

UNITED STATES PATENT OFFICE.

THOMAS N. MILLER, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN THE MANUFACTURE OF ILLUMINATING-GAS.

Specification forming part of Letters Patent No. **139,910**, dated June 17, 1873 application filed January 25, 1872.

To all whom it may concern:

Be it known that I, THOMAS N. MILLER, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new, useful, and improved process or method of treating "slack," or such small particles of bituminous coal as are usually found mingled with their own dust and other pernicious substances preparatory to the conversion of such coal into illuminating-gas, of which the following is a specification:

Heretofore coal-gas used for illuminating purposes has been made by the dry distillation of lump-coal without previous cleansing, and seldom or never from slack, unless such slack was first mixed with some one or more vegetable, mineral, or animal substances, so as to agglutinate the several small particles, and cause them to adhere together and thereby hold down the accompanying fine powder or dust to prevent its being carried over with the gaseous products arising from distillation, as the said dust, if allowed to pass over, would render the gas very foul with extraneous mixtures, and consequently require a greater amount of purification.

To utilize the granular coal found in slack without the necessity of such agglutinants, and get rid of the dusty matter that is mingled with and surrounds the several small solid particles of coal that would otherwise come over in the distillatory process, and enable me to make good illuminating-gas from an article hitherto

considered worthless, is the principal object of my invention.

To this end I take the slack, as it is thrown out at the mines, and agitate it in a fine screen or sieve, by which it is relieved or separated from as much of the surrounding dust as it is possible to remove by that process, the sieve or screen being fine enough in its meshes to allow only the pulverulent matter to pass through, retaining such small solid particles of coal that may be of the size of a grain of wheat, or larger, which granular coal is the only portion I propose to make use of, and, as each of these several small solid grains of coal are enveloped or covered by a coating of pernicious dust, notwithstanding the screening process, I further cleanse them by washing in water, after which the coal is to be thrown out and spread upon a platform so constructed as to carry off the water and enable the coal to rapidly dry, when it may be charged into a retort and the process of distillation conducted in the usual manner for the purpose of converting it into illuminating-gas.

I claim—

The three specified successive processes, as a preparatory step in the manufacture of illuminating-gas from bituminous coal-slack.

THOS. N. MILLER.

Witnesses:

JOSIAH W. ELLS,
CHAS. KEALLY, Jr.