July 2, 1940. A. M. SCHROEDER 2,206,053

GROWTH EXTERMINATOR

Filed April 11, 1938

Fig. 1.

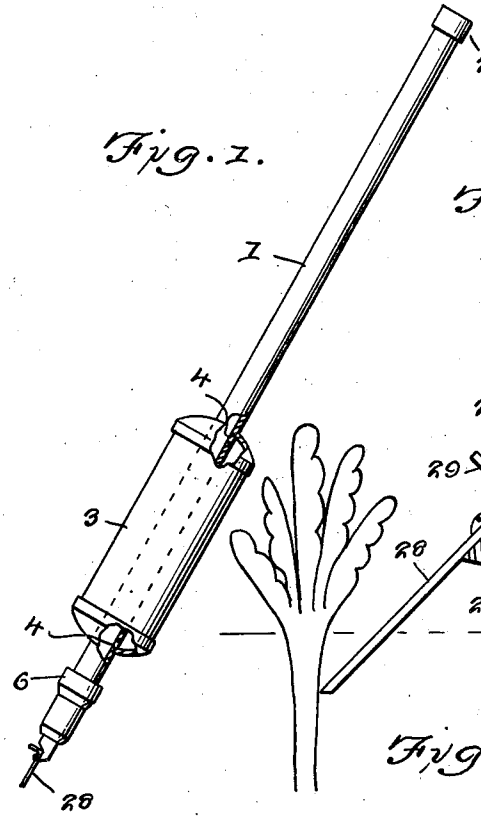


Fig. 2.

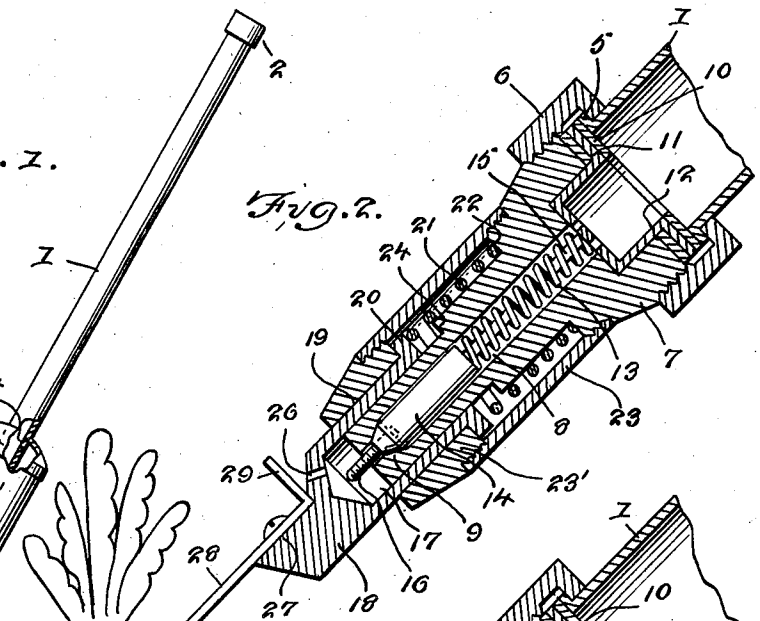


Fig. 3.

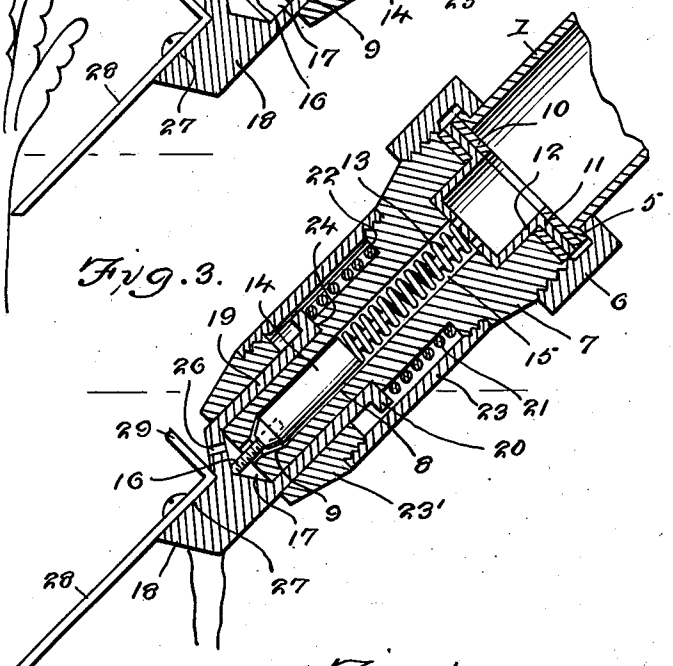
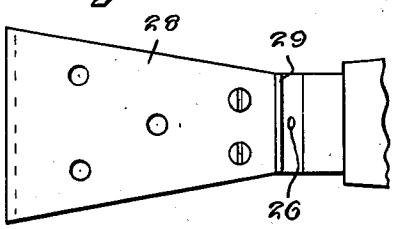


Fig. 4.



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GROWTH EXTERMINATOR

August M. Schroeder, Peotone, Ill.

Application April 11, 1938, Serial No. 201,379

10 Claims. (Cl. 47—49)

This invention relates to growth exterminators of the character set forth in my United States Patent No. 2,069,684 and has for the primary object the provision of an improved means controlling the dispensing of the exterminating liquid so that during the cutting of growth below a surface of the ground by the device the exterminating liquid will be directed onto the roots of the growth or that part of the growth left in the ground to assure the extermination thereof and which consists of a minimum number of parts rendering the device economical to manufacture and foolproof against waste or loss of the exterminating liquid, the latter being positively prevented from escaping until such time the device is cutting through the ground and the growth.

With these and other objects in view, this invention consists in certain novel features of construction, combination and arrangement of parts to be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawing, in which—

Figure 1 is a side elevation, partly in section, illustrating a growth exterminator constructed in accordance with my invention.

Figure 2 is a fragmentary vertical sectional view drawn on an enlarged scale showing the means of controlling the dispensing of the exterminating liquid from the exterminator.

Figure 3 is a view similar to Figure 2 showing the device in cutting position which brings about opening of the discharge thereof to permit the dispensing of the exterminating liquid.

Figure 4 is a fragmentary top plan view showing the cutting blade and its attachment onto the device.

Referring in detail to the drawing, the numeral 1 indicates a handle of a selected length and of hollow formation to form a reservoir to receive an exterminating liquid. One end of the handle is closed by a removable cap 2 which will permit the reservoir to be filled with exterminating liquid at any time needed. If desired, the handle 1 may be equipped with a tank 3, the handle extending through the end walls of said tank and the latter being in communication with the interior of the handle by ports 4 formed in said handle adjacent the end walls of the tank. The purpose of the tank 3 is to provide a greater capacity for exterminating liquid than would be provided for by the handle 1 alone.

One end of the handle is equipped with an external flange 5 engaged by an internally threaded coupling collar 6. The collar 6 is employed for detachably securing to the latter-named end of the handle a body 7 provided with a bore 8 extending therethrough and in which is formed a valve seat 9 located adjacent the free end of the body. Gaskets 10 are interposed between the body and the handle and also clamped between the body and the handle is a flange 11 of a cup-shaped spider 12 acting as a seat for one end of a coil spring 13, the other end of the spring engaging a valve element 14 adapted to coact with the seat 9 in closing the bore 8 under the influence of the spring 13. Pins 15 are carried by the spider and the valve element and enter the coil spring 13 to act as guides therefor. Threaded in the valve element 14 is a regulating pin 16 the free end of which is located beyond the discharge end of the bore 8 and enters a chamber 17 of an attaching head 18. The attaching head 18 includes a cylindrical portion 19 slidably mounted on the body 7 and is provided with a flange 20 acting as a seat for one end of a coil spring 21. The other end of the coil spring bears against the shoulder 22 formed on the body 7. A chuck 23' is mounted on the cylindrical portion 19 of the attaching head and is detachably secured on the body by a sleeve 23 acting as a protector for the spring 21. The sleeve 23 is threaded on the body and on the chuck holding the latter against movement relative to the body. The attaching head is free to slide relative to the chuck and the body 7. The sliding movement of the attaching head is limited in one direction by a flange 20 abutting the chuck under the influence of the spring 21. A shoulder 24 is formed on the body 7 for limiting the sliding movement of the attaching head on the body in an opposite direction from that described. The chamber 17 heretofore mentioned is formed by the cylindrical portion 19 of the attaching head 18 and the free end of the body and receives from the reservoir the exterminating liquid when the element 14 is unseated by movement of the attaching head relative to the body and coming in contact with the pin 16. A port 26 is formed in the attaching head and opens the chamber 17 for the discharge of exterminating liquid from said chamber 17. The attaching head 18 includes a flat face 27 arranged adjacent the port 26 on which is secured a cutting blade 28 including at one end a guard 29 arranged in front of and spaced from the port 26. The purpose of the guard 29 is to prevent soil or dirt from being pushed into

the port during the insertion of the cutting blade and a portion of the attaching head into the ground for the purpose of severing growth below the surface of the ground.

In operation, normally the attaching head is positioned by the spring 21 in its outermost position allowing the spring 13 to maintain the valve element 14 in engagement with the seat 9, consequently closing the bore 8 and preventing the escape of exterminating liquid from the bore and the reservoir. To sever growth a person gripping the handle 1 shoves the blade through the ground at an angle, as shown in Figure 2. As the blade passes through the growth below the surface of the ground sufficient resistance is offered to the blade to bring about movement of the attaching head on the body by the pressure exerted on the handle by the person. As the attaching head moves toward the body it engages the pin 16 and unseats the valve allowing discharge of exterminating liquid on the ground and on the growth where severed by the blade, as shown in Figure 3. It will be seen that the attaching head follows the cutting blade 28 into the ground so that the discharge of the exterminating liquid from the chamber 17 will be into the ground and onto the severed growth assuring extermination of the portion of the growth left in the ground. As soon as the blade is withdrawn from the ground the spring 21 restores the attaching head 18 to its initial position and the spring 13 closes the valve element against the seat 9 interrupting the discharge of exterminating liquid.

The blade 28 is detachably secured on the head 18 so that it can be easily removed whenever desired. The pin 16 being adjustable on the valve element 14 will permit a variance in the unseating of the valve by the head 18 moving relative to the body 7 in one direction so that a control over the amount of exterminating liquid discharged can be had.

What is claimed is:

1. A growth exterminator comprising a handle providing a reservoir for exterminating liquid, a body secured to one end of the handle and having a bore extending therethrough and in direct communication with the handle, a spring pressed valve operating in said bore for normally closing the latter, a spring influenced attaching head having a restricted reciprocatory movement relative to said body to unseat the valve and to permit the escape of the exterminating liquid, and a cutting blade mounted on said attaching head.

2. A growth exterminator comprising a handle acting as a reservoir for exterminating liquid, a body detachably mounted on said handle and having a bore extending therethrough and in direct communication with said handle, a spring influenced valve in said bore for normally closing the latter, a pin adjustably secured to said valve and extending outwardly of the bore, an attaching head having restricted reciprocatory movement relative to said body and having a discharge port, a spring acting on said head for normally positioning the latter to permit the valve to close and adapted when engaged with the ground and pressure applied to the handle to unseat said valve to permit the escape of the exterminating liquid by way of said port, and a blade carried by the head.

3. A growth exterminator comprising a handle acting as a reservoir for exterminating liquid, a body detachably mounted on said handle and having a bore extending therethrough and in direct communication with said handle, a spring influenced valve in said bore for normally closing the latter, an attaching head having a restricted reciprocatory movement relative to said body and having a discharge port, a spring acting on said head for normally positioning the latter to permit the valve to close and adapted when engaged with the ground and pressure applied to the handle to unseat said valve to permit the escape of the exterminating liquid by way of said port, and a cutting blade removably mounted on said head and including a guard positioned in front and spaced from the port.

4. A growth exterminator comprising a handle acting as a reservoir for exterminating liquid, a body detachably mounted on said handle and having a bore extending therethrough and in direct communication with said handle, a spring influenced valve in said bore for normally closing the latter, a pin adjustably secured to said valve and extending outwardly of the bore, an attaching head slidably mounted on said body and having a discharge port, a spring acting on said head for normally positioning the latter to permit the valve to close and adapted when engaged with the ground and pressure applied to the handle to unseat said valve to permit the escape of the exterminating liquid by way of said port, and a cutting blade removably mounted on said head and including a guard positioned in front and spaced from the port, a chuck mounted on said head, a sleeve detachably securing said chuck on the body, a flange formed on said head to abut the chuck under the influence of said spring, and a shoulder formed on the body to abut the head when moved against the action of said spring.

5. A growth exterminator comprising a handle acting as a reservoir for an exterminating liquid, a body detachably mounted on said handle and having a bore extending therethrough and in direct communication with said handle, a spring influenced valve in said bore for normally closing the latter, a pin adjustably secured to said valve and extending outwardly of the bore, an attaching head slidably mounted on said body and having a discharge port, a spring acting on said head for normally positioning the latter to permit the valve to close, and adapted when engaged with the ground and pressure applied to the handle to unseat said valve to permit the escape of the exterminating liquid by way of said discharge port, a chuck mounted on said head, a sleeve detachably securing said chuck on the body, a flange formed on said head to abut the chuck under the influence of said spring, and a shoulder formed on the body to abut the head when moved against the action of said spring.

6. A growth exterminator comprising a handle acting as a reservoir for an exterminating liquid, a body detachably mounted on said handle and having a bore extending therethrough and in direct communication with said handle, a spring influenced valve in said bore for normally closing the same, an attaching head slidably mounted on said body and having a discharge port, stop means carried by the body to restrict the sliding movement of the said attaching head within predetermined limits, a spring acting on said head for normally positioning the latter to permit the valve to close, and a knife blade carried by the said head.

7. A device comprising in combination a hollow casing, a valve normally closing one end of said casing, a shank carried by the valve and extending forwardly thereof beyond the said cas-

ing, a slidable head having a restricted reciprocatory movement relative to said body and adapted to engage the said shank to open the said valve, spring means to maintain the said head normally disengaged from the said shank, and a knife means carried by the said movable head.

8. A device comprising in combination a hollow casing, a valve positioned in one end of the said casing, spring means to maintain the said valve normally seated, an adjustable pin carried by the valve and extending forwardly thereof beyond the said casing, a slidable head actuating said valve and having a discharge port and an annular flange, spring means maintaining said head normally disengaged from the said pin, a chuck abutting the said annular flange to restrict the outward movement of the said head, and a sleeve detachably securing the chuck to the casing.

9. A device comprising in combination a hollow casing, a valve positioned in one end of the said casing, spring means to maintain the said valve normally seated, an adjustable pin carried by the valve and extending forwardly thereof beyond the said casing, a slidable head actuating said valve and having a discharge port and an annular flange, spring means maintaining said head normally disengaged from the said pin, a chuck abutting the said annular flange to restrict the outward movement of the said head, a sleeve detachably securing the chuck to the casing, and a knife means carried by the said movable head.

10. A device comprising in combination a hollow casing, a valve positioned in one end of the said casing, spring means to maintain the said valve normally seated, an adjustable pin carried by the valve and extending forwardly thereof beyond the said casing, a slidable head actuating said valve and having a discharge port and an annular flange, spring means maintaining said head normally disengaged from the said pin, a chuck abutting the said annular flange to restrict the outward movement of the said head, a sleeve detachably securing the chuck to the casing, and a guard associated with the said discharge port to prevent debris from entering therein.

AUGUST M. SCHROEDER.