J. Turrell,

Sign.

No. 77,781. Patented May. 12. 1868

Fig. 1.

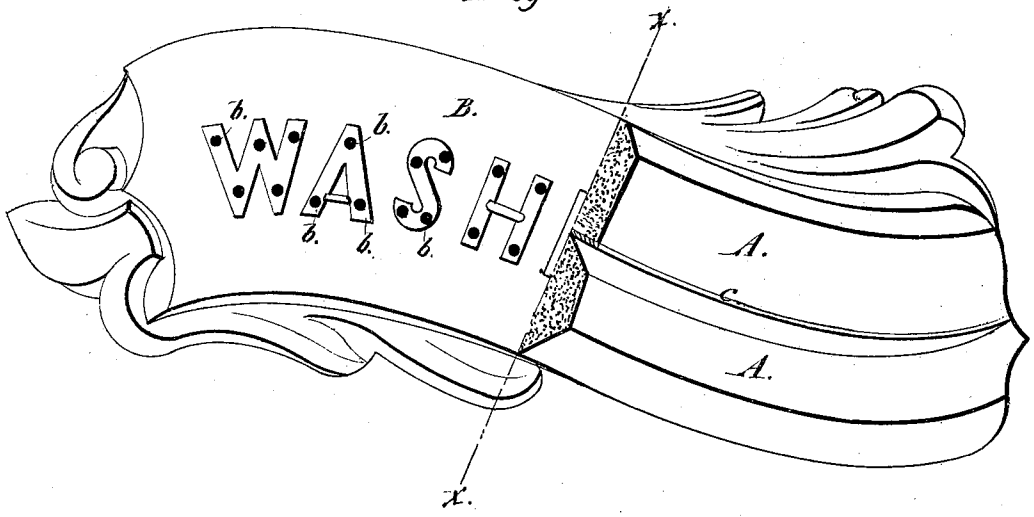
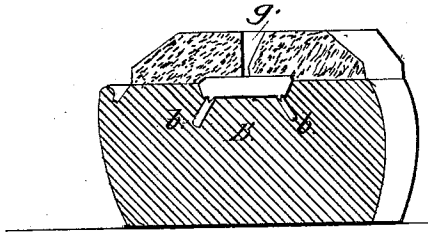


Fig. 2.



Witnesses

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JULES TUREL, OF KENDALLVILLE, INDIANA.

Letters Patent No. 77,781, *dated May* 12, 1868.

MODE OF LETTERING MARBLE.

The Schedule referred to in these Letters Patent and making part of the same.

TO WHOM IT MAY CONCERN:

Be it known that I, JULES TUREL, of Kendallville, Noble county, State of Indiana, have invented a certain new and useful Improvement in Lettering Marble; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, making part of this specification.

Figure 1 is a plan of a slab of marble and a plaster pattern, a portion of said pattern being removed to expose the letters in the marble.

Figure 2 is a section at *x x*, fig. 1, representing a subsequent stage of the process, as hereinafter described.

My invention consists in a mode of applying lead or other metal to letters in marble or other stone, in order to add to their beauty and durability.

In carrying out my invention, I engrave the desired letters in the stone to a moderate depth, but in this operation no great care or precision is required, except in the outlines of the letters. I next coat the entire engraved surface with plumbago, pulverized soapstone, or other suitable powder.

I then apply along the central line of the letters a perpendicular strip of sheet iron or other metal, *c*, greased to prevent adherence, and then pour on some calcined plaster of Paris in the form of a thin paste, so as to completely fill the letters, and rise to some height above the surface of the marble, so as to give sufficient strength to the plaster cast A, which is thus formed. This stage of the operation is illustrated in fig. 1, where the plaster pattern is represented in section.

When the plaster has become set and hard, I carefully remove it, cut away the projections from its face, and by following the lines of the impressions of the letters, form corresponding cavities in its surface to the depth of about one-sixteenth of an inch. I then drill diverging holes *b b* to such a depth, (say, one-eighth of an inch,) and in such positions as may be necessary to secure and retain the metal which is subsequently poured in to fill the letters, as hereinafter explained. These holes are represented in fig. 1, but in practice they will not, of course, be drilled until the plaster cast has been taken. The plaster is then replaced over the letters without the metal strip *c*. This stage of the operation is represented in fig. 2.

The space left by the strip *c* constitutes a gate or sprue, *g*, extending from end to end of the line, and connecting the matrices formed by the engraved letters and the cavities in the plaster cast. The customary funnel-shape may be imparted to the sprue *g*, either by the form of the strip *c* or by cutting away one angle of the plaster. Before pouring the lead I prefer to heat the marble, if practicable and convenient. I then take lead as pure and soft as possible, without any alloy or chemical preparation, and having melted it, pour it into the letters from end to end, through the sprue *g*. The plaster pattern is then removed and thrown away. After this, with suitable instruments, I press and rub the projecting portions of the lead as closely as possible into the letters, and then cut away the superfluous parts down to the surface of the marble, or nearly so, and the entire surface is then rubbed down and polished in the same manner as a piece of plain marble or other stone.

By the contact of the water and stone in polishing, the surface of the lead acquires a soft, black hue, which increases with exposure to the weather, and forms a very beautiful contrast to the marble, and, as there are no projecting surfaces or salient angles or edges to suffer abrasion from the weather, or from violence, or any cause, the work will endure in good condition as long as the stone itself.

I have described my invention as applied to marble, but it is manifestly applicable to any description of stone in which letters may be cut.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The process, substantially as herein described, for applying metallic lettering to marble or other stone.

To the above specification of my improvement in lettering marble, I have signed my hand, this 4th day of February, A. D. 1868.

JULES TUREL.

Witnesses:

THOMAS L. GRAVES,

CHAS. G. AICHELE.