To all whom it may concern:

Be it known that I, ELMER E. HACHMAN, a citizen of the United States of America, residing in the city of Baltimore, State of Maryland, have invented certain new and useful Improvements in Syringes and Guards, of which the following is a specification.

The present invention relates to a combination tongue and cheek guard and syringe, for use in the practice of dentistry. Its purpose being the protection of the tongue and cheek from injury during an operation and at the same time to act as a syringe, by injecting in the cavity or vicinity of the tooth being operated upon an antiseptic or local anesthetic.

In dental operations of all characters it is important that the dentist should have sufficient light and space in the vicinity of the affected tooth or gum and particularly to be free to work with the necessary instruments without injury to the surrounding parts such as the cheek or tongue. During such operations it is frequently necessary to immediately syringe the parts for antiseptic purposes, to cleanse the parts thoroughly, for the immediate comfort of the patient. It can be fully appreciated that the dentist can obtain a better view of the parts being worked upon when they are syringed and free from the grindings, blood or other foreign accumulations that are a natural consequence to dental operations.

The guard and syringe is at all times in the hands of the dentist and completely under his control, making it possible to adapt it to any position necessary for the comfort and protection of the patient. This condition is very favorable to the operator in that it permits a free use of the necessary instruments without danger to the patient of wounding the cheek, tongue or surrounding tissue, etc.,—the dentist while holding the guard in one hand and his operating tool or drill in the other, he can at all times follow up the course of his instrument, thereby reducing to a minimum any danger of injury to the patient.

In difficult operations and particularly with nervous patients it is frequently necessary for the dentist to require an assistant to constantly syringe and cleanse the parts during the operation also to prevent the cotton packing or absorbent material from working out of position. The present invention is designed to render such an assistant unnecessary under any circumstances where such services are needed. The dentist can readily prevent the moving of the packing by keeping the lower or upper edges of the guard pressed upon the packing. The surrounding parts are at the same time fully protected from being injured or cut by the instrument, and the syringe can be in constant use during the whole of the operation without necessitating the stopping of the work to reach for a syringe. With such use of the invention the patient can immediately eject from his mouth all objectionable matter as soon as the dentist has removed his drill. This does away with the unpleasant condition of retaining such matter in the mouth until the operator can lay aside his drill and prepare a syringe to clean the parts with and assist the patient to eject the grindings from his mouth.

The device is also of great comfort to the patient whether being used for the upper or lower portion of the jaw, in that the tongue is not harnessed or fixed in a particular position in an effort to protect it, as in a large number of such devices, but is free to move without danger of being injured. This free movement of the tongue permits the patient to swallow or gulp when so inclined during an operation, preventing the usual gagging sensation as is caused by a fixed instrument or guard in the mouth.

The device is also of great use in protecting the tongue and cheek from injury when long and continuous grinding of the teeth is necessary, such as the grinding down of a tooth for a crown or cap and bridge abutments.

In the accompanying drawings I have illustrated a tongue guard and syringe embodying the various features of my invention in the preferred form.

Figure 1 is a plan view of the guard and syringe shown in operative relation to a fragmentary portion of the lower jaw.
Figure 2 is a front elevation of the device. Figure 3 is a rear elevation of the guard and syringe.

Referring to the drawing by numerals the apparatus consists of a syringe bulb 1, a gripping plate 2, for the purpose of supporting the bulb and to act as a resistance against which the bulb is depressed. Connected to the bulb is the tube 3, within the handle 13, terminating in a cap 4, which supports the two pipes 5 and 6. These pipes terminate and are held in fixed positions at 7 and 8 respectively, by welding or braising. The pipes 5 and 6 each have nozzles 9 and 10 respectively, these nozzles as shown are disposed as to send their sprays or streams towards each other. Their direction in the present instance being slightly offset to cause the streams to pass each other and to enable the dentist to apply them to a wider range of activity. It is understood, of course, that the nozzles can be so disposed along the guard to most any point of advantage, also that the number of nozzles is not limited. In the illustration of the guard shown the nozzles are so arranged as to throw their streams at about 45° from their respective guard faces 11 and 12.

The guard can be used independently of the syringe by detaching the bulb 1 and the gripping plate 2 from the guard handle 13 by means of the nut 14.

The guard proper is U shape in design, the bottom 13 of the U being cut away or curved inwardly as shown in Figure 2 at 16. This arched or inwardly disposed portion 16 of the guard serves to span or arch the gum and teeth of the patient permitting the two side walls 17 and 18 of the guard to rest on the lower part of the gum and below the line of the teeth. This construction gives thorough protection to the surrounding parts of the mouth that are in the vicinity of the teeth being worked upon. The inner faces 19 and 20 of the guard are curved outwardly and away from each other as shown particularly in Figure 2. This curvature gives the operator or dentist better access to the tooth to work with his instrument allowing for the least amount of obstruction to the view of the field of operation. The outside faces 21 and 22 are so curved as to fit the tongue, i.e. when the guard is used as shown in Figure 1 on the left hand side of the lower jaw the tongue rests and fits into the curved face 22; the face 21 fits and protects the tongue when the guard is used on the right side of the mouth.

One of the purposes of the curved faces 21 and 22 may fit and protect the tongue, depending on the work and how the operator finds it most convenient to hold the guard.

An important feature of the invention is its universal adaptability to the tongue and other parts of the mouth, whether used for the upper or lower jaw and in the right or left side of the mouth.

The practical results obtained with my invention in the field of dentistry are new and far superior to those obtained by other and somewhat similar devices on the open market as they are designed from either the operator's point of view and in his interest alone without sufficient comfort to the patient or else designed particularly for the comfort and protection of the patient without due regard to the practicability of the instrument for the use of the dentist.

I have thus described my invention specifically and in detail in order that its nature and operation may be fully understood; however the specific terms herein are used descriptively rather than in their limiting sense, and the scope of the invention is defined in the claims.

What I claim and desire to secure by Letters Patent is:

1. In combination with a dental syringe, a tongue and cheek guard of one piece of metal, adapted to protect the tongue, cheek and surrounding parts of the mouth, in the form of spoon shaped plates, said plates being connected at one end by means of an arm, the opposite end of one of said plates has an extension thereto in the form of a handle, said handle terminating in a cup shaped member for the purpose of supporting the bulb of the syringe, a plurality of nozzles carried by said spoon shaped plates and positioned so that the streams therefrom are directed one towards the other, as shown and for the purpose hereinafter described.

2. In combination with a dental syringe, a tongue and cheek guard in the form of oppositely curved elliptically shaped flanged members connected at one end near their line of axis by an arm in the form of an arch, the flange members acting as a support for and retaining a plurality of nozzles.

3. In combination with a syringe, a one piece metal dental appliance, consisting of a handle formed about the syringe tube, and extending from one end thereof a spoon shaped member having an arm extending from its opposite end in a direction substantially at right angles therefrom, said arm terminating in a second spoon shaped member, said arm and spoon shaped members forming a recess for the purpose as hereinafter described.

4. In combination with a syringe, a one piece metal dental appliance, consisting of a handle formed about the syringe tube, and extending from one end thereof a spoon shaped member having an arm extending from its opposite end and in a direction substantially at right angles therefrom, said
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arm terminating in a second spoon shaped member, the said arm and spoon shaped members forming a recess, the said recess having a plurality of nozzles pointing in a direction towards each other from opposite sides of the recess, and their streams coming substantially in juxtaposition to each other for the purpose of directing a cooling liquid simultaneously on both sides of a grinding tool substantially as described. 10

Signed by me at Baltimore, Maryland, this 22nd day of August, 1921.

ELMER E. HACHMAN

Witnesses:

WILLIAM F. LUBKING,

GRACE RUNGE.