

April 19, 1966

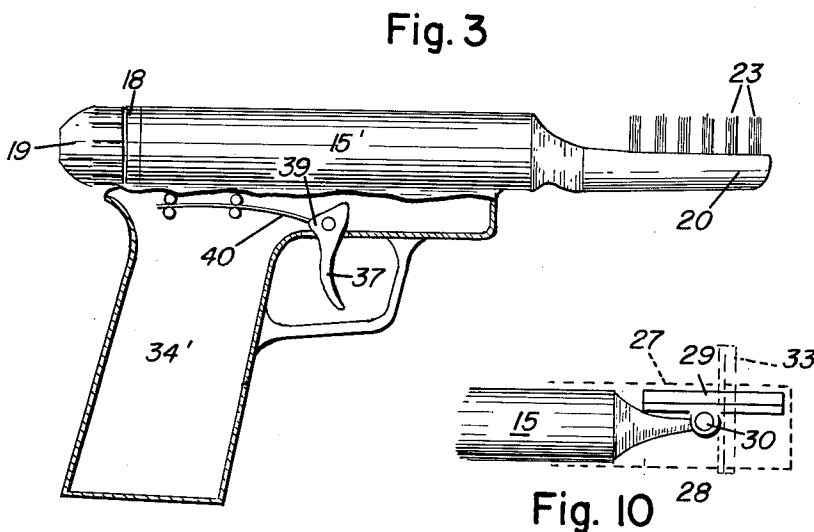
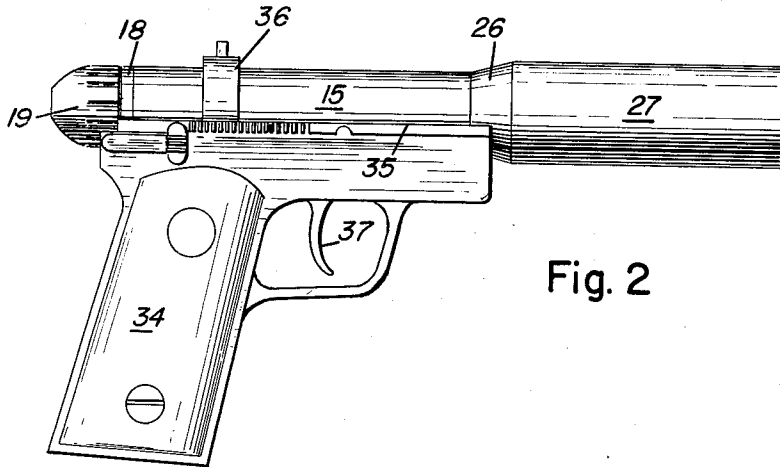
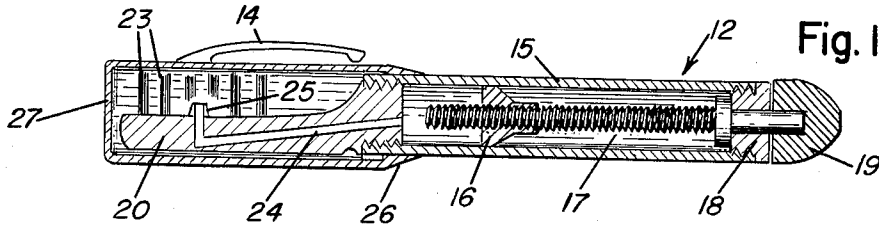
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3,246,361

COMBINATION POCKET FOUNTAIN TOOTHBRUSH AND TOY GUN

Filed Jan. 7, 1964

2 Sheets-Sheet 1



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COMBINATION POCKET FOUNTAIN TOOTHBRUSH AND TOY GUN

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2 Sheets-Sheet 2

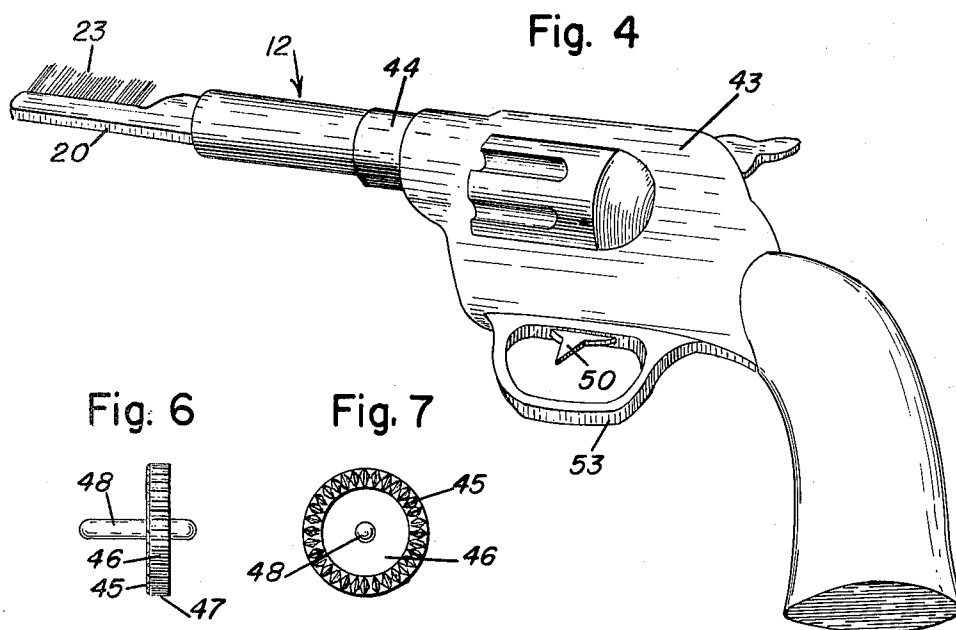


Fig. 6

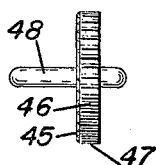


Fig. 7

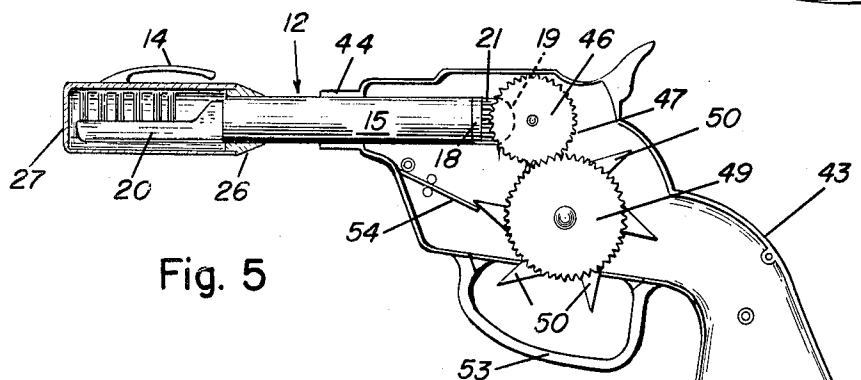
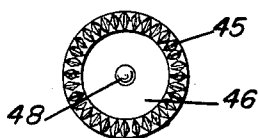


Fig. 8

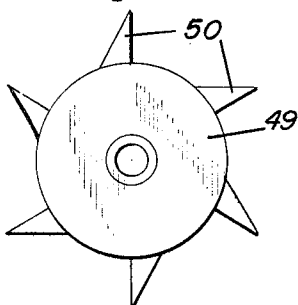
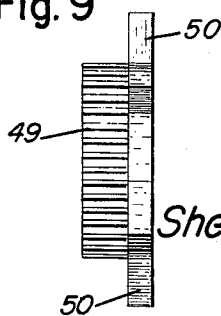


Fig. 9



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3,246,361

COMBINATION POCKET FOUNTAIN TOOTH-BRUSH AND TOY GUN

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3 Claims. (Cl. 15-558)

This invention relates generally to fountain toothbrushes and more particularly to a pocket brush of novel and improved construction having a fountain pen shape and clip for adults for carrying it in a pocket or a simulated or toy automatic gun or pistol shape enabling it to be carried in a pocket or in a gun holster so as to encourage the use of toothbrushes by children.

Fountain toothbrushes are known in the art but have not proven popular for a number of reasons. Among these are: a difficulty of refilling it with a dentifrice; a bulkiness and unwieldiness so as not to fit readily in a pocket or if so, cause an unsightly bulge; a poor design and construction resulting in leakage and unsightly messiness; and an inability to readily disassemble the fountain brush for cleaning, or to replace worn parts.

Accordingly, the main object of the present invention is to provide an improved fountain toothbrush which will obviate the above and other disadvantages of known fountain toothbrushes.

An important object of the present invention is to provide an improved fountain toothbrush having a readily replaceable brush head and which may be provided with a pocket clip for adult use and combined with a simulated pistol stock or toy pistol for pocket or holster carrying by children.

Another important object of the present invention is to provide an improved fountain pocket toothbrush in which means are provided for storing a dentifrice in the barrel and for delivering it in desired amounts to the bristles of the brush so as to enable and simplify the brushing of the teeth after meals whether at home or not, and which will require only infrequent refilling.

A further important object of the present invention is to provide a combined toy pistol and fountain toothbrush wherein a trigger actuated mechanism effects delivery of dentifrice to the bristles of the brush and actuation of the trigger is accompanied by an audible clicking sound.

A still further important object of the invention is to provide an improved, portable fountain toothbrush which is simple but practical in construction, rugged and of long life in use, and susceptible of ready and economic manufacture.

Other objects and advantages of the invention will become apparent during the course of the following description.

In the drawings I have shown several embodiments of the invention. In these showings:

FIGURE 1 is a central, longitudinal, sectional view of one form of the invention combined with a pocket engaging clip;

FIGURE 2 is a side elevational view of the invention showing it detachably mounted on a toy pistol stock;

FIGURE 3 is a similar view showing the barrel of the fountain toothbrush molded integrally with a toy pistol stock;

FIGURE 4 is a perspective view of the invention showing it detachably mounted as the barrel of a toy pistol which is provided with means for effecting extrusion of the dentifrice;

FIGURE 5 is a longitudinal sectional view thereof, parts being shown in elevation;

FIGURES 6 and 7 are respectively end and side elevational views to an enlarged scale of the idler gear forming a part of the extrusion effecting means;

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FIGURES 8 and 9 are similar views respectively of the trigger and drive gear of the means; and

FIGURE 10 is a fragmentary side elevational view to an enlarged scale of a razor head substituted at the end of the brush barrel for the toothbrush.

Referring to FIGURE 1 of the drawings, numeral 12 designates as a whole the improved pocket fountain toothbrush construction of the present invention which is adapted to be combined with a toy gun or stock for carrying in a child's pocket or holster as will be described, or equipped with a pocket engaging clip 14 so as to be carried in a pocket by an adult.

The fountain toothbrush includes an elongated tubular barrel 15 in which a piston 16 is mounted for axial movement on a screw threaded rod 17 which is centered and freely rotatable in a rear end bushing 18 by means of a rear operating nose member 19 fixed to the rod 17. The piston 16 has a tight friction fit within the barrel 15 which eliminates the need for a front end, screw threaded, rod centering and supporting bushing to thus simplify the construction, and when the rod 17 is rotated in a clockwise direction, the piston 16 is moved axially of the barrel from rear to front (right to left as seen in FIGURE 1) to eject a cream or plastic dentifrice contained therein therefrom.

A brush head 20 has a screw threaded connection with the front of the barrel 15 and includes bristles 23 and a conduit 24 which communicates with the barrel 15 so that dentifrice may be discharged through the conduit and a soft rubber nozzle 25 into the bristles as desired, by the piston upon rotation of the operating nose 19. The soft rubber nozzle 25 not only assists in the distribution of the dentifrice on and among the bristles 23 but also ensures against damage to the teeth by the nozzle during brushing due to the softening of the bristles when wet and limber or worn. A bushing 26 is fixed to the front end of the barrel 15 for the reception of and friction fit thereon of a brush enclosing cap 27.

The barrel holds about a week's supply of dentifrice between the piston, when retracted as far as possible to the right, and the brush head 20. When the supply of dentifrice is exhausted, the piston 16 has, of course, moved axially to the far left of the barrel which is the optimum position for effecting a refilling without the inclusion of air. This is accomplished by unscrewing and removing the brush head 20 and screwing a small tube of dentifrice in its place. The nose 19 is then rotated in a counterclockwise direction to effect retraction (movement to the right) of the piston 16 while squeezing the contents of the dentifrice tube into the barrel 15.

It will be noted that instead of a dentifrice, the barrel 15 may contain a lather shaving cream (FIGURE 10) and that a shaving head 28 may be substituted for the brush head 20. In such case, a razor head 29 is pivotally mounted on the shaving head 28 by means such as a hollow valve rivet 30 so that in the position shown, the conduit 24 is closed and upon pivoting of the razor head 29 ninety degrees to the dotted line or shaving position 33, the valve rivet 30 opens the conduit 24 to permit the discharge of the lather shaving cream.

It will be appreciated that the form of the invention disclosed in FIGURE 1 enables a person to brush his teeth immediately after every meal in that he can carry the toothbrush as he would a fountain pen and refill it once a week with his favorite toothpaste. Moreover, in addition to the convenience, the fountain brush will be less expensive in the long run as the bristle head alone may be readily replaced when worn out.

The combination toy gun and toothbrush invention forms disclosed in FIGURES 2, 3 and 4 are most valuable in the training of young children in good dental hy-

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gene habits as well as in frontier lore. The carrying of the guns to school or at play will enable children to pleaurably acquire regular noon-time tooth brushing habits and eliminate the decay arising from their lunches, candy, etc.

As seen in FIGURE 2, the fountain toothbrush 12 is provided with a supporting pistol stock 34 having an upper, elongated semi-circular recess 35 which detachably supports the barrel 15 in that it has a sliding friction fit with the recess and a simulated sight band 36 integral with the stock. The pistol has a noise making trigger 37 as is explained in connection with FIGURE 3, and functions as a toothbrush upon removal of the cap 27 and rotation of the nose 19 which is serrated as at 21 to advance the piston 16 and extrude the dentifrice through the conduit 24 and onto the brush bristles 23. It will be noted that the brush enclosing cap 27 is of larger diameter than the barrel 15 and resembles a pistol silencer.

The pistol fountain toothbrush combination 38 disclosed in FIGURE 3 is identical with that of FIGURE 2 with the exception that the barrel 15' is molded integrally with the stock 34' and the nose 19, bushing 18 (piston 16, rod 17, not shown) and brush head 20 are thereafter assembled therein. The stock is again provided with a pivoted trigger 37 having a cam portion 39 which engages the free end of a noise making member 40. The use of this form as a fountain toothbrush is as described in connection with FIGURE 2.

The form of the invention disclosed in FIGURES 4 to 9 inclusive comprises a toy pistol 43 having a short barrel 44 into which the portable fountain toothbrush 12 is detachably insertable and with which it has a light friction fit. The operating nose 19 and its serrations 21 engage the serrated radial face 45 of an idler gear 46 having peripheral teeth 47 and which is rotatably mounted in the pistol on a shaft 48.

Also rotatably mounted in the pistol 43 is a driving gear 49 which meshes with the idler gear 46 and is provided with a plurality (six shown) of circumferentially spaced triggers 50, one of which always projects down into the trigger guard 53. As one of the triggers is pulled by the finger, another engages a noise maker 54 fixed in the pistol to produce an audible sound.

It will now be readily apparent that upon removal of the cap 27 from the pocket fountain toothbrush 12 (from which the clip 14 may be omitted from FIGURES 2 to 5 if desired) that pulling the available trigger 50 will rotate the integral drive gear 49 to effect rotation of the idler gear 46 and hence the operating nose 19 of the toothbrush 12 to effect a delivery of dentrifrice to the bristles 23 of the brush head 20, and will effect also an audible clicking sound.

It is to be understood that the forms of my invention

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herewith shown and described are to be taken as preferred examples of the same and that various changes in the shape, size and arrangement of parts may be resorted to without departure from the spirit of the invention or the scope of the subjoined claims.

I claim:

1. A combination toy pistol and fountain toothbrush comprising a stock, a dentifrice-receiving barrel mounted on the stock to simulate a pistol barrel, a brush head detachably connected to the front end of said barrel and having a conduit communicating therewith, a piston movably mounted in said barrel to eject dentifrice into said brush head, rotatable means operably connected with said piston to effect longitudinal ejecting movement thereof, a noise making device mounted in said stock, and a trigger pivoted to said stock and engageable with said device to actuate it.

2. A combination toy pistol and fountain toothbrush comprising a stock, a dentifrice-receiving barrel mounted on the stock to simulate a pistol barrel, a brush head detachably connected to the front end of said barrel and having a conduit communicating therewith, a piston movably mounted in said barrel to eject dentifrice into said brush head, rotatable means operably connected with said piston to effect longitudinal ejecting movement thereof, said stock including a short barrel section and said pistol barrel being detachably mounted in said section, and a trigger mounted on said stock and operably connected with said rotatable means to effect rotation thereof by trigger movement.

3. A toy pistol for juvenile play and hygienic use comprising, in combination, a barrel, a stock, and a pivotally mounted trigger, said barrel having a toothbrush fixed to its outer end and an end cap simulating a silencer enclosing said brush and mounted on said barrel, said barrel including a dentifrice to be discharged on said toothbrush, means mounted on said barrel to effect discharge of said dentifrice, and means operably connecting said discharge effecting means and said trigger to discharge dentifrice on movement of said trigger.

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