

United States Patent Office.

WALDRON J. CHEYNEY, OF WALLINGFORD, PENNSYLVANIA.

Letters Patent No. 64,196, dated April 30, 1867; antedated March 29, 1867.

IMPROVEMENT IN THE MANUFACTURE OF PORCELAIN.

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, WALDRON J. CHEYNEY, of Wallingford, Delaware county, State of Pennsylvania, have invented a new and useful Improvement in the Manufacture of Cast Porcelain; and I do hereby declare the following to be a full and exact description of the same.

I take of either of the minerals known as cryolite, chiolite, and fluellite, (they being, respectively, fluorids of sodium and aluminium, and a fluorid of aluminium,) and mix it thoroughly with sand, or with sand, soda, potash, lime, or other alkali or oxide, in such combinations and in such proportions as may be necessary to produce the material desired, ranging in its quality from egg-shell china to statuary porcelain, (including Parian, Carrara, and other similar productions.) For soft porcelain the soda is to be increased. For hard porcelain potash is to be added. For Parian or Carrara add lime.

I have found the following-named combination and proportions to answer well: Sand, 10 parts; cryolite, 3 parts; soda, 3 parts; lime, 3 parts: $10 + 3 + 3 + 3 = 19$ parts. In case chiolite should be used the soda is to be increased to 4 parts. Should fluellite be used the soda is to be increased to 9 parts, as the last-named mineral is deficient in the sodium which is found in the other two. The materials, after being intimately mixed, are introduced into a glass furnace, the pot used being similar to an ordinary glass pot, with the exception of having a second hood at the bottom for the purpose of discharging the fluxed metal. When completely fused the metal is run into proper moulds, simply cast, or, if necessary, pressed. If desired, the metal can be blown in ordinary glass moulds.

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

1. The use of the minerals known as cryolite and chiolite, or their equivalents, in combination with silica, for the purpose of producing a vitreous porcelain, substantially as described.
2. The fusing of either of the before-named minerals, or fluellite, or their equivalents, with silica, in combination with soda, potash, lime, or other alkali or oxide, substantially as described.
3. A new article of manufacture, made by fusing silica with the above-named minerals, or their equivalents, which I call "hot-cast porcelain."

WALDRON J. CHEYNEY.

Witnesses:

J. E. SHAW,

GEO. E. BUCKLEY.