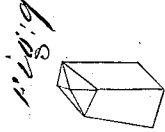
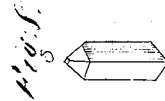
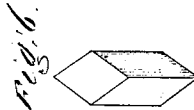
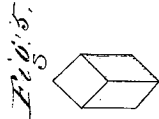
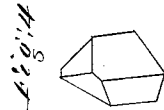
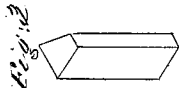
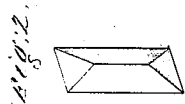
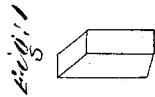


N^o 90824

John Dickinson's
New Manufacture of Artificially
Formed Mineral Carbon Stones Fullers etc



Witnesses
Charles L. Smith
Franklin Barrett

Bay Ridge Co
New York
1869
Inventor
John Dickinson

United States Patent Office.

JOHN DICKINSON, OF BAY RIDGE, NEW YORK.

Letters Patent No. 90,824, dated June 1, 1869.

IMPROVEMENT IN THE PREPARATION OF MINERAL CARBON FOR USE IN THE ARTS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOHN DICKINSON, of Bay Ridge, Kings county, and State of New York, have invented a new article of Manufacture of Mineral Carbon, or diamond-cutters, or dressers, for cutting, dressing, and sawing stone, metal, and other substances; and I do hereby declare that the following is a full description of the same.

For a proper understanding of the objects of my invention, it will be important to give a brief explanation of the nature and properties of the article called mineral carbon, or diamonds, as found in the natural state, and as heretofore used for cutting or dressing stone.

Mineral carbon, though of the same characteristics as the gem diamond, and therefore generally called a diamond, yet is totally unlike the gem diamond, as being black or brown, and opaque, and at the same time much harder.

Their natural shape or form also differs from the gem diamond, generally presenting a rough, irregular, pebbly appearance, but utterly destitute of any faces or plain surfaces.

Owing to its extreme hardness, it was, for a long time, only deemed useful for grinding and shaping diamonds and other gems.

Within a recent period of time, however, it has been applied to tools for drilling rocks, dressing mill-stones, and other like purposes.

Although of admitted utility for these purposes, yet owing to its peculiar shape or conformation in the natural state, it has been but little used, and then with great difficulty, because of the insecurity of firmly setting them in tools, and at the same time obtain a cutting-angle.

The nature of my invention, therefore, consists in manufacturing the natural mineral carbon into the varied shapes of drill-points or cutters, for dressing, cutting, boring, or sawing stone, metal, or other hard substances, and shaping them at the same time, so as to admit of their being securely and firmly set in the various kinds of metal tools in which they may be used.

But to describe my invention more particularly, I will refer to the accompanying drawings, forming a part of this specification, the same letters of reference, wherever they occur, referring to like parts.

Figure 1 represents a chisel-point cutter formation.

Figure 2, a triangular prism-like cutter or dresser.

Figure 3, a quadrangular prism-like dresser, having square or flat faces.

Figure 4, a quadrangular double-faced drill-point.

Figure 5, a cube formation.

Figure 6, a lozenge-shaped cube.

Figure 7, a double-inclined plane or wedge-shaped formation.

Figure 8, a drill-faced prism.

Figure 9, a drill-faced parallelogram formation.

Figure 10, a flat drill-point.

Figure 11, a flat oval drill-point formation.

Figure 12, a pyramidal drill-point formation.

The manufacturing of these various shapes is intended to include all the necessary drills, cutters, or dressers required for drilling, cutting, and dressing stone, metal, or other hard substances, and at the same time shape them so as to facilitate their easy and perfectly secure adjustment in the tool-holder.

To form them into the various shapes necessary to obtain a cutting-point or edge, as well as a good base for setting, has been supposed to be impracticable, owing to the immense hardness of mineral carbon.

In the United States it is not possible to do it at present, for want of the skilled labor, and the very limited demand, as yet, for the article.

And in Europe, where I have had to go to have my invention worked out into the requisite shapes, which I have enumerated as my new manufacture, it was at first declared not only impracticable, but also too costly to attempt to shape mineral carbon by the ordinary lapidary process.

By great labor, however, with the facilities afforded by the skilled labor of the regular diamond-dressers or lapidaries, I was enabled to reduce, and so shape the natural mineral carbon, as to carry out the principles of my new manufacture, and thus utilize the mineral carbon, by artificially shaping them into wedge and other forms, so as to obtain the best results, not only in cutting, but also in setting them in the tool.

From the fact that the most experienced diamond-cutters or dressers of Holland, not deeming it practicable to shape natural mineral carbon, and the further fact that the lapidary-wheel had to be discarded in the series of experiments I instituted to carry out my invention, establishes the fact that it was never before done, and therefore is a new manufacture, which, so soon as the immensely superior advantages of a secure and durable setting are ascertained, and a scientifically-formed cutting-edge is obtained, or shown to exist, will add greatly to their general adaptation, and to the wealth of the country, by cheapening the labor of all stone-cutting, or dressing, or mining operations.

The process by which I form the diamond or carbon into the required shape, is simply by rubbing or abrading one piece of carbon against another, without the assistance of a lap or other grinding-power, besides that of the hand.

The carbons or diamonds are taken in their original form, and are inserted into a soluble cement, composed of one part of rosin and two parts of shellac, affixed

at the ends of two sticks or holders, and then abraded or rubbed, one against the other, until the desired angle is obtained; and when thus formed, may be applied for drills, cutters, and dressers for working stone or any hard substance.

Having now described my invention, I will proceed to set forth what I claim, and desire to secure by Letters Patent of the United States.

I claim—

1. The within-described process for forming mineral

carbons in any shape desired, substantially as and for the purposes herein set forth.

2. As a new article of manufacture, mineral carbon, when formed in shape for making drills, cutters, or dressers, for drilling, cutting, or dressing stone, metal, or other hard substances, substantially as herein set forth.

Witnesses:

JOHN DICKINSON.

CHARLES L. BARRITT,
FRANKLIN BARRITT.