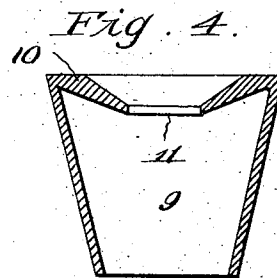
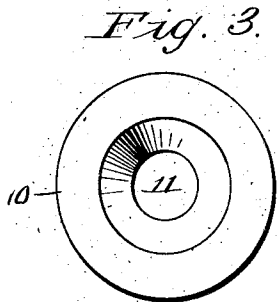
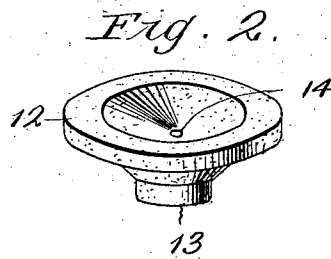
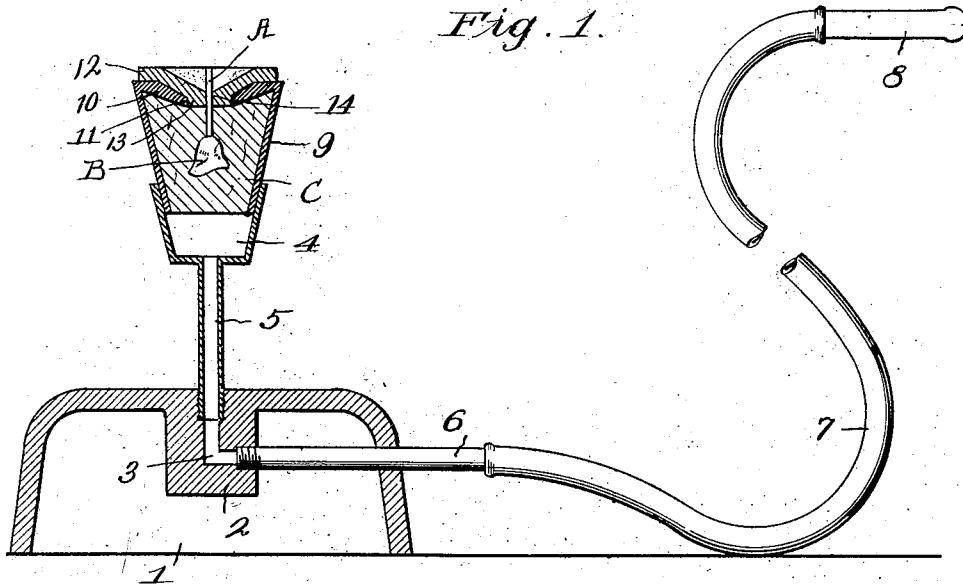


A. F. COGSWELL.
INLAY AND BRIDGE CASTING MACHINE.
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1,046,976.

Patented Dec. 10, 1912.



Witnesses:
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UNITED STATES PATENT OFFICE.

ASA F. COGSWELL, OF KIRWIN, KANSAS.

INLAY AND BRIDGE CASTING MACHINE.

1,046,976.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed April 3, 1911. Serial No. 618,708.

To all whom it may concern:

Be it known that I, ASA F. COGSWELL, a citizen of the United States, residing at Kirwin, in the county of Phillips and State of Kansas, have invented certain new and useful Improvements in Inlay and Bridge Casting Machines, of which the following is a specification.

This invention relates to improvements in casting machines, for use in the practice of dentistry, and my object is to produce a simple, inexpensive machine of this character whereby perfect, sharp-edged inlays, crowns, bridges, etc., can be produced at a small expenditure of time and labor.

The present invention relates more particularly to a novel crucible and a novel hopper therefor, the latter being provided chiefly to save the time and labor now required in forming the usual hopper in the investment surrounding the wax impression.

The novel feature of the crucible resides more particularly in the provision of means to prevent any passage of air between the inner walls of said crucible and the investment, to the end that suction applied to the latter is concentrated to the region of the sprue-gate and the cavity left in the investment by the wax impression. Thus a vacuum may be formed within the cavity and when the molten metal to form the cast flows into said cavity through the sprue-gate, a perfect cast is produced, as the metal being unopposed by air pressure, flows into all of the interstices of the cavity.

In order that the invention may be fully understood, reference will now be made to the accompanying drawing, in which:

Figure 1 shows a vertical sectional view of the machine assembled for use. Fig. 2 is a detail perspective view of the hopper forming part of the invention. Fig. 3 is a plan view of the crucible. Fig. 4 is a vertical section of the crucible.

In carrying out the invention, I employ a comparatively heavy base 1, having a central boss 2, with an L-shaped duct 3 leading to the top and one side of said boss.

4 designates a conical cup supported by a tubular stem 5, the lower threaded end of which is screwed into the upper portion of the base and communicates with the vertical leg of duct 3.

6 designates a horizontal pipe extending through one side of the base and communi-

cating with the horizontal leg of duct 3, said pipe being provided at its outer end with a flexible tube 7 having a mouth-piece 8.

9 designates a conical crucible adapted to fit snugly into the upper portion of cup 4 and provided with a top portion 10, sloping downward to a central opening 11.

12 designates a conical hopper adapted to fit snugly upon top 10 of the crucible, and provided with a circular boss 13 to fit into opening 11, said boss having a central sprue-hole 14 to receive the sprue A of a wax impression B. Hopper 12 is composed, preferably of fire-clay or other suitable material which will withstand a high temperature without cracking, and which has no affinity for molten metal, so that the same will not adhere thereto.

In practice the crucible 9 is taken from cup 4, and the hopper 12 is placed in position thereon. The crucible and hopper are then inverted and placed upon a smooth surface, after which the wax impression B and sprue A are placed within the upturned crucible, the sprue A passing through hole 14 in the hopper, so that the same will support the sprue and the wax impression in upright position. The length of the sprue determines the location of the wax impression B within the investment C, which is now poured into the upturned crucible until the same is filled therewith. After the investment becomes set, the crucible and the hopper are turned right side up and the sprue is removed, after which the crucible is subjected to sufficient heat to consume the wax impression, which leaves a cavity within the investment, said cavity communicating with a gate left by the sprue. Metal to form the cast is now placed in the hopper and melted, and when in a molten state, a vacuum is created in the cavity, by applying the mouth to the mouth-piece 8 and drawing the air from said cavity through cup 4, stem 5, duct 3, pipe 6, and tube 7. As the top 10 of the crucible is nonporous and the hopper 12 is substantially nonporous, air cannot pass through the porous investment, except in the region containing the cavity and the gate, consequently the vacuum produced in the cavity, aided by the force of gravity, will suck the metal from the hopper down through the gate and into the cavity, producing a perfect cast.

After the cast becomes set, it is removed in the customary manner by destroying the investment C.

While I have shown and described the preferred construction of my invention, I do not wish to be understood as limiting myself to the exact form and combination of parts disclosed, but reserve the right to make such changes as properly fall within the spirit and scope of the appended claims.

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

1. In a machine of the character described, a crucible, having an integral top thereon sloping downward to a central opening, and

a hopper adapted to snugly fit said top and provided with a central opening.

2. In a machine of the type described a crucible formed with an integral top that slopes downward to a central opening, and a conical hopper that snugly seats on said top and is formed with a central boss that projects down into the opening in the crucible top and has a sprue-hole.

In testimony whereof I affix my signature, in the presence of two witnesses.

ASA F. COGSWELL.

Witnesses:

F. G. FISCHER,
E. C. LILLIAN.