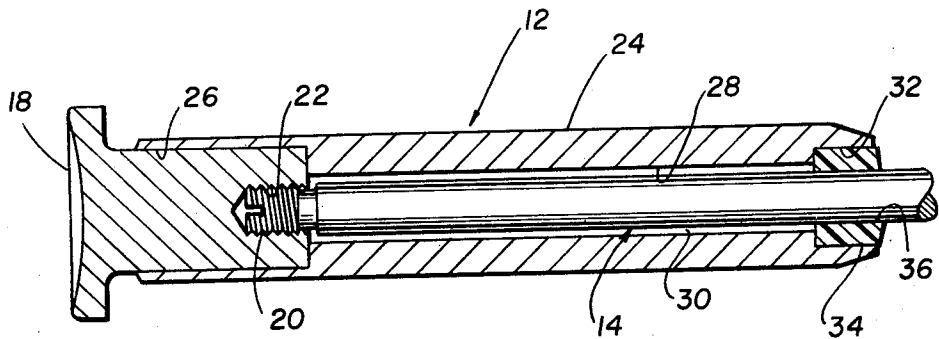


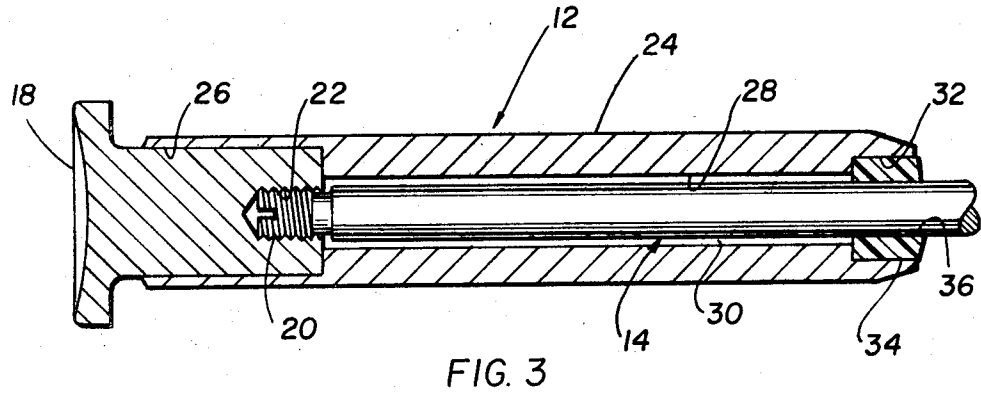
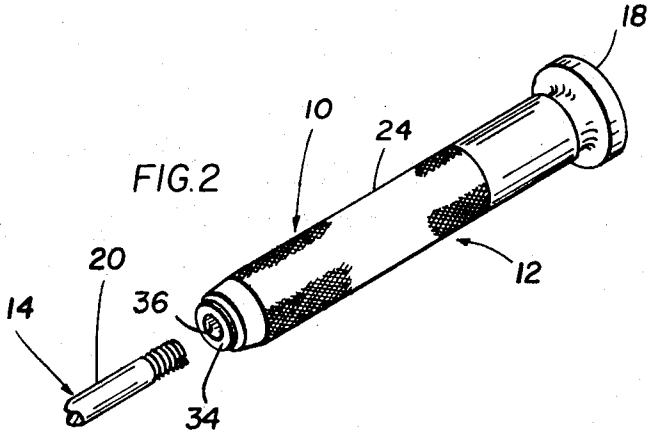
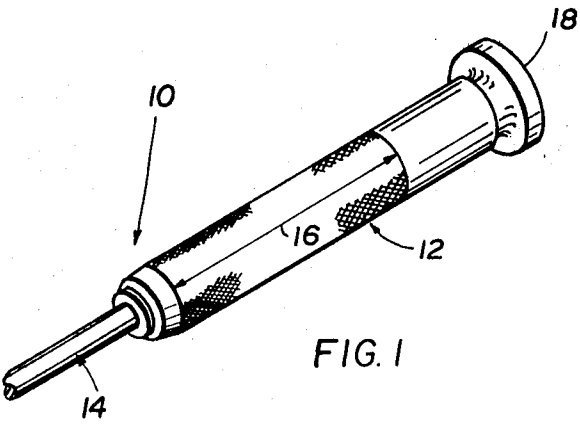
[54] **DENTAL INSTRUMENT**
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[51] Int. Cl. **A61c 3/00**
[58] Field of Search ...128/92 EC, 83, 92 R; 32/40 R, 32/51

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[57] **ABSTRACT**
A dental instrument having its gripping end centered in an oversized internal bore of its handle so that there is minimal amount of vibration transmitted to the handle.

4 Claims, 3 Drawing Figures





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DENTAL INSTRUMENT

The present invention relates generally to dental instruments, and more particularly to an improved handle construction for the same.

A variety of dental instruments are in use for such varied functions as tapping, and for general and special inserting purposes, to mention just a few. Often a force is applied with these instruments requiring, in turn, the striking of the impact head of the instrument. To minimize vibration transmission to the handle gripping surface, the handle is generally fabricated of steel throughout, or otherwise is massive. This, however, adds to the cost of the instrument and detracts from its ease of use.

Broadly, it is an object of the present invention to provide an improved dental instrument overcoming the foregoing and other shortcomings of the prior art. Specifically, it is an object to provide a light-weight dental instrument handle in which vibration is effectively dampened.

A dental instrument handle demonstrating objects and advantages of the present invention includes a sleeve-like body held in a surrounding clearance position about the proximal end of the instrument by an annular, plastic shock-absorbing member which dampens any vibration transmission that occurs along the nominal area of contact between the instrument body and the handle.

The above brief description, as well as further objects, features and advantages of the present invention, will be more fully appreciated by reference to the following detailed description of a presently preferred, but nonetheless illustrative embodiment in accordance with the present invention, when taken in conjunction with the accompanying drawings, wherein:

FIGS. 1 and 2 are perspective views of the handle construction of the dental instrument hereof, FIG. 2 illustrating the manner in which the body of the instrument is removed from said handle; and

FIG. 3 is a side elevational view, on an enlarged scale and in longitudinal section, illustrating internal structural features of the handle.

Reference is now made to the drawings in which there is shown an improved dental instrument, generally designated 10, the improvements of which more particularly reside in the construction of the handle 12 for the instrument body 14. Although the operative end of the instrument body 14 is not shown, the same may have a tip somewhat like a screwdriver, and be used for tapping, or it may have a bifurcated end for general or special inserting purposes. Further, since handle 12 can be utilized for any one of these types of dental instruments, it is further contemplated in accordance with the present invention that either the entire or a length portion 16 of the handle 12 have an appropriate color code so that the dentist can more readily recognize the particular instrument which he desires to use. The manner in which this color is applied to the handle 12 will depend on the material of construction thereof. Thus, if the handle 12 is aluminum, the color can be applied by anodizing, in a well understood manner. If, on the other hand, the handle 12 is steel, the color application can be in accordance with a color passivate process.

As is generally understood, a dental instrument 10, whether used for general or special inserting, or tapping, or even locating functions, may require, at least on some occasions, the application of force which is done by striking an impact head 18 of the instrument handle 12. When such impact force is applied, it is advantageous, for obvious reasons, to cushion the vibrations of the impact and thus minimize their transmission to the handle 12 which is being gripped by the user of the instrument 10.

As is perhaps best illustrated in FIG. 3, the proximal instrument end 20 (as distinguished from the operative or distal end thereof) is threaded and is adapted to be threadably received in a threaded opening 22 of the impact head 18. Assembled to the impact head 18 is the cylindrical body 24 of the handle 12, said body having an end counterbore 26 in which the impact head 18 is force fit. The medial portion of the cylindrical body 24 has a longitudinally oriented bore 28 which is of a greater diameter than the cylindrical instrument body 14 and thereby provides an annular clearance 30 between the body 14 and the wall 28 which bounds the through bore 28. The significance of clearance 30 will soon be apparent.

At the other end of the body 24 there is another counterbore 32 in which there is force fit and seated an annular, preferably plastic, shock-absorbing body 34. The instrument body 14 is projected through a central opening 36 of the shock absorber 34 and this, as is clearly obvious from FIG. 3, serves to center that length portion of the proximal end 20 of the instrument body 14 which is coextensive with the cylindrical length of the handle body 24 within the bore 28. In other words, the proximal end of the instrument body 14 is maintained in a clearance position, by virtue of the annular clearance 30, from the wall which bounds the bore 28.

It has been found that a consequence of maintaining the instrument body 14 out of significant physical contact with the handle 12, except for the spaced apart length portions thereof coextensive with the threaded opening 22 and with the central opening 36 of the shock absorber 34, is that there is an optimum minimum amount of vibration, due to impact against the head 18, that is transmitted to the outer surface of the handle body 24. Moreover, the plastic material out of which the body 34 is fabricated effectively dampens out much of the vibration that theoretically could be transmitted to the handle body 24.

A latitude of modification, change and substitution is intended in the foregoing disclosure, and in some instances some features of the invention will be employed without a corresponding use of other features. Accordingly, it is appropriate that the appended claims be construed broadly and in a manner consistent with the spirit and scope of the invention herein.

What is claimed is:

1. In combination, a dental instrument terminating in opposite distal and proximal ends and a shock-resistant handle for said instrument proximal end comprising a sleeve-like member serving as said instrument handle having a central throughbore of a greater diameter than said instrument proximal end operatively disposed in a clearance position about said instrument proximal end, said sleeve-like member having a counterbores respec-

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tively in the opposite open ends of said throughbore thereof, an impact head for said handle disposed in one said counterbore and engaged to said instrument proximal end, and a shock-absorbing body disposed in the other said counterbore and in concentric relation about said instrument so as to substantially center said instrument longitudinally in said oversized throughbore, whereby the clearance between said instrument and handle minimizes shock vibrations normally resulting from impact against said impact head from being transmitted to said instrument handle.

2. A dental instrument as defined in claim 1 wherein

said sleeve-like member is fabricated of aluminum to contribute to minimizing the weight of said instrument.

3. A dental instrument as defined in claim 2 wherein said shock-absorbing body is fabricated of plastic and has an annular shape, and said instrument is projected through a central opening therein.

4. A dental instrument as defined in claim 3 wherein said impact head is force fit in said counterbore of said sleeve-like member and said instrument proximal end is threadably engaged to said impact head.

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