June 30, 1964 L. KRIPAK 3,139,280

SQUIRTING CIGARETTE LIGHTER

Filed Sept. 11, 1961

FIG. 1

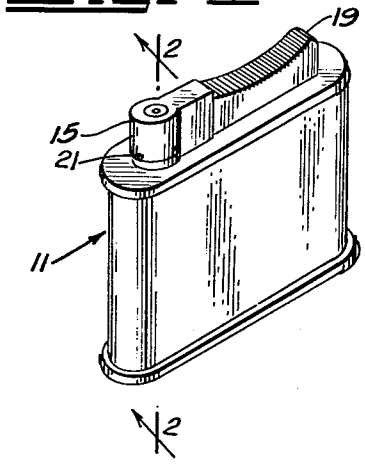


FIG. 2

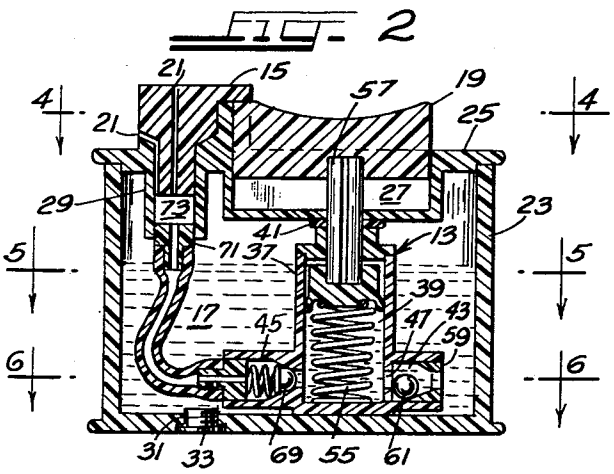


FIG. 3

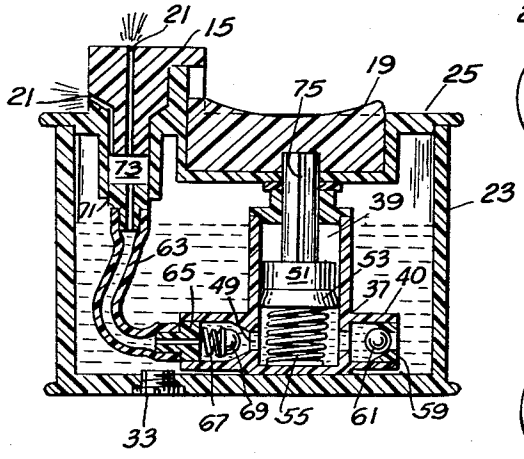


FIG. 4

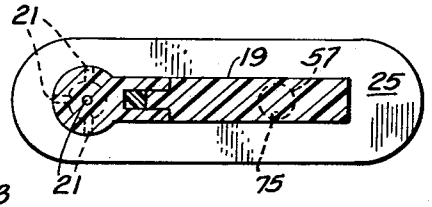


FIG. 5

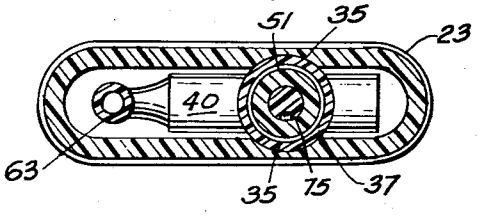
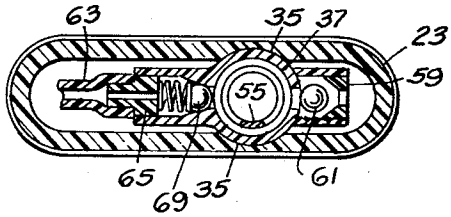


FIG. 6



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SQUIRTING CIGARETTE LIGHTER

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The invention relates to a novelty or toy in the form of a cigarette lighter. More particularly, the invention relates to a cigarette lighter which squirts a liquid, such as water.

A novelty item in accordance with the invention is intended to provide a means for perpetrating a practical joke on an unwary individual. Specifically, the disclosed novelty item is useable in response to a request for a "light" by a person desiring to smoke a cigarette, or the like. In use, the disclosed item is operable to direct a stream or spray of water toward the unsuspecting victim. Preferably, the item is constructed so as to maximize the possibility of spraying the victim's face with water.

Accordingly, the principal object of the invention is the provision of a novelty item in the shape or form of a cigarette lighter. Another object is the provision of a novelty cigarette lighter which squirts water when an actuator is pressed. A further object of the invention is the provision of a novelty item which is simple and easy in construction and reliable in operation.

Other objects and advantages of the invention are apparent by reference to the accompanying drawings and the following description of one preferred embodiment of the invention.

FIGURE 1 is a perspective view of a novelty embodying various of the features of the invention;

FIGURE 2 is an enlarged view, partially in section, taken along line 2—2 of FIGURE 1;

FIGURE 3 is a view similar to FIGURE 2 illustrating the novelty with the actuator fully depressed;

FIGURE 4 is a sectional view of the novelty taken along line 4—4 of FIGURE 2;

FIGURE 5 is a sectional view of the novelty taken along line 5—5 of FIGURE 2; and

FIGURE 6 is a sectional view of the novelty taken along line 6—6 of FIGURE 2.

Basically, the novelty item shown in FIGURE 1 comprises a main body 11 simulating the appearance of a cigarette lighter, a pump 13, and a nozzle or orifice 15 which resembles a wick holder and preferably contains a plurality of flow passageways or jet apertures 21 which point in different directions. The body 11 has therein a reservoir 17 for holding a liquid, such as water, and also contains therein the pump 13 which communicates with the reservoir 17 and the nozzle 15. The pump 13 is operated by an actuator 19 which extends exteriorly of the main body 11 and simulates a cigarette lighter actuator. By depressing the actuator 19, the pump 13 is operated, causing water to be transmitted to the nozzle 15 and emitted or sprayed from the jet apertures 21.

More specifically, the body 11 comprises a lower section 23 which has cemented thereon, or otherwise joined thereto, a head 25 having formed therein a cavity 27 to accommodate the actuator 19 and a cavity 29 to accommodate the nozzle 15. There is provided in the bottom of the lower body section 23 a threaded hole 31 which is closed by a fill screw 33. The inner walls of the lower body section 23 have formed in them recesses 35 on opposite sides which will suitably seat the pump 13. The lower body section 23 is preferably formed as one piece from a durable plastic material, although it may be fashioned from metal or any material which will hold water. The head 25 is also made as a single piece and is preferably of the same material as the lower section 23. When the

lighter is completely assembled, the lower section 23 and head 25 define the reservoir 17 which is adapted to hold a supply of water and may be filled through the threaded hole 31 by removing the fill screw 33.

The pump 13 is positioned in the reservoir 17 and includes a casing 37 which rests on the bottom of the body 11. Preferably, the casing 37 is made of plastic so as to allow it to be molded, although the casing can be made from any suitable material which will withstand continual immersion in water. The casing 37 has the general shape of two hollow, intersecting perpendicular cylinders, including a vertical cylinder 39 and a horizontal cylinder 40. The vertical cylinder 39 has a greater diameter than the horizontal cylinder 40 and is proportioned so as to be accommodated by the recesses 35 in the walls of the lower body section 23, thus securing the pump 13 against horizontal movement.

In order to secure the pump 13 against vertical movement and to assist in preventing leakage of fluid from the reservoir 17, a gasket 41 is provided. The gasket 41 is positioned between the top of the pump 13 and the bottom of the actuator cavity 27, totally filling this space so as to prevent vertical movement of the pump 13 after the head 25 is assembled. As mentioned, the gasket 41 also effectively seals the hole in the cavity 27 to prevent water leakage. However, the nature of this seal is such as not to prevent the passage of air into the reservoir 17 during the periods when the actuator 19 is being used to operate the pump 13.

The intersecting smaller or horizontal cylinder 40 of the pump casing 39 has a diameter small enough to allow it to fit in the area between walls of the body 11 and lies generally parallel to the bottom of the body 11. It provides two valve chambers 43, 45, which lie outside the surface of the pump cylinder 39 but have communication with the cylinder 39 through respective circular openings 47, 49.

Water is forced from the pump cylinder 39 by a plunger 51 which is operable therein. The plunger 51 is provided with a flexible lower rim 53 adapted for sealing against the walls of the cylinder 39. The bottom of the plunger 51 provides a seat, inside of the rim 53, for a pump spring 55 which biases the plunger 51 upward. The plunger 51 is attached to the bottom of an actuator shaft 57 which in turn is attached to the actuator 19. The shaft 57 resides in, and is guided by, an aperture which is located in the upper end of the pump casing 37 and which is aligned with an aperture in the actuator cavity 27.

In order to allow water to be fed to the pump cylinder 39, the inlet valve chamber 43 communicates with the reservoir 17 through a circular aperture in an inlet reducer 59. The inlet reducer 59 also serves to retain a ball check 61 within the chamber 43 so as to prevent expulsion of water during the pressure stroke of the plunger 51.

In order to transmit the water from the pump 13 to the nozzle 15, communication is provided by means of a hose 63. The lower end of the hose 63 seats on a nipple formed on one end of an outlet adapter 65 which forms the end wall of the outlet valve chamber 45. The opposite end of the adapter 65 provides a seat for a valve spring 67 which biases a ball check 69 toward the pump cylinder 39, thereby preventing back-flow through the outlet opening 49.

The upper end of the hose 63 is connected to a nipple formed as a part of a nozzle adapter 71. The adapter 71 is secured, as by cementing, to the lower end of the nozzle cavity 27 and defines the bottom of a flow equalization chamber 73. This chamber 73, the upper limit of which is defined by the bottom of the nozzle 15, serves to equalize the pressure of the water entering the flow passageways 21 to assure a balanced flow through them.

The nozzle 15 simulates a wick holder and is secured

in the top of the nozzle cavity 29 as by cementing. The nozzle 15 illustrated contains four flow passageways 21, all of which communicate between the chamber 73 and the atmosphere. The passageways 21 are preferably arranged, as shown in FIGURE 4, on a semi-circular pattern with one at each end of the diameter, one at the midpoint of the diameter, and the remaining one at the midpoint of the arc. The center tube is arranged to provide a vertically directed stream while the other tubes are arranged to provide streams which are inclined outwardly from the vertical. The nozzle 15 is preferably made from plastic with the center spray tube extending through its center and the remaining three formed in its outside surface. It is noted that the three outer spray tubes could, if desired, be formed in the surface of the nozzle cavity 29 with the same ultimate effect.

When filled and ready for use, the toy appears as shown in FIGURE 2. The pump cylinder 39 is in communication with the water reservoir 17 through the inlet valve chamber 43 which is open inasmuch as the inlet ball check 61, for lack of a lateral pressure differential, rests on the bottom of the chamber 43.

As the actuator 19 is depressed in simulation of the igniting operation of a cigarette lighter, the plunger 51 moves downward in the cylinder 39. The resulting increase in pressure of the water in the cylinder 39 forces the inlet ball check 61 against the inlet reducer 59, effectively sealing the aperture, and overcomes the bias of the valve spring 67, thereby opening the outflow opening 49, as illustrated in FIGURE 3. This allows water to flow through the outlet valve chamber 45 and, by way of the hose 63, into the flow equalization chamber 73. From the chamber, the water enters the four spray tubes 21 from which it squirts into the atmosphere. The four tubes 21 are positioned, as illustrated in FIGURE 4, so that one squirts generally vertically upward from the nozzle 15, another squirts forward at an angle from the vertical, and the remaining two squirt toward either side, also at an angle to the vertical. Thus, when the lighter is used to carry out a practical joke at least one of the sprays will be sure of reaching the victim.

When the outflow of water from the cylinder 39 causes the pressure therein to drop below that of the valve spring 67, the outlet ball check 69 is forced into the outflow opening 49, thereby sealing it. This ends the spray of water from the nozzle but leaves the flow chamber 73, the hose 63 and the outlet valve chamber 45 filled with water, ready for the next action. When the actuator 19 is released, the pump spring 55 forces the plunger 51 upward, returning it to its initial position. A key 75 may, if desired, be fashioned in the actuator shaft 57 to allow air to freely flow between the atmosphere and the top portion of the pump cylinder 39 in which the plunger 51 moves, thus preventing an air block from hindering the action of the pump 13.

The upward motion of the plunger 51 in the cylinder 39 creates a suction which refills the cylinder 39 with water through the inlet valve chamber 43, leaving it ready for the next cycle.

Thus the invention provides a novelty lighter, simple in construction, which, on a single filling, will provide repeated multiple sprays of water.

Various features of the invention are set forth in the appended claims.

What is claimed is:

1. A toy comprising a main body simulating the appearance of the body of a cigarette lighter, said main body having therein a generally closed liquid reservoir, means on said main body for introducing liquid into said reservoir, jet orifice means on said main body, said orifice means resembling a wick holder and including a plurality of flow passageways, equalizing means in said main body to balance liquid flow through said passageways, and a pump in said main body, said pump including an inlet in communication with said liquid reservoir, an outlet in communication with said jet orifice means, and an actuator extending exteriorly of said main body for effecting discharge of liquid form said reservoir and out of said flow passageways when operated in a manner simulating the igniting operation of a cigarette lighter.

2. A toy simulating the appearance of a cigarette lighter, which toy comprises a housing, means within said housing forming a generally closed liquid reservoir, means in said housing for introducing liquid into said reservoir, jet orifice means connected to said housing and including a plurality of flow passageways located so as to direct jets of liquid in different directions, pumping means mounted within said housing, said pumping means including a plunger and cylinder arrangement, an inlet communicating with said liquid reservoir, an outlet communicating with said jet orifice, valve means adapted to close said inlet and said outlet, and means connected to said housing for actuating said pumping means.

3. A toy simulating the appearance of a cigarette lighter, which toy comprises a housing, means within said housing forming a generally closed liquid reservoir, means in said housing for introducing liquid into said reservoir, jet orifice means connected to said housing and including a plurality of flow passageways located so as to direct jets of liquid in different directions, equalizing means in communication with said passageways for balancing liquid flow therethrough, pumping means mounted within said housing in communication with said reservoir for effecting discharge of liquid from said reservoir and out of said flow passageways, and means connected to said housing for actuating said pumping means.

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