A. LAVALLÉE & G. J. CONSTANTINEAU.

AUTOMATIC DENTAL ADVERTISING DEVICE.

APPLICATION FILED OCT. 31, 1908.

932,875.

Patented Aug. 31, 1909.

2 SHEETS—SHEET 1.

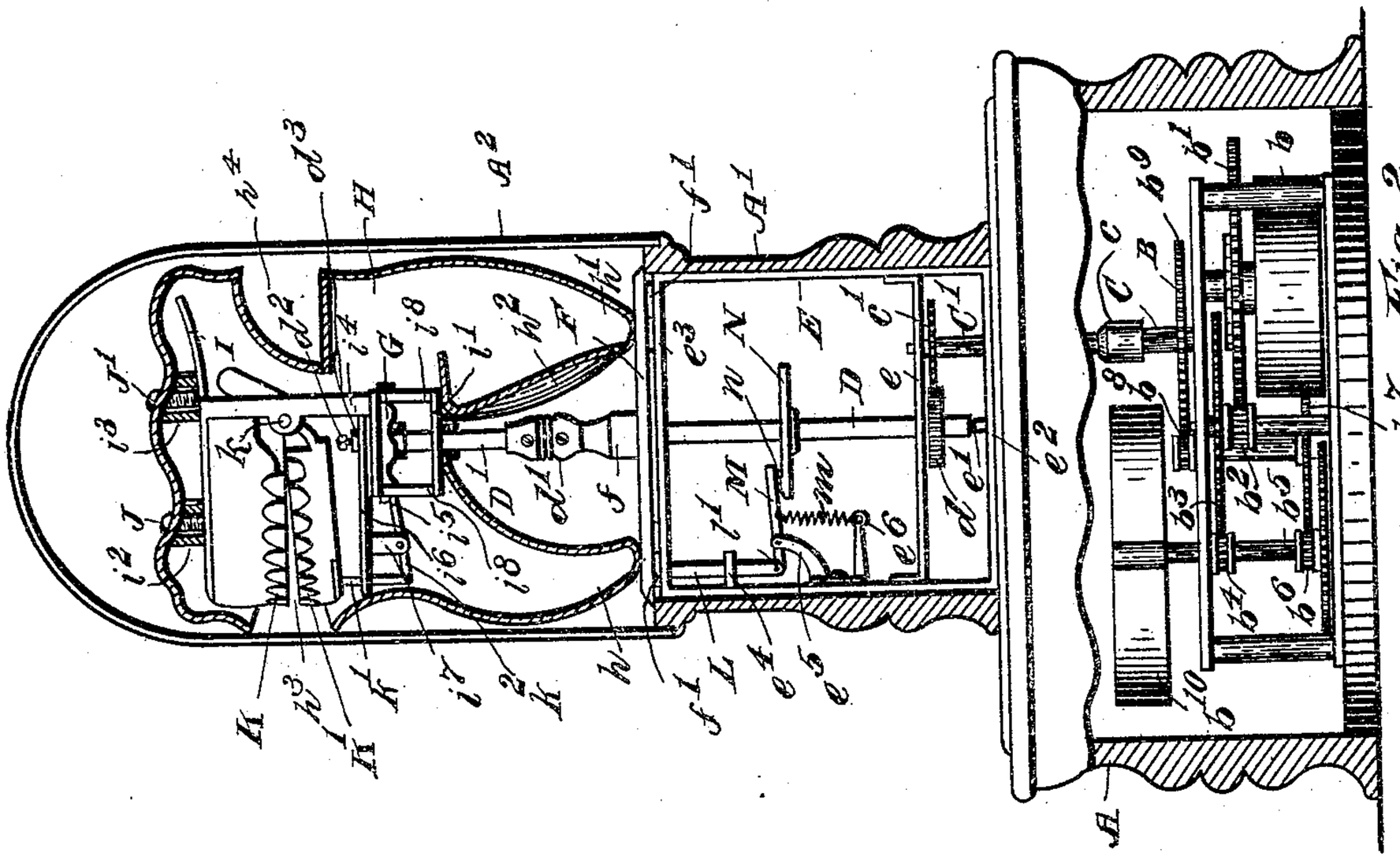

Fig. 2.

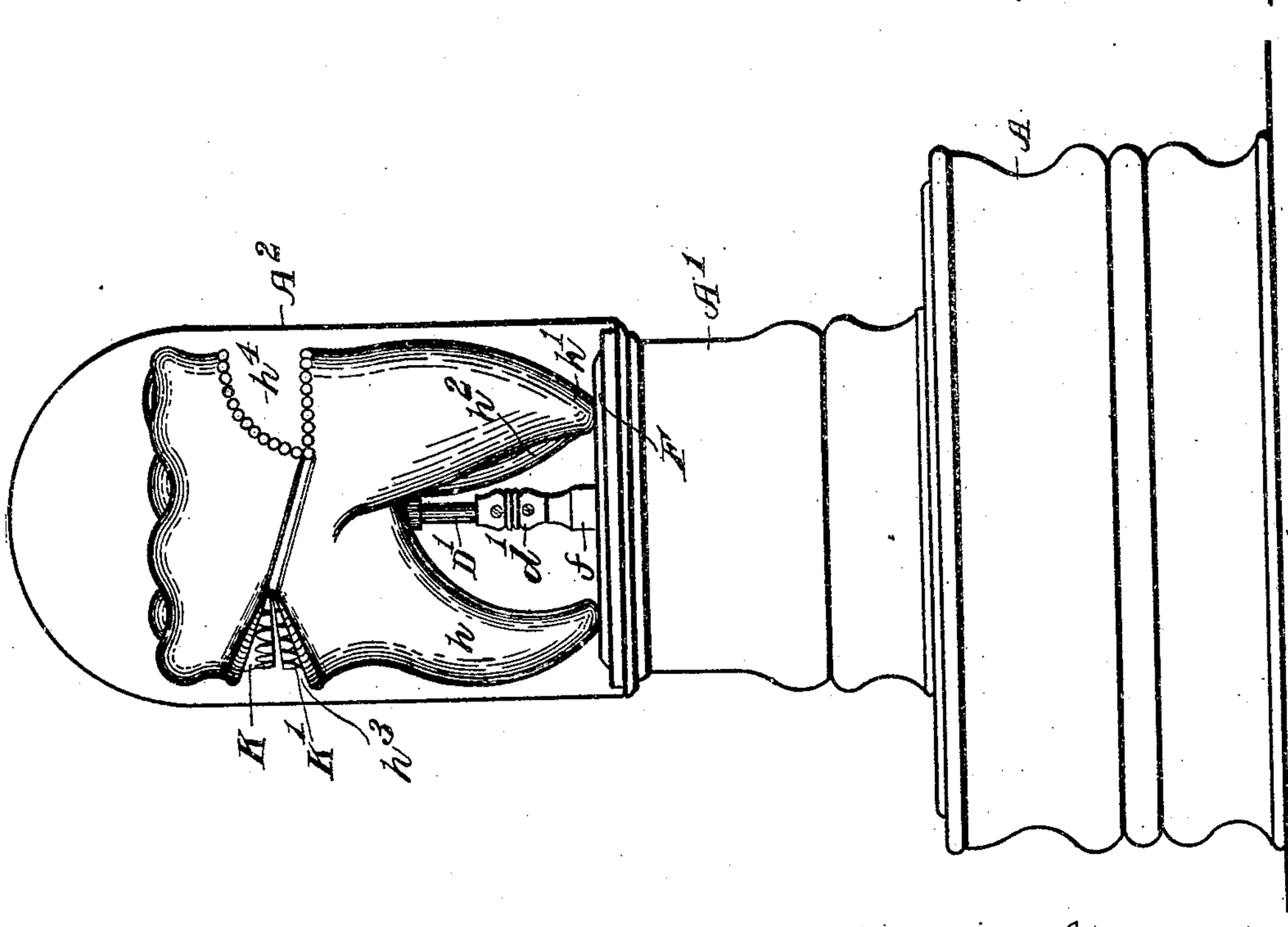

Fig. 1.

WITNESSES:

Ludger A. Nicol.

Edward Thorau

INVENTORS.

Alfred Lavallee &

George J. Constantineau,

BY Albert M. Moore,

Their ATTORNEY.

ANDREW. B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

A. LAVALLÉE & G. J. CONSTANTINEAU.

AUTOMATIC DENTAL ADVERTISING DEVICE.

APPLICATION FILED OCT. 31, 1908.

932,875.

Patented Aug. 31, 1909.

2 SHEETS—SHEET 2.

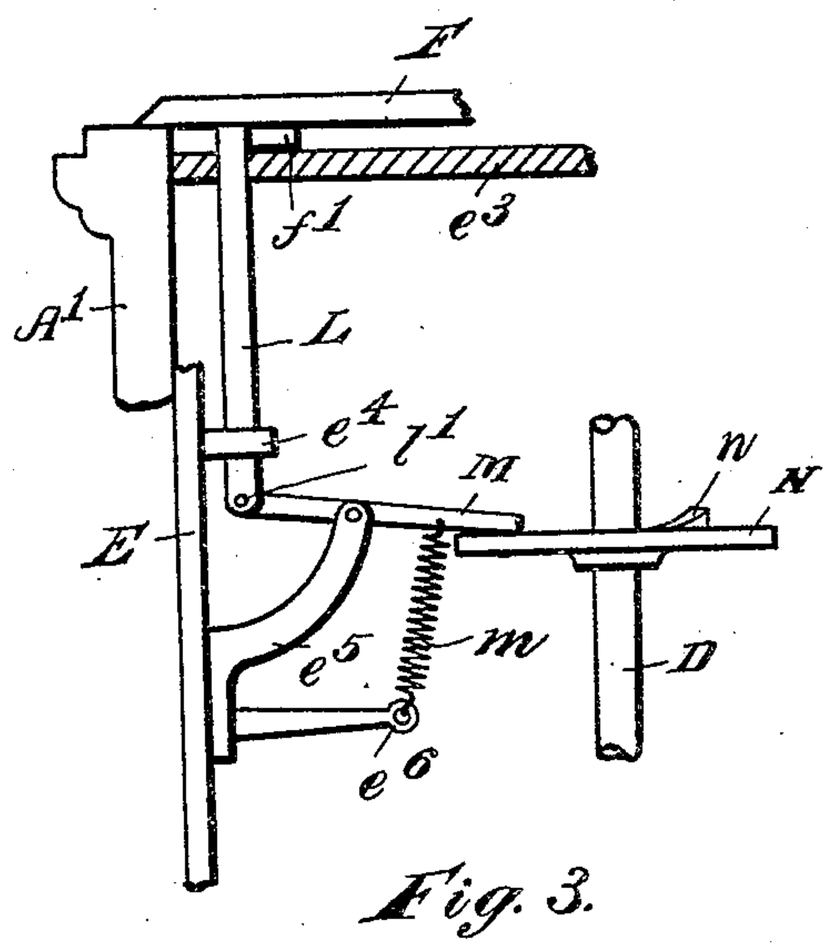

Fig. 3.

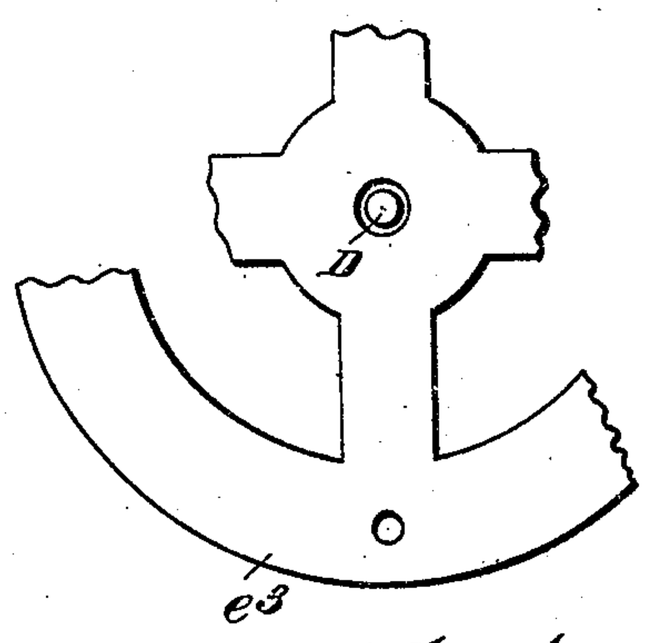

Fig. 4.

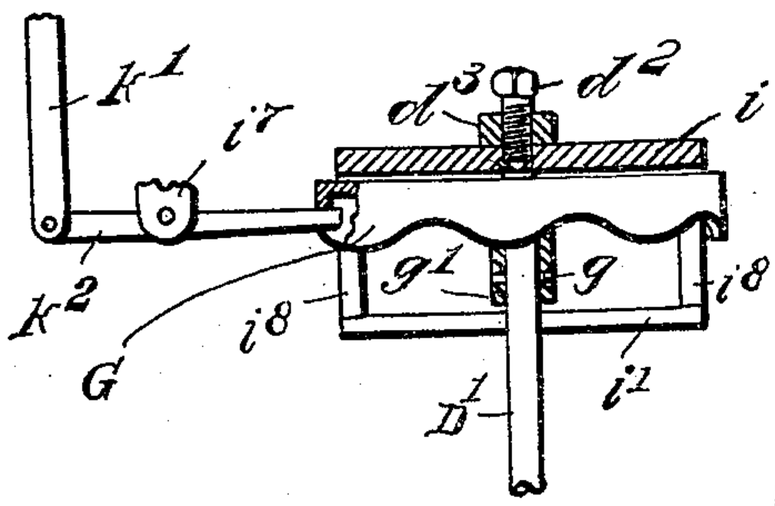

Fig. 5.

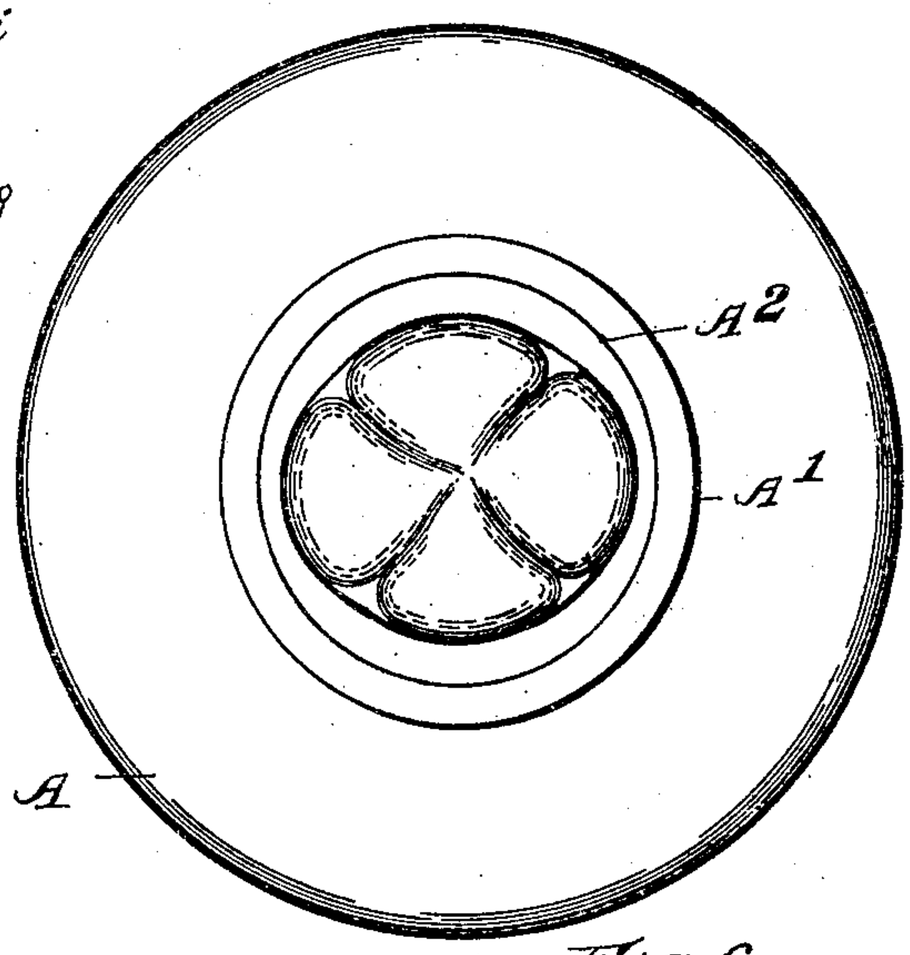

Fig. 6.

WITNESSES:

Ludger A. Nicol.

Edward Thorau

INVENTORS.

Alfred Lavallée &

George J. Constantineau,

BY

Albert M. Moore,

Their ATTORNEY.

UNITED STATES PATENT OFFICE.

ALFRED LAVALLÉE AND GEORGE J. CONSTANTINEAU, OF LOWELL, MASSACHUSETTS.

AUTOMATIC DENTAL ADVERTISING DEVICE.

932,875. Specification of Letters Patent. Patented Aug. 31, 1909.

Application filed October 31, 1908. Serial No. 460,434.

To all whom it may concern:

Be it known that we, ALFRED LAVALLÉE, a subject of the United Kingdom of Great Britain and Ireland, and GEORGE J. CONSTANTINEAU, a citizen of the United States, both residing at Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Automatic Dental Advertising Devices, of which the following is a specification.

This invention relates to automatic dental advertising devices. Said device comprises a hollow tooth-shaped support or chamber, in which are arranged a pair of articulated dental plates, and means for reciprocating the lower plate when said chamber is at rest, said chamber having an opening, through which said plates are shown and means for partially rotating said chamber at intervals.

In the accompanying drawing on two sheets, Figure 1 is a front elevation of said advertising device; Fig. 2, a central vertical section of the same; Fig. 3, a front elevation of a part of the turn-table and the means which interrupt the rotary movement of the chamber; Fig. 4, a plan of a part of the frame; Fig. 5, a front elevation of the means for reciprocating the lower dental plate; Fig. 6, a plan of the complete device.

In the base A is arranged any suitable motor, as a small electric motor. We have shown as a motor, a spring-actuated train of gears B, substantially like the driving mechanism of a spring clock, such a train of gears being represented in Fig. 2 as actuated by a ribbon spring b, on the shaft of which is secured the great wheel b' which engages the pinion b^2 of the second or center wheel b^3 which engages the pinion b^4 on the shaft b^5, on which shaft there is fast another pinion b^6 which engages the wheel b^7 with which rotates the pinion b^8, the last named pinion engaging a wheel b^9 fast on the vertical driving shaft C. A fan b^{10} on the shaft b^5 serves as a regulator. All of the above named parts are of the usual construction.

The shaft C′ is an extension of the shaft C and may have a socket c to engage the many-sided upper end of the shaft C. The upper end of the shaft C′ is journaled in a horizontal cross-girt e and has a gear c' which engages a gear d on the central vertical shaft D.

The shaft D turns on a pivot e' on the lower part e^2 of the frame E and is supported in the upper part e^3 of said frame and extends upward through said frame and loosely through a sleeve f secured to the center of a turn-table F and is connected by a sleeve-coupling d' to another shaft section D′, the latter carrying on its upper end a wave-wheel or cam-wheel G which is rigidly secured thereto in any convenient manner, as by a pin g driven through the hub g' of said wheel into the shaft section D′. (See Fig. 5.)

The upper end of the shaft-section D′ and the wheel G are concealed in a tooth-shaped chamber H rigidly secured on the turn-table F, said upper end of said shaft D′ turning upon a center-screw d^2 (Fig. 5) which is arranged in a horizontal plate i, rigidly secured in the chamber H and is prevented from being accidentally turned by a check-nut d^3.

It is evident that the entire weight of the chamber H and the turn-table F and the parts carried thereby rest upon the top of the shaft D′ and that they will when permitted to do so, turn with said shaft.

The plate i forms a part of a frame (Fig. 2) arranged in the chamber H and comprising the rigidly connected parts named below:—A top plate I into which screws J J′ guided by sleeves i^2 i^3 are driven through the top of the chamber,—a vertical hanger i^4 having a horizontal foot i^5, a horizontal arm i^6 carrying a bracket i^7, the plate i abovementioned, directly below it another like plate i', these plates i i' being rectangular and connected by posts i^8 at their corners and the plate i' resting upon the inside of the tooth-shaped chamber H upon the support formed by the meeting of the prongs h h' h^2 of said chamber.

The upper dental plate K is rigidly secured to the top-plate I and the lower dental plate K′ is jointed at k to said plate K and is supported by a rod k' on one arm of a lever k^2 fulcrumed in the bracket i^7, the other arm of said lever k^2 running under the wave-wheel G, so that when the chamber H is prevented from turning and the shaft D D′ is revolved the cams or waves of said wheel G will depress the adjacent end of the lever k^2 and the weight of the lower dental plate K′ will immediately after depress the other end of said lever and oscillate said plate K′. The friction of the lever k^2 on the wave-wheel G and of the center-screw d^2 on the top of the shaft D D′ are sufficient to

rotate the chamber H without operating said lower plate K′. But the chamber H is stopped one or more times in each revolution by a vertically sliding bolt L which is guided in the part e^3 of the frame E and in a bracket e^4 secured to said frame, the lower end of said bolt L being jointed at l to the outer arm of a lever M which is pivoted on another bracket e^5, also supported on said frame E, the inner arm of said lever M being drawn downward by a spring m stretched between said inner arm and a stud e^6 (which projects from said frame E) so that the upper end of said bolt L is normally held in the path of a stop-projection f' on the underside of the turn-table F and stops the revolution of said turn-table and the chamber H, whereupon the lower plate K′ is reciprocated as above described, until a cam-wheel N arranged in contact, or nearly so, with the under side of the inner end of the lever M and fast on the shaft D D′ brings an incline or cam n, on said wheel N, under and raises said inner end and draws said bolt L out of the path of the stop-projection f' when the turn-table F and chamber H again begin to turn. Any desired number of stop-projections f' may be used.

A sight-opening h^3 allows the dental plates to be seen and a recess h^4 may be used for the exhibition of bridge-work or other small articles relating to dentistry.

The frame E is preferably surrounded by an ornamental case A′ which rests on the base A or lower part of the case and the tooth-shaped chamber H and turn-table are preferably protected by a glass cover A^2.

We claim as our invention:—

1. The combination of a vertical shaft, driving means therefor, a turn-table, a chamber rigidly secured to said turn-table and having a sight-opening, said chamber and turn-table being loosely supported on said shaft, a cam-wheel fast on said shaft, a dental plate secured in said chamber, another dental plate articulated thereto, connecting means between said cam wheel and said last named dental plate to reciprocate said last named dental plate when said chamber is at rest.

2. The combination of a vertical shaft, driving means therefor, a turn-table, a chamber rigidly secured to said turn-table and having a sight-opening, said chamber and turn-table being loosely supported on said shaft and normally rotating therewith, a cam-wheel fast on said shaft, a dental plate secured in said chamber, another dental plate articulated thereto, connecting means between said cam-wheel and said last named dental plate to reciprocate said last named dental plate when said chamber is at rest, and means for interrupting the rotation of said shaft.

3. The combination of a vertical shaft, driving means therefor, a turn-table having a stop-projection thereon, a chamber rigidly secured to said turn-table and having a sight-opening, said chamber and turn-table being loosely supported on said shaft and normally rotating therewith, a cam-wheel fast on said shaft, a dental plate secured in said chamber, another dental plate articulated thereto, connecting means between said cam-wheel and said last named dental plate to reciprocate said last named dental plate when said chamber is at rest, a bolt, vertical guides for the same, a lever, to one end of which said bolt is jointed, a spring to depress the other end of said lever to raise said bolt into the path of said stop-projection to interrupt the rotation of said shaft.

4. The combination of a vertical shaft, driving means therefor, a turn-table having a stop-projection thereon, a chamber rigidly secured to said turn-table and having a sight-opening, said chamber and turn-table being loosely supported on said shaft and normally rotating therewith, a cam-wheel fast on said shaft, a dental plate secured in said chamber, another dental plate articulated thereto, connecting means between said cam-wheel and said last-named dental plate to reciprocate said last named dental plate when said chamber is at rest, a bolt, vertical guides for the same, a lever, to one end of which said bolt is jointed, a spring to depress the other end of said lever to raise said bolt into the path of said stop-projection to interrupt the rotation of said shaft, and another cam-wheel fast on said shaft and having an incline to raise said depressed end of said lever and to draw said bolt out of engagement with said stop-projection.

In witness whereof, we have affixed our signatures in presence of two witnesses.

ALFRED LAVALLÉE.
GEORGE J. CONSTANTINEAU.

Witnesses:
ALBERT M. MOORE,
GRACE CROWLEY.