Feb. 21, 1928. 1,659,768

G. DIETRICH

DITCH CLEANER

Filed Oct. 4, 1926

Fig. 1

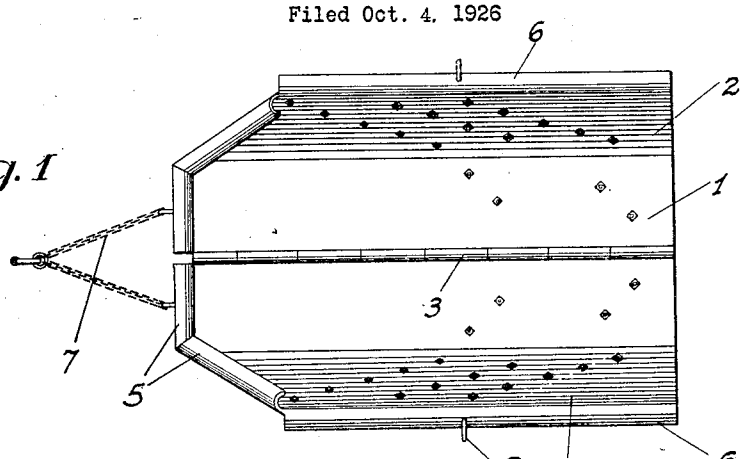


Fig. 2

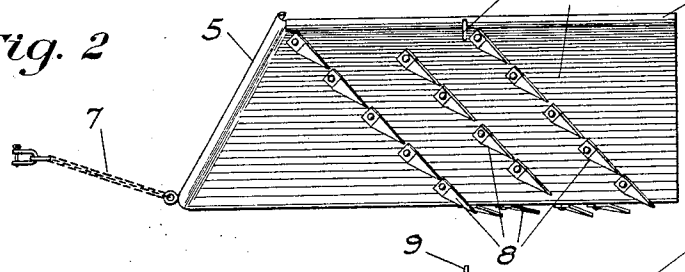


Fig. 3

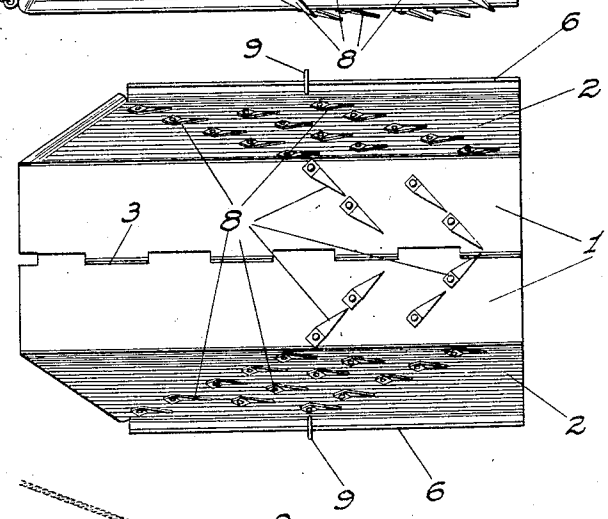
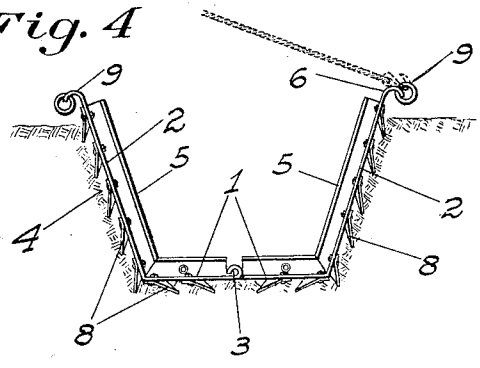


Fig. 4



INVENTOR.
Geo. Dietrich
BY
ATTORNEY

Patented Feb. 21, 1928. 1,659,768

UNITED STATES PATENT OFFICE.

GEORGE DIETRICH, OF BURREL, CALIFORNIA.

DITCH CLEANER.

Application filed October 4, 1926. Serial No. 139,344.

This invention relates to improvements in devices for cleaning irrigation ditches, especially those which are not lined with concrete or the like, and whose sides and bottom therefore become heavily covered with a growth of weeds, which in time, if not removed, seriously impair the carrying capacity of the ditch and ultimately choke the same.

Heretofore such weeds have been removed from the ditches by means of various hand operated tools which is a slow and inefficient method.

The principal object of my invention is to provide an implement to fit a ditch of a given size, and adapted to be drawn along the ditch, having a plurality of weed cutting elements, so arranged that at one operation all the weeds on the sides and bottom of the ditch will be cut off at the roots and the ditch restored to a proper and relatively smooth condition.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose 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:

Fig. 1 is a top plan view of the implement.

Fig. 2 is a side elevation of same.

Fig. 3 is a bottom plan view of the device.

Fig. 4 is a rear end view of the same.

Referring now more particularly to the characters of reference on the drawings, the implement comprises a pair of opposed plate members of suitable length, each having a bottom portion 1 and sides 2. In the present instance I have shown the bottom portions as being hinged together as at 3, though this feature may be omitted and the bottom members formed as a single rigid unit. The bottom and side members may either be formed of a single piece of iron plate or built up of a number of plates, as may be found most suitable. The width of the bottom members in such that they will fit snugly between the sides of a ditch 4 at the bottom, while the sides 2 are somewhat higher than the sides of the ditch and are disposed at an angle relative to the bottom member 1, so as to be parallel to the sides of the ditch. Any one implement is only intended to fit a ditch of a certain standard size and shape. It sometimes happens however that in the length of a certain ditch relatively wide or narrow places may be encountered. The hinge of the bottom members allows the structure to contract or expand somewhat so that the side plates will follow the contour of the sides of the ditch irrespective of such changes in width.

At the front end, the side and bottom plates are turned up as at 5 to permit the plates from cutting into the ditch, while the sides along the top are turned outwardly to form curved flanges, as at 6. Chains 7 or the like are connected to the bottom plates at the front end so that the implement can be connected to a draft horse or other pulling means to draw the implement along the ditch.

Removably secured in any suitable manner onto the outside of the plates is a series of knives 8, which are preferably arranged in a number of continuous and parallel rows down the sides and across the bottom. The cutting edges of the knives face forwardly and are disposed on the sides at a downward and rearward angle; and extend across the bottom to form a V-shaped arrangement whose apex is to the rear of the plates, as clearly shown in Fig. 3. The knives in the different rows are disposed relative to each other so to present a continuous cutting edge from the top to the bottom of the sides of the ditch and across the bottom thereof. At the same time, however, the knives are also disposed so that their cutting edges lie at an acute outward angle to the face of the plates from front to rear. This allows the weeds as cut by any one knife to pass between the knife and the plate structure and hence clear of adjacent knives. With the forward movement of the machine therefore all weeds down the sides and across the bottom of the ditch will be cut, and there is no chance for any cut weeds to clog up and hinder the cutting efficiency of the knives or the progress of the implement.

The weight of the plate structure is such that it will rest heavily on the bottom of the ditch. The knives therefore cut into the walls of the ditch to a depth depending on the extent to which said knives project outwardly from the plates, thereby causing the

weeds to be cut off under the normal ground surface. The blades being set at a rearward angle relative to the travel of the machine, they have a shearing action which provides for efficient cutting with a minimum expenditure of power.

Centrally of their length the flanges 6 are provided with rings 9 or the like. This is to enable a hook and cable to be readily attached to the implement for removing the same from the ditch at any desired point. To do this the cable is extended over the implement and connected to the ring on the far side, as indicated in Fig. 4. Then when the cable is pulled the implement will be tilted and raised on said far side, until it is out of the ditch, when the implement will rest in an inverted position on the near bank, as will be evident. While the implement is being thus manipulated the outer edge of the flange 6 on the near side bites into the ground, preventing the implement from slipping back into the ditch on that side and aiding in the raising and reversing operation.

Though I have especially intended and adapted this device for ditch cleaning purposes it may be also used for general land cultivating and cleaning, and any other uses for which it may be found suitable. Also, by reversing the position of the knives (which are removable) from the outside to the inside of the plate structure, and inverting the latter, the device may be used for cleaning levees.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects 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, as defined by the appended claims.

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

1. A ditch cleaner comprising a plate structure to be drawn along a ditch and having a bottom member to rest on the bottom of the ditch, and side portions to lie adjacent the sides of the ditch from top to bottom; and knives mounted on the outside of the plate structure; the cutting edges of the knives having a downward and rearward slant.

2. A ditch cleaner comprising a plate structure to be drawn along a ditch and having a bottom member to rest on the bottom of the ditch, and side portions to lie adjacent the sides of the ditch from top to bottom; and knives mounted on the outside of the plate structure; the cutting edges of the knives facing forwardly at an angle to the line of travel of the structure and being arranged to act on the sides of the ditch for their full width.

3. A ditch cleaner comprising a plate structure to be drawn along a ditch and having a bottom member to rest on the bottom of the ditch, and side portions to lie adjacent the sides of the ditch from top to bottom; and knives mounted on the outside of the plate structure; the cutting edges of the knives having a downward and rearward slant, and also an outward slant from front to rear relative to the face of the plate structure.

4. A ditch cleaner comprising a plate structure to be drawn along a ditch and having a bottom member to rest on the bottom of the ditch, and side portions to lie adjacent the sides of the ditch from top to bottom; and knives mounted on the outside of the plate structure in the form of rows, each row extending downwardly and rearwardly from the top of one side to the bottom, and diagonally across the bottom.

5. A ditch cleaner comprising a plate structure to be drawn along a ditch and having a bottom member to rest on the bottom of the ditch, and side portions to lie adjacent the sides of the ditch from top to bottom; and knives mounted on the outside of the plate structure in the form of rows, each row extending downwardly and rearwardly from the top of one side to the bottom, and diagonally across the bottom, the rear end of one knife being substantially in longitudinal alinement with the forward end of an adjacent knife and extending forwardly at an acute angle to the plate structure in a plane at right angles to said structure.

6. A ditch cleaner comprising a plate structure to be drawn along a ditch and having a bottom member to rest on the bottom of the ditch, and side portions to lie adjacent the sides of the ditch from top to bottom; and knives having forwardly facing cutting edges mounted on the outside of the plate structure and disposed at an angle to the face thereof from front to rear.

7. A ditch cleaner including a plate structure to fit into the ditch and to be drawn along the same, the sides of the structure being adapted to extend above the top of the ditch, outwardly projecting flanges along the upper edges of said side members, and members for attachment to a lateral pulling means mounted on said flanges.

In testimony whereof I affix my signature.

GEORGE DIETRICH.