STEEL IS USED AS AN ABSASIVE

The use of particles of steel for abrasive purposes was first introduced about fifty years ago in certain German industries, where the steel used was broken pieces of old files. This same idea of utilizing pieces of broken-up files was attempted later in this country by Mr. C. M. Lindsey as a substitute for sand in cutting marble and other stones The results were not satisfactory, owing to the impossibility of obtaining a uniform product. These experiments did, however, result beneficially, as they proved the value of hardened pieces of steel for abrasive purposes and led finally to the discovery of crushed steel, which was patented by Mr. Lindsey.

Sand was formerly the principal material used for cutting stone, but this was later partly superseded by a hardened steel known as chilled iron globules, or chilled shot. This material in many cases gave much better satisfaction than sand, and although it was a much more expensive raw material, it made a cheaper abrasive on account of its greater cutting capacity. Owing, however, to its rounded character, it did not give perfect satisfaction, and it has been in turn superseded by diamond crushed steel, which has sharper and more angular edges.

Although the crushed steel is more expensive than chilled shot its superior abrasive efficiency makes it in many cases the cheaper abrasive. The manufacturing of crushed steel has been so perfected that an absolutely uniform material can be produced. The method of manufacture and uses of crushed steel have recently been described by Mr. M. M. Kann, secretary of the Pittsburg Crushed Steel company (limited). In manufacturing these crushed steel abrasives the best material to use is high-grade crucible steel. This is heated to a temperature of about 2,500 degrees F. (nearly a white heat) and then quenched in a bath of cold water. This gives the steel a granular structure. These fragments of steel are then reduced to particles, varying in size from fine powder to one-sixth of an inch in diameter, by means of powerful hammers or crushing machines.

The crushed product is then classified into sizes varying from No. 6 to No. 200 mesh. The sizes from six to sixty are then tempered by being placed in a cylinder or pan and heated to a temperature of about 450 degrees F., when they change in appearance to a straw color. They are then cooled by subjecting them to blasts of cold air. This material is known as diamond crushed steel. The sizes from sixty to 200 are heated similarly, but are hardened still more. The latter sizes are known as diamond steel emery.—Mining World.

Southern States Gold Production.

The production of gold in the southern states, including Georgia, North and South Carolina, Maryland, Alabama, Virginia and Tennessee, from the first finding of gold in the year 1799 and up to the present year, 1904, is estimated at $16,810,944, divided as follows: North Carolina $22,965,844; Georgia, $16,780,000; South Carolina, $4,000,000; Virginia, $3,300,000; Alabama, $425,000; Tennessee, $185,000; Maryland, $55,000. The years of the greatest gold output were between 1843 and 1848, when almost $2,000,000 per year was produced. In 1849 there was a great exodus of miners to California, and thereafter the production of the southern states fell off. North Carolina maintained a lead in gold production from the start, and held it up to a few years ago, when Georgia forged ahead

In 1900 Georgia produced $116,700 in gold; in 1901, $124,500; in 1902, $97,800, and in 1903, $96,500.—Mining World.

P. G. Wells Strikes It Rich.

Major Buck has received a letter from P. G. Wells, who is opening up the rich claims which he located some months since in the Burnt river country, near Rye Valley. He says that the rich streak has widened with development until it is now three feet in width and colors everywhere. Al Otness is working with him and owns an adjoining claim. It was from Mr. Wells' property that the rich sample was taken that Otness exhibited in Sumpter some weeks since; a piece of which is now in Brig Ballentyne's jewelry window.