This invention relates to portable irrigation gates adapted to control the flow of water along an irrigation ditch or between a main ditch and a lateral taking from the same.

The principal objects of my invention are to provide a gate of this character which is truly portable in that it is light and may be easily carried from place to place by one man, one which is suitable for use either crosswise or lengthwise of a ditch, one which may be easily put into place or removed and which can be left in place as long as desired without deterioration or displacement, one so constructed that water flowing through the gate will have no erosive action tending to dislodge the gate, one which does not necessarily fit the ditch (when used crosswise thereof) and which will still have a watertight fit; and one which is self-supporting without having to be braced or rightly engaged by the dirt.

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 drawing similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a front view of my improved gate.

Figure 2 is a similar elevation of the same on the line 2—2 of Figure 1.

Figures 3 and 4 are diagrammatic plan views showing the gate as mounted lengthwise and crosswise respectively of a ditch.

Referring now more particularly to the characters of reference on the drawing, the gate comprises a substantially rectangular rigid metal plate 1 whose dimensions are such that it is higher and preferably somewhat wider than the ditch in which it is to be used. The plate has a water passage opening 2 of suitable form cut therein near the bottom and centrally of its width. A hand-operated shutter or gate plate 3 is disposed on the front or upper side of the plate 1, being mounted on said plate for vertical movement by guide elements 4 engaging the side edges of the gate.

A relatively short flange 5 surrounds the opening 2 and extends from the back side of the plate 1, said flange removable fitting in the adjacent end of a length of conduit 6 which is provided with a handle 7 on top whereby it may be manipulated and carried about. Projecting from the back side of the plate 1 and extending from top to bottom of the same at right angles thereto are rigid vertical fins 8, disposed intermediate the sides of the opening 2 and the side edges of the plate 1.

In operation the gate unit is preferably carried to the point of use with the conduit detached from the outlet flange, for convenience of manipulation. If the gate is to be used crosswise of the ditch the plate 1 is held transversely at the ditch at the desired point and after mounting the conduit in position said plate is depressed into the dirt at the sides and bottom of the ditch, until the bottom of the conduit rests on the bottom of the ditch, as indicated in Figure 2. If the water is already flowing through the ditch the gate may be left open while the plate 1 is being depressed.

The conduit 6 serves two purposes. For one thing it conveys the water past the plate 1 a sufficient distance so that when the water re-enters the ditch the swirl caused by the relatively restricted flow will not cause erosion of the walls of the ditch near the plate, so that the dirt adjacent the plate is not washed away to cause leakage or dislodge the plate. In the second place the conduit serves to support the plate in a vertical position against the pressure of water on its upper stream face and which tends to cause the plate to lean backwards, and the need of bracing the plate or wedging the same tightly into the dirt to maintain its position is unnecessary.

In the event that the width of the plate is approximately that of the ditch so that there is danger of water leaking past the plate, the fins 8 provide brackets which may be packed with dirt running inwardly from the sides of the ditch, as indicated at 9 in Figure 4.

If the gate is to be used to control a flow of water through a side cut to be made in the ditch, the plate 1 is set in a vertical position adjacent said side of the ditch, with the shutter 3 closed and with the conduit 6 removed. The dirt behind the plate may then be scooped away as at 5 to expose the opening through the flange 6 without any leakage of water interfering with this operation, or washing away the dirt at the sides of the cut and making the same unduly large. The fins remain embedded in the wall of the ditch to the sides of the scooped out area so as to reinforce the dirt of said wall and prevent erosion and leaking of the water past the sides of the plate.

After the dirt has been thus worked, the conduit may be slipped over the flange 6 and water passing through the same when the shutter 3 is
open will then be discharged into the corresponding lateral or parallel ditch at a sufficient distance from the gate to prevent erosion and washing away of the dirt in contact with the plate and fins.

5 The gate may also be used when it is desired to cut the side of the ditch for flooding the adjacent land, so as to control the flow through the cut.

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 portable irrigation gate including a vertical plate having an opening therethrough substantially central of its width, a gate slidably mounted on the upstream side of the plate to control the opening, vertical fins projecting from the downstream side of the plate in spaced relation to the sides of the opening, and a conduit registering with the opening and projecting from the downstream side of the plate to a termination beyond the fins.

2. A portable irrigation gate including a vertical plate having an opening therethrough substantially central of its width, a gate slidably mounted on the upstream side of the plate to control the opening, vertical fins projecting from the downstream side of the plate in spaced relation to the sides of the opening, a flange shorter in length than the horizontal extent of the fins projecting about the opening on the downstream side of the plate, and a relatively long conduit removably mounted on the flange.

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