

B. C. MOLL.
DENTAL MOLD.
APPLICATION FILED FEB. 19, 1908.

1,037,962.

Patented Sept. 10, 1912.

Fig. 1.

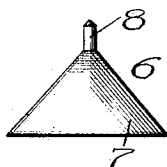


Fig. 2.

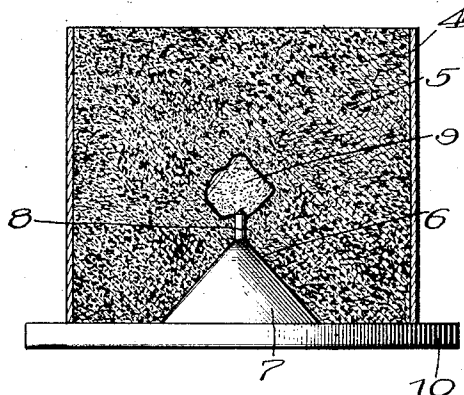
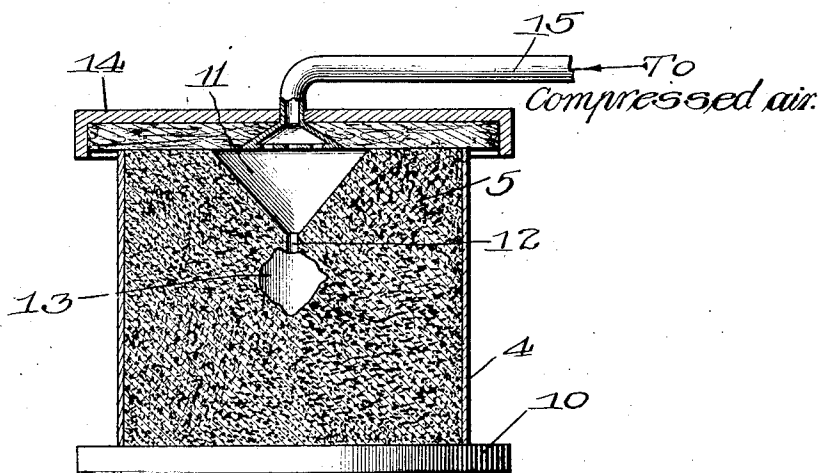


Fig. 3.



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UNITED STATES PATENT OFFICE.

BERNHARD C. MOLL, OF CHICAGO, ILLINOIS.

DENTAL MOLD.

1,037,962

Specification of Letters Patent.

Patented Sept. 10, 1912.

Application filed February 19, 1908. Serial No. 416,666.

To all whom it may concern:

Be it known that I, BERNHARD C. MOLL, a citizen of the United States of America, and resident of Chicago, Cook county, Illinois, have invented a certain new and useful Improvement in Dental Molds, of which the following is a specification.

My invention relates to improvements in the art of preparing cast fillings for dental uses, and has for its object the production of a device by means of which the fillings intended to fit within dental cavities may be accurate and quickly prepared.

A further object is the production of a device by means of which the dental fillings may be made to conform closely to the walls of the cavity and at the same time may be made of greater density than those made by the ordinary methods.

A further object is the production of a mold by the use of which the fillings above referred to may be cheaply manufactured.

A further object is the production of a cast filling far superior to those formed by the usual processes.

These and such other objects as may hereinafter appear are attained by my device, an embodiment of which is illustrated in the accompanying drawing, in which—

Figure 1 represents a perspective view of my improved sprue former. Fig. 2 represents a cross-section of a flask with my improved sprue former in position. Fig. 3 represents a sectional view through the center of the mold after the sprue former has been withdrawn from the flask.

Like letters of reference indicate like parts in the several figures of the drawing.

Referring now by numeral to the accompanying drawings—4 represents an ordinary flask generally comprising a section of tubing; 5 represents the investment material; 6 represents the sprue former comprising a base portion 7 with an upwardly extending pointed end 8. Seated on this end is the pattern of wax or some like material 9. The flask is adapted to rest on a shelf or table 10.

In the use of my device, the dental cavity is first properly prepared, care being taken that there are no reëntrant cavities or overhanging portions. The wax is then forced into the cavity, care being taken to have the material fill every portion of the cavity. The patient then bites on the wax in order

to secure a proper surface to the filling. The wax pattern is then withdrawn, the surplus portion removed, and the pattern mounted on the point of the sprue former 6. This sprue former is formed with a base portion 7 in order that the former may stand upright upon the table or stand 10. The flask 4 is then placed over the sprue former with the pattern therein, and the investment material poured within the mold. The consistency of the investment material is such that as the material rises within the flask, if care is exercised in the pouring, no air bubbles will form between the sides of the pattern and the body of the material. In some instances, however, I prefer to dust the surface of the pattern with powdered investment material before placing it within the flask. After the investment material has covered the pattern to a sufficient depth—generally one-fourth to half an inch—the flask is allowed to stand until the material becomes properly set. The flask is then turned end for end and the sprue former 6 removed, leaving a cavity 11 (shown in Fig. 3) terminating in the sprue 12. The flask is then subjected to heat, and the wax pattern absorbed, leaving a hole or mold 13 of the exact configuration of the pattern 9. The gold or other material from which the filling is to be made is then placed in the cavity 11 and melted in any well known manner.

A cover 14 of any desired form or shape, to which is connected a pipe 15 leading to a compressed air supply, is then placed over the flask and air pressure turned on. As soon as air pressure is turned on, the molten metal within the cavity 11 is forced through the sprue 12 into the mold 13. Sufficient molten material is provided to completely fill the cavity and generally a portion or all of the sprue. When castings are formed in the ordinary manner, it often happens that the article cast is full of minute blow holes, while at the same time, unless pressure is applied, the molten material rarely reaches the inner portions of the mold, especially in the case of molds for dental cavities. This, of course, prevents the casting from being a perfect fit, and allows the accumulation of moisture and material between the walls of the cavity and the filling after the same is in place. Decay is often apt to set in, with the result that the entire

tooth again becomes decayed, requiring new treatment. By the use of compressed air, however, in which the molten material is forced within the mold, so that it reaches every portion thereof, the result is that the casting is remarkably free from blow holes, and is also a perfect replica of the mold itself.

The elimination of the blow holes forms a casting of much greater density than those obtained by the ordinary method of filling, and gives a new article of manufacture in the shape of a cast filling which can be inserted in the cavity after the same has been coated with the cement so that the tooth is filled in a much more satisfactory manner than by the use of any other method or process heretofore employed.

Attention is called to a companion application, filed herewith of even date, Serial No. 416,667, covering a machine for manufacturing dental fillings.

While I have illustrated and explained this device and process as especially applicable for use by dentists, it is understood that I do not limit myself to such use, as castings of any size or of any desired material may be formed by the use of my improved device and process.

I claim:

1. In a device of the class described, the combination with a flask having a sprue channel therewithin, a cover for said flask, and means for passing air or gas under pressure through said cover and channel, and means for diffusing said air or gas before it enters said channel.

2. In a device of the class described, the combination with a flask, a cover for said flask, a funnel-shaped opening in said cover, means for passing air or gas under pressure through said cover, and a perforated plate in the lower part of said opening to diffuse said air or gas.

3. In a casting machine, an investment flask, a cap for said flask having an enlarged opening in the lower portion thereof, a tube passing through the upper part of said cap and terminating in an enlarged head in the opening of said cap, and means for passing air or gas through said tube or cap.

Signed by me at Chicago, Illinois, this 24th day of October, 1907.

BERNHARD C. MOLL.

Witnesses:

SARAH LEWIS,

ALBERT J. SAUSER.

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