UNITED STATES PATENT OFFICE.

ALEXANDER ZENZES, OF CHARLOTTENBURG, GERMANY.

PROCESS OF RESTRAINING EBULLITION IN CONVERTERS.

No. 836,909. Specification of Letters Patent. Patented Nov. 27, 1906.

Application filed June 29, 1906. Serial No. 324,058.

To all whom it may concern:

Be it known that I, ALEXANDER ZENZES, engineer, a subject of the German Emperor, residing at 17 Rönnestrasse, Charlottenburg, near Berlin, Germany, have invented a new and useful Improved Process of Restraining Ebullition in Converters, of which the following is a specification.

The present invention consists of a method for bringing charges of molten iron contained in a converter into such a condition as renders their use for cast-steel possible before their transference into the mold or the pans or ladles used for filling the same—that is, to do away with the dangerous ebullition into which they are brought during blowing by the overflowing of the oxid contained in solution in the bath of metal.

This process is intended to be used instead of that hitherto in vogue for this purpose—viz., to quieten the disturbance of the charge by addition of an alloy of silicon and manganese.

It consists of a process of preventing the ebullition of the "blown" iron simply by addition of the same iron from which the charge has been blown and which is always kept ready in the molten state for the filling of the converter after each emptying during the whole time the manufacture is carried on. To the batch of metal in the converter, after the decarbonizing and just before running off, is added a quantity of this molten mass from the same cupola-furnace which had been used for smelting. (For this purpose the same arrangement is used as was used to bring the batch into its place.) The carbon of the iron added acts energetically on the oxid dissolved in the charge of metal, and the same is decomposed with formation of carbonic-oxid gases. The quantity of the addition can amount to ten per cent. of the charge after the blowing.

With this percentage addition we have—

	Carbon.	Silicon.
For one hundred kilos blown iron	0.1	0.1
For ten kilos molten raw iron added	0.33	0.22
Therefore for one hundred and ten kilos of the mixture	0.43	0.32
In the reaction is lost	0.17	0.05
So that one hundred and ten kilos of the molten steel ready for running off contain	0.26	0.27
And one hundred kilos of the same	0.23	0.24

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that I am aware that it has been proposed to add some melted iron from the cupola-furnace when too much carbon has been driven off and also for the purpose of making a malleable iron, but such does not constitute any part of my invention.

What I claim is—

Method for restraining or preventing the ebullition of a "blown" charge of molten iron in the steel-converter, by adding a quantity up to ten per cent. of molten iron to the metal charge therein before running off, the iron added being of the same kind as that used for the charge substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALEXANDER ZENZES.

Witnesses:

HENRY HASPER,

WOLDEMAR HAUPT.