F. L. MARSHALL.

COMBINED DENTAL SPECULUM AND SALIVA EJECTOR.

APPLICATION FILED DEC. 11, 1908.

1,042,133. Patented Oct. 22, 1912.

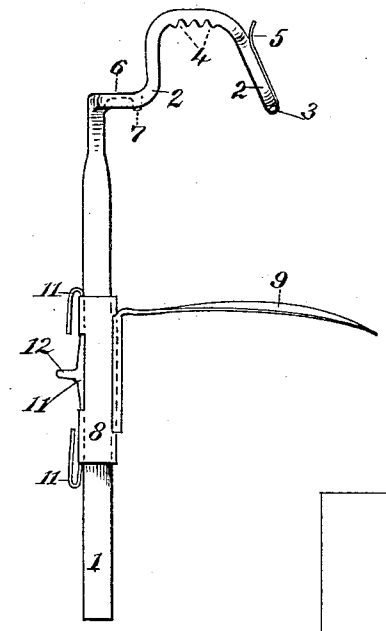

Fig. 1.

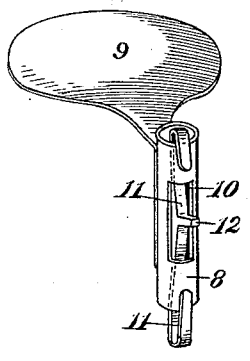

Fig. 5.

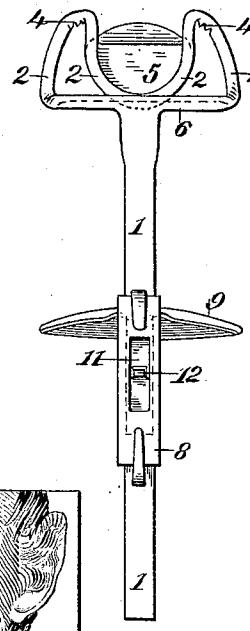

Fig. 2.

Fig. 7.

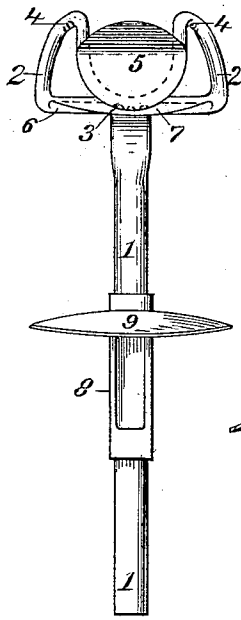

Fig. 3.

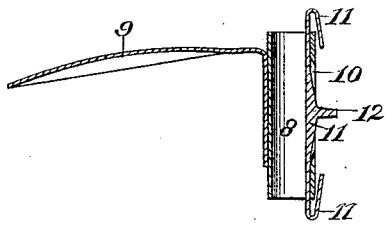

Fig. 6.

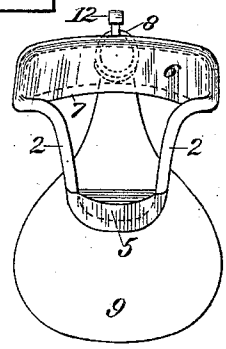

Fig. 4.

Witnesses:
H. E. Remick,
E. F. Maniac.

Inventor:
Frank L. Marshall
By Francis J. V. Dakin Atty

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANK L. MARSHALL, OF BOSTON, MASSACHUSETTS.

COMBINED DENTAL SPECULUM AND SALIVA-EJECTOR.

1,042,133. Specification of Letters Patent. Patented Oct. 22, 1912.

Application filed December 11, 1908. Serial No. 466,927.

To all whom it may concern:

Be it known that I, FRANK L. MARSHALL, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in a Combined Dental Speculum and Saliva-Ejector, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to dental appliances for facilitating operations upon teeth and is designed especially for use in operations on the lower front teeth.

In dental operations, it is essential that the teeth shall be kept dry and well exposed and it is desirable that this result be attained with as little discomfort as possible to the patient.

The main object of this invention is to provide a dental appliance for facilitating operations upon the lower front teeth and to this end means are provided for depressing and holding the lower lip away from the teeth to expose them together with means for holding the tongue away from the teeth and for draining the saliva.

A further object of the invention is to provide a device of the above character which may be easily adjusted in the patient's mouth and retained there without discomfort.

The following is a description of the invention, reference being made to the accompanying drawings, in which:—

Figure 1 is a side elevation of the device; Fig. 2 is a front elevation of the same; Fig. 3 is a rear elevation of the same; Fig. 4 is a plan view of the same; Fig. 5 is a view in perspective of the chin-plate; Fig. 6 is a vertical sectional view of the same; Fig. 7 is a view in perspective showing the device applied to the mouth of a patient.

This invention comprises briefly a main tube having, on its upper end, a double-bow loop tube adapted to go over the teeth and drain the saliva from the mouth and provided with means to depress the lower lip and expose the teeth and with means to prevent the tongue coming into contact with the teeth. On the main tube is arranged a sleeve carrying a chin-plate whereby the device may be secured in position, said sleeve being provided with means for locking it in any desired position on the main tube.

In the drawing is shown a main tube 1 having on its upper end a double-bow loop tube 2 provided with perforations 3 to drain away the saliva through the tube 2 and main tube 1. The lower end of the main tube may be attached by rubber tubing or otherwise to any means adapted to draw off the saliva. On the under sides of the bows of the tube 2 are corrugations or teeth 4 adapted to fit the edges of the lower teeth when the device is being adjusted in the mouth of the patient and thereby retain the device in a fixed position against inward or outward movement. The inner portion of the double-bow loop tube 2 carries a tongue guard 5 which serves to prevent the tongue of the patient coming in contact with the teeth, and on the upper end of the tube 1 and between the branches of the loop tube 2 is a plate 6, having an inner lip 7, and adapted to receive and depress the lower lip of the patient in order to expose the teeth.

For the purpose of locking the device in the mouth, the following means are provided. A hollow sleeve 8 carrying a chin-plate 9 is movably mounted on the main tube 1 and may be locked in any position on the tube as follows. The sleeve 8 is slightly larger than the tube 1 and is provided with a vertical opening or slot 10 in its front portion. On the inside of the sleeve 8 is loosely arranged a vertical locking strip 11 longer than the sleeve 8 and having both ends bent over to retain the locking strip 11 upon the sleeve 8 and to limit its vertical movement. A finger-piece 12 on the strip 11, which projects outwardly through the slot 10 enables the locking strip 11 to be moved longitudinally. From the finger-piece 12 upwardly the locking strip 11 is beveled and wedge-shaped in vertical section, and therefore when the locking strip 11 is moved upwardly the beveled part forces the sleeve 8 away from the main tube 1 and causes it to bind and to be locked on the main tube against downward pressure.

In Fig. 7 is illustrated the method of using the device. It is adjusted with the main tube 1 vertical and the double-bow loop tube 2 passing over the lower front teeth, the corrugations 4 engaging the edges of the teeth and thereby preventing forward or rearward movement. The rear lower portion of the loop tube 2 extends downwardly behind the teeth and drains the saliva from the mouth, through the perforations 3, the

tongue guard 5 preventing the tongue from contacting the back of the teeth. At the same time the concave plate 6 receives the lower lip and depresses it exposing the teeth and gums. As soon as the device has been properly arranged in the mouth, the sleeve 8 carrying the chin-plate 9 is moved upwardly until the chin-plate is firmly pressed against the chin when the locking-strip 11 is moved into a locking position and the device is then fixed in position. It will be noticed that the corrugations 4 and the chin-plate 9 coöperate to prevent any inward or outward or upward movement of the device after it has been adjusted and locked.

What is claimed is:—

1. A combined dental speculum and saliva ejector, having, in combination, a double-bow loop conduit for draining the saliva from the mouth, a tongue-guard, means for depressing the lower lip to expose the teeth and an adjustable chin-plate for securing the device in the mouth.

2. A combined dental speculum and saliva ejector, having, in combination, a loop conduit for draining the saliva from the mouth, a tongue-guard mounted on the rear portion of said loop conduit, a lip-depressing plate, an adjustable chin-plate and means for securing the chin-plate in any desired position.

3. A combined dental speculum and saliva ejector, having, in combination, a conduit for draining the saliva from the mouth, a tongue guard mounted on said conduit, a lip-depressing plate also mounted on said conduit and adjustable means for securing said conduit in the mouth.

4. A combined dental speculum and saliva ejector, having, in combination, a conduit for draining saliva from the mouth, said conduit being provided with a series of corrugations adapted to contact the edges of the teeth to prevent inward and outward movement, a tongue guard mounted on said conduit, and adjustable means for securing said conduit in the mouth.

5. A combined dental speculum and saliva ejector, having, in combination, a conduit for draining the saliva from the mouth, a sleeve loosely mounted on said conduit, a chin-plate attached to said sleeve and a locking strip having a beveled face and adapted to lock said sleeve in any desired position on said conduit.

6. A combined dental speculum and saliva ejector, having, in combination, a conduit for draining the saliva from the mouth, a tongue guard mounted on said conduit, a lip-depressing plate also mounted on said conduit, a sleeve loosely mounted on said conduit, a chin-plate attached to said sleeve and a locking strip having a beveled face and adapted to lock said sleeve in any desired position on said conduit.

In testimony whereof, I hereunto set my hand, in the presence of two subscribing witnesses, this the ninth day of December 1908.

FRANK L. MARSHALL.

Witnesses:
E. F. UNIAC,
F. J. V. DAKIN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."