Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The process of making hydraulic cement from argillo-magnesian and argillo-calcareous limestone, substantially as herein specified and described.

2. As an improved article of manufacture, hydraulic cement produced from argillo-magnesian and argillo-calcareous limestone, substantially as herein specified and described.

Witnesses:

Edwin Albright
Augustus Weber

The Lehigh district enjoyed almost a monopoly in the manufacture of portland cement until it was discovered that an equally good product could be made from a variety of materials. Lehigh cement was shipped all over the country and much of it exported. While no other cement region occupies so favorable a position with reference to accessibility to good cement rock and fuel and proximity to great industrial centers, yet on account of freight charges the market for the cement of the Lehigh district is year by year restricted by the erection of cement plants in other sections of the country. Fortunately, however, the demand for portland cement kept pace with the increase in number of cement plants so that the district continued to prosper regardless of increasing competition.

In this region many improvements have been made since the first successful manufacture of portland cement. For a time the run of quarry was used, with the result that some companies that owned quarries in which the rock had practically the composition now looked upon as most desirable, were able to produce a better product than other companies with less suitable rock. Also few companies were able to produce a uniform product on account of the variation in composition of the rock even in the same quarry. Now, however, the chemist of each company sees that the proper mixtures are used, and the physical tests also serve as a check, so that the old hit-or-miss method has given place to the exact scientific process and the variations in the product are very slight.

The changes in mechanical process of manufacture have been equally great and each year mechanical modifications are introduced which tend to increase the output, improve the quality, and lower the cost of production. The greatest improvements have been the change from the old upright kiln to the modern rotary kiln now universally used throughout the region.

For many years the cement plants of the Lehigh District made a single kind of cement. This, however, is now changed and, effective Sept. 2, 1940, five types are recognized by the American Society of Testing Materials. Other slight modifications materially increase this number. The Society accepts the following definition of portland cement and specifies the following chemical requirements:

Portland cement is the product obtained by pulverizing clinker consisting essentially of hydraulic calcium silicates, to which no additions have been made subsequent to calcination other than water and/or untreated calcium sulfate, except that not to exceed 1 percent of other materials may be added, provided such materials have been shown not to be harmful by tests acceptable to Committee C-1 on Cement.