March 8, 1932. W. T. GOLLWITZER 1,848,621

TOOTH SPRAY DEVICE

Filed Oct. 14, 1929

Fig. 1.

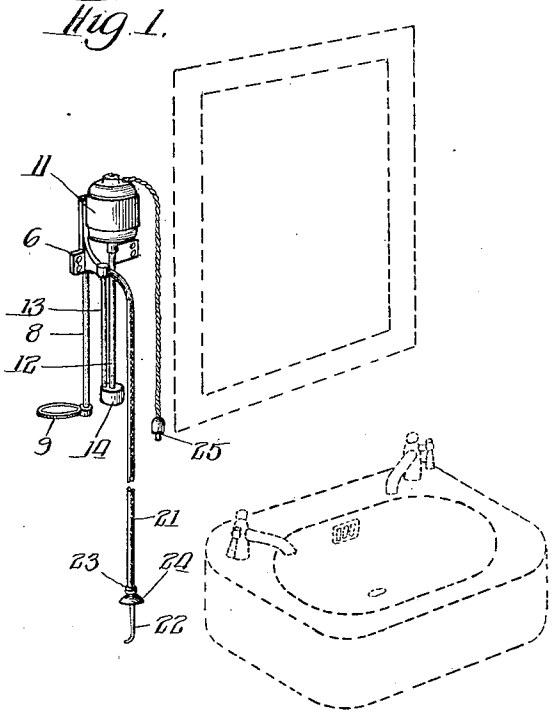


Fig. 2.

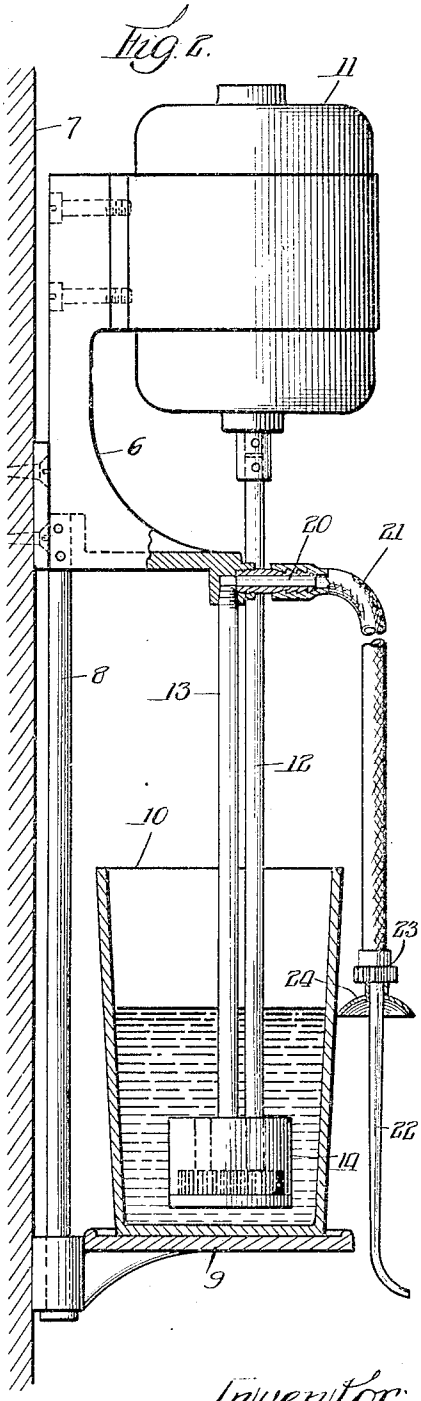


Fig. 3.

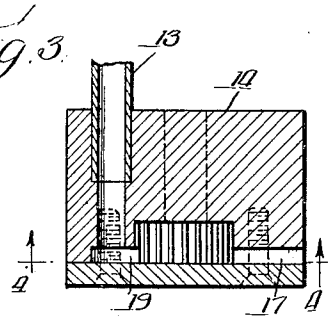


Fig. 5.

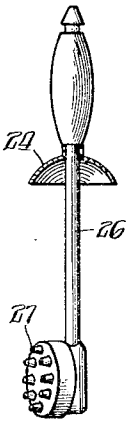
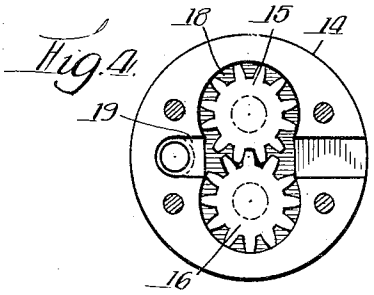


Fig. 4.



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UNITED STATES PATENT OFFICE

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TOOTH SPRAY DEVICE

Application filed October 14, 1929. Serial No. 399,615.

The object of this invention is to provide a novel device for personal use for cleaning the teeth and cleaning and treating the gums by the use of a liquid spray which may contain an antiseptic or other medicament.

Another object of the invention is to enable the beneficial effects of a liquid spray to be used for cleaning the teeth and cleaning and treating the gums by providing a compact power-operated device which may be portable or used as a fixture in a bathroom or any other convenient place.

A further object of the invention is to enable sanitary use by a number of persons of a single device of this kind, as a bathroom fixture for example, by providing each person with a personal nozzle which can be easily and quickly applied to the device.

I have illustrated the invention in a selected embodiment in the accompanying drawings referring to which

Fig. 1 is a perspective view of the invention as it may be used as a bathroom fixture.

Fig. 2 is an enlarged side elevation partly in section.

Fig. 3 is an enlarged view showing the pump.

Fig. 4 is a sectional view on the line 4—4 of Fig. 3.

Fig. 5 is a detail perspective view showing another type of nozzle.

Referring to the drawings 6 is a bracket which is fastened to the wall 7 or other convenient support and 8 is a rod depending from the bracket and carrying a plate 9 which is pivoted on the rod and serves as a support for a receptacle 10. A small electric motor 11 is supported in the bracket and it has an elongated shaft 12. A tube 13 also depends from the bracket alongside of the shaft and carries the casing 14 of a gear pump which comprises the two intermeshing gears 15, 16 one of which is mounted on the lower end of the motor shaft 12. There is an inlet passage 17 to the gear chamber 18 and an outlet passage 19 from the gear chamber to the outlet tube 13, Fig. 3. A nipple 20 is supported in the bracket and connects with the upper end of the tube 13. A flexible tube 21 is connected to the nipple and it carries a nozzle 22. This nozzle is detachably engaged at 23 with the outer end of the tube and a drain cup 24 may be mounted on the end of the tube at the connection 23, or on the end of the nozzle 22 or detachably secured in place at the connection between the nozzle and the tube as desired to catch any drippings from the nozzle. A switch 25 of any suitable kind is provided for starting and stopping the motor.

In practice the receptacle 10 may be partly filled with plain water, hot or cold, with cleansing, antiseptic or medicinal solutions, and raised on the pump to permit the support 9 to be swung into place thereunder. The nozzle is then inserted in the mouth and directed to the teeth or to the gums. It is convenient to use a push switch of common type which will close a circuit and keep the motor in operation as long as pressure is applied to the switch so that the operation of the pump may be sensitively controlled, but other types of switches may be employed if desired. When the switch is operated the motor will operate the pump to pump the liquid through the nozzle against the teeth or the gums with some force. The discharge force of the liquid will depend, of course, upon the power of the motor but it is desirable that the liquid be discharged with sufficient force to thoroughly cleanse the teeth and to have a massaging effect upon the gums. The discharge of a single jet of liquid is sufficient to cleanse the teeth and it is highly desirable by reason of its massaging effect for healing bleeding gums, hardening tender gums, and otherwise improving the condition of the gums. A nozzle 26 having a plurality of jet openings 27 may be employed if desired. My invention provides a device which can be installed as a fixture in bathrooms, in wash or toilet rooms, and in other places for general use in a sanitary manner because every person may carry with him has own individual nozzle for connection with the hose. The invention is an improvement over the ordinary tooth brush which, it is well known, easily and quickly becomes infected and is difficult to keep clean and in a sanitary condition. The nozzle can be easily kept clean and free from infection.

I have described the device as adapted to be installed as a fixture but it is readily apparent that it could be made portable since it is only necessary to connect the motor with a wall socket by the use of an ordinary plug and to hold the motor with the pump submerged in the liquid.

I have shown the invention in a simple form satisfactory for the purposes intended but changes in the construction and arrangement of parts may be made without departing from my invention within the scope of the following claims:

I claim:

1. A tooth spray device comprising a receptacle adapted to contain a liquid, a pump to be submerged in the liquid in the receptacle, a bracket, a motor mounted on the bracket and operatively connected to the pump, a tube connected to the pump and to the bracket, and a nozzle connected to said tube and adapted to be inserted in the mouth for directing the liquid jet discharged from the nozzle upon the teeth and gums.

2. A tooth spray device comprising a receptacle adapted to contain a liquid, a gear pump to be submerged in the liquid in the receptacle, a bracket, a motor mounted on the bracket and having an elongated shaft for operating the pump, a tube secured at one end to the bracket and connected to and supporting the pump at its other end, and a nozzle connected to said tube and adapted to be inserted in the mouth for directing the liquid jet discharged from the nozzle upon the teeth and gums.

3. A tooth spray device comprising a pump, a movable support, a receptacle containing a liquid and adapted to be mounted on said support whereby said support may be moved to position said receptacle so that said pump may be submerged in the liquid in the receptacle, a bracket, a motor mounted on the bracket and having an elongated shaft connected to and operating the pump, said bracket having a passage, a tube secured in the bracket at one end of said passage and secured to and carrying the pump at its other end, and a nozzle connected to the bracket and communicating with the passage therein and adapted to be inserted in the mouth for directing the liquid jet discharged from the nozzle upon the teeth and gums.

4. A tooth spray device comprising a bracket, a rod depending from the bracket, a receptacle adapted to contain a liquid, a pump to be submerged in the liquid in the receptacle, a support for the receptacle movably mounted on the rod whereby said support may be moved from supporting position to permit said receptacle to be moved from association with said pump, a motor mounted on the bracket for operating the pump, a discharge tube connected to the pump and to the bracket and supporting said pump, and a flexible tube connected to said discharge tube and having a nozzle on said tube adapted to be inserted in the mouth for directing the liquid jet discharged from the nozzle upon the teeth and gums.

5. A tooth spray device comprising a motor, a tube, a bracket carrying said motor and said tube, a pump carried by said tube operatively connected to said motor, a receptacle adapted to contain a liquid, a support for said receptacle and movable to and from a supporting position whereat it will support said receptacle with said pump submerged in the liquid in the receptacle, a nozzle connected to said tube, and means controlling the operation of said motor whereby said pump will be operated to withdraw liquid from said receptacle to force said liquid through said tube to said nozzle for discharge therefrom under pressure against the teeth and gums when said nozzle is inserted in the mouth of the user.

6. A tooth spray device comprising a motor, a tube, a bracket carrying said motor and said tube, a pump carried by said tube and operatively connected to said motor, a receptacle adapted to contain a liquid, a support for said receptacle and movable to and from a supporting position whereat it will support said receptacle with said pump submerged in the liquid in the receptacle, a nipple on said bracket, said bracket having a passage therein interconnecting said nipple and said tube, a flexible tube having a nozzle thereon and detachably connected to said nipple, and means controlling the operation of said motor whereby said pump will be operated to withdraw liquid from said receptacle to force said liquid through said tube passage, nipple, and said flexible tube to said nozzle for discharge therefrom under pressure against the teeth and gums when said nozzle is inserted in the mouth of the user.

WALTER T. GOLLWITZER.