

(No Model.)

F. H. BELL & E. J. MARSH.

HAND PIECE FOR DENTAL ENGINES.

No. 374,286.

Patented Dec. 6, 1887.

Fig. 1.

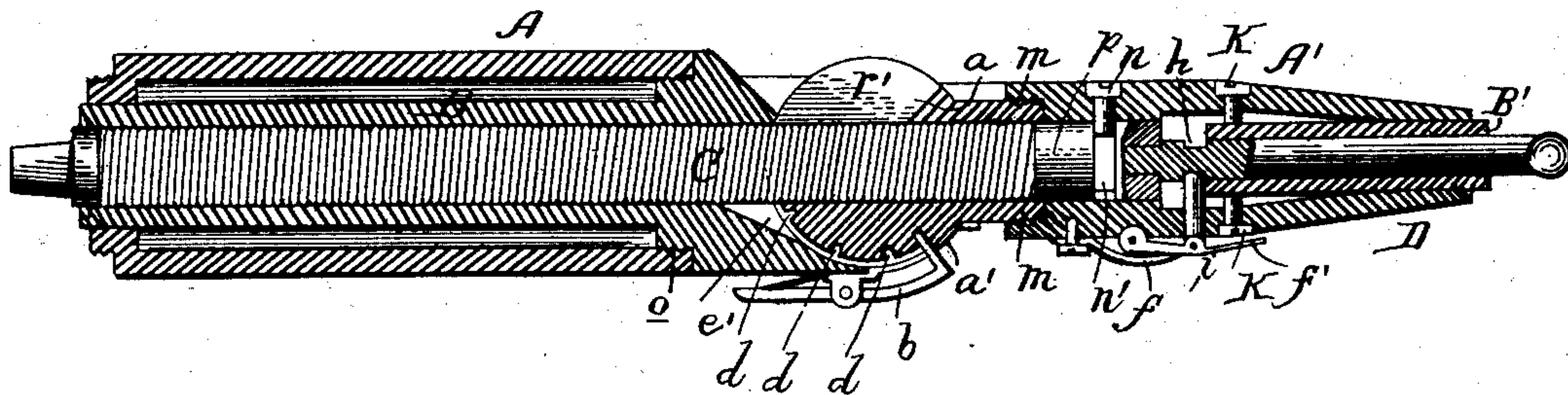


Fig. 2.

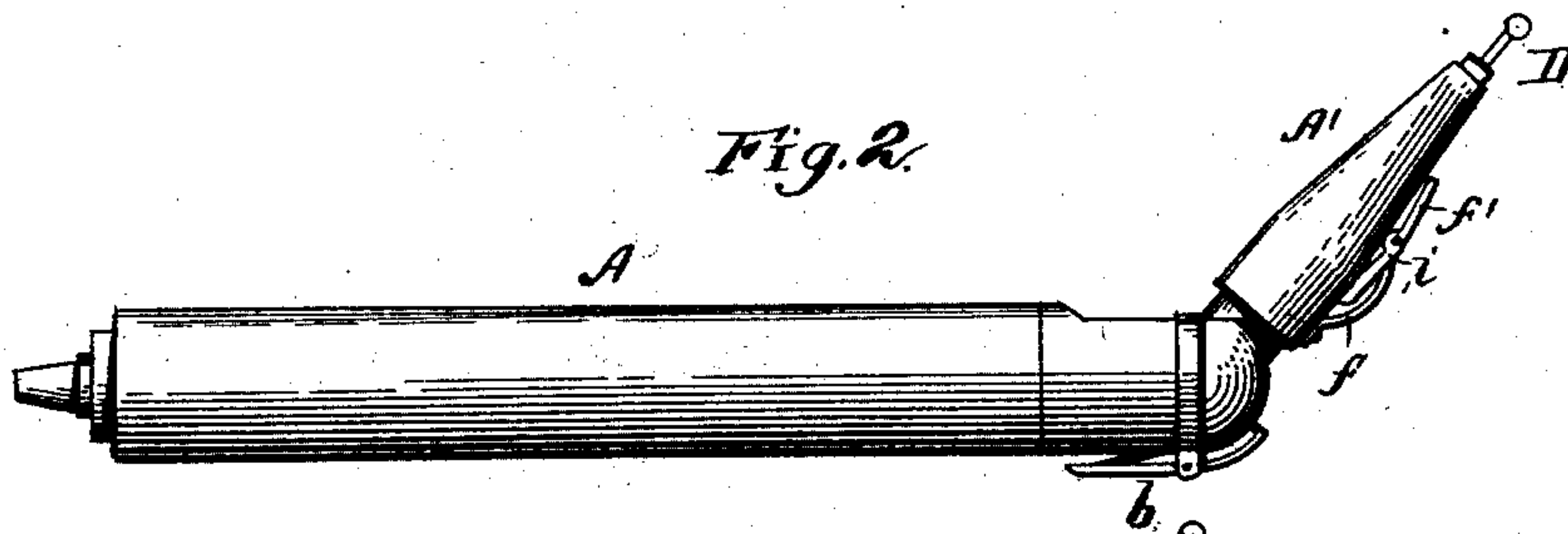


Fig. 3.

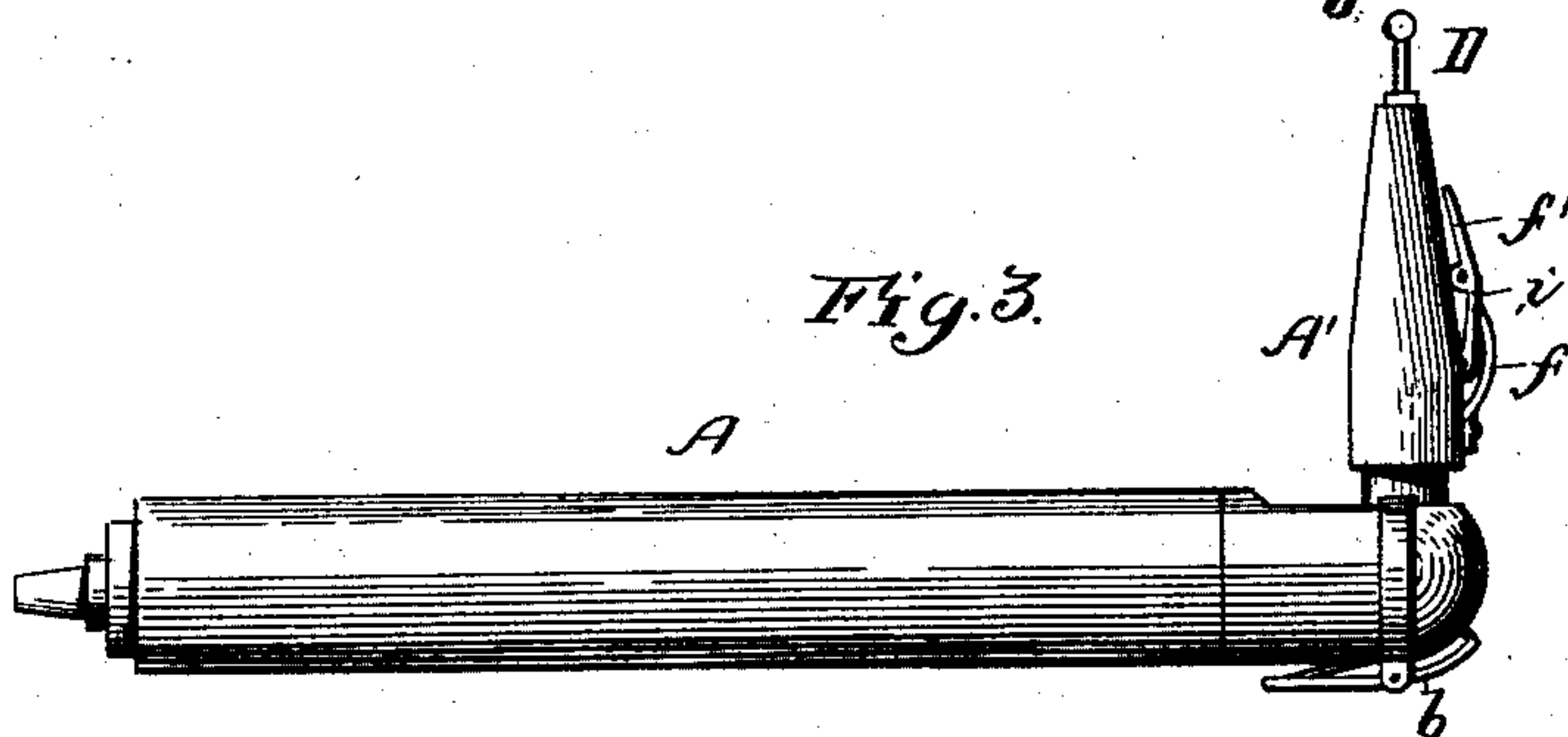
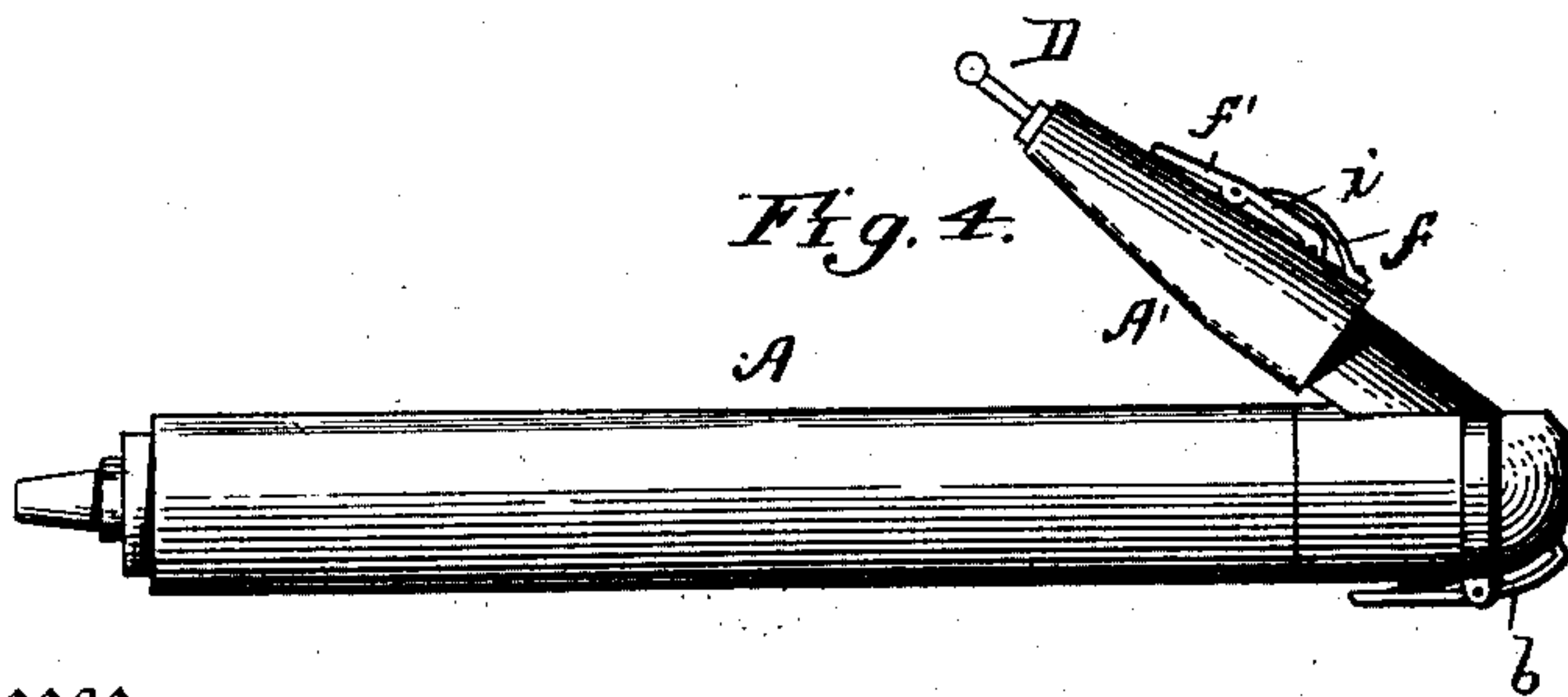


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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HAND-PIECE FOR DENTAL ENGINES.

SPECIFICATION forming part of Letters Patent No. 374,286, dated December 6, 1887.

Application filed July 19, 1887. Serial No. 244,755. (No model.)

To all whom it may concern:

Be it known that we, FRANK H. BELL and ELLERSON J. MARSH, citizens of the United States, residing at Dubois, in the county of Clearfield and State of Pennsylvania, have invented certain new and useful Improvements in Hand-Pieces for Dental Engines for Drilling Teeth; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to hand-pieces for dental engines, and has for its object the production of a hand-piece that can be readily adjusted to any desired angle, and when adjusted can be fixed in such position by a simple contrivance.

The improvements consist in the peculiar and novel construction and combination of parts, which will be more fully hereinafter set forth and claimed, and shown in the drawings, in which—

Figure 1 is a longitudinal sectional view of a dental hand-piece embodying our invention; and Figs. 2, 3, and 4, side views of the same, showing the hand-piece adjusted to various angles.

The hand-piece is composed of two parts, A and A', connected by a ball-and-socket joint, *a a'*. The ball has a short stem, *m*, which is screwed into the part A', and a slot, *r'*, on one side extending into the bore to accommodate the bight of the flexible shaft C, when the part A' is adjusted at an angle relative to the part A.

The socket is slotted opposite slot *r'* in the ball for a twofold purpose—to receive the stem *m* of the ball and to give clearance for and prevent binding of the shaft when the handle or part A' of the handle is adjusted to an angle, as shown by Figs. 2, 3, and 4. The inner wall of the socket, diametrically opposite slot *r'*, is channeled out, forming the recess *e'*, which accommodates and prevents binding of the bight of the shaft when the parts of the handle are bent out of line, as will be readily understood. The part A' is held in an adjusted position by catch *b*, pivoted to part A, and having its end

bent and extending through the socket to fit in one of the openings *d* in the ball.

Each of the parts A and A' is composed of an inner and outer case. The inner case, B, has the socket *a'* formed therewith, and is held in case A by screw-threads *o*. The inner case, B', forming a bearing for the tool D, is held in case A' by the screws K. The flexible shaft C passes through the part A, ball *a*, and into part A', where it terminates in the head *p*, and is held therein by screw *n*, fitting in the annular groove, *n'*, formed in said head *p*. The tool D, preferably a drill, is fitted in the end of the head, and is held from accidental displacement by pin *i*, passing through part A' and entering annular groove *h* in said tool. The pin is carried by the lever *f'*, which is held close to part A' by the spring *f*. The tool may be readily removed by disengaging the pin *i* therefrom by pulling out on lever *f'*.

The part A' of the handle can be adjusted to any desired angle relative to part A by disengaging catch *b* from the ball. When adjusted, its position is fixed by releasing catch *b*, when it will enter one of the openings in the ball, which will be readily comprehended.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination, with the handle composed of two tubular parts, the ball-and-socket joint connecting the said parts, and having a bore corresponding with the bore of the handle, and the flexible shaft passing through the handle and the ball-and-socket joint, of means for holding the parts of the handle at any relative adjustment or inclination, consisting of the catch carried by the socket, and openings in the ball to receive the end of the catch, substantially as described.

2. The combination, with the two parts comprising the handle, of a ball-and-socket joint uniting said parts, the ball having a slot in one side and the socket having a slot opposite the slot in the ball, and a recess diametrically opposite the slot, substantially as and for the purpose specified.

3. The combination, with the handle composed of two parts, having an inner and outer casing, of the socket made with the inner case of one part, the ball having a short stem fitted

in the outer case of the other part, and the catch for holding the parts relatively adjusted, substantially as set forth.

4. The combination, with the handle and
5 the inner case, B', forming a bearing for the tool, of the screws K, passing through the sides of the handle and bearing upon the case B' on diametrically-opposite sides thereof, substantially as and for the purpose described.

In testimony whereof we affix our signatures to in presence of two witnesses.

FRANK H. BELL,
ELLERSON J. MARSH.

Witnesses:

W. C. PENTZ,
WM. A. MEANS.