UNITED STATES PATENT OFFICE.

BERTEL EMIL OLSEN AND CHARLES GABRIEL, OF VICTORIA, BRITISH COLUMBIA, CANADA.

COMPOUND FOR PIPING, BOWLS, &c.

SPECIFICATION forming part of Letters Patent No. 403,548, dated May 21, 1889.

Application filed October 5, 1888. Serial No. 287,303. (No specimens.)

To all whom it may concern:

Be it known that we, BERTEL EMIL OLSEN and CHARLES GABRIEL, citizens of the United States, residing at Victoria, British Columbia, Canada, have invented a new and useful Improvement in Compounds for Piping, Bowls, &c., of which the following is a specification.

The invention is an improved composition of matter that can be cast and molded into various shapes, such as piping, bowls, dishes, and similar articles. The compound consists of either of the following mixtures: first, sulphur, sand, clay, and pitch; second, sulphur, sand, cement, and pitch; third, sulphur, sand, lime, and pitch; fourth, sulphur, sand, ground burnt clay, and pitch. Either of these compounds may be employed, according to the locality where the pipes are to be manufactured and used, clay, cement, lime, and burnt clay (old bricks) ground being equally useful, and one of the earths being often more available than the other three.

Any of the compounds makes an excellent quality of drain-pipe of any length up to ten feet and any diameter up to two feet, and the ingredients are mixed in the following proportions: to make one hundred pounds of the mixture, thirty-three pounds sulphur, twenty-three pounds clay, forty-three pounds sand, and one pound pitch.

The ingredients as above, being thoroughly mixed in a dry state, are placed in a crucible and heated by superheated steam or hot air to a temperature of from 320° to 350° Fahrenheit, the sulphur acting as a flux. The whole of the ingredients are thoroughly stirred, and while in a molten state can be readily manufactured into pipes by being poured into a mold. A few hours after manufacture the pipes will stand any test usually applied to pipes of this character, standing a pressure of sixty-eight pounds to the square inch. In case a pipe breaks, the débris can be gathered together, put into the crucible, and recast, which we claim is a great advantage in favor of our pipe.

The composition, when hardened, will take a fine polish and can be worked into any desired shape by tools. The material thus formed is cheap, easily made, and will be found of utility in the arts. The composition is particularly useful in making piping, such as that used for sewers and mains, and also for water-piping in the construction of houses.

Having thus described our invention, we claim—

1. The herein-described composition of matter, consisting of sand, forty-three per cent.; sulphur, thirty-three per cent.; pitch, one per cent., and an earth, such as ground burnt clay, twenty-three per cent., mixed together under the action of superheated steam, substantially as specified.

2. The herein-described composition of matter, consisting of sand, sulphur, pitch, and an earth, such as ground burnt clay, mixed together under the action of superheated steam, substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of witnesses.

BERTEL EMIL OLSEN.
CHARLES GABRIEL.

Witnesses:
R. F. TOLMIE,
JOHN H. LIGGERS,
R. J. MARSHALL.