

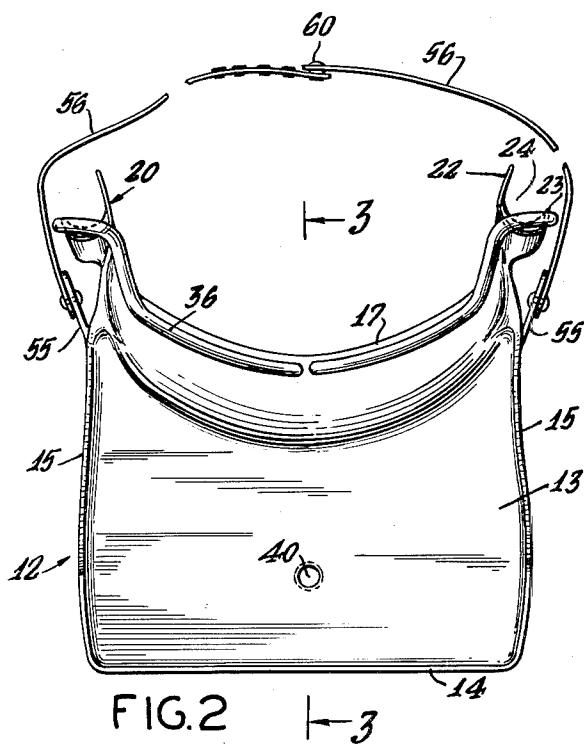
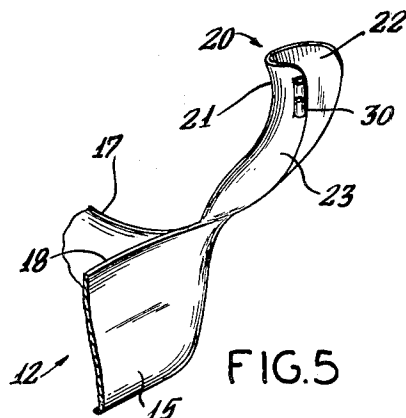
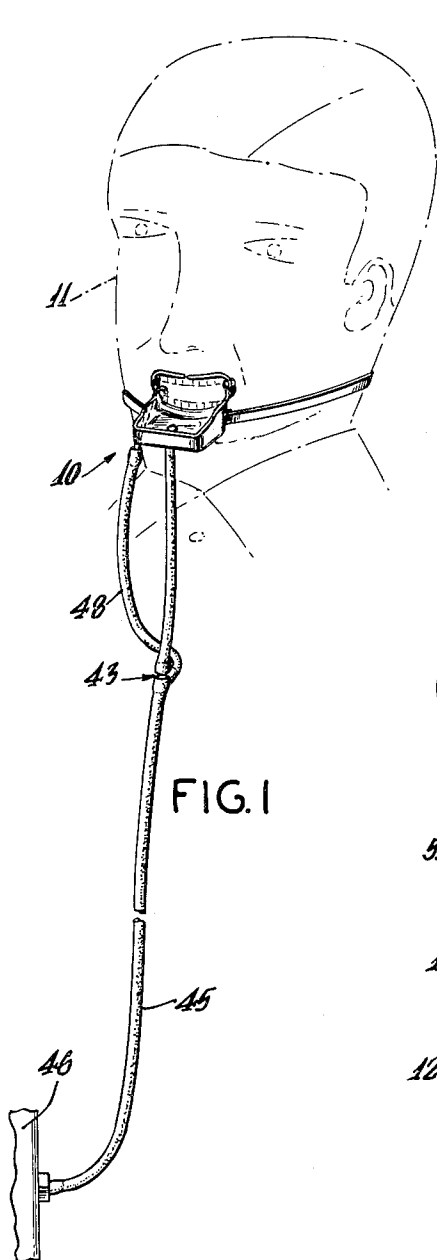
April 3, 1962

R. COHEN
COMBINATION HEAD SUPPORTED WATER BASIN OR
TRAY, CHEEK AND LIP RETRACTOR
AND VACUUM SALIVA EJECTOR

3,027,643

Filed Nov. 30, 1959

2 Sheets-Sheet 1



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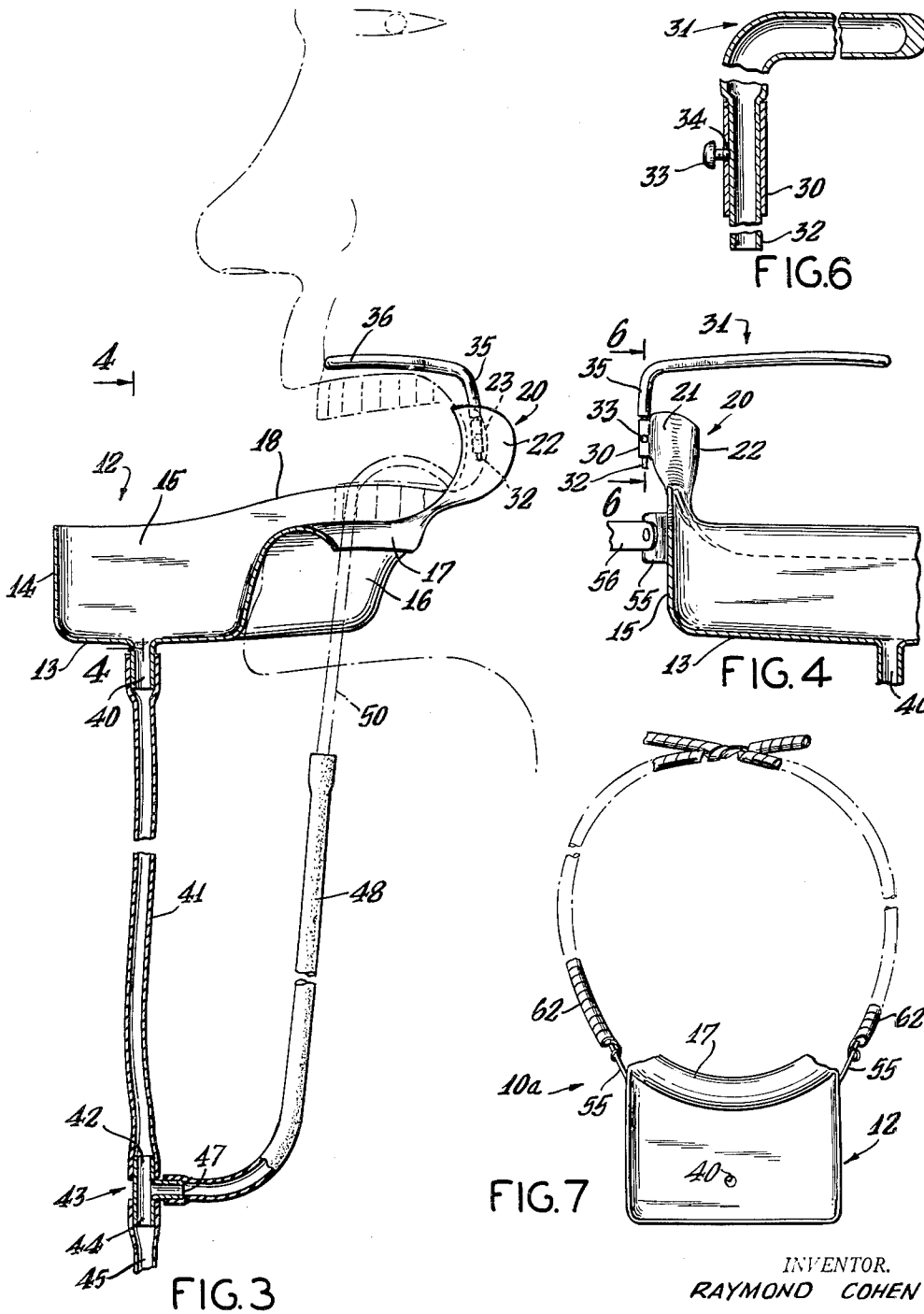
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COMBINATION HEAD SUPPORTED WATER BASIN OR TRAY, CHEEK AND LIP RETRACTOR AND VACUUM SALIVA EJECTOR

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14 Claims. (Cl. 32—33)

This invention relates to combination head supported water basin or tray, cheek and lip retractor and vacuum saliva ejector for dental patients.

With use by dentists of high speed drills, lots of water is necessary, which sometimes wets the patient. An object of this invention is therefore to provide a device of the character described having highly improved means to catch the water coming out of the patient's mouth, and vacuum means to draw the water off quickly whereby to prevent water from spilling over onto the patient's clothes.

Another object of this invention is to provide in a device of the character described, a tray, means to strap the tray to the patient's head, means on the tray to depress the lower lip of the patient, means to retract the cheeks and also the upper lip, whereby the patient's mouth is wide open to facilitate drilling.

Still another object of this invention is to provide in a device of the character described, saliva ejector means which may be hooked into the patient's mouth from either side thereof, and which is operated by the vacuum apparatus which draws water from the tray.

Another object of this invention is to provide in a device of the character described, removable and adjustable means to retract the upper lip of the patient.

Still another object of this invention is to provide a strong, rugged and durable device of the character described which shall be relatively inexpensive to manufacture, easy to manipulate, comfortable in use and yet practical and efficient to a high degree.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the construction hereinafter described and of which the scope of invention will be indicated in the following claims.

In the accompanying drawings in which is shown an illustrative embodiment of this invention,

FIG. 1 is a perspective view of a device embodying the invention, shown strapped onto a patient's head in position for use;

FIG. 2 is a top plan view of said device;

FIG. 3 is a cross-sectional view taken on line 3—3 of FIG. 2;

FIG. 4 is a cross-sectional view taken on line 4—4 of FIG. 3;

FIG. 5 is a partial perspective view of the device showing the cheek retractor;

FIG. 6 is an enlarged cross-sectional view taken on line 6—6 of FIG. 4; and

FIG. 7 is a top view of the device with parts broken away and illustrating a modification of the head strap.

Referring now in detail to the drawing, 10 designates a combination device embodying the invention shown strapped on a patient's head 11.

Device 10 comprises a basin or tray 12 having a bottom wall 13, a front wall 14 and side walls 15. Said basin or tray 12 has a rear wall 16 which is transversely curved inwardly in horizontal planes to straddle the chin of the patient. Said wall 16 slopes upwardly and rearwardly and is formed with a rearwardly and downwardly curved flange 17 to depress the lower lip of the patient.

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The side walls 15 have upper upwardly and rearwardly curved edges 18 rising above the level of the flange 17 and above the front wall 14, to help catch water spilling out from the sides of the mouth.

Extending upwardly from the rear ends of the side walls 15 are cheek retractors 20. Each cheek retractor 20 has a central transversely curved portion 21 from the inside of which extends rearwardly, a flange 22; and from the outside of which extends a flange 23. Each cheek retractor hence has an inner rearwardly opening channel 24 which is curved inwardly in a vertical plane. The cheek retractors engage the ends of the mouth and keep them retracted rearwardly. The inner flanges 22 are preferably larger than the outer flanges 23. The edge of the inner flange 22 merges with the lower lip retractor 17, whereas the edge of the outer flange 23 merges with the upper edge of the side wall.

Integral with or attached to the outer flanges 23 are vertical tubes 30. Adjustably and removably mounted on each tube 30 is an upper lip retractor 31. Each upper lip retractor has a stem 32 telescoped within one of the tubes 30. A set screw 33 screwed into a proper threaded opening 34 in the tube 30, serves to fix the retractor 31 in vertically and rotationally adjusted position.

Each retractor 31 comprises a portion 35 extending up from the stem 32, and from which extends a horizontal forwardly curved portion 36 adapted to engage between the upper lip and the upper gum of the patient to thus lift or retract the upper lip. Each portion 36 extends about half way across the mouth or to the center of the mouth. These upper lip retractors can be removed by loosening the set screws 33.

The bottom wall 13 of the basin has a central downwardly extending nipple 40. Connected thereto is a flexible pipe or conduit 41 which is connected at its lower end to one branch 42 of a T fitting 43. Another branch 44 of the fitting 43 has connected thereto, a flexible tube or conduit 45 which is connected to a vacuum drain 46. Such may be the usual dental vacuum apparatus which the dentist uses for saliva ejection.

Connected to the third branch 47 of the T-fitting 43 is a flexible tube 48 which is connected to the usual hooked tube 50 which may be hooked either to the right or left side of the patient's mouth for saliva ejection.

On the outer side of each side wall 15 is a tab 55. Connected to the tabs 55 are strap elements 56 which may be connected together in adjusted positions at the back of the patient's head. In this manner the device is strapped to the patient's head. Either snap fasteners 60, or buckles, or the like may be used for the adjustment.

In FIG. 7 there is shown a device 10a embodying the invention similar to device 10 except for the attaching straps. As shown in FIG. 7, the straps comprise helically coiled resilient plastic elements 62 attached to the tabs 55. These elements can stretch and the coils can be opened and interengaged in adjusted position.

It will thus be seen that there is provided an apparatus in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings, is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. In combination, a basin, means connected to the basin, to attach the basin to a patient's head, said basin having a bottom wall, side walls, a front wall and a rear wall, conduit means connected to the bottom wall to drain

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off water from the basin and said rear wall having a rearwardly extending lower lip retractor.

2. The combination of claim 1, in combination with cheek retractors extending upwardly from the sides of the basin.

3. The combination of claim 2, in combination with means on the cheek retractors to retract the upper lip of the patient.

4. The combination of claim 3, said upper lip retractor means being adjustably and removably mounted on said cheek retractors.

5. The combination of claim 1, said conduit means being connected to a vacuum drain.

6. The combination of claim 5, in combination with a flexible pipe connected to said conduit means, and a hooked tube on said pipe, adapted to be hooked to either the right or left side of the patient's mouth.

7. In combination, a basin, means connected to the basin, to strap the basin to a patient's head, said basin having a bottom wall, and side and front walls, and a rear wall, said rear wall being curved transversely to straddle the patient's chin, and having a rearwardly and downwardly curved flange to fit over and depress the patient's lower lip.

8. The combination of claim 7, in combination with cheek retractors extending upwardly and having rearwardly opening channels and being horizontally and vertically curved.

9. In combination, a tray and means connected to the tray, to hold the tray at the chin of a patient, and means on the tray to retract the upper lip of the patient.

10. In combination, a tray, means connected to the tray, to attach said tray to a patient's head to lie at the

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chin of the patient, conduit means connected to the bottom of the tray to draw water off therefrom, and means to connect said conduit means to a vacuum drain apparatus, said tray having means to depress the lower lip of the patient.

11. The combination of claim 10, in combination with means on the tray to retract the upper lip of the patient.

12. In combination, a tray, means connected to the tray, to attach said tray to a patient's head, said tray having a rear wall adapted to contact the outside of the chin of the patient when said tray is attached to the head of the patient by said attaching means, and means on the upper end of the rear wall of the tray, extending rearwardly therefrom, to depress the lower lip of the patient when said tray is attached to the patient's head.

13. In combination, a tray, means connected to the tray, to attach said tray to the head of the patient with the tray at the chin of the patient, said tray having a bottom wall, a conduit connected at one end, to said bottom wall and extending downwardly therefrom, to draw water off therefrom, a tube having a hooked portion at one end adapted to be hooked into the patient's mouth, and means on the tube, connecting the other end of said tube to an intermediate portion of said conduit below said tray.

14. The combination of claim 13, in combination with vacuum drain means connected to the other end of the conduit, to apply vacuum to said other end of said conduit.

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