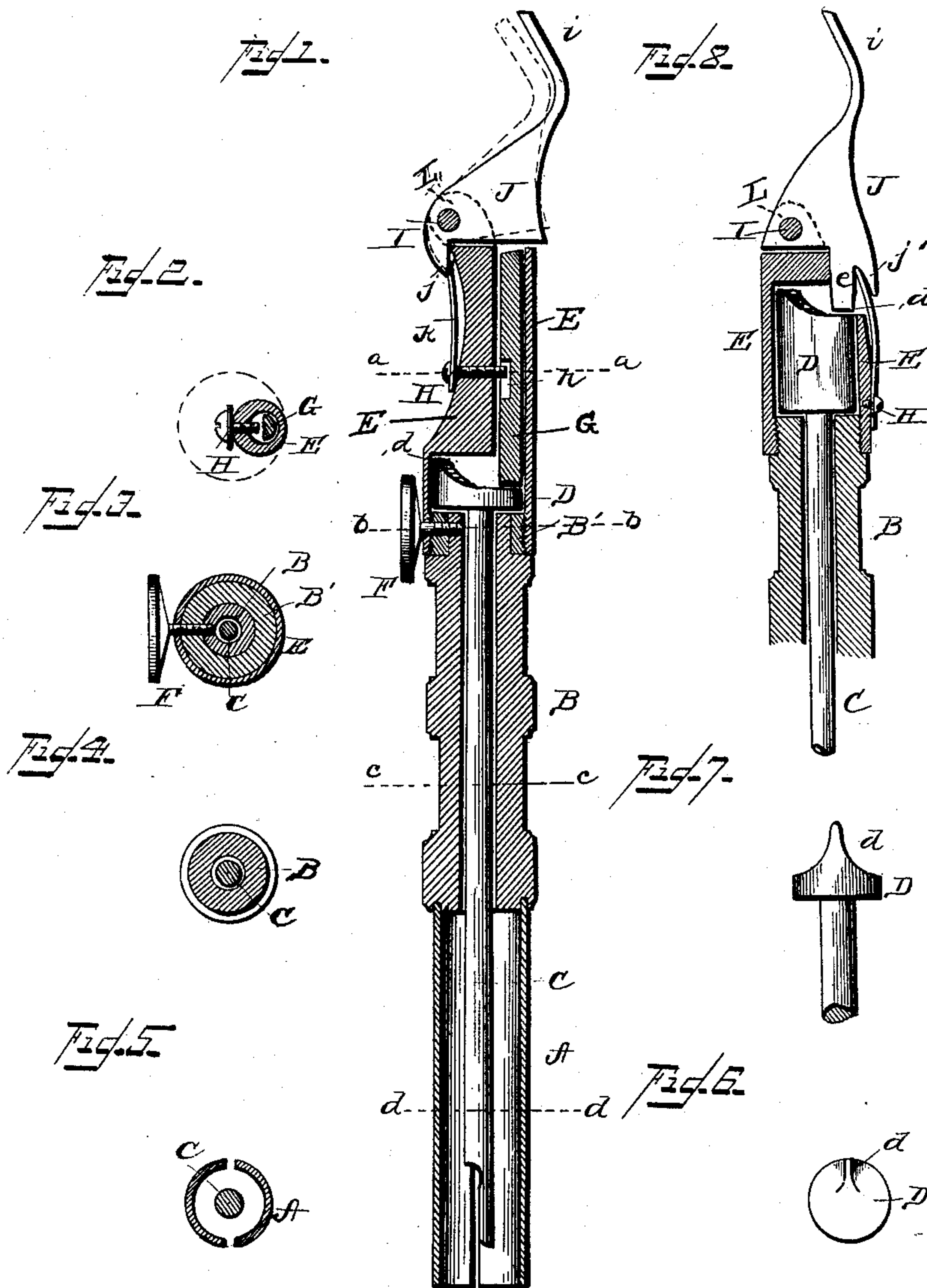


(No Model.)

F. SCHMIDT.
DENTAL PLUGGER.

No. 410,935.

Patented Sept. 10, 1889.



WITNESSES
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UNITED STATES PATENT OFFICE.

FERDINAND SCHMIDT, OF DEMMIN, PRUSSIA, GERMANY.

DENTAL PLUGGER.

SPECIFICATION forming part of Letters Patent No. 410,935, dated September 10, 1889.

Application filed April 13, 1889. Serial No. 307,116. (No model.) Patented in Germany April 4, 1888, No. 45,279.

To all whom it may concern:

Be it known that I, FERDINAND SCHMIDT, a subject of the Emperor of Germany, residing at Demmin, in the Province of Pomerania, Kingdom of Prussia, in the Empire of Germany, have invented certain new and useful Improvements in Dental Pluggers, (for which Letters Patent of the German Empire, No. 45,279, have been issued to me under date of April 4, 1888,) of which the following is a specification.

My invention relates to dental pluggers adapted to be used either as a hand-plugger or as a plugging attachment to dental engines; and it consists in the improved construction and combination of parts of a device of that class, as will be hereinafter more fully described and claimed.

Reference being had to the accompanying drawings, forming part of this specification, and in which like letters of reference denote corresponding parts in the several figures, Figure 1 is a longitudinal sectional view of my improved dental plugger. Fig. 2 is a cross-section on line *a a*, Fig. 1. Fig. 3 is a cross-section on line *b b*, Fig. 1. Fig. 4 is a cross-section on line *c c*, Fig. 1. Fig. 5 is a cross-section on line *d d*, Fig. 1. Fig. 6 is a top or plan view of the revolving cam, which operates the hammer. Fig. 7 is a side elevation of the same with part of its shaft; and Fig. 8 is a sectional view of the outer end of the device, illustrating a slightly-modified construction and arrangement of the parts.

The letter A denotes the lower part or sheath of my improved device, which is in the nature of a tube, and has secured at its upper end a tubular casting B of a reduced diameter, forming a bearing for the centrally-revolving shaft C, the lower end of which is adapted to be connected to the revolving bit of a dental engine, or may be operated by hand. By preference this lower tubular part or section A is made in two separate parts, as shown in Fig. 5; but this is not necessary.

The revolving shaft C is provided at its upper end with a concentric circular disk or button D, the top or face of which is shaped to form a cam having a projecting sloping point *d*. The disk D projects into and is covered by a hood or cap-piece E, which is fast-

ened upon the part B by means of a set-screw F. By turning the set-screws so as to disengage it from the part B it will be seen that the hood or cap-piece E may be removed, so as to expose the disk or cam D. This hood, cover, or cap-piece E contains within it a reciprocating slide or bar G, the throw or movement of which may be regulated by means of a set-screw H, the inner end of which projects into the recess *h* in one side of the bar. At the upper end of the cap E is pivoted upon a pin I the hammer or plugger-head J, which is preferably of the shape shown in the drawings, provided with a projecting lip or tongue *i*, forming the plugger proper, and which is of such a shape as to adapt it to be inserted into the cavity of the tooth operated upon, and bear against the plugging inserted therein.

The pivoted hammer or plugger-head J is provided near its fulcrum I with a downwardly-projecting lip or shoulder *j*, which engages a spring K, fastened upon the concave side of the cap-piece E by means of the binding-screw H. The tendency of this spring is to force the flattened side of the plugger-head or hammer J against the top of the cap-piece E, as indicated in full lines in the drawings. If desired, this arrangement may be slightly modified or varied, as illustrated in Fig. 8, by dispensing with the reciprocating slide-bar G and extending shaft C, causing its revolving cam *d* to bear directly against a lip *e*, projecting downwardly from the hammer, the spring K at the same time being shifted to the opposite side of the cap-piece E, where it engages a lip *j'* on the corresponding side of the pivoted hammer. Again, instead of fastening the said hood or cap-piece E direct upon the outer end of the part B, as in Fig. 8, a tubular washer may be interposed, as shown at B' in Fig. 1, so as to get a longer and better bearing for the set-screw F.

By pivoting the hammer J at I, as shown in the drawings, I in operating the tool cause its point or striker *i* to vibrate or oscillate in the arc of a circle having the hammer-fulcrum I for its center, thereby imparting a direct and positive blow upon the filling of the tooth operated upon at each revolution of the cam. This hammer, as stated, is pivoted upon bolt I, the ends of said bolt being secured in

a bracket or arms L, extending upwardly from the cap-piece.

I am well aware that it is not new, broadly, to operate the spring-actuated hammer of a dental plugger by means of a revolving cam, as shown, for example, in the patent to B. F. Eshelman, No. 290,014, dated December 11, 1883, and I do not therefore claim such construction, broadly; but

10 What I claim as my improvement, and desire to secure by Letters Patent of the United States, is—

1. In a dental plugger of the described class, the combination of the revolving shaft

and cam, the pivoted oscillating hammer or plugger-head formed on its end with the point or striker, and the spring, substantially as set forth.

2. In a dental plugger of the described class, the combination of the revolving shaft and cam, the reciprocating slide-bar, the pivoted oscillating hammer, and the spring, substantially as and for the purpose set forth.

FERDINAND SCHMIDT.

Witnesses:

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A. G. ALLMEEK.