United States Patent Office.

CHARLES M. STRAUSS, OF MEMPHIS, TENNESSEE.

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IMPROVED PROCESS OF FORMING LETTERS, CHARACTERS, AND ORNAMENTS ON GLASS.

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

To all whom it may concern:

Be it known that I, CHARLES M. STRAUSS, of Memphis, in the county of Shelby, and State of Tennessee, have invented certain new and useful Improvements in Lettering and Ornamenting Glass; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, like letters indicating like parts wherever they occur.

To enable others skilled in the art to construct and use my invention, I will proceed to describe it.

My invention relates to forming letters or characters of any kind on glass, by means of acid; and

The invention consists in a new and improved method of accomplishing the same, whereby the process is rendered much cheaper, more expeditious, and accurate, as hereinafter explained.

It is well known that hydrofluoric acid will act upon the surface of glass, and efforts have been made to form letters and ornaments on glass, by first covering the surface of the glass with a coating of wax, asphaltum, or other material that would resist the action of the acid, and then removing the wax or protecting-coat from those portions of the surface of the glass upon which it was desired to have the acid act, the same as in etching metallic plates. This process is both slow and imperfect. In order to form the letters or characters with the required accuracy, a professional person or expert had to be employed, and when letters or ornaments of much breadth of surface were to be made, much time was employed in removing the wax or protecting-coat, and even then more or less was apt to be left adhering in spots, thereby rendering the operation imperfect.

My invention has for its object the preventing or removing of these difficulties; and my process is as follows:

I procure a set of letters or type, of the size and style desired, made preferably of sheet-lead, and lay them on the surface of the glass in the required order to form the words or sentences I desire to form. These letters may be held in place by weights, or by a rod resting on them, and fastened at the ends by clips, or in any similar manner, care being taken to press their edges all around in close contact with the surface of the glass. I then cover the remaining portion of the surface of the glass, or that not occupied by the letters or characters, with a coating of any suitable material, preferably of melted paraffine. As soon as the paraffine becomes hardened or solidified, I remove the letters or characters, which, of course, leaves corresponding spaces on the glass exposed. These exposed spaces are then treated with the solution of hydrofluoric acid in the usual manner, the letters being formed on the glass by having its surface eaten away at the exposed points by the acid.

It is obvious that all forms and styles of letters or types may be used, the same as in printing, and that the most highly ornamental letters can be formed with the same ease, rapidity, and accuracy as the plainest and most common ones; and, as it is only necessary to set or place them properly on the glass, the operation can be performed by unskilled persons, by women and children, as readily and rapidly as by the artists or professional parties heretofore employed, and with even greater accuracy. In this way, door-plates, signs, or advertisements on glass doors, windows, and all similar articles, can be produced in a most elegant and artistic manner, and at a very cheap and rapid rate.

It is obvious that this plan may also be applied in producing ornamental figures of any kind on glass. Imitations of fruits, flowers, animals, human figures, any and everything of the kind, may be thus formed, it only being necessary to provide the required type in the first instance. In this way, glass-ware of all kinds may be highly ornamented at a nominal cost, the type or designs once produced being capable of being used indefinitely.

Any other material that can be fitted snugly to the glass may be used for the type or designs; but sheet-lead is well adapted to the purpose, as it can be so readily and perfectly brought in contact with the surface of the glass.

Having thus described my invention,

What I claim, is—

1. The herein-described process of forming letters, characters, or ornaments on glass.

2. The use of movable type, characters, figures, or designs of any kind, in combination with paraffine or any equivalent material, for the production on glass of letters, characters, or ornaments, in the manner substantially as herein described.

CHAS. M. STRAUSS.

Witnesses:

W. C. DODGE,

PHIL. T. DODGE.