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J. WILEN

2,731,722

DENTAL ATTACHMENT

Filed Aug. 9, 1954

FIG. 1.

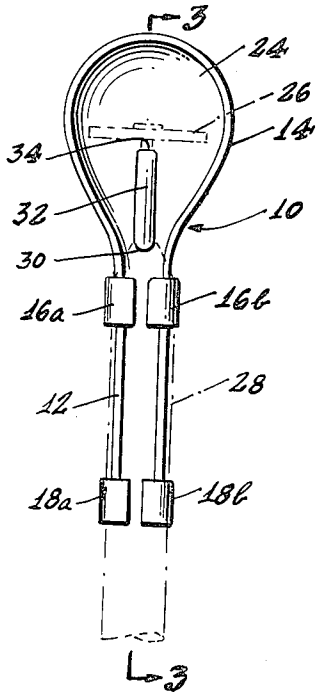


FIG. 2.

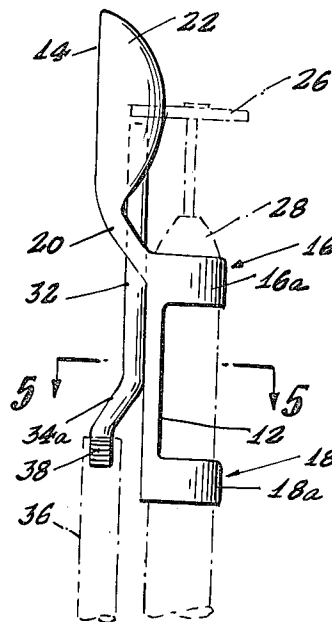


FIG. 3.

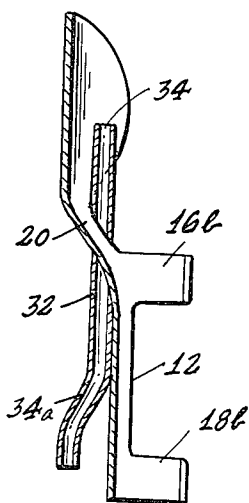


FIG. 4.

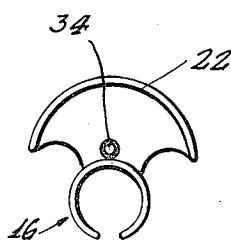
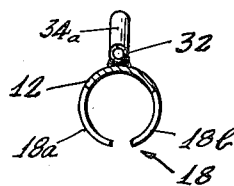


FIG. 5.



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DENTAL ATTACHMENT

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4 Claims. (Cl. 32—28)

This invention relates to dental drill attachments in general and more particularly to a combined water spray, guard, and retractor in a unitary device which may be attached to a dentist's drill.

The present invention is particularly adapted for grinding operations such as performed by dentists and during which time it is highly desirable that the grinding wheel be cooled by a water jet to prevent the transfer of the heat generated during the grinding operation to the nerves of the teeth. During such a grinding operation, it is necessary that the tongue be depressed or the tissue lining the oral cavity be distorted so that freedom of the drill during the drilling operation is provided. The present invention further provides a guard that protects the depressed lining or tongue from accidental engagement with the rotating grinding wheel. This guard is formed to provide a concave and a convex surface. The convex surface acts as the retractor while the highly polished concave surface reflects light on the drill and assists the dentist performing the grinding operation.

Therefore, one of the principal objects of the present invention is to provide a unitary device incorporating a water fountain, a grinding wheel guard and a flesh retractor for attachment to a dental drill.

Another object of the invention resides in the provision of resilient means for readily attaching such a unitary device to a dental drill.

Another object of the invention is to provide a highly polished surface on the retractor portion of the device to reflect light and facilitate the use of said device.

Other ancillary objects will be, in part, hereinafter pointed out and will be, in part, hereinafter apparent.

In the drawings:

Figure 1 is a front elevation of the device further illustrating the operating relationship thereof to a dental drill which is outlined in dotted line.

Figure 2 is a side elevation of the device also illustrating the relationship thereto of the dental drill in dotted line.

Figure 3 is a cross section taken along line 3—3 of Figure 1.

Figure 4 is a top elevational view of the device.

Figure 5 is a cross sectional view taken along line 5—5 of Figure 2.

Referring to the drawings in detail, 10 generally designates the device which comprises an elongated arcuate body portion 12 and an upper arcuate portion 14, body portion 12 has integrally formed therewith a pair of retaining members 16 and 18 respectively, spaced one from the other and laterally extending therefrom. Retaining members 16 and 18 each comprise a pair of complementary arcuate arms 16a—16b and 18a—18b respectively. Arms 16a and 16b are disposed to terminate in a spaced relation and are so constructed that the inherent resiliency therein will provide a clamping effect on a drill or similar device that may be inserted therein. Analogously, retaining member 18 performs the identical function as that of retaining member 16. Body por-

tion 12 is further provided with an offset neck portion 20 which supports the integrally formed upper arcuate portion 14. Arcuate portion 14 is formed to provide a convex surface 22 that functions as a retractor and a concave surface 24 which substantially encompasses the grinding wheel 26 mounted in the dental drill 28. Concave surface 24 is highly polished to reflect a maximum amount of light on the grinding wheel 26.

Neck portion 20 is further provided with a central aperture 30 through which a water fountain 32 extends. Water fountain 32 is substantially a tubular member having an aperture 34 of reduced diametrical proportion relative to the diameter of the fountain 32. The fountain 32 extends through the aperture 30 in the offset neck 20 in parallel relation with the convex surface of arcuate body portion 12 and is secured thereto by any conventional method such as soldering, etc. The lower extremity of the fountain 32 is provided with an offset portion 34a which terminates in spaced relation from the body portion 12. This spaced relation facilitates the disposal of the water hose designated as 36 thereon. Further, the outer periphery of the offset portion 34a is provided with a plurality of ridges 38 which frictionally engage the internal periphery of the water holes to retain the said hose thereon.

In operation, the drill 28 is installed within the retaining member 16 and 18. The grinding wheel 26 is then mounted in the drill 28 and the water hose 36 is secured to the fountain 32. The aperture 34 in the fountain 32 is disposed under the grinding wheel 26 and water emitting therefrom engages the abradant wheel to perform a cooling function. The upper arcuate portion 14 is utilized by the dentist to displace the flesh surrounding the tooth that is to be ground while preventing accidental engagement thereof with the rotating abradant wheel 26.

Thus, it is apparent that there has been provided a device in which the several objects of the invention are achieved and which is well adapted to meet the conditions of practical use.

While there has been shown and described a single embodiment of the invention, it is to be understood that modifications and changes might be made without departing from the scope of the present invention, except as limited by the following claims.

The invention claimed is:

1. An attachment for a dental drill, comprising a member having integrally formed spoon-shaped retractor means, water fountain means, means having inherent resiliency for detachably securing said member to a dental drill, said retractor means having concave and convex surfaces wherein the convex surface functions as a retractor and said concave surface being disposed in a plane that is coaxially concentric with and spaced from an abradant wheel rotated by the dental drill and said concave surface being polished to reflect light on to the tooth being ground by the abradant wheel.

2. An attachment for a dental drill, comprising a member having integrally formed spoon-shaped retractor means, water fountain means, means having inherent resiliency for detachably securing said member to a dental drill, said retractor means having concave and convex surfaces wherein the convex surface functions as a retractor and said concave surface being coaxially concentric with and spaced from an abradant wheel rotated by the dental drill, and said water fountain being disposed within the arc formed by the concave portion of the retractor means and below the plane of the abradant wheel and adapted to project water on to the abradant wheel, said concave surface being polished to reflect light on to the tooth being ground by the abradant wheel.

3. An attachment for a dental drill, comprising a member having a body portion and means having inher-

3

ent resiliency and integrally formed from said body portion for detachably securing said body portion to the shank of a dental drill; retractor means having polished concave and convex surfaces and being integrally formed in offset co-planar relation from said body portion and adapted to guard an abradant wheel that is rotated by the dental drill in grinding operations, a water fountain affixed to said body member and projecting in coaxial relation to said body member, whereas water projected from said water fountain will engage the abradant wheel to be carried by said wheel on to the tooth being ground, and said polished concave retractor surface being disposed in a plane perpendicular to the plane of the abradant wheel whereby light is reflected thereby on to the tooth being ground.

4. An attachment for a dental drill, comprising a member having a body portion and means having inherent resiliency integrally formed from said body portion for detachably securing said body portion to a dental drill, retractor means having polished concave and con-

4

vex surfaces and being integrally formed in offset co-planar relation from said body portion and adapted to guard an abradant wheel that is rotated by the dental drill in grinding operations, a water fountain affixed to said body member and projecting in coaxial relation to said body member, whereas water projected from said water fountain will engage the abradant wheel to be carried by said wheel on to the tooth being ground, and said polished concave retractor surface being disposed in a plane perpendicular to the plane of the abradant wheel whereby light is reflected thereby on to the tooth being ground, and a portion of said water fountain means being angularly offset from the remainder of said water fountain to facilitate the attachment of a water hose thereto.

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