UNITED STATES PATENT OFFICE.

WILLIAM ANDERSON SPARGER, OF BRISTOL, TENNESSEE.

PROCESS OF REDUCING OR DRAWING OUT STEEL INGOTS.

SPECIFICATION forming part of Letters Patent No. 392,468, dated November 6, 1888.

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To all whom it may concern:

Be it known that I, WILLIAM ANDERSON SPARGER, a citizen of the United States, residing at Bristol, in the county of Sullivan, in the State of Tennessee, have invented a certain new, useful, and Improved Process for Reducing or Drawing out Steel Ingots, of which the following is a specification.

By all processes heretofore in use steel ingots have to be reduced or drawn out at a red or low heat, in which condition the metal is very hard and requires much time and labor to reduce it.

By my process the ingot may be worked at a white heat without danger of flying to pieces or being injured by the heat. In this condition the metal is very soft, drawing out easily under the hammer, and if the ingot be "honeycombed" or "piped," which is almost always the case, these defects are eliminated and the metal made perfectly solid by my process.

To render it practicable to work the ingot at a white heat I take ground or pulverized sulphate of barium and apply it to the ingot once or twice while heating and also just before hammering. The surface of the heated ingot should be thoroughly covered with the flux, which will prevent scaling and disintegration while hammering. If the ingot is thoroughly covered with the baryta flux when it is first put under the hammer it will not be necessary to apply the flux again during that hammering, as this flux is not quickly vaporized, burned, or destroyed, but lasts sufficiently long to insure a perfect protection to the metal during any reasonable hammering period. The hammering should proceed quickly and with as much force as the size of the ingot will allow until it is reduced to the size desired.

When it is desired to reduce ingots before allowing them to cool after they are cast, they are removed from their molds at white heat, the sulphate of baryta is applied, and they are then passed immediately to the hammer.

Having thus described my said process, I claim as my invention and desire to patent under this specification—

1. The improved process of reducing or drawing out steel ingots, which consists in heating the ingot to a white heat, applying sulphate of barium, so that its flux fully envelops the ingot, and hammering the ingot at white heat, substantially as hereinbefore specified.

2. In the reduction or drawing out of steel ingots at white heat, the process of preventing oxidation and disintegration, which consists in applying ground or pulverized sulphate of barium to the surface of the ingot, so that its flux fully envelops the same before hammering, substantially as hereinbefore set forth.

WILLIAM ANDERSON SPARGER.

Witnesses:
H. H. HAYNES,
W. D. HAYNES.