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UNITED STATES PATENT OFFICE.

SAM. GARBER AND H. SWARTZENGROVER, OF NORRISTOWN, PA.

IMPROVEMENT IN THE PROCESS OF BURNING LIME BY THE INTRODUCTION OF A BLAST OF AIR.

Specification forming part of Letters Patent No. **152**, dated March 25, 1837.

To all whom it may concern:

Be it known that we, SAMUEL GARBER and HENRY SWARTZENGROVER, of Norristown, in the State of Pennsylvania, have invented an Improvement in the Process of Burning Lime; and we do hereby declare that the following is a full and exact description thereof.

We take a kiln of either of the the ordinary constructions for the burning of lime, and we adapt thereto any of the various kinds of blowing apparatus used for forges or for furnaces, and after having charged our kiln with limestone and fuel in the usual way and ignited the fuel, we introduce a blast of air into the same, giving to the blast such a degree of force as may be found requisite. The blowing apparatus which we prefer is the ordinary fan-wheel, as it affords at once a more diffused blast than that from a bellows or from blowing-cylinders; but by the adoption of proper means well known to machinists, as by blowing into a regulator, and by introducing the blast through several openings as large as may be found convenient, it may be sufficiently diffused from any blowing apparatus.

It is well known to those persons employed in the business of burning lime that the operation of a kiln is much influenced by the state

of the weather, the fuel sometimes burning too feebly to produce a sufficiently high temperature; but by means of the artificial blast the process is made to go on independently of atmospheric changes, and the proper temperature rapidly attained. By this procedure the saving of fuel is large in amount, as the proper degree of heat can not only be produced, but also maintained until the calcination is completed; and, furthermore, we are enabled to burn such fuel as would either be thrown away or would be rejected as unsuited to the burning of lime in kilns without the blast.

We do not claim as our invention any particular kind of blowing apparatus, nor any particular manner of constructing a limekiln, but employ any of those now in use which may be adapted to our purpose, all that we claim being—

The introduction of wind into a limekiln by a blowing apparatus for regulating the combustion of the fuel, and in consequence the calcination of the lime.

SAMUEL GARBER.

HENRY SWARTZENGROVER.

Witnesses:

D. SOWERS,

B. F. HANCOCK.