

May 20, 1924.

1,494,809

B. F. SAHR

DENTAL SYRINGE

Filed Dec. 31, 1923

2 Sheets-Sheet 1

*Fig. 2*

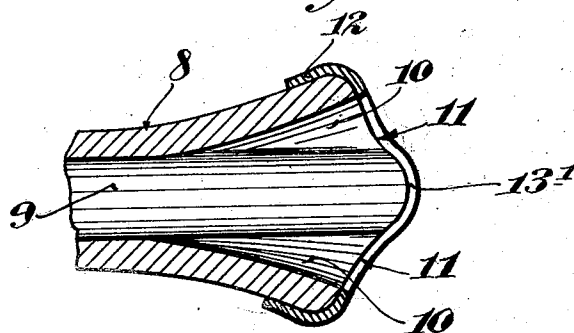


*Fig. 1*

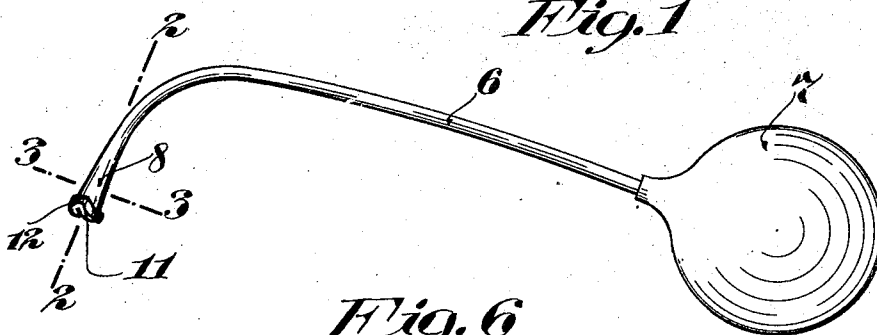
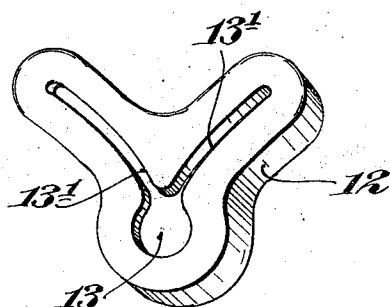


*Fig. 6*



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*Fig. 5*

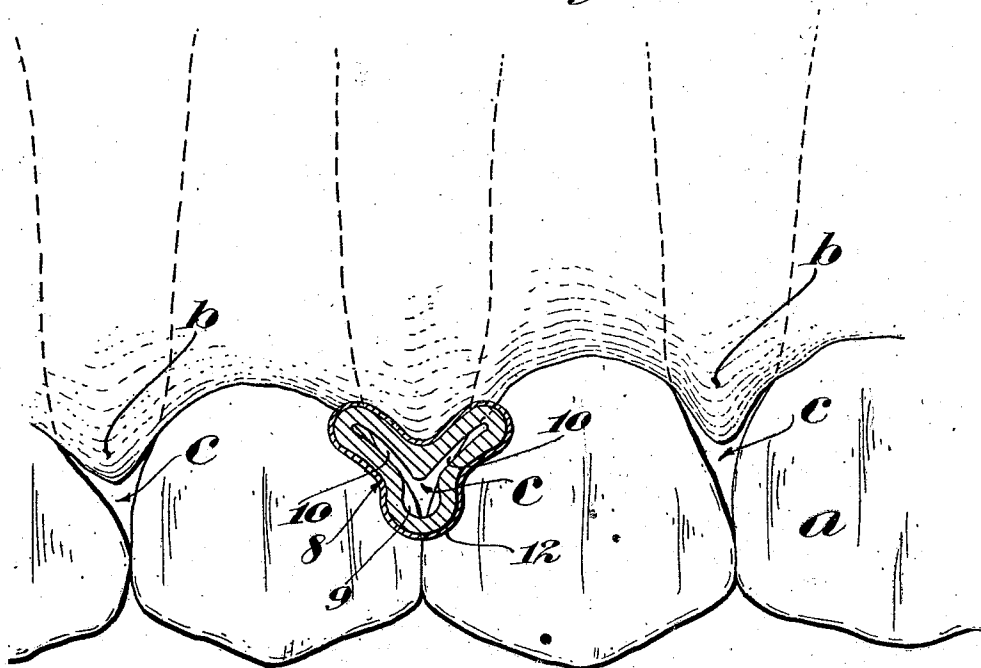


*Fig. 4*

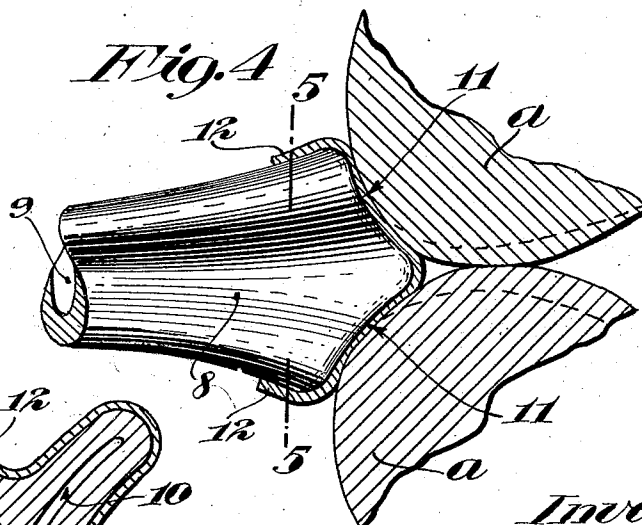
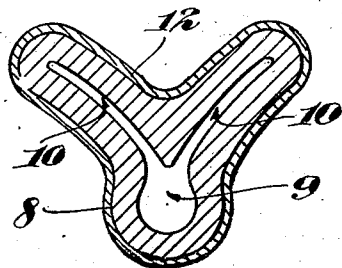


*Fig. 3*



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Patented May 20, 1924.

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# UNITED STATES PATENT OFFICE.

BENJAMIN F. SAHR, OF HUTCHINSON, MINNESOTA.

## DENTAL SYRINGE.

Application filed December 31, 1923. Serial No. 683,594.

*To all whom it may concern:*

Be it known that I, BENJAMIN F. SAHR, a citizen of the United States, residing at Hutchinson, in the county of McLeod and State of Minnesota, have invented certain new and useful Improvements in Dental Syringes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention provides an improved dental syringe designed and adapted to efficiently wash out the interdental spaces between the teeth and gums, and, generally stated, the invention consists of the novel construction and arrangement hereinafter described and defined in the claims.

To all dentists and other persons familiar with the subject, it is well known that, between the teeth of human beings, there are interdental spaces, which, because of the divergence of the adjacent teeth and the formation of the gums between the teeth, are of a form that might be well designated either as V-shaped or Y-shaped, but which, for convenience of statement, will be hereinafter designated as V-shaped. In practice, it has been found that an ordinary syringe having the customary round or substantially round orifice will not effectually clean or wash out these interdental spaces. My invention is directed in particular to the formation of the discharge end of the nozzle and of the discharge orifice of the nozzle.

Inasmuch as there is a decided divergence of the adjacent teeth from the interdental spaces, I provide the nozzle with a discharge end with reversely beveled and preferably concavely curved tooth-engaging surfaces that make the end of the nozzle substantially wedge-shaped; and I provide the said nozzle with a main discharge orifice formed with attenuated diverging extension channels that afford a substantially V-shaped discharge orifice at the discharge end of the nozzle. This approximately V-shaped discharge orifice will correspond approximately to the average V-shaped form of the interdental spaces, and this result is best accomplished by making the attenuated channel extensions slightly curved.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is a side elevation showing the improved dental syringe;

Fig. 2 is an enlarged section on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged transverse section taken through the nozzle on the line 3—3 of Fig. 1;

Fig. 4 is a plan view of the nozzle, the stem being broken away, portions of two adjacent teeth being indicated in horizontal sections;

Fig. 5 is a view in elevation showing a row of teeth and showing the nozzle in section on the line 5—5 of Fig. 4; and

Fig. 6 is a perspective view showing a marginal soft rubber cap for application to the end of the nozzle.

The teeth are indicated by the character *a*, the gums by the character *b*, and the V-shaped interdental spaces by the character *c*.

The syringe illustrated is of the type comprising a tubular stem 6 and a bulb 7. The tubular stem 6 terminates in a discharge nozzle 8 shown as formed integral therewith but expanded and increased in cross section, so that its main channel 9 is provided with attenuated diverging extension channels or wings 10, preferably slightly curved. By reference particularly to Figs. 3 and 5, it will be noted that, in cross section, the nozzle is approximately Y-shaped. By reference to Figs. 2 and 4, it will be noted that the nozzle, at its extreme end, is made approximately wedge-shaped or reversely beveled, being, as already indicated, provided with tooth-engaging surfaces 11 that are slightly concave to more closely engage with tooth surfaces.

Fig. 5 illustrates the manner in which the approximately V-shaped discharge orifice of the nozzle will approximately align with the interdental space, so that when the water is discharged, it will be simultaneously forced through the entirely interdental space with approximately the same force, thereby insuring the best possible kind of a cleaning action. Moreover, the bevel formation of the end of the nozzle adapts the nozzle to fit against the teeth and gums closely enough to insure good pressure for discharging the water through the interdental spaces.

The nozzle of the syringe is adapted to be made, as above described, entirely of metal, hard rubber or any other suitable material

but I preferably provide a marginal soft rubber cap detachably fitted to the end of the nozzle. This soft rubber cap is indicated as an entirety by the numeral 12 and is shown detached in Fig. 6. Said cap is provided with a marginal flange adapting it to be telescoped over the end of the nozzle and to closely fit the same, and it is provided with a discharge orifice 13 with branches 13' that correspond to the discharge orifice in the nozzle. This pliable rubber cap will prevent injury to the gums and will form a tighter joint between the nozzle, the gums and the teeth, and between the hard or solid tip of the nozzle.

This improved dental syringe has, in actual dental practice, been found highly efficient and extremely desirable for the purposes had in view. As is obvious, it is of small cost.

What I claim is:

1. A dental syringe having a tubular stem terminating in a nozzle provided with an approximately V-shaped discharge channel adapted approximately to coincide with interdental spaces.

2. A dental syringe having a tubular stem terminating in a nozzle provided with an approximately V-shaped discharge channel adapted approximately to coincide with interdental spaces, the end of said nozzle being made approximately wedge-shaped to afford diverging tooth-engaging surfaces.

3. An interdental syringe having a tubular stem terminating in a nozzle provided with a main channel having diverging attenuated channels, said main and diverging channels openings at the discharge end of said nozzle and operating to simultaneously discharge air between or against teeth.

4. An interdental syringe having a tubular stem terminating in a nozzle provided with a main channel having diverging attenuated channels, said main and diverging channels opening at the discharge end of said nozzle, and operating to simultaneously discharge air between or against teeth the end of said nozzle being formed with slightly concave diverging tooth-engaging surfaces.

5. A dental syringe having a tubular stem terminating in a nozzle provided with an approximately V-shaped discharge channel adapted approximately to coincide with interdental spaces, and a pliable marginal rim applied around the end of said nozzle.

6. A dental syringe having a tubular stem terminating in a nozzle provided with an approximately V-shaped discharge channel adapted approximately to coincide with interdental spaces, and a pliable rubber cap telescoped onto the end of said nozzle and having a discharge orifice corresponding in form to the discharge orifice of said nozzle.

In testimony whereof I affix my signature.

BENJAMIN F. SAHR.