

No. 744,358.

PATENTED NOV. 17, 1903.

C. T. KINSMAN.
DENTIMETER.

APPLICATION FILED APR. 20, 1903.

NO MODEL.

Fig. 1,

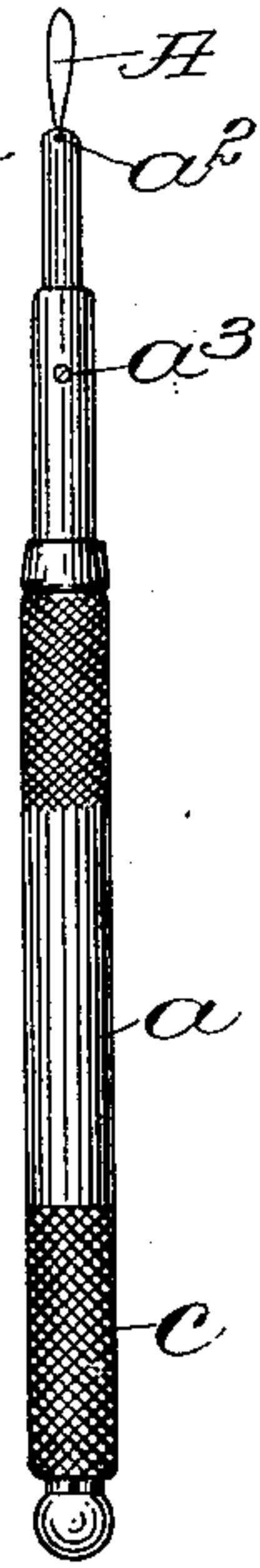


Fig. 2,

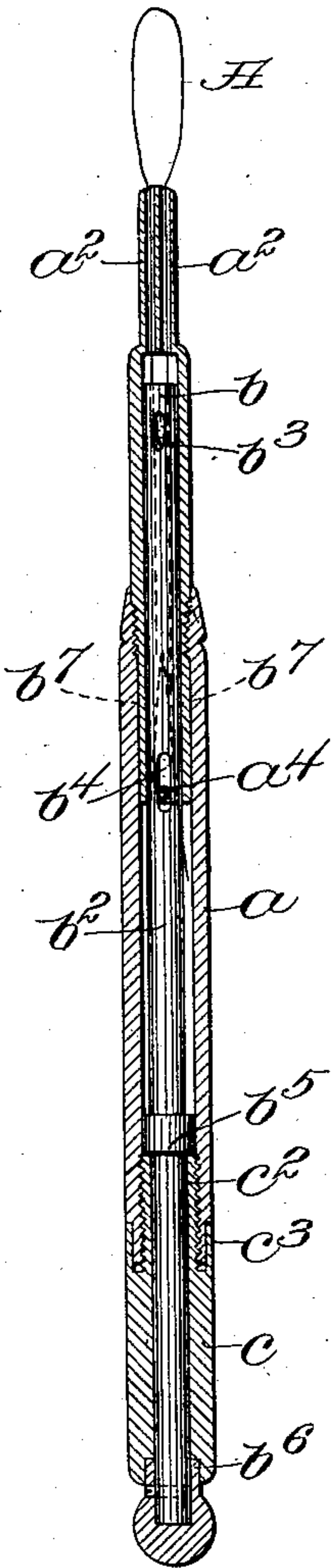


Fig. 3,

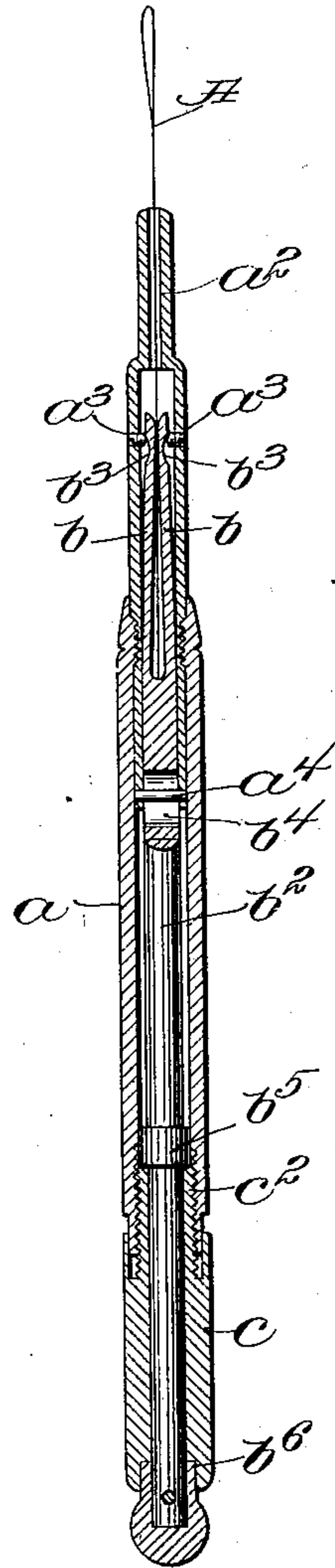
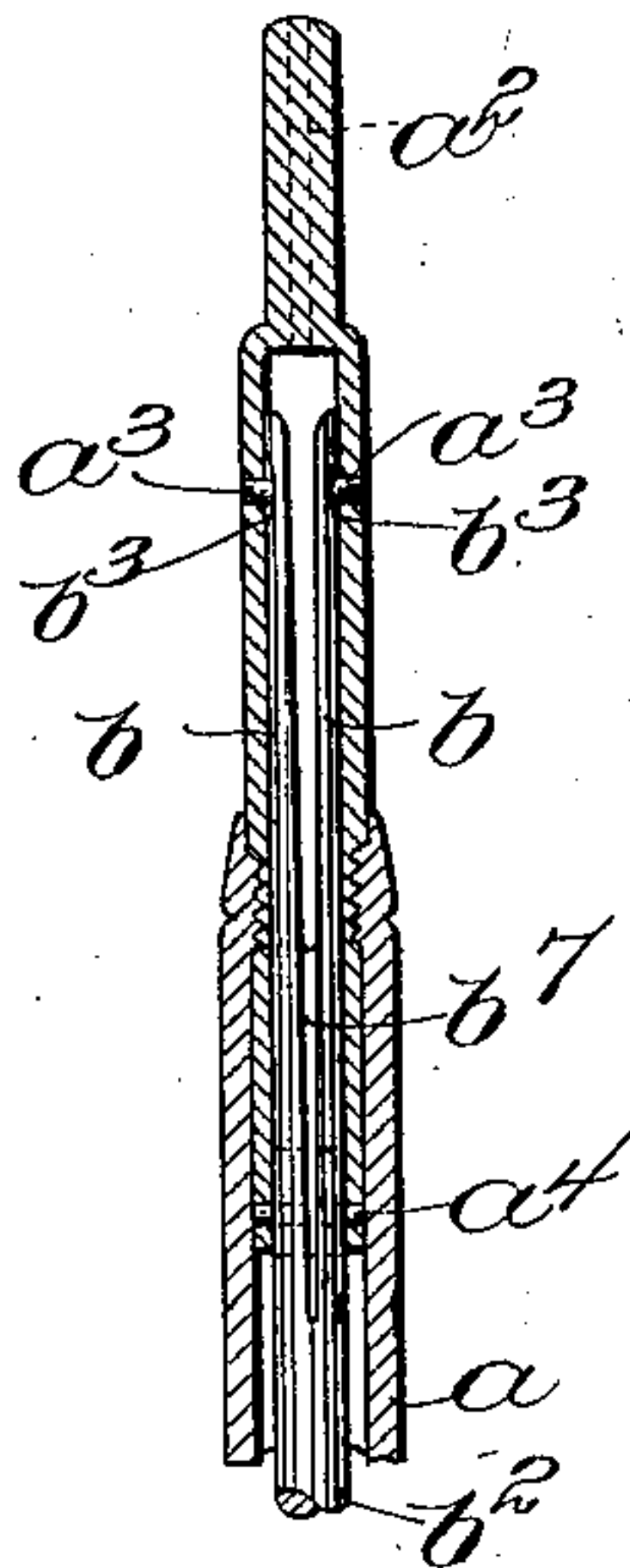


Fig. 4,



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UNITED STATES PATENT OFFICE.

CHARLES T. KINSMAN, OF CAMBRIDGE, MASSACHUSETTS.

DENTIMETER.

SPECIFICATION forming part of Letters Patent No. 744,358, dated November 17, 1903.

Application filed April 20, 1903. Serial No. 153,482. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. KINSMAN, of Cambridge, county of Middlesex, and State of Massachusetts, have invented an Improvement in Dentimeters, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The present invention relates to a dentimeter and is embodied in an instrument for holding the fine wires commonly used by dentists for making accurate measurements of teeth or roots of teeth to be used in connection with crown or bridge work. It is customary to obtain the measurements by passing a loop of wire loosely around the tooth or root and twisting the ends of the said wire together until it fits tightly around the tooth, the wire loop thus formed being then removed, the length of the loop being the exact measurement of the circumference of the tooth. For the proper manipulation of the wires a holder is employed, to which the ends of the wire are connected, so that by turning the said holder the said ends can be twisted so as to form the final loop. The present invention is embodied in such a holder, the purpose being to obtain a holder in which the wires can be easily and quickly fastened, while the body of the instrument is small and compact, as well as free from any projections which might injure the patient's mouth in turning the holder, the ends of the wire, furthermore, being contained within the holder, so that they do not project in any way therefrom.

To these ends the instrument embodying the invention comprises a tubular body portion or wire-container having separate wire-guides at one end to receive the ends of the wire loop, the said wire ends projecting into the interior of the tubular body portion, which is provided with a clamp adapted to receive the wires and to be operated by an actuating device connected with the body portion. As herein shown, the said clamping device comprises a pair of jaws between which the wires are guided when passed through the openings, the said jaws being longitudinally movable within the tubular body portion through the agency of the actuating device, which may conveniently be a sleeve or secondary tubular portion screw-threaded to the main tubu-

lar portion, so as to have a longitudinal movement with relation thereto when turned. The gripper members, which are connected with such actuating device, are arranged to cooperate with projections extending toward them from the main tubular member and acting on inclined surfaces, so that in the longitudinal movement of the jaws they are pinched together to grip the wire.

Figure 1 is an elevation of the instrument embodying the invention; Fig. 2, a longitudinal section of the same on a larger scale; Fig. 3, a similar section taken on a plane at right angles to the plane of Fig. 2; and Fig. 4, a detail view of the upper part of Fig. 3, showing the clamping-jaws in elevation.

The instrument embodying the invention comprises the tubular body portion *a*, of convenient size and shape to be manipulated for the purpose of twisting the wire *A* held therein around the tooth or foot to be measured, the said body portion, as indicated in Figs. 2 and 3, being tubular and containing the clamping devices for the wire. To guide the wire into the said tubular portion *a*, the said portion is provided at one end with the parallel openings *a*², through which the ends of the wire loop are guided to the interior of the portion *a*. Within the tubular portion *a* there is a clamping device, herein shown as spring-jaws *b*, (best shown in Figs. 3 and 4,) the said jaws being indicated as formed by cutting a longitudinal slot in a spring-tempered rod *b*², which fits within the body portion *a* and is longitudinally movable therein, the said body portion being provided with projections *a*³, extending inwardly to engage inclined surfaces *b*³ at the sides of the jaws *b*. It will be seen, therefore, that if the rod *b*² is moved longitudinally with relation to the body portion *a* the inclined surfaces *b*³ will be engaged by the projections *a*³, so that the two members *b* will be forced together after the manner of a clamp. (See Fig. 3.)

The member *b*² is so placed within the member *a* that the space between the members *b* lies in the same plane with the two openings *a*², so that when the ends of the wire are inserted through said openings they will be guided between the members *b*, which, as indicated, are beveled at their outer ends, so as to assist in guiding the ends of the wire be-

tween them. The member b^2 is held in this position—that is, prevented from rotation within the member a —by means of a transverse pin a^4 , which extends through a slot or opening b^4 in the rod b^2 , thus insuring that the jaws b will always be in the proper position to receive the ends of the wire A when they are passed through the openings a^2 .

In order to produce the longitudinal movement of the rod b^2 for the purpose of operating the gripper member b , the said rod is provided with an actuating device c , which forms a part of the instrument, the said actuating device being herein shown as a rotatable member connected by a screw-thread with the body portion a and also connected with the rod b^2 , so that by turning the member c the body portion a and the rod b^2 are caused to move longitudinally one relatively to the other.

As herein shown, the member c is provided with a tongue c^2 , having external screw-threads coöperating with internal screw-threads formed in the member a , the said actuating device c further being provided with a sleeve portion c^3 , which projects over a part of the member a , the purpose being to keep the interior of the member a closed and free from dust.

The rod b^2 is shown as provided with shoulders b^5 and b^6 , which are engaged, respectively, by the opposite ends of the member c , through which the rod b^2 extends, so that the longitudinal movement of the said member c with relation to the portion a will cause the corresponding longitudinal movement of the rod b^2 to clamp or unclamp the jaws b , in accordance with the direction of such movement.

When the parts are in the position indicated in Figs. 2 and 4, the jaws b are released, being then substantially out of engagement with the projections a^3 , so that the ends of the wire loop passed through the openings a^2 will slip between the said jaws, which can then be clamped upon the wires by turning the member c , after which the instrument is ready for use.

In forming the opening between the jaws channels b^7 at opposite sides are formed, the material between the channels being inclined outward, as shown in Figs. 2 and 4, so as to constitute guides for the ends of the wire in case the said wire is long enough to reach this part, whereby the said wire is caused to pass freely along through said channels and into the space between the rod b^2 and the portion a . This prevents any difficulty in case the wires are slightly longer than is necessary.

In the operation of the device a wire is bent in the form of a loop and the ends passed through the openings a^2 , as indicated in Fig. 2, and pushed in until the loop is left of sufficient size to pass easily around the object to be measured. The ends of the wire are then clamped, as indicated in Fig. 3, by turning the actuating member c , after which the

instrument is ready for use. The loop is then placed around the object to be measured and twisted by turning the body portion a until the ends of the wire are twisted together and the wire fits snugly around the object, after which it is slipped off. The construction, moreover, is such that if it is desired to pass the wire loop loosely over the tooth or root before securing the ends of the wire in the instrument and adjusting it to approximately the required size this can be readily done, as a turn of the fingers will clamp the wire after the loop is adjusted and the instrument in position. The wire with the twisted loop formed as above described can then be instantly removed from the instrument by loosening the clamping members b , which frees the ends of the loop, there being no danger of distorting or altering in any way the twisted loop during the removal thereof. This feature of the invention is of material importance for the reason that it is frequently the custom to measure teeth or roots by this method, subsequently sending the measuring-loop away to a laboratory, where it is used to indicate the exact size of material to be formed into a crown or bridge. It is therefore of great importance that the loop once formed should not in any way be altered, and in this instrument there is very little liability of such alteration, for the reason that the wire itself is not touched in removing it from the holder. Furthermore, if it is desired to remove the instrument before the loop is removed from the tooth this can be done by a mere turn of the actuating device, which at once releases the wires.

I claim—

1. In a dentimeter, a tubular body portion provided with two separate wire-guides for the ends of the wire loop; and a clamp for the said ends, the members of which clamp are inclosed within said body portion.

2. In a dentimeter, a tubular body portion to receive within it the ends of a wire loop; a clamp for the said ends, the members of which clamp are inclosed within said body portion; and an external actuating device for said members.

3. A dentimeter comprising a tubular body portion provided with longitudinal parallel wire-guides; a longitudinally-movable rod within said body portion provided with clamping-jaws; and internal projections to coöperate with said jaws in the longitudinal movement of the rod.

4. A dentimeter comprising a tubular body portion provided with longitudinal parallel wire-guides; a longitudinally-movable rod within said body portion provided with clamping-jaws; internal projections to coöperate with said jaws in the longitudinal movement of the rod; an actuating member screw-threaded in the body portion; and means for connecting said actuating member with said rod.

5. A dentimeter comprising a tubular body

portion provided with longitudinal parallel wire-guides; a longitudinally-movable rod within said body portion provided with clamping-jaws; internal projections to coöperate
5 with said jaws in the longitudinal movement of the rod; an actuating member screw-threaded in the body portion; means for connecting said actuating member with said rod; and means for preventing the rod from rotat-
10 ing with relation to the body portion.

6. A dentimeter having a tubular body portion provided at one end with wire-guides; a sleeve screw-threaded in said body portion at the other end thereof; a rod extending through
15 said sleeve into said body portion and pro-

vided with shoulders engaging the opposite ends of said sleeve; spring clamping-jaws formed in the rod, the space between said clamping-jaws forming inclined channels; and engaging members projecting internally
20 from the body portion to engage inclined surfaces at the outside of said jaws, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of
25 two subscribing witnesses.

CHARLES T. KINSMAN.

Witnesses:

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HENRY J. LIVERMORE.