

UNITED STATES PATENT OFFICE.

CHARLES DIEBOLD, OF LEBANON, PENNSYLVANIA.

PROCESS OF PREPARING SLAG FOR RAILWAYS AND ROADWAYS.

SPECIFICATION forming part of Letters Patent No. 281,248, dated July 17, 1883.

Application filed December 11, 1882. (No specimens.)

To all whom it may concern:

Be it known that I, CHARLES DIEBOLD, a citizen of the United States of America, residing at Lebanon, in the county of Lebanon and State of Pennsylvania, have invented certain new and useful Improvements in Processes for Preparing Slag for Ballast for Railways and Roadways; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has relation to improvements in processes for preparing blast-furnace slag for utilization as railway or roadway ballast.

Heretofore little value has belonged to blast-furnace slag. It has been disposed of in such ways and places as were the most convenient and inexpensive, usually being run through gutters or troughs to some handy locality or carted away to some place and heaped up, or thrown down a bank as useless material. Generally in the vicinity of furnaces the smaller pieces of slag are to a certain extent used to make roads with; but by far the greater quantity is carried off and regarded as of no use. These places of deposit are becoming more and more contracted, and the removal of slag is a question of some importance to all furnace-men, and to obviate the difficulties, provide places of deposit, and profitable disposition and utilization I have devised my improved process of preparing blast-furnace slag for ballast in railroads and on roadways.

My invention therefore consists in the method of running the slag from a blast-furnace into a movable receptacle with a discharge means, and then moving the receptacle over a prepared bed, and in the progress of the same over the bed discharging the slag on the bed in such quantities or layers as may be desired.

To consummate the objects of my invention the receptacle may be propelled by any suitable means and be of any desired shape or size, and provided with a discharge-orifice, with means for regulating the flow of slag. The bed may be prepared by any of the usual means of leveling a dirt floor. Then, by moving the receptacle filled with molten slag

over or along the side of the floor, and opening the discharge-orifice, the slag is distributed in such layers as may be required, and by the sudden cooling becomes disintegrated and broken into pieces suitable for ballast in the uses stated.

It will be readily seen that a thick layer of slag may be obtained by a free discharge at the orifice and a slow movement of the receptacle, and a thin deposit or layer by lessening the flow at the discharge or accelerating the progress of the receptacle. Successive layers of slag may be run on each other, and the integration assisted and hastened by the variations of temperature thus produced. In my experience it has been developed that this running in consecutive layers produces the better results, since, as stated, the variations of temperature produced cause the slag to crack and break evenly and much more speedily than when run in a single layer. The variations of thickness of layers of the slag produce corresponding variations in the size of the ballast.

Ordinarily the preparation of slag by stamps or known means for purposes named is attended with more expense than profit, and for that reason there is but very little use made of it; but by my improved process or method of preparation the slag is cracked and broken ready for application to the beds of railroads between the cross-ties or on the common dirt roads, and these desirable results are attained with but little additional expense to that now attending the common disposition made of it in heaps and on cinder banks.

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

The hereinbefore-described method of treating liquid slag, which consists in running the slag from a furnace into a movable receptacle provided with discharge means, and then moving the receptacle over or along the side of a prepared bed, and during the progress of the same over the bed discharging the slag on the bed, substantially as described.

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

CHAS. DIEBOLD.

Witnesses:

BASSLER BOYER,
LEWIS REHR.