

# UNITED STATES PATENT OFFICE.

HENRY A. TOBELMANN, OF WARREN, ARIZONA TERRITORY.

PROCESS OF UTILIZING COKE-BREEZE.

978,236.

Specification of Letters Patent.

Patented Dec. 13, 1910.

No Drawing.

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*To all whom it may concern:*

Be it known that I, HENRY A. TOBELMANN, a citizen of the United States, residing at Warren, in the Territory of Arizona, have invented new and useful Improvements in Processes of Utilizing Coke-Breeze, of which the following is a specification.

My invention relates to improvements in artificial fuel, and comprises a method of preparing artificial fuel from coke breeze and "slack" or washed coal.

The principal object of my invention is to utilize the coke breeze coming from coke ovens, and which is at present almost a waste product and in most cases is an expense for its removal. I propose to convert this waste product into a source of revenue by a simple and comparatively inexpensive process, converting it into marketable coke. As is well known, from two to five per cent. of the coal which is charged into the ovens is lost in the coke breeze which is mixed with the ashes. The coke breeze will analyze between 25 and 35 per cent. of ash, and it is the common practice to haul or ship this away, to be used merely for filling purposes or to a dump.

I have found that the coke of the coke breeze will amalgamate or fuse with coal under proper conditions, providing the ash is first removed. The latter is, however, an important and essential step in my process.

My method of transforming the coke breeze into a marketable fuel consists in first pulverizing the breeze, by passing it between rolls or other suitable crushing apparatus until the lumps are reduced to about the size of slack coal. After the breeze has thus been crushed, the ash is removed by sifting or by mixing with water, in which the coke will float while the ashes will sink. The crushed and cleaned coke breeze is then mixed with slack or with washed coal, the particles of coke breeze and coal being about the same size. By removing the ash from the coke breeze, clean surfaces of coke are thereby left exposed, which are brought into

direct and intimate contact with the clean coal in the mixture, so that the particles of coke and coal may be thoroughly amalgamated during the succeeding coking step of the process. This mixture is charged into the coke ovens and heated in the manner of coking coal. During the process of coking, the particles of coke are practically unaffected while the particles of coal will fuse to the coke particles and then coke, thus forming a resulting mass of coke of marketable quality.

I have found that the proportions of coke breeze and washed coal or slack that may be mixed may vary quite largely, depending upon the so called coking value of the coke. It is essential, however, that the ash shall be removed from the coke breeze before it is mixed with the slack, in order that the fusing of the mass may be accomplished and final coking accomplished.

Having thus disclosed my process of utilizing coke breeze and the manner in which the same may be carried out, I claim—

1. The method of utilizing coke breeze, which comprises pulverizing the coke breeze, cleaning the ash therefrom, mixing the cleaned coke breeze with suitable proportions of clean coking slack, and subjecting the mixture to heat sufficient to fuse and coke the mass.

2. The method of utilizing coke breeze, which comprises pulverizing the coke breeze, cleaning the ash therefrom, mixing the cleaned coke particles with suitable proportions of clean coking slack, and subjecting the mixture to a temperature sufficient to cause the particles of the mixture to cohere and coke the slack.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HENRY A. TOBELMANN.

Witnesses:

M. E. JACKS,  
B. A. McNELLY.