

UNITED STATES PATENT OFFICE.

WILLIAM DAVY, OF CHICAGO, ILLINOIS.

METHOD OF MAKING PAVING MATERIAL FROM CLAY.

SPECIFICATION forming part of Letters Patent No. 305,432, dated September 23, 1884.

Application filed September 17, 1880. (No specimens.)

To all whom it may concern:

Be it known that I, WILLIAM DAVY, a subject of the Queen of Great Britain, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Method of Making Ballast and Paving Material from Clay; and I hereby declare the following to be a full, clear, and exact description of the same.

My object is to produce from ordinary clay in the cheapest and most effective and expeditious manner an extremely hard conglomerate mass of igneous matter, suitable, when broken into pieces, for macadamizing roads, forming foundations for buildings, and for all analogous purposes.

My invention will be fully understood by the following description: I build upon the ground, in the open air, a coal-fire, and heap upon it common clay to the height in the center of two or three feet and gradually sloping downward to the edges. The manner in which I prefer to proceed in this initial stage is to lay the foundation of the fire with sticks and coal, heap the clay over it, leaving draft-openings, and then ignite the fuel; but, if desired, the fire may be lighted first and the clay heaped on when the fire is under way. No particular regularity of form is required as to this heap, but it should, as nearly as convenient or practicable, approximate a cone. On the top of this heap of clay I place a thin layer of coal-slack and leave the pile to burn. At the end of about six or eight hours the conical heap of clay appears as a half-fused glowing mass. It is then raked out from the base to a greater area, (which operation causes it to settle down somewhat at the center,) sprinkled over with coal-slack, and a fresh charge of clay piled on in the same form as before, completely covering the glowing clay as the first charge covered the burning coal. Over this second charge a fresh layer of coal-slack is spread in the same manner and about the same depth as before, when the mass is again allowed to stand for a period of several hours, or until the whole is again reduced to a glowing state, when the operation of drawing out the base, sprinkling with coal-slack, heaping on fresh clay, and covering with coal-slack, and permitting it to

burn in its own way is repeated. The heap should be stirred two or three times a day by inserting a crow-bar at different points, in order that the mass shall not become so solid as to interfere with the draft. If the clay is of an inferior grade, it should be moistened with water before being laid on. When by continued repetition of the above operation the pile has attained the desired magnitude, it is allowed to cool by the natural process, and will then be found to consist of a mass of solid lumps, resembling igneous rock of extreme hardness, of substantially uniform quality throughout.

For application to the purpose for which it is designed, these lumps are broken into fragments of suitable size by any of the well-known methods.

I am aware that it is not new to make ballast or paving material from clayey earths by burning the same in conjunction with fuel; but, so far as I am aware, wherever this has been practiced the clay and fuel have been inclosed in kilns, and after ignition of the fuel have been left to follow their own course, without further manipulation.

It is obvious that the employment of kilns entails considerable labor and expense, and that the quantity of clay treated in any kiln must be a comparatively small one. Besides this, the product of each kiln presents several different grades, only one or two of which are adapted for the main purpose. All these disadvantages are overcome by my improved method. By treating the clay in the open air not only is the expense and trouble of constructing kilns avoided, but I am enabled to produce the material in immense quantities from a single initial fire, and by the method of stirring and spreading the pile, which I have described, I obviate the production of inferior grades.

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

1. The method of producing from clay a hard conglomerate mass, to be broken into pieces for use in the construction of road-beds, pavements, and the like, which consists in making a coal-fire in the open air, covering the fire so formed with clay, placing over the clay a cov-

ering of coal-slack, and allowing the burning to continue for a suitable period of time, substantially as described.

2. The method of producing from clay a hard conglomerate mass, of any desired magnitude, in lumps to be broken into pieces for use in the construction of road-beds, pavements, and the like, which consists in making a coal-fire in the open air, covering the fire so formed
10 with clay, placing over the clay a sprinkling

of coal-slack, from time to time raking out the mass from the base to a greater area and heaping on fresh charges of clay and coal-slack, stirring the heap at intervals from the top, and finally allowing it to cool, substantially 15 as described.

WILLIAM DAVY.

Witnesses:

J. O. DICKERSON,
FRED L. SMITH.