A. CAMPBELL.

DENTAL HANDPIECE.

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1,113,752.

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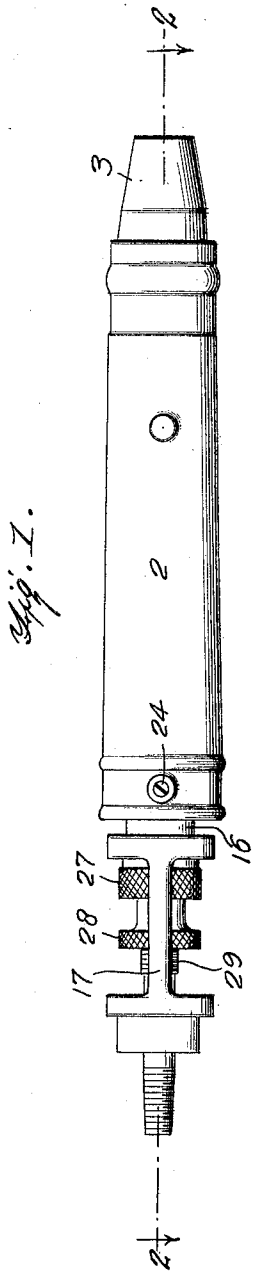


Fig. 1.

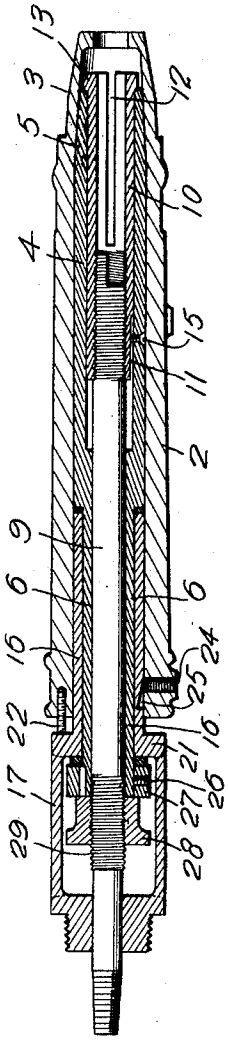


Fig. 2.

WITNESSES

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DENTAL HANDPIECE.

1,113,752. Specification of Letters Patent. **Patented Oct. 13, 1914.**

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To all whom it may concern:

Be it known that I, ALEXANDER CAMPBELL, a citizen of the United States, and a resident of Los Angeles, in the county of Los Angeles and State of California, have made an Improvement in Dental Handpieces, of which the following is a specification.

My invention is embodied in a simplified and otherwise improved construction, arrangement, and combination of parts, as hereinafter described, and illustrated in the accompanying drawing, in which—

Figure 1 is a plan view of the hand-piece; Fig. 2 is a central longitudinal section of the same, on the line 2—2 of Fig. 1.

The barrel or casing 2 of the hand-piece is tapered at its outer end 3 internally and externally. Within the casing is fitted loosely a sleeve 4 whose rear or inner portion is reduced in diameter, as indicated at 6. Around such reduced portion is fitted loosely a short outside sleeve 16, which is constructed integrally with the skeleton frame 17 that constitutes an inner bearing of the spindle 9. The latter is fitted in the sleeve 4 and its forward end is threaded into the tool-holder 10, which is provided with a lengthwise slit. The tool holder 10 is secured on the threaded end of the spindle and a ring 27 is secured by a screw 26 on the rear or inner end of the sleeve 4 within the frame 17. This ring is knurled as shown in Fig. 1.

28 indicates a knurled nut which is applied to the spindle and jams against the ring 27. The casing 2 is fitted adjustably on the longer and shorter sleeve 4 and 16, and a screw 22 is applied to its inner end and abuts the forward shoulder of the frame 17. By this means the parts may be adjusted lengthwise relative to each other as may be required. The casing 2 is locked to the outside sleeve 16 by means of a screw 24 whose inner end enters an inclined groove 25, as shown.

15 indicates a set-screw which passes through the sleeve 4 and enters a longitudinal groove 11 formed in the inner portion of the tool-holder 10. By this means the tubular part 10 is adapted to slide longitudinally and is locked rotatively to the sleeve 4.

In order to assemble the parts of the hand-piece, the spindle 9 is inserted in the tool 2 and the sleeve 4 is then dropped into place, the screw 15 in such case entering the groove 11. The outside sleeve 16 may then be fitted on the reduced portion 6 of the main sleeve 4 and a ring 27 is secured on the reduced portion 6 by the screw 26, as shown.

It will be seen that by holding the collar 27, and turning the nut 28, the spindle 9 may be moved forward to project the tool-holder 10 out of the sleeve 4 sufficiently to permit insertion or withdrawal of the shank or bur or other tool in the split end portion of the part 10. Then, by turning the nut 28 in the opposite direction the tool-holder 10 will be drawn back into the sleeve 4 so that the beveled shoulders of the two parts will engage, as indicated at 13, whereby the tool will be clamped in the part 10 between the two spring jaws of the same.

The tool is formed of comparatively few parts and may be quickly adjusted for gripping or releasing the shanks of burs or other tools.

I claim:—

1. In a dental hand piece, the combiantion with a casing having a forward portion thereof formed tapering, a part adapted to fit rotatively against the interior wall at such portion of the casing, said part being constructed as a sleeve extending to the body of the implement, a spindle passing through the sleeve, and a tool holder held in the outer end of the sleeve, a lateral projection extending into a longitudinal channel in the tool holder, an adjustable sleeve fitted on the first named sleeve and extending into the rear end portion of the casing, a bearing for the spindle, the same being arranged in rear of and carried by the adjustable sleeve, and a nut arranged on the spindle to cause the forward or rearward movement of the latter and the tool holding part, as described.

2. A dental-hand-piece comprising a casing, a spindle, a split tool holder whose outer end has a tapered shoulder, a sleeve receiving the tool holder and abutting the tapered shoulder on the outer end of the latter, an adjustable sleeve applied to the

reduced rear portion of the first named sleeve and constructed integrally with an end bearing for the spindle, a screw interposed between the casing and the inner end of said bearing, a knurled ring applied to the inner end of the main sleeve, and a nut applied to the adjacent threaded portion of the spindle and bearing upon said ring, as described.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."