

UNITED STATES PATENT OFFICE.

FREDERICK M. BECKET, OF NIAGARA FALLS, NEW YORK, ASSIGNOR TO ELECTRO METALLURGICAL COMPANY, OF NEW YORK, N. Y., A CORPORATION OF WEST VIRGINIA.

ALLOY.

1,062,430.

Specification of Letters Patent.

Patented May 20, 1913.

No Drawing.

Application filed August 8, 1910. Serial No. 576,175.

To all whom it may concern:

Be it known that I, FREDERICK M. BECKET, a subject of the King of Great Britain, residing at Niagara Falls, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Alloys, of which the following is a specification.

My invention relates to an alloy consisting of, or comprising manganese, titanium and silicon, the manganese and titanium being the principal constituents.

The alloy may contain widely differing percentages of titanium and manganese, but for most purposes it is desirable to keep the titanium content less than 25%, though I do not wish to be understood as limiting my invention to 25% as the maximum. The alloy may also contain carbon in proportions varying from a fraction of one per cent. to carbon in appreciable proportions depending on the method of manufacture, the ratio of manganese to titanium, or upon other considerations, as, for example, where the alloy is to be added to steel, it may contain sufficient carbon to furnish all or part of the carbon requisite for recarburization of the steel. Iron may be present, due to its presence in the commercial raw materials, but its presence is not essential nor particularly useful.

Alloys of the character above described may be prepared by smelting, preferably in an electric furnace, the prepared oxides, or oxid ores of manganese, titanium and silicon, in presence of a carbonaceous reducing

agent, or a metallic reducing agent such as aluminum or calcium for example. Or the alloys may be prepared by the addition of metallic manganese or silicon in suitable proportions during the smelting of the ore of titanium.

The above described alloys, when used as additions to steel, have the particular advantage that the component metals disseminate more uniformly and rapidly throughout the molten steel than when the corresponding ferro-alloys are added separately, and their use is further advantageous, as compared with ferro-alloys, in that a much smaller proportion of iron is added to the steel and the chilling effect is therefore lessened.

What I claim is:

1. An alloy comprising manganese, titanium and silicon, the manganese and titanium together being in excess of fifty per cent.

2. An alloy comprising manganese, titanium, silicon and carbon, the manganese and titanium together being in excess of fifty per cent.

3. An alloy comprising manganese, titanium and carbon, the manganese and titanium together being in excess of fifty per cent.

In testimony whereof, I affix my signature in presence of two witnesses.

FREDERICK M. BECKET.

Witnesses:

JNO. B. HUFFARD,
D. BURGESS.