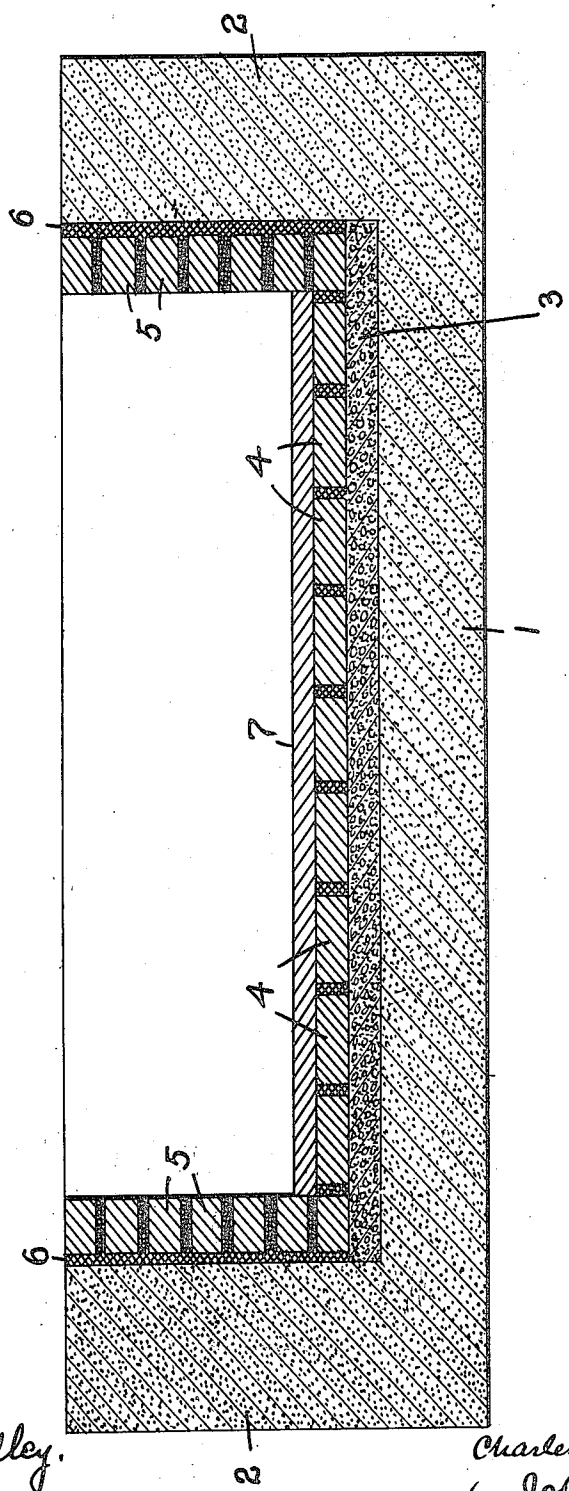
C. E. MANBY.

CEMENT FOR PICKLING VATS.

APPLICATION FILED SEPT. 21, 1916.

1,259,651.

Patented Mar. 19, 1918.



WITNESSES

J. Herbert Bradley.

INVENTOR

Charles E. Manby

by Jo. Baily Brown,

his attorney.

UNITED STATES PATENT OFFICE.

CHARLES E. MANBY, OF CARNEGIE, PENNSYLVANIA.

CEMENT FOR PICKLING-VATS.

1,259,651. Specification of Letters Patent. Patented Mar. 19, 1918.

Application filed September 21, 1916. Serial No. 121,375.

To all whom it may concern:

Be it known that I, CHARLES E. MANBY, a citizen of the United States, residing at Carnegie, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Cement for Pickling-Vats, of which the following is a specification.

This invention relates to receptacles, vats, or tanks, used to store acids and corrosive liquid. The particular object of the invention is to provide an acid-resisting binder for joining the walls of such structures, which may be easily applied during construction, and which will harden quickly and adhere firmly to the wall units. In a former application, Serial No. 98,301, filed May 18, 1916, I have described a composition which will successfully resist the action of dilute acids, but this composition was in a liquid form, and very hard to use for laying wall units. The present invention is particularly designed to furnish that composition, or a similar one, in the form of a mortar, which can be handled and applied with a trowel, as in ordinary bricklaying.

The drawings illustrate a built-up tank, or vat for containing dilute acids in which iron and steel material is dipped before being galvanized.

Such vats when constructed of wood, are very expensive, and when constructed of ordinary bricks and mortar they do not retain the strong acid which is used in this process. I have discovered that a mortar which will be impervious to acid, and which will not be attacked thereby may be made of a composition, one formula (A) for which is:—

Four parts by measure of sulfur.
One part by measure of silica.
Four parts by measure of lamp black.
One part by measure of coke-dust.

This is heated to the melting point of the sulfur and thoroughly mixed, being kept hot until used. This is used in the form of a thin liquid, poured into recesses between wall units. To make a mortar from this composition, which is the particular object of this invention, I add to the above mixture a non-combustible wool, such as asbestos wool, or glass wool. This when added to the above composition, makes a mortar thick enough to be handled with a trowel, and I may call it composition B. On account of the smaller expense, glass wool is preferable. This mortar is made and applied hot, and it sets very quickly on cooling. By adding the proper amount of the non-combustible wool, it may be made of any required thickness, and is readily handled by the use of the ordinary masonry trowels.

As an illustration of the use of this composition, the tank shown in the drawing may be used. A concrete structure embodying a floor 1 and walls 2 is first constructed. The floor is then covered with a layer of hot gravel 3, and the hot liquid composition A is poured over it. When this is hard vitrified bricks 4 are laid upon the floor with wide spaces between. These spaces are dammed at intervals with the thicker composition, or mortar B, to cut off a section of the floor, and the spaces of this section are poured level full of the hot liquid composition A, which flows freely about each brick and fills all spaces. The walls are then built up of similar bricks 5, the mortar then being used hot, as above described. After two or three courses of the wall are laid, the space 6 between the wall 2 and the brick wall is poured full of the hot liquid composition A. This effectually backs the wall and fills any chinks or spaces that might otherwise occur between the wall units. The result is an impervious wall of non-corrodible material, which is comparatively inexpensive, and which will last indefinitely and withstand rough usage.

It will be found that this mortar hardens very quickly and adheres to the bricks so tightly that frequently the bricks will chip when the mortar is being knocked off after setting.

The silica used may be a fine sand, but it is preferably a fire clay burned until dehydrated, and then ground fine.

For the purpose of protecting the bottom of the vat from abrasion, a stone or slate slab 7 may be used.

I claim:—

1. An acid resisting mortar containing an inorganic stiffening element in the form of fibrous wool.

2. An acid resisting mortar comprising sulfur and carbon containing an inorganic stiffening element in the form of a fibrous wool.

3. An acid resisting mortar comprising

sulfur and carbon containing spun glass in the form of wool.

4. A mortar comprising melted sulfur and carbon having added thereto a stiffening element consisting of an inorganic fibrous wool.

5. A mortar comprising melted sulfur and carbon having added thereto a stiffening element of glass in the form of fibrous wool.

In testimony whereof I hereunto affix my signature in the presence of a witness.

CHARLES E. MANBY.

Witness:

Jo. BAILY BROWN.