F. Y. Clark,

Dental Mold.

No. 28,348. Patented May 22, 1860.

Fig: 1

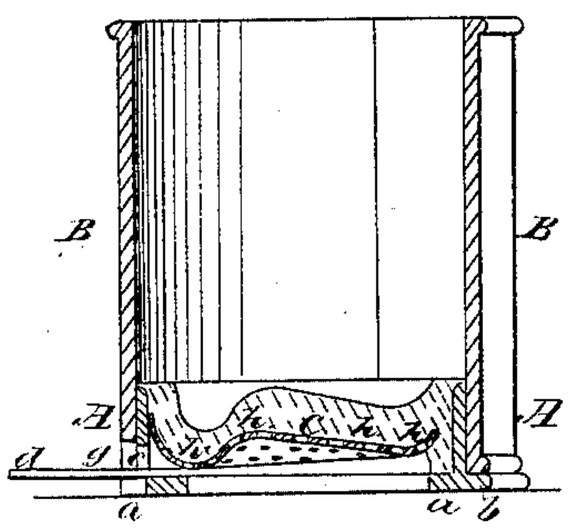


Fig: 2.

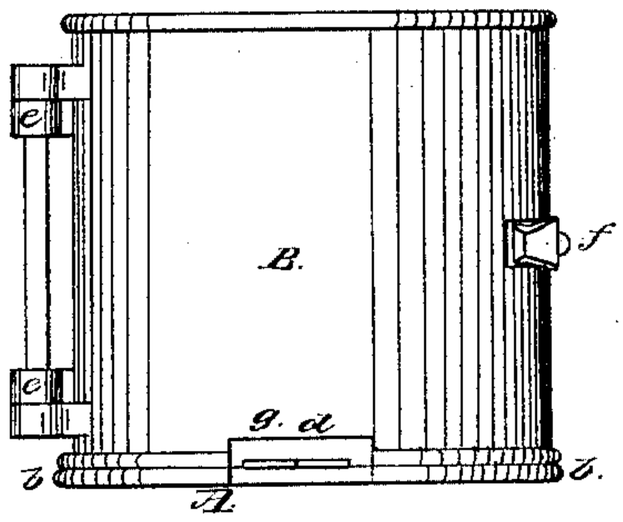


Fig: 3.

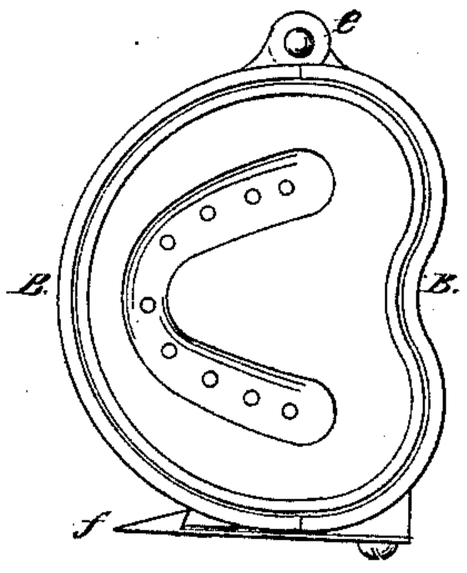


Fig: 4.

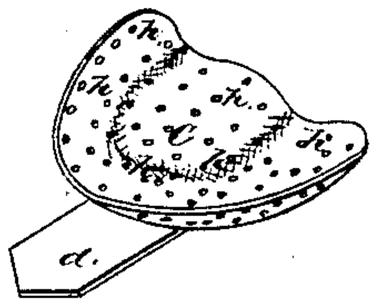
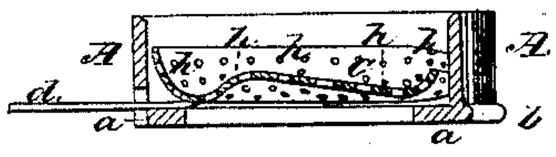


Fig: 5.



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UNITED STATES PATENT OFFICE.

F. Y. CLARK, OF SAVANNAH, GEORGIA.

MOLD FOR METAL DIES USED BY DENTISTS.

Specification of Letters Patent No. 28,348, dated May 22, 1860.

To all whom it may concern:

Be it known that I, F. Y. CLARK, of Savannah, in the county of Chatham and State of Georgia, have invented certain new and useful Improvements in Molds for Casting Metal Dies for Dentists' Use; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a central vertical section of the mold complete in condition to receive the metal of which the die is to be cast. Fig. 2, is an elevation of the same. Fig. 3, is a plan of the same. Fig. 4, is a perspective view of the impression cup. Fig. 5, is a central vertical section of the lower flask and impression cup.

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

The object of my invention is to enable one of the two metal dies used by dentists in forming their plates, to be cast in the impression that is taken from the mouth, thereby simplifying the process of obtaining the first die and enabling a perfectly fitting plate to be obtained, without the failure which is so common with dies obtained in the usual way; and to this end my invention consists in an improved construction of the impression cup, and in a new system of flasks employed in combination with the impression cup and the impression taken directly from the mouth, the whole constituting a complete mold possessing the requisite qualities.

A and B B, are two flasks of cast iron or other metal. The bottom flask A, is made in one piece with its horizontal section of a form substantially like the impression cup C, but somewhat larger, and has a flat open bottom with an internal flange *a*, to support the impression cup, an external flange *b*, to support the upper flask B, B, and an opening *c*, in front to allow the handle *d*, of the impression cup to pass out to enable the said plate to be adjusted. The upper flask is made to fit tightly around the upright portion of the lower one, and consequently has a transverse section of corresponding form. It is divided vertically into two equal parts B, B, and these two parts are hinged together on one side by a hinge *e* and secured together on the opposite side by a spring catch *f*, for the purposes of enabling it to be easily attached to, or detached from the lower flask, and of facilitating the removal of the die after it has been cast, and it has an opening *g*, in front corresponding with the opening *c*, of the lower flask for the handle *d*, of the impression cup C, to pass through.

The impression cup C, is made of copper or any other metal, that will resist the heat to which it has to be subjected as hereinafter described. It is of the usual construction except that it is perforated all over with holes *h*, *h*, of from one-sixteenth to one-eighth of an inch in diameter, and about a quarter of an inch apart, the object of which is to prevent the composition in which the impression is taken from breaking away from it in the act of withdrawing it from the mouth, and also to provide for the escape of moisture from the said composition in drying and in the process of casting the die.

The composition in which I take the impression is composed of equal parts of finely ground feld spar and the best ground and calcined plaster of paris, which I make with water into a batter somewhat thicker than the plaster of paris batter commonly used is made. Having prepared this batter in a suitable vessel I keep it constantly stirred, until there are unmistakable signs of its setting when I quickly put a sufficient quantity of it into the cup, and convey it quickly to the patient's mouth, and take the impression in the usual manner. In very difficult cases, when the crowns of the teeth are larger than the necks it is better to use more spar than plaster in the composition, for then the giving will be more apt to take place at the very point of difficulty. In such cases it is impossible to get an absolutely perfect impression with any material, but this composition is found to possess advantages over wax and plaster, the two materials heretofore used, for being harder than the one, and not so hard as the other, but still somewhat brittle, it is more apt to give where it should, viz., at the very point where the difficulty occurs, and there are few cases if any in which a better impression cannot be obtained with this material than with either plaster or wax.

The impression having been taken, the cup C, is placed in the lower flask A, the upper one being for the present detached, and the space between the impression and the sides of the said flask filled up with the

same kind of batter a little thicker than is used for the impression, care being taken that the batter is not allowed to run down between the cup and flask, any more than cannot be avoided, as all that is necessary is just sufficient to hold the cup in place, and give a smooth continuous surface around the sides of the impression, and it is desirable to leave open as many as possible of the holes *h*, *h*, for the escape of moisture from the compound. When the impression is thus prepared in the bottom flask A, the top one B, B, is put on and screwed. The mold is then complete as shown in Figs. 1 and 3, and only requires to be dried in an oven or on a stove to be ready for casting the die.

The die may be made of the alloy that is commonly used or of any metal or alloy possessing the requisite characteristics, such metal or alloy being poured into the mouth of the upper flask, in sufficient quantity to make the die of the requisite thickness. The male die is thus obtained, directly from the impression, a result which cannot be obtained with the materials heretofore commonly used for the impression and which I believe has never heretofore been successfully accomplished. When the die thus obtained has become solid, the flasks are taken apart, and the die replaced in the upper or outer flask B, B, in an inverted position, and the counter or female cast taken in the usual manner.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The impression cup perforated substantially as described for the purposes herein specified.

2. The combination of the perforated cup C, the impression obtained directly from the mouth and the two flasks A and B B, constructed substantially as described, the whole constituting a mold for casting the die, of which the impression taken directly from the mouth forms a part as herein specified.

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