

# UNITED STATES PATENT OFFICE.

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## FILLING FOR JOINTS, FRACTURES, &c., OF STONE STRUCTURES.

SPECIFICATION forming part of Letters Patent No. 525,292, dated August 28, 1894.

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*To all whom it may concern:*

Be it known that I, CHARLES H. SLICER, a citizen of the United States, and a resident of the city of Baltimore and State of Maryland, have invented certain new and useful Improvements in Filling for the Joints, Fractures, and Disintegrated Surfaces of Stone Structures, of which the following is a specification.

10 So far as I know and can find the state of the art in repairing, restoring and preserving the surfaces of stone structures and the like, as in obelisks, monuments and other stone structures, such as the Egyptian obelisk, for  
15 their preservation from the effects of moisture, climate, frost and other destructive elements, the practice has been by using the paraffine and creosote process, as followed by Caffall in his treatment of the Egyptian obelisk and other stone structures, and which  
20 has been found to give desirable results. In carrying out this treatment it is the practice to fill or putty the joints and fractures and even broken surfaces with a solid body of  
25 paraffine-wax to exclude moisture, dirt, &c. But this is found not to be satisfactory and durable, since the wax being in considerable body at these points, is liable to run and be displaced by the melting action of the sun,  
30 or summer heat, leaving the joints or other parts exposed and allowing moisture to pass into the body of the structure. This melting of the wax disfigures the face of the work and besides the wax is objectionable for the  
35 purpose of filling the joints from its strong contrast to the stone in the structure by reason of having a glassy or semi-transparent appearance.

The object of my invention is to produce a  
40 filling for the joints, fractures or decayed parts of stone structures, that will not be endangered by the heat and other climatic changes and at the same time be homogeneous, both as to color and material with the  
45 structure, when such structure has been treated by the Caffall process, which consists in diffusing or driving into the surface of the stone heated paraffine or paraffine and creosote. It will however, be understood that my  
50 new filling can be used just as successfully as a filling for structures which have not been treated by the Caffall process. My method

of obtaining the object stated is to take the material of the structure or like material to that of which the structure is built, say marble, granite, brown-stone, sand-stone, or the like and to reduce it to powder, more or less fine as may be required so that when used as hereinafter set forth, the filling will resemble in texture as well as in color, the material  
55 of which the structure is built. When the kind and texture of the powdered material has been determined upon it is put in a suitable vessel and heated to about 200° Fahrenheit. I then take paraffine-wax in  
60 quantity from five to twenty per cent. of the weight of the powder and mix it with the powder and I may add any desirable quantity of creosote, the whole being fully incorporated under a strong heat. It is not necessary to heat the powder and paraffine separately as they may be put in a vessel and heated together. The amount of paraffine wax to be added is determined by the degree of comminution of the powder, the finer the  
65 powder the greater the amount of wax to be added. The amount of wax should be sufficient to make the mixture into a stiff mastic when very hot. The wax when hot being extremely fluid care should be taken to add as  
70 little wax in excess as is practicable to give it the proper holding quality when applied. Since the coating of the particles of powder with a thin transparent coating of wax, with as little excess as possible, gives the best imitation of the stone, when the mixture is cold after being applied to the work. Care should be taken not to have the heat so great as to evaporate the wax or scorch the material.

When the materials are sufficiently mixed  
75 and heated to maintain their heat, while being applied, the mixture is ready for use and is applied to the joints, or other places with a warm trowel or similar instrument. When applied in moderate weather it is found to  
80 take hold readily of the stone without heating the stone, but in very cold weather it is advisable to warm the parts of the stone to which the filling is to be applied to insure it will not be too suddenly chilled in getting  
85 hold upon the stone, but the stone should be made only moderately warm. In making it hot as in the case of using the wax in the old way does not give good results. After the  
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filling has become fully set and hard, which is in a short time, the face of the filling may be scraped a little with a sharp scraper to make it more granular if desired—more like stone that has been exposed to the weather; or the joints may be cut with a sharp instrument to point it up.

Blocks of stone may be made from this mixture but in this case less wax should be used so as to have the mixture a moist powder when ready for use instead of a mastic. By this means the grain of the stone is more pronounced, the powder adhering together very readily when tamped in a mold and allowed to cool. It must be also understood that the simple paraffine-wax may be used in making the mastic or stone without creosote, the latter being only used to insure the joints in the stone against vegetable or other like growth. It will also be understood that either the mastic filling or the granulated mixture for molding stone may be made and kept on hand, since they can be readily used by reheating just as well as when used when first prepared.

This filling can be made in cakes, blocks or slabs of convenient size and kept for trade as articles of manufacture, in a hard or stone like condition, and rendered plastic for use by being heated at the proper temperature in a vessel.

While the mixture when made of brown-stone or various colored stones, will resemble the natural stone, it is obvious that by coloring the paraffine, or putting color with the mixture, artificial colors can be produced.

The creosote is used to prevent the growth

of fungus or other vegetable growth where the filling is used.

I have stated that the powder is subjected to a strong heat, and this I prefer to do before it is mixed with the paraffine for the purpose of expelling the moisture and expanding the cellular structure of the grains. This increases the capacity of the grains to absorb and be thoroughly coated with the paraffine; gives greater density to the substance on cooling, and insures a more perfect contact between the binder and the grains. It gives homogeneousness to the composition and greater solidity of the filling is thereby produced.

I claim as my invention—

1. The herein described composition of matter to be used as a filling for the joints, fractures, and surface cavities of stone structures, consisting of paraffine wax and powdered stone, mixed in the proportions substantially as described.

2. The herein described composition of matter for use as a filling for joints, fractures and surface cavities of stone structures, consisting of powdered stone, paraffine wax as a binder therefor, and creosote as a protective against vegetable growth thereon, mixed in the proportions substantially as described.

In testimony whereof I have hereunto set my hand to this specification in the presence of witnesses.

CHARLES H. SLICER.

Witnesses:

A. E. H. JOHNSON,  
GUY H. JOHNSON.