C. KING.

DENTAL PLUGGER.

No. 186,680. Patented Jan. 30, 1877.

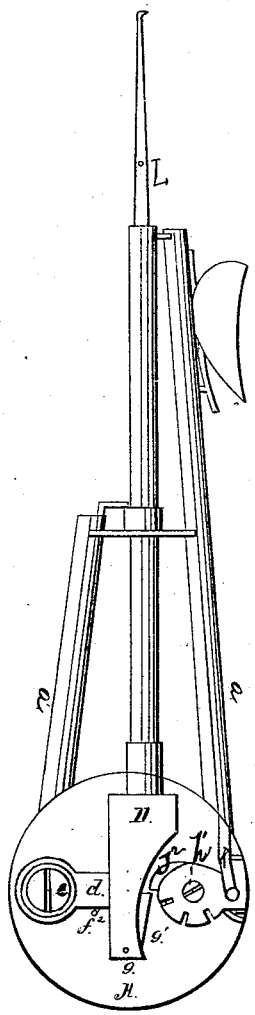

Fig. 1

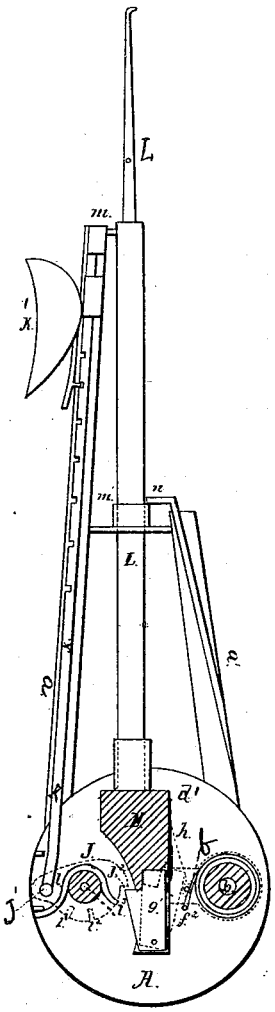

Fig. 2

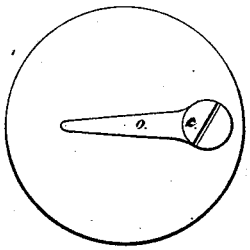

Fig. 3

Witnesses

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COURTLEN KING, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN DENTAL PLUGGERS.

Specification forming part of Letters Patent No. **186,680**, dated January 30, 1877; application filed August 21, 1876.

To all whom it may concern:

Be it known that I, COURTLEN KING, of Pittsburg, Pennsylvania, have invented a new and useful Improvement in Dental Pluggers, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing.

Similar letters of reference indicate corresponding parts.

My improvement relates to the mechanism for operating the hammer in my automatic dental plugger, for which a patent was granted to me June 27, 1876, and numbered 179,201, by which mechanism the operation of the hammer or the plugging-instrument is made certain and effective, with fewer parts and greater economy of construction.

I will now proceed to describe the same, reference being had to the accompanying drawings, in which—

Figure 1 is a top view of my automatic dental plugger, showing the front of the hammer and operating mechanism in place. Fig. 2 is a longitudinal sectional view of the reverse side of the same; and Fig. 3 is a sectional view, showing the lever for adjusting the actuating-spring of the hammer.

A represents a circular metallic shell, to which are attached rigidly the tubes *a* and *a'*, forming the frame-work of my plugger. An opening is made in the bottom of the shell A, into which is secured the end of the post *b*, the same being held firmly in place by a shoulder upon the post, held against the inner part of the shell A by the tension of the screw *c*. A journal and shoulder are formed on the other end of the post *b*, to which is hinged and secured the arm *d* of the hammer D, by means of the screw *c*, attached to the lower end of the post *b*, and coiled around the same is a spiral spring, *f*, with the upper end resting on the arm *d* of the hammer at f^2. A groove is made transversely in the top of the hammer D, into which groove is hinged, by the pin *g*, the pawl *g'*. Attached to the hammer D rigidly, at d^1, is a flat spring, *h*, in such position that the upper end of the spring rests against the pawl *g'* at d^2. Attached also at the bottom of the shell A is a post, l^3, around which post is coiled a spiral spring, *l*, with the lower end of the same to rest against the keeper l^1, and the upper end within the notches l^2 of the lever J. The lever J is suitably pivoted at or near its center to the post l^3, and held in place by the screw *h'*. Attached to the outer end of the lever J at J^1, by a screw or other suitable fastening, is the connecting-rod K, and the other end of the lever terminating in a click or detent at J^2, in such position as to engage with the hinged pawl upon the hammer D, the operation of which will be more fully hereinafter explained.

The construction of the other parts of my dental plugger, to which letters of reference are hereinafter given, is fully described in my other Letters Patent.

K' is an adjustable finger-hold upon the connecting-rod K. L is the plugging-instrument, and *m* and *m'* are supporting-disks to the plugging-instrument. *n* is a spring for holding the instrument in place, and O is the lever for adjusting the actuating-spring of the hammer D.

I will now proceed to describe the operation of the same. By pressure on the finger-hold K' the end of the lever J is drawn down by the rod K, by which means the other end of the lever J is made to ascend. The click-lever J^2 of the same engages with the pawl *g'*, raising the hammer D until, by the diverging of the pawl *g'* and click J^2 at the point of separation of the circles, the pawl and click become disengaged, and the hammer is made to descend by its own gravity and the force of the actuating-spring *f*, transmitting a blow upon the top of the plugging-instrument. When the blow is thus transmitted, by the operation of the spring *l*, the lever J is made to assume its former position, drawing back the connecting-rod K, and bringing a pressure to bear from the under and rounded part of the click J^2 upon the upper incline part of the hinged pawl *g'*, and the spring *h* in the rear of the pawl is made to yield, allowing the pawl to recede into the groove of the hammer until the pressure is released from the pawl by the jaw of the click passing beneath it. Then, by the force of the spring *h*, the pawl is again thrown forward to engage the click for the next blow.

The spring *f* is regulated to give the re-

quired blow by means of the adjusting-lever O, operating on the post *b*, to which it is attached.

Having thus described my invention, what I claim is—

1. In a dental plugger, the pawl *g'*, click J^2, and spring *h*, as and for the purposes described and shown.

2. The hammer D, having the groove for retaining the pawl, and the arm d^1 for hinging the hammer, substantially as described, and for the purposes set forth.

3. The spiral spring *f*, in combination with the post *b*, arm d^1, and hammer D, substantially as described, and for the purposes set forth.

4. In a dental plugger, the combination of the hammer D, arm d^1, post *b*, spring *f*, adjusting-lever O, pawl *g'*, lever J, click J^2, and spring *l*, all combined and arranged substantially as described.

COURTLEN KING.

Witnesses:

J. H. STEVENSON,

J. A. CLINE.