No. 649,424. Patented May 15, 1900.

A. E. ADAMS.

MANUFACTURE OF TOOTH CROWNS.

(Application filed Oct. 14, 1899.)

(No Model.)

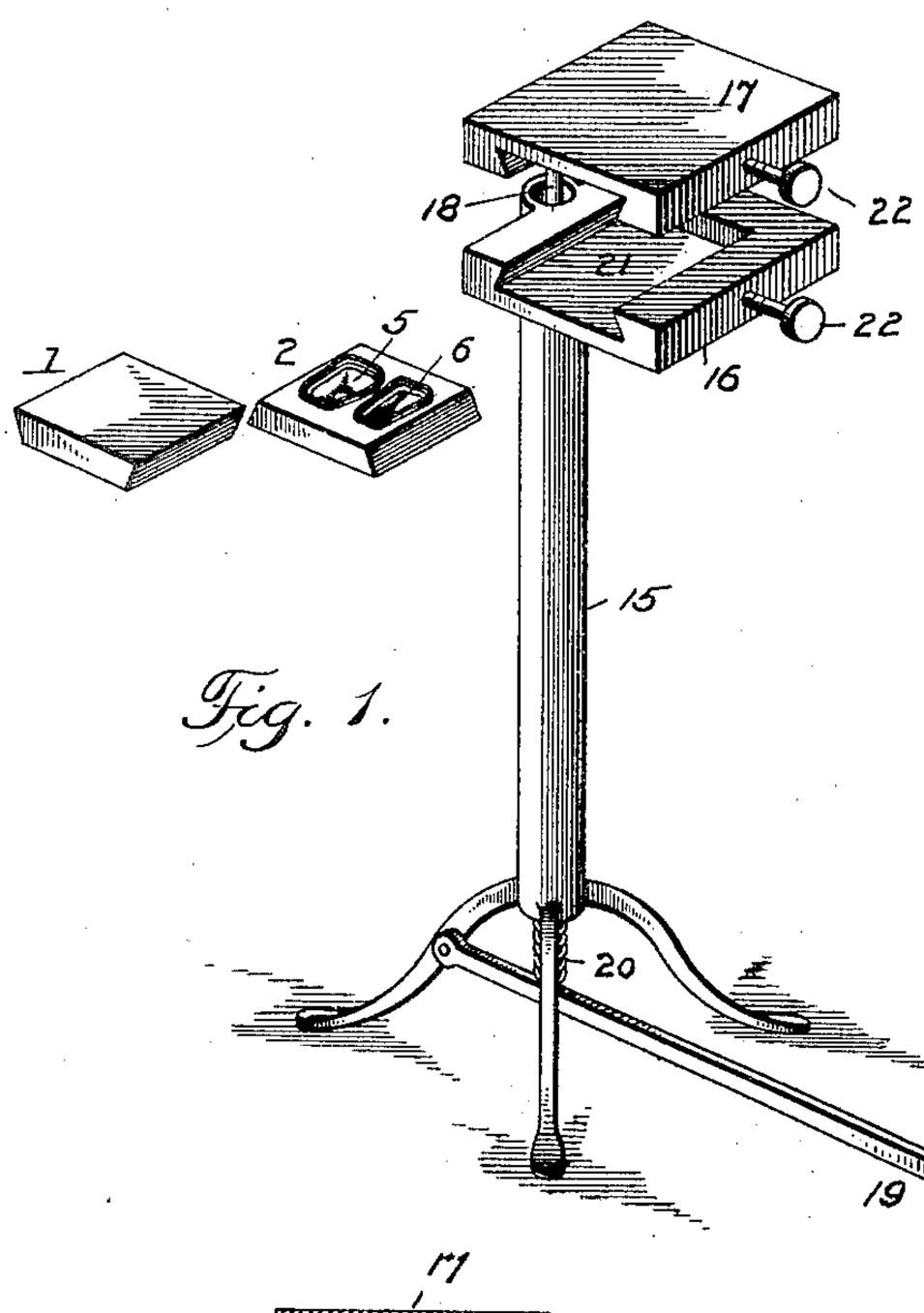


Fig. 1.

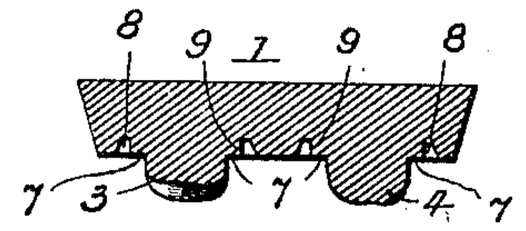
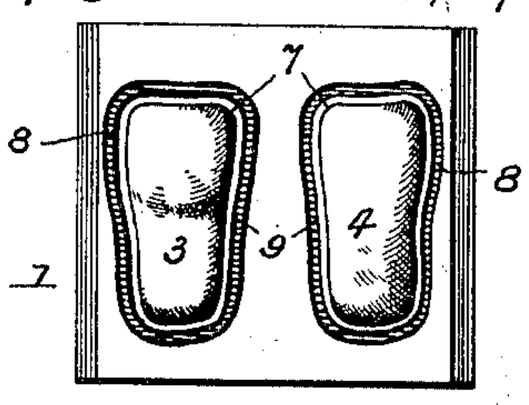


Fig. 3.



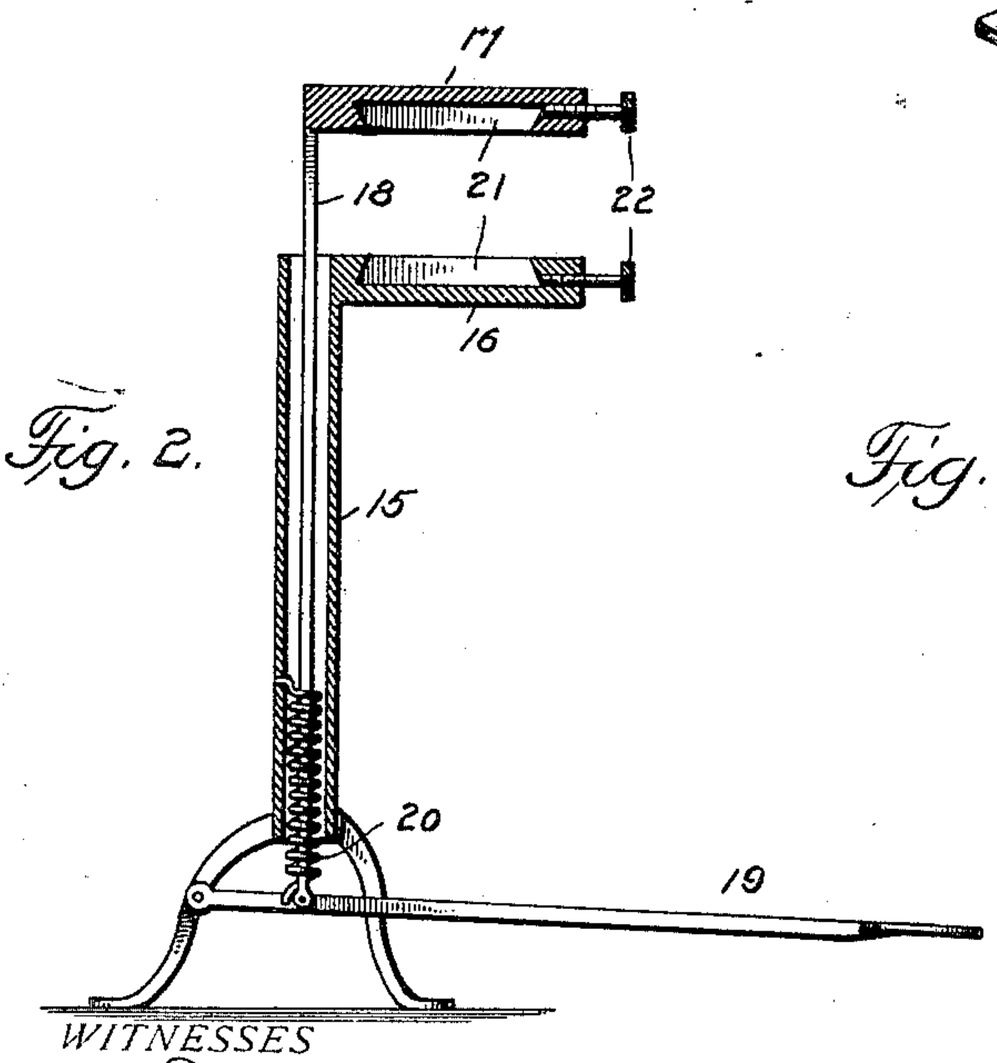
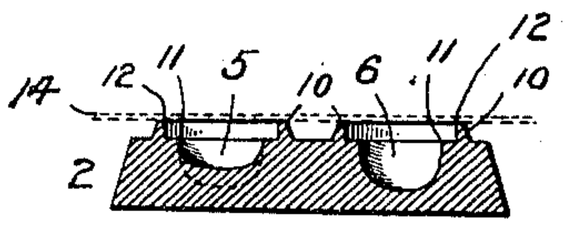


Fig. 2.



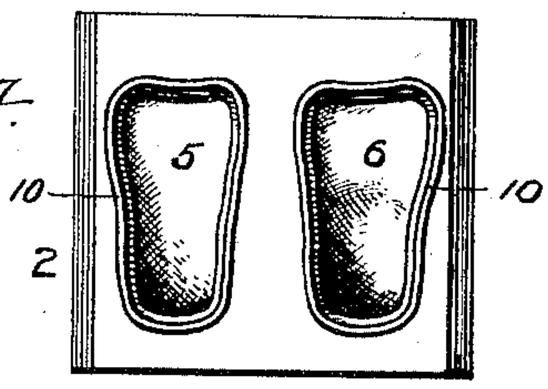


Fig. 4.

WITNESSES

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AARON EMERSON ADAMS, OF ARDMORE, INDIAN TERRITORY, ASSIGNOR OF ONE-HALF TO ERNEST L. TRUELOVE, OF SAME PLACE.

MANUFACTURE OF TOOTH-CROWNS.

SPECIFICATION forming part of Letters Patent No. 649,424, dated May 15, 1900.

Application filed October 14, 1899. Serial No. 733,601. (No model.)

To all whom it may concern:

Be it known that I, AARON EMERSON ADAMS, a citizen of the United States, residing at Ardmore, in the county of Pickens, Indian Territory, have invented certain new and useful Improvements in the Manufacture of Tooth-Crowns; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the manufacture of gold or metallic crowns for teeth, and has for one object the provision of improvements whereby the halves of the crown can be stamped or cut out of the gold sheet at one operation, thereby obviating the necessity of cutting out the stamping or impression by shears after it has been formed in the mold, as now generally done by dentists.

A further object is to obviate the necessity of making a mold from which to take the impression in the gold sheet each time it is desired to form a crown.

Another object is to make possible the manufacture of the crown rapidly and easily.

The foregoing objects are accomplished by the provision of dies of improved construction which are adapted for simultaneously forming the halves of the crown and severing or cutting them from the gold sheet or plate and by providing dies with tooth-forms of all shapes and sizes necessary for use in ordinary practice. It is also intended to provide a suitable press for holding the dies, operated either by hand or foot, by means of which the stamping of the crowns can be accomplished rapidly and easily.

In the accompanying drawings, Figure 1 is a perspective view of a press, the dies being shown in position for insertion therein, adapted for use in cutting out the crowns. Fig. 2 is a vertical section of the press; Fig. 3, a cross-section and plan views of the male die, and Fig. 4 similar views of the female die.

Referring more particularly to Figs. 3 and 4, which represent my improved dies, 1 is the male die, and 2 the female die. The male die is provided with raised portions 3 and 4, representing the halves of the tooth, (in the present instance an incisor,) and in the female die there are depressions 5 and 6 corresponding thereto. In this connection I may say that in supplying the invention to the profession a complete set of dies will be provided, so that there will be a series of dies covering all possible sizes and shapes of each and every kind of tooth, so that the operator will be enabled to form any kind of a crown that could possibly be required in practice, thus obviating the necessity of forming a different mold for making different crowns, as now generally done. The male die has a flat shoulder 7 around the base of the tooth-form and a groove or depression 8, one wall of which, 9, is perfectly flat and is disposed precisely at right angles to the shoulder 7. The other wall of the groove may be disposed at right angles or not, as preferred; but it is essential that the angle formed by the shoulder 7 and wall 9 be a sharp one in order to insure the shearing cut necessary to sever the stamped or impressed portion of the gold plate from the blank. Referring now to the female die 2, it will be seen that the same has a rim or ridge 10 projecting from its face, which corresponds in contour to the groove 8. Similar to corresponding parts on the male die the shoulder 7 and wall 9 are at right angles to each other. The distance between the base of said wall 9 of the female die and the edge 11 of the crater of the tooth-form is precisely the same as the perpendicular height of the ridge 10 from the shoulder 7 to the apex 12 of said ridge. This proportioning of parts is necessary to insure the proper conformation of the impression cut from the gold plate 14 to the tooth-form. The impressed portion is severed from the gold plate 14 at the point 12, after which the male die has to travel the distance 7 to 12, Fig. 4, in order to press the plate into the depressed tooth-form. Consequently the surplus metal extending laterally beyond the crater to the base of the ridge 10 must be equal to the distance the male die has to travel in order to have the edge of the formed crown lie flush with the plane of the face 7.

In Figs. 1 and 2 I have shown a convenient type of press with which the dies can be used, so that the operation of stamping out the crowns can be carried on with facility and

ease. Here 15 is a tubular standard having a jaw or head 16, while 17 is a corresponding jaw mounted on the upper end of a stem 18, sliding in the standard and operated by a treadle 19 and retracted by a spring 20. The heads or jaws have dovetailed sockets 21 leading in from one side to snugly receive the respective dies, and set-screws 22 are employed for clamping the dies therein. In stamping the crowns out of the metal all the operator has to do is to insert the proper dies in the press, place the gold sheet on the lower die, and depress the treadle. While I have illustrated and described a foot-operated press, a hand-press can be employed to as good advantage, and the type of press is immaterial, provided it is properly adapted to the dies.

I am aware that it has been proposed heretofore to employ sets of dies in pressing metal which have projections on one die and depressions on the other, and I do not, consequently, claim any such construction broadly; but, so far as I am aware, the particular form of dies disclosed in the present application has not heretofore been employed by others for stamping metal, particularly for forming gold crowns for dental work, for which use they are especially designed.

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

1. The herein-described set of dies for forming gold and metallic crowns for teeth, comprising a male die having a tooth-form projecting from the face of the die, a shoulder around the base of said form, and a groove in the face having its wall nearest the form disposed at right angles to the said shoulder thereby providing a cutting edge, and a female die having a depressed tooth form or hollow and a rim or ridge raised from the face of the die and provided with a shoulder corresponding to that on the male die and having its wall nearest the depressed tooth-form made perpendicular to the shoulder.

2. The herein-described set of dies for forming gold and metallic crowns for teeth, comprising a male die having a tooth-form projecting from the face of the die, a shoulder around the base of said form and a groove in the face having its wall nearest the form disposed at right angles to the said shoulder, thereby providing a cutting edge, and a female die having a depressed tooth form or hollow and a flat shoulder around the crater of said hollow and provided with a raised rim or ridge around said shoulder, said ridge having its wall nearest the tooth depression made perpendicular and corresponding to the wall of the groove of the male die and being of a perpendicular height the same as the distance from its base to the edge of the crater of the tooth depression or hollow.

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

AARON EMERSON ADAMS.

Witnesses:
CHARLES M. BIRCKHEAD,
SARA A. TERRY.