S. RIZZON AND R. CICCIOLI.

PROCESS OF ORNAMENTING THE SURFACES OF STONES.

APPLICATION FILED SEPT. 13, 1920.

1,410,721. Patented Mar. 28, 1922.

Fig. 1.

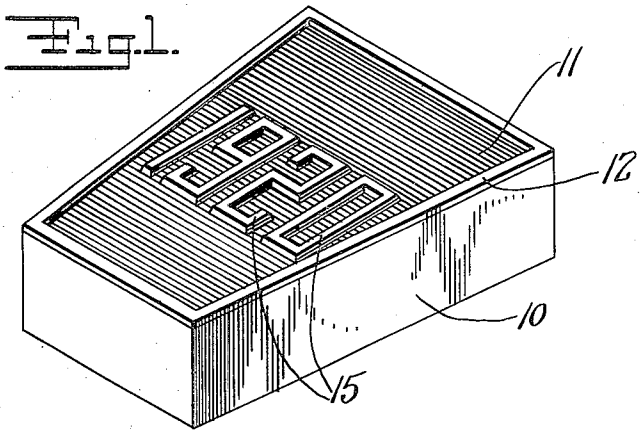


Fig. 2.

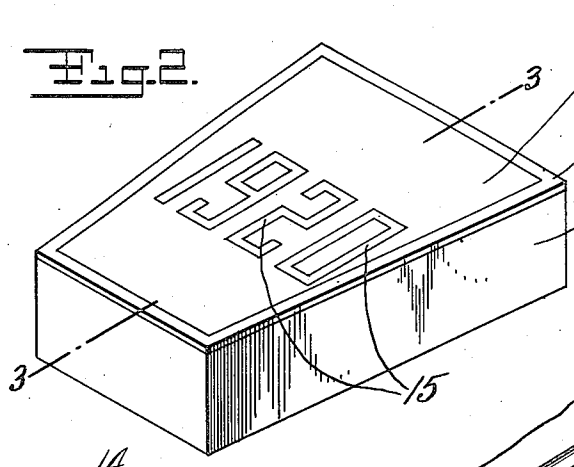
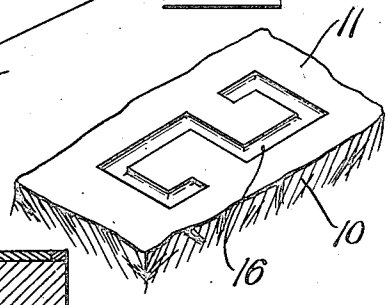


Fig. 5.



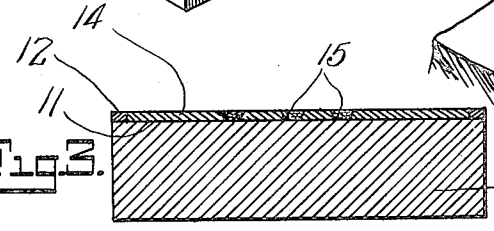


Fig. 3.

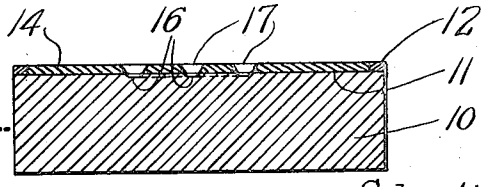


Fig. 4.

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PROCESS OF ORNAMENTING THE SURFACES OF STONES.

1,410,721. Specification of Letters Patent. Patented Mar. 28, 1922.

Application filed September 13, 1920. Serial No. 410,062.

To all whom it may concern:

Be it known that we, SEBASTIANO RIZZON and RAFFAELE CICCIOLI, citizens of the United States, residing at 337 East 146th Street, in the borough of Bronx, city and State of New York, have invented new and useful Improvements in Processes of Ornamenting the Surfaces of Stones, of which the following is a specification.

The object of this invention is to provide a novel means and process for ornamenting the surface of stones, as marble, granite, limestone, with particular reference to cutting characters thereon by sand blasting.

This object is attained by the novel devices and processes hereinafter described and indicated in the annexed drawings, in which:—

Figure 1 is a perspective view of a conventional slab or block of stone, used in a generic sense, its surfaces being finished and having disposed upon it the characters which it is to bear.

Figure 2 is a similar view of the same, but in a further advanced stage.

Figure 3 is a sectional view taken on line 3—3 of Fig. 2.

Figure 4 is another sectional view showing further progress.

Figure 5 is an enlarged fragmentary detail showing a single character sunk into the surface.

Perhaps the best exposition of the present state of the art is commercially known as the Scantlebury process, which, in order to clearly understand this invention, is briefly outlined as follows:—

The finished stone 10 is mounted on trestles or like supports to present its upper surface 11 in an essentially level position, and the top wiped free of dust and the like.

A border or dam 12 is secured around the edges of the stone and the top covered with a plastic composition 14 in a fluid state, to a uniform depth of approximately one sixteenth of an inch.

This composition is a commercial article composed of glycerine, gelatine, water and a powder as plaster of Paris, which, after setting, presents a pliable, resilient body, tenacious and similar to rubber; this surface is dusted with plaster of Paris and the outlines of the characters marked thereon by stencil or otherwise and cut along their margins.

If the characters are to be cut below the surface of the stone, the pliable covering between the incisions is removed, while if the characters are to be raised the material exterior of the incisions is removed and the sand blast applied.

It is found by experience that considerable time is taken by the marking, cutting and removal of the material not required to act as a protection from the effects of the fine particles of sand or other abrading material forced under pressure against the stone, and which rapidly cuts or erodes the uncovered portions, but which due to the elasticity of the covering is caused to recoil upon striking it.

The final process is to remove the covering whereupon work is completed.

The cutting of the composition above described is extremely difficult to accomplish properly, requiring the services of an expert artisan whose capacity is of necessity limited by the degree of care required in order to produce finely cut and properly formed characters. An expert in this field, working at full speed, can cut about one hundred simple characters, as a letter of the alphabet, during a working day.

The use of the Scantlebury process involving the cutting last above described and requiring as shown, the slow, careful labor of an expert in the art, does not result in any material advantage in the way of added production over the pristine method, even now in general use, of cutting the stone directly by hand. In the last mentioned method, an able artisan can produce about 75 to 80 similar characters, cut by hand directly into the stone, per day.

In addition to the time loss, it is also found that the action of the sand blast upon the edges of the composition prevents or makes difficult to obtain a smooth outlined character upon the stone.

These difficulties are overcome by this invention which includes a material change in the process.

In its application the stone 10 is mounted as before with the surface 11 uppermost and level. Prints 15 of the characters are previously prepared, by moulding or analogous means, of highly friable, brittle material when in a dry condition, these characters being secured to the face of the stone by a suitable adhesive, the dam applied, and the liquid composition 14 flowed upon the stone,

surrounding the friable characters 15 within the border 12.

After the substance has set or become sufficiently firm the stone is subjected to the action of the sand blast which breaks and crumbles the characters and passes through the openings which they formerly occupied in the protective composition and impinge direct upon the stone, forming the characters 16.

In order to avoid erosion of the edges adjacent the characters the moulded prints 15 are bevelled at their edges, as shown in Figs. 3 and 4 so that the openings 17 are narrower at their bases or portions adjacent the stone than at their outer parts, this shape being found in practice to produce smooth, true outlines in the cut characters.

From the foregoing it will be noted that practical departure from established practice has been disclosed which produces superior results with a minimum of labor.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. The process of forming characters on stone consisting of applying frangible models to the stone, flowing an elastic composition around the models, drying the composition, and applying a sand blast, the action of the blast causing destruction and removal of the models and erosion of the stone where unprotected by said composition.

2. The process of forming characters on stone consisting of securing frangible models of the characters upon the face of the stone, said characters having bevelled edges and presenting narrowed bases, flowing an elastic protective coating, when in a semi-liquid state, over the stone around and between the model characters permitting said coating to become partially dehydrated, and subjecting the stone with the models and coating to the action of a sand blast.

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