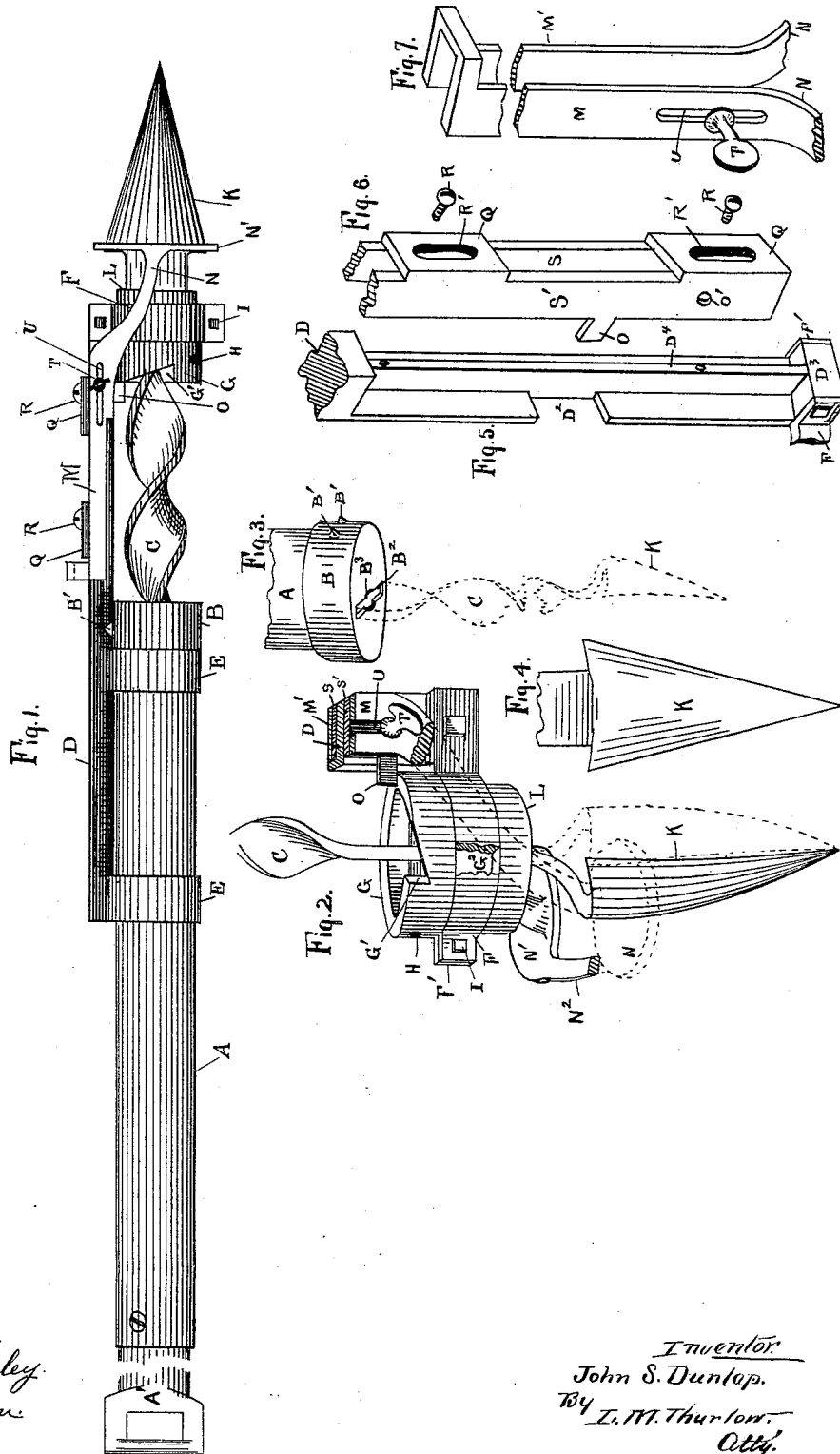


(No Model.)

J. S. DUNLAP.
WEED EXTERMINATOR.

No. 500,538.

Patented June 27, 1893.



Witnesses.
A. Keithley.
C. Johnson.

Inventor.
John S. Dunlap.
By I. M. Thurston.
Atty.

UNITED STATES PATENT OFFICE.

JOHN S. DUNLAP, OF PEORIA, ILLINOIS.

WEED-EXTERMINATOR.

SPECIFICATION forming part of Letters Patent No. 500,538, dated June 27, 1893.

Application filed July 5, 1892. Serial No. 438,907. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. DUNLAP, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Weed-Exterminators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in weed exterminators.

The object of the invention is to provide a tool in which a knife is used which is inserted into the ground beside the weed and by a simple movement the knife is made to revolve around the weed, cutting it loose from the ground.

The device may be also used for transplanting.

In the drawings hereto annexed, Figure 1 represents a side view of the device. Fig. 2 is a perspective view of the knife and part of the working portions. Fig. 3 is a perspective view of the lower end of a tube showing opening or slot for admission of a spiral operating bar. Fig. 4 is a front view of a knife used in the device. Fig. 5 is a perspective view of a portion of a bar of the device on which a sliding foot piece or gage, and a catch are placed. Fig. 6 is a perspective view of a sliding catch used to lock the machine in certain positions. Fig. 7 is a perspective view of a portion of a gage of the device.

In the several figures, A represents a tube or piece of piping of the required length on one end of which is screwed a cap B having a slot B² cut therein. A hole B³ is first drilled in the said cap. Then the notches forming the slot B² through which passes a spiral bar C are cut or filed, all of which is shown in Fig. 3. The lower end of the said spiral is formed into a concaved V shaped knife K with the point downward. The said spiral bar C is provided near its lower end with a collar G having a notch G' cut in its upper edge. A pin H passes through the collar G and bar C thus binding the said collar to the bar. A portion of the middle length of the said collar G is turned out to form the neck G² which leaves the lower shoulder L. The neck G² thus formed, is encircled by a clip formed of

two half circular portions F and F' both ends of which are provided with ears. The outer ends of which portions F, F' are held together by the bolt I, while the inner ends are bolted to the lower end of a rod D having a sliding connection with the tube A. The said rod D occupies a position close to and parallel with the said tube A and is guided and held by two rings or bands E E each of which is cast with the bar or rod and encircle the said tube A and have a free and easy sliding movement on the said tube. The cap B is provided with two lugs B' B', one placed on each side of the bar D to hold the said bar in one position.

In the position shown in Fig. 1 it will be seen that if the knife K were inserted in the ground and the tube A pressed downward, the spiral bar would be made to revolve and thus cut a circular cone shaped hole in the ground of the depth of the length of the knife and perhaps farther. Therefore a gage and catch are provided which are secured to the bar D in the following manner:—The said bar D is made solid in the upper part of its length for a short distance below the lower ring E and the lower part is then cut out to form the T shaped angle portion and the extreme lower end is formed with a lug D³. Now set on either side of the center bead D⁴, are short bars S and S' shown in Fig. 6 which are made integral with the plates Q Q. The said bars S and S' bear against the back of the bar D and the plates Q Q bear against the bead D⁴. The plates Q Q are slotted as shown in Fig. 6 and through these slots the screws R R are inserted which pass into the said bead D⁴. It will thus be seen that the said bars S and S' as a whole, will be free to slide up and down on the bar D since the screws are not fully tightened so that the heads bear against the plates, but are held loose enough to allow of a free movement of the said bars. With the bar S' is cast a lug O which is allowed to move up and down in a notch D² formed by cutting out a portion of the inner lobe of the T shaped bar D, on the side on which the catch O is placed. Over this portion just described is placed a gage composed of the bars M and M', one on each side of the bars S and S'. The said bars M and M' are held together by a connecting plate P and at the bottom by a brace N². The lower end of the rods M and M' are extended

downward into the oblong plates N' N' which occupy a position to one side of the center of the axis of the spiral bar C and between which the knife K revolves. A slot U is cut in the side of the bar M and through which is inserted a thumb screw T and this screw passes into the bar S' at O'.

The adjustment and operation is as follows: The device is always opened out to its full length by its own weight when upright and the gage composed of the bars M and M', &c., attached to the bars S and S' which form the locking mechanism, being loosely mounted on the rod D, also falls thus bringing the catch or lug O into engagement with the notch G' in the collar G. This prevents the spiral from turning while the knife is being forced into the ground and neither does the knife revolve. When the plates N' of the gage are in position with relation to the knife K as shown in Fig. 1, said knife may be pressed into the ground until the said plates strike the ground and when this occurs, the catch or lug O is raised from engagement with the notch G' of the collar G and the pressure being still on the tube A, the spiral C with its knife is revolved. The slots R' R' in the plates Q allow the catch or lug O to engage and disengage with the notch G' freely. When it is desired to insert the knife only part way in the ground, the thumb screw T is loosened and the gage lowered toward the point of the knife to correspond with the depth the hole is to be.

Fig. 2 shows the shape of the knife, the point of which is directly below the center of the axis of the spiral bar C while the upper portion is set out from the center so that in revolving, the knife cuts a cone shaped hole in the earth, the reverse position of said knife being shown in dotted lines in Fig. 2.

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

1. In a weed exterminator a spiral bar, provided at one end with the concaved V shaped knife K having its lower point directly on a line with the axis of the said spiral bar and having its upper portion set out from the line of said axis substantially in the manner and for the purposes herein set forth and described.

2. In a weed exterminator a spiral bar C provided at one end with a concaved V shaped knife K having its lower point directly on a

line with the axis of the said spiral bar and having its upper portion set out from the line of said axis substantially as herein set forth and described, the opposite end of said spiral bar being inclosed within a tube A said spiral being retained in a slotted cap B on one end of said tube A in the manner and for the purposes set forth and described.

3. In a weed exterminator, a tube A provided at one end with a cap B carrying a slot B², a spiral C provided at one end with a knife K, the notched collar G secured to the said spiral C and engaged by the clip composed of the halves F and F', a bar or rod D of the form described having the said clip attached to the lower end thereof, the rings or loops E E on said bar or rod and encircling the tube A for the purposes set forth, the catch composed of the bars S and S' made integral with the slotted plates Q Q said bar S' provided with the lug O, said bars having a free sliding connection with said bar D and the gage composed of the bars M and M' placed over the said bars S and S' and having the lower ends flared and provided with the plates N', one of said bars being provided with a slot U, and a set screw for engaging with one of the said bars S and S' for the purposes herein set forth and described.

4. In a weed extractor, a V shaped knife made to revolve, having its lower point always on a line with the axis of said knife, said knife having its upper portion set out from said line of said axis and made and curved to form an arc of a circle to describe a circle when in operation substantially in the manner and for the purposes herein set forth and described.

5. In a weed exterminator a knife designed to revolve, in combination with a locking device and gage of suitable construction, to hold said knife stationary until it has entered the ground to a sufficient depth, and to limit its descent therein and then to release said knife to allow it to revolve while yet in the ground substantially in the manner and for the purposes herein set forth and described.

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

JOHN S. DUNLAP.

Witnesses:

C. JOHNSON,
A. KEITHLEY.