

UNITED STATES PATENT OFFICE.

EDWARD BAKER, OF MILLSTONE, NEW JERSEY.

IMPROVEMENT IN THE MANUFACTURE OF SPIEGELEISEN.

Specification forming part of Letters Patent No. **139,649**, dated June 10, 1873; application filed April 30, 1873.

To all whom it may concern:

Be it known that I, EDWARD BAKER, of Millstone, Somerset county, New Jersey, have invented an Improvement in the Process for Producing that Quality of Iron known as "Spiegeleisen," and that the following is a full, clear, and exact description.

That quality of iron known as spiegeleisen has heretofore been produced in the United States from the residuum of the zinc ore of Sussex county, New Jersey, containing Franklinite, after the ore has been treated for the production of white oxide of zinc, by analysis, the said residuum containing, on the average—

Oxide of zinc	-	-	-	-	6.40
Oxide of manganese	-	-	-	-	17.70
Peroxide of iron	-	-	-	-	39.90
Lime	-	-	-	-	8.74
Magnesia	-	-	-	-	5.50
Silicon	-	-	-	-	21.65

99.89

Such residuum has for some years past been successfully worked in a smelting-furnace, such as described in Letters Patent granted to Thaddeus Sillick, and bearing date the 13th day of January, 1855, to which is applied an apparatus for collecting the remaining zinc, or portions of it, and the production of spiegeleisen thus obtained from such residuum has been, on the average, about twenty-seven per cent. of the weight of the residuum treated.

I have discovered that by the admixture of iron ore, such as hematite, magnetite, or other iron ores with the said residuum I can materially increase the yield of spiegeleisen of a quality equally good with that heretofore obtained from the residuum alone.

I have successfully worked my improved process in the proportions of one-eighth iron ore to seven-eighths residuum, and in that proportion, the iron ore being magnetite, I have obtained an average of thirty-five per cent. of spiegeleisen to the weight of residuum and ore, and the product thus obtained, on analysis, contained, on the average—

Metallic iron	-	-	-	-	85.40
Metallic manganese	-	-	-	-	10.22
Carbon	-	-	-	-	4.10
Phosphorus	-	-	-	-	.29
Silicon	-	-	-	-	.10
					100.11

By my improved process of smelting the residuum of the zinc ore containing Franklinite iron in admixture with any of the ordinary iron ores I am enabled to produce spiegeleisen at a much cheaper rate than by any process heretofore known and practiced.

I do not wish to be understood as limiting my claim of invention to the working of the said process in the proportions above specified, nor to the working of the residuum of the zinc ores of Sussex county, New Jersey, which contain Franklinite iron, as other ores of other localities may possess like properties.

What I claim as my invention, and desire to secure by Letters Patent, is—

The process for obtaining spiegeleisen by smelting the residuum of the zinc or like ores which contain Franklinite iron in admixture with ordinary iron ore, substantially as described.

EDW. BAKER.

Witnesses:

G. W. BROWNE,
WILLIAM SCOTT.