E. D. DITHRIDGE.

Apparatus for Frosting Glass-Ware.

No. 206,392. Patented July 30, 1878.

Fig. 1.

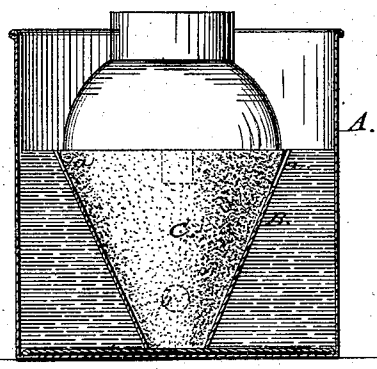


Fig. 2.

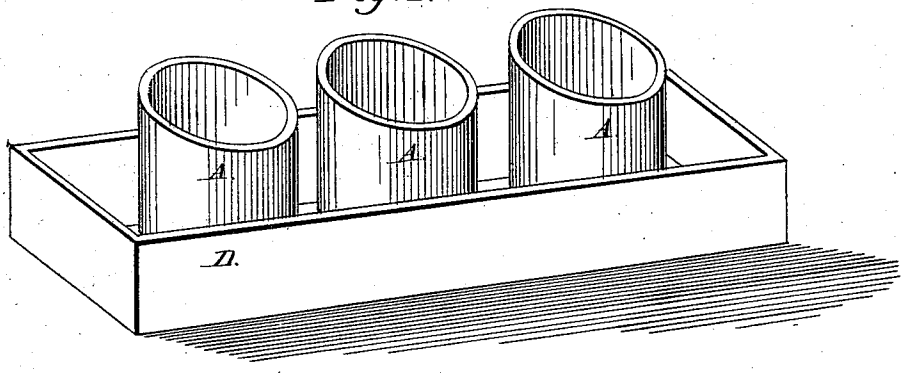
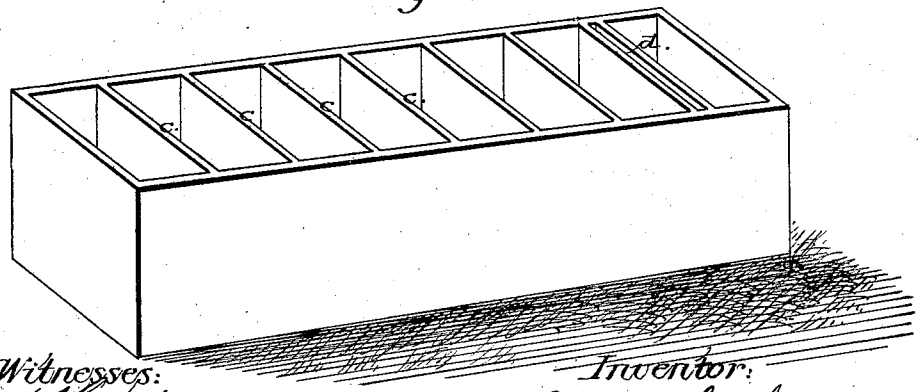


Fig. 3.



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IMPROVEMENT IN APPARATUS FOR FROSTING GLASSWARE.

Specification forming part of Letters Patent No. **206,392**, dated July 30, 1878; application filed January 22, 1878.

To all whom it may concern:

Be it known that I, EDWARD D. DITHRIDGE, of the city of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Frosting Glassware by means of acids; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of the same.

My invention consists, first, in the apparatus for performing this operation, composed of a jar or cell provided with a support for the article; secondly, of the support for the article; and, lastly, it consists in arranging a number of jars or cells into a battery placed in a trough or box, so as to be under the control of a single attendant or operator.

In the accompanying drawings, forming part of this specification, Figure 1 represents a vertical section of my improved apparatus. Fig. 2 represents the apparatus arranged into a battery. Fig. 3 represents a modification of the same.

Similar letters of reference indicate corresponding parts in all the figures.

As now generally practiced, the operation of frosting glassware by means of acid (usually hydrofluoric acid) consists in immersing the article to be frosted in an acid-bath contained in a tank sufficiently large to hold a number of articles at the same time. No support is provided for the articles, which are placed on the floor of the tank. This is subject to several disadvantages. For instance, the placing in and the removal of the articles cause the height of the acid in the tank to constantly vary, whereby the extent of the surface exposed to the action of the acid is not the same at all times, as it should be to obtain uniformity. So, too, in removing the articles from the bath there is liability that some of the acid will drip and fall upon the surface of the ware remaining in the box or tank, and thus spoil it. Further, there being no guide or support in the tank, great care must be exercised in placing the ware in the bath, to avoid agitation of the acid and the immersion of too much of the surface, necessitating slow work in order to avoid spoiling the ware.

My apparatus consists of a cell, jar, or compartment sufficiently large to accommodate the article to be operated upon, provided with a guide and support immersed in the acid-bath.

Referring to the drawings, A represents a jar, made of lead or other suitable material, for containing the acid. This jar, being used for frosting lamp-chimneys, is made round; but the shape is not material, as it may be made to accommodate any article. Inside this jar is placed a guide and support, B—in this instance made vase-shaped to receive the conical end of the chimney C. The sides of this support are provided with slots and perforations *a b*, the object of which is to give free access of the acid to the article when it is placed on the support. This device is necessary, because, as the support fits the conical end of the chimney quite snugly, in putting the chimney in it would expel the acid from the inside of the support, and it could not reach the surface freely without some provision of this kind.

The operation of this invention is as follows: The support B is placed in the jar A, which is then filled with the acid-bath to a height corresponding with the desired extent of frosting on the article. The article to be frosted is then placed in the support, and allowed to remain there the usual length of time, when it is removed.

These jars are, in practice, arranged in the form of a battery, composed of six, eight, or more jars, as shown in Fig. 2; and this battery is placed in a trough or box, D. One attendant or operator has charge of a battery. When so arranged, the jars should be placed with small intervals between them, so that in removing the articles the drippings will not be liable to reach the exposed surfaces in the other jars.

In Fig. 3 is shown a modification, consisting of a tank divided into compartments by the partitions *c c*. As a further modification, air-spaces *d d* may be made between each compartment.

By this improvement the work of frosting glassware by means of acid can be done better and more expeditiously than by any method now known. Owing to the surface of the acid not being disturbed by the placing in or removal of the acid from the jar, the line of the frosting is kept clear and sharp, and, as the support keeps the article level, there is an

evenness in the lines that cannot be obtained when the article is placed on the bottom of the tank. So, too, less acid is required than in a tank, as all the space occupied by the support is space saved. The height of the acid can be maintained without difficulty, and as the quantity is smaller, and a free circulation of air is permitted around the jars, they do not heat so rapidly as the tank.

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

1. As an improvement in apparatus for frosting glassware by means of acids, the jar A, provided with the guide and support B, substantially as described.

2. As an improvement in apparatus for frosting glassware, the combination of a jar or cell for holding the acid with an interior support for the article to be frosted, substantially as described.

3. As an improvement in apparatus for frosting glassware, the combination of a series of jars, A, having supports B, to form a battery, substantially as described.

4. As an improvement in apparatus for frosting glassware, the combination of a series of jars, A, having the supports B, to form a battery, with the trough D, substantially as described.

In testimony that I claim the foregoing as my invention I have hereunto signed my name this 15th day of August, A. D. 1877.

EDWARD D. DITHRIDGE.

Witnesses:
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WILTON C. DONN.