

No. 854,283.

PATENTED MAY 21, 1907.

J. M. EVEY.

DENTAL ROOT IMPRESSION AND CROWN MOUNTING INSTRUMENT.

APPLICATION FILED MAR. 24, 1906.

Fig. 1.

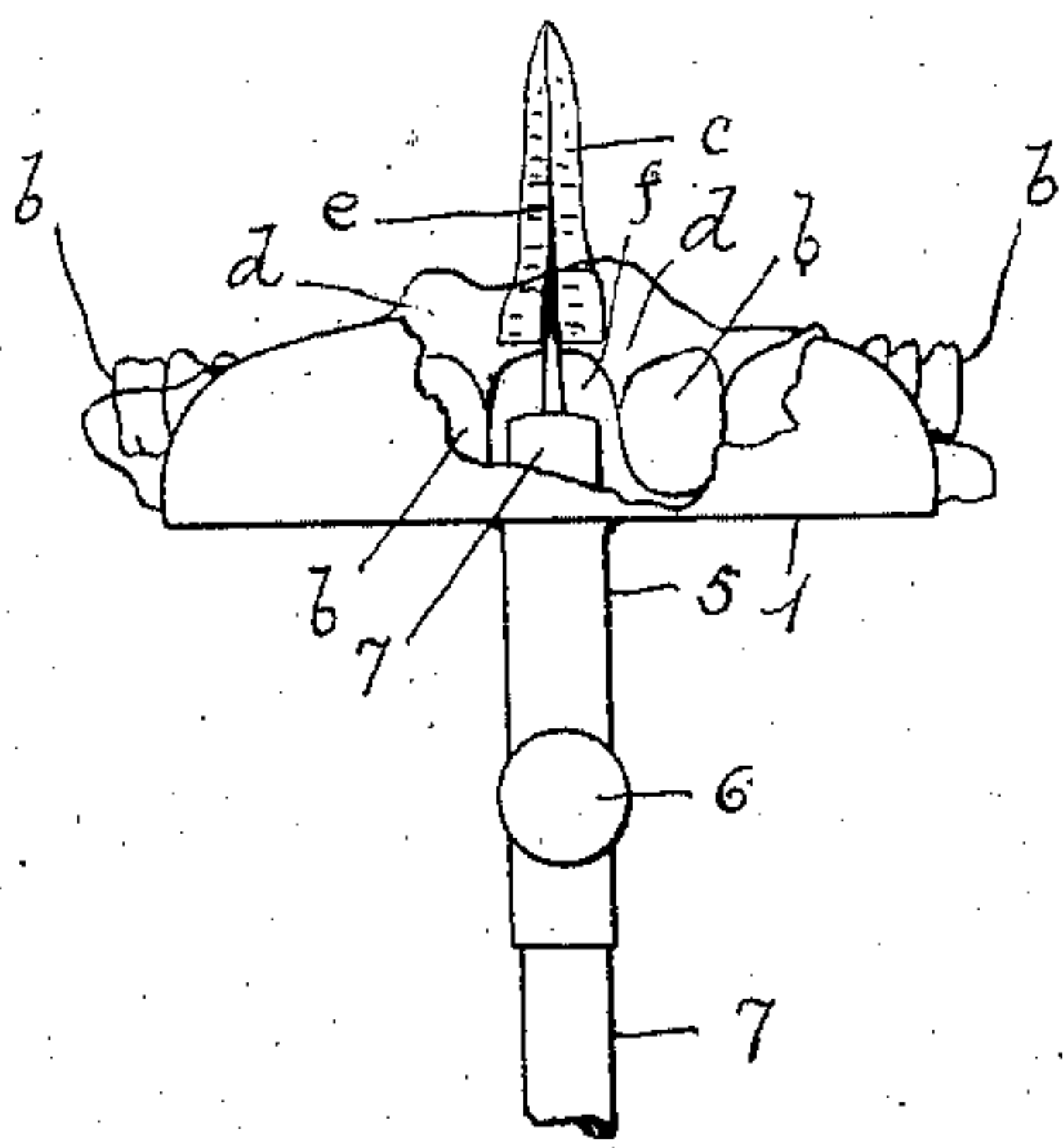


Fig. 2.

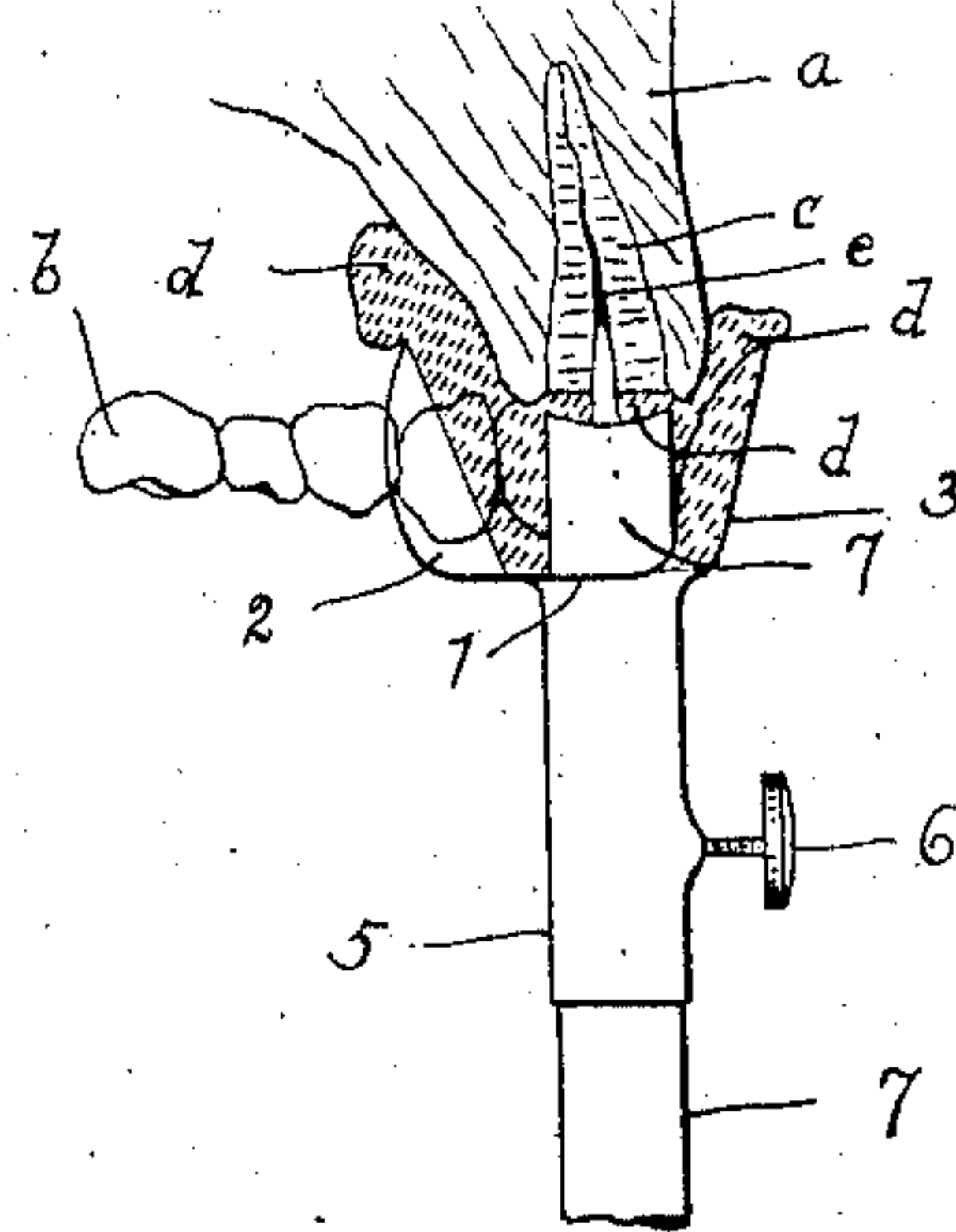


Fig. 3.

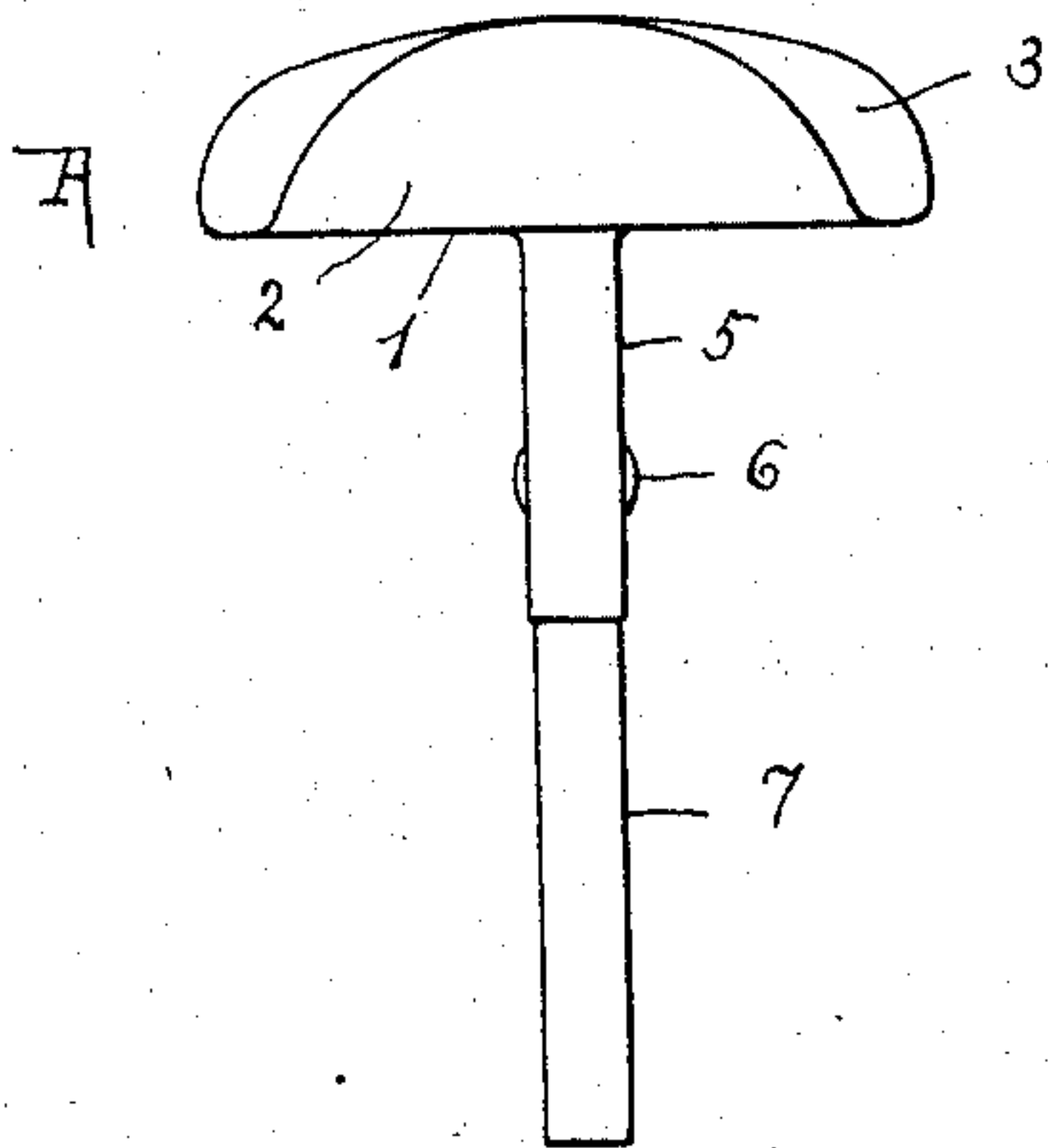


Fig. 4.

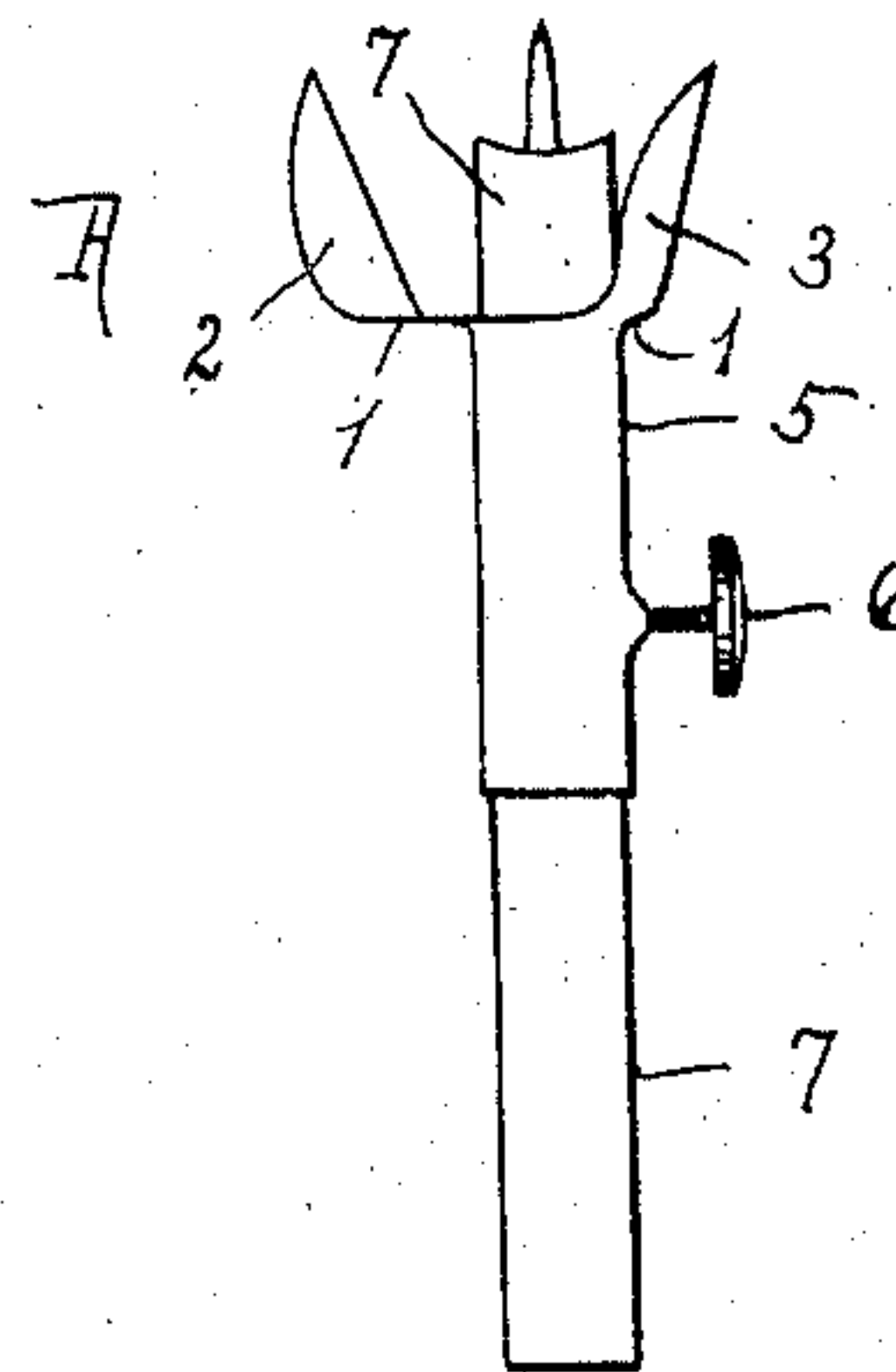


Fig. 5.

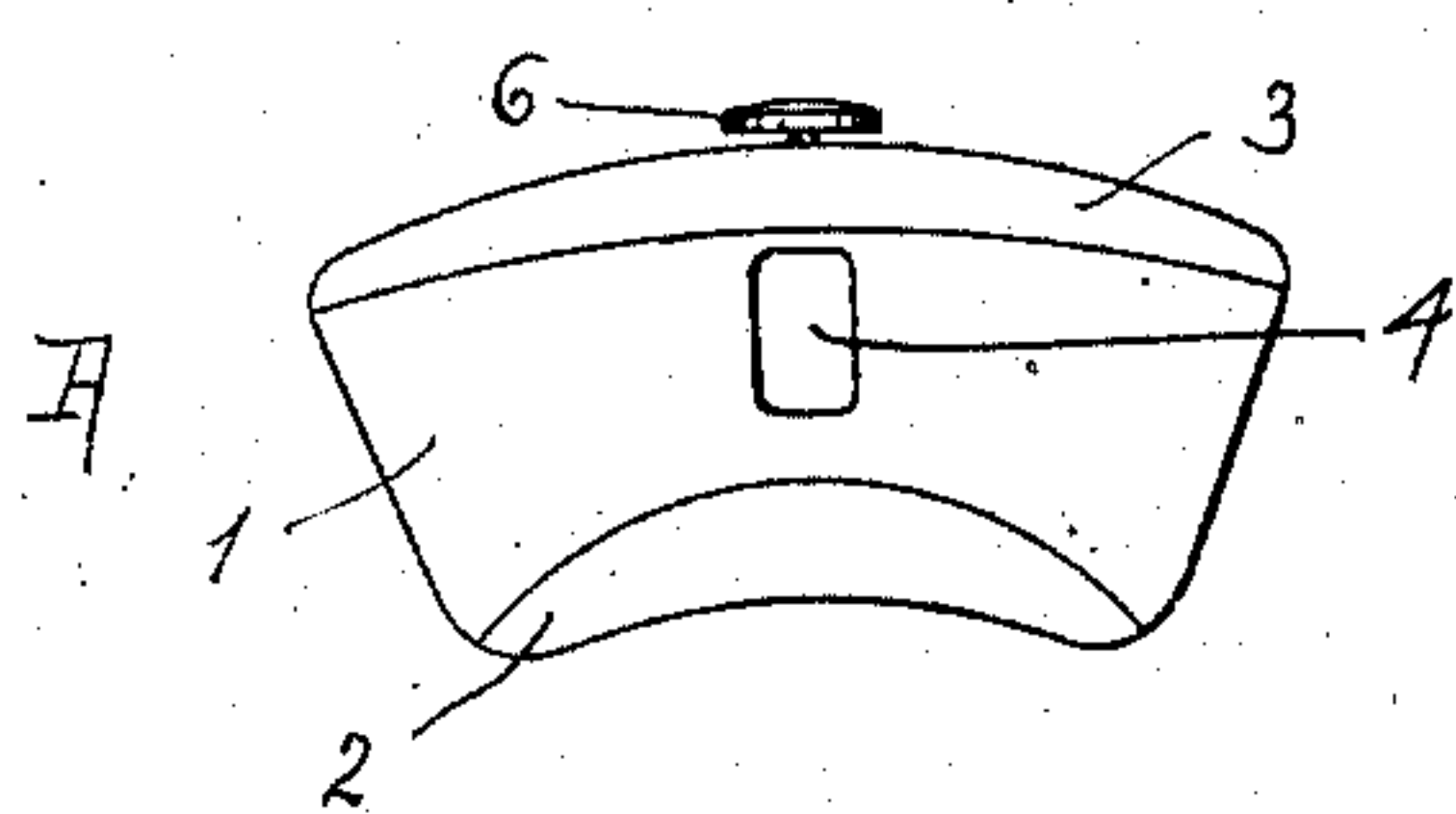
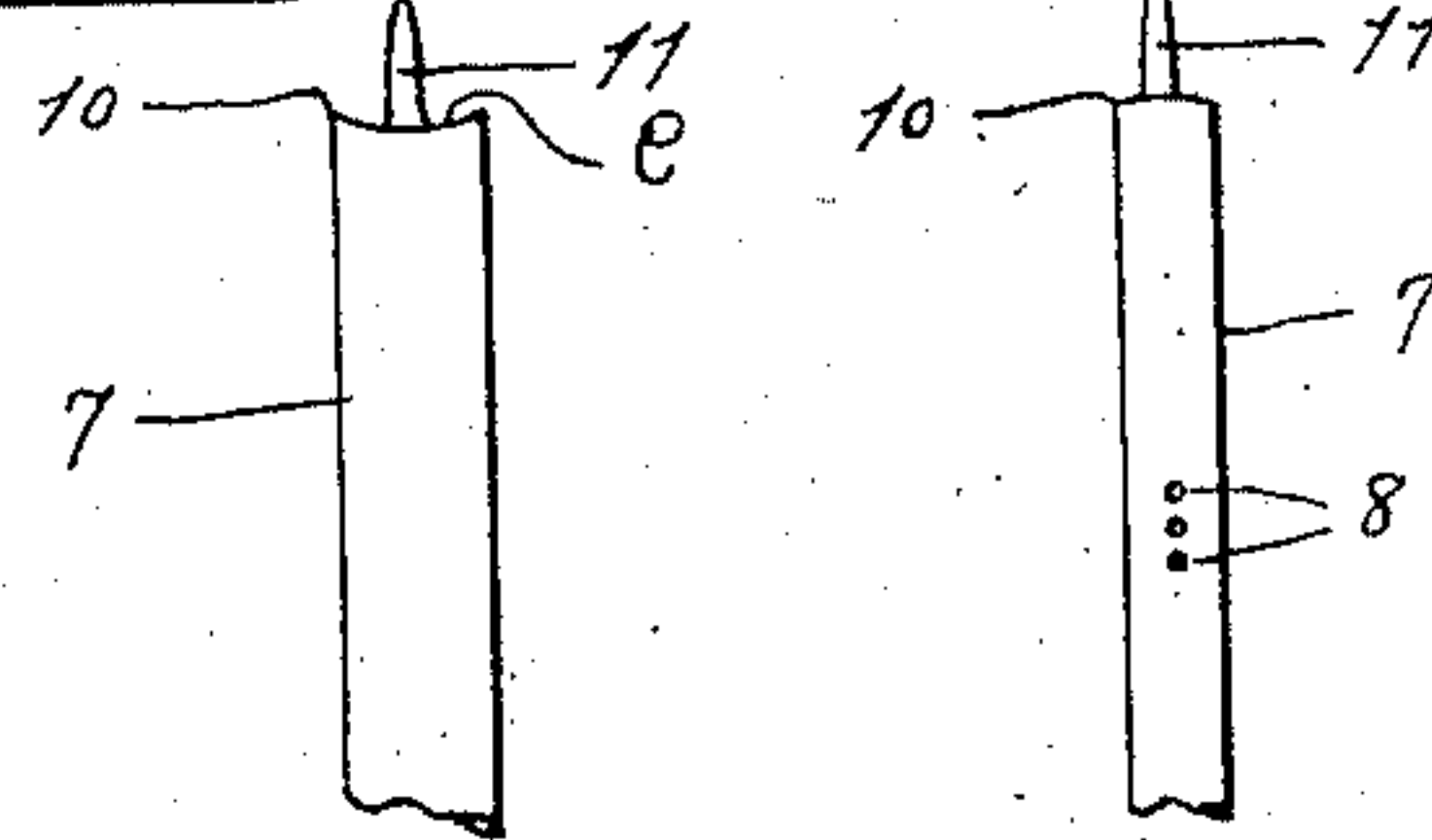


Fig. 6.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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DENTAL ROOT-IMPRESSION AND CROWN-MOUNTING INSTRUMENT.

No. 854,283.

Specification of Letters Patent.

Patented May 21, 1907.

Application filed March 24, 1906. Serial No. 307,940.

To all whom it may concern:

Be it known that I, JOHN M. EVEY, a citizen of the United States, residing at Monmouth, in the county of Warren and State of Illinois, have invented a new and useful Dental Root-Impression and Crown-Mounting Instrument, of which the following is a specification.

My invention relates to dental instruments of the nature above described in which an impression of the face of the root which has been prepared by certain processes of grinding and finishing by an operator, with the object of fixing permanently to said surface by means of a pin, a crown or false tooth of porcelain, gold, platinum or other suitable material, is taken for the purpose of obtaining a perfect reversed copy thereof and from which said crown may be made by any of the numerous well known processes. In the use of this class of devices as heretofore constructed, difficulty has been experienced in obtaining an impression which was of such perfect character that a crown could be constructed therefrom having such surface that it would conform exactly and absolutely to the surfaced root or root face; and the primary object of this invention is to provide a device in the use of which such perfect impression can at a single operation and without preliminary trials and with but a single instrument, with certainty be obtained, and simultaneously therewith a perfect impression of the teeth adjoining said root also be obtained.

To these ends and objects my invention consists in novel constructions and combinations of parts, the operations of which devices separately and in combination will be found hereinafter fully described and made the subject-matter of claims hereto appended.

Mechanism showing the structural features, arrangement, connection and mutual relationship of the several parts of my improvement are illustrated in the accompanying drawings, in which:—

Figure 1 is a front elevation of the assembled device, partly broken away, the impression compound within the tray and in partly completed form; Fig. 2, a side elevation, partly in section, showing the completed impression; Fig. 3, a rear elevation of the parts assembled; Fig. 4, a side elevation, the parts assembled and the plunger having been moved a slight distance; Fig. 5, a detail of

a portion of the plunger, seen from in front; Fig. 6, a similar view, seen from one side; and Fig. 7, a top plan of the tray.

Referring now to the drawings by letters and numerals, A represents a tray comprising a bottom 1 curved to conform to the shape or outline of the gums and provided with an inner curved and flared flanged side 2 and an outer and larger but similarly formed side 3. Centrally of and through the bottom is an aperture or foramen 4. Projecting downwardly from the bottom 1 and preferably integral therewith is a tubular shank 5 surrounding the orifice 4, and its front side is threaded for the reception of a set screw 6 for a purpose hereinafter described.

7 represents an imperforate push-rod or plunger of such diameter that it will fit snugly but be free to move within the shank 5. It is preferably oval in cross section and is provided with a series of indentations in one of its sides with either of which the point of the set screw may engage. It will be evident, however, that these indentations may be dispensed with if necessary, as the set screw will firmly and securely hold the plunger wherever placed. One end of the latter is striated or furrowed in one cross section, as at 9, and festooned in its other cross section, as at 10, for a purpose hereinafter described. Located centrally of this end of the plunger and preferably integral therewith is a guide pin 11, the use of which will be set forth hereinafter. It will be manifest from the drawings that the plunger is adapted to reciprocate or have forward and back endlong movement in and through the shank, and that it is reversible from side to side therein.

I shall now proceed to describe the operation of the device:—The dentist or other operator having approximately filled the tray A with any suitable plastic impression material *d* which will rapidly harden upon becoming cooled or being exposed to the air, fixes the plunger 7 by means of the set screw 6 in such position that the pin 11 will project a short distance through the impression material, sufficient that it may be clearly seen by him in guiding it directly and positively to insure its perfect placement in the nerve canal *e* in the root *c*. The assembled device is then pushed down upon the teeth and into proper position, which operation will give a partially completed impression. The set screw is then loosed from the plunger or push-rod and the tray A slid or pushed forwardly

thereon and tightly over the teeth *b* adjoining and adjacent to the root, whereupon the impression material will assume the form or approximately the form shown at Fig. 1, which is about that obtainable from the use of instruments for a like purpose now in use. The plunger being then pushed forwardly through the shank 5 (which maintains it in absolute alinement therewith) will press against the impression material and its furrowed and festooned ends or ends provided with semi-circular projections will, through the instrumentality of the interposed material, force the gum *a* which surrounds the root and lies within the space *f* formerly occupied by the natural crown, a slight distance therefrom and cause said material to assume the perfect form or impression desired, and in fact, absolutely essential, see Fig. 2. The two operations last described will further cause the material to assume a perfect impression of the adjoining, and if desired, adjacent teeth, the great advantage of which will at once be apparent to those skilled in the art to which the invention appertains.

It will readily be seen that the tray may be of sufficient length to take an impression of more teeth than herein shown, and that minor changes may be made in the details of construction without departing materially from the purview of my invention.

To a certain extent the mechanical advantages have been set forth in connection with the statement of the purposes or objects thereof and the detail description of the mechanism; but concisely stated, the leading benefits secured thereby are as follows:—

First:—A perfect impression of a tooth root face which has been prepared for the reception of a crown may be obtained in a simple and certain manner. Second:—A perfect impression of adjoining and adjacent teeth may be obtained by a simultaneous (the same) action to that last mentioned. Third:—The needle is rigid and immovable; not being seated in a socket or flexible its line of progression must be and is true and posi-

tive. Fourth:—In positioning the device the operator is enabled to see with certainty that the guide-pin enters the nerve canal directly and not at an angle. Fifth:—In exchangeable parts are unnecessary. Many minor advantages will present themselves and be obvious to those skilled in the art.

I claim as my invention the following:—

1. In a device of the character described, a tray comprising a bottom, flanged sides projecting in one direction therefrom, and an integral tubular shank projecting therefrom in a contrary direction.

2. In a device of the character described, a tray comprising a bottom provided with a central aperture, flanged sides projecting in one direction therefrom, a tubular shank extending therefrom in a contrary direction, and a set screw threaded in said shank.

3. The combination with plastic-material holding means, of means adapted to engage therewith comprising a rod, festoons at an end thereof and a centrally disposed pin projecting from the same end of the pin as do the festoons, said rod, festoons and pin being immovable with relation to each other.

4. In a device of the character described, a tray, a hollow shank integral therewith, and a plunger adapted to reciprocate therein and to pass through the bottom of the tray.

5. In a device of the character described, a tray, a hollow shank integral therewith, a plunger adapted to reciprocate therein and to pass through the bottom of the tray and through said shank, and means for normally locking it in position.

6. In a device of the character described, in combination with a tray, a plunger comprising an imperforate rod-like body and an integral guide-pin.

In witness whereof I have hereunto set my hand at Monmouth, Warren Co., Illinois, this 20th day of March, 1906.

JOHN M. EVEY.

Witnesses:

J. A. TUBBS,
D. E. GAYER.