E. O. PIEPER.

DENTAL FLASK.

APPLICATION FILED JUNE 30, 1910.

1,068,698. Patented July 29, 1913.

Fig. 1.

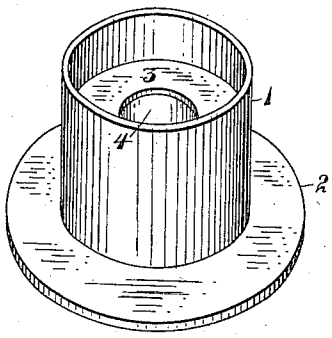
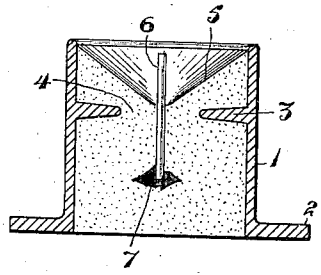


Fig. 2.



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DENTAL FLASK.

1,068,698. Specification of Letters Patent. Patented July 29, 1913.

Application filed June 30, 1910. Serial No. 569,758.

To all whom it may concern:

Be it known that I, ERNEST O. PIEPER, a citizen of the United States, residing at San Jose, in the county of Santa Clara and State of California, have invented new and useful Improvements in Dental Flasks, of which the following is a specification.

This invention relates to improvements in dental flasks, the object of the invention being to provide a very simple form of flask, and yet one which is certain and efficient in operation.

In the accompanying drawing, Figure 1 is a perspective view of the flask; Fig. 2 is a vertical central section thereof.

Referring to the drawing, 1 indicates the cylindrical wall of my improved flask having a base ring 2 to prevent tipping. Intermediate of the ends of said wall and formed integral therewith is an inwardly extending dividing ring or diaphragm 3, forming a central aperture 4.

In practising this invention, after mixing a sufficient quantity of investment material, the upper part of the flask is filled about half full, placing a finger in or under the hole 4 to retain the material in said upper half. A crucible former is then inserted in the investment material to form a crucible 5. The flask is now inverted, still holding the crucible former in position, and the sprue 6, having thereon the impression 7 or work to be reproduced, is inserted in the small hole in the apex of the crucible former. The lower part of the flask containing the impression or work to be reproduced is now filled with investment material, and the excess of material at the base is removed by a knife to secure an even surface. The flask is set aside for about 15 minutes, and then the crucible former is removed by a gentle rotary motion. The material in the flask is then slowly dried out and when thoroughly dried, the sprue wire 6 is removed. By means of a very low flame, the wax impression is absorbed into the investment. The flask is now set upon an asbestos pad and the blow pipe is applied which will tend to burn out any wax that may not have been thus absorbed. The crucible is now filled with pure gold of a quantity about twice that necessary to produce the casting. The blow pipe is then applied in a large full flame that will envelop the entire flask, and this process is continued for about three minutes. The flame is then reduced and turned direct on the gold. When it is thoroughly melted a pressure or suction agent is employed and the molten gold is forced into the mold.

The novel feature of this invention is the dividing ring or diaphragm 3 dividing the flask into two sections, which diaphragm prevents loss of pressure or suction by escape of air between the wall of the flask and the investment material when the latter are in a heated condition. Said diaphragm also prevents the pressure or suction being diminished by passage of air through checks or cracks in the investment material, (which is always more or less porous,) and thus confines or restricts the pressure or suction to the crucible, so that the pressure or suction is directed to the region of the sprue gate and directly over the mold. Said ring or diaphragm is particularly advantageous in cases where the mold is unusually large, extending almost to the wall of the flask, in which event, if the ring were not employed, the pressure fluid would pass down along the inner wall and enter the mold through the narrow intervening investment material between the mold and said wall, and, entering the mold in advance of the molten gold, would create a counterbalancing pressure within the mold, and thus prevent the gold from entering the mold. Moreover said dividing ring, when formed integral with the wall, as shown in the drawing, serves as an additional retaining wall for the investment, and is therefore especially useful in cases of rapid or careless heating, which usually results in a blow-out, due to the generation of steam. The ring or diaphragm also prevents cracks due to heat entering the lower or mold section from the upper or crucible section. Said ring or diaphragm also serves as a medium for conducting the heat imparted to the wall of the flask to a point nearer the center of investment than would otherwise be the case, thus affording uniform heat distribution.

I claim:—

1. A dental flask having a surrounding wall formed in one piece and an annular flange extending inwardly from said wall at a sufficient distance from one end of the flask to permit of a sprue gate being formed in the flask at said end, and a sufficient distance from the other end to permit of a mold being formed within said wall at said

latter end, said ring having an operative engagement with said wall adapted to prevent the passage, between said wall and the inner edge of said ring, of air of unequal pressures on opposite sides thereof.

2. A dental flask having a surrounding wall formed in one piece, and a ring or flange extending inwardly from said wall mediate of the ends thereof, and having an operative engagement with said wall adapted to prevent the passage between said wall and diaphragm of air of unequal pressures on opposite sides thereof.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ERNEST O. PIEPER.

Witnesses:
JULIAN H. BIDDLE,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."