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L. H. CRAWFORD.

DENTAL SWAGING APPARATUS.

APPLICATION FILED JUNE 16, 1903. RENEWED JAN. 6, 1906.

Fig. 1.

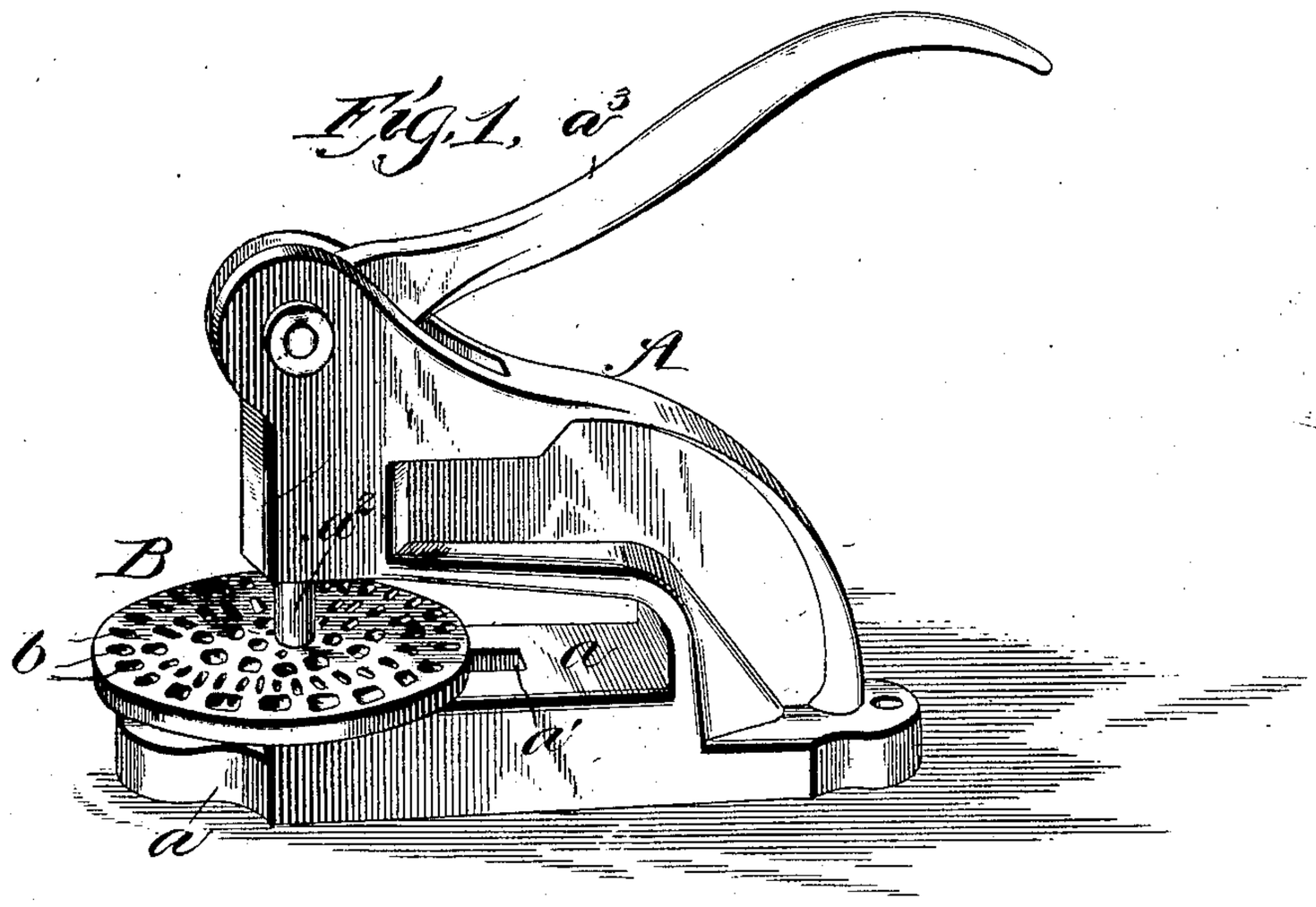


Fig. 2.

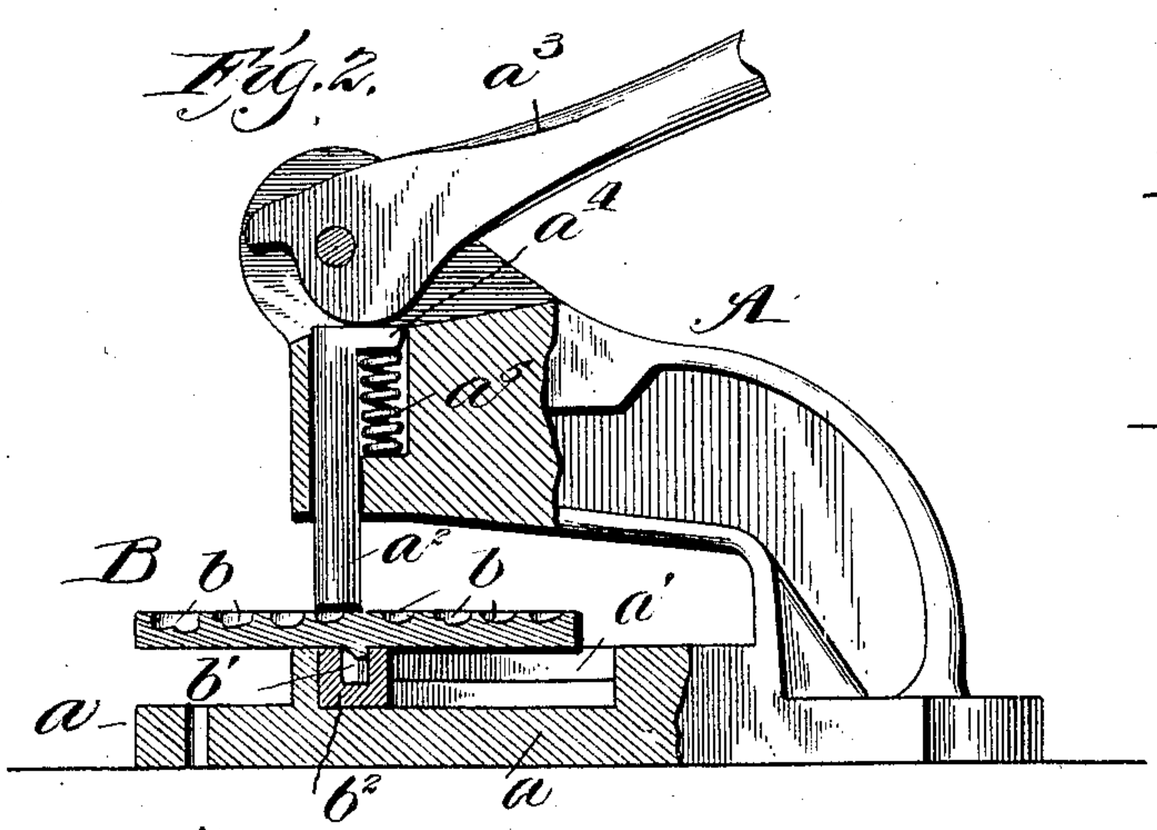


Fig. 5.

Fig. 3.

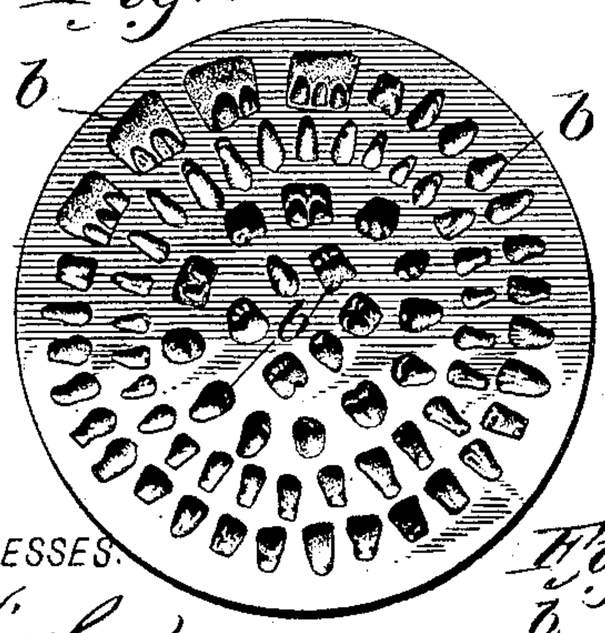
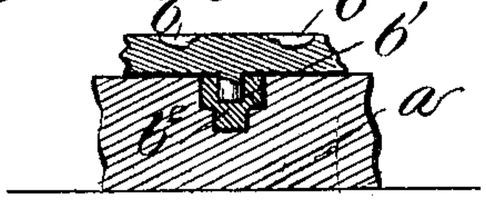


Fig. 4.



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DENTAL SWAGING APPARATUS.

No. 827,508. Specification of Letters Patent. Patented July 31, 1906.

Application filed June 15, 1903. Renewed January 6, 1906. Serial No. 294,920.

To all whom it may concern:

Be it known that I, LYTER H. CRAWFORD, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have made certain new and useful Improvements in Dental Swaging Apparatus, of which the following is a specification.

My invention is an improvement in the class of dental apparatus or appliances intended for producing some form of gold facings and cusps for plate and bridge work or for individual teeth. I have produced an apparatus adapted for a wide range of work of this character and which supplies a distinct want in operative dentistry.

The details of construction, combination, and operation of parts are as hereinafter described, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved apparatus. Fig. 2 is a sectional side view of the apparatus. Fig. 3 is a plan view of the intaglio die-plate forming part of my apparatus. Fig. 4 is a detail cross-section of a part of the lower portion of the apparatus. Fig. 5 is a sectional view showing a modification of the base of the press.

The two chief parts of my apparatus are, first, the press A, having a base a with lengthwise slot or groove a', and a slidable plunger a^2, operated by a lever a^3; second, an intaglio die-plate B, having concentric rows of sockets b and provided on its under side with a central pendent pin or stud b', by which it is pivoted so as to rotate and also adapted to slide bodily on the aforesaid base a.

The details of construction and operation are as follows:

The plunger a^2 works in a vertical guideway in the curved arm of the press and is provided at its upper end with a lateral prong or arm a^4, (see Fig. 2,) which rests upon a spiral spring a^5. The eccentric or cam-head of the pivoted lever a^3 rests upon the pronged head of the plunger and serves to forcibly depress the latter in a well-understood manner. The narrow base a extends horizontally beneath the curved arm of the press and lies in the same vertical plane therewith. It is provided with a longitudinal groove or open slot a' in its upper face, which is flat, as shown.

The intaglio die-plate B has a pin or stud b' projecting centrally from its plain under side, and the same may enter and is adapted to slide in the aforesaid groove a', as shown in Fig. 6. I have found it preferable, however, to provide a block b^2 to receive the stud b', the same fitting the groove in such manner as to adapt it to slide easily therein. In brief, the block furnishes a bearing for the stud b, which takes the wear incident to the sliding adjustment. The bottom of the groove a, as shown in Figs. 2 and 4, is preferably formed with opposite lengthwise ribs or shoulders. The die-plate B is for making gold dummies for bridge and plate work. It is constructed of the finest steel or bell-metal and is circular in form and provided in its upper face with numerous (preferably seventy-six) sockets b for forming the most natural impressions possible for gold facings for centrals, laterals, canines, bicuspids, and molars. The facings for bicuspids and molars are formed with cusps attached for use in bridge and plate work. In Fig. 3 the two outer circles of sockets are for forming facings for centrals, laterals, and canines, while the sockets inclosed by such circles are for forming combined cusps and facings for bicuspids and molars.

The swaging operation is effected as follows: A gold disk is laid over the particular socket b representing the tooth for which a facing is desired. Then a small piece of lead is placed upon the said disk, and the die-plate B is adjusted to bring the socket referred to directly under the plunger a^2, which is then forced down by the lever a^3, whereby the lead presses the gold disk into the socket so that it receives the desired form. It will be seen that the adaptation of the die-plate to rotate and also slide bodily on the base a, which is due to the provision of the central pendent stud b' and the lengthwise groove in the base, enables the operator to quickly adjust the plate so as to bring any particular socket b beneath the plunger.

The formation of facings with cusps attached constitutes an important feature of the die. The usual practice is to form a facing and cusp (or cap) for a bicuspid or molar separately and to solder them together at one side. This is difficult, and a lap-joint is formed which is for several reasons objectionable. By my invention the facings and cusps are formed integrally and at one operation, and the cusp may be subsequently bent at any required angle to the facing. Thus the objections to the old method are avoided and other important advantages attained.

The great number and varying forms of the sockets b in the die-plate provide a wide

range of selection and enable a dentist to quickly produce any particular form of dummy or facing, with or without a cusp attached, which he may require to apply. Heretofore in attempting to swage artificial caps, crowns, or facings resort has been had to a very numerous and comparatively expensive assemblage of separate or individual dies which were adapted to slide in the base of a press. Thus each die required to be first selected and then inserted in the base, which consumed much time besides being otherwise objectionable, whereas by my combination of slotted press-base and a rotatable and slidable die-plate any desired dummy facing may be produced with the greatest convenience and despatch. It will be seen that the under side of the die-plate B must be flat to adapt it to rest properly and slide and turn readily on the flat top of the press-base *a*.

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

1. The improved dental swaging apparatus, consisting of the press comprising a curved arm, a slidable plunger arranged in said arm, and a horizontal flat base provided with a lengthwise groove, and a detachable die-plate, having in its face sockets for producing tooth-forms and on its under side a central pendent stud which enters and is adapted to slide in said groove, the die-plate resting and being supported bodily upon the two side portions of the base adjacent to said groove, as shown and described, whereby the die-plate is freely rotatable, slidable, and detachable, as specified.

2. The improved dental swaging apparatus, comprising the press formed of a rigid curved arm, a horizontal base having a lengthwise groove, a curved arm and plunger, and an intaglio die-plate having its flat under side provided with a stud adapted to enter and slide in said groove, and its face provided with sockets for forming facings for teeth, substantially as shown and described.

3. The combination, with the press proper, having a horizontal base provided with a lengthwise groove, of a detachable die-plate having a central pendent stud, and a block provided with a socket to receive said stud, and fitted to and adapted to slide in the said groove, the die-plate resting, bodily, directly upon the side portions of the base, and adapted to slide on the base, as shown and described.

4. In a dental swaging apparatus, the press comprising the curved arm, a horizontal base provided with a flat top having a narrow lengthwise groove adapted to receive the pivot and guide-pin of a die-plate, and a plunger and lever, substantially as described.

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