Aug. 6, 1935. L. D. ADAMS 2,010,249

WATER GATE

Filed March 1, 1935

Fig. 1.

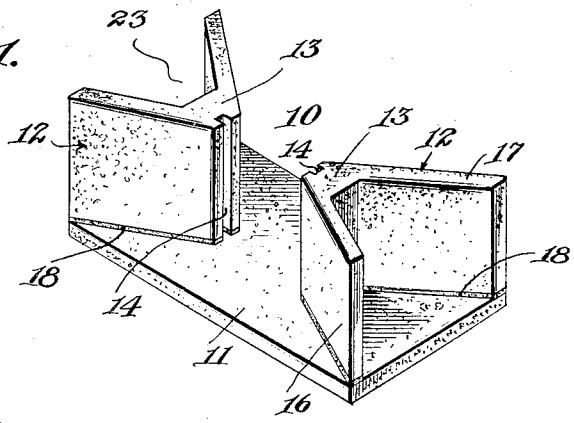


Fig. 2.

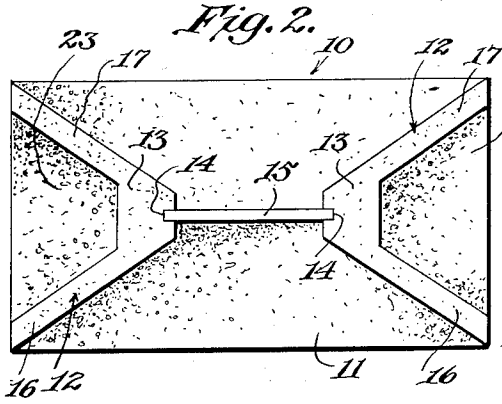


Fig. 3.

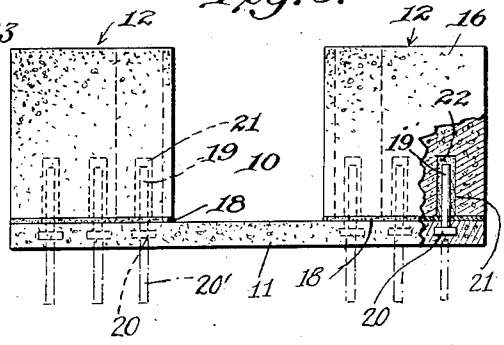


Fig. 5.

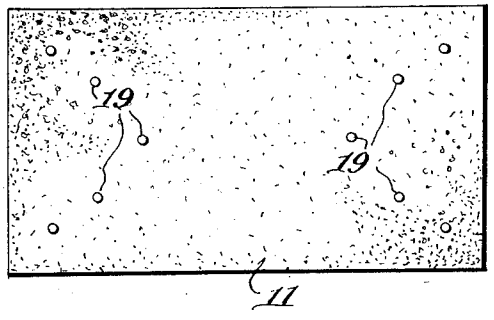
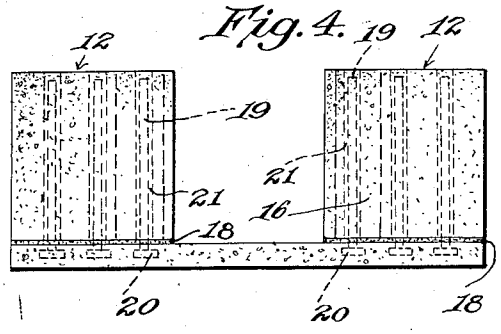


Fig. 4.



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WATER GATE

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4 Claims. (Cl. 61—29)

This invention is particularly related to water gates for controlling the flow of water to irrigation ditches, and it is an object of the invention to provide a water gate of parts adapted for assembly in the field so that each part is easily transportable over rough fields, and is cooperable with the other parts of the assembly to provide a sturdy gate well adapted to meet the severest service conditions.

It is an important object of this invention to provide a water gate structure comprising a pair of side wing elements removably secured to a base so that should the ground upon which the structure is placed in assembled relation become disturbed, due to abnormal weather or flood conditions, the structure may be disassembled and re-set without much effort and at little expense.

It is also an important object of this invention to provide a water gate comprising a pair of similar side wing elements removably secured to a base so that the several parts may be manufactured with the aid of inexpensive and simple molds, may be readily transported over rough terrain, and may be carried in stock by farmers and fruit growers to renew a part that becomes worn or damaged in service.

It is a further object of this invention to provide a water gate comprising side wing elements removably secured to a base, said side wing elements having their integral parts so disposed as to resist overturning of the element on the base and thus making possible the use of eminently simple securing means.

It is also an object of this invention to provide a water gate comprising a base having integral securing elements cooperable with side wing members resting on the base and receiving the securing means to protect them against injury.

It is also an object of this invention to provide a water gate having side members that are interchangeable and reversible so that the stock of spare parts may be reduced to a minimum, and so that a repair may be readily effected by simply reversing a part.

In the drawing:

Figure 1 is a perspective view of the assembled parts of the water gate.

Figure 2 is a plan view of the gate.

Figure 3 is a side elevation view of the gate with a part broken and in section.

Figure 4 is a side elevation view of the gate showing a modification.

Figure 5 is a plan view of the base of the gate.

In the drawing, as best shown in Figure 1, a water gate 10, comprises a flat base slab 11, upon which similar side or abutment members 12 are seated. Each side member comprises a toe portion 13, provided with a slot 14 to receive a slidable gate 15, and a pair of inwardly converging and integrally formed walls 16 and 17.

A grout 18 of an asphaltic, or similar, material is placed between the side members 12 and the base 11 to make the joint water-tight, but easy to break. In the manufacture of the gate 10, the base slab 11 is formed separate, and is of concrete, or other suitable material, and a plurality of pins or dowels 19 are placed in the mold so that they become integral with the material of the slab when it hardens. The pins 19 are provided with suitable integral heads or flanges 20, so that each pin is, in effect, a vertical column having a base anchored in the slab 11. As is shown in Figure 5, the pins 19 are laid out in the form of a V to engage the toe and side walls of the abutment members 12.

Since the pair of abutment members 12 are of similarly shaped elements, a single mold is enough. The members 12 are also of concrete, or other suitable material, and during the forming or casting process removable and tapered plugs are placed in the mold, and are removed later when the material of the member 12 is hard enough, to leave tapered recesses or pin receiving holes 21.

In Figure 3 the recess 21 is shown as extending from the bottom of the member 12 to a suitable height in the toe and wall portions, and in Figure 4 the recess 21 is shown as extending the full height of the toe and wall portions.

In the forms shown in Figure 3 and Figure 4 the recess 21 is filled with a suitable filler or grout 22 of an asphaltic, or similar, material so that when the members 12 are put in position on the base 11, and the pins 19 are entered in the recesses 21, the pins 19 are protected by the surrounding material of the members 12, and by the grout 22.

The pocket 23 between the walls or wings 16 and 17 may be filled with soil when the gate 10 is in its assembled position in the field, and it is obvious that the walls 16 and 17 function as aprons to guide water towards and away from the control opening.

The slab 11, obviously provides a sill for the water as it approaches and leaves the control opening.

Because of the disposition of the pins 19 in the base 11, and of the disposition of the walls 16 and 17, the members 12 are evidently well adapted to

resist displacement or overturning even though they are not cast integral with the base 11.

The parts 11 and 12 may be cast and cured at some convenient point, and their shape and relatively low weight facilitate their transportation over fields, even in the spring when the soil is wet and soft, to the service location.

Should the soil settle or become materially disturbed, due to unusual weather or flood conditions, it is obvious that the water gate of this invention is adapted to be readily disassembled and re-set.

Also, should a part become worn or damaged, that part may be readily and inexpensively replaced from stock parts without renewing the whole structure.

It has been found that the combination of a flat slab for a sill, and the outwardly and rearwardly diverging aprons produce a flow condition that does not encourage erosion of the soil about the gate.

Because of the ease with which the gate 10 may be disassembled, transported, and assembled in position, it is obvious that it lends itself peculiarly to the demand for the temporary placing of gates or dams, and to the shifting of gates as flow conditions or flow requirements change in service.

The parts 12 are obviously interchangeable. When the side members are provided with apertures that extend the full height of the toe and walls, or are provided with similar top and bottom apertures, they are reversible so that it is often possible to keep a gate in service by reversing a side member to bring the damaged portion to a position in which it does not materially affect flow control. Thus, should the lower portion of a toe or wall become damaged, the side member may be reversed to put the damaged portion above the water line.

It is also obvious that the pins in the slab may be arranged extending through the slab to provide anchorage in the soil, and to also make the slab reversible in service, as is indicated at 21' in Figure 3.

It will of course be understood that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention and it is therefore not the purpose to limit the patent granted hereon otherwise than necessitated by the scope of the appended claims.

What is claimed is:

1. A water gate for irrigation ditches, said water gate comprising a base slab, a pair of spaced side members removably seated on said slab, each of said side members comprising a pair of substantially similar and integrally formed and inwardly converging walls, said walls being provided with vertically extending apertures, and anchoring means entered in said apertures and secured to said base whereby said side members are secured against side movement and may be removed by vertically lifting them to clear said anchoring means.

2. A water gate for irrigation ditches, said water gate comprising a base, a pair of spaced side members removably seated on said base, a sealing material between said side members and said base, said side members each comprising a pair of substantially similar and integrally formed and inwardly converging side walls, said side walls being provided with vertically extending apertures, a sealing material in said apertures, a plurality of upstanding pins entered in said apertures and immersed in said sealing material in said apertures, said pins being secured at their lower ends to said base, said side members being removable by vertically lifting them clear of said pins.

3. A water gate for irrigation ditches, said water gate comprising a base, a pair of similar and interchangeable and reversible side members removably seated on said base in opposed spaced relation to each other, said side members each comprising a pair of substantially similar and integrally formed and inwardly converging walls, and anchoring means secured to said base and slidably entered in said walls.

4. A water gate for irrigation ditches, said water gate comprising a flat base slab having anchoring pins projecting normally from the upper and lower faces of said slab, a pair of spaced and interchangeable and reversible side members removably seated on the upper face of said slab and housing the pins projecting from that face, said side members each comprising a pair of substantially similar and integrally formed and inwardly converging walls, the pins projecting from the upper face of the slab being vertically alined with the pins projecting from the lower face of the slab.

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