy according to any of claims 1 to 4, over at least a portion, preferably over the entire inner surface, thereof.

14. The method of producing a welded assembly (20) according to claim 9, comprising, prior to the welding step, the following successive steps:

- supplying a first tube section (7) and a second tube section (7), the tube sections (7) forming the portions of parts (3), the first tube section (7) and the second tube section (7) each extending along a longitudinal axis (M), and made of the base material;
- positioning of the first and second tube sections (7) in such a way that a longitudinal end (24) of the first tube section (7) is arranged facing a longitudinal end (24) of the second tube section (7) along the longitudinal axis (M) of the first and second tube sections (7); and

wherein the welding step is a step of welding together two longitudinal ends (24) facing the first and second tube sections (7), the welding preferably being orbital butt welding

wherein said welded assembly forms a tube (20) comprising at least the first tube section (7) and the second tube section (7), and the weld seam (22) extending along the circumference of the tube (20).

15. The method according to claim 14, further comprising a step of manufacturing the first tube section (7) and the second tube section (7) using the method of one of claims 11 to 14.

16. A part or portion of a part made of an alloy according to any of claims 1 to 4, said part or portion of a part being obtained by metal additive manufacturing.

17. A method of manufacturing a part or portion of a part, comprising a step of manufacturing said part or portion of a part by a metal additive

manufacturing process using, as filler material, a filler wire made of the alloy according to any of claims 1 to 4 and/or a powder made of the alloy according to any of claims 1 to 4.

18. The use of the filler wire according to claim 7:

- as a welding filler wire for welding together two portions of parts made of a base material, the base material being an iron-nickel alloy such as Fe-9Ni, a nickel alloy such as C-276, C-4 or 22, or a carbon steel, and for example a X56, X60, X65 or X70 steel; and/or
- as a hardfacing wire for producing a coating on parts or portions of parts made of a base material, the base material being a metallic material, preferably a carbon steel, and for example a X56, X60, X65 or X70 steel; and/or
- as filler wire in a metal additive manufacturing process.

19. A metallic powder made of an alloy according to any of claims 1 to 4.

20. A method of manufacturing a metal powder according to claim 19, said method comprising a step of providing a filler wire according to claim 7, and a step of plasma atomizing the filler wire, for obtaining the metal powder.