

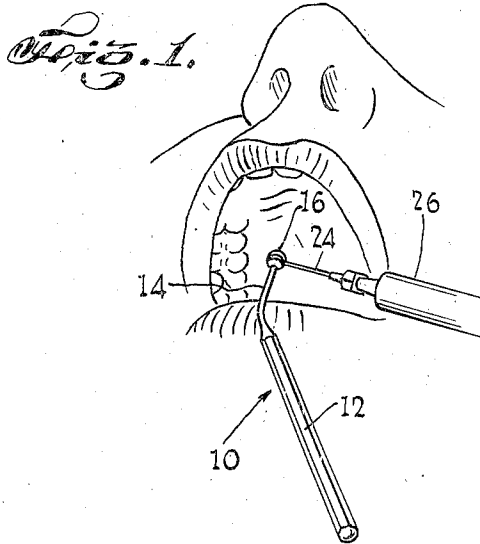
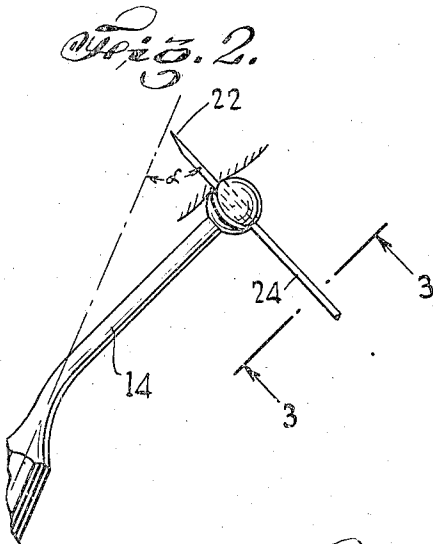
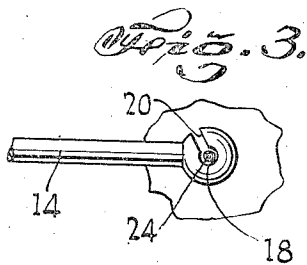
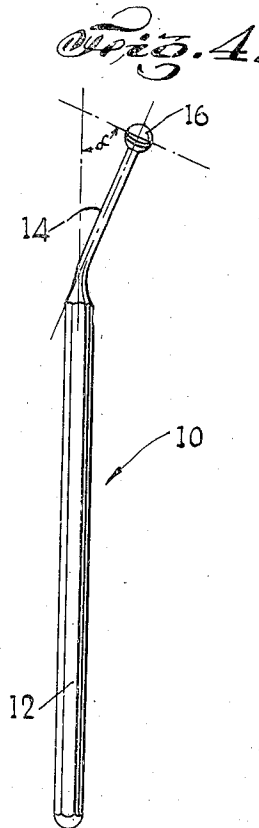
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2,479,645

DENTAL INSTRUMENT

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DENTAL INSTRUMENT

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10 Claims. (Cl. 128-215)

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This invention relates to an instrument, and, more particularly, is concerned with dental instruments.

It is an object of my invention to provide a dental instrument which is adapted to mask the entry pain of a hypodermic needle in the mouth.

It is a more specific object of my invention to provide a dental instrument which is adapted to mask the entry pain of a hypodermic needle in the palate.

It is another object of the invention to provide a dental instrument which, in addition to masking the pain of insertion of a hypodermic needle, can be withdrawn from the site of the injection while the needle still is imbedded.

Other objects of my invention will in part be obvious and in part will be pointed out hereinafter.

My invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter described and of which the scope of application will be indicated in the appended claims.

In the accompanying drawings in which is shown one of the various possible embodiments of my invention:

Fig. 1 is a perspective view of a dental instrument constructed in accordance with my invention and shown as it appears in use;

Fig. 2 is an enlarged fragmentary side view of the instrument at the site of an injection;

Fig. 3 is a sectional view taken substantially along the line 3-3 of Fig. 2; and

Fig. 4 is a side view of said instrument.

Referring now in detail to the drawings, the reference numeral 10 denotes a dental instrument embodying my invention. Said instrument comprises a long straight handle 12 having an integral elongated foot 14 at whose tip there is permanently affixed, as by welding, an approximately spherical ball or bead 16 of about $\frac{1}{8}$ " diameter, which is considerably larger than (at least about twice as large as) the diameter of the foot. Said bead is formed with a straight, through opening 18 whose longitudinal axis is disposed at an angle α to the longitudinal axis of the handle. Pursuant to my invention, this angle does not exceed, and preferably is, about 60°.

In the form of the invention illustrated herein, with which highly satisfactory results are obtained, the longitudinal axis of the opening 18 is perpendicular to the longitudinal axis of the foot 14 and the longitudinal axis of said foot is disposed at an angle of approximately 30° to the

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longitudinal axis of the handle 12. However, it will be understood that it is within the scope of my invention to have the foot 14 form a straight line extension of the handle 12. In such case, the longitudinal axis of the opening 18 is arranged at an angle of about 60° or less to the longitudinal axis of said foot, and, therefore, at the same inclination to the longitudinal axis of the handle 12.

The bead 16 also is provided with a bottomless slot 20 which is parallel to the longitudinal axis of the opening 18 and extends over the entire length of said opening to the outside of the bead, thereby defining a straight passageway from said opening to the exterior of the bead. All lower portions of the bead surrounding the opening and the slot, i. e. all portions which will contact the skin in use, are slightly rounded.

To use the instrument, the same is manipulated to place one end of the opening 18 against a site on the hard palate where an injection is to be made. A typical position of the instrument is shown in Fig. 1. Due to the inclination between the longitudinal axis of the opening and the longitudinal axis of the handle and to the natural configuration of the hard palate, when the instrument is placed on any spot on the hard palate with the end of the opening against the patient's flesh, the longitudinal axis of the opening can be arranged to pass through the patient's mouth. That is to say, this longitudinal axis will be so oriented that it will pass between the patient's lips.

The instrument is manipulated to press the bead 16 against the palate hard enough to cause a slight pressure pain. Inasmuch as the hard palate is comparatively firm, the bead will not sink into the same to appreciably stretch the skin of the palate. However, the pressure causes a pain which is extremely localized due to the small area of contact between the portion of the bead around the opening and the palate. I have found that the nervous system of the hard palate is such that this pressure will mask the pain of entry of a hypodermic needle, although if the instrument is manipulated in the same way on the external skin of a user it will not function in the same manner.

With the instrument so positioned and pressing against the palate, the point 22 of a hypodermic needle 24 is thrust through the opening 18 and inserted into the palate as illustrated in Fig. 2. It will be observed that the longitudinal axis of the hypodermic syringe 25 and needle coincide with the longitudinal axis of the opening 18, and because the longitudinal axis of said opening

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passes between the lips of the patient, it is comparatively simple to properly dispose the syringe so as to insert the needle through said opening.

As soon as the needle is inserted, discharge of the hypodermic may be started. This discharge normally takes a substantial period of time, i. e. from one to three minutes. However, the instrument 10 need not be held in the patient's mouth all this time. Rather, at, or immediately after, injection begins, the instrument is removed by 10 shifting the bead in such direction that the slot 20 slides over the hypodermic needle. Thereupon the instrument can be removed from the mouth. Such procedure frees one of the dentist's hands, and enables the patient to close his mouth somewhat.

Attention is directed to the fact that the width of the slot 20 is less than the diameter of the opening 18, thereby causing a major portion of the palate surrounding the site of the injection to be subjected to a masking pain.

It thus will be seen that I have provided an instrument which achieves the several objects of my invention and is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings, is to be interpreted as illustrative and not in a limiting sense, but any permissible change must fall within the purview of the claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A dental instrument adapted to cause a pressure pain around the site of a hypodermic injection in the hard palate in order to mask the pain of entry of a hypodermic needle, said instrument comprising an approximately spherical bead having a straight diametrical opening therethrough and an elongated handle connected to said bead, the longitudinal axis of said handle being disposed at an angle not exceeding 60° to the longitudinal axis of said opening.

2. A dental instrument adapted to cause a pressure pain around the site of a hypodermic injection in the hard palate in order to mask the pain of entry of a hypodermic needle, said instrument comprising a bead having a straight opening therethrough, and an elongated handle connected to said bead, the longitudinal axis of said handle being disposed at an angle not exceeding 60° to the longitudinal axis of said opening, said handle at its point of connection to the bead being of a diameter less than the bead.

3. A dental instrument adapted to cause a pressure pain around the site of a hypodermic injection in the hard palate in order to mask the pain of entry of a hypodermic needle, said instrument comprising a bead having a straight opening therethrough, an elongated handle and an elongated foot, said foot being connected at one end to the handle and at the other end to the bead, the longitudinal axis of said foot being perpendicular to the longitudinal axis of said opening, and at an angle of about 30° to the longitudinal axis of said handle.

4. A dental instrument adapted to cause a pressure pain around the site of a hypodermic injection in the hard palate in order to mask the pain of entry of a hypodermic needle, said instrument comprising a bead having a straight opening therethrough, an elongated handle and an elongated foot, said foot being connected at

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one end to the handle and at the other end to the bead, the longitudinal axis of said foot being perpendicular to the longitudinal axis of said opening, and at an angle of at least 30° to the longitudinal axis of said handle.

5. A dental instrument adapted to cause a pressure pain around the site of a hypodermic injection in the hard palate in order to mask the pain of entry of a hypodermic needle, said instrument comprising a bead having a straight opening therethrough and an elongated handle connected to said bead, the longitudinal axis of said handle being disposed at an angle not exceeding 60° to the longitudinal axis of said opening, said bead having a bottomless slot extending over the entire length of said opening to the exterior of the bead, said slot being straight and parallel to the longitudinal axis of the opening.

6. A dental instrument adapted to cause a pressure pain around the site of a hypodermic injection in the hard palate in order to mask the pain of entry of a hypodermic needle, said instrument comprising a bead having a straight opening therethrough and an elongated handle connected to said bead, the longitudinal axis of said handle being disposed at an angle not exceeding 60° to the longitudinal axis of said opening, said bead having a bottomless slot extending over the entire length of said opening to the exterior of the bead, said slot being straight and parallel to the longitudinal axis of the opening, the width of said slot being less than the diameter of said opening.

7. A dental instrument adapted to cause a pressure pain around the site of a hypodermic injection in the hard palate in order to mask the pain of entry of a hypodermic needle, said instrument comprising a bead having a straight opening therethrough, an elongated handle and an elongated foot, said foot being connected at one end to the handle and at the other end to the bead, the longitudinal axis of said foot being perpendicular to the longitudinal axis of said opening, and at an angle of at least 30° to the longitudinal axis of said handle, said bead having a bottomless slot extending over the entire length of said opening to the exterior of the bead, said slot being straight and parallel to the longitudinal axis of the opening.

8. A dental instrument adapted to cause a pressure pain around the site of a hypodermic injection in the hard palate in order to mask the pain of entry of a hypodermic needle, said instrument comprising a bead having a straight opening therethrough, an elongated handle and an elongated foot, said foot being connected at one end to the handle and at the other end to the bead, the longitudinal axis of said foot being perpendicular to the longitudinal axis of said opening, and at an angle of at least 30° to the longitudinal axis of said handle, said bead having a bottomless slot extending over the entire length of said opening to the exterior of the bead, said slot being straight and parallel to the longitudinal axis of the opening, the width of said slot being less than the diameter of said opening.

9. An instrument adapted to cause a pressure pain around the site of a hypodermic injection in order to mask the pain of entry of a hypodermic needle, said instrument comprising a bead having a straight opening therethrough and a bottomless slot extending over the entire length of said opening to the exterior of the bead, said slot being straight and parallel to the longitudinal axis of the opening.

10. An instrument adapted to cause a pressure

pain around the site of a hypodermic injection in order to mask the pain of entry of a hypodermic needle, said instrument comprising a bead having a straight opening therethrough and a bottomless slot extending over the entire length of said opening to the exterior of the bead, said slot being straight and parallel to the longitudinal axis of the opening, the width of said slot being less than the diameter of said opening.

RUBIN D. SILVERSTEIN. 10

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