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A. A. WILCOX & M. JEWETT.

DENTAL INSTRUMENT.

APPLICATION FILED SEPT. 14, 1904.

Fig. 1.

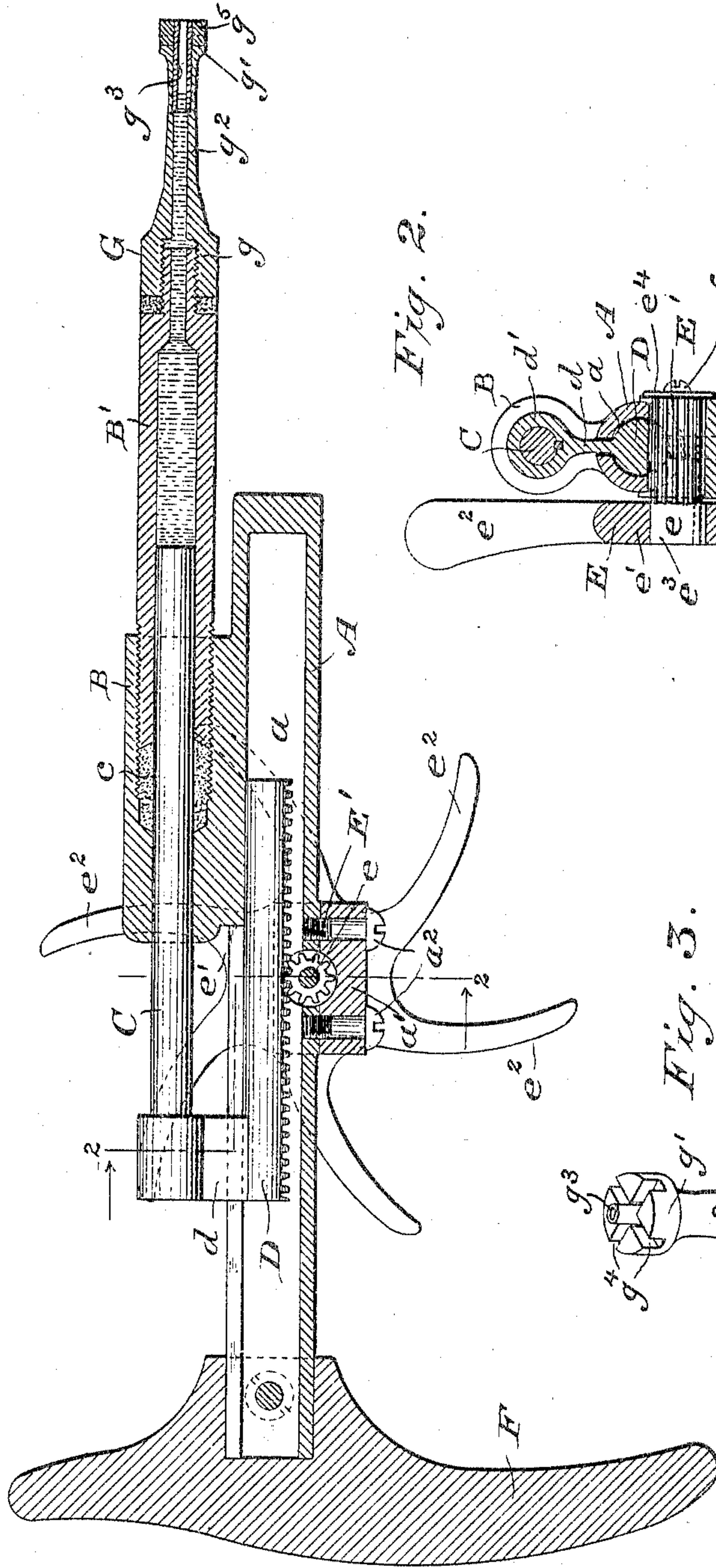


Fig. 2.

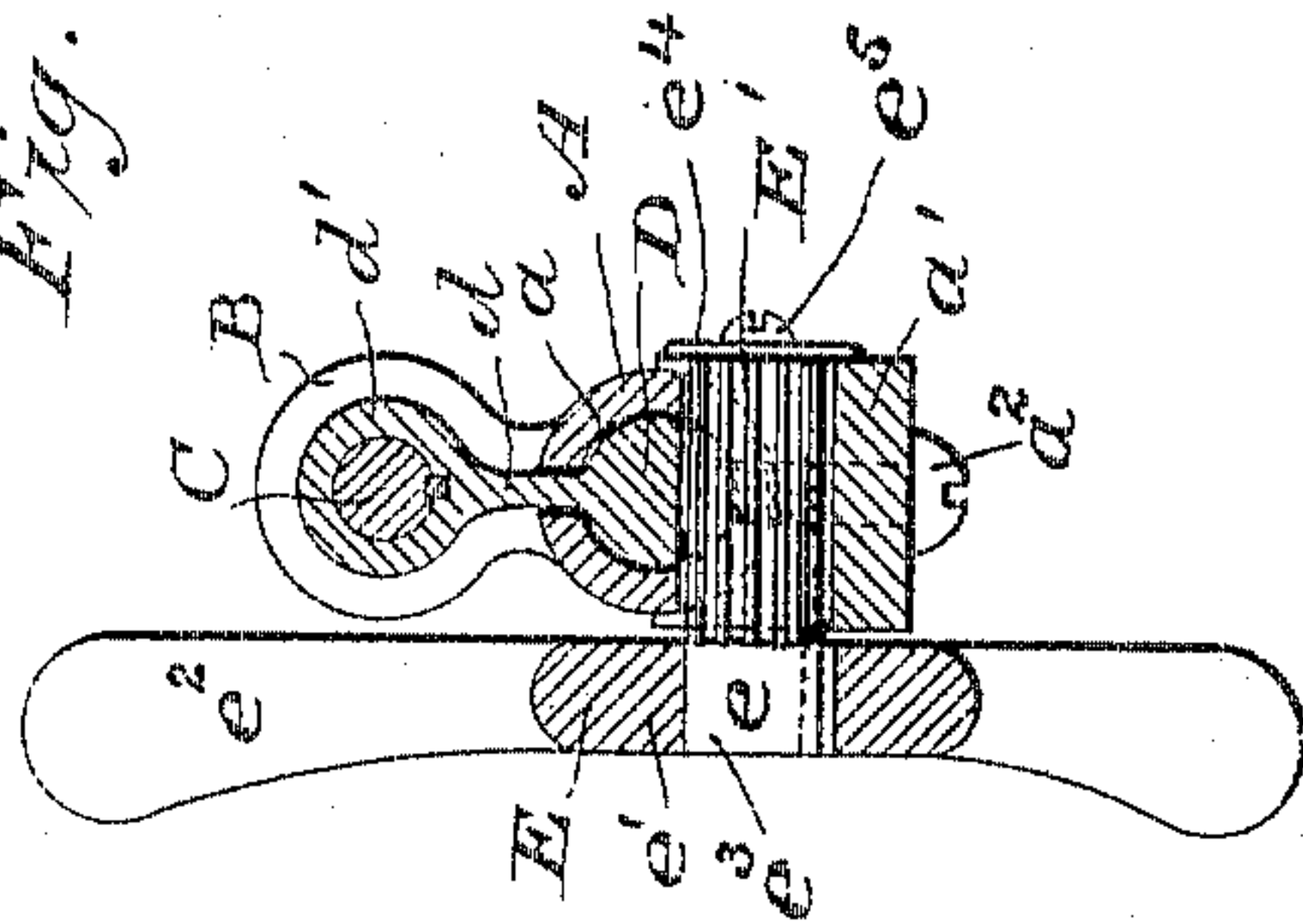
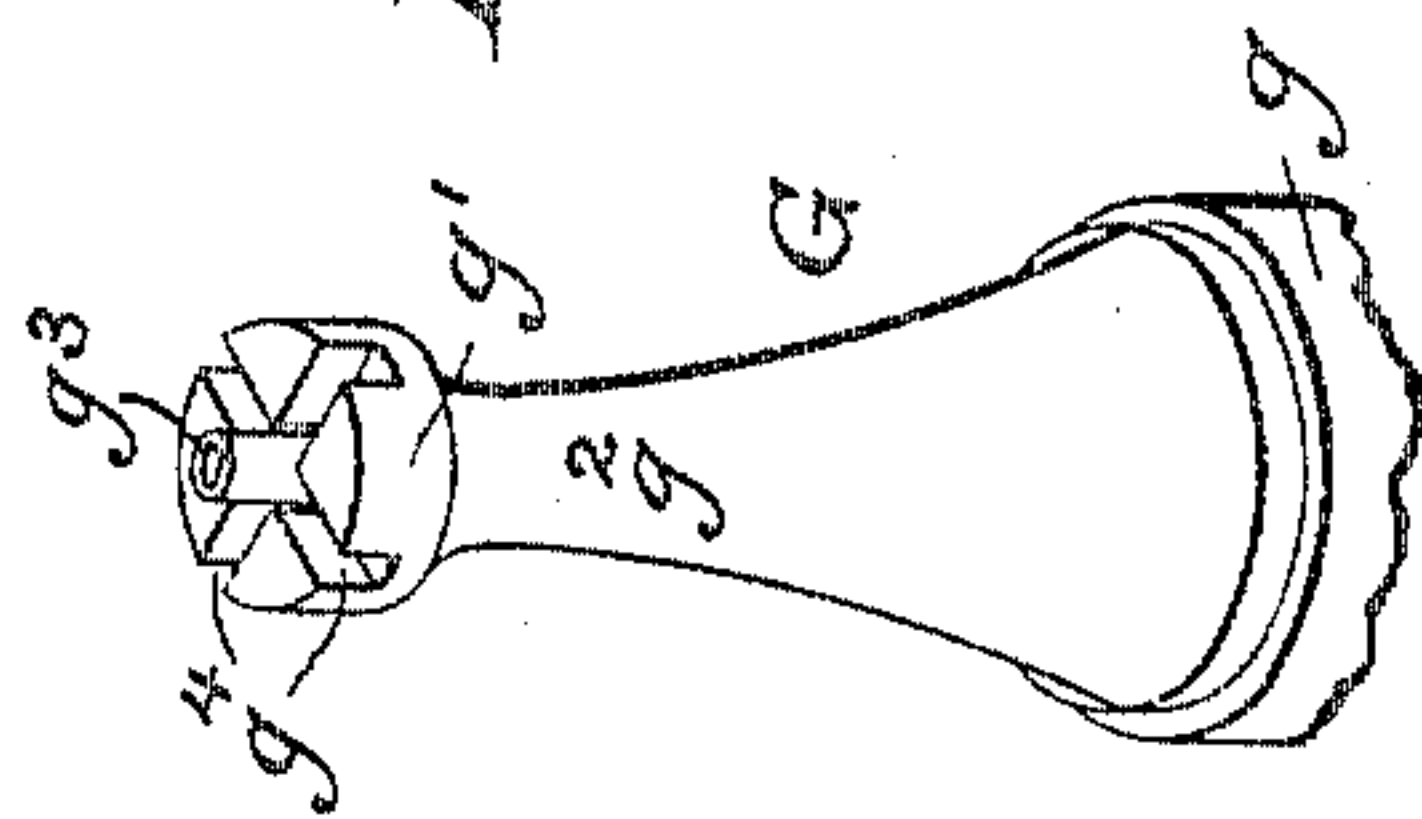


Fig. 3.



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## DENTAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 780,147, dated January 17, 1905.

Application filed September 14, 1904. Serial No. 224,399.

*To all whom it may concern:*

Be it known that we, AMOS A. WILCOX and MARCELLUS JEWETT, citizens of the United States, and residents of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Dental Instruments, of which the following is a specification, the principle of the invention being herein explained and the best mode in which we have contemplated applying that principle, so as to distinguish it from other inventions.

Our invention relates to dental instruments, and particularly to that class of the latter which is adapted to force obtundent fluid or other anesthetizing fluid through the dentine of the teeth.

Said invention consists of means hereinafter fully described, and specifically set forth in the claims.

The annexed drawings and the following description set forth in detail certain means embodying the invention, such disclosed means constituting but one of various forms in which the principle of the invention may be used.

In said annexed drawings, Figure 1 represents a central longitudinal sectional view of our improved instrument. Fig. 2 represents a vertical transverse section taken upon the plane indicated by lines 2-2, Fig. 1; and Fig. 3 represents an enlarged broken perspective view of the improved nipple used upon our dental instrument, the elastic material secured in the end thereof not being shown.

A hollow cylindrical casing A is provided with an integral upwardly-projecting hollow cylindrical portion B with an internal screw-thread at one end, within which a separate hollow cylindrical member B', having an external screw-thread, is adapted to be secured, the members B and B' together forming a suitable reservoir for an obtundent or anesthetizing fluid. A piston C is adapted to reciprocate within said reservoir, there being provided suitable packing *c* around the same within the reservoir, as will be noted from the drawings. Within the cylindrical guide-way *a* of the casing A a rack D is adapted to operate, which has connected to its rear end an upwardly-projecting ear *d*, having a hollow cylindrical portion *d'*, Fig. 2, within

which the end of the piston C is adapted to be secured, as plainly shown in Fig. 2. It will be noted, therefore, that the actuation of the rack D in either direction will effect the simultaneous actuation at the same speed and in the same direction of the piston C.

The means provided for actuating the rack are as follows: Suitably journaled at one end in a downwardly-projecting trough-shaped portion *a'*, secured either integrally or in any other suitable manner to the casing A and secured at the other end in a trigger-wheel E, is a small stud, forming an axis *e*. In the construction shown in the drawings the portion *a'* is shown as a separate piece, secured to the casing A by means of suitable screws *a'' a''*. Said axis *e* is a pinion and is soldered or otherwise secured at one end, *e'*, into the trigger-wheel E, and at its other end is an extended portion E', which engages with the rack D, the portion *a'* forming, in effect, a guard for that portion of the axis *e* comprising the pinion E'. The pinion E' is inserted within the guard *a'* and then secured therein by means of a washer *e'* and screw *e''*, as shown in Fig. 2. The trigger-wheel E comprises a central solid portion *e'* and a plurality of finger-pieces *e''*, six, as shown, secured to said portion *e'* and shaped like triggers in order to give a firm, easily-operable, and sensitive grip thereon. A suitable palm-piece F for enabling the instrument to be satisfactorily held is secured to the casing A.

Our construction of dental instrument is an especially convenient and effective one, as it is compact and reliable, the reservoir or barrel can be easily filled with the obtundent fluid, and the trigger-wheel enables a certain sensitiveness to pressure to be imparted to the fingers which is not present in the other constructions of similar devices with which we are acquainted.

We have provided an improved nipple G for our dental instrument, which is clearly shown in Fig. 3 and which comprises an inner enlarged portion *g*, adapted to receive the externally-screw-threaded outer end of the member B' of the reservoir, an outer restricted part with an enlarged portion *g'*, and an intermediate tapering portion *g''*. Within the



portion  $g'$  is secured a hollow needle  $g^3$ , registering with the liquid-passage of the nipple. The enlarged portion  $g'$  is, in effect, a head upon the restricted portion  $g^2$  and is transversely slotted, as shown at  $g^4$ , so as to divide its upper portion into any desired number of parts. Within the slots  $g^4$  thus formed is secured a flexible or resilient material, thus forming an elastic point for the nipple, as shown at  $g^5$ , Fig. 1, whereby the nipple is rendered especially serviceable in the treatment of teeth which are sore and tender and which could not withstand treatment with an ordinary nipple without subjecting the patient to unnecessary pain.

We therefore particularly point out and distinctly claim as our invention—

1. In a dental instrument, the combination of a two-part reservoir for liquid material; a piston operating therein; a discharge-nipple connected to said reservoir; a rack provided within an extending ear within which said piston is secured; and a trigger-wheel provided with a plurality of discharge-operating finger-pieces and with an extended axis, the latter comprising a pinion adapted to gear with said rack.

2. In a dental instrument, a hollow casing provided with an open extending portion having an internal screw-thread; a hollow cylindrical portion provided with an external screw-thread at one end adapted to engage

with the aforementioned internal screw-thread thereby providing a reservoir for liquid material; a discharge-nipple connected to said hollow cylindrical portion; a piston operating in said reservoir; a rack adapted to operate within said casing and connected to said piston; a pinion adapted to engage with said rack; and means for operating said pinion.

3. In a dental instrument, the combination of a reservoir for liquid material; a piston operating therein; a discharge-nipple connected to said reservoir; a casing connected to said reservoir; a rack adapted to operate in said casing and provided with an extending ear within which said piston is secured; a trigger-wheel provided with a plurality of discharge-operating finger-pieces and with an extended axis, said wheel being rigid upon said axis, the latter comprising a pinion adapted to engage with said rack; a separate portion secured to said casing adapted to form a sheath or guard for said pinion, and providing a bearing for the latter; and means for securing said pinion in said guard.

Signed by us this 10th day of September, 1904.

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MARCELLUS JEWETT.

Attest:

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