

Automatic Dental-Pluggers.

Patented Nov. 17, 1874.

Fig. 1.

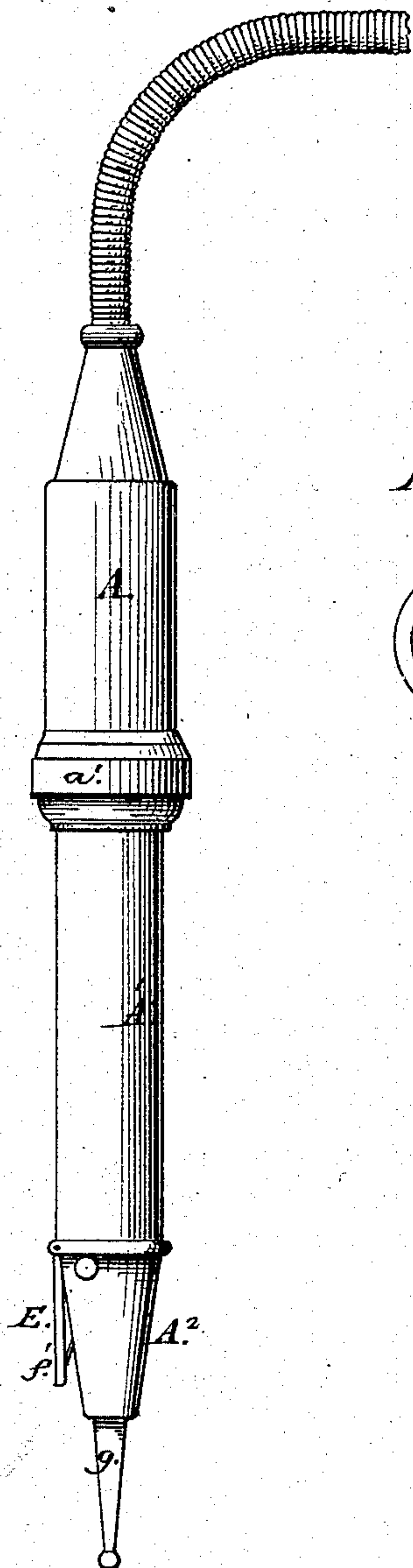


Fig. 3.

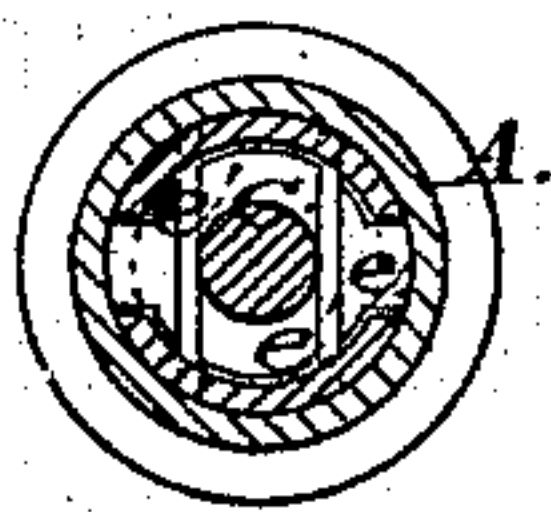


Fig. 4.

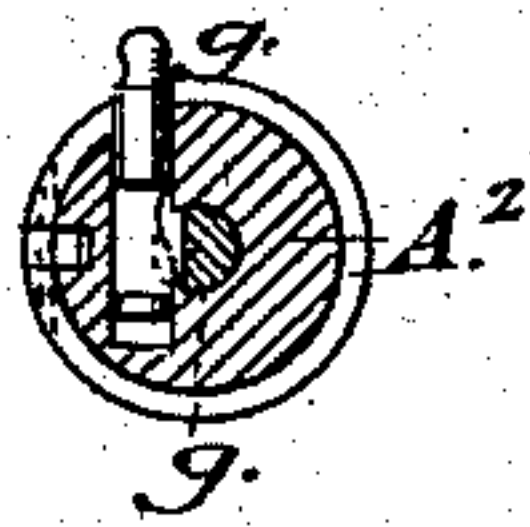
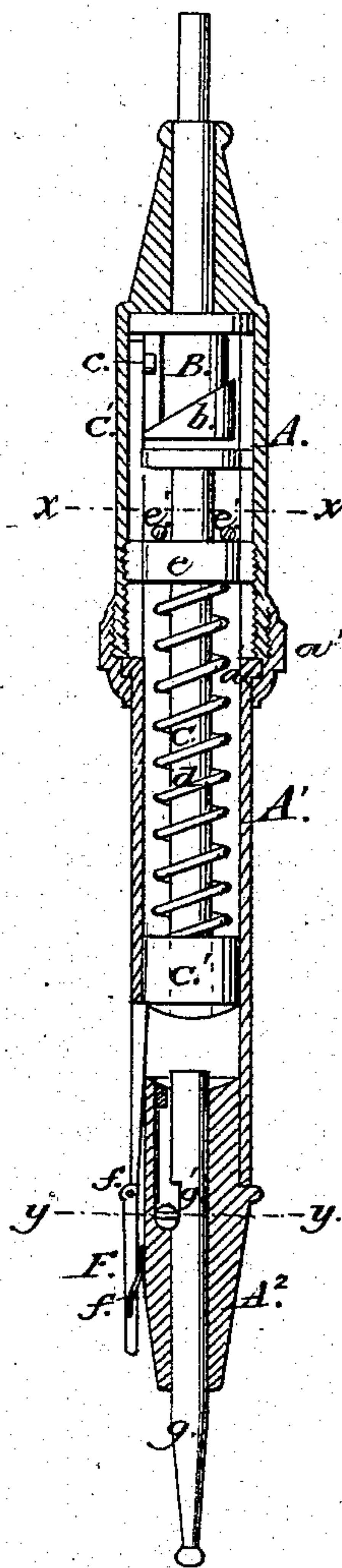


Fig. 2.



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IMPROVEMENT IN AUTOMATIC DENTAL PLUGGERS.

Specification forming part of Letters Patent No. **156,945**, dated November 17, 1874; application filed July 5, 1873.

CASE B.

To all whom it may concern:

Be it known that I, WILLIAM MYRON REYNOLDS, of the city, county, and State of New York, have invented certain new and useful Improvements in Automatic Plugging Instruments and Mechanical Mallets for Dental Purposes, of which improvements the following is a specification:

The object of my invention is to enable dentists to avoid manual labor in plugging teeth, leaving them only the work of holding and guiding the instrument. This I do by employing an instrument in which is combined a plugging-tool, an automatic mallet, and mechanism by which the mallet is reciprocated from a rotating shaft driven from a suitable prime mover.

The subject-matter claimed is hereinafter particularly specified.

I propose to use this instrument in combination with my dental drill patented May 28, 1872, but obviously it may be used in combination with other suitable rotary prime movers.

The accompanying drawings represent all my improvements embodied in one instrument in the way best known to me. Obviously, however, some of them may be used without the others, and their details of construction may be varied in well-known equivalent ways without departing from the spirit of my invention.

Figure 1 is a side elevation; Fig. 2, a similar view with the casing in section; Fig. 3, a transverse section through the line *x x*, and Fig. 4 a similar section through the line *y y* of Fig. 2.

The case of the instrument in this instance is constructed in two parts, A A', the lower of which is provided with a flange, *a*, against which an annular collar, *a'*, which slips over the lower part A' of the case, abuts. This collar overlaps the flange, and the lower end of the upper part A of the casing which screws into it, by which mode of construction and connection the lower part of the casing can turn freely in the collar and yet, at the same time, be securely held therein. A short spindle, B, driven from any suitable prime-mover rotates in bearings in the upper end of the casing. A cam, *b*, on this spindle acts on a pin, *c*, project-

ing from an arm, *c'*, on the plunger C of a mallet, C', which is thus moved endwise at regular intervals in its bearings in the casing, being carried upward by the cam, and when released being forced suddenly downward by a spring, *d*, coiled around the plunger C. The force of the blow delivered by the mallet is regulated by means of a tubular screw-nut, *e*, made adjustable endwise within the casing to regulate the tension of the spring, but prevented from turning by having ears fitting into longitudinal slots in the casing. Stops *e'* prevent the nut *e* from being screwed up beyond a proper limit. The descent of the mallet is prevented, when desired, by a locking spring-catch consisting of a lever, F, rocking on a fulcrum, *f*, on the casing, and ordinarily pressed into a slot in the case, so as to intercept the descent of the mallet.

A spring, *f'*, tends constantly to retain the catch in this position, but when operating, if desiring continuous blows of the mallet, the operator presses the tail end of the lever F, and thus holds the catch out of the way of the mallet.

The plugging-tool *g* itself is a simple straight shank sliding freely endwise and capable of turning in a socket, A², in the case. One side of the pin is recessed for the reception of a locking-pin, *g*, which prevents the tool from dropping out of its socket, while allowing it the proper degree of end play and admitting of the removal and replacement or substitution of a tool of different form or function.

In operation, the spindle is rotated as hereinbefore indicated. The cam rapidly lifts, and as suddenly drops, the mallet, which, at the moment of release, is forced, by its spring, against the plugger, which is guided and held to its work by the operator, who grasps the instrument and presses with his finger on the locking-lever, to hold the catch out of the way of the mallet, the descent of which is instantly arrested when the locking-lever is released. In this situation the instrument may be used as a hand-plugger.

I claim as my invention—

1. The combination, in a mechanical plugging instrument, of a mallet to act upon the

plugging-tool and a cam to act upon the mallet, substantially as hereinbefore set forth.

2. The combination, in a mechanical plugging instrument, of a plugging-tool, a mallet, guides for the mallet, and a cam, substantially as hereinbefore set forth.

3. The combination, in a mechanical plugging instrument, of a mallet, a spring encircling the stem of the mallet, and mechanism for adjusting the tension of the spring, substantially as hereinbefore set forth.

4. The combination, in a mechanical plugging instrument, of a reciprocating mallet with stop mechanism, controlled by the operator, to arrest the blow of the mallet, without disconnecting the motive-power, substantially as set forth.

W. M. REYNOLDS.

Witnesses:

ROBERT REYNOLDS,
S. E. PAGE.