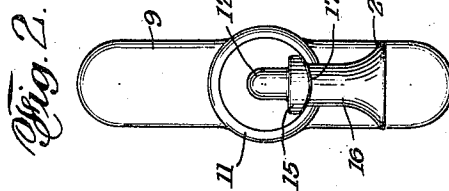
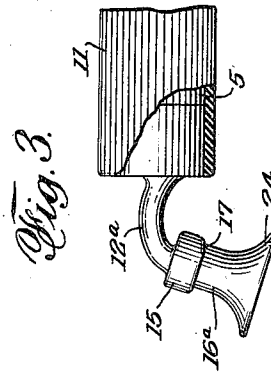
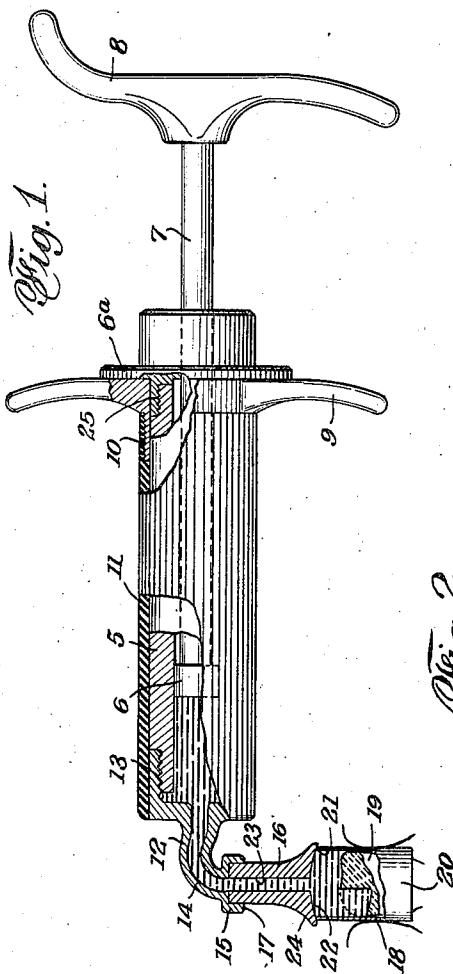


May 23, 1944.

H. R. BERGER
DENTAL INSTRUMENT
Filed Nov. 28, 1941

2,349,607



INVENTOR
HERBERT R. BERGER
BY *Herbert R. Berger*
ATTORNEY

UNITED STATES PATENT OFFICE

2,349,607

DENTAL INSTRUMENT

Herbert R. Berger, Brooklyn, N. Y., assignor to Mizzy, Inc., New York, N. Y., a corporation of New York

Application November 28, 1941, Serial No. 420,762

2 Claims. (Cl. 32—17)

This invention relates to dental instruments and more particularly to an instrument for injecting material into the prepared cavity of a tooth to make an impression thereof, preparatory to producing the filling or inlay to be fitted into said cavity.

Much difficulty has been encountered in making a proper impression. Some dentists merely apply a piece of wax to the tooth and then lift the same depending upon their expertness to achieve proper results. Others make use of an impression band placed around the tooth and fill the band with impression material by hand. Neither method has been found satisfactory because of either inaccuracies in the impression or the incorporation therein of air bubbles because sufficient pressure could not be employed for forcing the impression material into the cavity.

The primary object of the present invention, therefore, is to provide an instrument whereby an exact impression of a cavity may be obtained in an expeditious manner and with minimum discomfort to the patient.

Another object of the invention is to provide an instrument in which the impression material is conveniently loaded and in which handling thereof is facilitated.

A further object resides in the provision of an instrument in which the impression material may be heated for ready flowing thereof, said instrument yet being comfortable to handle during manipulation.

The inexpensive and fool-proof design of the instrument whereby its range of application is enlarged, also forms a material part of the invention.

The foregoing objects and other objects, features and advantages of the invention will become more clearly evident from the following specification in which the invention is described with particular reference to the illustrated embodiment shown in the accompanying drawing.

In the drawing—

Fig. 1 is a side view, partly in section, of an instrument incorporating features of the invention as applied to make an impression of a tooth cavity.

Fig. 2 is an end view thereof.

Fig. 3 is a broken side view, somewhat differently fitted, of the instrument shown in Fig. 1.

In that form of the invention which is illustrated, the instrument comprises a barrel 5, and a piston or plunger 6 connected by a stem 7 to a hand-piece 8. The above is quite conventional,

following the usual forms of extrusion syringes of that general type.

In the present instance, the instrument is provided with a flange 6a forming a shoulder for a finger-piece 9 strung over said barrel. As contemplated, said finger-piece is connected, as by the threads 10, to a heat insulating sleeve 11 completely surrounding the barrel 5.

At its end opposite to the flange 6a, the barrel is fitted with a nozzle 12 which is threadedly engaged as at 13 for ready removal and replacement.

The nozzle is formed with a passage 14 having communication with the bore of the barrel 5 and terminates in a flanged seat 15 at its outer end. The nozzle may be made in a plurality of forms as a set whereby selection of a nozzle which provides for most comfortable and effective handling of the instrument, is afforded. Thus, the nozzle shown in Fig. 1 has its seat directed at right angles to the longitudinal dimension of the barrel so that a fitting 16, set into the seat 15, is arranged at right angles to said barrel, and the nozzle 12a shown in Fig. 3 has its seat directed at a lesser angle with respect to the barrel length so that a fitting 16a, set into its seat, is arranged at a commensurately lesser angle with respect to said body.

The provision of a set of such nozzles, each varying as set forth, will afford the user the greatest ease and comfort in applying the instrument. Inasmuch as the sleeve 11 is made removable for reasons later apparent, it is preferred that said sleeve be adapted to be removed and replaced with the nozzle in position on the barrel. Hence, the edge 17 of the flanged seat 15 is curved in accordance with the curvature of the barrel as can be understood.

The instrument above described is employed for obtaining a wax impression of, for instance, the cavity 18 of a tooth 19. Preparatory to shooting wax into said cavity, it is preferred to place an impression band 20 around said tooth as shown, said band having a top edge 21 engageable by a preferably concavely curved face 22 formed on the fitting 16. A central passage 23 in said fitting communicates the passage 14 with the interior of the impression band as shown.

It will be noted that the fittings 16 and 16a may also be made in sets, each with a flare or flange 24 of different size. A proper fitting may thus be selected according to the size of the impression band and the amount of space afforded for manipulating the instrument in use.

When an impression is to be made, the band 20 is placed in position on the tooth having the cavity. The sleeve 11 and nozzle 12 are removed and the plunger 6 retracted. Into the bore of the barrel is placed a stick or cartridge of impression wax which may comprise either hydro-colloids, elastic compounds, or regular compounds—all available to the dentist. The nozzle 12 or 12a is then replaced and the barrel 5 heated to soften or melt the wax. It will be noted that the instrument cannot be used in this condition since the finger-piece 9 forms part of the sleeve 11 which had been removed.

After heating of the wax, the sleeve 11 is replaced on the barrel to cover the same and afford protection against hand burns to the user, or burns to the patient. The finger-piece 9 being in position, the instrument may be properly grasped. The fitting 16 or 16a is applied against the impression band as shown and the plunger 6 projected to force the softened wax through the passages 14 and 23 into the impression band 20 and into the tooth cavity 18.

The user continues projecting wax until an extrusion thereof appears around the bottom of the impression band at which time assurance is had that the entire interior of the band, except the space occupied by the tooth, is completely filled with wax. The fitting 16, by means of the instrument which serves as a handle, is then removed from contact with the band with a wiping motion. After the wax has set, the impression band, together with the wax is lifted from the tooth and used for casting the filling or inlay.

Because of the plastic state of the wax while being applied, assurance is had that all the interstices of the cavity have been filled and that the impression is free of air bubbles—a common cause of failure in prior methods.

In practice it has been found that a cartridge of wax is easier placed into the barrel from the handle end thereof and does not require the removal of the nozzle 12. For this purpose, the flange 6a is made removable from the barrel 5 so

that the plunger 6 may be removed to give access to the bore of the barrel. A threaded engagement of these parts at 25 is, therefore, provided.

The instrument herein disclosed may have other uses than that described, it being effective in any connection for the purpose of extruding plastic material.

In the above manner, and by employing the novel instrument herein described, an impression may be quickly and accurately made with a minimum of discomfort to the patient and with no danger of burns in handling the heated wax or the heated barrel. Broad facility of operation is afforded by the judicious selection of a suitable nozzle and fitting, and assurance that a sharp impression has been made.

From the foregoing it can be seen that an efficient instrument has been provided for the purpose intended. However, since the invention is subject to variations within the spirit and scope of the following claims, it is intended that this disclosure be considered as by way of example only.

I claim:

1. In an instrument of the extrusion syringe type having a barrel, a nozzle removably attached thereto, the outside of the barrel and the nozzle presenting a smooth, cylindrical, outer surface, a removable insulating sleeve for said barrel having affixed thereto a finger-piece for the instrument, and said sleeve having a smooth interior cylindrical surface.

2. In an instrument of the extrusion syringe type having a barrel, a nozzle replaceably carried by said barrel, a seat in the end of said nozzle receptive selectively of any of a plurality of nozzle fittings, the outside of the barrel and the nozzle forming a smooth cylindrical outer surface, a removable insulating sleeve for said barrel, and a finger-piece for said instrument affixed to said sleeve, said sleeve having a smooth interior cylindrical surface whereby the sleeve may be removed from and replaced over said barrel while the nozzle is in place on the barrel.

HERBERT R. BERGER.