

UNITED STATES PATENT OFFICE.

FRANK P. HARNED, OF CAMDEN, NEW JERSEY, ASSIGNOR TO CLEMENT R. WAINWRIGHT, ISRAEL R. WAINWRIGHT, AND JOSEPH R. WAINWRIGHT, ALL OF PHILADELPHIA, PENNSYLVANIA.

PROCESS OF GRINDING CAUSTIC SODA.

SPECIFICATION forming part of Letters Patent No. 286,132, dated October 2, 1883.

Application filed October 30, 1882. (No specimens.)

To all whom it may concern:

Be it known that I, FRANK P. HARNED, of Camden, in the county of Camden and State of New Jersey, have invented a certain new and useful Improvement in the Process of Grinding or Comminuting Caustic Soda, of which improvement the following is a specification.

The difficulty heretofore attending the preparation of granulated caustic soda for the market, which difficulty has arisen from the rapid deliquescence of the soda upon exposure to the atmosphere, has led to the adoption of a process of grinding it hot or in heated apparatus, or in a highly-heated atmosphere, such process being described in Letters Patent of the United States No. 243,939, granted under date of July 5, 1881, to William J. Menzies, assignor of one-half interest to George I. Lewis, in which patent reference is made to English Letters Patent No. 4,274, issued under date of October 21, 1879. The use of heat in connection with such process is, however, expensive and otherwise undesirable; and it is the object of my invention to simplify the process of grinding or comminuting caustic soda at the ordinary temperature by counteracting and restraining the tendency of the soda to deliquesce during its necessary exposure to the atmosphere; to which end my invention consists in the addition to the caustic soda of dry soda-ash, or carbonate of soda, which will absorb the moisture attracted by the caustic soda and restrain its deliquescence.

I break up the mass of caustic soda or caustic

alkali in the ordinary way, and as it comes from the breaker I throw over the broken mass a small quantity of dry soda-ash, or carbonate of soda of good color and high test. I then feed this mixture of caustic soda or caustic alkali and soda-ash, or carbonate of soda, through a mill preferably of the kind known as a "disintegrator," which comminutes or reduces it, and I then bolt the ground mixture in the usual manner. The quantity of the soda-ash or carbonate of soda requisite for the purpose will not exceed from one to two per cent. of the mass of caustic soda or caustic alkali, and I have found this quantity sufficient to effectually counteract and restrain the deliquescence of the caustic soda during the grinding and bolting stages of the process, while it is not, in any degree, practically detrimental to the product.

Having thus described the nature and object of my improvement, what I claim as new, and desire to secure by Letters Patent, is—

The hereinbefore-described improvement in the process of grinding or comminuting caustic soda or caustic alkali at ordinary temperatures, which improvement consists in adding to the broken mass of caustic soda, carbonate of soda, or soda-ash, and grinding and bolting the mixture, substantially as and for the purpose described.

FRANK P. HARNED.

Witnesses:

CHARLES F. ZIEGLER,
WILLIAM W. FARR, Jr.