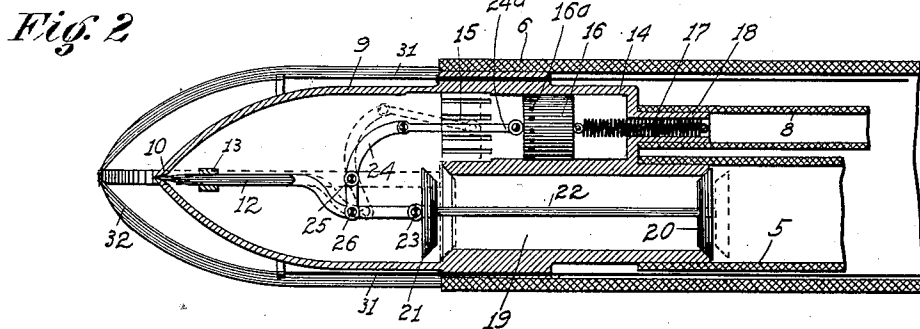
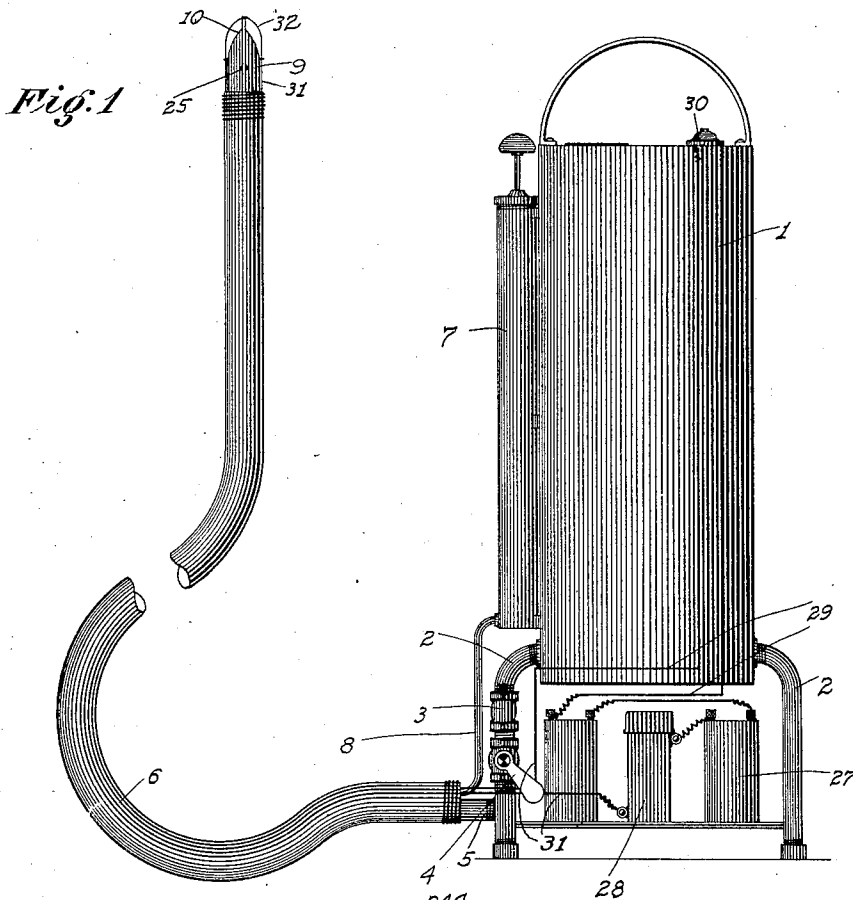


D. B. HARRIS.
 RODENT EXTERMINATOR.
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DELVIN B. HARRIS, OF MINTURN, CALIFORNIA.

RODENT-EXTERMINATOR.

1,018,109.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, DELVIN B. HARRIS, a citizen of the United States, residing at Minturn, in the county of Madera, State of California, have invented certain new and useful Improvements in Rodent-Exterminators; and I do declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in exterminators of rodents of all kinds, the object of the invention being to produce an exterminator capable of projecting an explosive chemical into the holes or abodes of the rodents and exploding the same therein, which will result in killing the rodents within their holes.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purposes for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a side elevation of the complete device. Fig. 2 is a sectional view of a discharge nozzle and exploding means.

Referring now more particularly to the characters of reference on the drawings, I first provide a reservoir or tank 1 adapted to hold the explosive chemical, provided with tubular legs 2 on which may or may not be mounted wheels for transporting the reservoir 1 as may be found desirable.

One of the legs 2 may be used for an outlet for the tank 1 and is provided with a check valve 3 to prevent the liquid from moving back into the tank after it has once left the same, and 4 is a governing valve to govern the passage of the liquid from the tank 1. The hose 5 leads from the member 2 which connects with the tank 1 and projects through a larger hose 6 down to the nozzle which will be hereinafter described.

On the side of the tank 1 is an air pump

7 having a hose 8 leading therefrom and into the hose 6.

The numeral 9 designates a discharge nozzle on the end of the hose 6, which discharge nozzle has an outlet port 10 having a needle valve 12 movable in a guide 13, which needle valve forms a normal closure for said port 10. Within the nozzle 9 is a chambered cylinder 14 having a series of slots 15 in its lower end. Within this chamber 14 is movable a hollow piston 16 closed at its outer end held normally away from the slots 15 by a spring 17 secured in a nipple 18. To this nipple 18 is connected the hose 8. Such piston has side ports 16^a for the purpose as will appear. Also within the nozzle 9 is another chambered cylinder 19 having end closing valves 20 and 21 connected by a rod 22 of such length that when one of said valves closes one end of said chamber 19 the other valve is open as shown in Fig. 2. With this chamber 19 is connected the hose 5. The needle valve 12 is linked to the end of the rod 22 as at 23, and 24 is a bell crank fulcrumed at 25 within the nozzle 9 and linked to the needle valve 12 as at 26. The other end of this bell crank projects into line of the movement of the piston 16, and is linked thereto as shown at 24^a.

In practice the air is pumped from the pump 7 through the pipe 8 into the chambered cylinder 14 and moves the piston 16 outward until such air escapes through the ports 16^a and slots 15 and the movement of the piston 16 moves the bell crank 24 and opens the needle valve 12, and the air mixing with the explosive liquid which has been admitted into the nozzle 9 forces the same out through the port 10 in a spray. This movement of the bell crank 24 also closes the valve 21 and the explosive liquid from the tank 1 passes through the pipe 5 through the valve 20 into the cylinder 19 and then when the air pressure is stopped the piston 16 returns to normal position which closes the needle valve 12 by reason of the liquid in the chamber 19 opening the valve 21 and passing through the nozzle 9 when the above operation can be repeated.

In connection with the above structure I provide batteries 27 working through a coil 28 and connected by wires 29 in the usual manner with a push button 30 adapted to make and break a circuit. Wires 31 also extend from the coil 28 through the hose 6

and connect with plates 32 spaced just a sufficient distance apart in front of the nozzle 9 to make a jump spark when the button 30 is pressed, and this explodes the atomized mixture of air and explosive chemical and this explosion and the gases therefrom is designed to kill the rodents in their holes the hose 6 being inserted into such holes for this purpose.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfils the object of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention.

Having thus described my invention what I claim as new and useful and desire to secure by Letters Patent is:—

1. A device of the character described comprising a liquid tank, an air pump, a hose having a nozzle on its end, means connecting said tank and said air pump with said nozzle, points projecting outwardly from said nozzle, batteries disposed at a distance from said nozzle, wires extending from said batteries to said points, and means for completing a circuit through said batteries and to said points for the purpose of forming a spark as described.

2. A device of the character described comprising a nozzle having a port in its end, a needle valve forming a normal closure for said port, an air inlet into said nozzle, means admitting a fluid to said nozzle, and means for forming an electrical spark at the end of said nozzle as described.

3. A device of the character described comprising a nozzle having a spray port, a needle valve forming a normal closure for said spray port, means admitting air pressure to said nozzle, means admitting liquid to said nozzle, means for opening said spray port by said air pressure and means for closing said spray port by a resilient means as described.

4. A device of the character described comprising a nozzle provided with a spray port, a needle valve forming a normal closure for said spray port, said nozzle being provided with two cylinders, a piston movable in one of said cylinders, a valve at each end of said other cylinder, a rod connecting said valves, said needle valve being linked to one end of said rod, a bell crank fulcrumed within said nozzle and linked to said needle valve, said bell crank projecting into alinement with and linked to said pis-

ten, means admitting air pressure to said first named cylinder and means admitting liquid to said last named cylinder as described.

5. A device of the character described comprising a liquid tank, an air pump, a hose having a nozzle on its end, means connecting said tank and said air pump with said nozzle, such connecting means projecting through said hose but being connected with said nozzle independently of said hose, and means for forming a spark at the end of said nozzle as described.

6. A device of the character described comprising a nozzle, such nozzle having a main chamber, two independent chambers adapted to communicate with said main chamber, means for controlling the communication from said independent chambers with said main chamber, said main chamber being provided with a spray port and means for opening or closing said spray port, said last named means being controlled by the operation of said communicating means in said independent chambers and means for communicating air to one of said independent chambers and fluid to the other of said independent chambers as described.

7. A device of the character described comprising a nozzle having a main chamber, two independent chambers connected with said main chamber, means for opening and closing communication between said independent chambers and said main chamber and means for supplying air to one of said independent chambers and liquid to the other of said independent chambers, said main chamber being provided with a spray port as described.

8. A device of the character described comprising a nozzle having a main chamber and a spray port, two independent chambers communicating with said main chamber, means for opening and closing communication from each of said independent chambers and said main chamber, such communicating means comprising a means whereby, when one of said independent chambers is communicating with said main chamber, the means of communication from the other independent chamber to said main chamber will be closed, and means for supplying air to one of said independent chambers and liquid to the other independent chamber as described.

In testimony whereof I affix my signature in presence of two witnesses.

DELVIN B. HARRIS.

Witnesses:

PERCY S. WEBSTER,
JOSHUA B. WEBSTER.