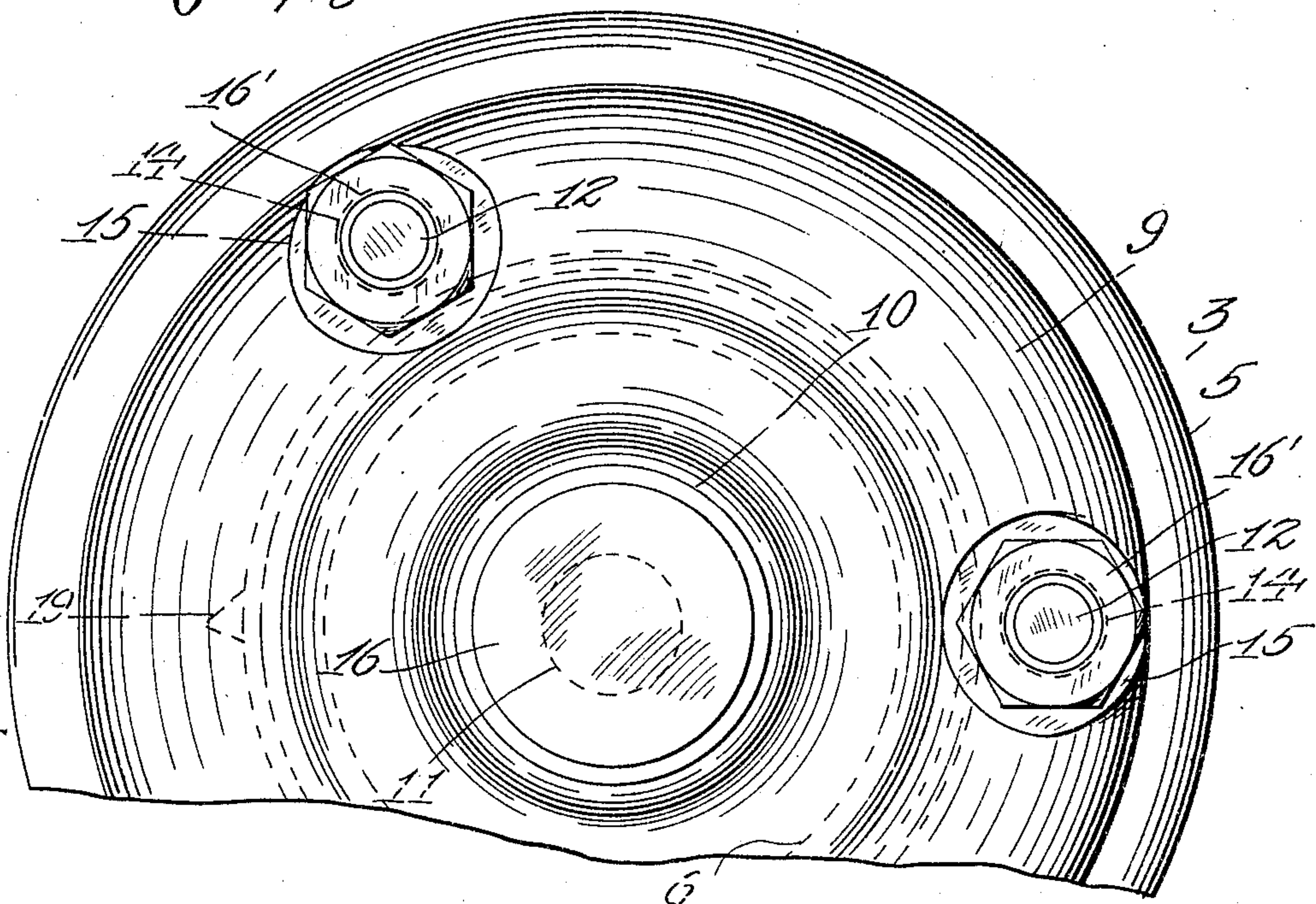
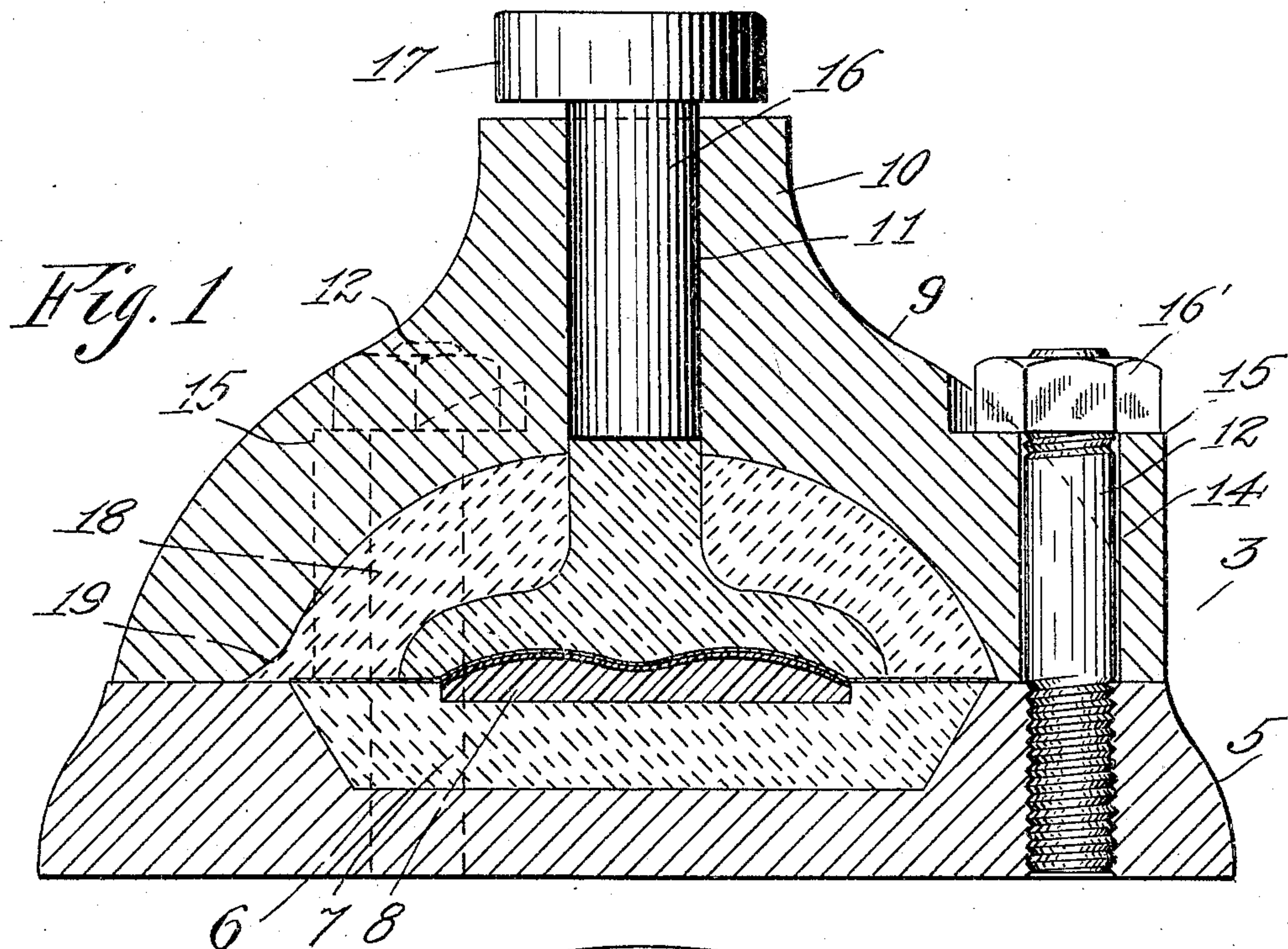


No. 788,490.

PATENTED APR. 25, 1905.

C. L. NELSON.
APPARATUS FOR SWAGING DENTAL PLATES.

APPLICATION FILED JUNE 4, 1903.



WITNESSES:

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Fig. 2

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CARL LUDVIG NELSON, OF SEATTLE, WASHINGTON.

APPARATUS FOR SWAGING DENTAL PLATES.

SPECIFICATION forming part of Letters Patent No. 788,490, dated April 25, 1905.

Application filed June 4, 1903. Serial No. 160,109.

To all whom it may concern:

Be it known that I, CARL LUDVIG NELSON, a citizen of the United States of America, and a resident of the city of Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Apparatus for Swaging Dental Plates, of which the following is a specification.

My invention relates to improvements in apparatus for swaging dental plates, and has for its object the production of a simplified and inexpensive device for this purpose embodying essential features of adaptability, utility, and general efficiency, which facilitates the swaging of dental plates from single dies, prevents the dies from spreading under pressure, and insures a more perfect conformation of the plate relatively to the die.

The above-mentioned and other desirable objects are attained by the constructions, combinations, and arrangements of parts as disclosed on the accompanying drawings, set forth in this specification, and succinctly pointed out in the appended claims.

With reference to the drawings filed herewith and bearing like reference characters for corresponding parts throughout, Figure 1 is a vertical diametrical section of the apparatus shown in the act of swaging a plate, and Fig. 2 is a plan view of the apparatus with a portion of the casing broken away.

This invention includes a separable casing 3, inclosing a swaging-chamber in which the die is placed for swaging the plate, and this casing embodies a circular disk-shaped base-plate 5, which is formed with a centrally-located depression 6 of circular form and comparatively large diameter and having the side wall tapering upwardly and outwardly from the bottom, and this depression is adapted to receive a bed or seat 7 of comparatively low-fusing material, as ordinary modeling compound such as used by dentists, in which the base of the die, as 8, is embedded before the compound has congealed. Upon the base-plate 6 is a removable cap 9, which is formed of dome shape, as best serving to withstand the pressure exerted in swaging, and this cap is substan-

tially equal in exterior diameter at the base end to the plate 6 and is formed with an upwardly-extending centrally-located boss 10 at the top, in which a throat or passage-way 11 of considerably less diameter than the interior diameter of the cap at its base is located and leads to the chamber therein. This cap is secured to the base-plate by means of vertically-disposed tie-bolts 12, which are screw-threaded at both ends and fastened at one end in suitable apertures arranged at equidistantly-spaced points in the base-plate adjacent to the margin thereof, and these bolts fit loosely in corresponding apertures 14, formed in the wall of the cap and which extend through suitable vertical bosses 15, formed on the outer surface of the cap to afford seats for the nuts 16' of the bolts.

Fitting in throat 11 is a rammer 16, which is formed with the stem substantially the same length as the throat and is enlarged at the outer end to provide a head 17 for impact of a hammer or the like in swaging the plate, and in the swaging-chamber is a partial filling 18, composed of low-fusing material, as modeling compound, and which is adapted to reduce the size of the chamber relatively to the size of the die employed, so that but a comparatively small amount of swaging material is required to fill the chamber.

The dies employed with this apparatus are preferably formed of low-fusing metal, which is comparatively soft and likely to spread under pressure, and to avoid this defect I embed the base of the die in the seat 7, composed of modeling compound, which prevents spreading of the die, and consequently insures a more perfectly fitting plate and can be readily removed from the depression in the base, owing to the taper of the side wall thereof, and melted to release the die and then repoured to offer a seat for a succeeding die.

In the inner edge of the base of the cap 9 a V-shaped notch 19 is formed to receive a portion of the partial filling as poured in the cap, so that a tongue will be formed on the body of filling in this notch, which will serve as a guide for resetting the body in the cap should it be removed, and this filling can be readily

melted and re-formed in the cap in conformity with the size of the die employed.

In proceeding with this apparatus to form a plate for a full denture, for example, the die 8 is first cast in the ordinary manner and then embedded in the seat 7, as heretofore set forth. The cap 9 is then inverted and the rammer 16 set within the cap with the point of the stem closing the inner end of throat 11. Modeling compound is then poured in the cap about the rammer, which is removed before the compound has fully set, and a portion of the compound is then cut away about the opening left by the rammer to clear a space for the swaging material over the die. The plate-blank is then placed on the die and a sheet of rubber placed over the blank, and the cap is then fastened in place on the base-plate of the casing. A stick of paraffin is now placed in the throat 11 and the rammer 16 set over the paraffin and driven home with a hammer to effect the swaging.

By forming the cap 9 dome-shaped it will better resist the pressure of swaging without rupture, and the apparatus will be lighter of weight and more easily handled, while the arrangement of the tie-bolts as disclosed allows for ready removal and replacement of the cap relatively to the base and insures a tight joint between these parts when assembled. The use of paraffin in swaging insures perfect conformation of the plate, as it will pack in the swaging-chamber under impacts of the hammer delivered through the rammer and distribute the pressure uniformly over the plate, and the paraffin can be readily removed by removing the filling from the cap and then driving out the packed body of paraffin, which can then be melted and recast as a stick and again used for swaging as before, while the filling can be replaced in the cap without melting or recast in the cap and cut away in accordance with the size of the die next used.

This apparatus is simple of construction and durable in use, and its operation can be readily understood, while the partial filling reduces to a minimum the quantity of swaging material necessarily employed, and consequently reduces the time required to pack the chamber, and the apparatus effects the swaging in a most satisfactory manner both as to the time required and fit of the plates.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States of America, is—

1. In apparatus for swaging dental plates; the combination of a separable casing inclosing a swaging-chamber and comprising a base having a centrally-located depression, and a dome-shaped cap having a boss at the top and a throat in said boss, a partial filling cast in said cap and consisting of a body of modeling compound having an opening leading from said throat, a die-seat cast in said depression and consisting of a bed of modeling compound, and a rammer fitting in said throat.

2. In apparatus for swaging dental plates; the combination of a separable casing inclosing a swaging-chamber and comprising a disk-shaped base-plate, and a dome-shaped cap having a throat and equidistantly-spaced bosses at the base with vertical bolt-receiving apertures, vertical tie-bolts consisting of equidistantly-spaced studs secured in said base, a partial filling cast in said cap and consisting of a body of modeling compound having an opening leading from said throat, a die-seat cast in said depression and consisting of a bed of modeling compound, and a rammer fitting in said throat.

Signed at Seattle, Washington, this 22d day of May, 1903.

CARL LUDVIG NELSON.

Witnesses:

ERNEST B. HERALD,
JOHN A. WHALLEY.